consulting engineers

NRB

Transportation Assessment Report

incl.

Preliminary Mobility Management Plan

(Appendix F)

Stage 1 Road Safety Audit

(incl. Quality Audit)

(Appendix K)

For

Proposed HSE Ambulance Facility

At

Belgard Road, Tallaght, Dublin 24.

SUBMISSION ISSUE

Apollo Buildings, Dundrum Road, Dundrum, Dublin 14
Tel/fax: +353 1 292 1941, E-mail: info@nrb.ie, Web: www.nrb.ie

Registered in Ireland No. 491679

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EXECUTIVE SUMMARY

NRB Consulting Engineers Ltd were appointed to address the Traffic/Transportation issues associated with a planning application for a new HSE Ambulance Facility at Belgard Road, Tallaght, Dublin 24.

The site was previously used for industrial/Office employment purposes. In this regard, the site has long established traffic, transportation demand and trip generation characteristics, which are most likely to have been significantly greater than the now-proposed use as an Ambulance/Administration base.

Being located in the heart of Tallaght and within a 5 to 10-minute walk of The Square and other local large employment centres such as Tallaght Hospital and TU Dublin Campus, the site is ideally placed to take advantage of non-car modes of travel.

This Transportation Assessment (TA) has been prepared to address any Traffic/Transportation issues associated with the proposal, and specifically the capacity of the existing road network.

The Report has been prepared in accordance with the TII's Traffic & Transportation Assessment Guidelines and addresses the worst-case traffic impact of the proposal. This TA addresses the adequacy of the existing and improved local road network to safely and appropriately accommodate the worst-case vehicular demands with the development fully occupied, taking account of the existing transportation demands locally.

This assessment also considers the effect of the adjacent Strategic Housing Development (The Glen Abbey Complex, ABP Case Ref TA06S.309916), with the traffic included as 'committed' within the assessment.

We commissioned and undertook new traffic surveys of the adjacent road network during 2021 and the assessment of the impact has been based on these surveys..

The Transportation Assessment confirms that the established existing road network and the access junctions are more than adequate to accommodate the worst-case traffic associated with the development. The assessment also confirms that the construction and full occupation of the facility will have a negligible impact upon the operation of the adjacent road network and will pass unnoticed.

The assessment includes a Preliminary Mobility Management Plan (MMP or Travel Plan) for the site which is included as ***Appendix F***. The MMP contains an assessment and appraisal of the Non-Car modes of transportation.

An independent Stage 1 Road Safety Audit (incl. Quality Audit), together with the Designer Feedback form, has been undertaken and included as ***Appendix G***.

We conclude that there are no adverse traffic/transportation capacity or operational safety issues associated with the construction and operation of the proposed facility which 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 arising from the application for a new HSE Ambulance Facility at Belgard Road, Tallaght, Dublin 24.

1.2 Drawings showing the proposed development are included for reference as ***Appendix A***. A site location plan is included below as ***Figure 1.1***.

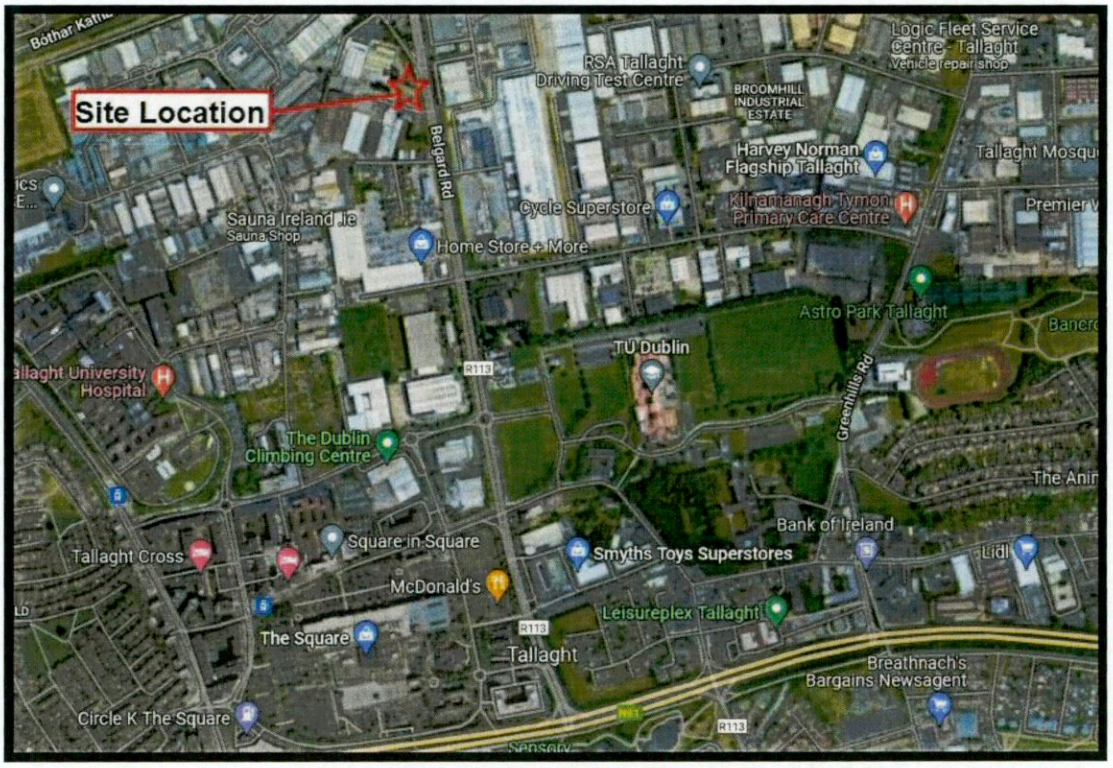

Figure 1.1 - Site Location in Heart of Tallaght

1.3 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 Traffic terms** (conscious of the long-established use & nature of the established site for employment purposes),
- Location of the development within Tallaght in close proximity to high quality Public Transport Links,
- Traffic & Transportation impact,
- Capacity of the proposed vehicular accesses to accommodate the worst-case development traffic flows,
- Capacity of & Impact Upon the Existing Road Network,

- Adequacy and safety of the existing roads and junctions locally, within the area of influence.

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

- The TII Traffic & Transport Assessment Guidelines,
- Design Manual for Urban Roads and Streets,
- Recent Weekday AM and PM Peak Classified Turning Movements Traffic Survey Data commissioned,
- TII Design Guidance,
- Transportation Planning Policy provisions of the SDCC Development Plan & the Tallaght Local Are Plan (LAP),
- Our experience in assessing the impact of Developments of this Nature, and
- Site Visits and Observations.

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

1.6 The assessment includes a Preliminary Mobility Management Plan (MMP or Travel Plan) for the site which is included as ***Appendix F***. An independent Stage 1 Road Safety Audit (incl. Quality Audit), together with the Designer Feedback form, has been undertaken and included as ***Appendix G***

2.0 EXISTING CONDITIONS, DEVELOPMENT PROPOSALS & PARKING

2.1 The subject development site is located within and adjacent to the Glen Abbey Complex and subject site was until recently in use as Industrial/Employment uses. The site is bound to the west by the permitted Glen Abbey SHD. An extract from the adjacent permitted SHD GF Layout Plan is included below, showing the subject application site:

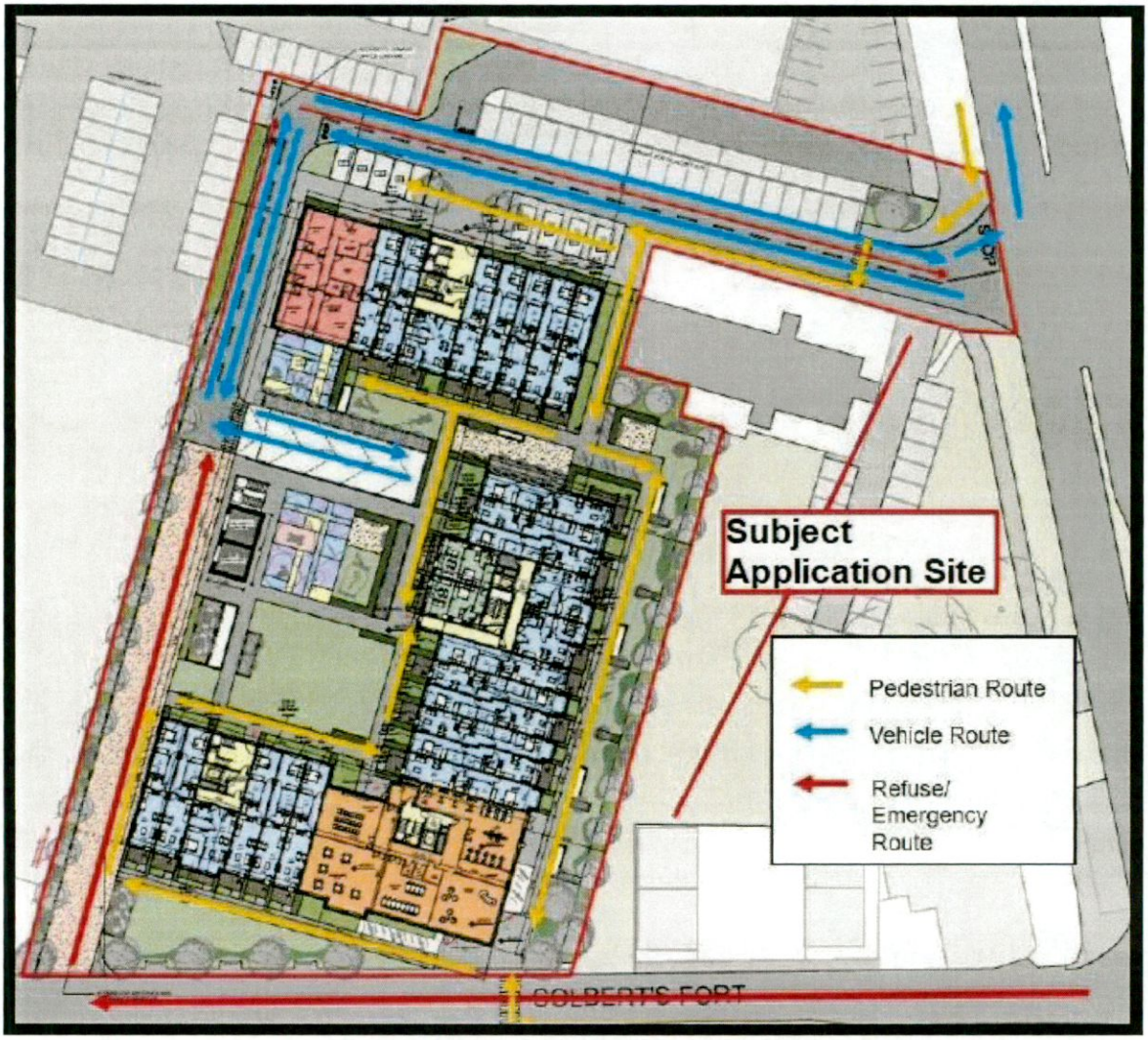

Figure 2.1 – Adjacent Approved SHD - Ground Floor Layout Plan

2.2 The site is within the long-established old Industrial Estate, which clearly is Commercial/Industrial in nature.

2.3 The subject site is bound to the north by the access road from Belgard Road to the south by adjacent premises and to the east by Belgard Rd R113.

2.4 Belgard Road is a wide dual-carriageway 2-way Regional Road, currently subject to a 60km/h speed restriction and is relatively heavily trafficked. It runs in a N-S orientation immediately east of the site, and it is intended that the site access will be taken directly from the established access, which in turn leads to Belgard Road in the form of the existing traditional simple priority 'T-Junction'. Google Streetview images showing the current layout at Belgard Rd North, and South are included below as ***Figure 2.2*** and ***Figure 2.3.***

Figure 2.2 – Belgard Rd, View North, with Site on RHS

2.5 The Traffic survey and assessment within ***Appendix D***, confirms that Belgard Road carries a weekday AM Peak Hour 2-Way traffic flow of approximately 1,459 Passenger Car Units (PCUs, or car-equivalents) and a 2-way flow of 1,714 PCUs in the PM Peak Hour, measured immediately south of the development site. In these terms, the road is considered heavily trafficked in terms of its link carrying capacity.

2.6 The site access road itself will be a single carriageway 2-way road. It runs in an E-W orientation and meets Belgard Road in the form of a simple priority T Junction with the provision of a dedicated right turn ghost island, or shelter island, for intended right turners. The Traffic survey confirms that the road currently carries a weekday AM Peak Hour 2-Way traffic flow of approximately 44 PCUs and a 2-way flow of 54 PCUs in the

PM Peak Hour. In these terms, the access road is clearly very lightly trafficked in terms of its link carrying capacity.

Figure 2.3 – Belgard Rd, View South, with Site on RHS

2.7 To set the above existing flows in context, a standard single lane of an urban road or street would typically have a traffic-carrying or link-capacity of between 1,000 and 1,500 PCUs per-direction per-hour. In these terms, this link capacity provides a context for the traffic nature classification of the existing flows as set out above. Of course, it should be remembered that the capacity or through-put of any street in an urban environment of this nature is generally determined by the capacity of the junctions. In this case, based on our own experience and observation, the critical junctions are the Belgard Rd/Airton Rd and Airton Rd/Greenhills Rd traffic signal-controlled junctions which are both somewhat remote from the subject site, but which affect the throughput and capacity of Belgard Rd.

2.8 A review of the Road Safety Authority (RSA) on-line database of reported road traffic accidents confirms that there have been no significant accidents on the adjacent affected roads during the reported period 2005 to date, ones that are considered relevant or which will be affected by the proposed development. An extract from the RSA Database is included below as ***Figure 2.4.***

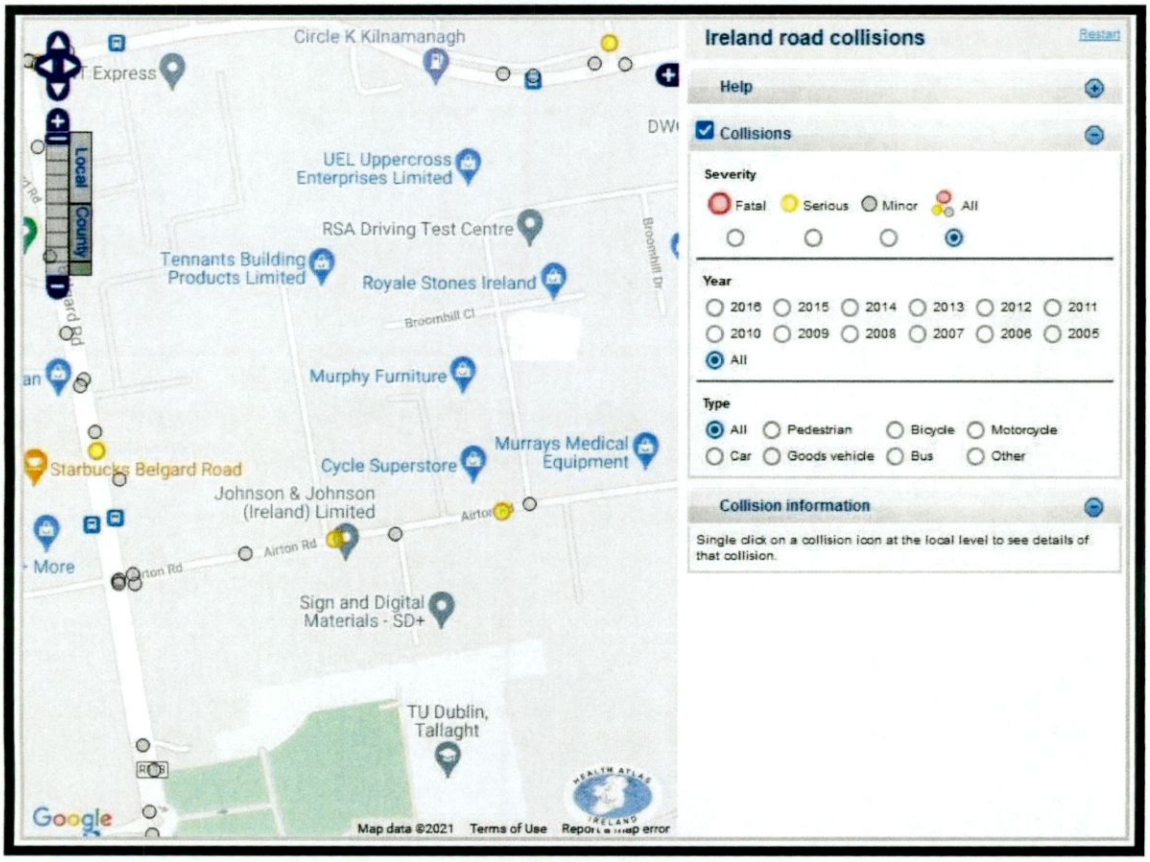

Figure 2.4 – RSA Accident Statistics Database Extract

Proposed Development

2.9 The proposed ambulance base at Belgard Road will provide for both a local response and National Services. Following mapping assessments, reviews of options and requirements for the NAS, the HSE decided that in order to better serve and access South Dublin and environs, a new Dublin centred Ambulance Base would be required. The site location at Belgard Road, Tallaght was chosen due to its close proximity to Tallaght University Hospital (c. 1 km away) and Our Lady's Children's Hospital Crumlin (c. 6 km away).

2.10 This is also in accordance with the NAS strategy of relocating Ambulance Bases off the sites of Acute Hospitals, to new purpose-built facilities, situated in close proximity to clusters of existing Acute Hospitals and other Healthcare facilities, a strategy which has been implemented in other locations throughout the country over the past number of years. The site at Belgard Road is in very close proximity to Tallaght University Hospital (c. a 3 No. minute drive away) as well as The Coombe Hospital, St. James' Hospital and Our Lady's Children's Hospital, Crumlin, as well as other Primary and Community Care

facilities in the Greater Dublin Area. The site at Belgard Road also has excellent access to the Greater Dublin area, bordering counties Kildare and Wicklow as well as access to the urban centres and is near main inter-connecting junctions with M50, N81 and N7 main access routes.

Development Description

2.11 The proposed development principally comprises the refurbishment and extension of the existing 3 No. storey building and a change of use of the existing building & site from a vacant addiction service facility to a National Ambulance Base facility.

2.12 The proposed works principally include: the demolition of a stair-core and boiler room (40 m^2) and the removal of an external stair-core, entrance ramp and steps to the north of the building; and the provision of lateral & vertical extensions at ground, first and second floor levels, principally comprising a single storey, two-bay ambulance garage, increasing the gross floor area of the building from 943 m^2 to 1,420m^2; the rationalisation of floor space in the existing building; the provision of an external canopy to shelter 14 No. ambulance vehicles; the provision of a power washing station towards the south-western corner of the site.

2.13 The development includes ancillary staff car-parking, cycle parking, revised elevational treatments, boundary treatments, hard and soft landscaping, and all associated works above and below ground.

Parking

2.14 The development includes 13 no. **Car Parking** spaces (incl 1 no. mobility-impaired parking space). The SDCC Development Plan sets out the car parking requirements within Table 12.25 of the Development Management Guidelines, however there is no recommended specific guidance for a facility of this nature.

2.15 The development, comprising a total of 1,420m^2 GFA, is within SDCC Zone 2 for assessment purposes. If we applied an 'Office' category (1:75m^2) this would result in a requirement for 19 spaces. If we were to apply the standard for 'Hospital' category (1:150m^2) , this would require the provision of 10 spaces. These are both maximum standards. Using these as a Guide it is considered that the provision of 13 no. car parking spaces represents an appropriate level, being between 'Office' and 'Hospital' requirements.

2.16 In terms of **Bicycle Parking**, the SDCC Development Plan sets out the car parking requirements within Table 12.23 of the Development Management Guidelines, however similar to Car Parking there is no recommended specific guidance for a facility of this nature. We have therefore applied the standard for 'Offices' to the 1,420m^2 facility (1:200m2 GFA), resulting in a requirement for a total of 7 no. bicycle parking spaces. There are a total of 12 spaces provided as per the annotated Architects drawing extract included below as ***Figure 2.5*** exceeding the requirements of the SDCC Plan.

Figure 2.5 – Architects Extract, GF Plans

3.0 TRIP GENERATION, ASSIGNMENT & DISTRIBUTION

3.1 In terms of assessing Car Traffic and the impact of same on the local road network, the Trip Rate Information Computer System 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 specifically referenced & recommended for use within the TII Traffic and Transport Assessment Guidelines.

3.2 There are no Ambulance facilities of this nature included within the TRICS database. We have therefore included as ***Appendix C*** the TRICS output for both Medical Facilities and for traditional offices. We have assessed the potential traffic generated using both selection parameters, and it is clear that Medical Facilities have higher overall peak hour traffic generation rates than offices. We have therefore based the assessment on the Medical Selection Parameter from within TRICS. This provides a robust estimation of traffic as illustrated in ***Table 3.1*** below, with the comparison with traditional offices included as ***Table 3.2*** for reference.

Table 3.1: TRICS Data Summary - Proposed Development, Medical Facility - USED

1,420m² Medical Bldg	Arrivals (PCUs)		Departures (PCUs)		Total 2-Way Vehicular Traffic Generated
Network Hour	100m²	Dev	100m²	Dev	
Weekday AM Peak Hr 8-9	1.223	17	0.392	6	23
Weekday PM Peak Hr 5-6	0.387	5	0.995	14	19

Table 3.2: TRICS Data Summary - Proposed Development, Offices (For Comparison)

1,420m² Office Bldg	Arrivals (PCUs)		Departures (PCUs)		Total 2-Way Vehicular Traffic Generated
Network Hour	100m²	Dev	100m²	Dev	
Weekday AM Peak Hr 8-9	1.031	15	0.114	2	17
Weekday PM Peak Hr 5-6	0.098	1	0.840	12	13

3.3 Given that we have selected the higher traffic generating facility for use, we consider that the use of TRICS in the methodology adopted is Robust and Onerous and the Trip Rates applied and used provide for a robust reflection of the expected worst-case traffic generated by the proposed development.

3.4 Notwithstanding, in light of observation of existing capacity conditions, the use of higher Trip Rates, even double the traffic generation for example, if required would have no impact upon the conclusions of the study. This is particularly the case given the low traffic impact associated with the development as evidenced herein.

Assessment Methodology

3.5 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. 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 Traffic Survey of the existing affected roads and junctions in order to establish base background traffic conditions.

3.6 We have included the traffic generated by the adjacent SHD application within the assessment, considering the traffic generated by this development as 'Committed' for the purposes of the assessment, consistent with the Guidelines.

3.7 We have used the TII PE-PAG-02017 Project Appraisal Guidelines for National Roads Unit 5.3 (Travel Demand Projections 2021, Table 6.1: Central Growth Rates: Annual Growth Factors, Dublin), to establish projected occupation/opening year 2024 and design year 2039 traffic conditions 15 years following opening on the local road network. 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***.

3.8 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 to the conclusions.

3.9 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.

3.10 Calculations of the relevant growth factors are included in ***Table 3.3*** below (based on tabulated 'Central Growth' for Metropolitan Dublin). It should be noted that any requirement to use different or higher growth factors will also have no implications for the conclusions of the study.

Table 3.3: Traffic Growth Rates, TII Travel Demand Projections Unit 5.3

Year	to Year	Table 6.1:
Surveyed	2024	1.049
2024	2039	1.152

4.0 TRAFFIC IMPACT - TRAFFIC CAPACITY RESULTS

4.1 The TII Traffic and Transport Assessment Guidelines set out a strict mechanism for assessment of developments of this nature and determining whether further assessment is indeed required. This Guideline 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 We have assessed the impact of the proposed development with a sufficiently wide area of influence included. The professional guidance referenced above sets out specific increases in traffic volume associated with new development, which, when breached, requires further detailed analysis to be undertaken. The recommendation is that, if the expected increase is **5%** for networks that are considered heavily trafficked or congested, then further analysis is warranted. In this case, given the location, for robustness, the 5% threshold has been applied. The Threshold is 10% for other networks.

4.3 In this regard, it is demonstrated herein that the occupation of the development, with relatively low volumes of vehicular traffic added to a busy network, will not result in any significant or noticeable level of new trips on the local roads, with all anticipated traffic increases beyond the Access junction and Belgard Road itself expected to be **well below** the Industry-Standard level of 5% above which further assessment is required. This underlines the low levels of traffic generated in comparison with the established road network traffic volumes.

4.4 Our assessment confirms that the absolute worst-case traffic increases on the adjacent road network junctions, with the entire development open and occupied, undertaken in accordance with Guidelines, is as summarised below as ***Table 4.1***.

