consulting engineers

NRB

Transportation Assessment Report

Including

Preliminary Travel Plan

(Appendix F)

Independent Stage 1

Road Safety Audit

(Appendix G)

Bus/Dart Capacity & Demand Report

(Appendix H)

Parking Management/Strategy Report

(Appendix I)

for

Proposed Apartment Development

At

Castle Street,

Bray, Co Wicklow.

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

Appendices.....

EXECUTIVE SUMMARY

NRB Consulting Engineers Ltd were appointed to address the Traffic & Transportation issues associated with a planning application for a Residential Development, with ancillary commercial elements and a creche, on a site at Castle Street, Bray, Co Wicklow.

The proposed development consists of a 139 unit apartment scheme, including a supporting Creche and small street fronting commercial units, with secure off-street parking areas for bicycles & a reduced number of private cars (along with landscaping, bins storage and all associated site works). The site is located in the heart of Bray, representing sustainable living.

In terms of vehicular access, the site is to be accessed by way of an improved simple priority T-Junction access from Castle Street, as a direct replacement for the existing long established site access. An under-croft area is provided containing car parking, with a raised podium slab above. This area incorporates both residential car & bicycle storage parking and also includes refuse storage/management areas. The parking quantum provided is further considered within this Report.

Being located within Bray, with bus stops adjacent the site on Castle Street, with high quality pedestrian & cyclist provision, and being within a c.12 minute walk of Bray DART Station, the site is well placed to take advantage of non-car modes of travel. The non-car alternative modes of travel are further explored in the Preliminary Mobility Management Plan enclosed herein as ***Appendix F*** and the Bus/DART Capacity & Demand Report as ***Appendix H.***

This Transportation Assessment Report (TA) has been prepared to address the Traffic and Transportation issues associated with the proposal, the capacity of the existing road network and the impact of the increased scale of development locally, conscious that the site use will generate very low traffic volumes indeed, and particularly in the context of the busy road network in the area and the former uses on the site.

The Report has been prepared in accordance with TII's Traffic & Transportation Assessment Guidelines and addresses the worst case traffic impact of the proposal.

Comprehensive classified turning movement surveys of the existing affected roads and junctions were carried out during the weekday AM and PM Peak Hours in preparation for the studies. These surveys, undertaken in the normal school term outside any Covid 19 Pandemic lockdown, formed the basis of the study.

The analysis includes the effects of the existing traffic on the local roads and assesses the impact during the traditional peak commuter peaks periods in accordance with Traffic & Transportation Assessment Guidelines.

The Transportation Assessment confirms that the road network and the proposed vehicular access junction arrangement is more than adequate to accommodate the worst case traffic associated with the facility. The assessment also confirms that the construction and full occupation of the scheme will have a negligible and unnoticeable impact upon the operation of the adjacent road network.

Detailed analysis also confirms that there is adequate capacity in the proposed access junction to accommodate the low levels of traffic associated with the development of the site.

The assessment includes a Preliminary Travel Plan (MMP or Travel Plan) for the site which is included as ***Appendix F***. An independent Stage 1 Road Safety Audit, together with the Designer Feedback form has been undertaken and is included As ***Appendix G***. An assessment of additional Capacity & Demand for Bus/DART services due to the proposed development has also been undertaken and is included as ***Appendix H***.

Based on our studies, we believe that there are no adverse traffic/transportation capacity or operational issues associated with the construction and occupation of the proposed development that would prevent planning permission being granted by An Bord Pleanála.

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 proposed 139 Unit Apartment development, plus an ancillary Créche and small street-fronting commercial units on the town centre site at Castle Street, Bray, Co Wicklow.

1.2 The local area is already a long-established destination, containing a mixture of commercial, schools & residential development and in these terms, being in the heart of the Town Centre, the area has very well established traffic generation characteristics in its own right. The proposed development, being on a prominent & highly accessible site should be considered in this context. A site location plan for the site is included below as ***Figure 1.1***.

Figure 1.1 - Site Location

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

- Relative Small Scale of the development in the context of the busy road network an former uses on the site (Reflected in the very Low Traffic Generation of the Development itself),

- Location of the development within Bray, with bus stops adjacent the site on Castle Street, high quality pedestrian and cyclist provision, and being within a c.12 minute walk of Bray DART Station,
- Traffic & Transportation impact,
- Capacity of the proposed vehicular access arrangement to accommodate the worst-case development traffic flows,
- Pedestrian and cyclist permeability & promotion,
- Capacity of the Existing Road Network,
- Adequacy and safety of the existing roads and junctions locally, within the area of influence.
- Impact upon the adjacent affected junctions locally on Castle Steet/Dublin Road.

1.4 A review of the Road Safety Authority (RSA) online collision database indicates that there are no concerning accidents on the affected stretches of road network surrounding the site. There were 2 pedestrian accidents recorded a short distance away east of the site, however these are not considered relevant to the location and design of the proposed access. An extract from the RSA on-line collisions record is included below as ***Figure 1.2***.

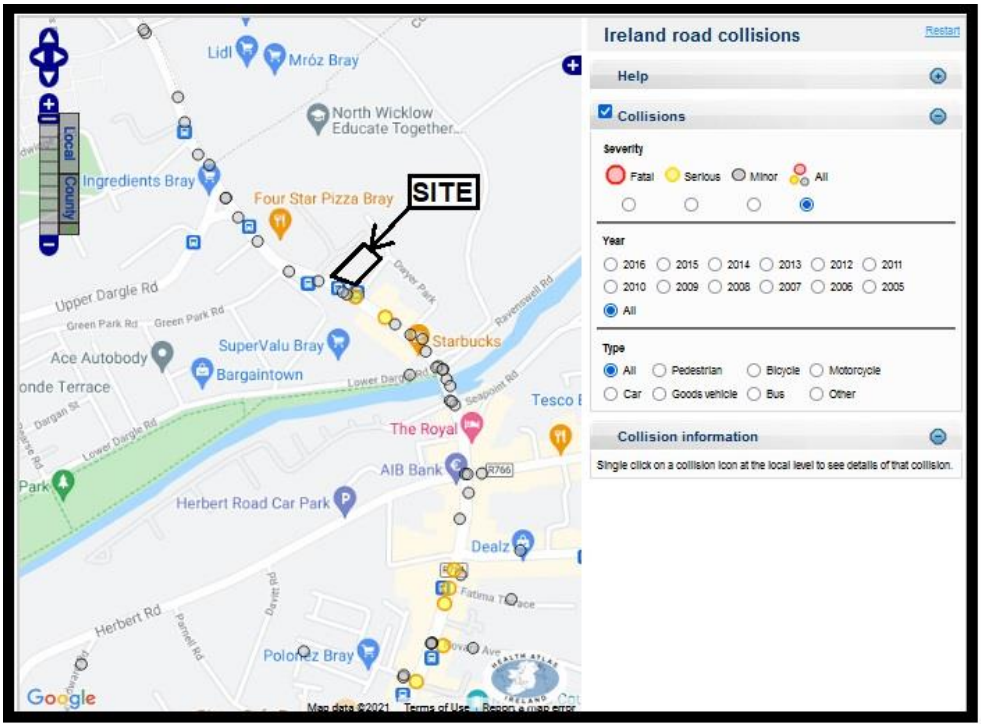


Figure 1.2 - Extract from RSA On-Line Record of Traffic Collisions

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

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

1.6 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.

1.7 The assessment includes a Preliminary Travel Plan (MMP or Travel Plan) for the site which is included as ***Appendix F***. An independent Stage 1 Road Safety Audit, together with the Designer Feedback form has been undertaken and is included As ***Appendix G***. An assessment of additional Capacity & Demand for Bus/DART services due to the proposed development has also been undertaken and is included as ***Appendix H***. A Parking Management/Strategy Report is included as ***Appendix I*****.**

2.0 EXISTING CONDITIONS & DEVELOPMENT PROPOSALS

2.1 The development consists of a total of 139 apartments, a mix of units in a total of 2 blocks over podium slab, with an under-croft area together with a supporting ancillary crèche & small commercial units at ground level fronting onto Castle Street. This ancillary crèche use and the and small street fronting commercial units are not expected to generate any significant traffic movements their own right but for robustness the Creche has been considered as a traffic-generating element.

2.2 The site itself was in previous recent use as a commercial business, and in this regard it generated significant traffic movements to/from Castle Street in its own right. In these terms, the proposed use as a sustainable-living residential apartment development over commercial elements is considered to represent lower traffic generation characteristics than the established previous site usage.

2.3 Visitor car and bicycle parking is to be provided at ground level, with residential bicycle storage within the under-croft, visitor bicycle parking at surface level, with a reduced number of private car parking spaces along with bins storage and all associated site works. A total of 59 car parking spaces are provided for the development including mobility impaired spaces. Provision is made to allow the provision of car sharing (*GoCar*) spaces if required. A total of 330 Bicycle Parking Spaces are provided, with 260 for residents and 70 visitor bicycle parking spaces.

2.4 The site is bound to the north-east and east by Dwyer Park, a long established residential estate. It is bound to the north-west and west by established town centre commercial premises. The site is immediately bound to the south by Castle Street (classified as a Regional Road R761), which is a main arterial route linking the Town Centre with Dublin Road.

2.5 Castle Street is a wide single carriageway road, served with footpaths along both sides, and with continuous formal wide cycleways in either direction. Castle Street is urban in nature and is subject to an urban 50kph speed restriction adjacent the site. It carries a weekday AM Peak Hour 2-way flow of approximately 1,369 PCUs and a weekday PM Peak Hour 2-Way flow of approximately 1,364 PCUs, and in these terms, it can be considered as quite heavily trafficked – which is to be expected given the location and context.

2.6 To set these flows in context, a road of the nature of Castle Street has a theoretical free flow link capacity of approximately 1,000-1,200 PCUs per-direction per-hour. In this regard, as it has a capacity of between 2,000 and 2,400 PCUs, and whilst it carries less traffic, it can nonetheless be considered as heavily trafficked. It is accepted that the capacity of a road of this nature is generally limited by the capacity of road junctions along its length, particularly in urban areas, and traffic flow along Castle Street is affected by turning movements & town centre activity in a busy area such as Bray.

2.7 Castle Street runs generally in an N-S orientation, linking Bray Town Centre with Dublin Road and the M11 at Junction #5. The M11 is approximately 1km distance to the north of the subject site.

2.8 The approach to the M11 junction, at the intersection of the R119 and R761 takes the form of a large inscribed circle diameter at-grade roundabout, and this junction serves as the primary gateway entry to Bray. Beyond this junction, it is accepted that Bray experiences periodic traffic congestion or delay issues, consistent with the majority of such successful vibrant town centres.

2.9 A site layout plan showing the development arrangement in relation to the existing site and roads is included herein as ***Appendix A*** along with further details of the development access replacing the long established site access. It should be remembered that DMURS promotes the creation of junctions in urban environments as a natural traffic calming feature.

2.10 It is anticipated that, consistent with similar residential apartment schemes, the development will be serviced using traditional weekly refuse lorries as required, collecting the normal refuse types from the wheeled bin staging areas. An Operational Waste Management Plan will be included as part of the planning application.

2.11 For the individual residential servicing, and for the ground floor small commercial elements, it is expected that they will require small transit vans or small-wheelbase trucks for infrequent servicing of the individual units. These vehicles do not have onerous swept-paths and can easily be facilitated on site, within the under-croft area if required.

2.12 The small scale of the subject development in terms of traffic generated is confirmed through the very robust assessment of Traffic Generated, which is addressed further within Section 3 of this Report.

Car Parking & Accessibility

2.13 The proposed development consists of a residential apartment scheme with ancillary supporting facilities, supported by basement car parking, combined with dedicated secure bicycle parking areas for residents and visitors. (Refer to Architects Drawings illustrating same and the annotated site layout drawing included herein as ***Appendix A***).

2.14 The vehicular access arrangement and the layout and design of the internal network will include for tactile paving and dropped kerbs as required. The geometry is designed in line with the Design Manual for Urban Road and Streets (DMURS) to provide shorter crossing distances and a safer environment for cyclists and pedestrians and also take account of the National Cycle Manual.

2.15 It is expected that in light of the location, the majority of residents of the proposed development will either walk and/or use the bicycle as the preferred mode of travel, and they will benefit from the existing safe links and facilities in place on the local approach roads, and also the secure storage and parking for cyclists incorporated into the layout design. This is reflected in the provision of a total of 330 new dedicated cycle parking spaces, which is in line with new national Design Standards for Apartments.

2.16 The development includes a total provision of 59 dedicated car parking spaces including provision for car-share (*GoCar*) spaces if required & mobility impaired spaces included. This represents a parking provision or ratio of c 0.42 spaces per unit, which is considered appropriate in a sustainable location of this nature. There are 3 drop-off spaces provided for the Creche.

Electric Vehicle Charging

2.17 Car parking spaces provided can easily be upgraded to allow conversion for Electric Vehicles. In the case of residential apartment development of the nature proposed, with specific spaces likely dedicated to specific apartments, it is considered appropriate to facilitate the retro-fitting of spaces, based on demand following occupation, rather than a % of spaces being defined as such and provided from the outset.