Table 4.1: Proposed Development Open & Operating - Threshold Assessment, Worst-Case Impact - AM & PM Peak Hours 2024

Assessed Road or Junction	Traffic Increase %		COMMENT
	AM Pk Hr	PM Pk Hr	
Site Access Internally	NA	NA	Junction Capacity Assessment Included
Belgard Rd North (2-Way Flow)	0.9%	0.7%	<5% No Further Assessment Required
Site Access Road/Belgard Rd Junc	1.4%	1.0%	<5% No Further Assessment Required
Belgard Rd 2-Way (North of Airton)	0.5%	0.4%	<5% No Further Assessment Required
Airton Rd/Belgard Rd Junc	0.4%	0.3%	<5% No Further Assessment Required
Belgard Rd 2-Way (South of Airton)	0.4%	0.2%	<5% No Further Assessment Required

4.5 Apart from the internal Site Access, these worst-case traffic increases are below the Guideline and industry standard 5% level above which further assessment is required, in accordance with the Guidelines.

4.6 To set these increased levels of traffic in context, the day-to-day variation in traffic volume (due to day-of-week or weather conditions for example) is accepted as 10%, so, in this context alone, increases of less than 5% will go entirely unnoticed and this underscores the negligible impact of the proposed development traffic.

4.7 We have undertaken traffic modelling of the proposed internal access T-Junction for weekday AM and PM Periods (2024 Opening Year and 2039 Design Year +15) purely to confirm & demonstrate adequate capacity exists to accommodate the increased traffic associated with the development.

Internal Access - Capacity Modelling

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 internal junction. PiCADY produces results based on a ratio of flow to capacity (RFC) and queue length. An RFC greater than 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 site access as ***Appendix E***.

4.9 We have undertaken the detailed assessment of the capacity of the junction with the entire subject development in place and fully operational and with the adjacent SHD open and occupied. The detailed output of the models is summarised below as ***Table 4.2.***

Table 4.2: Site Access PiCADY Results, Weekday AM & PM Commuter Pk Hours - 2024 & 2039

Modelled Scenario	*Period Mean Max Q (PCUs)*	*Period Max RFC*
Opening Year 2024 AM Peak Hr	<1	0.01
Opening Year 2024 PM Peak Hr	<1	0.03
Design Year 2039 AM Peak Hr	<1	0.01
Design Year 2039 PM Peak Hr	<1	0.03

4.10 The results of the modelling clearly show the junction will have way more than adequate capacity to accommodate the worst-case traffic associated with the fully complete and operational ambulance base, in opening and design years (conscious of the very small increases in traffic associated with the subject development).

4.11 The analysis undertaken confirms that there is adequate capacity in the existing and proposed junctions to accommodate the worst-case traffic projections without any concerns arising in terms of increased Traffic Congestion or indeed adverse Traffic Safety. It should also be remembered that we have ignored the significant traffic generation characteristics on the established and historic site uses, which would have undoubtedly generated significantly higher volumes of vehicular traffic. This underscores the robust nature of the assessment.

5.0 CONCLUSIONS

5.1 This Transportation Assessment Report assesses the traffic & transportation impact of the planning application for a new HSE Ambulance Facility at Belgard Road, Tallaght, Dublin 24.

5.2 The site was previously used for industrial/Office employment purposes. In this regard, the site has long established traffic, transportation demand and trip generation characteristics, which are most likely to have been significantly greater than the now-proposed use as an Ambulance/Administration base.

5.3 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. 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, with industry standard covid factors applied based on TII Traffic Counter Data. Appropriate traffic growth factors have been applied to establish selected opening year and design year traffic conditions.

5.4 This assessment also considers the effect of the adjacent Strategic Housing Development (The Glen Abbey Complex, ABP Case Ref TA06S.309916), with the traffic included as 'committed' within the assessment.

5.5 The assessment includes a Preliminary Mobility Management Plan (MMP or Travel Plan) for the site which is included as ***Appendix F***. The MMP contains an assessment and appraisal of the Non-Car modes of transportation. An independent Stage 1 Road Safety Audit (incl. Quality Audit), together with the Designer Feedback form, has been undertaken and included as ***Appendix G***.

5.6 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.

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

APPENDICES - CONTENT

A	Proposed Development – Site Layout Plans & Drawings
B	Weekday Classified Turning Movement Traffic Survey Output Data
C	TRICS Output Data – Medical Facility (& Offices, For Information)
D	Traffic Calculations, Trip Distribution, Network Traffic Flow Diagrams & Projections, Based on Traffic Surveys
E	Junction 9 PiCADY Output – Internal Site Access Junction
F	Preliminary Mobility Management Plan/Travel Plan
G	Stage 1 Independent Road Safety Audit, incl Quality Audit (& *Designer Feedback Form*)

NRB consulting engineers

APPENDIX A

Proposed Development
Site Layout/Plans & Drawings

PROPOSED SITE LAYOUT PLAN - 1:500

ORDNANCE SURVEY SHEET REFERENCE: 3390-01, 3390-02, 3390-06, 3390-07.

ORDNANCE SURVEY ITM COORDINATES FOR SITE - **708626, 728517**

ORDNANCE SURVEY IRELAND LICENCE GRANTED WITH OSi PLOT OUTPUT REFERENCE v_50120202_1

THIS DRAWING IS FOR PLANNING PURPOSES ONLY AND IS NOT TO BE USED FOR CONSTRUCTION PURPOSES.

THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH ALL OTHER DRAWINGS AND DOCUMENTS FORMING PART OF THIS APPLICATION

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SITE AREA OUTLINED IN RED 0.33 ha (0.8 acres)

Rev	Date	Description	Drawn By	Checked By

Project	REDEVELOPMENT OF GLEN ABBEY, TALLAGHT, DUBLIN 24		Drawing No. P(01)09
Client	HSE ESTATES		
Drawing Title	PROPOSED SITE LAYOUT PLAN		Revision

Job No.	Date	Scale	Drawn By	Checked By	Released
44007	OCT 22	1:500	JN		

AXO ARCHITECTS
AXO ARCHITECTS, ELLISON STREET, CASTLEBAR, COUNTY MAYO F23 TH73 TEL (094)9026094 E-MAIL info@axoarchitects.ie WEB www.axoarchitects.ie

TRAFFINOMICS LIMITED

BELGARD ROAD TRAFFIC COUNT **MAY 2021**

MANUAL CLASSIFIED JUNCTION TURNING COUNT **TRA/21/082**

SITE: 01 DATE: 20th May 2021

LOCATION: Belgard Road/Belgard Market DAY: Thursday

	MOVEMENT 5								MOVEMENT 6								MOVEMENT 7							
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
13:00	0	0	4	0	0	0	4	4	0	0	1	0	0	0	1	1	2	0	183	23	12	6	226	242
13:15	0	0	1	0	0	0	1	1	0	0	2	0	1	0	3	4	0	0	202	31	6	1	240	247
13:30	0	0	4	0	0	0	4	4	0	0	0	0	0	0	0	0	0	1	174	26	6	2	209	216
13:45	1	0	5	1	0	0	7	6	0	0	4	1	0	0	5	5	0	0	193	26	13	2	234	249
H/TOT	1	0	14	1	0	0	16	15	0	0	7	1	1	0	9	10	2	1	752	106	37	11	909	955
14:00	0	0	3	1	0	0	4	4	0	0	5	0	0	0	5	5	0	0	187	27	13	4	231	248
14:15	0	0	2	0	0	0	2	2	0	0	4	0	0	0	4	4	0	0	173	36	7	2	218	227
14:30	0	0	0	0	0	0	0	0	0	0	5	0	0	0	5	5	0	0	161	31	14	2	208	224
14:45	0	0	0	0	0	0	0	0	0	0	3	1	0	0	4	4	0	0	170	30	13	3	216	232
H/TOT	0	0	5	1	0	0	6	6	0	0	17	1	0	0	18	18	0	0	691	124	47	11	873	931
15:00	0	0	2	0	0	0	2	2	0	0	0	0	0	0	0	0	2	0	180	32	10	3	227	238
15:15	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	3	1	174	29	9	2	218	226
15:30	1	0	0	0	0	0	1	0	0	0	2	0	0	0	2	2	4	0	162	25	5	3	199	204
15:45	0	0	1	0	0	0	1	1	0	0	1	0	0	0	1	1	6	0	185	39	5	1	236	237
H/TOT	1	0	4	0	0	0	5	4	0	0	3	0	0	0	3	3	15	1	701	125	29	9	880	905
16:00	0	0	2	0	0	0	2	2	0	0	2	0	0	0	2	2	4	1	200	30	12	4	251	263
16:15	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	5	2	215	32	12	3	269	279
16:30	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	2	2	0	217	38	11	2	270	281
16:45	0	0	1	0	0	0	1	1	0	0	3	0	0	0	3	3	4	1	219	26	15	2	267	280
H/TOT	0	0	3	0	0	0	3	3	0	0	8	0	0	0	8	8	15	4	851	126	50	11	1057	1104
17:00	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	6	1	247	37	5	2	298	300
17:15	0	0	1	0	0	0	1	1	0	0	4	0	0	0	4	4	1	1	216	17	4	1	240	244
17:30	0	0	4	0	0	0	4	4	0	0	4	0	0	0	4	4	6	0	212	23	1	2	244	242
17:45	0	0	2	0	0	0	2	2	0	0	7	0	0	0	7	7	3	0	186	16	2	1	208	209
H/TOT	0	0	7	0	0	0	7	7	0	0	16	0	0	0	16	16	16	2	861	93	12	6	990	994
18:00	0	0	2	0	0	0	2	2	0	0	4	0	0	0	4	4	4	0	178	21	3	2	208	210
18:15	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	2	1	0	173	16	3	3	196	201
18:30	0	0	1	0	0	0	1	1	0	0	4	1	0	0	5	5	1	0	160	15	0	0	176	175
18:45	0	0	2	0	0	0	2	2	0	0	4	0	0	0	4	4	2	0	141	19	1	1	164	164
H/TOT	0	0	5	0	0	0	5	5	0	0	14	1	0	0	15	15	8	0	652	71	7	6	744	751
P/TOT	2	0	59	2	3	0	66	67	1	0	102	5	2	0	110	111	82	21	7414	1203	395	106	9221	9644

TRAFFINOMICS LIMITED

BELGARD ROAD TRAFFIC COUNT **MAY 2021**

MANUAL CLASSIFIED JUNCTION TURNING COUNT **TRA/21/082**

SITE: 01 DATE: 20th May 2021

LOCATION: Belgard Road/Belgard Market DAY: Thursday

	MOVEMENT 5								MOVEMENT 6								MOVEMENT 7							
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	0	2	0	0	0	2	2	0	0	49	23	7	1	80	88
07:15	0	0	1	0	0	0	1	1	0	0	1	0	0	0	1	1	5	1	41	16	7	1	71	74
07:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	65	22	8	3	101	110
07:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	76	23	6	2	110	116
H/TOT	0	0	1	0	0	0	1	1	0	0	3	0	0	0	3	3	11	1	231	84	28	7	362	388
08:00	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	2	2	102	20	7	1	134	139
08:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	103	20	4	1	131	134
08:30	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	3	0	118	15	8	6	150	162
08:45	0	0	2	0	0	0	2	2	0	0	5	1	0	0	6	6	0	1	112	23	10	2	148	159
H/TOT	0	0	2	0	0	0	2	2	0	0	7	1	0	0	8	8	8	3	435	78	29	10	563	594
09:00	0	0	0	0	0	0	0	0	0	0	11	0	0	0	11	11	1	0	97	16	4	3	121	127
09:15	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	1	105	26	17	3	152	171
09:30	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	124	25	8	4	161	173
09:45	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	1	119	19	7	2	148	156
H/TOT	0	0	2	0	0	0	2	2	0	0	12	0	0	0	12	12	1	2	445	86	36	12	582	628
10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	126	22	7	4	161	171
10:15	0	0	6	0	0	0	6	6	0	0	0	0	0	0	0	0	0	0	121	26	6	1	154	161
10:30	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	2	0	0	130	19	14	2	165	181
10:45	0	0	2	0	0	0	2	2	0	0	3	0	1	0	4	5	0	0	152	20	8	2	182	192
H/TOT	0	0	8	0	0	0	8	8	0	0	5	0	1	0	6	7	1	1	529	87	35	9	662	705
11:00	0	0	2	0	1	0	3	4	1	0	1	0	0	0	2	1	0	1	142	28	11	2	184	196
11:15	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	144	29	14	2	189	205
11:30	0	0	2	0	1	0	3	4	0	0	0	0	0	0	0	0	0	1	158	33	9	1	202	211
11:45	0	0	1	0	0	0	1	1	0	0	2	1	0	0	3	3	1	0	147	33	15	1	197	212
H/TOT	0	0	5	0	2	0	7	9	1	0	4	1	0	0	6	5	1	2	591	123	49	6	772	825
12:00	0	0	1	0	0	0	1	1	0	0	2	0	0	0	2	2	0	0	150	23	9	3	185	197
12:15	0	0	1	0	1	0	2	3	0	0	0	0	0	0	0	0	0	1	183	27	8	1	220	228
12:30	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	2	1	169	22	11	2	207	218
12:45	0	0	0	0	0	0	0	0	0	0	4	0	0	0	4	4	2	2	173	28	8	2	215	222
H/TOT	0	0	3	0	1	0	4	5	0	0	6	0	0	0	6	6	4	4	675	100	36	8	827	865

TRAFFINOMICS LIMITED

BELGARD ROAD TRAFFIC COUNT **MAY 2021**

MANUAL CLASSIFIED JUNCTION TURNING COUNT **TRA/21/082**

SITE: 01 DATE: 20th May 2021

LOCATION: Belgard Road/Belgard Market DAY: Thursday

	MOVEMENT 1								MOVEMENT 2								MOVEMENT 3								MOVEMENT 4							
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	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU
13:00	0	0	148	26	13	3	190	206	0	0	1	0	1	0	2	3	1	1	0	0	0	0	2	1	0	0	5	0	1	0	6	7
13:15	0	0	162	26	9	3	200	212	0	0	5	0	3	0	8	11	5	1	0	0	0	0	6	1	0	0	7	0	0	0	7	7
13:30	0	0	184	19	8	1	212	221	1	0	1	2	1	0	5	5	2	0	0	0	0	0	2	0	0	0	3	0	0	0	3	3
13:45	0	1	156	25	9	2	193	203	0	0	2	3	0	0	5	5	2	0	0	0	0	0	2	0	0	0	3	2	2	0	7	9
H/TOT	0	1	650	96	39	9	795	842	1	0	9	5	5	0	20	24	10	2	0	0	0	0	12	3	0	0	18	2	3	0	23	26
14:00	4	0	167	18	10	2	201	210	0	0	0	0	0	0	0	0	3	1	0	0	0	0	4	1	0	0	2	1	0	0	3	3
14:15	0	2	125	21	8	2	158	167	0	0	5	0	1	0	6	7	3	2	0	0	0	0	5	1	0	0	3	1	0	0	4	4
14:30	1	1	118	19	4	4	147	154	0	0	5	0	2	0	7	9	5	0	0	0	0	0	5	1	0	0	5	0	0	0	5	5
14:45	1	0	131	17	9	3	161	172	0	0	1	0	1	0	2	3	1	1	0	0	0	0	2	1	1	0	3	1	0	0	5	4
H/TOT	6	3	541	75	31	11	667	702	0	0	11	0	4	0	15	19	12	4	0	0	0	0	16	4	1	0	13	3	0	0	17	16
15:00	1	0	155	16	8	1	181	189	0	0	2	1	1	0	4	5	0	0	0	0	0	0	0	0	0	0	6	0	1	0	7	8
15:15	2	0	176	27	9	4	218	229	0	0	1	0	0	0	1	1	6	0	0	0	0	0	6	1	0	0	1	0	0	0	1	1
15:30	2	0	141	22	13	3	181	195	0	0	2	0	0	0	2	2	7	1	0	0	0	0	8	2	0	0	7	0	1	0	8	9
15:45	0	0	149	26	10	3	188	201	0	0	1	0	0	0	1	1	1	1	0	0	0	0	2	1	0	0	2	0	0	0	2	2
H/TOT	5	0	621	91	40	11	768	815	0	0	6	1	1	0	8	9	14	2	0	0	0	0	16	4	0	0	16	0	2	0	18	20
16:00	1	2	153	26	6	2	190	196	0	0	4	1	0	0	5	5	0	0	0	0	0	0	0	0	0	0	2	1	1	0	4	5
16:15	3	0	154	25	11	3	196	208	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	2	0	0	0	2	2
16:30	2	1	151	23	6	2	185	191	0	0	5	0	0	0	5	5	1	0	0	0	0	0	1	0	0	0	6	1	0	0	7	7
16:45	4	1	146	18	5	1	175	177	0	0	2	2	0	0	4	4	4	2	0	0	0	0	6	2	0	0	5	0	0	0	5	5
H/TOT	10	4	604	92	28	8	746	772	0	0	11	3	0	0	14	14	6	2	0	0	0	0	8	2	0	0	15	2	1	0	18	19
17:00	4	2	152	35	3	1	197	197	0	0	1	1	2	0	4	6	4	0	0	0	0	0	4	1	0	0	2	0	0	0	2	2
17:15	1	1	147	23	2	1	175	177	0	0	2	0	0	0	2	2	2	0	0	0	0	0	2	0	0	0	5	0	0	0	5	5
17:30	2	1	128	14	2	0	147	147	0	0	4	0	0	0	4	4	1	0	0	0	0	0	1	0	0	0	7	0	0	0	7	7
17:45	5	1	146	22	1	3	178	177	0	0	4	0	0	0	4	4	1	0	0	0	0	0	1	0	0	0	1	0	0	0	1	1
H/TOT	12	5	573	94	8	5	697	697	0	0	11	1	2	0	14	16	8	0	0	0	0	0	8	2	0	0	15	0	0	0	15	15
18:00	3	0	139	14	2	0	158	158	0	0	4	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	7	1	0	0	8	8
18:15	4	0	181	15	2	3	205	207	0	0	6	0	0	0	6	6	0	1	0	0	0	0	1	0	0	0	1	0	0	0	1	1
18:30	1	1	129	18	3	1	153	156	0	0	5	0	0	0	5	5	1	0	0	0	0	0	1	0	0	0	5	1	0	0	6	6
18:45	4	0	132	12	2	1	151	151	0	0	5	0	0	0	5	5	1	0	0	0	0	0	1	0	0	0	6	0	0	0	6	6
H/TOT	12	1	581	59	9	5	667	671	0	0	20	0	0	0	20	20	2	1	0	0	0	0	3	1	0	0	19	2	0	0	21	21
P/TOT	72	21	###	###	370	92	###	###	1	0	166	18	21	0	206	226	103	16	0	0	0	0	119	27	1	0	155	17	19	0	192	210

TRAFFINOMICS LIMITED

BELGARD ROAD TRAFFIC COUNT **MAY 2021**

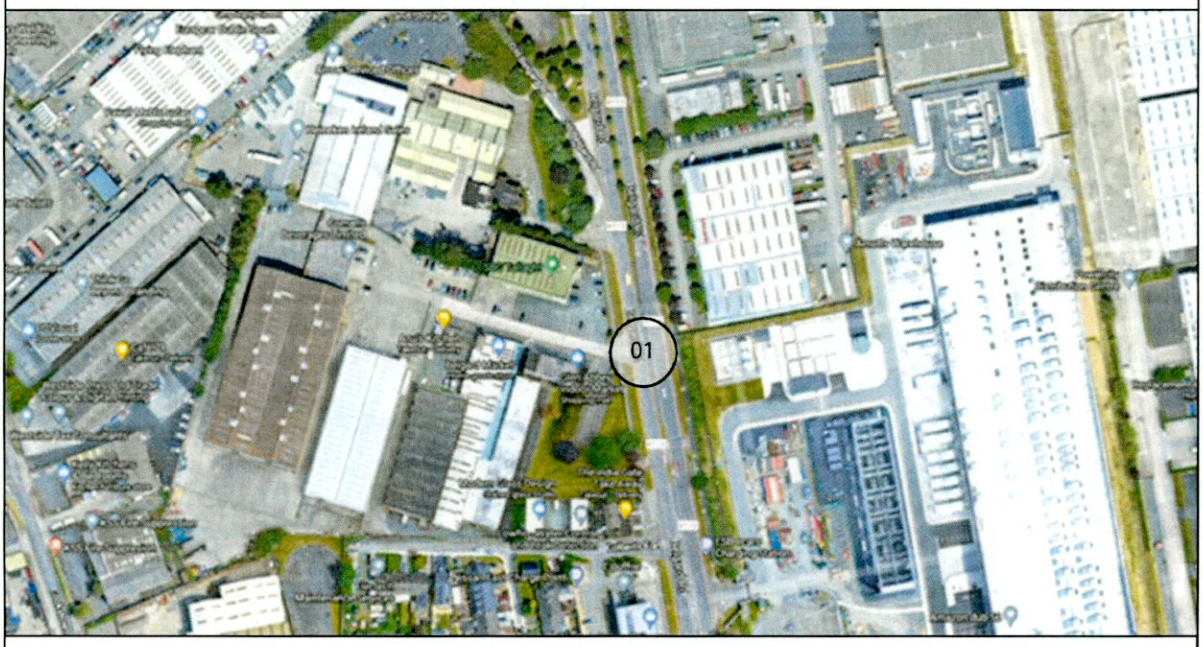
MANUAL CLASSIFIED JUNCTION TURNING COUNT **TRA/21/082**

SITE: 01 DATE: 20th May 2021

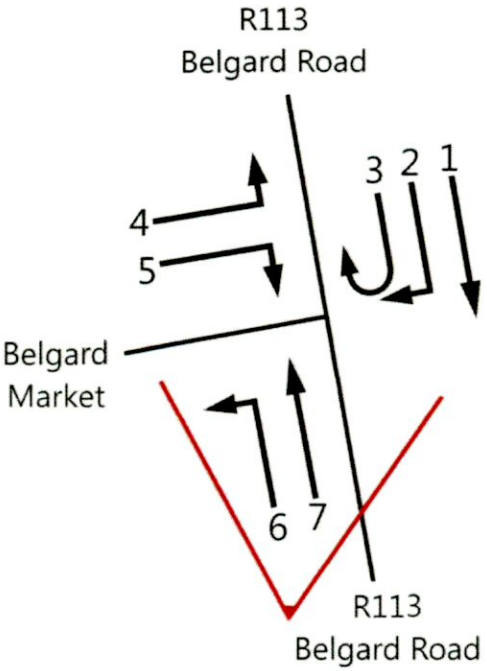
LOCATION: Belgard Road/Belgard Market DAY: Thursday

	MOVEMENT 1								MOVEMENT 2								MOVEMENT 3								MOVEMENT 4							
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	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU
07:00	1	0	79	14	1	3	98	101	0	0	4	0	1	0	5	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15	1	0	91	19	9	3	123	134	0	0	3	0	1	0	4	5	1	0	0	0	0	0	1	0	0	0	1	0	1	0	2	3
07:30	3	0	108	18	6	1	136	141	0	0	0	0	1	0	1	2	2	0	0	0	0	0	2	0	0	0	1	0	2	0	3	5
07:45	3	0	161	19	9	2	194	203	0	0	4	1	0	0	5	5	2	0	0	0	0	0	2	0	0	0	0	0	2	0	2	4
H/TOT	8	0	439	70	25	9	551	579	0	0	11	1	3	0	15	18	5	0	0	0	0	0	5	1	0	0	2	0	5	0	7	12
08:00	3	0	128	26	8	4	169	179	0	0	3	0	1	0	4	5	3	0	0	0	0	0	3	1	0	0	1	0	2	0	3	5
08:15	2	2	154	27	6	1	192	196	0	0	3	0	0	0	3	3	2	0	0	0	0	0	2	0	0	0	0	0	4	0	4	8
08:30	5	0	173	22	10	1	211	218	0	0	2	0	0	0	2	2	2	0	0	0	0	0	2	0	0	0	1	0	0	0	1	1
08:45	1	1	206	32	11	1	252	263	0	0	8	0	0	0	8	8	3	0	0	0	0	0	3	1	0	0	2	0	0	0	2	2
H/TOT	11	3	661	107	35	7	824	855	0	0	16	0	1	0	17	18	10	0	0	0	0	0	10	2	0	0	4	0	6	0	10	16
09:00	1	0	192	35	15	2	245	261	0	0	6	0	0	0	6	6	4	0	0	0	0	0	4	1	0	0	2	0	0	0	2	2
09:15	0	0	153	38	8	1	200	209	0	0	5	0	0	0	5	5	4	0	0	0	0	0	4	1	0	0	0	0	0	0	0	0
09:30	0	0	135	23	5	2	165	172	0	0	6	0	0	0	6	6	3	1	0	0	0	0	4	1	0	0	1	0	0	0	1	1
09:45	0	0	167	27	11	5	210	226	0	0	9	0	0	0	9	9	3	0	0	0	0	0	3	1	0	0	6	0	1	0	7	8
H/TOT	1	0	647	123	39	10	820	868	0	0	26	0	0	0	26	26	14	1	0	0	0	0	15	3	0	0	9	0	1	0	10	11
10:00	0	0	154	29	13	1	197	211	0	0	6	0	0	0	6	6	2	0	0	0	0	0	2	0	0	0	3	1	0	0	4	4
10:15	1	0	137	23	10	1	172	182	0	0	2	0	0	0	2	2	0	2	0	0	0	0	2	1	0	0	2	0	0	0	2	2
10:30	1	1	121	33	7	2	165	173	0	0	3	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	2
10:45	0	0	128	27	11	2	168	181	0	0	5	2	1	0	8	9	1	0	0	0	0	0	1	0	0	0	2	1	0	0	3	3
H/TOT	2	1	540	112	41	6	702	747	0	0	16	2	1	0	19	20	3	2	0	0	0	0	5	1	0	0	9	2	0	0	11	11
11:00	0	0	136	19	7	2	164	173	0	0	4	1	1	0	6	7	2	0	0	0	0	0	2	0	0	0	3	1	0	0	4	4
11:15	0	0	144	31	10	1	186	197	0	0	3	1	0	0	4	4	4	0	0	0	0	0	4	1	0	0	1	1	1	0	3	4
11:30	1	1	155	27	7	0	191	197	0	0	3	2	0	0	5	5	1	1	0	0	0	0	2	1	0	0	5	1	0	0	6	6
11:45	0	0	141	21	11	1	174	186	0	0	3	0	0	0	3	3	3	0	0	0	0	0	3	1	0	0	3	0	0	0	3	3
H/TOT	1	1	576	98	35	4	715	753	0	0	13	4	1	0	18	19	10	1	0	0	0	0	11	2	0	0	12	3	1	0	16	17
12:00	1	1	164	31	11	0	208	218	0	0	5	1	0	0	6	6	3	0	0	0	0	0	3	1	0	0	2	1	0	0	3	3
12:15	0	0	159	27	8	3	197	208	0	0	4	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	9	1	0	0	10	10
12:30	2	1	174	25	9	2	213	222	0	0	3	0	3	0	6	9	2	1	0	0	0	0	3	1	0	0	5	0	0	0	5	5
12:45	1	0	164	33	12	2	212	225	0	0	4	0	0	0	4	4	4	0	0	0	0	0	4	1	0	0	7	1	0	0	8	8
H/TOT	4	2	661	116	40	7	830	873	0	0	16	1	3	0	20	23	9	1	0	0	0	0	10	2	0	0	23	3	0	0	26	26