2.18 The entire car park of the subject scheme can therefore be ducted to accept future cabling to serve a charging point for every car space as demanded. Within the parking area, conduits can be run on the walls where charging points can also be mounted.

Parking Quantum

2.19 The 'Sustainable Urban Housing: Design Standards for New Apartments Guidelines for Planning Authorities', updates previous guidance in the context of greater evidence and knowledge of current and likely future housing demand in Ireland taking account of the Housing Agency National Statement on Housing Demand and Supply and projected need for additional housing supply out to 2020, the Government's action programme on housing and homelessness Rebuilding Ireland & National Planning Framework Ireland 2040, (subsequent to 2015 guidelines).

2.20 These new guidelines address car parking and include an objective to 'Remove requirements for car-parking in certain circumstances where there are better mobility solutions and to reduce costs.' Under Car Parking - Section 4.18 the guidelines acknowledge that the quantum of car parking or the requirement for any such provision for apartment developments will vary, having regard to the types of location in cities and towns that may be suitable for apartment development, broadly based on proximity and accessibility criteria.

2.21 The development will be managed and operated by a Management Company. Car parking will not be an automatic entitlement. The development will be continually managed on an on-going basis to ensure that the reduced car dependency nature of the development is continually promoted and enhanced.

2.22 Under Section 4.19 the guidelines note that in larger scale and higher density developments, comprising wholly of apartments in more central locations that are well served by public transport, the default policy is for car parking provision to be **wholly eliminated or substantially reduced**. Specifically, Paragraph 4.19 states;

> ***Central and/or Accessible Urban Locations***
>
> ***In larger scale and higher density developments, comprising wholly of apartments in more central locations that are well served by public transport, the default policy is for car parking provision to be minimised, substantially reduced or wholly***

eliminated in certain circumstances. The policies above would be particularly applicable in highly accessible areas such as in or adjoining city cores or at a confluence of public transport systems such as rail and bus stations located in close proximity.

2.23 In terms of the stated Policy, we believe that the subject site meets all the requirements for reducing the provision of Private Car Parking, under the headings;

High Density Development	✓
Comprising Wholly of Apartments	✓
Central Location	✓
Well Served by Public Transport	✓

2.24 In these terms the proposed subject development meets all the necessary requirements for reduced car parking provision, in this case a parking 'Ratio' of 0.42 per residential unit. Following our review of the scheme design and location, and following our interpretation of National Policy, we believe that the provision of a total of 59 managed car parking spaces to serve this development is adequate and is appropriate.

2.25 It is proposed that some parking spaces can be allocated to car club parking spaces (e.g. "*Go Car"* spaces), if required. These would be located conveniently for ease for use for residents.

Bicycle Parking

2.26 The Department of Housing Planning & Local Government "***Sustainable Urban Housing Design Standards for New Apartments***" includes recommendations on the appropriate level of Bicycle Parking. An extract from the Guidance is included below as ***Figure 2.4.***

> *Quantity* – a general minimum standard of 1 cycle storage space per bedroom shall be applied. For studio units, at least 1 cycle storage space shall be provided. Visitor cycle parking shall also be provided at a standard of 1 space per 2 residential units. Any deviation from these standards shall be at the discretion of the planning authority and shall be justified with respect to factors such as location, quality of facilities proposed, flexibility for future enhancement/enlargement, etc.

Figure 2.4 - Extract from National Apartment Guidelines

2.27 There are a total of 330 Bicycle Parking spaces provided, to be divided between residential spaces and visitor spaces. Applying the Guideline requirements, there are a total of 260 Bedrooms in the development, requiring 260 residential bicycle parking spaces. With 139 apartments, this requires 70 visitor bicycle parking spaces. This results in a Guideline requirement totalling 330 spaces for the residential elements.

3.0 VEHICULAR TRIP GENERATION, ASSIGNMENT & DISTRIBUTION

3.1 The Trip Rate Information Computer System (TRICS) database is ordinarily used to ascertain vehicular trip generation associated with the use of any particular site. This represents industry standard practice for Transportation Assessments in Ireland, and is specifically referenced and recommended in the TII Guidelines. In this case the worst case assessment has been undertaken based on traditional Private Residential Apartments & Créche Developments (using the licensed version of TRICS).

3.2 A robust and onerous assessment has been undertaken of the impact along the adjacent Castle Street/Dublin Rd corridor, in order to ensure that we thoroughly assess the impact (in terms of stress-testing the access junctions and the road capacity impact of the scheme on the important local links). The assessment is undertaken in accordance with the Guidelines in the context of the demonstrably low levels of traffic generated by the proposed development, and of course the traffic generated should be considered in the context of the previous uses of the site for commercial purposes.

3.3 The TRICS Trip Rates applied for the Residential & Créche elements of the Development in this case are as set out below as ***Table 3.1.***

Table 3.1; - TRICS Data Summary, 139 No. Residential Apartments & Créche

139 No Apartments	Arrivals (PCUs)		Departures (PCUs)		Total 2-Way Traffic Generated
Network Hour	Per Unit	139 units	Per Unit	139 units	
Weekday AM Peak Hr	0.062	9	0.203	28	37
Weekday PM Peak Hr	0.178	25	0.088	12	37
300m2 Creche	Arrivals (PCUs)		Departures (PCUs)		Total 2-Way Traffic Generated
Network Hour	Per 100m2	Dev	Per 100m2	Dev	
Weekday AM Peak Hr	3.716	11	3.122	9	21
Weekday PM Peak Hr	2.854	9	3.448	10	19
Network Hour	Arrivals (PCUs)		Departures (PCUs)		Total (PCUs)
Weekday AM Peak Hr	20		38		58
Weekday PM Peak Hr	33		23		56

3.4 We have included herein as ***Appendix C*** the TRICS data output for Residential Apartments & Créche upon which the above are based - clearly a residential development located in a town centre in close proximity to centres of employment and public transport, with limited car parking, will create lower trip rates, but by

applying these higher rates the assessment provides a robust assessment of impact.

3.5 The Créche is ancillary to the scheme and the reality is that it will generate few is any external vehicular trips, and this underscores the robustness as we have assigned Créche Traffic as 100% New/Primary Trips. We have however assigned no additional traffic to the small Castle Street Ground Floor commercial elements, as it is considered that these will clearly not generate additional traffic movements in their own right. Given the low traffic impact as evidenced in this report, we consider that the addition of extra traffic associated with these elements, if required, would we have no impact upon the conclusions of the study.

Assignment/Distribution - Future Year Traffic

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

3.7 The standard methodology applied was to firstly ascertain the base background traffic conditions for both the weekday AM & 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. We then applied a calculated **Covid Factor** based on accurate data extracted from the TII Permanent Traffic Counter data on the M11 nearest the site. This represents a pragmatic & industry-standard approach in these times, when Planning Applications have statutory timeframes during a Pandemic.

3.8 We then used the TII PE-PAG-02017 Project Appraisal Guidelines for National Roads Unit 5.3 (Travel Demand Projections 2019, Table 6.2: Central Growth Rates: Annual Growth Factors) Wicklow County, to establish projected occupation/opening year 2024 and design year 2039 traffic conditions 15 years following opening on the local road network.

3.9 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***.

3.10 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 will have no significant impact upon the conclusions of the study. In addition, given the favourable results reported in this study, if required to apply higher background traffic conditions for any reason we would not anticipate any changes whatsoever to the conclusions.

3.11 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.

3.12 Calculations of the relevant growth factors are included in ***Table 3.2*** below (based on tabulated 'Central Growth' in the Wicklow Area). It should be noted that any requirement to use different or higher growth factors will also have no implications whatsoever for the conclusions of the study.

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

Year	to Year	Table 5.5.1:
2020	2024	1.064
2024	2039	1.179

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

4.0 TRAFFIC IMPACT - THRESHOLD ASSESSMENT/TRAFFIC CAPACITY ANALYSIS

4.1 The TII Traffic and Transport Assessment Guidelines (March 2014) sets out a strict mechanism for assessment of developments of this nature and determining whether further assessment is indeed required.

4.2 This TII Traffic and Transport Assessment Guidelines requires a **Threshold Assessment** of the impact on the local roads to be provided in order to determine whether further more detailed modelling and assessment of particular critical junctions is necessary. This is important in this case as the development is located in proximity to locally important routes for Bray, conscious also that traffic capacity issues in busy town centres are normal.

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

4.4 In this regard, it is demonstrated herein that the proposed occupation of the entire apartment development, with very 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 at and beyond the site access expected to be **well below** the Industry-Standard level of 5% above which further assessment is required.

4.5 Our assessment, included within ***Appendix D***, (Refer to Page 7) confirms that the absolute worst case traffic increase on the adjacent road network junctions are as summarised below as ***Table 4.1*** and ***Table 4.2***

Table 4.1; - Threshold Assessment, Worst-Case Impact - AM Peak Hour 8-9am

Assessed Road - Scenario - Year/Period	Traffic Increase %
Chapel Lane/Dublin Rd Junction N of Site	1.7%
Upper Dargle Rd/Dublin Rd Junction N of Site	2.46%
Green Park/Castle St Junction N of Site	4.16%
Dwyer Park W/Castle St Junction S of Site	1.44%
Dwyer Park E/Castle St Junction S of Site	1.53%
Lower Dargle Rd/castle St Junction S of Site	1.14%
Herbert Rd/Quinsborough Rd/Castle St Junc S of Site	1.36%

Table 4.2; - Threshold Assessment, Worst-Case Impact - PM Peak Hour 5-6pm

Assessed Road - Scenario - Year/Period	Traffic Increase %
Chapel Lane/Dublin Rd Junction N of Site	1.93%
Upper Dargle Rd/Dublin Rd Junction N of Site	1.96%
Green Park/Castle St Junction N of Site	4.19%
Dwyer Park W/Castle St Junction S of Site	1.29%
Dwyer Park E/Castle St Junction S of Site	1.49%
Lower Dargle Rd/castle St Junction S of Site	1.23%
Herbert Rd/Quinsborough Rd/Castle St Junc S of Site	1.31%

4.6 The Threshold assessment clearly confirms that, beyond the site access, the worst case traffic increase are in all cases imperceptible AND significantly below the IHT and TII recommended level of 5% above which further assessment is warranted. It should also be recognised that the above assessment ignores the fact that the site until recently generated commercial traffic movements, which were likely in excess of that generated by a sustainable residential apartment scheme, and in these terms the assessment is further robust (in that the net effect of the proposed new development on local traffic flows will likely be considerably less).

4.7 To set these predicted increased levels of traffic in context, the day-to-day variation in traffic volume (due to day of week or weather conditions) is accepted as being 10%, so, in this context alone, increases of in all cases less than 5% in Traffic on the local roads and junctions will go entirely unnoticed.

4.8 It is clear that the introduction of the proposed development will have an absolutely negligible and unnoticeable impact upon vehicular traffic conditions locally.

ACCESS JUNCTION CAPACITY ANALYSIS

4.9 We have used the TII-approved software package 'Junctions 9' PICADY' (**P**riority **I**ntersection **C**apacity and **D**ela**y**) software package (as part of the TRL Package 'Junction 9') to assess the capacity of the priority controlled access junction onto Castle Street to accommodate the completed development.

4.10 PiCADY produces results based on a ratio of flow to capacity (RFC) and queue length. An RFC greater that 1.00 indicates that a junction is operating at or above capacity, with 0.85 considered to be the optimum RFC value. We have appended the detailed computer simulation model results (PiCADY Outputs) of the junction modelling for the proposed site access in ***Appendix E.***

4.11 A summary of the results is reproduced below as ***Table 4.4***

Table 4.4 - Junctions9 PiCADY Summary Results, Site Access T Junction

Modelled Scenario	***Period Mean Max Q (PCUs)***	***Period Max RFC***
2024 Opening Year AM Peak	<1	0.13
2024 Opening Year PM Peak	<1	0.08
2039 Design Year AM Peak	<1	0.16
2039 Design Year PM Peak	<1	0.1

4.12 The results of the modelling clearly show that the site access junction will have significantly more than adequate capacity to accommodate the worst case traffic associated with the entire lands being developed and all apartments fully occupied. All of the RFCs are below the theoretical optimum capacity of 0.85 and no queuing is anticipated.

5.0 CONCLUSIONS

5.1 This Transportation Assessment Report assesses the traffic and transportation impact of the proposal to construct and occupy the proposed 139 unit apartment development with ancillary crèche and small ground floor commercial units, at Castle Street, Bray.

5.2 This Report has been prepared in accordance with the TII Traffic & Transport Assessment Guidelines, and is based on industry-standard high Trip Generation Rates, in order to provide an onerous and robust assessment of the impact of the proposed development. The traffic generated needs to be considered in the context of the sites previous commercial uses and the traffic generated by those, with the extant use having an established Castle Street Access.

5.3 Notwithstanding, the impact of the development traffic on the local roads has been modelled and assessed, based on a comprehensive new classified vehicle turning movement survey undertaken for the purposes of this study, during normal school period, factored to account for Covid 19 Pandemic Lockdown measures, in accordance with Industry-Standard techniques.

5.4 The proposed development is appropriately located within the town of Bray and is well served by public transport as identified in the enclosed MMP. The site is also well served by pedestrian and cycle linkages. The site is therefore ideally well placed to take advantage of non-car modes of travel.

5.5 Reduced car parking numbers are proposed for the scheme in compliance with the requirements of "Sustainable Urban Housing Design Standards for New Apartments".

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 The assessment also confirms that the proposed access junction is of more than adequate capacity to accommodate the worst case traffic associated with the proposed development.

5.8 The assessment includes a Preliminary Travel Plan (MMP or Travel Plan) for the site which is included as ***Appendix F***. An independent Stage 1 Road Safety Audit, together with the Designer Feedback form has been undertaken and is included As ***Appendix G***. An assessment of additional Capacity & Demand for Bus/DART

services due to the proposed development has also been undertaken and is included as ***Appendix H.*** A Parking Management/Strategy Report is included as ***Appendix I.***

5.9 It is considered that there are no significant Operational Traffic Safety, Road Capacity or Public Transport Capacity issues that would prevent a positive determination of the application by An Bord Pleanála.

APPENDICES - CONTENT

APPENDIX A

Proposed Development Layout & Access

Corrigan Hodnett Consulting
Civil & Structural Engineers

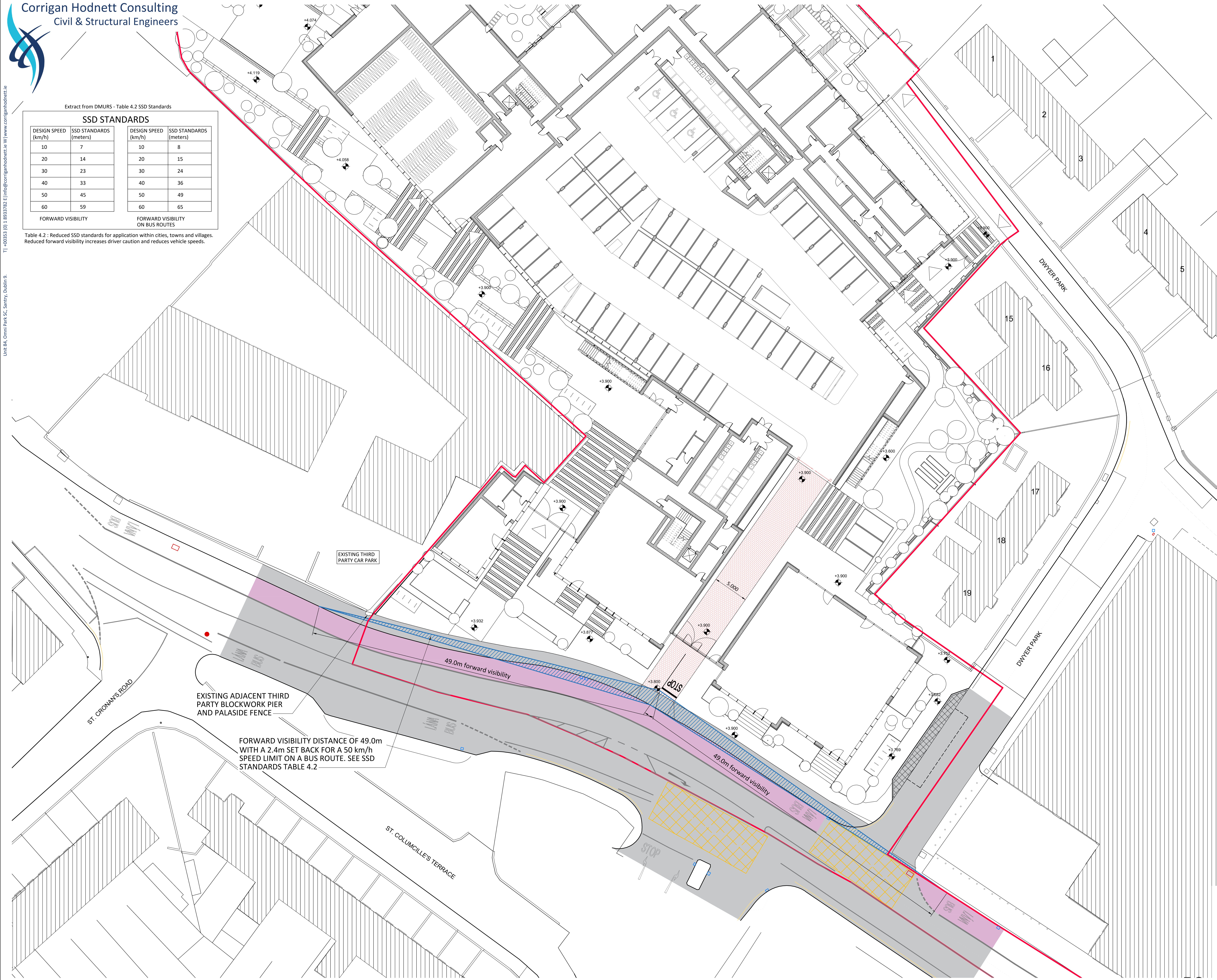
Unit 84, Omni Park SC, Santry, Dublin 9.
T| +00353 (0) 1 8933782 E| info@corriganhodnett.ie W| www.corriganhodnett.ie

Extract from DMURS - Table 4.2 SSD Standards

SSD STANDARDS

DESIGN SPEED (km/h)	SSD STANDARDS (meters)	DESIGN SPEED (km/h)	SSD STANDARDS (meters)
10	7	10	8
20	14	20	15
30	23	30	24
40	33	40	36
50	45	50	49
60	59	60	65
FORWARD VISIBILITY		FORWARD VISIBILITY ON BUS ROUTES	

Table 4.2 : Reduced SSD standards for application within cities, towns and villages. Reduced forward visibility increases driver caution and reduces vehicle speeds.



SITE LAYOUT
SCALE 1:250

General Notes

A1

1. Do not scale from this drawing. Refer to Architects drawings for all works levels and setting out.
2. This drawing is to be read in conjunction with all other Engineer's and Architect's drawings and specifications. Where discrepancies are observed please notify CHC for clarification.
3. Contractor to check all levels (existing and proposed), setting out and dimensions on site prior to commencement of the works and advise the consultants of any discrepancies.
4. All works to be constructed in accordance with current building control legislation, local authority requirements and good building practice.
5. All Insulation, weathering materials (dpc, dpm, flashings etc), radon barriers and sumps and all sub-floor ducting all to Architect's details.
6. Location of all service pop-ups to be confirmed and set out by the Architect.
7. Refer to Architect's drawings and specifications for fire strategy and all fire protection requirements
8. All materials and products specified must carry CE marking and Declarations of Performance as appropriate.
9. Contractor shall note the recommendations of the site investigation report in respect of all excavation depths, ground water levels and identification of required adequate bearing strata. All foundation formation soft spots or disturbed ground not covered in SI report to be recorded and notified to the Engineer.

Issue	Suitability	Date	Description	Designed	Drawn	Approved
P02	S4	03.03.2022	Issued for Planning.	P.C.	N.N.	P.C.
P03	S2	04.02.2022	Issued For information.	P.C.	N.N.	P.C.
P01	S4	24.09.2021	Issued for SHD Tripartite.	P.C.	N.N.	P.C.
P02	S2	12.07.2021	Issued for information.	P.C.	N.N.	P.C.
P01	S2	01.07.2021	Issued for information.	P.C.	N.N.	P.C.

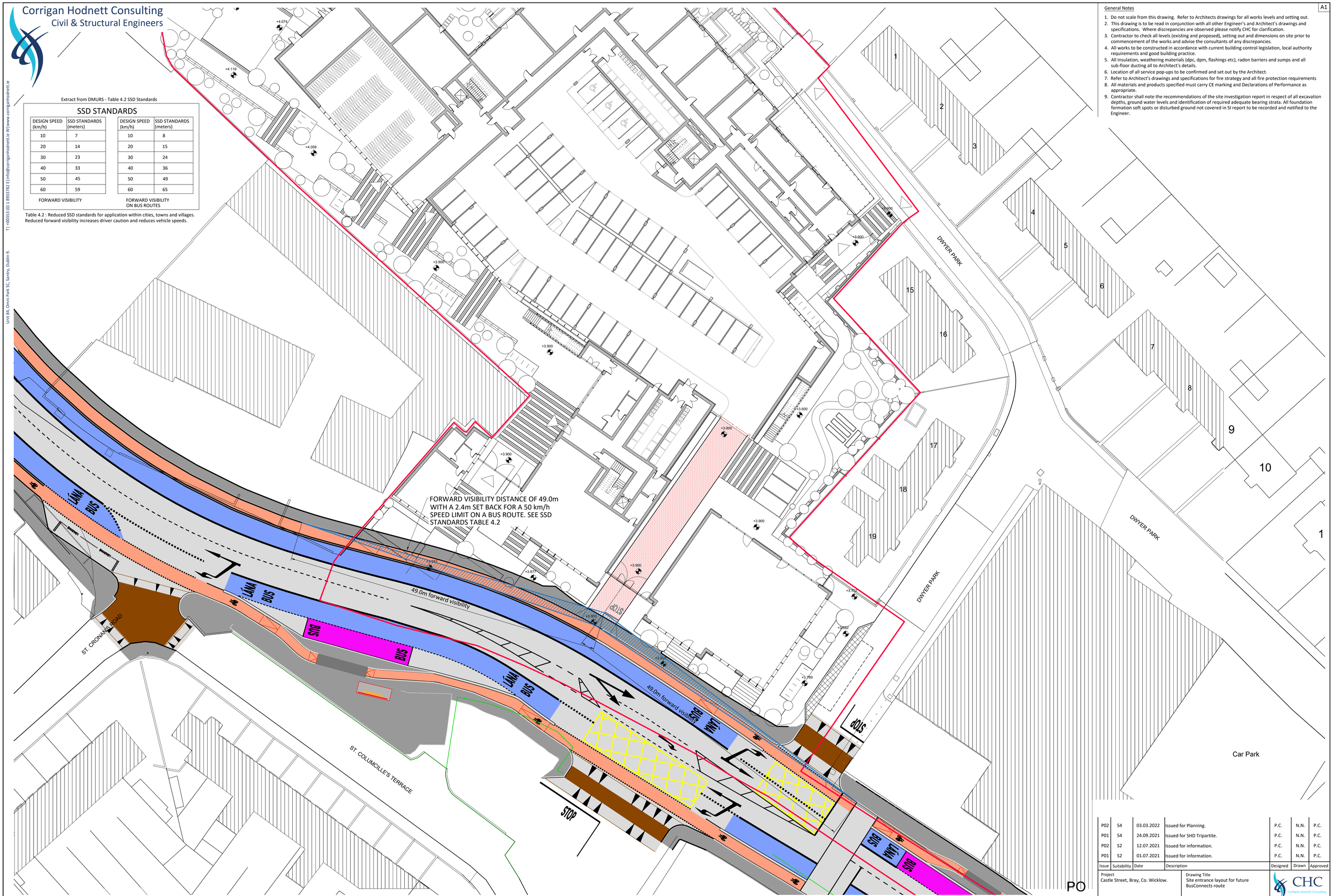
Project
Castle Street, Bray, Co. Wicklow.

Drawing Title
Site entrance layout
for existing road layout

CHC
Corrigan Hodnett Consulting

Client
Silver Bow Limited

Originator.	Area.	Level.	Type.	Role.	Number.
CHC	- 00	- GR	- DR	- C	-00015



Corrigan Hodnett Consulting
Civil & Structural Engineers

Unit 84, Omni Park SC, Santry, Dublin 9.
T| +00353 (0) 1 8933782 E| info@corriganhodnett.ie W| www.corriganhodnett.ie

Extract from DMURS - Table 4.2 SSD Standards

SSD STANDARDS

DESIGN SPEED (km/h)	SSD STANDARDS (meters)
10	7
20	14
30	23
40	33
50	45
60	59

FORWARD VISIBILITY

DESIGN SPEED (km/h)	SSD STANDARDS (meters)
10	8
20	15
30	24
40	36
50	49
60	65

FORWARD VISIBILITY
ON BUS ROUTES

Table 4.2 : Reduced SSD standards for application within cities, towns and villages. Reduced forward visibility increases driver caution and reduces vehicle speeds.

FORWARD VISIBILITY DISTANCE OF 49.0m WITH A 2.4m SET BACK FOR A 50 km/h SPEED LIMIT ON A BUS ROUTE. SEE SSD STANDARDS TABLE 4.2

SITE LAYOUT
SCALE 1:250

N

General Notes

A1

1. Do not scale from this drawing. Refer to Architects drawings for all works levels and setting out.
2. This drawing is to be read in conjunction with all other Engineer's and Architect's drawings and specifications. Where discrepancies are observed please notify CHC for clarification.
3. Contractor to check all levels (existing and proposed), setting out and dimensions on site prior to commencement of the works and advise the consultants of any discrepancies.
4. All works to be constructed in accordance with current building control legislation, local authority requirements and good building practice.
5. All Insulation, weathering materials (dpc, dpm, flashings etc), radon barriers and sumps and all sub-floor ducting all to Architect's details.
6. Location of all service pop-ups to be confirmed and set out by the Architect.
7. Refer to Architect's drawings and specifications for fire strategy and all fire protection requirements
8. All materials and products specified must carry CE marking and Declarations of Performance as appropriate.
9. Contractor shall note the recommendations of the site investigation report in respect of all excavation depths, ground water levels and identification of required adequate bearing strata. All foundation formation soft spots or disturbed ground not covered in SI report to be recorded and notified to the Engineer.