Site Location



Movement Numbering



Job number: TRA/21/082	Job Date: 20th May 2021	Drawing No: TRA/21/082-01	traffinomics.ie
Client: NRB	Job Day: Thursday	Site Map For Survey	

BROOMHILL ROAD TRAFFIC COUNTS — MAY 2021

MANUAL CLASSIFIED JUNCTION TURNING COUNTS — TRA/21/077

SITE: 05 DATE: 19th May 2021

LOCATION: Greenhills Road/Airton Road DAY: Wednesday

	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
07:30	0	0	2	1	0	1	4	5	0	0	11	6	1	0	18	19	4	1	67	14	0	1	87	84
07:45	0	0	5	2	1	0	8	9	1	0	30	6	0	0	37	36	4	0	80	22	0	1	107	105
08:00	0	0	5	0	5	1	11	17	1	0	21	4	1	0	27	27	5	0	80	15	4	3	107	110
08:15	0	0	6	4	2	1	13	16	0	0	29	2	1	0	32	33	4	1	70	20	4	3	102	105
H/TOT	0	0	18	7	8	3	36	47	2	0	91	18	3	0	114	115	17	2	297	71	8	8	403	404
08:30	1	0	25	1	0	0	27	26	3	0	38	2	1	1	45	45	2	0	81	6	1	4	94	97
08:45	0	0	22	1	0	2	25	27	1	0	38	4	0	0	43	42	3	1	75	16	3	2	100	102
09:00	0	0	15	2	1	0	18	19	3	0	39	5	0	0	47	45	3	0	72	16	4	2	97	101
09:15	0	0	15	2	3	0	20	23	0	0	33	4	1	0	38	39	3	1	76	14	1	1	96	95
H/TOT	1	0	77	6	4	2	90	95	7	0	148	15	2	1	173	170	11	2	304	52	9	9	387	395
P/TOT	1	0	95	13	12	5	126	142	9	0	239	33	5	1	287	286	28	4	601	123	17	17	790	799

	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	23	2	1	0	28	27	0	0	13	2	0	0	15	15	3	0	45	9	2	3	62	65
16:15	2	1	23	3	0	0	29	27	0	1	15	1	0	0	17	16	2	0	57	7	8	1	75	82
16:30	2	0	26	3	0	0	31	29	1	0	21	2	0	0	24	23	2	0	55	6	9	2	74	83
16:45	1	0	23	0	0	0	24	23	0	0	13	4	1	0	18	19	1	0	53	7	0	2	63	64
H/TOT	7	1	95	8	1	0	112	107	1	1	62	9	1	0	74	74	8	0	210	29	19	8	274	295
17:00	0	0	40	2	0	0	42	42	0	0	19	3	3	0	25	28	1	0	40	6	1	2	50	52
17:15	0	0	21	1	0	0	22	22	0	0	17	1	0	0	18	18	2	1	46	2	1	1	53	53
17:30	0	0	22	4	0	0	26	26	0	0	16	1	1	0	18	19	1	0	50	3	1	1	56	57
17:45	0	0	22	1	0	0	23	23	1	0	25	0	1	0	27	27	0	1	59	5	1	2	68	70
H/TOT	0	0	105	8	0	0	113	113	1	0	77	5	5	0	88	92	4	2	195	16	4	6	227	233
18:00	0	0	27	2	0	0	29	29	1	0	15	1	1	0	18	18	3	0	55	3	2	3	66	69
18:15	1	0	24	2	0	0	27	26	1	0	6	0	0	0	7	6	1	0	54	1	0	1	57	57
H/TOT	1	0	51	4	0	0	56	55.2	2	0	21	1	1	0	25	24.4	4	0	109	4	2	4	123	126
P/TOT	8	1	251	20	1	0	281	275	4	1	160	15	7	0	187	190	16	2	514	49	25	18	624	653

BROOMHILL ROAD TRAFFIC COUNTS — MAY 2021

MANUAL CLASSIFIED JUNCTION TURNING COUNTS — TRA/21/077

SITE: 05 DATE: 19th May 2021

LOCATION: Greenhills Road/Airton Road DAY: Wednesday

	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
07:30	1	0	25	7	1	1	35	36	1	0	17	1	2	0	21	22	0	1	20	5	2	0	28	29
07:45	2	1	30	19	4	3	59	64	1	0	40	4	0	0	45	44	1	1	29	7	1	0	39	39
08:00	2	0	51	3	2	1	59	60	0	0	28	6	1	1	36	38	1	0	24	5	2	0	32	33
08:15	0	0	38	12	5	4	59	68	0	0	40	6	6	0	52	58	0	1	39	8	1	1	50	51
H/TOT	5	1	144	41	12	9	212	228	2	0	125	17	9	1	154	162	2	3	112	25	6	1	149	153
08:30	1	0	49	4	1	1	56	57	0	0	49	4	3	2	58	63	1	0	19	9	1	0	30	30
08:45	1	0	54	6	1	4	66	70	1	0	35	7	1	0	44	44	0	0	25	9	3	0	37	40
09:00	2	0	63	14	3	1	83	85	1	0	44	4	1	0	50	50	0	0	25	7	3	0	35	38
09:15	2	0	43	12	3	1	61	63	1	0	31	4	5	0	41	45	0	0	23	7	1	0	31	32
H/TOT	6	0	209	36	8	7	266	276	3	0	159	19	10	2	193	203	1	0	92	32	8	0	133	140
P/TOT	11	1	353	77	20	16	478	505	5	0	284	36	19	3	347	365	3	3	204	57	14	1	282	293

	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	3	3	72	15	1	0	94	91	0	0	34	5	1	0	40	41	2	0	38	6	3	0	49	50
16:15	6	0	60	7	3	2	78	78	1	0	39	2	2	0	44	45	0	0	33	6	0	0	39	39
16:30	7	1	71	8	2	2	91	89	0	1	37	5	4	0	47	50	1	1	33	1	1	0	37	37
16:45	4	1	60	3	4	2	74	76	2	0	42	6	1	0	51	50	1	0	40	5	2	0	48	49
H/TOT	20	5	263	33	10	6	337	334	3	1	152	18	8	0	182	187	4	1	144	18	6	0	173	175
17:00	1	2	79	11	5	1	99	103	1	0	54	11	0	0	66	65	0	1	39	2	1	0	43	43
17:15	8	1	77	6	4	3	99	99	0	0	41	2	1	0	44	45	1	0	25	4	1	0	31	31
17:30	6	0	72	8	1	0	87	83	3	1	41	2	1	0	48	46	0	0	36	0	0	0	36	36
17:45	4	0	56	5	1	1	67	66	2	0	43	4	0	0	49	47	0	0	23	1	1	0	25	26
H/TOT	19	3	284	30	11	5	352	351	6	1	179	19	2	0	207	204	1	1	123	7	3	0	135	137
18:00	6	0	75	6	1	2	90	88	0	0	37	1	0	0	38	38	0	1	22	3	1	0	27	27
18:15	1	0	71	5	2	1	80	82	2	1	22	2	0	0	27	25	1	0	27	1	0	0	29	28
H/TOT	7	0	146	11	3	3	170	170	2	1	59	3	0	0	65	62.8	1	1	49	4	1	0	56	55.6
P/TOT	46	8	693	74	24	14	859	855	11	3	390	40	10	0	454	453	6	3	316	29	10	0	364	367

BROOMHILL ROAD TRAFFIC COUNTS **MAY 2021**

MANUAL CLASSIFIED JUNCTION TURNING COUNTS **TRA/21/077**

SITE: 04 DATE: 19th May 2021

LOCATION: Greenhills Road/Broomhill Road DAY: Wednesday

	MOVEMENT 10								MOVEMENT 11								MOVEMENT 12							
TIME	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU
07:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	4	4
07:45	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	1	0	0	1	1
08:00	0	0	1	1	0	0	2	2	0	0	2	0	0	0	2	2	0	0	0	2	0	0	2	2
08:15	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
H/TOT	0	0	2	1	0	0	3	3	0	0	3	0	0	0	3	3	0	0	5	3	0	0	8	8
08:30	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	1	0	0	0	1	1
08:45	0	0	0	0	1	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:00	0	0	2	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:15	0	0	1	0	0	0	1	1	0	0	0	1	0	0	1	1	0	0	0	0	1	0	1	2
H/TOT	0	0	3	0	1	0	4	5	0	0	1	1	0	0	2	2	0	0	1	0	1	0	2	3
P/TOT	0	0	5	1	1	0	7	8	0	0	4	1	0	0	5	5	0	0	6	3	1	0	10	11

	MOVEMENT 10								MOVEMENT 11								MOVEMENT 12							
TIME	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU
16:00	0	0	2	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	2	0	0	3	3
16:30	0	0	3	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	4	0	0	0	4	4
16:45	0	0	2	1	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	8	1	0	0	9	9	0	0	0	0	0	0	0	0	0	0	5	2	0	0	7	7
17:00	0	0	3	1	0	0	4	4	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
17:15	0	0	1	2	0	0	3	3	0	0	1	0	1	0	2	3	0	0	1	0	0	0	1	1
17:30	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
17:45	0	0	2	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	7	3	0	0	10	10	0	0	1	0	1	0	2	3	0	0	3	0	0	0	3	3
18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:15	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	2	1	0	0	3	3
H/TOT	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	2	1	0	0	3	3
P/TOT	0	0	16	4	0	0	20	20	0	0	1	0	1	0	2	3	0	0	10	3	0	0	13	13

BROOMHILL ROAD TRAFFIC COUNTS — MAY 2021

MANUAL CLASSIFIED JUNCTION TURNING COUNTS — TRA/21/077

SITE: 04 DATE: 19th May 2021

LOCATION: Greenhills Road/Broomhill Road DAY: Wednesday

	MOVEMENT 7								MOVEMENT 8								MOVEMENT 9							
TIME	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU
07:30	0	0	4	0	0	0	4	4	2	1	61	13	3	1	81	83	0	0	1	1	0	0	2	2
07:45	0	0	9	3	0	0	12	12	3	0	74	19	3	1	100	102	0	0	2	3	0	0	5	5
08:00	0	0	12	3	0	1	16	17	6	0	85	17	7	2	117	121	0	0	4	2	0	0	6	6
08:15	1	0	9	3	0	0	13	12	4	1	69	29	4	3	110	113	0	0	2	1	0	0	3	3
H/TOT	1	0	34	9	0	1	45	45	15	2	289	78	17	7	408	419	0	0	9	7	0	0	16	16
08:30	1	0	5	0	0	0	6	5	3	0	76	9	3	4	95	100	0	0	0	1	0	0	1	1
08:45	0	0	9	5	0	1	15	16	2	1	74	20	5	1	103	107	0	0	6	1	1	0	8	9
09:00	0	0	6	6	0	0	12	12	1	0	83	14	5	2	105	111	0	0	5	2	0	0	7	7
09:15	0	0	4	2	2	0	8	10	4	1	73	10	4	1	93	94	0	0	5	2	1	0	8	9
H/TOT	1	0	24	13	2	1	41	43	10	2	306	53	17	8	396	412	0	0	16	6	2	0	24	26
P/TOT	2	0	58	22	2	2	86	88	25	4	595	131	34	15	804	831	0	0	25	13	2	0	40	42

	MOVEMENT 7								MOVEMENT 8								MOVEMENT 9							
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	4	2	0	0	6	6	4	0	96	15	5	3	123	128	0	0	2	0	0	0	2	2
16:15	1	0	0	0	0	0	1	0	3	0	86	8	6	1	104	109	0	0	4	0	0	0	4	4
16:30	1	0	4	2	1	0	8	8	2	1	73	4	7	3	90	98	0	0	4	0	0	0	4	4
16:45	0	0	5	0	0	0	5	5	2	0	85	10	1	2	100	101	0	0	4	1	0	0	5	5
H/TOT	2	0	13	4	1	0	20	19	11	1	340	37	19	9	417	436	0	0	14	1	0	0	15	15
17:00	0	0	1	0	0	0	1	1	2	1	75	4	1	1	84	84	0	0	1	0	1	0	2	3
17:15	0	0	1	0	0	0	1	1	3	1	81	8	1	2	96	96	0	0	3	0	0	0	3	3
17:30	0	0	2	0	0	0	2	2	1	0	87	3	1	1	93	94	0	0	1	0	0	0	1	1
17:45	0	0	0	0	0	0	0	0	0	1	83	6	2	2	94	97	0	0	2	0	0	0	2	2
H/TOT	0	0	4	0	0	0	4	4	6	3	326	21	5	6	367	371	0	0	7	0	1	0	8	9
18:00	0	0	4	0	2	0	6	8	4	1	78	6	1	3	93	93	0	0	0	1	0	0	1	1
18:15	0	0	3	0	0	0	3	3	2	0	76	4	1	1	84	84	0	0	3	0	0	0	3	3
H/TOT	0	0	7	0	2	0	9	11	6	1	154	10	2	4	177	178	0	0	3	1	0	0	4	4
P/TOT	2	0	24	4	3	0	33	34	23	5	820	68	26	19	961	985	0	0	24	2	1	0	27	28

BROOMHILL ROAD TRAFFIC COUNTS — MAY 2021

MANUAL CLASSIFIED JUNCTION TURNING COUNTS — TRA/21/077

SITE: 04 — DATE: 19th May 2021

LOCATION: Greenhills Road/Broomhill Road — DAY: Wednesday

	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
07:30	0	0	7	1	0	0	8	8	0	0	0	0	0	0	0	0	0	0	2	1	0	0	3	3
07:45	0	0	5	1	1	0	7	8	0	0	1	3	0	0	4	4	0	0	1	1	2	0	4	6
08:00	0	0	4	2	1	0	7	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15	0	0	8	7	4	0	19	23	0	0	0	1	1	0	2	3	0	0	1	0	0	0	1	1
H/TOT	0	0	24	11	6	0	41	47	0	0	1	4	1	0	6	7	0	0	4	2	2	0	8	10
08:30	0	0	12	4	0	0	16	16	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2	3
08:45	0	1	16	5	1	0	23	23	0	0	1	0	0	0	1	1	0	0	2	1	0	0	3	3
09:00	0	0	10	3	1	0	14	15	0	0	1	1	0	0	2	2	0	0	0	0	0	0	0	0
09:15	0	0	11	5	5	0	21	26	0	0	0	1	1	0	2	3	0	0	1	1	1	0	3	4
H/TOT	0	1	49	17	7	0	74	80	0	0	2	2	1	0	5	6	0	0	3	3	1	1	8	10
P/TOT	0	1	73	28	13	0	115	127	0	0	3	6	2	0	11	13	0	0	7	5	3	1	16	20

	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	28	5	1	0	35	35	0	0	2	1	0	0	3	3	0	0	1	2	0	0	3	3
16:15	1	0	16	6	2	0	25	26	0	0	2	0	0	0	2	2	0	0	2	3	1	0	6	7
16:30	2	0	24	5	1	0	32	31	0	0	1	0	0	0	1	1	0	0	4	0	0	0	4	4
16:45	3	0	25	10	0	0	38	36	0	0	1	0	0	0	1	1	0	0	0	0	1	0	1	2
H/TOT	7	0	93	26	4	0	130	128	0	0	6	1	0	0	7	7	0	0	7	5	2	0	14	16
17:00	2	0	34	3	3	0	42	43	0	0	3	2	0	0	5	5	0	0	5	1	0	0	6	6
17:15	0	1	21	2	0	0	24	23	0	0	0	0	0	0	0	0	0	1	3	0	0	0	4	3
17:30	1	0	19	2	0	0	22	21	0	0	1	0	0	0	1	1	0	0	4	1	0	0	5	5
17:45	0	0	12	3	1	0	16	17	0	0	4	0	0	0	4	4	0	0	2	0	0	0	2	2
H/TOT	3	1	86	10	4	0	104	105	0	0	8	2	0	0	10	10	0	1	14	2	0	0	17	16
18:00	1	0	16	1	0	0	18	17	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3	3
18:15	0	0	7	0	0	0	7	7	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	2
H/TOT	1	0	23	1	0	0	25	24.2	0	0	0	0	0	0	0	0	0	0	5	0	0	0	5	5
P/TOT	11	1	202	37	8	0	259	258	0	0	14	3	0	0	17	17	0	1	26	7	2	0	36	37

BROOMHILL ROAD TRAFFIC COUNTS — MAY 2021

MANUAL CLASSIFIED JUNCTION TURNING COUNTS — TRA/21/077

SITE: 04 DATE: 19th May 2021

LOCATION: Greenhills Road/Broomhill Road DAY: Wednesday

	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
07:30	1	0	4	2	0	0	7	6	6	0	52	7	3	1	69	68	1	0	13	4	0	0	18	17
07:45	0	0	8	2	1	0	11	12	4	0	62	18	2	2	88	89	0	0	12	1	0	0	13	13
08:00	0	0	2	2	0	0	4	4	2	0	74	15	1	2	94	95	3	0	22	2	0	0	27	25
08:15	0	0	5	0	0	0	5	5	1	0	73	11	9	4	98	110	0	0	19	2	1	0	22	23
H/TOT	1	0	19	6	1	0	27	27	13	0	261	51	15	9	349	363	4	0	66	9	1	0	80	78
08:30	0	0	5	1	0	0	6	6	1	0	96	7	4	3	111	117	1	0	14	3	1	0	19	19
08:45	0	0	11	3	1	0	15	16	4	0	87	9	3	3	106	109	1	0	17	1	1	0	20	20
09:00	0	0	6	1	0	0	7	7	4	0	102	17	2	1	126	126	0	0	24	4	2	0	30	32
09:15	0	0	4	4	1	0	9	10	3	0	76	9	9	1	98	106	0	0	23	5	3	0	31	34
H/TOT	0	0	26	9	2	0	37	39	12	0	361	42	18	8	441	457	2	0	78	13	7	0	100	105
P/TOT	1	0	45	15	3	0	64	66	25	0	622	93	33	17	790	820	6	0	144	22	8	0	180	183

	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	5	1	0	0	6	6	2	3	85	13	2	0	105	104	0	0	7	6	4	0	17	21
16:15	0	0	5	0	0	0	5	5	7	0	80	6	6	2	101	103	0	0	9	5	2	0	16	18
16:30	0	0	5	0	0	0	5	5	6	2	88	6	1	2	105	102	0	0	11	4	1	0	16	17
16:45	0	0	4	0	0	0	4	4	5	0	82	7	1	2	97	96	1	0	11	2	0	0	14	13
H/TOT	0	0	19	1	0	0	20	20	20	5	335	32	10	6	408	405	1	0	38	17	7	0	63	69
17:00	0	0	4	1	0	0	5	5	4	1	92	11	4	2	114	116	0	0	10	1	0	0	11	11
17:15	0	0	3	2	1	0	6	7	9	0	88	5	5	2	109	109	0	0	9	1	2	0	12	14
17:30	0	0	4	0	1	0	5	6	9	1	94	8	1	0	113	106	2	0	7	0	0	0	9	7
17:45	0	0	3	0	0	0	3	3	4	0	82	10	1	2	99	99	0	0	4	1	0	0	5	5
H/TOT	0	0	14	3	2	0	19	21	26	2	356	34	11	6	435	430	2	0	30	3	2	0	37	37
18:00	0	0	5	1	0	0	6	6	6	0	92	7	1	1	107	104	0	0	6	0	0	0	6	6
18:15	0	0	3	1	0	0	4	4	3	1	77	6	3	1	91	92	2	0	6	2	0	0	10	8
H/TOT	0	0	8	2	0	0	10	10	9	1	169	13	4	2	198	196	2	0	12	2	0	0	16	14.4
P/TOT	0	0	41	6	2	0	49	51	55	8	860	79	25	14	1041	1031	5	0	80	22	9	0	116	121

BROOMHILL ROAD TRAFFIC COUNTS — MAY 2021

MANUAL CLASSIFIED JUNCTION TURNING COUNTS — TRA/21/077

SITE: 03 — DATE: 19th May 2021

LOCATION: Broomhill Road/Airton Road — DAY: Wednesday

	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
07:30	1	1	28	5	2	0	37	38	2	0	21	5	1	0	29	28	0	0	2	1	1	0	4	5
07:45	2	0	45	8	0	1	56	55	2	0	55	9	2	0	68	68	0	0	4	1	0	0	5	5
08:00	1	0	42	10	5	0	58	62	1	0	38	8	2	1	50	52	0	0	7	1	0	0	8	8
08:15	0	1	51	14	3	1	70	73	0	0	51	9	4	0	64	68	0	0	10	1	0	0	11	11
H/TOT	4	2	166	37	10	2	221	229	5	0	165	31	9	1	211	217	0	0	23	4	1	0	28	29
08:30	3	0	62	10	1	0	76	75	2	0	46	5	3	1	57	59	0	0	8	0	0	0	8	8
08:45	1	0	67	4	3	0	75	77	2	0	60	9	3	1	75	77	0	0	11	1	1	0	13	14
09:00	0	0	60	9	4	0	73	77	3	0	58	10	1	0	72	71	0	0	8	0	0	0	8	8
09:15	1	0	45	7	2	0	55	56	2	0	57	7	5	0	71	74	0	0	3	1	1	0	5	6
H/TOT	5	0	234	30	10	0	279	285	9	0	221	31	12	2	275	282	0	0	30	2	2	0	34	36
P/TOT	9	2	400	67	20	2	500	514	14	0	386	62	21	3	486	499	0	0	53	6	3	0	62	65

	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	3	0	46	9	3	0	61	62	1	0	68	12	2	0	83	84	0	0	2	1	0	0	3	3
16:15	0	1	37	7	1	0	46	46	1	0	54	4	1	0	60	60	0	0	1	1	0	0	2	2
16:30	1	0	53	7	1	0	62	62	2	1	70	13	6	0	92	96	0	0	3	0	1	0	4	5
16:45	1	0	48	4	2	0	55	56	1	0	74	8	1	0	84	84	0	0	0	1	1	0	2	3
H/TOT	5	1	184	27	7	0	224	226	5	1	266	37	10	0	319	324	0	0	6	3	2	0	11	13
17:00	0	0	55	2	1	0	58	59	3	0	91	15	1	0	110	109	0	0	4	0	2	0	6	8
17:15	3	0	44	5	1	0	53	52	1	0	64	9	1	0	75	75	0	0	1	1	0	0	2	2
17:30	0	0	47	1	1	0	49	50	1	0	58	4	4	0	67	70	0	0	4	0	0	0	4	4
17:45	0	0	43	0	0	0	43	43	4	1	72	4	0	0	81	77	0	0	4	0	1	0	5	6
H/TOT	3	0	189	8	3	0	203	204	9	1	285	32	6	0	333	331	0	0	13	1	3	0	17	20
18:00	1	1	27	2	0	0	31	30	2	0	59	4	1	0	66	65	0	0	3	1	1	0	5	6
18:15	2	0	41	1	0	0	44	42	3	1	37	3	0	0	44	41	0	0	4	0	0	0	4	4
H/TOT	3	1	68	3	0	0	75	72	5	1	96	7	1	0	110	106	0	0	7	1	1	0	9	10
P/TOT	11	2	441	38	10	0	502	502	19	3	647	76	17	0	762	762	0	0	26	5	6	0	37	43