Issue	Suitability	Date	Description	Designed	Drawn	Approved
P02	S4	03.03.2022	Issued for Planning.	P.C.	N.N.	P.C.
P01	S4	24.09.2021	Issued for SHD Tripartite.	P.C.	N.N.	P.C.
P02	S2	12.07.2021	Issued for information.	P.C.	N.N.	P.C.
P01	S2	01.07.2021	Issued for information.	P.C.	N.N.	P.C.

Project
Castle Street, Bray, Co. Wicklow.

Drawing Title
Site entrance layout for future BusConnects route

CHC
Corrigan Hodnett Consulting

Client
Silver Bow Limited

Originator.	Area.	Level.	Type.	Role.	Number.
CHC	- 00	- GR	- DR	- C	-00016

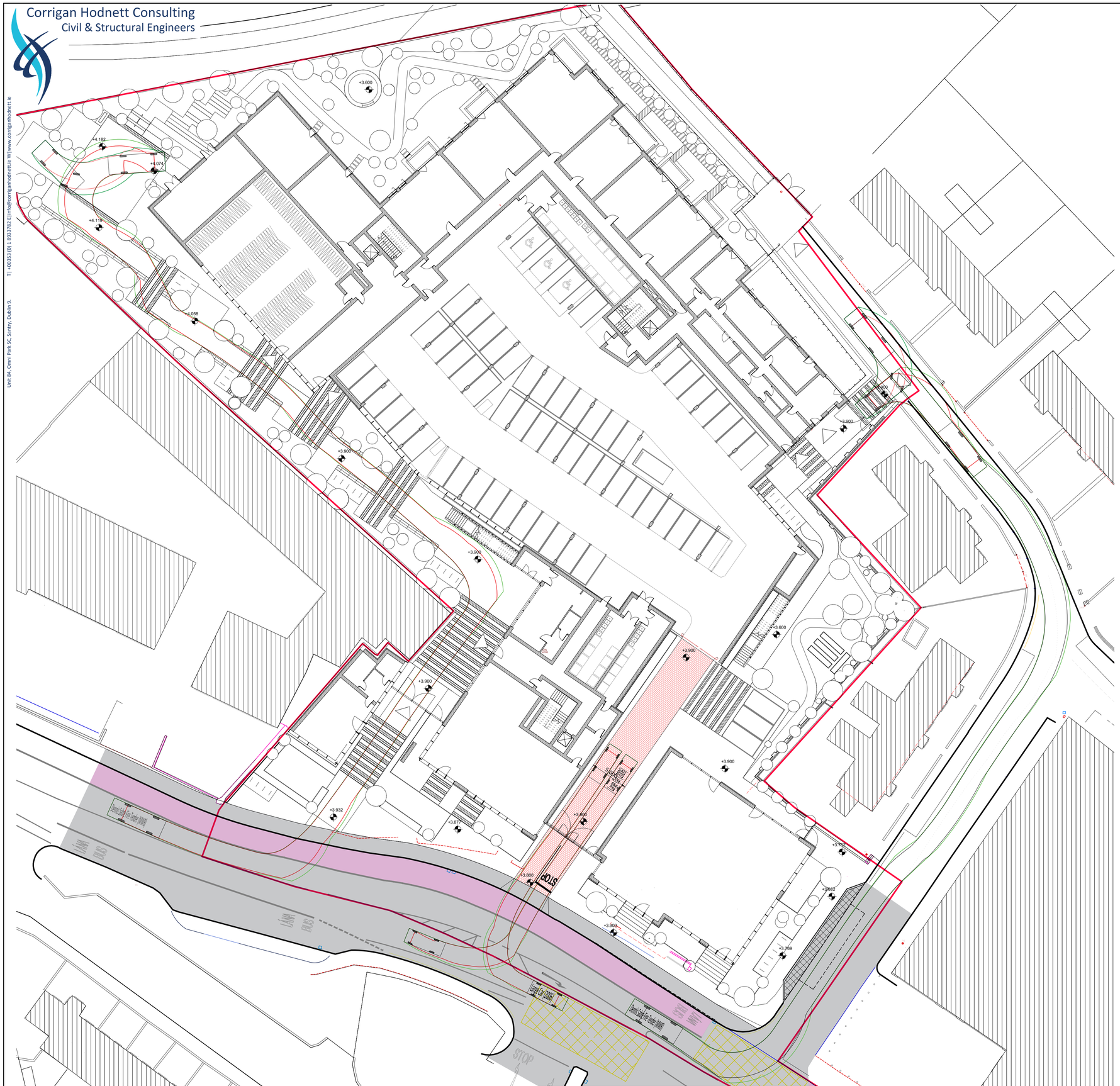
Corrigan Hodnett Consulting
Civil & Structural Engineers

Unit B4, Omni Park SC, Santry, Dublin 9. T| +00353 (0) 1 8933782 E| info@corriganhodnett.ie W| www.corriganhodnett.ie

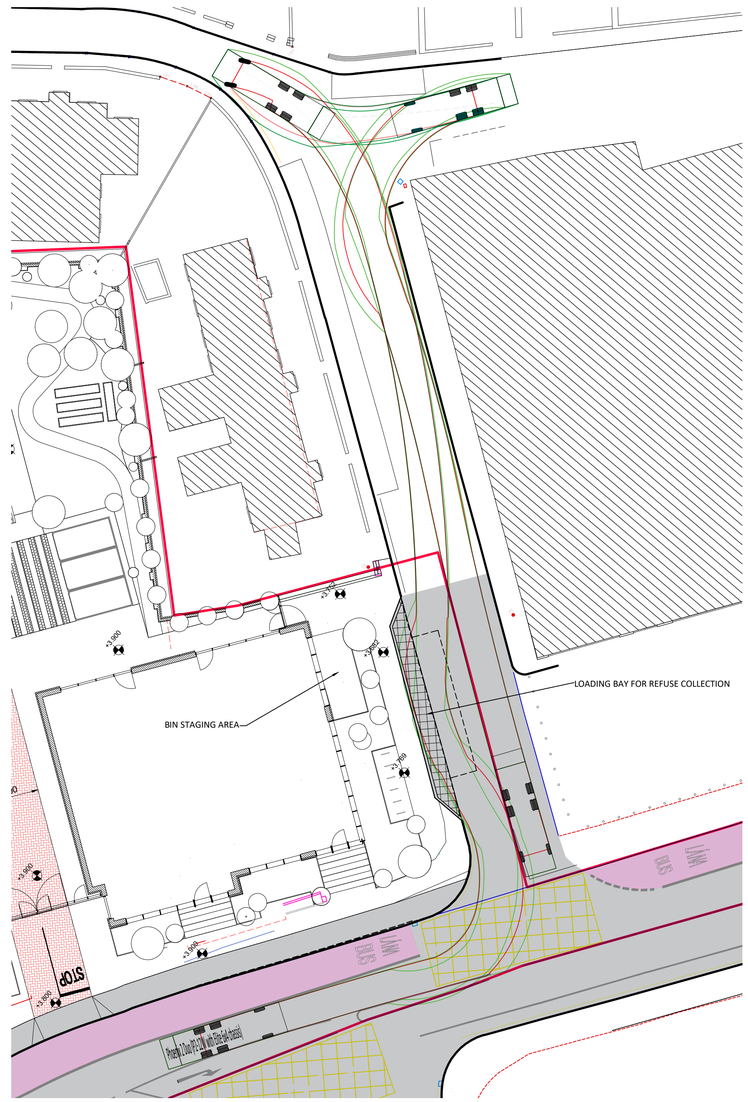
A1

General Notes

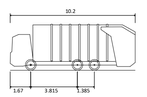
1. Do not scale from this drawing. Refer to Architects drawings for all works levels and setting out.
2. This drawing is to be read in conjunction with all other Engineer's and Architect's drawings and specifications. Where discrepancies are observed please notify CHC for clarification.
3. Contractor to check all levels (existing and proposed), setting out and dimensions on site prior to commencement of the works and advise the consultants of any discrepancies.
4. All works to be constructed in accordance with current building control legislation, local authority requirements and good building practice.
5. All Insulation, weathering materials (dpc, dpm, flashings etc), radon barriers and sumps and all sub-floor ducting all to Architect's details.
6. Location of all service pop-ups to be confirmed and set out by the Architect.
7. Refer to Architect's drawings and specifications for fire strategy and all fire protection requirements
8. All materials and products specified must carry CE marking and Declarations of Performance as appropriate.
9. Contractor shall note the recommendations of the site investigation report in respect of all excavation depths, ground water levels and identification of required adequate bearing strata. All foundation formation soft spots or disturbed ground not covered in SI report to be recorded and notified to the Engineer.



FIRE TENDER VSP
SCALE 1:250



REFUSE VEHICLE VSP
SCALE 1:250

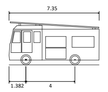


Phoenix 2 Duo (P2-12W with Elite 6x4 chassis)

Overall Length	10.200m
Overall Width	2.530m
Overall Body Height	3.751m
Min Body Ground Clearance	0.304m
Track Width	2.500m
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	7.800m

Large Car (2006)

Overall Length	5.079m
Overall Width	1.872m
Overall Body Height	1.525m
Min Body Ground Clearance	0.131m
Max Track Width	1.831m
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	5.900m



Dennis Sabre Fire Tender (MWB)

Overall Length	7.350m
Overall Width	2.430m
Overall Body Height	3.512m
Min Body Ground Clearance	0.397m
Track Width	2.380m
Lock-to-lock time	5.00s
Curb to Curb Turning Radius	7.100m

Issue	Suitability	Date	Description	Designed	Drawn	Approved
P03	S4	10.03.2022	Issued for planning.	N.N.	N.N.	P.C.
P02	S4	03.03.2022	Issued for planning.	P.C.	N.N.	P.C.
P01	S4	24.09.2021	Issued for SHD Tripartite.	P.C.	N.N.	P.C.

Project
Castle Street, Bray, Co. Wicklow.

Drawing Title
Vehicle swept path analysis

CHC Corrigan Hodnett Consulting

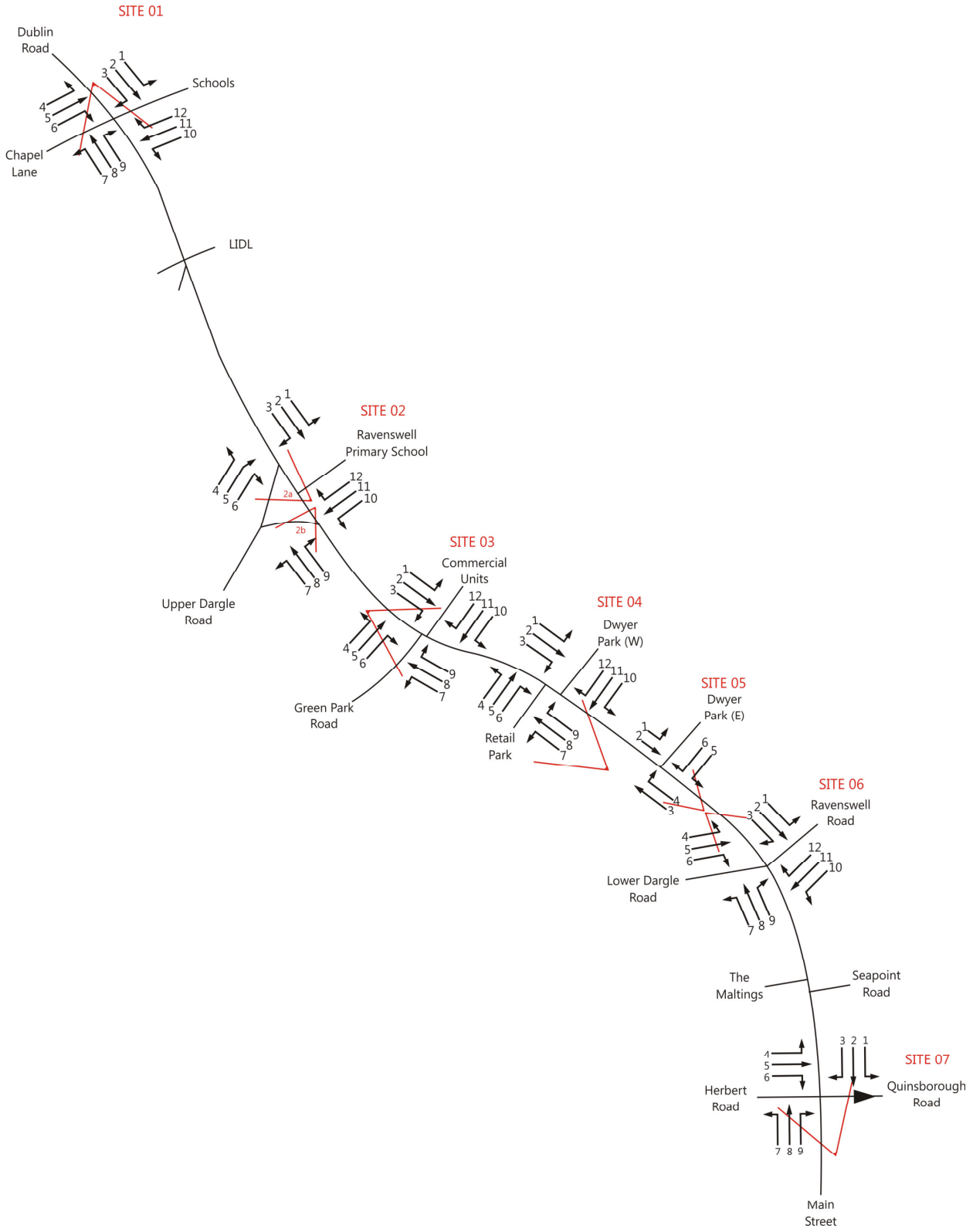
Client
Silver Bow Limited

Originator. Area. Level. Type. Role. Number.
CHC -00 -GR -DR -C -00101

APPENDIX B

Raw Traffic Survey Data Output

Site/Movement Numbering



	Job number: TRA/20/137	Job Date: 9th December 2020	Drawing No: TRA/20/137-02	traffinomics.ie
	Client: NRB	Job Day: Wednesday	Pages: **1 of 26**	

TRAFFINOMICS LIMITED

BRAY TRAFFIC COUNTS **DECEMBER 2020**

MANUAL CLASSIFIED JUNCTION TURNING COUNTS **TRA/20/137**

SITE: 01 DATE: 9th December 2020

LOCATION: Dublin Road/Chapel Lane/Schools 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	4	0	0	1	5	6	0	0	81	19	7	5	112	124	0	0	0	0	0	0	0	0
07:45	0	0	4	0	0	2	6	8	7	0	102	12	1	7	129	131	0	0	0	0	0	0	0	0
08:00	0	0	15	2	0	0	17	17	4	0	125	16	2	5	152	156	0	0	2	0	0	0	2	2
08:15	4	0	49	0	0	0	53	50	4	2	123	9	1	6	145	148	0	0	1	0	0	0	1	1
H/TOT	4	0	72	2	0	3	81	81	15	2	431	56	11	23	538	559	0	0	3	0	0	0	3	3
08:30	0	0	63	3	0	0	66	66	8	0	94	17	3	6	128	131	0	0	0	0	0	0	0	0
08:45	11	0	50	1	0	0	62	53	2	2	97	18	2	4	125	128	0	0	1	0	0	0	1	1
09:00	0	0	18	1	0	1	20	21	7	1	87	10	6	5	116	121	0	0	0	0	0	0	0	0
09:15	1	0	10	1	1	1	14	15	1	1	124	10	4	6	146	155	0	0	1	0	0	0	1	1
H/TOT	12	0	141	6	1	2	162	155	18	4	402	55	15	21	515	534	0	0	2	0	0	0	2	2
P/TOT	16	0	213	8	1	5	243	236	33	6	833	111	26	44	1053	1093	0	0	5	0	0	0	5	5

	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	8	1	0	0	9	9	6	0	143	10	2	4	165	166	0	0	1	0	0	0	1	1
16:15	1	0	10	0	0	0	11	10	1	1	113	16	1	3	135	138	0	0	1	0	0	0	1	1
16:30	0	0	11	0	0	0	11	11	1	1	136	15	2	6	161	168	0	0	0	0	0	0	0	0
16:45	0	0	12	0	0	0	12	12	4	2	142	7	1	10	166	173	0	0	2	0	0	0	2	2
H/TOT	1	0	41	1	0	0	43	42	12	4	534	48	6	23	627	644	0	0	4	0	0	0	4	4
17:00	0	0	16	1	0	0	17	17	2	1	125	22	4	4	158	164	0	0	2	1	0	0	3	3
17:15	0	0	15	0	0	0	15	15	5	0	116	13	2	5	141	144	0	0	5	1	0	0	6	6
17:30	0	0	10	0	0	0	10	10	1	0	151	5	0	6	163	168	0	0	2	0	0	0	2	2
17:45	0	0	10	0	0	0	10	10	2	1	124	14	1	4	146	149	0	0	1	0	0	0	1	1
H/TOT	0	0	51	1	0	0	52	52	10	2	516	54	7	19	608	625	0	0	10	2	0	0	12	12
18:00	0	0	7	0	0	0	7	7	2	1	118	9	0	3	133	134	0	0	2	0	0	0	2	2
18:15	0	0	7	0	0	0	7	7	0	1	140	3	1	8	153	161	0	0	1	0	0	0	1	1
H/TOT	0	0	14	0	0	0	14	14	2	2	258	12	1	11	286	295	0	0	3	0	0	0	3	3
P/TOT	1	0	106	2	0	0	109	108	24	8	1308	114	14	53	1521	1564	0	0	17	2	0	0	19	19

TRAFFINOMICS LIMITED

BRAY TRAFFIC COUNTS **DECEMBER 2020**

MANUAL CLASSIFIED JUNCTION TURNING COUNTS **TRA/20/137**

SITE: 01 DATE: 9th December 2020

LOCATION: Dublin Road/Chapel Lane/Schools 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	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
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	2	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
08:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
08:45	0	0	1	0	0	0	1	1	0	0	1	1	0	0	2	2	0	0	0	0	0	0	0	0
09:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:15	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	3	0	0	0	3	3	0	0	1	1	0	0	2	2	0	0	1	0	0	0	1	1
P/TOT	0	0	5	0	0	0	5	5	0	0	1	1	0	0	2	2	0	0	2	0	0	0	2	2

	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	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	1	0	0	2	2
16:15	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
16:45	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	4	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	2	1	0	0	3	3
17:00	0	0	2	1	0	0	3	3	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
17:15	0	0	8	0	0	0	8	8	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	2
17:30	0	0	2	1	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45	0	0	2	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	2
H/TOT	0	0	14	2	0	0	16	16	0	0	0	0	0	0	0	0	0	0	5	0	0	0	5	5
18:00	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:15	0	0	4	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
H/TOT	0	0	5	0	0	0	5	5	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
P/TOT	0	0	23	2	0	0	25	25	0	0	0	0	0	0	0	0	0	0	8	1	0	0	9	9

TRAFFINOMICS LIMITED

BRAY TRAFFIC COUNTS **DECEMBER 2020**

MANUAL CLASSIFIED JUNCTION TURNING COUNTS **TRA/20/137**

SITE: 01 DATE: 9th December 2020

LOCATION: Dublin Road/Chapel Lane/Schools 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	2	1	0	0	3	3	3	0	139	18	4	7	171	180	0	0	1	0	0	0	1	1
07:45	0	0	0	0	0	0	0	0	0	0	144	19	1	7	171	179	0	0	3	0	0	0	3	3
08:00	0	0	1	0	0	0	1	1	3	1	160	17	0	6	187	190	0	0	1	0	0	1	2	3
08:15	0	0	0	0	0	0	0	0	0	0	136	22	3	7	168	178	0	0	8	1	0	1	10	11
H/TOT	0	0	3	1	0	0	4	4	6	1	579	76	8	27	697	727	0	0	13	1	0	2	16	18
08:30	0	0	2	0	0	0	2	2	4	0	146	13	0	3	166	166	0	0	24	2	0	0	26	26
08:45	0	0	3	0	0	0	3	3	2	0	136	13	5	4	160	167	0	0	31	1	0	1	33	34
09:00	0	0	3	0	0	0	3	3	3	1	140	10	4	12	170	183	0	0	7	2	0	0	9	9
09:15	0	0	0	0	0	0	0	0	0	0	133	25	0	4	162	166	0	0	1	0	0	0	1	1
H/TOT	0	0	8	0	0	0	8	8	9	1	555	61	9	23	658	682	0	0	63	5	0	1	69	70
P/TOT	0	0	11	1	0	0	12	12	15	2	1134	137	17	50	1355	1409	0	0	76	6	0	3	85	88

	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	1	0	1	0	0	0	2	1	3	1	108	28	2	5	147	151	0	0	0	0	0	0	0	0
16:15	0	0	1	1	0	0	2	2	4	0	146	18	4	6	178	185	0	0	1	0	0	1	2	3
16:30	0	0	1	0	0	0	1	1	3	0	128	17	0	7	155	160	0	0	1	0	0	0	1	1
16:45	0	0	0	0	0	0	0	0	2	1	136	13	0	4	156	158	0	0	0	0	0	0	0	0
H/TOT	1	0	3	1	0	0	5	4	12	2	518	76	6	22	636	653	0	0	2	0	0	1	3	4
17:00	0	0	4	0	0	0	4	4	5	1	130	17	2	4	159	160	0	0	0	0	0	0	0	0
17:15	0	0	1	1	0	0	2	2	1	1	125	8	0	6	141	146	0	0	0	0	0	0	0	0
17:30	0	0	2	0	0	0	2	2	0	0	157	16	0	7	180	187	0	0	2	0	0	0	2	2
17:45	0	0	1	0	0	0	1	1	0	0	147	4	0	3	154	157	0	0	1	0	0	0	1	1
H/TOT	0	0	8	1	0	0	9	9	6	2	559	45	2	20	634	650	0	0	3	0	0	0	3	3
18:00	0	0	0	0	0	0	0	0	1	0	148	6	0	5	160	164	0	0	0	0	0	0	0	0
18:15	0	0	0	0	0	0	0	0	0	0	107	14	0	7	128	135	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	1	0	255	20	0	12	288	299	0	0	0	0	0	0	0	0
P/TOT	1	0	11	2	0	0	14	13	19	4	1332	141	8	54	1558	1602	0	0	5	0	0	1	6	7

TRAFFINOMICS LIMITED

BRAY TRAFFIC COUNTS **DECEMBER 2020**

MANUAL CLASSIFIED JUNCTION TURNING COUNTS **TRA/20/137**

SITE: 01 DATE: 9th December 2020

LOCATION: Dublin Road/Chapel Lane/Schools 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	1	0	0	1	2	3
07:45	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	1	0	1	3	4
08:00	0	0	0	0	0	1	1	2	0	0	1	0	0	0	1	1	0	0	6	0	0	0	6	6
08:15	0	0	2	0	0	1	3	4	0	0	0	0	0	0	0	0	0	0	11	1	0	0	12	12
H/TOT	0	0	3	0	0	2	5	7	0	0	1	0	0	0	1	1	0	0	19	2	0	2	23	25
08:30	0	0	8	1	0	0	9	9	0	0	0	0	0	0	0	0	0	0	28	4	0	0	32	32
08:45	0	0	16	1	0	1	18	19	0	0	0	0	0	0	0	0	0	0	26	5	0	0	31	31
09:00	1	0	22	1	0	0	24	23	0	0	1	0	0	0	1	1	0	0	35	1	0	0	36	36
09:15	0	0	1	1	1	0	3	4	0	0	0	0	0	0	0	0	0	0	3	1	0	0	4	4
H/TOT	1	0	47	4	1	1	54	55	0	0	1	0	0	0	1	1	0	0	92	11	0	0	103	103
P/TOT	1	0	50	4	1	3	59	62	0	0	2	0	0	0	2	2	0	0	111	13	0	2	126	128

	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	5	0	0	0	5	5	0	0	0	0	0	0	0	0	0	0	14	3	0	0	17	17
16:15	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	7	1	0	0	8	8
16:30	0	0	1	0	0	0	1	1	0	0	1	0	0	0	1	1	0	0	8	3	0	0	11	11
16:45	0	0	2	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	8	0	0	0	8	8
H/TOT	0	1	8	0	0	0	9	8	0	0	1	0	0	0	1	1	0	0	37	7	0	0	44	44
17:00	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	12	1	0	0	13	13
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	1	0	0	5	5
17:30	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3	3
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	4	4
H/TOT	0	0	2	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	23	2	0	0	25	25
18:00	0	0	2	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	6	0	0	0	6	6
18:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	3	3
H/TOT	0	0	2	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	8	1	0	0	9	9
P/TOT	0	1	12	0	0	0	13	12	0	0	1	0	0	0	1	1	0	0	68	10	0	0	78	78