BROOMHILL ROAD TRAFFIC COUNTS — MAY 2021

MANUAL CLASSIFIED JUNCTION TURNING COUNTS — TRA/21/077

SITE: 03 — DATE: 19th May 2021

LOCATION: Broomhill Road/Airton Road — DAY: Wednesday

	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
07:30	0	0	0	0	0	0	0	0	0	0	3	2	1	0	6	7	0	0	22	4	3	1	30	34
07:45	0	0	1	1	0	0	2	2	0	0	8	4	1	0	13	14	0	0	33	10	2	0	45	47
08:00	0	0	0	0	1	1	2	4	0	0	8	3	1	0	12	13	1	0	29	9	1	0	40	40
08:15	0	0	1	1	1	0	3	4	0	0	8	0	2	0	10	12	0	0	54	7	3	0	64	67
H/TOT	0	0	2	2	2	1	7	10	0	0	27	9	5	0	41	46	1	0	138	30	9	1	179	188
08:30	0	0	4	1	0	0	5	5	0	0	7	3	1	0	11	12	0	0	44	7	2	1	54	57
08:45	0	0	1	3	0	1	5	6	0	0	12	7	2	0	21	23	2	0	33	13	2	0	50	50
09:00	0	0	2	1	1	0	4	5	0	0	18	9	2	0	29	31	1	0	33	9	4	0	47	50
09:15	0	0	5	2	1	0	8	9	0	0	14	5	3	0	22	25	0	0	21	9	0	0	30	30
H/TOT	0	0	12	7	2	1	22	25	0	0	51	24	8	0	83	91	3	0	131	38	8	1	181	188
P/TOT	0	0	14	9	4	2	29	35	0	0	78	33	13	0	124	137	4	0	269	68	17	2	360	376

	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	6	2	1	0	9	10	0	0	21	7	2	0	30	32	0	0	16	4	4	0	24	28
16:15	0	0	4	0	0	0	4	4	0	0	24	5	1	0	30	31	1	1	16	3	4	0	25	28
16:30	1	0	8	0	2	0	11	12	1	0	28	12	5	0	46	50	0	0	21	6	0	0	27	27
16:45	0	0	9	0	0	0	9	9	1	1	43	6	2	0	53	54	0	0	14	3	2	0	19	21
H/TOT	1	0	27	2	3	0	33	35	2	1	116	30	10	0	159	167	1	1	67	16	10	0	95	104
17:00	0	0	7	0	0	0	7	7	1	1	66	10	2	0	80	81	0	0	14	2	1	0	17	18
17:15	0	0	7	0	0	0	7	7	0	0	37	2	4	0	43	47	1	0	12	0	0	0	13	12
17:30	0	0	8	2	1	0	11	12	0	0	35	2	4	0	41	45	0	0	13	0	0	0	13	13
17:45	0	0	7	0	1	0	8	9	0	0	20	4	1	0	25	26	1	0	15	3	1	0	20	20
H/TOT	0	0	29	2	2	0	33	35	1	1	158	18	11	0	189	199	2	0	54	5	2	0	63	63
18:00	0	0	13	3	2	0	18	20	0	0	28	6	1	0	35	36	0	0	20	1	3	0	24	27
18:15	1	0	10	0	0	0	11	10	2	0	30	6	1	0	39	38	0	0	14	0	0	0	14	14
H/TOT	1	0	23	3	2	0	29	30.2	2	0	58	12	2	0	74	74.4	0	0	34	1	3	0	38	41
P/TOT	2	0	79	7	7	0	95	100	5	2	332	60	23	0	422	440	3	1	155	22	15	0	196	208

TRAFFINOMICS LIMITED

BROOMHILL ROAD TRAFFIC COUNTS **MAY 2021**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **TRA/21/077**

SITE: 02 DATE: 19th May 2021

LOCATION: Broomhill Road/Broomhill Close/Broomhill Terrace DAY: Wednesday

	MOVEMENT 10								MOVEMENT 11								MOVEMENT 12							
TIME	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU
07:30	0	0	1	2	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45	0	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00	0	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	1	4	0	0	5	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45	0	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:00	0	0	0	0	1	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	1	1	0	2	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
P/TOT	0	0	1	5	1	0	7	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	MOVEMENT 10								MOVEMENT 11								MOVEMENT 12							
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	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30	0	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	0	0	2	1	0	0	3	3	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
H/TOT	0	0	3	2	0	0	5	5	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
17:00	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
17:45	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	2	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:15	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
H/TOT	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
P/TOT	0	0	6	2	0	0	8	8	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3	3

TRAFFINOMICS LIMITED

BROOMHILL ROAD TRAFFIC COUNTS **MAY 2021**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **TRA/21/077**

SITE: 02 DATE: 19th May 2021

LOCATION: Broomhill Road/Broomhill Close/Broomhill Terrace DAY: Wednesday

	MOVEMENT 7								MOVEMENT 8								MOVEMENT 9							
TIME	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU
07:30	0	0	4	2	0	0	6	6	0	0	20	1	3	1	25	29	0	0	0	0	0	0	0	0
07:45	0	0	2	4	1	0	7	8	5	0	31	7	2	0	45	43	0	0	0	0	0	0	0	0
08:00	0	0	1	3	0	0	4	4	0	0	32	5	0	0	37	37	0	0	0	1	0	0	1	1
08:15	0	0	6	2	0	0	8	8	1	0	56	9	3	0	69	71	0	0	0	0	0	0	0	0
H/TOT	0	0	13	11	1	0	25	26	6	0	139	22	8	1	176	180	0	0	0	1	0	0	1	1
08:30	0	0	4	2	0	0	6	6	0	0	30	6	2	0	38	40	0	0	1	0	0	0	1	1
08:45	0	0	5	1	2	0	8	10	1	1	39	10	1	0	52	52	0	0	0	0	0	0	0	0
09:00	0	0	3	2	0	0	5	5	1	0	32	7	1	0	41	41	0	0	1	0	1	0	2	3
09:15	0	0	1	2	1	0	4	5	0	0	19	7	1	0	27	28	0	0	0	0	0	0	0	0
H/TOT	0	0	13	7	3	0	23	26	2	1	120	30	5	0	158	161	0	0	2	0	1	0	3	4
P/TOT	0	0	26	18	4	0	48	52	8	1	259	52	13	1	334	341	0	0	2	1	1	0	4	5

	MOVEMENT 7								MOVEMENT 8								MOVEMENT 9							
TIME	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU
16:00	0	0	2	1	0	0	3	3	0	0	17	6	4	0	27	31	0	0	0	0	0	0	0	0
16:15	0	0	0	2	1	0	3	4	0	2	15	2	3	0	22	24	0	0	0	0	0	0	0	0
16:30	0	0	2	0	0	0	2	2	0	0	14	3	0	0	17	17	0	0	0	0	0	0	0	0
16:45	0	0	2	1	1	0	4	5	0	0	13	4	2	0	19	21	0	0	0	0	0	0	0	0
H/TOT	0	0	6	4	2	0	12	14	0	2	59	15	9	0	85	93	0	0	0	0	0	0	0	0
17:00	0	0	1	0	0	0	1	1	2	1	14	1	0	0	18	16	0	0	1	0	0	0	1	1
17:15	0	0	0	0	0	0	0	0	0	1	12	0	0	0	13	12	0	0	0	1	0	0	1	1
17:30	0	0	1	1	0	0	2	2	1	0	11	0	0	0	12	11	0	0	0	0	0	0	0	0
17:45	0	0	0	2	1	0	3	4	1	0	9	1	3	0	14	16	0	0	0	0	0	0	0	0
H/TOT	0	0	2	3	1	0	6	7	4	2	46	2	3	0	57	56	0	0	1	1	0	0	2	2
18:00	0	0	0	0	1	0	1	2	0	0	16	2	1	0	19	20	0	0	0	0	0	0	0	0
18:15	0	0	1	0	0	0	1	1	2	0	7	0	1	0	10	9	0	0	1	0	0	0	1	1
H/TOT	0	0	1	0	1	0	2	3	2	0	23	2	2	0	29	29.4	0	0	1	0	0	0	1	1
P/TOT	0	0	9	7	4	0	20	24	6	4	128	19	14	0	171	178	0	0	2	1	0	0	3	3

TRAFFINOMICS LIMITED

BROOMHILL ROAD TRAFFIC COUNTS **MAY 2021**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **TRA/21/077**

SITE: 02 DATE: 19th May 2021

LOCATION: Broomhill Road/Broomhill Close/Broomhill Terrace DAY: Wednesday

	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
07:30	0	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
07:45	0	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	2
08:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	3	3
08:15	0	0	0	3	1	0	4	5	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2
H/TOT	0	0	0	5	1	0	6	7	0	0	0	0	0	0	0	0	0	0	2	4	1	0	7	8
08:30	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3	3
08:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	2
09:00	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:15	0	0	1	2	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2	3
H/TOT	0	0	3	2	0	0	5	5	0	0	0	0	0	0	0	0	0	0	0	6	1	0	7	8
P/TOT	0	0	3	7	1	0	11	12	0	0	0	0	0	0	0	0	0	0	2	10	2	0	14	16

	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	2	1	0	0	3	3	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3	3
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	2
16:30	0	0	2	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	2
16:45	0	0	3	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3	3
H/TOT	0	0	7	1	0	0	8	8	0	0	0	0	0	0	0	0	0	0	10	0	0	0	10	10
17:00	0	0	2	1	1	0	4	5	0	0	0	0	0	0	0	0	0	0	2	1	0	0	3	3
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	0	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	3	1	0	0	4	4
17:45	0	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0	1	0	5	1	0	0	7	6
H/TOT	0	0	2	3	1	0	6	7	0	0	0	0	0	0	0	0	1	0	10	3	0	0	14	13
18:00	0	0	0	0	1	0	1	2	0	0	0	0	0	0	0	0	0	0	2	4	1	0	7	8
18:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	1	0	1	2	0	0	0	0	0	0	0	0	0	0	2	4	1	0	7	8
P/TOT	0	0	9	4	2	0	15	17	0	0	0	0	0	0	0	0	1	0	22	7	1	0	31	31

NRB consulting engineers

APPENDIX B

Weekday - Classified
Turning Movement Traffic Survey Output Data

TRAFFINOMICS LIMITED

BROOMHILL ROAD TRAFFIC COUNTS **MAY 2021**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **TRA/21/077**

SITE: 02 DATE: 19th May 2021

LOCATION: Broomhill Road/Broomhill Close/Broomhill Terrace DAY: Wednesday

	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
07:30	0	0	0	0	0	0	0	0	0	0	3	3	0	0	6	6	0	0	0	0	0	0	0	0
07:45	0	0	0	0	0	0	0	0	0	0	8	0	1	0	9	10	0	0	1	0	0	0	1	1
08:00	0	0	0	0	0	0	0	0	0	0	9	1	1	1	12	14	0	0	3	0	0	0	3	3
08:15	0	0	0	1	0	0	1	1	0	0	11	2	2	0	15	17	0	0	0	0	0	0	0	0
H/TOT	0	0	0	1	0	0	1	1	0	0	31	6	4	1	42	47	0	0	4	0	0	0	4	4
08:30	0	0	0	0	0	0	0	0	1	0	8	1	0	0	10	9	0	0	1	0	0	0	1	1
08:45	0	0	0	0	0	0	0	0	1	0	16	4	3	1	25	28	0	0	0	0	0	0	0	0
09:00	0	0	0	0	0	0	0	0	0	0	14	10	1	0	25	26	0	0	0	0	0	0	0	0
09:15	0	0	0	0	0	0	0	0	0	0	14	5	1	0	20	21	0	0	0	1	1	0	2	3
H/TOT	0	0	0	0	0	0	0	0	2	0	52	20	5	1	80	84	0	0	1	1	1	0	3	4
P/TOT	0	0	0	1	0	0	1	1	2	0	83	26	9	2	122	131	0	0	5	1	1	0	7	8

	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	0	0	0	0	0	0	0	0	27	4	3	0	34	37	0	0	0	0	0	0	0	0
16:15	0	0	0	0	0	0	0	0	0	0	15	7	5	0	27	32	0	0	0	0	0	0	0	0
16:30	0	0	1	0	0	0	1	1	2	1	30	9	3	0	45	46	0	0	0	0	0	0	0	0
16:45	0	0	2	0	0	0	2	2	5	0	37	5	3	0	50	49	0	0	0	0	0	0	0	0
H/TOT	0	0	3	0	0	0	3	3	7	1	109	25	14	0	156	164	0	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0	0	6	1	55	6	2	0	70	67	0	0	1	0	0	0	1	1
17:15	0	0	0	0	0	0	0	0	1	0	28	0	3	0	32	34	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0	2	0	34	5	0	0	41	39	0	0	0	0	0	0	0	0
17:45	0	0	0	0	0	0	0	0	0	0	8	2	1	0	11	12	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	9	1	125	13	6	0	154	152	0	0	1	0	0	0	1	1
18:00	0	0	0	0	0	0	0	0	0	0	17	2	2	0	21	23	0	0	0	0	0	0	0	0
18:15	0	0	1	0	0	0	1	1	3	0	12	3	1	0	19	18	0	0	0	0	0	0	0	0
H/TOT	0	0	1	0	0	0	1	1	3	0	29	5	3	0	40	40.6	0	0	0	0	0	0	0	0
P/TOT	0	0	4	0	0	0	4	4	19	2	263	43	23	0	350	357	0	0	1	0	0	0	1	1

BROOMHILL ROAD TRAFFIC COUNTS **MAY 2021**

MANUAL CLASSIFIED JUNCTION TURNING COUNTS **TRA/21/077**

SITE: 01 DATE: 19th May 2021

LOCATION: Belgard Road/Monarch Industrial Estate/Airton Road DAY: Wednesday

	MOVEMENT 10								MOVEMENT 11								MOVEMENT 12							
TIME	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU
07:30	1	0	14	2	0	0	17	16	0	0	3	0	0	0	3	3	0	0	7	3	2	0	12	14
07:45	1	0	32	3	1	0	37	37	0	0	0	1	0	0	1	1	0	0	15	7	1	0	23	24
08:00	0	0	30	4	1	1	36	38	0	0	2	2	0	0	4	4	1	0	9	5	3	0	18	20
08:15	0	0	35	2	3	0	40	43	0	0	3	1	0	0	4	4	0	0	16	4	3	0	23	26
H/TOT	2	0	111	11	5	1	130	134	0	0	8	4	0	0	12	12	1	0	47	19	9	0	76	84
08:30	0	0	29	4	0	1	34	35	0	0	1	1	0	0	2	2	0	0	17	4	6	0	27	33
08:45	0	0	40	8	1	0	49	50	0	0	5	1	0	0	6	6	0	0	19	9	4	1	33	38
09:00	0	0	39	7	2	0	48	50	1	0	6	2	0	0	9	8	0	0	19	11	5	0	35	40
09:15	0	0	39	0	1	0	40	41	0	0	4	1	0	0	5	5	0	0	22	14	9	0	45	54
H/TOT	0	0	147	19	4	1	171	176	1	0	16	5	0	0	22	21	0	0	77	38	24	1	140	165
P/TOT	2	0	258	30	9	2	301	310	1	0	24	9	0	0	34	33	1	0	124	57	33	1	216	249

	MOVEMENT 10								MOVEMENT 11								MOVEMENT 12							
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	47	6	0	0	53	53	0	0	12	0	0	0	12	12	0	0	77	13	4	0	94	98
16:15	0	0	42	5	1	0	48	49	0	0	6	0	0	0	6	6	0	0	44	3	3	0	50	53
16:30	3	0	49	9	3	0	64	65	0	0	8	1	0	0	9	9	1	0	72	11	3	0	87	89
16:45	1	2	62	6	1	0	72	71	0	0	8	1	0	0	9	9	1	0	65	13	5	0	84	88
H/TOT	4	2	200	26	5	0	237	238	0	0	34	2	0	0	36	36	2	0	258	40	15	0	315	328
17:00	3	0	72	10	0	0	85	83	0	0	14	0	0	0	14	14	0	1	74	12	3	0	90	92
17:15	2	0	56	5	1	0	64	63	0	0	7	3	0	0	10	10	0	0	72	6	4	0	82	86
17:30	0	0	50	5	2	0	57	59	1	0	8	1	0	0	10	9	2	0	52	5	3	0	62	63
17:45	3	0	45	4	0	0	52	50	0	1	13	0	0	0	14	13	1	0	34	5	2	0	42	43
H/TOT	8	0	223	24	3	0	258	255	1	1	42	4	0	0	48	47	3	1	232	28	12	0	276	285
18:00	1	1	48	6	0	0	56	55	0	0	10	0	0	0	10	10	1	0	36	4	3	0	44	46
18:15	1	0	38	4	0	0	43	42	0	0	3	1	0	0	4	4	1	0	31	3	1	0	36	36
H/TOT	2	1	86	10	0	0	99	96.8	0	0	13	1	0	0	14	14	2	0	67	7	4	0	80	82.4
P/TOT	14	3	509	60	8	0	594	589	1	1	89	7	0	0	98	97	7	1	557	75	31	0	671	696

BROOMHILL ROAD TRAFFIC COUNTS — MAY 2021

MANUAL CLASSIFIED JUNCTION TURNING COUNTS — TRA/21/077

SITE: 01 DATE: 19th May 2021

LOCATION: Belgard Road/Monarch Industrial Estate/Airton Road DAY: Wednesday

	MOVEMENT 7								MOVEMENT 8								MOVEMENT 9							
TIME	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU
07:30	0	0	4	0	0	0	4	4	4	1	53	11	4	2	75	77	2	1	36	3	1	0	43	42
07:45	1	0	4	0	0	0	5	4	3	2	54	14	3	2	78	79	1	0	56	7	2	0	66	67
08:00	0	0	2	3	0	0	5	5	4	0	77	13	6	1	101	105	0	0	31	8	1	0	40	41
08:15	0	0	9	1	0	0	10	10	2	0	86	18	5	2	113	118	0	1	50	11	1	1	64	65
H/TOT	1	0	19	4	0	0	24	23	13	3	270	56	18	7	367	380	3	2	173	29	5	1	213	215
08:30	0	0	9	4	0	0	13	13	1	0	92	17	3	1	114	117	1	0	53	11	0	0	65	64
08:45	0	0	11	2	0	0	13	13	0	1	91	14	0	2	108	109	0	0	47	5	2	0	54	56
09:00	0	0	22	4	0	1	27	28	1	0	74	13	4	5	97	105	1	0	36	4	3	0	44	46
09:15	0	0	25	1	2	0	28	30	0	0	77	12	1	4	94	99	0	0	25	3	0	1	29	30
H/TOT	0	0	67	11	2	1	81	84	2	1	334	56	8	12	413	431	2	0	161	23	5	1	192	196
P/TOT	1	0	86	15	2	1	105	107	15	4	604	112	26	19	780	811	5	2	334	52	10	2	405	412

	MOVEMENT 7								MOVEMENT 8								MOVEMENT 9							
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	26	1	0	0	27	27	1	1	103	17	4	3	129	135	1	0	31	6	0	0	38	37
16:15	0	0	31	1	0	0	32	32	1	2	123	9	3	2	140	143	0	0	25	2	1	0	28	29
16:30	0	0	28	5	0	0	33	33	2	0	106	17	0	2	127	127	0	0	22	4	0	0	26	26
16:45	0	0	21	1	0	0	22	22	0	0	108	13	3	1	125	129	0	0	34	8	2	0	44	46
H/TOT	0	0	106	8	0	0	114	114	4	3	440	56	10	8	521	534	1	0	112	20	3	0	136	138
17:00	0	0	19	0	0	0	19	19	1	1	142	10	1	2	157	159	0	0	39	2	0	0	41	41
17:15	0	0	18	7	0	0	25	25	3	1	130	16	3	0	153	153	2	1	20	3	0	0	26	24
17:30	0	0	19	3	0	0	22	22	5	0	121	11	5	1	143	145	0	0	28	1	1	0	30	31
17:45	1	0	21	1	0	0	23	22	2	0	149	5	2	2	160	162	1	0	23	1	0	0	25	24
H/TOT	1	0	77	11	0	0	89	88	11	2	542	42	11	5	613	619	3	1	110	7	1	0	122	120
18:00	0	0	30	2	0	0	32	32	3	1	92	7	4	2	109	112	0	0	24	0	1	0	25	26
18:15	0	0	17	2	0	0	19	19	3	0	107	8	1	2	121	122	1	0	27	0	0	0	28	27
H/TOT	0	0	47	4	0	0	51	51	6	1	199	15	5	4	230	234	1	0	51	0	1	0	53	53.2
P/TOT	1	0	230	23	0	0	254	253	21	6	1181	113	26	17	1364	1387	5	1	273	27	5	0	311	311

BROOMHILL ROAD TRAFFIC COUNTS **MAY 2021**

MANUAL CLASSIFIED JUNCTION TURNING COUNTS **TRA/21/077**

SITE: 01 DATE: 19th May 2021

LOCATION: Belgard Road/Monarch Industrial Estate/Airton Road DAY: Wednesday

	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
07:30	0	0	2	0	1	0	3	4	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3	3
07:45	0	0	3	0	0	0	3	3	0	0	2	1	0	0	3	3	0	0	1	0	0	0	1	1
08:00	0	0	3	2	0	0	5	5	0	0	0	0	0	0	0	0	0	0	4	0	0	0	4	4
08:15	0	0	6	1	0	0	7	7	0	0	2	3	0	0	5	5	0	0	5	2	0	0	7	7
H/TOT	0	0	14	3	1	0	18	19	0	0	4	4	0	0	8	8	0	0	13	2	0	0	15	15
08:30	0	0	5	0	0	0	5	5	0	0	2	2	0	0	4	4	0	0	6	1	0	0	7	7
08:45	0	0	7	5	2	0	14	16	0	0	5	0	0	0	5	5	0	0	8	1	0	0	9	9
09:00	0	0	12	4	0	0	16	16	0	0	5	0	0	0	5	5	0	0	8	2	1	0	11	12
09:15	0	0	11	3	0	0	14	14	0	0	6	0	0	0	6	6	0	0	13	1	1	0	15	16
H/TOT	0	0	35	12	2	0	49	51	0	0	18	2	0	0	20	20	0	0	35	5	2	0	42	44
P/TOT	0	0	49	15	3	0	67	70	0	0	22	6	0	0	28	28	0	0	48	7	2	0	57	59

	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	26	3	0	0	30	29	0	0	12	3	0	0	15	15	0	1	22	0	0	0	23	22
16:15	0	0	38	4	0	0	42	42	0	0	11	1	0	0	12	12	0	0	17	1	1	0	19	20
16:30	0	0	27	4	1	0	32	33	1	0	13	1	1	0	16	16	0	0	27	2	0	0	29	29
16:45	0	0	30	4	1	0	35	36	0	0	8	0	0	0	8	8	0	0	26	3	0	0	29	29
H/TOT	1	0	121	15	2	0	139	140	1	0	44	5	1	0	51	51	0	1	92	6	1	0	100	100
17:00	0	0	35	2	0	0	37	37	0	0	9	0	0	0	9	9	0	1	26	1	0	0	28	27
17:15	1	0	23	3	0	0	27	26	0	0	10	1	0	0	11	11	0	0	26	1	0	0	27	27
17:30	0	0	31	3	0	0	34	34	0	0	13	1	0	0	14	14	0	0	27	2	1	0	30	31
17:45	0	0	25	3	0	0	28	28	0	0	12	2	0	0	14	14	0	0	23	3	0	0	26	26
H/TOT	1	0	114	11	0	0	126	125	0	0	44	4	0	0	48	48	0	1	102	7	1	0	111	111
18:00	1	0	26	3	0	0	30	29	0	1	7	1	0	0	9	8	0	0	22	2	0	0	24	24
18:15	0	0	34	2	0	0	36	36	1	0	12	1	0	0	14	13	0	0	14	1	0	0	15	15
H/TOT	1	0	60	5	0	0	66	65.2	1	1	19	2	0	0	23	21.6	0	0	36	3	0	0	39	39
P/TOT	3	0	295	31	2	0	331	331	2	1	107	11	1	0	122	121	0	2	230	16	2	0	250	251