TRAFFINOMICS LIMITED

BRAY TRAFFIC COUNTS **DECEMBER 2020**

MANUAL CLASSIFIED JUNCTION TURNING COUNTS **TRA/20/137**

SITE: 02 DATE: 9th December 2020

LOCATION: Dublin Road/Upper Dargle 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	1	0	0	0	1	1	0	0	75	19	4	5	103	112	0	0	4	0	1	1	6	8
07:45	0	0	0	0	0	0	0	0	5	0	92	14	3	5	119	123	2	0	4	0	0	1	7	6
08:00	0	0	3	0	0	0	3	3	6	0	121	15	1	8	151	155	0	0	10	1	0	0	11	11
08:15	0	0	0	0	0	0	0	0	5	1	109	7	1	6	129	131	0	0	10	1	0	1	12	13
H/TOT	0	0	4	0	0	0	4	4	16	1	397	55	9	24	502	522	2	0	28	2	1	3	36	38
08:30	3	0	0	0	0	0	3	1	7	2	88	15	1	4	117	115	0	0	7	2	1	0	10	11
08:45	0	0	1	0	0	0	1	1	4	0	99	16	1	2	122	122	0	0	20	0	0	2	22	24
09:00	0	0	1	0	0	0	1	1	5	2	66	11	6	7	97	105	0	0	35	1	0	0	36	36
09:15	0	0	1	0	0	0	1	1	3	1	108	13	4	7	136	144	0	0	11	2	0	0	13	13
H/TOT	3	0	3	0	0	0	6	4	19	5	361	55	12	20	472	486	0	0	73	5	1	2	81	84
P/TOT	3	0	7	0	0	0	10	8	35	6	758	110	21	44	974	1007	2	0	101	7	2	5	117	122

	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	3	0	121	13	1	4	142	145	0	0	18	3	0	0	21	21
16:15	0	0	0	0	0	0	0	0	2	1	128	16	2	4	153	157	0	0	13	2	0	0	15	15
16:30	0	0	0	0	0	0	0	0	0	0	123	13	1	5	142	148	0	0	17	4	1	0	22	23
16:45	0	0	0	0	0	0	0	0	5	0	118	4	0	9	136	141	0	1	18	3	0	1	23	23
H/TOT	0	0	0	0	0	0	0	0	10	1	490	46	4	22	573	590	0	1	66	12	1	1	81	82
17:00	0	0	0	0	0	0	0	0	1	0	100	17	0	4	122	125	1	0	18	3	1	0	23	23
17:15	0	0	0	0	0	0	0	0	3	1	123	13	3	4	147	151	0	0	19	3	0	1	23	24
17:30	0	0	0	0	0	0	0	0	2	0	119	6	1	4	132	135	1	0	21	1	0	0	23	22
17:45	0	0	0	0	0	0	0	0	1	1	128	21	0	2	153	154	1	0	17	1	0	1	20	20
H/TOT	0	0	0	0	0	0	0	0	7	2	470	57	4	14	554	565	3	0	75	8	1	2	89	90
18:00	0	0	0	0	0	0	0	0	0	2	99	9	1	7	118	125	0	0	18	3	0	0	21	21
18:15	0	0	0	0	0	0	0	0	1	0	120	9	1	8	139	147	0	0	17	0	0	0	17	17
H/TOT	0	0	0	0	0	0	0	0	1	2	219	18	2	15	257	272	0	0	35	3	0	0	38	38
P/TOT	0	0	0	0	0	0	0	0	18	5	1179	121	10	51	1384	1428	3	1	176	23	2	3	208	210

TRAFFINOMICS LIMITED

BRAY TRAFFIC COUNTS **DECEMBER 2020**

MANUAL CLASSIFIED JUNCTION TURNING COUNTS **TRA/20/137**

SITE: 02 DATE: 9th December 2020

LOCATION: Dublin Road/Upper Dargle 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	14	3	1	1	19	21	0	0	2	0	0	0	2	2	0	0	15	0	1	0	16	17
07:45	0	0	22	7	0	0	29	29	0	0	6	1	0	0	7	7	0	0	11	1	0	2	14	16
08:00	1	0	20	1	1	1	24	25	0	0	1	0	0	0	1	1	0	0	19	2	0	1	22	23
08:15	0	0	21	3	0	0	24	24	0	0	5	0	0	1	6	7	0	0	18	1	0	0	19	19
H/TOT	1	0	77	14	2	2	96	99	0	0	14	1	0	1	16	17	0	0	63	4	1	3	71	75
08:30	0	0	43	2	0	1	46	47	0	0	3	0	0	0	3	3	0	0	13	0	2	1	16	19
08:45	0	0	33	2	0	1	36	37	0	0	3	0	0	0	3	3	1	0	13	0	0	1	15	15
09:00	0	0	20	3	0	0	23	23	0	0	0	0	0	0	0	0	0	0	11	1	0	1	13	14
09:15	0	0	12	4	0	0	16	16	0	0	0	0	0	0	0	0	0	0	23	2	3	1	29	33
H/TOT	0	0	108	11	0	2	121	123	0	0	6	0	0	0	6	6	1	0	60	3	5	4	73	81
P/TOT	1	0	185	25	2	4	217	222	0	0	20	1	0	1	22	23	1	0	123	7	6	7	144	156

	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	18	4	0	0	22	22	0	0	1	0	0	0	1	1	0	0	15	0	1	0	16	17
16:15	1	0	12	3	0	0	16	15	0	0	0	1	0	0	1	1	0	0	9	4	0	1	14	15
16:30	0	0	14	1	0	1	16	17	0	0	0	0	0	0	0	0	0	0	10	2	0	0	12	12
16:45	0	0	19	2	0	0	21	21	0	0	0	0	0	0	0	0	0	0	16	1	0	1	18	19
H/TOT	1	0	63	10	0	1	75	75	0	0	1	1	0	0	2	2	0	0	50	7	1	2	60	63
17:00	1	0	18	1	0	1	21	21	0	0	0	0	0	0	0	0	1	0	23	0	0	0	24	23
17:15	0	0	14	0	0	0	14	14	0	0	0	0	0	0	0	0	0	0	20	1	0	1	22	23
17:30	0	0	9	3	0	1	13	14	0	0	0	0	0	0	0	0	0	0	18	0	1	0	19	20
17:45	0	0	16	0	0	1	17	18	0	0	0	0	0	0	0	0	0	0	19	0	0	1	20	21
H/TOT	1	0	57	4	0	3	65	67	0	0	0	0	0	0	0	0	1	0	80	1	1	2	85	87
18:00	1	0	12	1	0	0	14	13	0	0	0	0	0	0	0	0	0	0	15	1	0	0	16	16
18:15	0	0	6	0	0	0	6	6	0	0	0	0	0	0	0	0	0	0	7	1	0	0	8	8
H/TOT	1	0	18	1	0	0	20	19.2	0	0	0	0	0	0	0	0	0	0	22	2	0	0	24	24
P/TOT	3	0	138	15	0	4	160	162	0	0	1	1	0	0	2	2	1	0	152	10	2	4	169	174

TRAFFINOMICS LIMITED

BRAY TRAFFIC COUNTS **DECEMBER 2020**

MANUAL CLASSIFIED JUNCTION TURNING COUNTS **TRA/20/137**

SITE: 02 DATE: 9th December 2020

LOCATION: Dublin Road/Upper Dargle 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	3	0	0	0	3	3	2	0	118	19	4	6	149	157	0	0	0	0	0	0	0	0
07:45	0	0	8	0	0	0	8	8	0	1	139	15	1	4	160	164	0	0	0	0	0	0	0	0
08:00	0	0	8	2	0	0	10	10	4	0	131	10	0	8	153	158	0	0	0	0	0	0	0	0
08:15	0	0	13	2	0	0	15	15	2	0	137	15	3	6	163	170	0	0	0	0	0	0	0	0
H/TOT	0	0	32	4	0	0	36	36	8	1	525	59	8	24	625	650	0	0	0	0	0	0	0	0
08:30	0	0	8	1	0	2	11	13	7	0	147	14	2	2	172	170	3	0	2	0	0	0	5	3
08:45	0	0	15	0	0	1	16	17	2	0	142	10	4	5	163	170	0	0	1	0	0	0	1	1
09:00	0	0	17	2	0	1	20	21	3	1	126	13	3	11	157	168	0	0	0	0	1	0	1	2
09:15	0	0	14	2	3	0	19	22	1	0	121	20	0	4	146	149	0	0	0	0	0	0	0	0
H/TOT	0	0	54	5	3	4	66	73	13	1	536	57	9	22	638	658	3	0	3	0	1	0	7	6
P/TOT	0	0	86	9	3	4	102	109	21	2	1061	116	17	46	1263	1308	3	0	3	0	1	0	7	6

	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	1	0	31	1	0	0	33	32	5	1	115	22	2	6	151	154	0	0	1	0	0	0	1	1
16:15	1	0	18	0	0	0	19	18	4	1	126	21	4	4	160	164	0	0	1	0	0	0	1	1
16:30	0	0	23	6	0	1	30	31	1	0	112	14	0	5	132	136	0	0	0	0	0	0	0	0
16:45	1	0	27	2	0	0	30	29	2	1	118	11	2	4	138	142	0	0	0	0	0	0	0	0
H/TOT	3	0	99	9	0	1	112	111	12	3	471	68	8	19	581	597	0	0	2	0	0	0	2	2
17:00	0	1	34	1	0	0	36	35	2	1	104	14	1	4	126	129	0	0	0	0	0	0	0	0
17:15	0	0	32	2	0	1	35	36	2	1	122	19	0	4	148	150	0	0	0	0	0	0	0	0
17:30	0	0	35	2	0	0	37	37	1	1	139	15	1	5	162	167	0	0	0	0	0	0	0	0
17:45	0	0	28	0	0	0	28	28	2	0	127	7	1	4	141	144	0	0	0	0	0	0	0	0
H/TOT	0	1	129	5	0	1	136	136	7	3	492	55	3	17	577	590	0	0	0	0	0	0	0	0
18:00	0	0	25	0	0	1	26	27	3	2	125	15	1	3	149	149	0	0	0	0	0	0	0	0
18:15	0	0	28	1	0	1	30	31	1	1	119	11	0	5	137	141	0	0	0	0	0	0	0	0
H/TOT	0	0	53	1	0	2	56	58	4	3	244	26	1	8	286	290	0	0	0	0	0	0	0	0
P/TOT	3	1	281	15	0	4	304	305	23	9	1207	149	12	44	1444	1476	0	0	2	0	0	0	2	2

TRAFFINOMICS LIMITED

BRAY TRAFFIC COUNTS **DECEMBER 2020**

MANUAL CLASSIFIED JUNCTION TURNING COUNTS **TRA/20/137**

SITE: 02 DATE: 9th December 2020

LOCATION: Dublin Road/Upper Dargle 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	1	0	0	0	1	1	0	0	0	0	0	0	0	0
07:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0
08:15	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	1	0	0	0	1	1	0	0	2	0	0	0	2	2	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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:00	1	0	1	0	0	0	2	1	0	0	2	0	0	0	2	2	0	0	0	0	0	0	0	0
09:15	0	0	0	0	1	0	1	2	0	0	1	0	0	0	1	1	0	0	1	0	0	0	1	1
H/TOT	1	0	1	0	1	0	3	3	0	0	3	0	0	0	3	3	0	0	1	0	0	0	1	1
P/TOT	1	0	2	0	1	0	4	4	0	0	5	0	0	0	5	5	0	0	1	0	0	0	1	1

	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	0	0	0	0	0	0	0	0	3	1	0	0	4	4	0	0	0	0	0	0	0	0
16:15	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0
16:30	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0
H/TOT	1	0	0	0	0	0	1	0	0	0	4	1	0	0	5	5	1	0	1	0	0	0	2	1
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45	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	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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	1	0	0	0	1	1	0	0	0	0	0	0	0	0
H/TOT	0	0	1	0	0	0	1	1	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0
P/TOT	1	0	2	0	0	0	3	2	0	0	5	1	0	0	6	6	1	0	1	0	0	0	2	1

TRAFFINOMICS LIMITED

BRAY TRAFFIC COUNTS **DECEMBER 2020**

MANUAL CLASSIFIED JUNCTION TURNING COUNTS **TRA/20/137**

SITE: 03 DATE: 9th December 2020

LOCATION: Dublin Road/Green Park 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	90	18	5	5	118	128	0	0	0	1	0	0	1	1
07:45	0	0	0	0	0	0	0	0	5	0	101	14	2	7	129	134	0	0	2	1	1	0	4	5
08:00	0	0	1	1	0	0	2	2	5	0	137	16	1	9	168	174	1	0	2	0	0	0	3	2
08:15	0	0	2	0	0	0	2	2	5	1	126	8	1	6	147	149	0	0	0	0	0	0	0	0
H/TOT	0	0	3	1	0	0	4	4	15	1	454	56	9	27	562	585	1	0	4	2	1	0	8	8
08:30	0	0	0	0	0	0	0	0	7	2	99	14	3	5	130	131	0	0	2	1	0	0	3	3
08:45	0	0	1	1	0	0	2	2	5	0	104	15	1	3	128	128	0	0	7	0	0	0	7	7
09:00	0	0	2	0	0	0	2	2	6	2	72	11	5	8	104	111	0	0	4	1	1	0	6	7
09:15	0	0	0	1	0	0	1	1	3	1	124	14	8	8	158	171	0	0	7	0	0	0	7	7
H/TOT	0	0	3	2	0	0	5	5	21	5	399	54	17	24	520	541	0	0	20	2	1	0	23	24
P/TOT	0	0	6	3	0	0	9	9	36	6	853	110	26	51	1082	1127	1	0	24	4	2	0	31	32