TRAFFINOMICS LIMITED

BROOMHILL ROAD TRAFFIC COUNTS **MAY 2021**

MANUAL CLASSIFIED JUNCTION TURNING COUNTS **TRA/21/077**

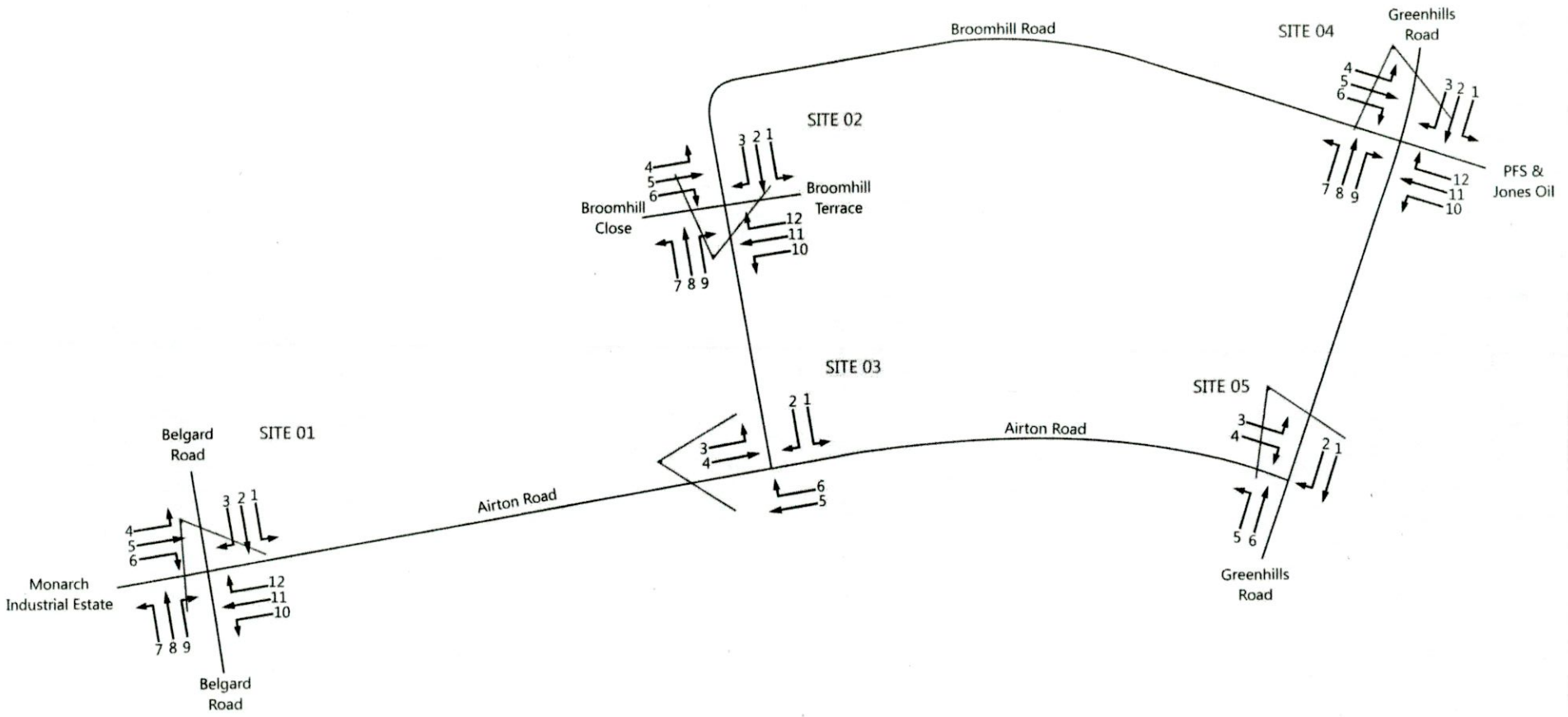
SITE: 01 DATE: 19th May 2021

LOCATION: Belgard Road/Monarch Industrial Estate/Airton Road DAY: Wednesday

	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
07:30	1	0	45	7	4	2	59	64	2	0	57	15	12	2	88	100	0	0	4	1	1	0	6	7
07:45	6	0	67	18	4	0	95	94	1	0	66	10	5	3	85	92	0	0	5	0	0	0	5	5
08:00	0	0	51	10	4	0	65	69	1	0	79	12	1	2	95	97	0	0	14	4	0	0	18	18
08:15	0	1	69	12	7	0	89	95	2	0	66	8	1	4	81	84	0	0	7	2	1	0	10	11
H/TOT	7	1	232	47	19	2	308	323	6	0	268	45	19	11	349	374	0	0	30	7	2	0	39	41
08:30	1	1	70	15	10	0	97	106	3	1	104	16	4	3	131	135	0	0	6	2	0	0	8	8
08:45	2	0	62	13	5	0	82	85	1	0	135	19	2	0	157	158	0	0	15	3	1	0	19	20
09:00	0	1	57	14	6	0	78	83	2	0	100	18	2	2	124	126	0	0	11	2	1	0	14	15
09:15	1	0	45	14	5	0	65	69	1	1	110	15	7	0	134	140	0	0	24	1	0	0	25	25
H/TOT	4	2	234	56	26	0	322	344	7	2	449	68	15	5	546	559	0	0	56	8	2	0	66	68
P/TOT	11	3	466	103	45	2	630	666	13	2	717	113	34	16	895	933	0	0	86	15	4	0	105	109

	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	17	3	5	0	25	30	2	0	74	13	3	2	94	97	0	0	24	5	1	0	30	31
16:15	0	2	31	6	3	0	42	44	1	0	92	23	1	3	120	123	0	0	32	0	2	0	34	36
16:30	0	1	36	8	1	0	46	46	0	2	107	14	3	3	129	134	0	0	25	3	1	0	29	30
16:45	1	0	19	4	3	0	27	29	5	0	76	14	0	1	96	93	0	1	29	2	0	0	32	31
H/TOT	1	3	103	21	12	0	140	149	8	2	349	64	7	9	439	447	0	1	110	10	4	0	125	128
17:00	0	0	15	6	1	0	22	23	3	2	81	13	3	0	102	101	0	0	20	0	0	0	20	20
17:15	0	0	24	3	1	0	28	29	3	1	118	10	1	1	134	133	0	0	19	1	1	0	21	22
17:30	0	0	23	3	0	0	26	26	2	2	113	5	2	0	124	123	0	0	28	3	0	0	31	31
17:45	0	0	25	2	2	0	29	31	2	0	99	15	2	1	119	120	0	0	27	3	0	0	30	30
H/TOT	0	0	87	14	4	0	105	109	10	5	411	43	8	2	479	478	0	0	94	7	1	0	102	103
18:00	1	0	19	1	1	0	22	22	4	0	100	7	0	2	113	112	0	0	24	1	0	0	25	25
18:15	0	0	18	1	2	0	21	23	2	3	98	13	1	2	119	119	0	1	16	2	0	1	20	20
H/TOT	1	0	37	2	3	0	43	45.2	6	3	198	20	1	4	232	230	0	1	40	3	0	1	45	45.4
P/TOT	2	3	227	37	19	0	288	304	24	10	958	127	16	15	1150	1156	0	2	244	20	5	1	272	277

Site Locations/Movement Numbering



Job number: TRA/21/077	Job date: 19th May 2021	Drawing No: TRA/21/077-02	traffinomics.ie
Client: NRB Consulting Engineers	Job day: Wednesday	Survey: Stick Diagram - Details	

NRB consulting engineers

APPENDIX C

TRICS Output Data
Medical Facility (& Offices, For Information)

TRIP RATE for Land Use 05 - HEALTH/A - GENERAL HOSPITAL - WITH CASUALTY
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	4	56287	0.322	4	56287	0.099	4	56287	0.421
07:00 - 08:00	14	65342	1.066	14	65342	0.377	14	65342	1.443
08:00 - 09:00	**14**	**65342**	**1.223**	14	65342	0.392	**14**	**65342**	**1.615**
09:00 - 10:00	14	65342	0.915	14	65342	0.446	14	65342	1.361
10:00 - 11:00	14	65342	0.646	14	65342	0.511	14	65342	1.157
11:00 - 12:00	14	65342	0.547	14	65342	0.560	14	65342	1.107
12:00 - 13:00	14	65342	0.500	14	65342	0.600	14	65342	1.100
13:00 - 14:00	14	65342	0.678	14	65342	0.585	14	65342	1.263
14:00 - 15:00	14	65342	0.658	14	65342	0.695	14	65342	1.353
15:00 - 16:00	14	65342	0.548	14	65342	0.829	14	65342	1.377
16:00 - 17:00	14	65342	0.448	**14**	**65342**	**1.092**	14	65342	1.540
17:00 - 18:00	14	65342	0.387	14	65342	0.995	14	65342	1.382
18:00 - 19:00	14	65342	0.482	14	65342	0.627	14	65342	1.109
19:00 - 20:00	13	51378	0.403	13	51378	0.607	13	51378	1.010
20:00 - 21:00	11	51037	0.252	11	51037	0.593	11	51037	0.845
21:00 - 22:00	5	49576	0.124	5	49576	0.233	5	49576	0.357
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			9.199			9.241			18.440

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.*

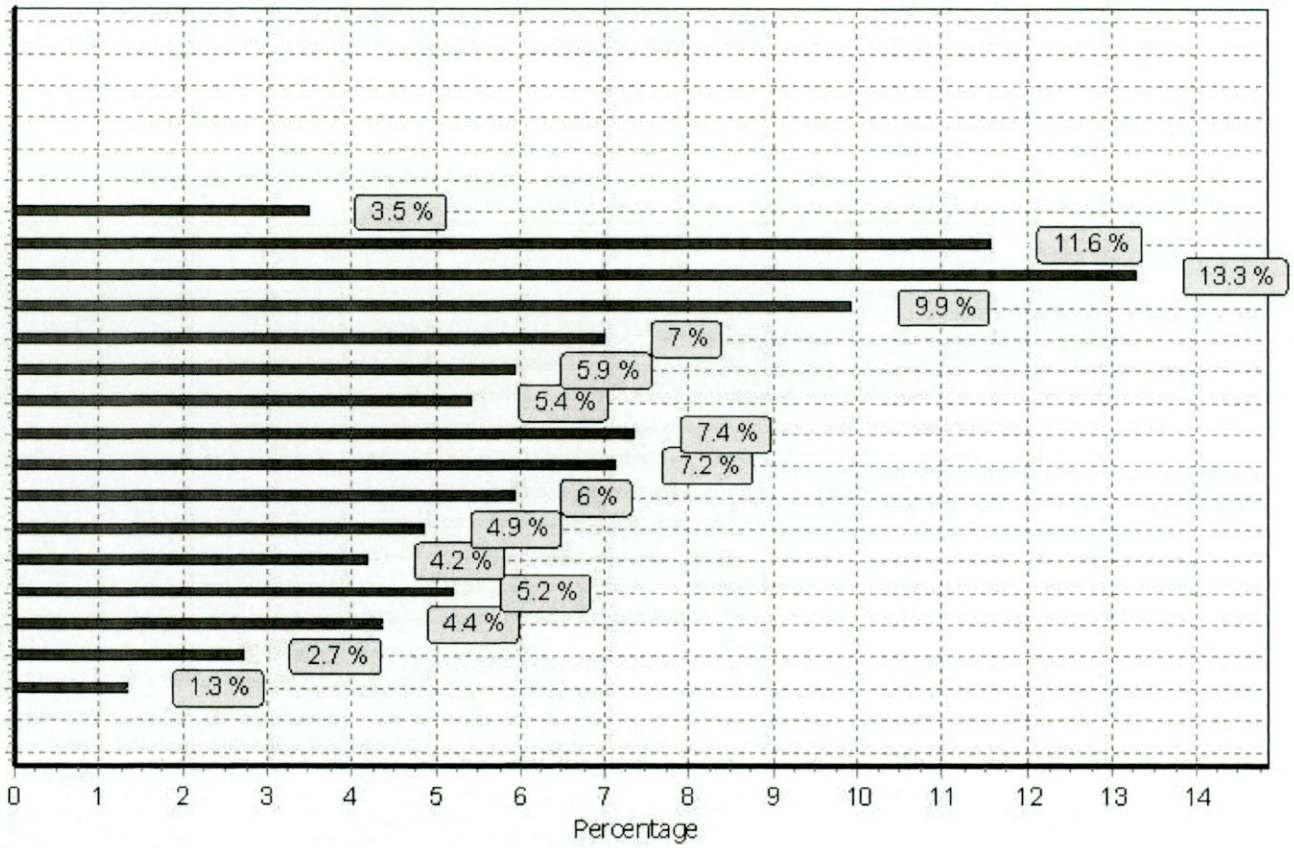
Parameter summary

Trip rate parameter range selected:	8500 - 246876 (units: sqm)
Survey date date range:	01/01/14 - 10/05/22
Number of weekdays (Monday-Friday):	13
Number of Saturdays:	0
Number of Sundays:	1
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

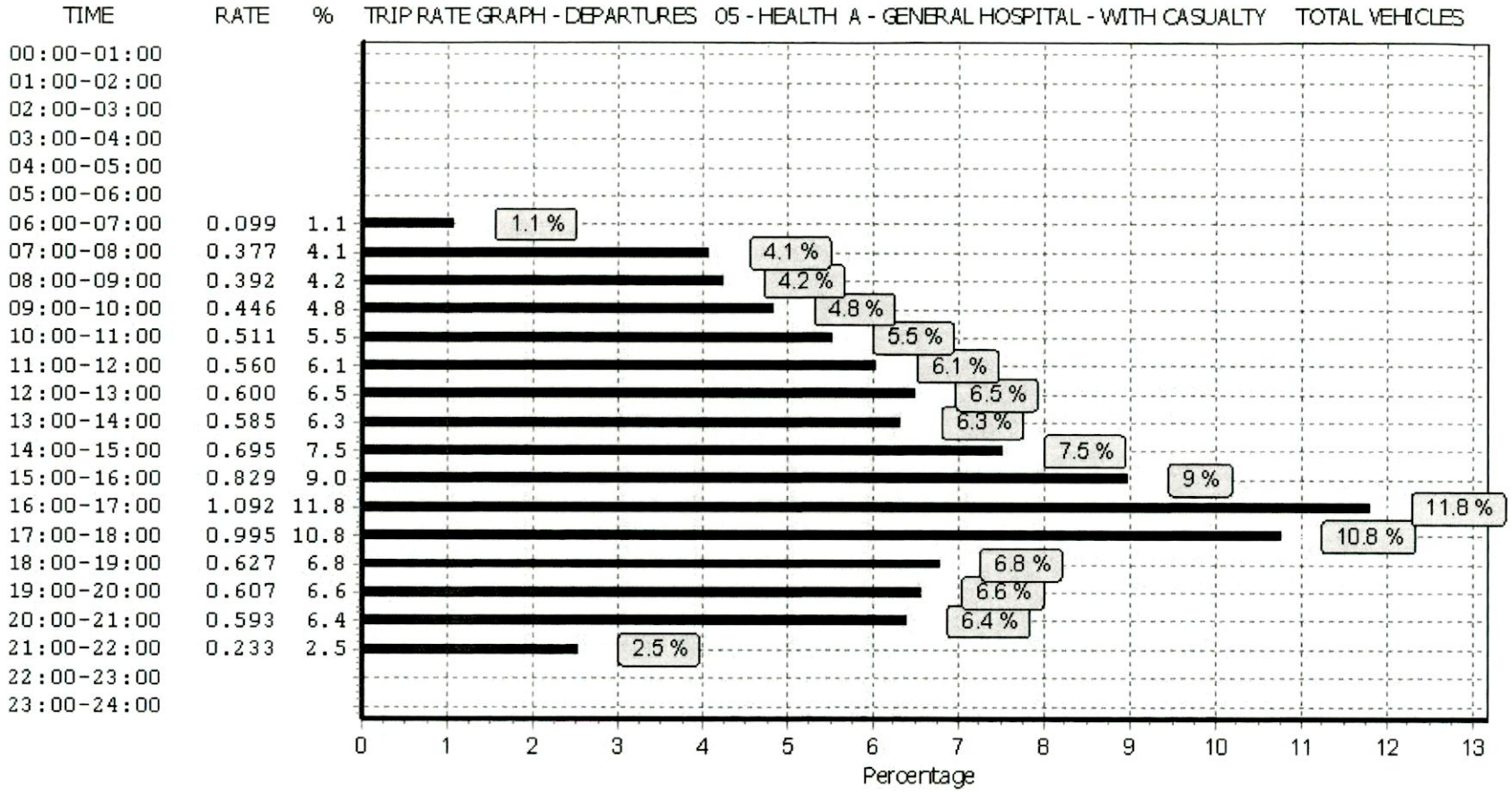
This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected 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.

TRIP RATE GRAPH - ARRIVALS 05 - HEALTH A - GENERAL HOSPITAL - WITH CASUALTY 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	0.322	3.5
07:00-08:00	1.066	11.6
08:00-09:00	1.223	13.3
09:00-10:00	0.915	9.9
10:00-11:00	0.646	7.0
11:00-12:00	0.547	5.9
12:00-13:00	0.500	5.4
13:00-14:00	0.678	7.4
14:00-15:00	0.658	7.2
15:00-16:00	0.548	6.0
16:00-17:00	0.448	4.9
17:00-18:00	0.387	4.2
18:00-19:00	0.482	5.2
19:00-20:00	0.403	4.4
20:00-21:00	0.252	2.7
21:00-22:00	0.124	1.3
22:00-23:00		
23:00-24:00		

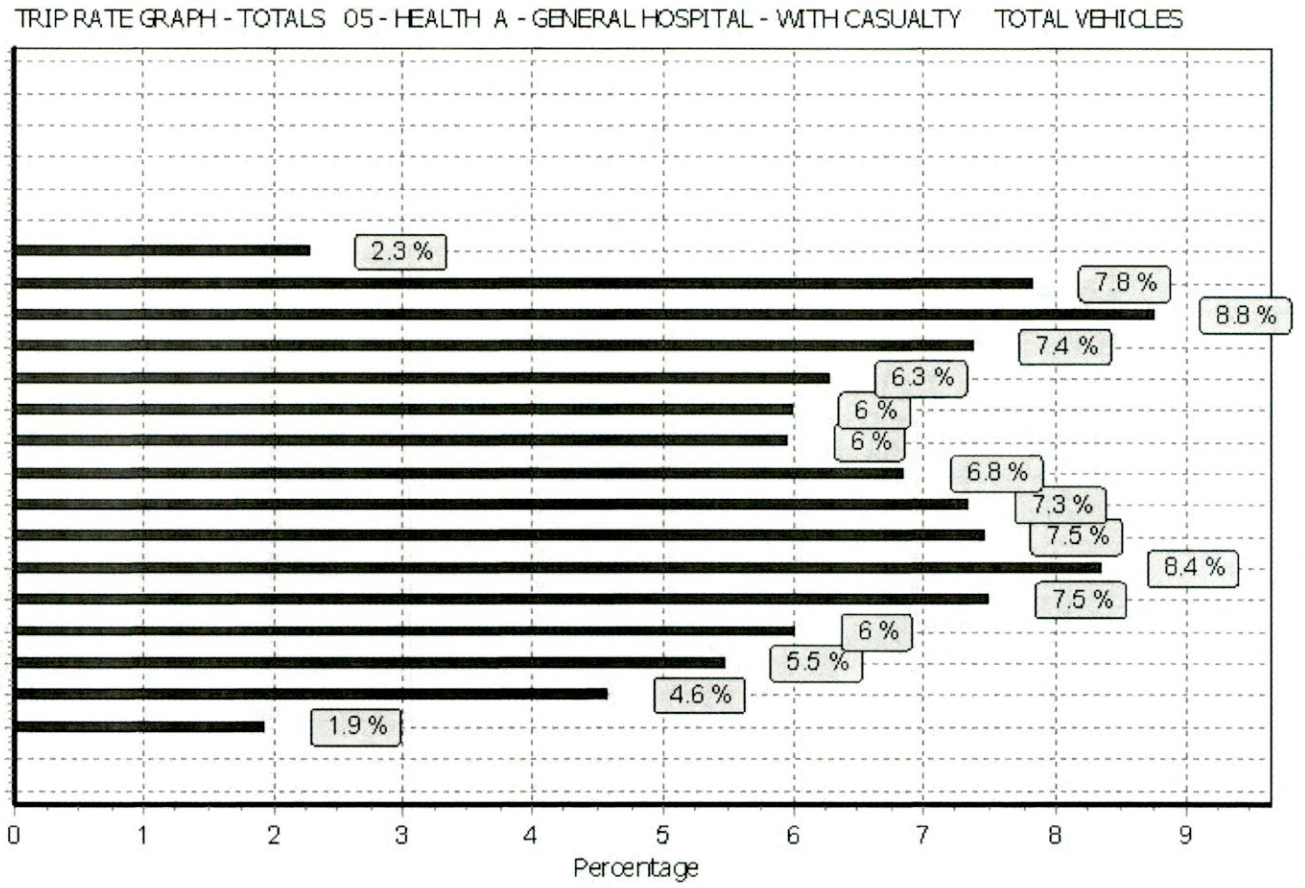


This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through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



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	0.421	2.3
07:00-08:00	1.443	7.8
08:00-09:00	1.615	8.8
09:00-10:00	1.361	7.4
10:00-11:00	1.157	6.3
11:00-12:00	1.107	6.0
12:00-13:00	1.100	6.0
13:00-14:00	1.263	6.8
14:00-15:00	1.353	7.3
15:00-16:00	1.377	7.5
16:00-17:00	1.540	8.4
17:00-18:00	1.382	7.5
18:00-19:00	1.109	6.0
19:00-20:00	1.010	5.5
20:00-21:00	0.845	4.6
21:00-22:00	0.357	1.9
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 02 - EMPLOYMENT/A - OFFICE

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 - 00:30									
00:30 - 01:00									
01:00 - 01:30									
01:30 - 02:00									
02:00 - 02:30									
02:30 - 03:00									
03:00 - 03:30									
03:30 - 04:00									
04:00 - 04:30									
04:30 - 05:00									
05:00 - 05:30									
05:30 - 06:00									
06:00 - 06:30	1	10100	0.406	1	10100	0.030	1	10100	0.436
06:30 - 07:00	**1**	**10100**	**0.703**	1	10100	0.139	**1**	**10100**	**0.842**
07:00 - 07:30	49	3964	0.123	49	3964	0.013	49	3964	0.136
07:30 - 08:00	49	3964	0.284	49	3964	0.041	49	3964	0.325
08:00 - 08:30	51	3821	0.475	51	3821	0.046	51	3821	0.521
08:30 - 09:00	52	3862	0.556	52	3862	0.068	52	3862	0.624
09:00 - 09:30	52	3862	0.444	52	3862	0.082	52	3862	0.526
09:30 - 10:00	52	3862	0.259	52	3862	0.095	52	3862	0.354
10:00 - 10:30	52	3862	0.154	52	3862	0.100	52	3862	0.254
10:30 - 11:00	52	3862	0.119	52	3862	0.093	52	3862	0.212
11:00 - 11:30	52	3862	0.092	52	3862	0.084	52	3862	0.176
11:30 - 12:00	52	3862	0.094	52	3862	0.089	52	3862	0.183
12:00 - 12:30	52	3862	0.097	52	3862	0.159	52	3862	0.256
12:30 - 13:00	52	3862	0.128	52	3862	0.182	52	3862	0.310
13:00 - 13:30	52	3862	0.149	52	3862	0.167	52	3862	0.316
13:30 - 14:00	52	3862	0.166	52	3862	0.134	52	3862	0.300
14:00 - 14:30	52	3862	0.136	52	3862	0.108	52	3862	0.244
14:30 - 15:00	52	3862	0.088	52	3862	0.146	52	3862	0.234
15:00 - 15:30	52	3862	0.080	52	3862	0.168	52	3862	0.248
15:30 - 16:00	52	3862	0.077	52	3862	0.177	52	3862	0.254
16:00 - 16:30	52	3862	0.076	52	3862	0.313	52	3862	0.389
16:30 - 17:00	52	3862	0.078	52	3862	0.340	52	3862	0.418
17:00 - 17:30	52	3862	0.048	**52**	**3862**	**0.501**	52	3862	0.549
17:30 - 18:00	52	3862	0.050	52	3862	0.339	52	3862	0.389
18:00 - 18:30	49	4060	0.023	49	4060	0.238	49	4060	0.261
18:30 - 19:00	49	4060	0.020	49	4060	0.105	49	4060	0.125
19:00 - 19:30	1	2150	0.000	1	2150	0.000	1	2150	0.000
19:30 - 20:00	1	2150	0.000	1	2150	0.000	1	2150	0.000
20:00 - 20:30	1	2150	0.000	1	2150	0.047	1	2150	0.047
20:30 - 21:00	1	2150	0.000	1	2150	0.000	1	2150	0.000
21:00 - 21:30									
21:30 - 22:00									
22:00 - 22:30									
22:30 - 23:00									
23:00 - 23:30									
23:30 - 24:00									
Total Rates:			4.925			4.004			8.929

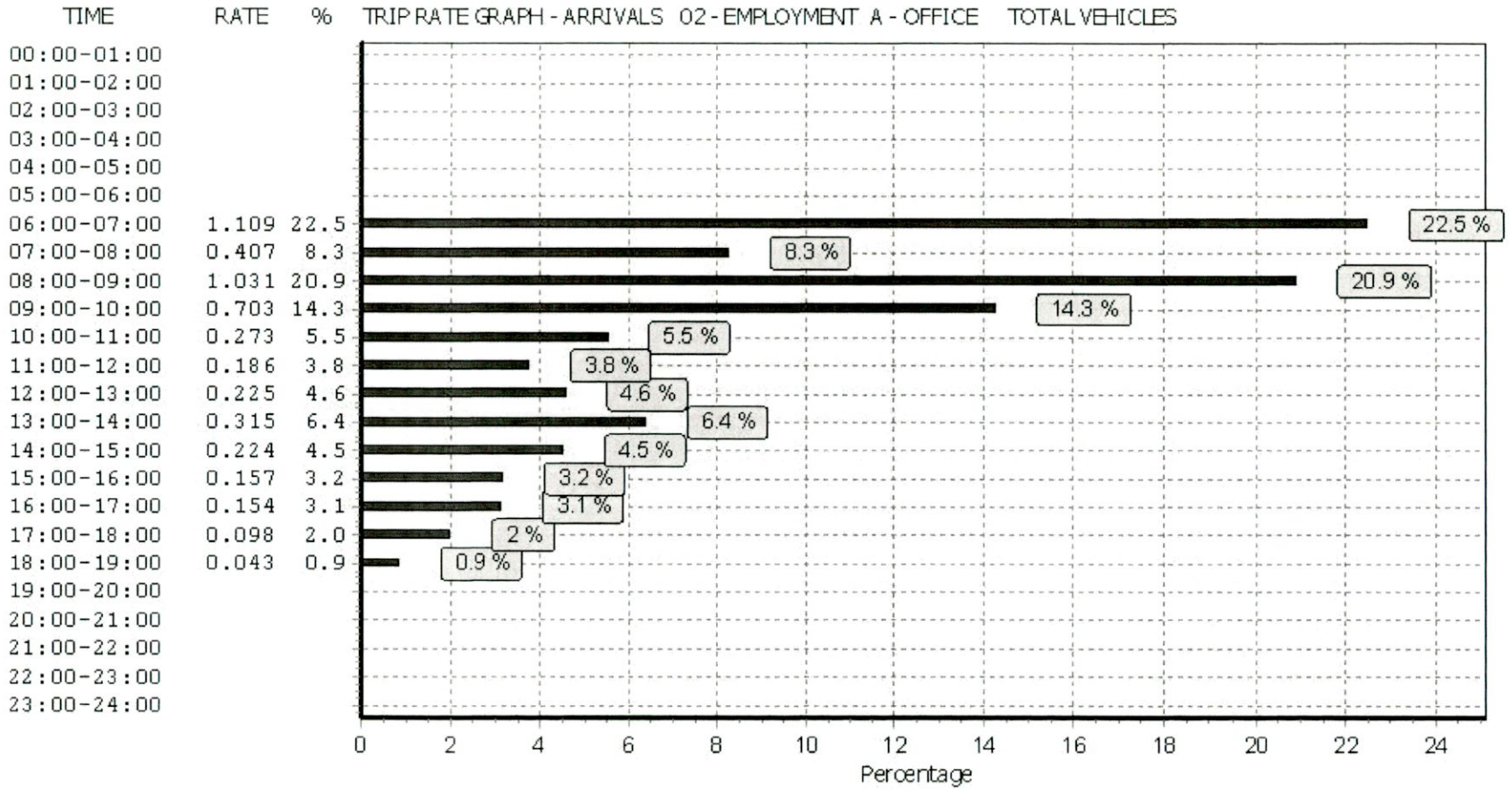
This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are 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.*

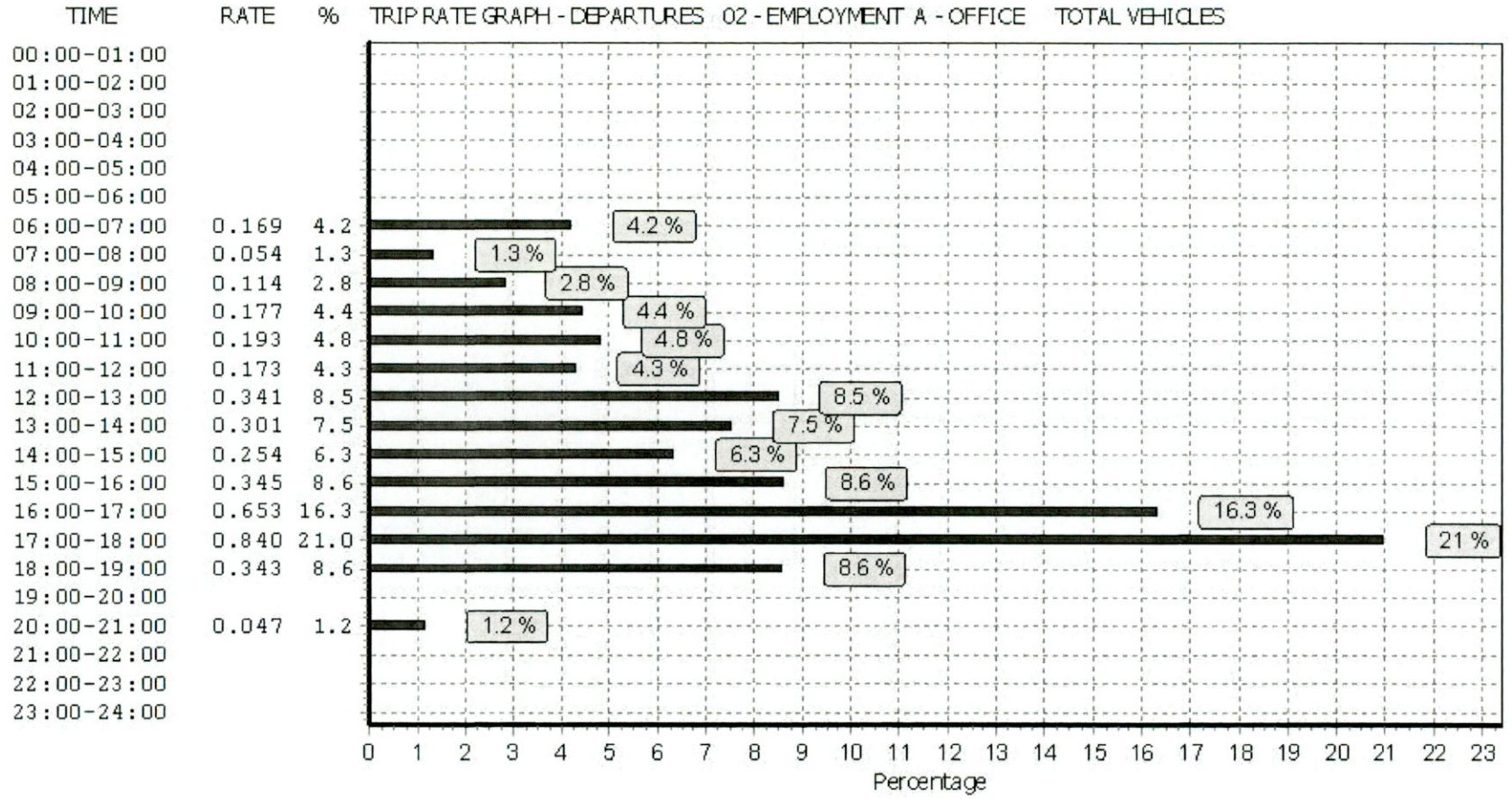
Parameter summary

Trip rate parameter range selected:	118 - 22657 (units: sqm)
Survey date date range:	01/01/14 - 06/05/22
Number of weekdays (Monday-Friday):	52
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	2
Surveys manually removed from selection:	0

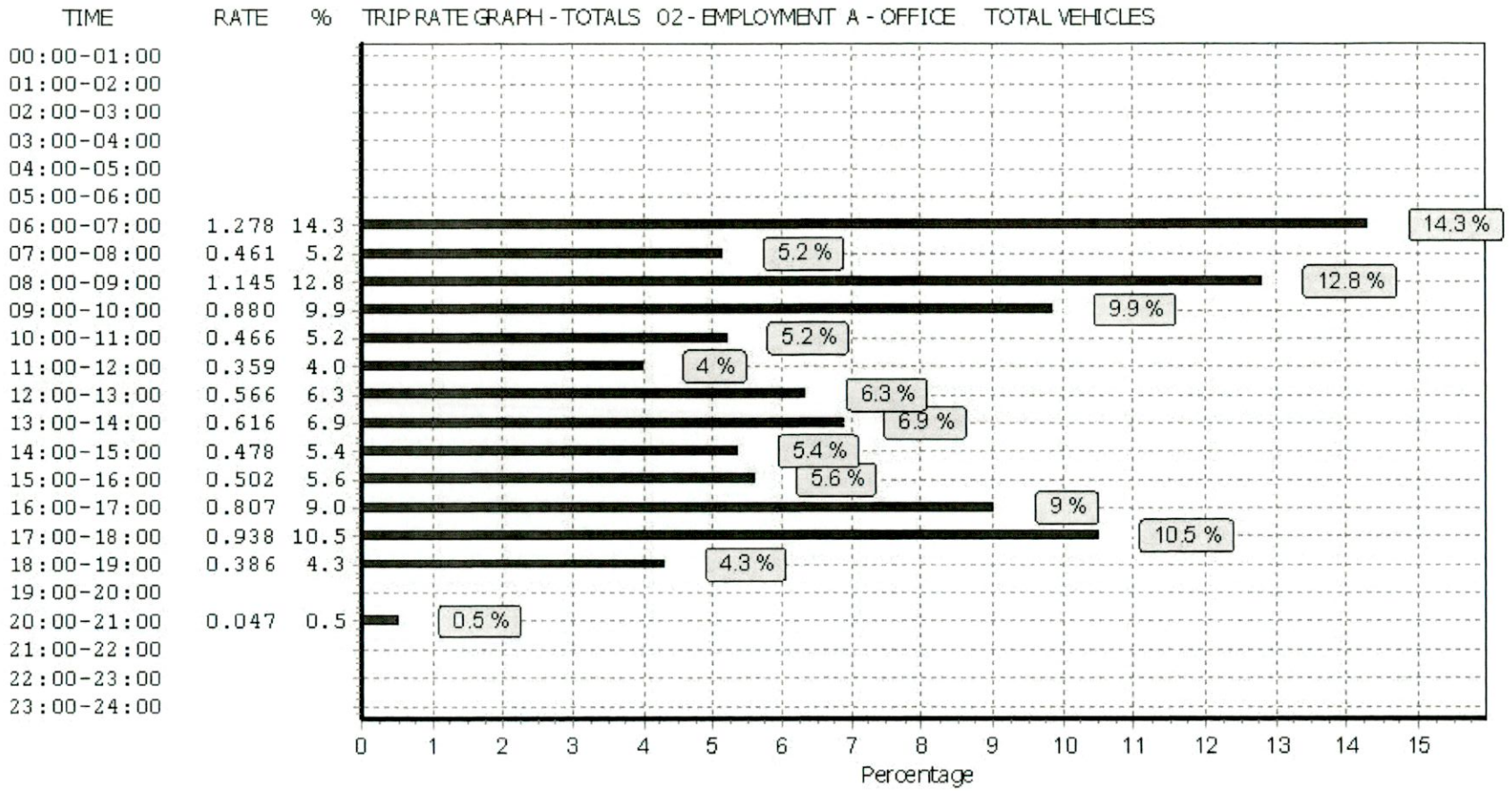
This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected 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.



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.



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.

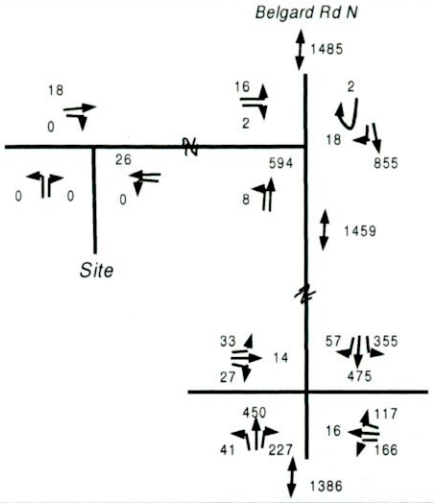


This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through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

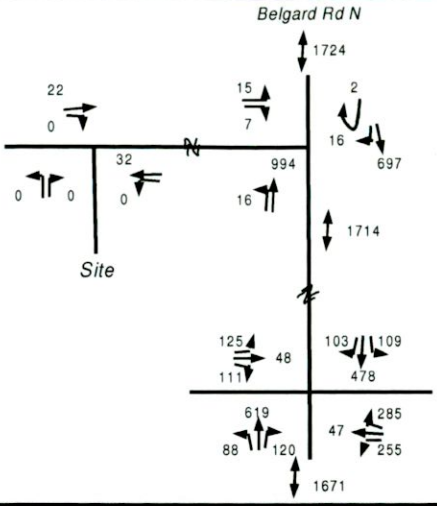
NRB consulting engineers

APPENDIX D

Traffic Calculations, Trip Distribution, Network Traffic Flow Diagrams & Projections Based on Traffic Surveys/TRICS



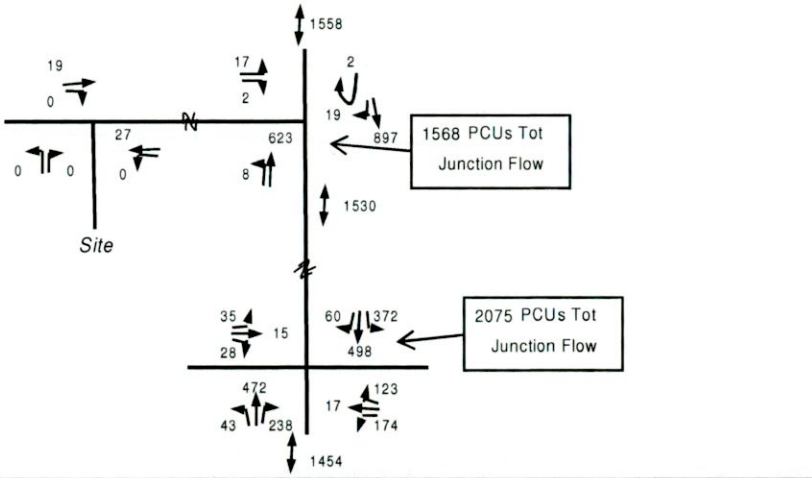
AM PEAK HR 8-9am



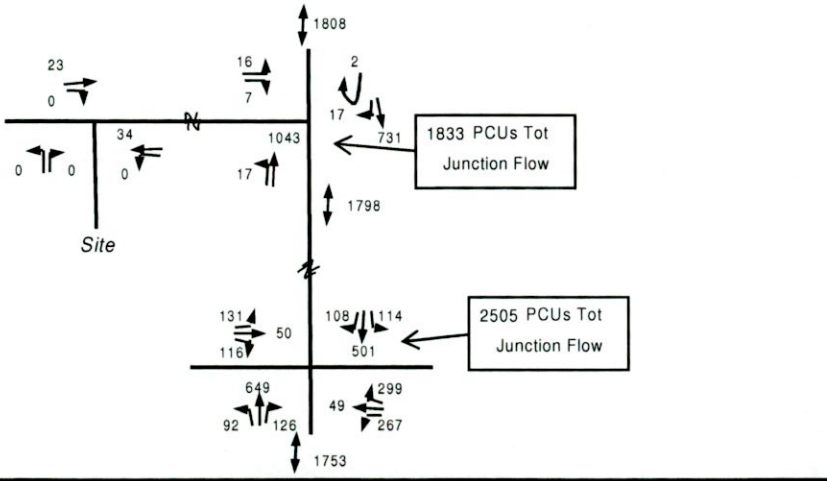
PM PEAK HR 5-6pm

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 Demand Projections 2021, Table 6.1: Central Growth Rates: Annual Growth Factors Dublin)	(Travel	2021 to 2024 = 1.049 2024 to 2039 = 1.152