	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	1	0	0	0	1	1	3	0	128	12	2	3	148	151	0	0	7	1	0	1	9	10
16:15	0	0	4	0	0	0	4	4	2	1	130	20	2	5	160	165	0	0	3	0	0	0	3	3
16:30	0	0	4	0	0	0	4	4	1	0	125	15	1	5	147	152	0	0	4	0	0	0	4	4
16:45	0	0	4	0	0	0	4	4	5	0	125	5	0	10	145	151	0	0	5	0	0	0	5	5
H/TOT	0	0	13	0	0	0	13	13	11	1	508	52	5	23	600	619	0	0	19	1	0	1	21	22
17:00	0	0	2	0	0	0	2	2	2	0	118	15	0	4	139	141	0	0	3	2	0	0	5	5
17:15	0	0	3	0	0	0	3	3	3	1	137	14	3	5	163	168	0	0	4	0	0	0	4	4
17:30	0	0	0	0	0	0	0	0	2	0	132	6	2	4	146	150	0	0	5	0	0	0	5	5
17:45	0	0	2	0	0	0	2	2	1	1	137	20	0	3	162	164	0	0	8	1	0	0	9	9
H/TOT	0	0	7	0	0	0	7	7	8	2	524	55	5	16	610	623	0	0	20	3	0	0	23	23
18:00	0	0	0	0	0	0	0	0	0	2	109	10	1	7	129	136	0	0	5	0	0	0	5	5
18:15	0	0	0	0	0	0	0	0	1	0	124	10	1	8	144	152	0	0	4	0	0	0	4	4
H/TOT	0	0	0	0	0	0	0	0	1	2	233	20	2	15	273	288	0	0	9	0	0	0	9	9
P/TOT	0	0	20	0	0	0	20	20	20	5	1265	127	12	54	1483	1530	0	0	48	4	0	1	53	54

TRAFFINOMICS LIMITED

BRAY TRAFFIC COUNTS **DECEMBER 2020**

MANUAL CLASSIFIED JUNCTION TURNING COUNTS **TRA/20/137**

SITE: 03 DATE: 9th December 2020

LOCATION: Dublin Road/Green Park 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	5	1	0	1	7	8	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
07:45	0	0	6	1	0	0	7	7	0	0	0	0	0	0	0	0	0	0	5	2	0	0	7	7
08:00	0	0	4	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	3	2	0	0	5	5
08:15	0	0	12	1	0	0	13	13	0	0	1	0	0	0	1	1	0	0	14	1	0	0	15	15
H/TOT	0	0	27	3	0	1	31	32	0	0	1	0	0	0	1	1	0	0	23	5	0	0	28	28
08:30	0	0	20	0	0	1	21	22	0	0	0	0	0	0	0	0	0	0	26	2	0	1	29	30
08:45	0	0	31	2	0	0	33	33	0	0	0	1	0	0	1	1	0	0	15	0	0	0	15	15
09:00	0	0	7	4	0	0	11	11	0	0	0	0	0	0	0	0	0	0	12	0	0	0	12	12
09:15	0	0	3	0	1	0	4	5	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
H/TOT	0	0	61	6	1	1	69	71	0	0	0	1	0	0	1	1	0	0	54	2	0	1	57	58
P/TOT	0	0	88	9	1	2	100	103	0	0	1	1	0	0	2	2	0	0	77	7	0	1	85	86

	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	4	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
16:15	0	0	4	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
16:30	0	0	9	0	0	0	9	9	0	0	0	0	0	0	0	0	0	0	4	0	0	0	4	4
16:45	0	0	5	0	0	0	5	5	0	0	0	0	1	0	1	2	0	0	2	1	0	0	3	3
H/TOT	0	0	22	0	0	0	22	22	0	0	0	0	1	0	1	2	0	0	8	1	0	0	9	9
17:00	0	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	6	0	0	0	6	6
17:15	0	0	6	3	0	0	9	9	0	0	1	0	0	0	1	1	0	0	3	1	0	0	4	4
17:30	0	0	4	2	0	0	6	6	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3	3
17:45	0	0	4	1	0	0	5	5	0	0	0	0	0	0	0	0	0	0	4	0	0	0	4	4
H/TOT	0	0	14	7	0	0	21	21	0	0	1	0	0	0	1	1	0	0	16	1	0	0	17	17
18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	2	1
18:15	0	0	8	1	0	0	9	9	0	0	0	0	0	0	0	0	0	0	4	0	0	0	4	4
H/TOT	0	0	8	1	0	0	9	9	0	0	0	0	0	0	0	0	1	0	5	0	0	0	6	5.2
P/TOT	0	0	44	8	0	0	52	52	0	0	1	0	1	0	2	3	1	0	29	2	0	0	32	31

TRAFFINOMICS LIMITED

BRAY TRAFFIC COUNTS **DECEMBER 2020**

MANUAL CLASSIFIED JUNCTION TURNING COUNTS **TRA/20/137**

SITE: 03 DATE: 9th December 2020

LOCATION: Dublin Road/Green Park 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	1	0	0	1	2	3	2	0	116	18	4	5	145	152	0	0	0	0	0	0	0	0
07:45	0	0	2	1	0	0	3	3	0	1	141	14	1	4	161	165	0	0	0	0	0	0	0	0
08:00	0	0	1	0	0	0	1	1	4	0	135	12	0	8	159	164	0	0	0	0	0	0	0	0
08:15	0	0	1	0	0	0	1	1	2	0	137	16	3	6	164	171	0	0	1	0	0	0	1	1
H/TOT	0	0	5	1	0	1	7	8	8	1	529	60	8	23	629	653	0	0	1	0	0	0	1	1
08:30	0	0	2	0	0	0	2	2	10	0	137	15	2	3	167	164	0	0	2	0	0	0	2	2
08:45	0	0	3	0	0	0	3	3	2	0	127	7	4	6	146	154	0	0	0	0	0	0	0	0
09:00	0	0	5	0	0	0	5	5	3	1	135	11	4	12	166	179	0	0	0	1	0	0	1	1
09:15	0	0	3	0	0	0	3	3	1	0	132	21	2	4	160	165	0	0	2	1	0	0	3	3
H/TOT	0	0	13	0	0	0	13	13	16	1	531	54	12	25	639	663	0	0	4	2	0	0	6	6
P/TOT	0	0	18	1	0	1	20	21	24	2	1060	114	20	48	1268	1316	0	0	5	2	0	0	7	7

	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	5	0	0	0	5	5	6	1	141	23	2	6	179	182	0	0	3	0	0	0	3	3
16:15	0	0	3	2	0	0	5	5	5	1	139	21	4	4	174	177	0	0	1	0	0	0	1	1
16:30	0	0	4	0	0	0	4	4	1	0	122	20	0	6	149	154	0	0	1	1	0	0	2	2
16:45	0	0	3	0	0	0	3	3	3	1	138	13	2	4	161	164	0	0	1	0	0	0	1	1
H/TOT	0	0	15	2	0	0	17	17	15	3	540	77	8	20	663	677	0	0	6	1	0	0	7	7
17:00	0	0	6	0	0	0	6	6	2	2	135	14	1	4	158	160	0	0	2	0	0	0	2	2
17:15	0	0	7	0	0	0	7	7	2	1	146	18	0	5	172	175	0	0	1	0	0	0	1	1
17:30	0	0	5	0	0	0	5	5	1	1	166	15	1	5	189	194	0	0	4	0	0	0	4	4
17:45	0	0	4	0	0	0	4	4	2	0	149	6	1	4	162	165	0	0	1	0	0	0	1	1
H/TOT	0	0	22	0	0	0	22	22	7	4	596	53	3	18	681	694	0	0	8	0	0	0	8	8
18:00	0	0	6	1	0	0	7	7	3	2	148	15	1	4	173	174	0	0	1	0	0	0	1	1
18:15	0	0	6	0	0	0	6	6	1	1	139	11	0	6	158	163	0	0	0	0	0	0	0	0
H/TOT	0	0	12	1	0	0	13	13	4	3	287	26	1	10	331	337	0	0	1	0	0	0	1	1
P/TOT	0	0	49	3	0	0	52	52	26	10	1423	156	12	48	1675	1708	0	0	15	1	0	0	16	16

TRAFFINOMICS LIMITED

BRAY TRAFFIC COUNTS **DECEMBER 2020**

MANUAL CLASSIFIED JUNCTION TURNING COUNTS **TRA/20/137**

SITE: 03 DATE: 9th December 2020

LOCATION: Dublin Road/Green Park 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	0	0	0	0	0	0
07:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
09:00	1	0	2	1	0	0	4	3	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
09:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
H/TOT	1	0	2	1	0	0	4	3	0	0	0	0	0	0	0	0	0	0	1	2	0	0	3	3
P/TOT	1	0	2	1	0	0	4	3	0	0	0	0	0	0	0	0	0	0	2	2	0	0	4	4

	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	3	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	2
16:15	0	0	1	0	0	0	1	1	0	0	1	0	0	0	1	1	0	0	2	0	0	0	2	2
16:30	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	4	0	0	0	4	4
16:45	0	0	2	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	2
H/TOT	0	0	7	0	0	0	7	7	0	0	1	0	0	0	1	1	0	0	10	0	0	0	10	10
17:00	0	0	3	0	0	0	3	3	0	0	1	0	1	0	2	3	0	0	3	0	0	0	3	3
17:15	0	0	2	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	2
17:30	0	0	3	0	0	0	3	3	0	0	1	0	0	0	1	1	0	0	4	0	0	0	4	4
17:45	0	0	2	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	2
H/TOT	0	0	10	0	0	0	10	10	0	0	2	0	1	0	3	4	0	0	11	0	0	0	11	11
18:00	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	2
18:15	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	2	0	0	0	2	2
P/TOT	0	0	19	0	0	0	19	19	0	0	3	0	1	0	4	5	0	0	23	0	0	0	23	23

TRAFFINOMICS LIMITED

BRAY TRAFFIC COUNTS **DECEMBER 2020**

MANUAL CLASSIFIED JUNCTION TURNING COUNTS **TRA/20/137**

SITE: 04 DATE: 9th December 2020

LOCATION: Dublin Road/Dwyer Park (W) 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	2	0	0	0	2	2	0	0	87	17	5	5	114	124	0	0	2	1	0	0	3	3
07:45	0	0	0	1	0	0	1	1	5	0	103	14	2	7	131	136	0	0	3	1	0	0	4	4
08:00	0	0	3	0	0	0	3	3	5	0	128	16	0	9	158	163	0	0	9	2	1	0	12	13
08:15	0	0	3	0	0	0	3	3	5	1	133	9	1	6	155	157	0	0	4	0	0	0	4	4
H/TOT	0	0	8	1	0	0	9	9	15	1	451	56	8	27	558	580	0	0	18	4	1	0	23	24
08:30	0	0	2	1	0	0	3	3	7	2	118	15	3	6	151	153	0	0	5	0	0	0	5	5
08:45	0	0	0	0	0	0	0	0	5	0	106	14	1	3	129	129	0	0	13	1	0	0	14	14
09:00	0	0	3	0	0	0	3	3	7	2	73	10	5	8	105	111	0	0	10	2	0	0	12	12
09:15	0	0	1	0	0	0	1	1	3	1	107	13	8	8	140	153	0	0	17	1	0	0	18	18
H/TOT	0	0	6	1	0	0	7	7	22	5	404	52	17	25	525	546	0	0	45	4	0	0	49	49
P/TOT	0	0	14	2	0	0	16	16	37	6	855	108	25	52	1083	1127	0	0	63	8	1	0	72	73

	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	1	2	0	0	3	3	3	0	106	9	2	3	123	126	0	0	25	1	0	0	26	26
16:15	0	0	2	0	0	0	2	2	2	1	108	20	2	5	138	143	0	0	22	0	0	0	22	22
16:30	0	0	1	1	0	0	2	2	1	0	118	11	1	5	136	141	0	0	11	3	0	0	14	14
16:45	0	0	3	1	0	0	4	4	5	0	109	5	0	10	129	135	0	0	17	0	0	0	17	17
H/TOT	0	0	7	4	0	0	11	11	11	1	441	45	5	23	526	545	0	0	75	4	0	0	79	79
17:00	0	0	2	0	0	0	2	2	2	0	115	15	0	4	136	138	0	0	10	0	0	0	10	10
17:15	0	0	3	0	0	0	3	3	3	1	121	15	3	5	148	153	0	0	18	0	0	0	18	18
17:30	0	0	1	1	0	0	2	2	2	0	115	5	2	4	128	132	0	0	22	0	0	0	22	22
17:45	0	0	1	0	0	0	1	1	1	1	131	17	0	3	153	155	0	0	11	3	0	0	14	14
H/TOT	0	0	7	1	0	0	8	8	8	2	482	52	5	16	565	578	0	0	61	3	0	0	64	64
18:00	0	0	1	0	0	0	1	1	1	2	100	8	1	7	119	125	0	0	10	2	0	0	12	12
18:15	0	0	0	1	0	0	1	1	1	0	110	9	1	8	129	137	0	0	19	0	0	0	19	19
H/TOT	0	0	1	1	0	0	2	2	2	2	210	17	2	15	248	262	0	0	29	2	0	0	31	31
P/TOT	0	0	15	6	0	0	21	21	21	5	1133	114	12	54	1339	1385	0	0	165	9	0	0	174	174