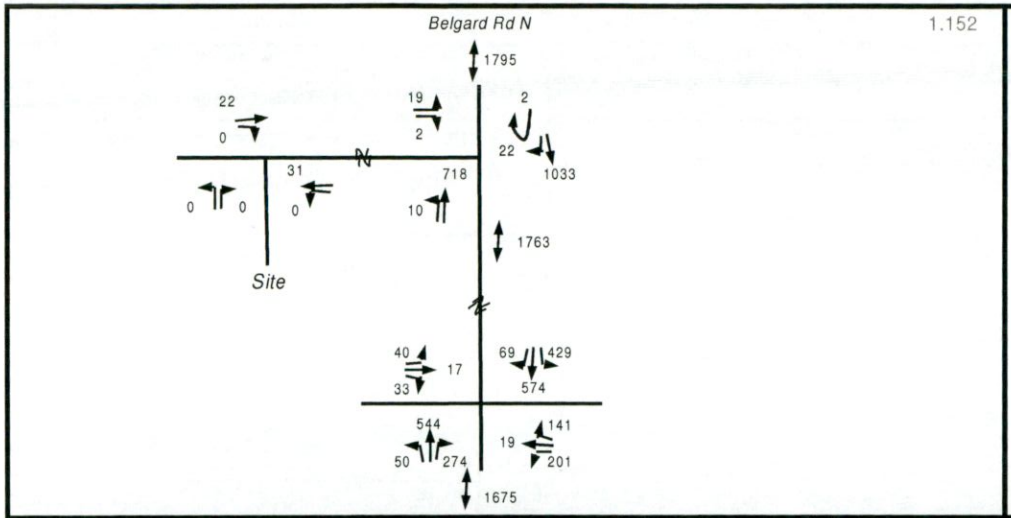


AM PEAK HR 8-9am

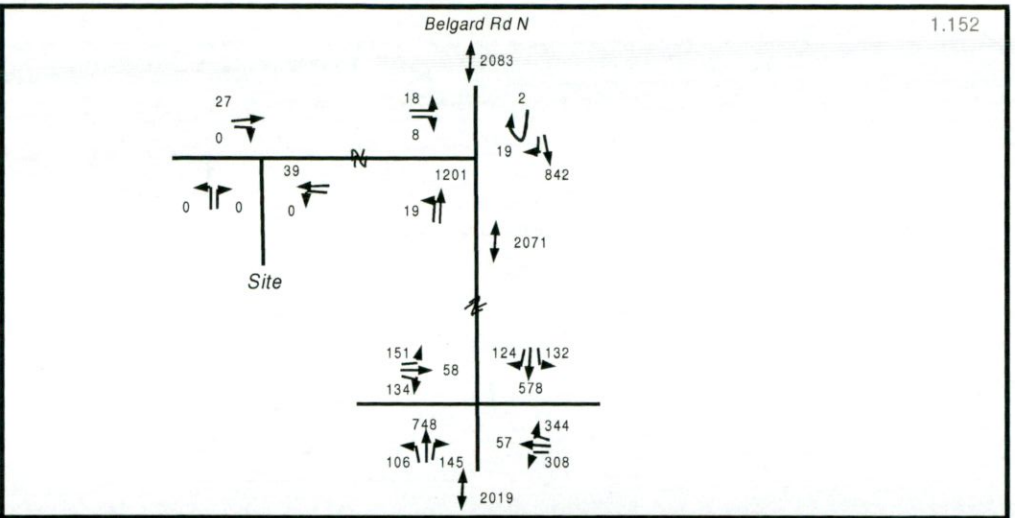


PM PEAK HR 5-6pm

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

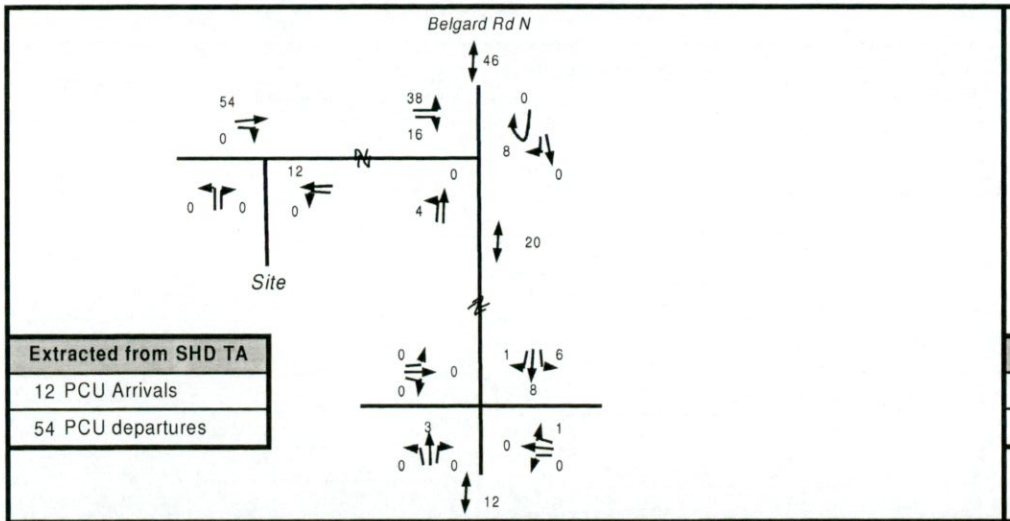


AM PEAK HR 8-9am



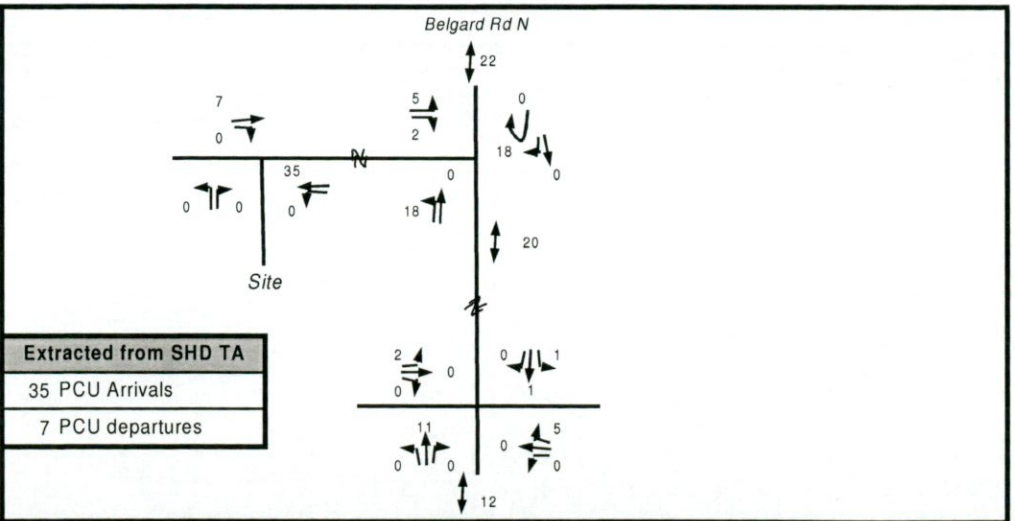
PM PEAK HR 5-6pm

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



Extracted from SHD TA
12 PCU Arrivals
54 PCU departures

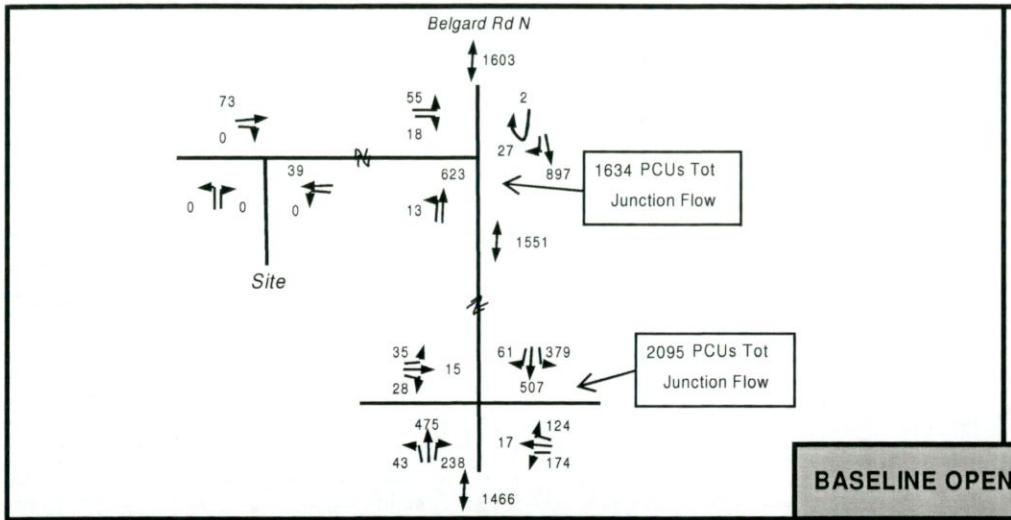
AM PEAK HR 8-9am

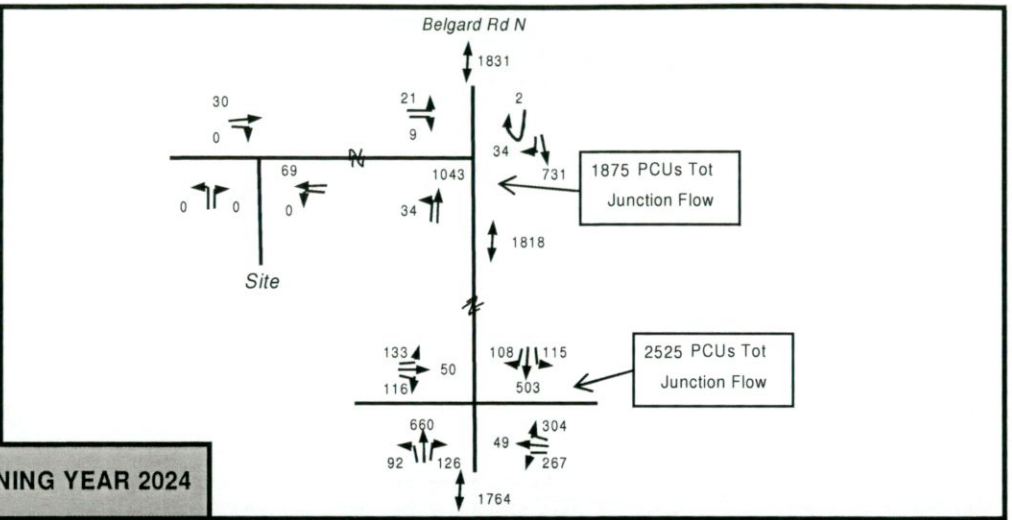


Extracted from SHD TA
35 PCU Arrivals
7 PCU departures

PM PEAK HR 5-6pm

ASSIGNMENT OF COMMITTED ADJACENT SHD TRAFFIC *(AS EXTRACTED FROM TRANSPORTATION ASSESSMENT ON PROJECT FILE)*

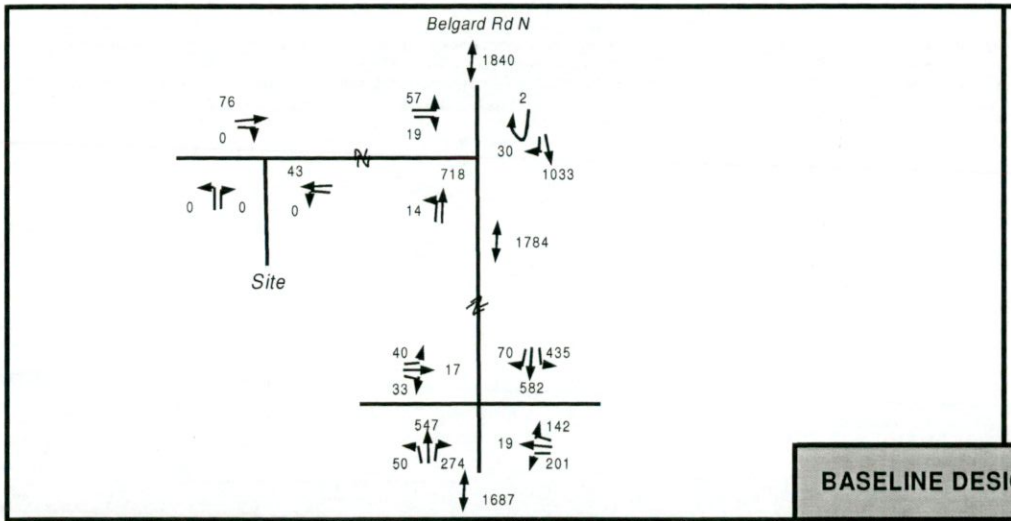


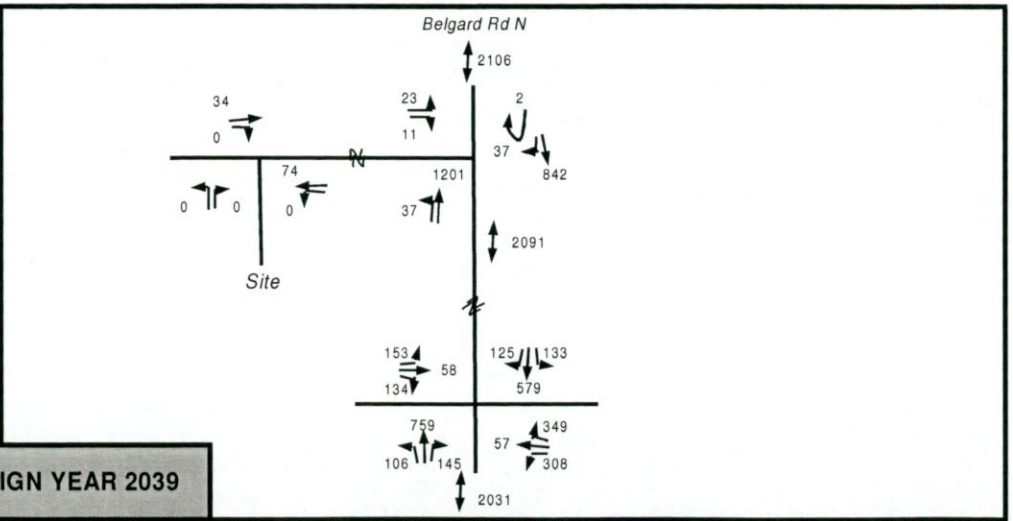


BASELINE OPENING YEAR 2024

AM PEAK HR 8-9am | **PM PEAK HR 5-6pm**

BASELINE Opening Year 2024 Weekday Pk Hour Traffic Volumes - WITHOUT SUBJECT DEVELOPMENT, BUT WITH COMMITTED SHD DEVELOPMENT.



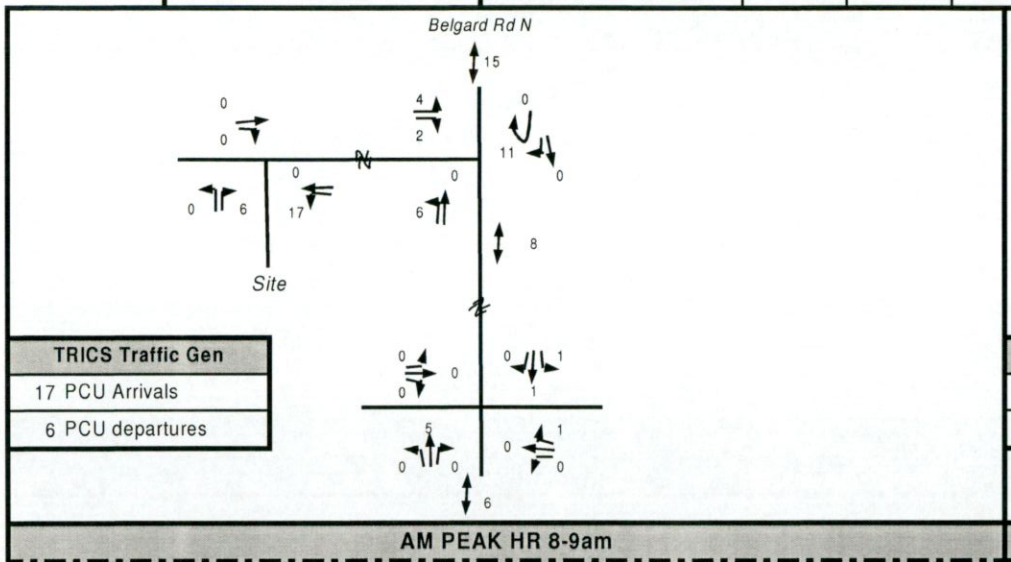


BASELINE DESIGN YEAR 2039

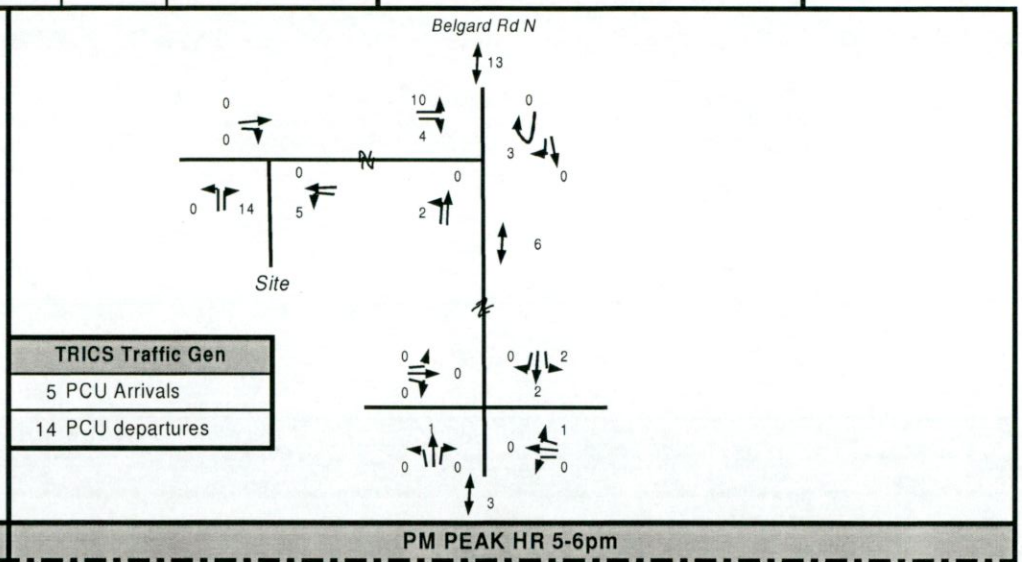
AM PEAK HR 8-9am | **PM PEAK HR 5-6pm**

BASELINE Associated Design Year 2039 Weekday Pk Hour Traffic Volumes - WITHOUT SUBJECT DEVELOPMENT, BUT WITH COMMITTED SHD DEVELOPMENT.

TRICS TRAFFIC GEN CALCS (Refer Appendix C)	1420 m2 Medical	Arrivals (PCUs)		Departures (PCUs)		Total 2-Way Vehicular Traffic Generated	"Medical Facility" or "Ambulance Base" Assessed
	Network Hour	100m2	Dev	100m2	Dev		
	Weekday AM Peak Hr 8-9	1.223	17	0.392	6	23	
	Weekday PM Peak Hr 5-6	0.387	5	0.995	14	19	

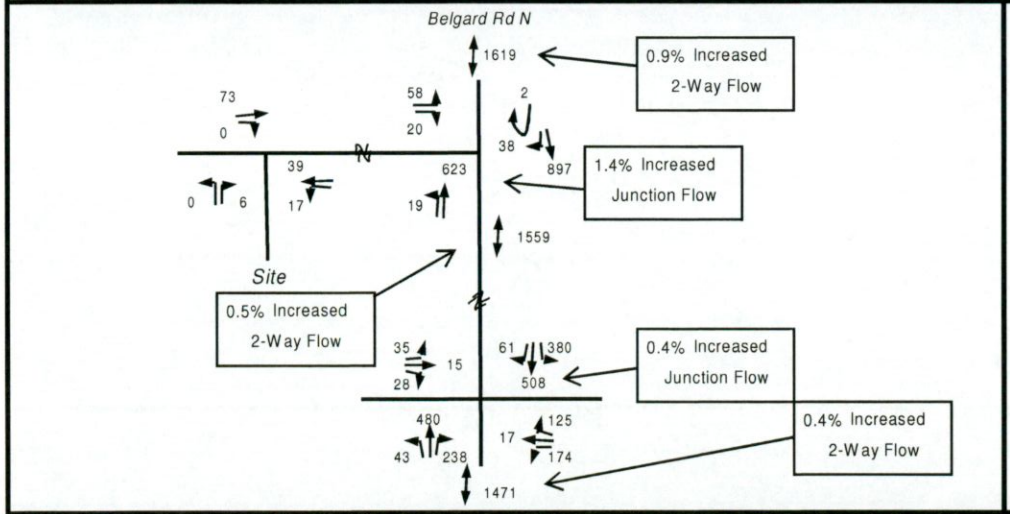


AM PEAK HR 8-9am

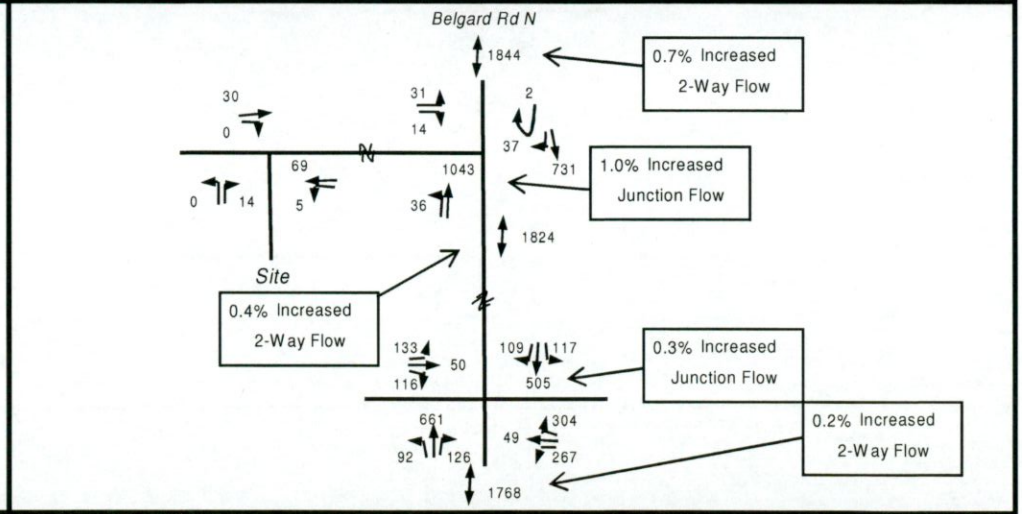


PM PEAK HR 5-6pm

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

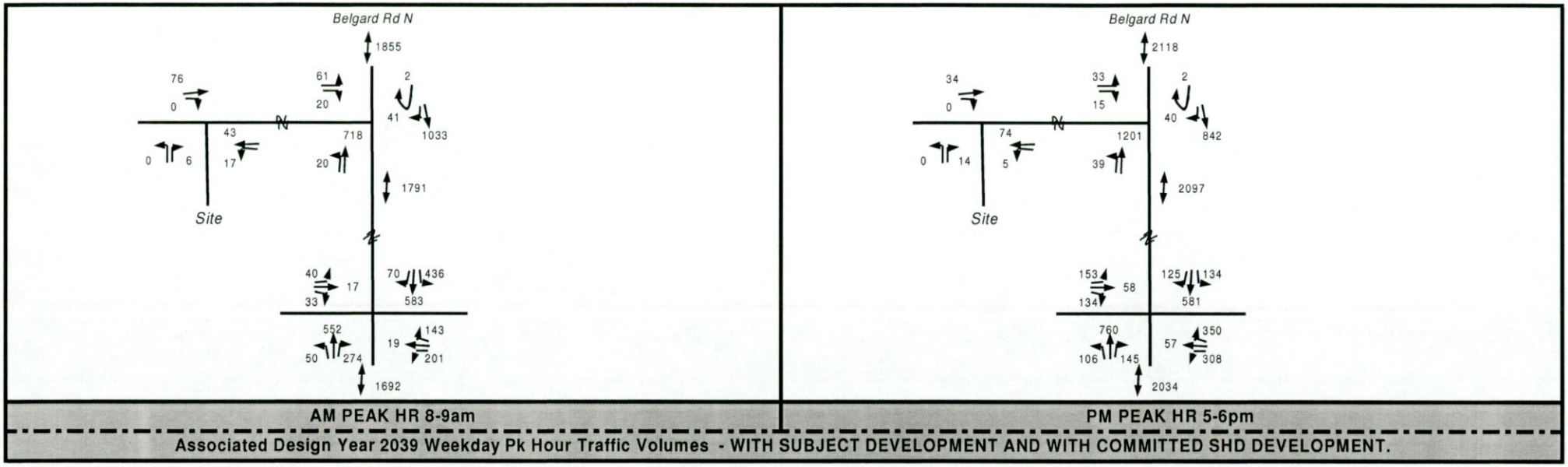


AM PEAK HR 8-9am



PM PEAK HR 5-6pm

PROJECTED Opening Year 2024 Weekday Pk Hour Traffic Volumes - WITH SUBJECT DEVELOPMENT AND WITH COMMITTED SHD DEVELOPMENT.


Belgard Rd N
1855
76
0
61
20
2
41
1033
43
17
718
20
0
6
Site
1791
40
33
17
70
583
436
552
50
274
19
143
201
1692
AM PEAK HR 8-9am
Belgard Rd N
2118
34
0
33
15
2
40
842
74
5
1201
39
0
14
Site
2097
153
134
58
125
581
134
760
106
145
57
350
308
2034
PM PEAK HR 5-6pm
Associated Design Year 2039 Weekday Pk Hour Traffic Volumes - WITH SUBJECT DEVELOPMENT AND WITH COMMITTED SHD DEVELOPMENT.

NRB consulting engineers

APPENDIX E

Junction9 PiCADY Output
(Internal Site Access to Ambulance Base)

Capacity Assessment With Subject & SHD Developments Open and Occupied
Priority Controlled Junction

Modelled Scenario	Period Mean Max Q (PCUs)	Period Max RFC
2024 Opening Year AM Peak Hr	<1	0.01
2024 Opening Year PM Peak Hr	<1	0.03
2039 Design Year AM Peak Hr	<1	0.1
2039 Design Year PM Peak Hr	<1	0.03

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. In fact the RFCs are barely registering in the model output, underlining the significant reserve capacity.

NB - Any Small Changes to Selected Opening Year 2024 or Design Year 2039, or indeed significantly higher traffic volumes experienced, as clearly deductable from the positive results presented, will clearly have no significant implications in terms of the conclusions of the Study.

The Excess Capacity in the Junction is such that the modelled RFCs are practically immeasurable.

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	Internal Amb Base Site Access	T-Junction	Two-way	0.33	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Site Rd East		Major
B	Amb Base Access		Minor
C	Site Rd West		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			100.0	✓	1.00

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

Minor Arm Geometry

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

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	519	0.094	0.239	0.150	0.341
1	B-C	655	0.100	0.254	-	-
1	C-B	632	0.245	0.245	-	-

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		✓	56	100.000
B		✓	6	100.000
C		✓	73	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	17	39
	B	6	0	0
	C	73	0	0

Vehicle Mix

HV %s

		To		
		A	B	C
From	A	0	2	2
	B	2	0	2
	C	2	2	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Q (PCU)	Max LOS
B-AC	0.01	7.53	0.0	A
C-AB	0.00	0.00	0.0	A
C-A				
A-B				
A-C				

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	5	502	0.009	4	0.0	7.379	A
C-AB	0	1243	0.000	0	0.0	0.000	A
C-A	55			55			
A-B	13			13			
A-C	29			29			

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	5	499	0.011	5	0.0	7.440	A
C-AB	0	1239	0.000	0	0.0	0.000	A
C-A	66			66			
A-B	15			15			
A-C	35			35			

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	7	494	0.013	7	0.0	7.526	A
C-AB	0	1234	0.000	0	0.0	0.000	A
C-A	80			80			
A-B	19			19			
A-C	43			43			

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	7	494	0.013	7	0.0	7.526	A
C-AB	0	1234	0.000	0	0.0	0.000	A
C-A	80			80			
A-B	19			19			
A-C	43			43			

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	5	499	0.011	5	0.0	7.440	A
C-AB	0	1239	0.000	0	0.0	0.000	A
C-A	66			66			
A-B	15			15			
A-C	35			35			

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	5	502	0.009	5	0.0	7.379	A
C-AB	0	1243	0.000	0	0.0	0.000	A
C-A	55			55			
A-B	13			13			
A-C	29			29			

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	Internal Amb Base Site Access	T-Junction	Two-way	0.91	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		✓	74	100.000
B		✓	14	100.000
C		✓	30	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	5	69
	B	14	0	0
	C	30	0	0

Vehicle Mix

HV %s

		To		
		A	B	C
From	A	0	2	2
	B	2	0	2
	C	2	2	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Q (PCU)	Max LOS
B-AC	0.03	7.66	0.0	A
C-AB	0.00	0.00	0.0	A
C-A				
A-B				
A-C				

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	11	502	0.021	10	0.0	7.465	A
C-AB	0	1236	0.000	0	0.0	0.000	A
C-A	23			23			
A-B	4			4			
A-C	52			52			

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	13	499	0.025	13	0.0	7.544	A
C-AB	0	1231	0.000	0	0.0	0.000	A
C-A	27			27			
A-B	4			4			
A-C	62			62			

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	15	495	0.031	15	0.0	7.657	A
C-AB	0	1224	0.000	0	0.0	0.000	A
C-A	33			33			
A-B	6			6			
A-C	76			76			

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	15	495	0.031	15	0.0	7.657	A
C-AB	0	1224	0.000	0	0.0	0.000	A
C-A	33			33			
A-B	6			6			
A-C	76			76			

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	13	499	0.025	13	0.0	7.548	A
C-AB	0	1231	0.000	0	0.0	0.000	A
C-A	27			27			
A-B	4			4			
A-C	62			62			

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	11	502	0.021	11	0.0	7.468	A
C-AB	0	1236	0.000	0	0.0	0.000	A
C-A	23			23			
A-B	4			4			
A-C	52			52			

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\2021\21-064 HSE National Ambulance Base\Calculations\Site Access Internal Junc
Report generation date: 13/10/2022 11:56:44

Summary of junction performance

	AM				PM			
	Q (PCU)	Delay (s)	RFC	LOS	Q (PCU)	Delay (s)	RFC	LOS
	2039							
Stream B-AC	0.0	7.55	0.01	A	0.0	7.69	0.03	A
Stream C-AB	0.0	0.00	0.00	A	0.0	0.00	0.00	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	13/10/2022
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	Internal Amb Base Site Access	T-Junction	Two-way	0.32	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Site Rd East		Major
B	Amb Base Access		Minor
C	Site Rd West		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			100.0	✓	1.00

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

Minor Arm Geometry

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

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	519	0.094	0.239	0.150	0.341
1	B-C	655	0.100	0.254	-	-
1	C-B	632	0.245	0.245	-	-

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		✓	60	100.000
B		✓	6	100.000
C		✓	76	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	17	43
	B	6	0	0
	C	76	0	0

Vehicle Mix

HV %s

		To		
		A	B	C
From	A	0	2	2
	B	2	0	2
	C	2	2	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Q (PCU)	Max LOS
B-AC	0.01	7.55	0.0	A
C-AB	0.00	0.00	0.0	A
C-A				
A-B				
A-C				

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	5	501	0.009	4	0.0	7.395	A
C-AB	0	1242	0.000	0	0.0	0.000	A
C-A	57			57			
A-B	13			13			
A-C	32			32			

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	5	498	0.011	5	0.0	7.459	A
C-AB	0	1237	0.000	0	0.0	0.000	A
C-A	68			68			
A-B	15			15			
A-C	39			39			

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	7	493	0.013	7	0.0	7.550	A
C-AB	0	1231	0.000	0	0.0	0.000	A
C-A	84			84			
A-B	19			19			
A-C	47			47			

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	7	493	0.013	7	0.0	7.550	A
C-AB	0	1231	0.000	0	0.0	0.000	A
C-A	84			84			
A-B	19			19			
A-C	47			47			

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	5	498	0.011	5	0.0	7.462	A
C-AB	0	1237	0.000	0	0.0	0.000	A
C-A	68			68			
A-B	15			15			
A-C	39			39			

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	5	501	0.009	5	0.0	7.395	A
C-AB	0	1242	0.000	0	0.0	0.000	A
C-A	57			57			
A-B	13			13			
A-C	32			32			

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	Internal Amb Base Site Access	T-Junction	Two-way	0.85	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		✓	79	100.000
B		✓	14	100.000
C		✓	34	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	5	74
	B	14	0	0
	C	34	0	0

Vehicle Mix

HV %s

		To		
		A	B	C
From	A	0	2	2
	B	2	0	2
	C	2	2	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Q (PCU)	Max LOS
B-AC	0.03	7.69	0.0	A
C-AB	0.00	0.00	0.0	A
C-A				
A-B				
A-C				

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	11	501	0.021	10	0.0	7.485	A
C-AB	0	1235	0.000	0	0.0	0.000	A
C-A	26			26			
A-B	4			4			
A-C	56			56			

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	13	498	0.025	13	0.0	7.569	A
C-AB	0	1229	0.000	0	0.0	0.000	A
C-A	31			31			
A-B	4			4			
A-C	67			67			

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	15	493	0.031	15	0.0	7.689	A
C-AB	0	1221	0.000	0	0.0	0.000	A
C-A	37			37			
A-B	6			6			
A-C	81			81			

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	15	493	0.031	15	0.0	7.689	A
C-AB	0	1221	0.000	0	0.0	0.000	A
C-A	37			37			
A-B	6			6			
A-C	81			81			

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	13	498	0.025	13	0.0	7.573	A
C-AB	0	1229	0.000	0	0.0	0.000	A
C-A	31			31			
A-B	4			4			
A-C	67			67			

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	11	501	0.021	11	0.0	7.489	A
C-AB	0	1235	0.000	0	0.0	0.000	A
C-A	26			26			
A-B	4			4			
A-C	56			56			

NRB consulting engineers

APPENDIX F

Preliminary Planning Stage
Mobility Management Plan/Travel Plan

consulting engineers

NRB

Workplace Travel Plan
(Mobility Management Plan)

Appendix F

For

Proposed HSE
Ambulance/Administration
Facility

At

Belgard Road, Tallaght,
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 a Travel Plan in support of a proposed Ambulance Facility development on the site at Belgard Rd, Tallaght, Dublin 24. This report explains the applicant's commitment to the promotion of more sustainable and cost-effective travel habits among the end occupiers/staff of the scheme. In this case, sustainable travel is supported by restricted provision of car parking for the development and generous cycle parking provision.

1.2 Of course, it should be recognised that, until staff are actually in place, an MMP prepared at Planning Stage can only outline the current & proposed alternative transport services and set out strategies that will be deployed to encourage future staff to use these alternative modes of travel. In this regard an MMP can only be considered as a preliminary document.

What is a Travel Plan?

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

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

Aims and Objectives of this Travel Plan

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

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

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

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

Methodology

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

- 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).

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

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

2.0 ACCESS TO THE SITE - BY MODE

2.1 The site is within close proximity to high quality alternative modes of transport, with secure off street parking areas for bicycles and a restricted number of private cars proposed.

2.2 For staff, it is essential for the successful Travel Planning to concentrate on journeys associated with work and school commuting patterns. These are the groups which can most practically be encouraged to use modes of transport other than the car. It should be noted that, being located immediately beside Tallaght Town Centre, this contributes to sustainable living, with shopping, ancillary employment opportunities, retail and leisure all located within reasonable proximity. The measures and initiatives below are relevant and assist in addressing the transportation demands of the proposed scheme.

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 some cycle lanes/facilities. These are ever improving, and of course the GDA cycle network will be rolled out as the nature of the environment changes. 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 This is as illustrated in ***Figure 2.1*** below.

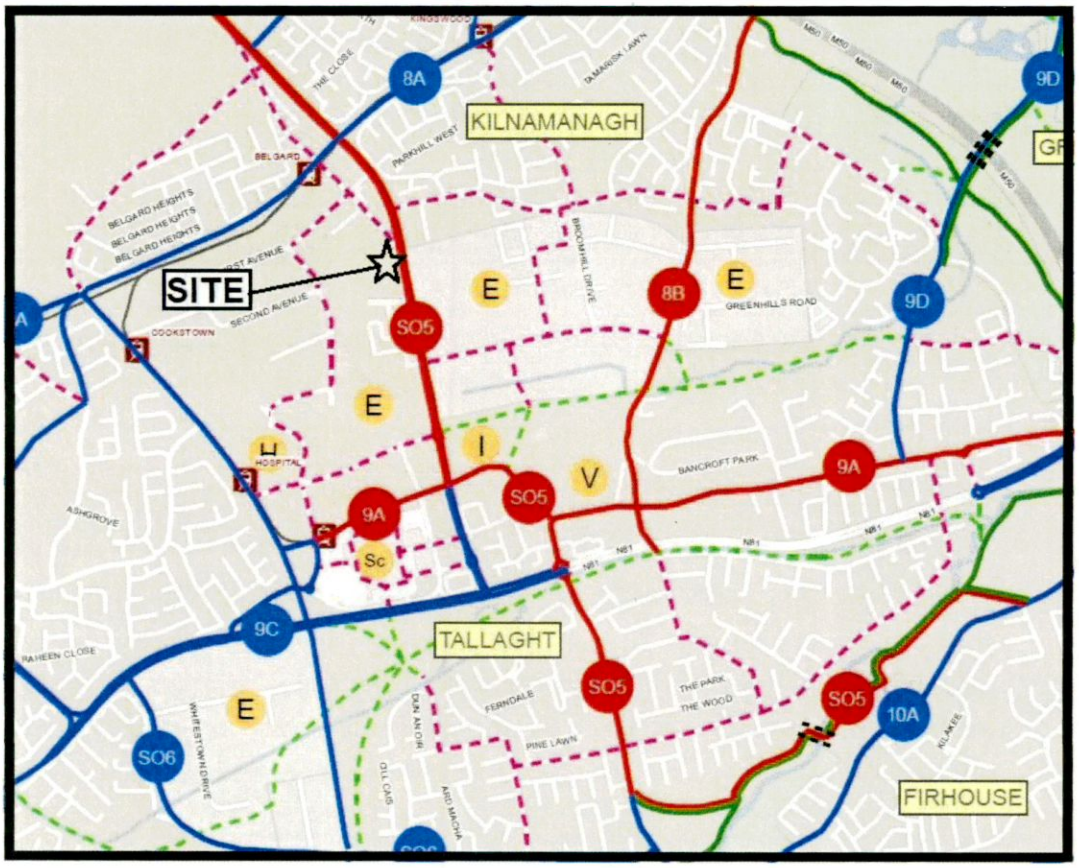


Figure 2.1 – NTA's GDA Cycle Network, Showing Site

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

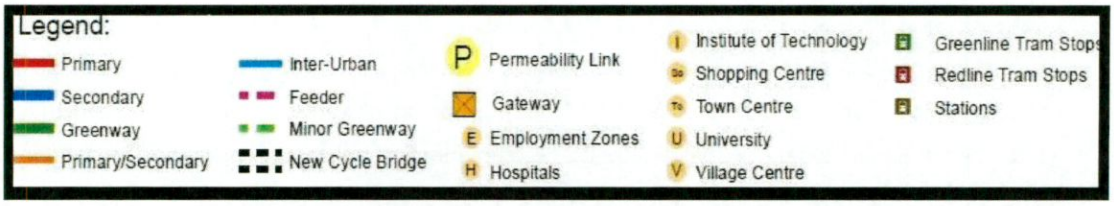


Figure 2.2 – Legend for NTA's GDA Cycle Network

2.5 The site is therefore ideally placed to take advantage of the Primary Route serving Belgard Road past the site.

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.

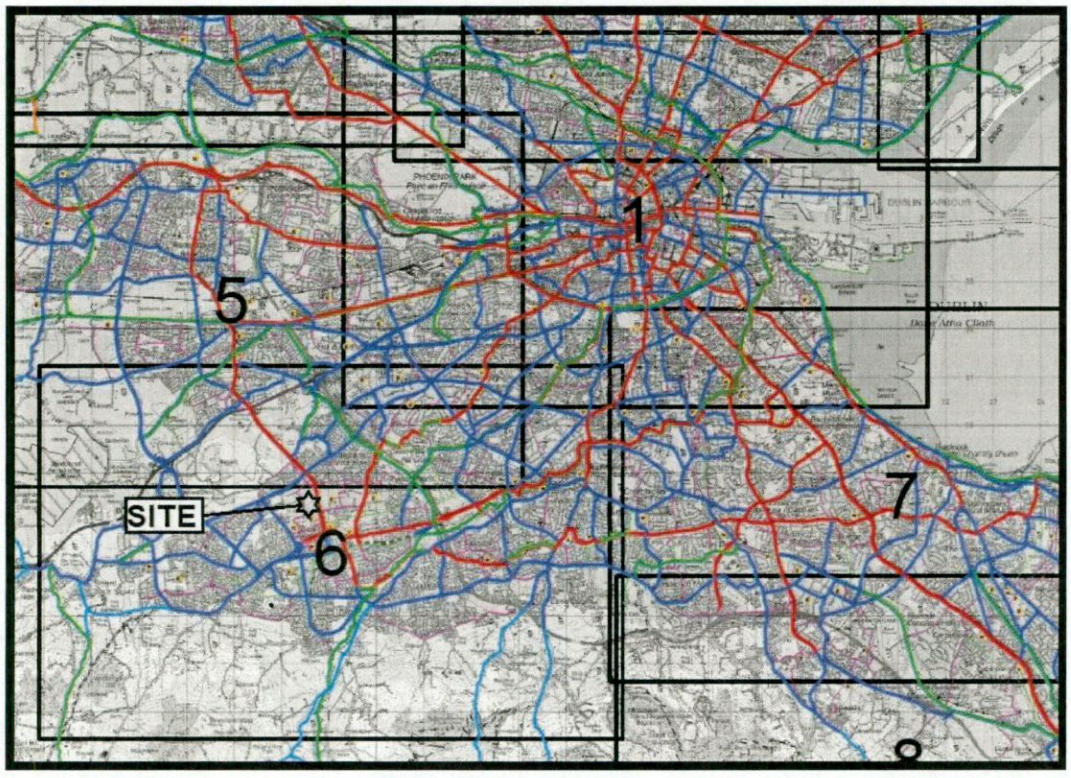


Figure 2.3 – Overall GDA Cycle Network Plan, Showing Site Location

2.7 The key to cycle accessibility is convenient safe links, with secure and carefully sited cycle parking. Cycling is ideal for shorter journeys.

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 accessibility 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 residential, employment, retail, and schools within sustainable travel distance of the site, as ***Figure 2.4*** and ***Figure 2.5***. In these terms, staff within this catchment would not have a requirement to own a car, supporting sustainable living.

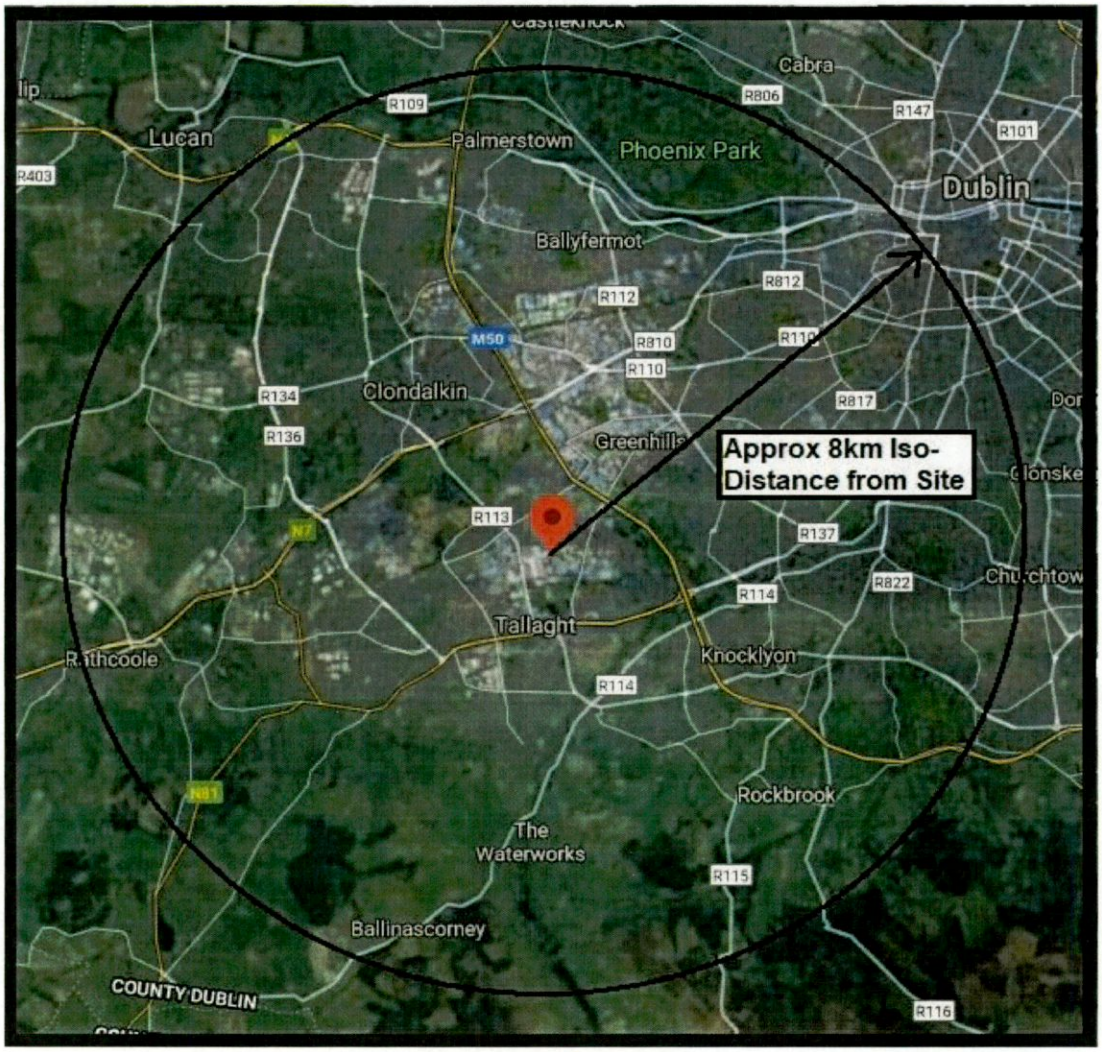


Figure 2.4 – 8km Radius Iso-Distance of the Subject Site (Cycle)

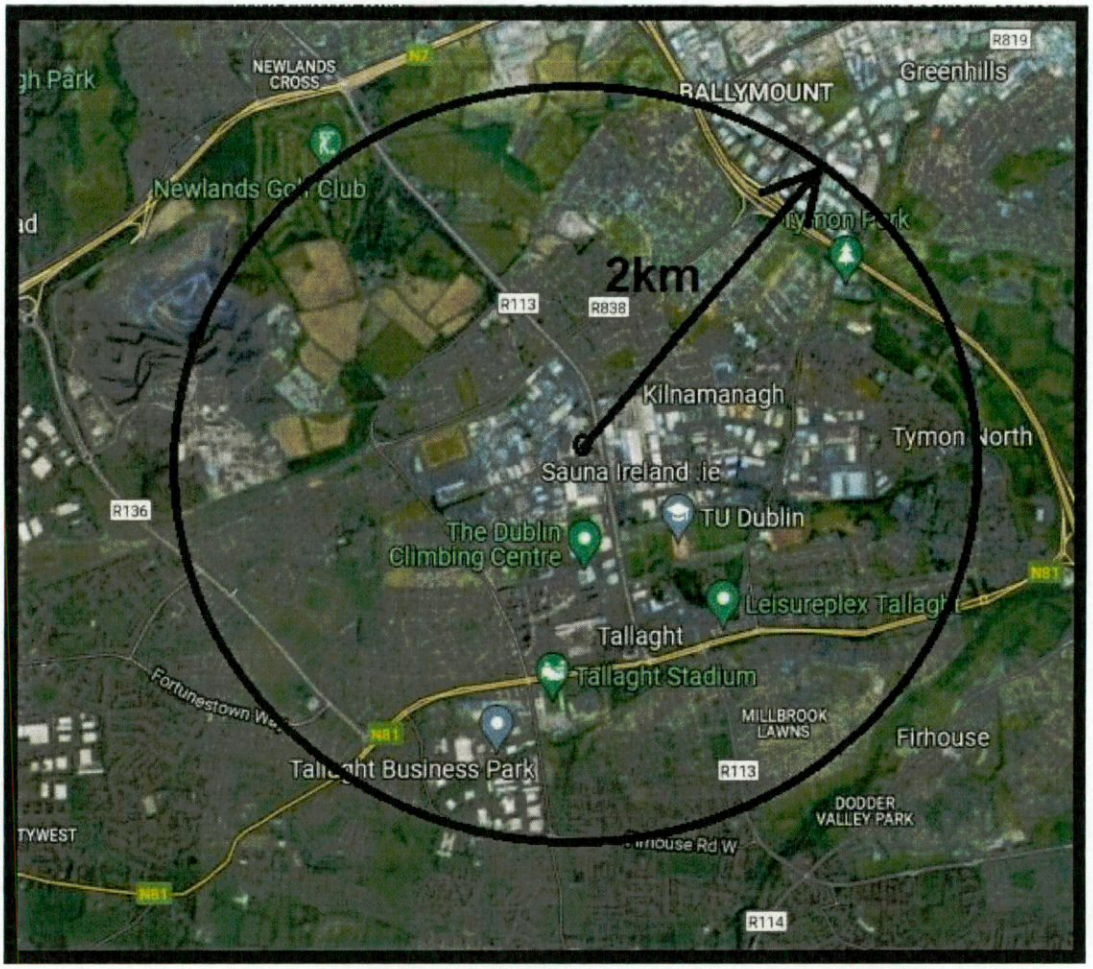


Figure 2.5 – 2km Radius Iso-Distance of the Subject Site (Walk)

2.10 The proposed site clearly can support sustainable living in terms of cycle and walking accessibility 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 Given the clear accessibility of the location as demonstrated above, it is anticipated that a significant number of staff can be encouraged to cycle to work and school etc. with the safe links and secure parking which are in place.

2.13 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.

BUS ACCESSIBILITY

2.14 The development is well placed to take advantage of the existing and future Dublin Bus 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.

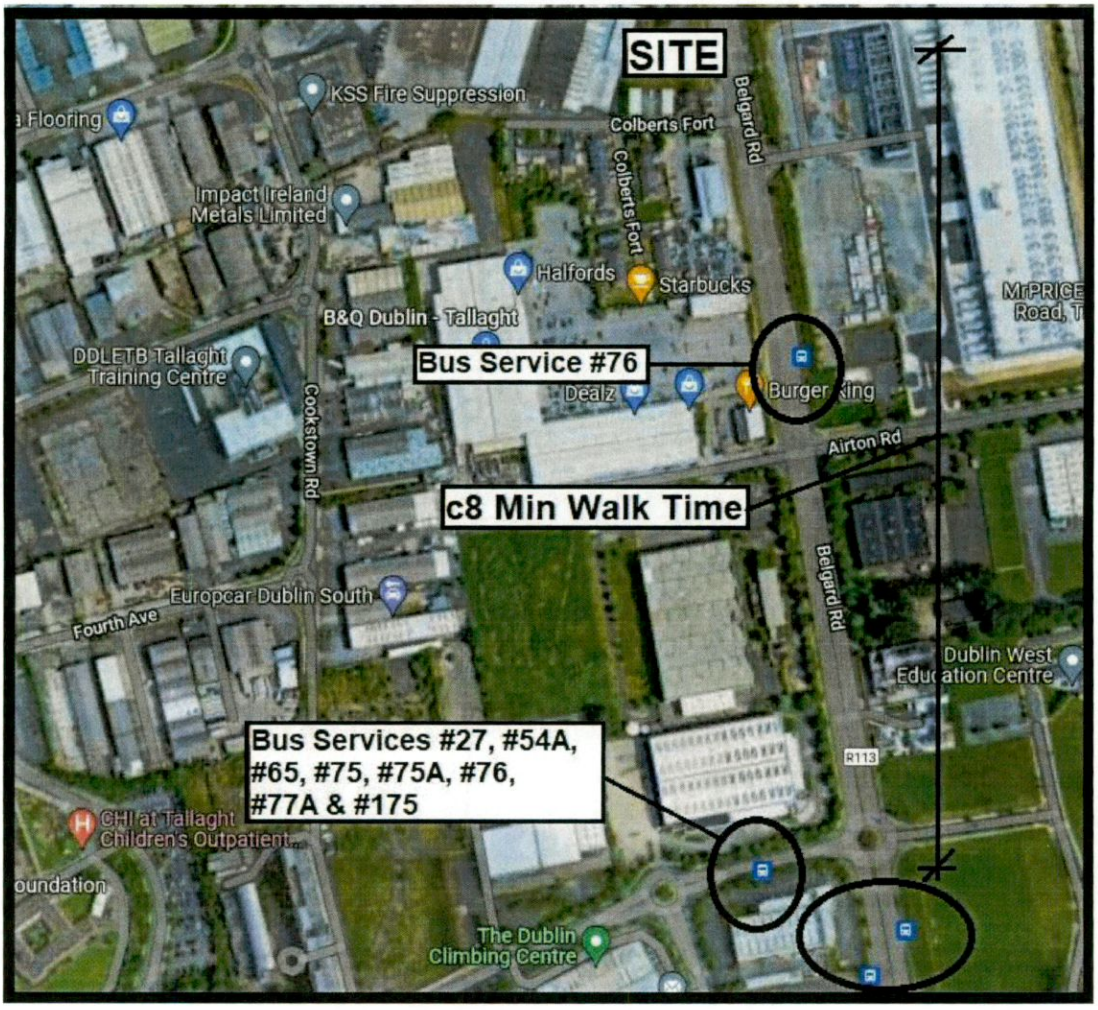


Figure 2.6 – Existing Local Bus Services

2.15 In addition to the stops adjacent the site on Belgard 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.

2.16 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.

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

2.17 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.

2.18 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.***

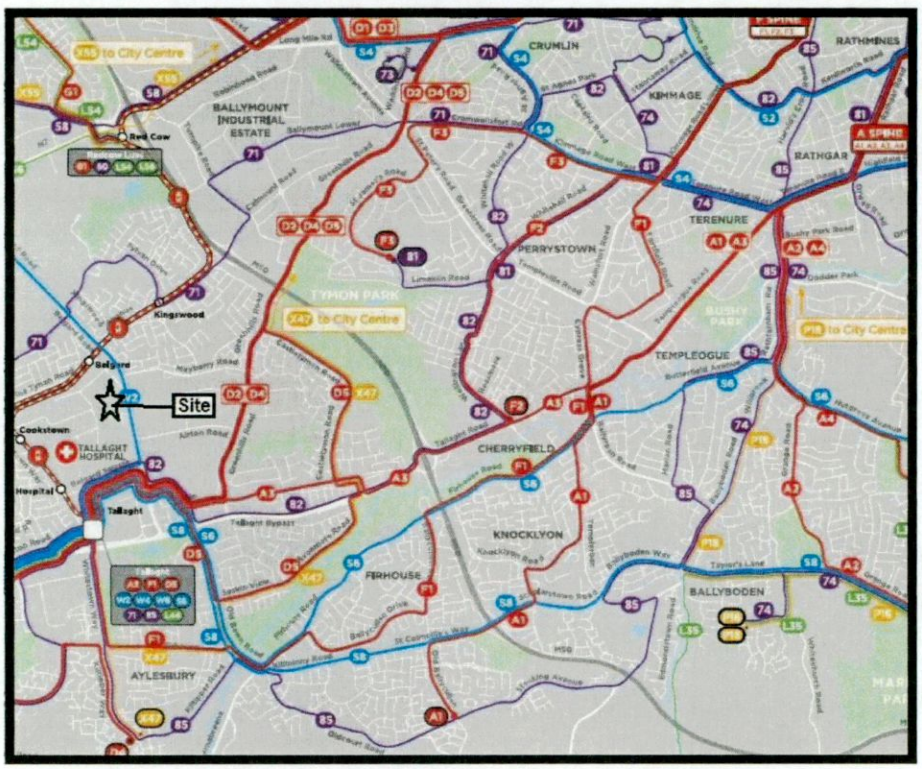


Figure 2.8 – NTA GDA New Dublin Area Network - Bus Services

2.19 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.

LUAS

2.20 The LUAS Red Line stops (Cookstown & Belgard) are immediately beside the site and high-quality established pedestrian links are in place. 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.

2.21 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.

2.22 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*** illustrating a 6min walk from the site to Belgard LUAS Stop.

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

MAINLINE BUS AND RAIL

2.23 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.

2.24 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 proposed development is highly sustainable in terms of public transport accessibility. The proximity of the development to existing public transport services means that end staff will 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

2.25 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.

WALKING

2.26 The permeability locally for walking by staff is addressed above – and of course, being within close proximity to the major shopping and employment district of Tallaght and Ballymount (amongst others), this means that a very significant number of residential houses/apartments Schools, Services, Employment Destinations and Offices are within an easy and acceptable walk-commute of the site.

2.27 The site is also within the heart of the Tallaght Community and is therefore within the catchment for local Primary and Secondary Schools.

2.28 In these terms we believe that walking will represent the most popular mode of travel for staff within the 2km catchment of the Facility.

STAFF COMMUNICATION

2.29 Once operational, the Management will issue MMP Info-packs to all staff. These packs include details of the development and how it is run, advice on access options, public transport information, useful local information and the restricted availability of on-site parking and can contain useful information such as bicycle user group details. The preparation of this information ensures staff are familiar with the options from commencement.

2.30 In terms of number of transport alternatives easily available to staff, it is considered that the proposed development is very highly sustainable in terms of public and alternative transport accessibility. The proximity of the development to existing public transport services means that all

staff will have viable alternatives to the private car for accessing the site and will not be reliant upon the car as a primary mode of travel.

2.31 Direct and high-quality pedestrian linkages are provided between the site and the existing pedestrian facilities on the surrounding road network. The entrances to the site will be well lit, so that people can feel secure in using the facilities and can also be monitored by CCTV.

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

2.33 Working Staff are generally now offered the opportunity to purchase public transport commuter tickets under the current 'Employer Pass' and 'TaxSaver' programmes, by individual Employers. Under these schemes the employer applies to Iarnród Éireann / Bus Éireann for tax free public transport tickets for their employees as an incentive for them to use public transport to travel to work.

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

3.0 COLLECTION OF BASELINE INFORMATION

Possible Travel Pattern Questionnaires

3.1 Once operational and staffed, and when the Travel Plan Coordinator is appointed, staff will be encouraged to regularly monitor the Travel Plan initiatives in order to maximise on their success.

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

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

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

4.0 THE TRAVEL PLAN

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

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

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

Table 4.1 – Key Information: Walking

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

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

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