TRAFFINOMICS LIMITED

BRAY TRAFFIC COUNTS **DECEMBER 2020**

MANUAL CLASSIFIED JUNCTION TURNING COUNTS **TRA/20/137**

SITE: 04 DATE: 9th December 2020

LOCATION: Dublin Road/Dwyer Park (W) 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	4	0	1	0	5	6	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	2
07:45	0	0	10	2	0	0	12	12	0	0	0	0	0	0	0	0	0	0	2	2	0	0	4	4
08:00	0	0	4	1	0	0	5	5	0	0	0	0	0	0	0	0	0	0	3	1	1	0	5	6
08:15	0	0	3	2	1	0	6	7	0	0	0	0	0	0	0	0	0	0	6	0	0	0	6	6
H/TOT	0	0	21	5	2	0	28	30	0	0	0	0	0	0	0	0	0	0	13	3	1	0	17	18
08:30	0	0	7	0	0	0	7	7	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	2
08:45	0	0	12	0	0	0	12	12	0	0	0	0	0	0	0	0	0	0	4	0	0	0	4	4
09:00	0	0	13	1	0	0	14	14	0	0	0	0	0	0	0	0	0	0	4	0	0	0	4	4
09:15	0	0	24	1	0	0	25	25	0	0	0	0	0	0	0	0	0	0	4	0	0	0	4	4
H/TOT	0	0	56	2	0	0	58	58	0	0	0	0	0	0	0	0	0	0	14	0	0	0	14	14
P/TOT	0	0	77	7	2	0	86	88	0	0	0	0	0	0	0	0	0	0	27	3	1	0	31	32

	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	30	0	0	0	30	30	0	0	0	0	0	0	0	0	0	0	14	0	0	1	15	16
16:15	0	0	26	1	0	0	27	27	0	0	0	0	0	0	0	0	0	0	14	0	0	0	14	14
16:30	0	0	23	1	0	0	24	24	0	0	0	0	0	0	0	0	0	0	13	0	0	0	13	13
16:45	0	0	29	1	0	0	30	30	0	0	0	0	0	0	0	0	0	0	5	2	0	0	7	7
H/TOT	0	0	108	3	0	0	111	111	0	0	0	0	0	0	0	0	0	0	46	2	0	1	49	50
17:00	0	1	24	0	0	0	25	24	0	0	0	0	0	0	0	0	0	0	9	0	0	0	9	9
17:15	0	0	31	0	0	0	31	31	0	0	0	0	0	0	0	0	0	0	4	1	0	0	5	5
17:30	0	0	29	2	0	0	31	31	0	0	0	0	0	0	0	0	0	0	13	0	0	0	13	13
17:45	0	0	32	1	0	0	33	33	0	0	0	0	0	0	0	0	0	0	13	0	0	0	13	13
H/TOT	0	1	116	3	0	0	120	119	0	0	0	0	0	0	0	0	0	0	39	1	0	0	40	40
18:00	0	0	29	4	0	0	33	33	0	0	0	0	0	0	0	0	0	0	12	1	0	0	13	13
18:15	0	1	21	0	0	0	22	21	0	0	0	0	0	0	0	0	0	0	8	2	0	0	10	10
H/TOT	0	1	50	4	0	0	55	54.4	0	0	0	0	0	0	0	0	0	0	20	3	0	0	23	23
P/TOT	0	2	274	10	0	0	286	285	0	0	0	0	0	0	0	0	0	0	105	6	0	1	112	113

TRAFFINOMICS LIMITED

BRAY TRAFFIC COUNTS **DECEMBER 2020**

MANUAL CLASSIFIED JUNCTION TURNING COUNTS **TRA/20/137**

SITE: 04 DATE: 9th December 2020

LOCATION: Dublin Road/Dwyer Park (W) 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	3	0	0	0	3	3	1	0	111	18	3	6	139	147	0	0	0	0	0	0	0	0
07:45	0	0	3	0	0	0	3	3	0	1	132	13	1	4	151	155	0	0	0	0	0	0	0	0
08:00	0	0	1	1	0	0	2	2	4	0	132	11	0	8	155	160	0	0	0	0	0	0	0	0
08:15	0	0	8	0	0	0	8	8	2	0	136	14	2	6	160	166	0	0	1	0	0	0	1	1
H/TOT	0	0	15	1	0	0	16	16	7	1	511	56	6	24	605	629	0	0	1	0	0	0	1	1
08:30	0	0	8	0	0	0	8	8	10	0	131	15	2	3	161	158	0	0	1	0	0	0	1	1
08:45	0	0	8	0	0	0	8	8	2	0	116	7	4	6	135	143	0	0	2	0	0	0	2	2
09:00	0	0	10	1	0	0	11	11	3	1	126	10	4	12	156	169	0	0	3	0	0	0	3	3
09:15	0	0	16	2	0	0	18	18	1	0	112	21	2	4	140	145	0	0	1	0	0	0	1	1
H/TOT	0	0	42	3	0	0	45	45	16	1	485	53	12	25	592	616	0	0	7	0	0	0	7	7
P/TOT	0	0	57	4	0	0	61	61	23	2	996	109	18	49	1197	1244	0	0	8	0	0	0	8	8

	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	16	0	0	0	16	16	6	1	118	23	2	6	156	159	0	0	0	0	0	0	0	0
16:15	0	0	22	0	0	0	22	22	5	1	116	22	4	4	152	155	0	0	3	0	0	0	3	3
16:30	0	0	20	0	0	0	20	20	1	0	103	20	0	6	130	135	0	0	1	0	0	0	1	1
16:45	0	0	15	0	0	0	15	15	3	1	110	12	2	4	132	135	0	0	2	0	0	0	2	2
H/TOT	0	0	73	0	0	0	73	73	15	3	447	77	8	20	570	584	0	0	6	0	0	0	6	6
17:00	0	0	15	1	0	0	16	16	2	1	118	14	1	4	140	143	0	0	0	0	0	0	0	0
17:15	0	0	12	0	0	0	12	12	2	1	121	18	0	5	147	150	0	0	2	1	0	0	3	3
17:30	0	0	17	0	0	0	17	17	1	1	141	13	1	5	162	167	0	0	1	0	0	0	1	1
17:45	0	0	14	1	0	0	15	15	2	0	119	5	1	4	131	134	0	0	0	0	0	0	0	0
H/TOT	0	0	58	2	0	0	60	60	7	3	499	50	3	18	580	594	0	0	3	1	0	0	4	4
18:00	0	0	13	0	0	0	13	13	3	2	125	12	1	4	147	148	0	0	1	0	0	0	1	1
18:15	0	0	7	0	0	0	7	7	1	0	122	11	0	6	140	145	0	0	2	0	0	0	2	2
H/TOT	0	0	20	0	0	0	20	20	4	2	247	23	1	10	287	294	0	0	3	0	0	0	3	3
P/TOT	0	0	151	2	0	0	153	153	26	8	1193	150	12	48	1437	1471	0	0	12	1	0	0	13	13

TRAFFINOMICS LIMITED

BRAY TRAFFIC COUNTS **DECEMBER 2020**

MANUAL CLASSIFIED JUNCTION TURNING COUNTS **TRA/20/137**

SITE: 04 DATE: 9th December 2020

LOCATION: Dublin Road/Dwyer Park (W) 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	1	0	2	0	0	0	3	2
07:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
08:00	0	0	0	2	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15	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	1	2	0	0	3	3	0	0	0	0	0	0	0	0	1	0	3	0	0	0	4	3
08:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3	3
08:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	2
09:00	1	0	1	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	1	1	0	0	2	2
09:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
H/TOT	1	0	1	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	7	1	0	0	8	8
P/TOT	1	0	2	2	0	0	5	4	0	0	0	0	0	0	0	0	1	0	10	1	0	0	12	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	3	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
16:15	0	0	3	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
16:30	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
16:45	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3	3
H/TOT	0	0	8	0	0	0	8	8	0	0	0	0	0	0	0	0	0	0	6	0	0	0	6	6
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	2
17:30	0	0	2	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	5	0	0	0	5	5
17:45	0	0	0	0	0	0	0	0	0	0	1	1	0	0	2	2	0	0	3	0	0	0	3	3
H/TOT	0	0	2	0	0	0	2	2	0	0	1	1	0	0	2	2	0	0	11	0	0	0	11	11
18:00	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
18:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	2
H/TOT	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3	3
P/TOT	0	0	11	0	0	0	11	11	0	0	1	1	0	0	2	2	0	0	20	0	0	0	20	20

TRAFFINOMICS LIMITED

BRAY TRAFFIC COUNTS **DECEMBER 2020**

MANUAL CLASSIFIED JUNCTION TURNING COUNTS **TRA/20/137**

SITE: 05 DATE: 9th December 2020

LOCATION: Dublin Road/Dwyer Park (E) 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	89	17	5	5	116	126	1	0	113	18	3	6	141	149
07:45	0	0	0	0	0	0	0	0	5	0	105	16	2	7	135	140	0	1	135	13	1	4	154	158
08:00	0	0	0	0	0	0	0	0	5	0	131	19	1	9	165	171	4	0	132	12	0	8	156	161
08:15	0	0	0	0	0	0	0	0	5	1	140	9	1	6	162	164	2	0	145	14	2	6	169	175
H/TOT	0	0	0	0	0	0	0	0	15	1	465	61	9	27	578	601	7	1	525	57	6	24	620	644
08:30	0	0	0	0	0	0	0	0	7	2	120	15	3	6	153	155	10	0	140	15	2	3	170	167
08:45	0	0	0	0	0	0	0	0	5	0	110	14	1	3	133	133	2	0	126	7	4	6	145	153
09:00	1	0	0	0	0	0	1	0	7	2	78	10	5	8	110	116	3	1	139	11	4	12	170	183
09:15	0	0	0	0	0	0	0	0	3	1	111	13	8	8	144	157	1	0	129	23	2	4	159	164
H/TOT	1	0	0	0	0	0	1	0	22	5	419	52	17	25	540	561	16	1	534	56	12	25	644	668
P/TOT	1	0	0	0	0	0	1	0	37	6	884	113	26	52	1118	1163	23	2	1059	113	18	49	1264	1311

	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	2	0	0	0	2	2	3	0	121	9	2	4	139	143	6	1	134	22	2	6	171	174
16:15	0	0	0	0	0	0	0	0	2	1	125	20	2	5	155	160	5	1	141	22	4	4	177	180
16:30	0	0	1	0	0	0	1	1	1	0	131	11	1	5	149	154	1	0	124	20	0	6	151	156
16:45	0	0	0	0	0	0	0	0	5	0	115	7	0	10	137	143	3	1	127	12	2	4	149	152
H/TOT	0	0	3	0	0	0	3	3	11	1	492	47	5	24	580	600	15	3	526	76	8	20	648	662
17:00	0	0	0	0	0	0	0	0	2	0	124	15	0	4	145	147	2	1	133	15	1	4	156	159
17:15	0	0	0	0	0	0	0	0	3	1	125	16	3	5	153	158	2	1	135	19	0	5	162	165
17:30	0	0	0	0	0	0	0	0	2	0	130	5	2	4	143	147	1	1	157	13	1	5	178	183
17:45	0	0	0	0	0	0	0	0	1	1	144	17	0	3	166	168	2	0	133	6	1	4	146	149
H/TOT	0	0	0	0	0	0	0	0	8	2	523	53	5	16	607	620	7	3	558	53	3	18	642	656
18:00	0	0	0	0	0	0	0	0	1	2	113	9	1	7	133	139	3	2	139	12	1	4	161	162
18:15	0	0	0	0	0	0	0	0	1	0	118	11	1	8	139	147	1	0	130	11	0	6	148	153
H/TOT	0	0	0	0	0	0	0	0	2	2	231	20	2	15	272	286	4	2	269	23	1	10	309	316
P/TOT	0	0	3	0	0	0	3	3	21	5	1246	120	12	55	1459	1506	26	8	1353	152	12	48	1599	1633

TRAFFINOMICS LIMITED

BRAY TRAFFIC COUNTS **DECEMBER 2020**

MANUAL CLASSIFIED JUNCTION TURNING COUNTS **TRA/20/137**

SITE: 05 DATE: 9th December 2020

LOCATION: Dublin Road/Dwyer Park (E) 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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
07:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
08:15	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	2	0	0	0	2	2
08:30	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	2	0	0	0	0	0	0	0	0
08:45	0	0	1	0	0	0	1	1	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0
09:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:15	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0
H/TOT	0	0	1	0	0	0	1	1	0	0	4	0	0	0	4	4	0	0	0	0	0	0	0	0
P/TOT	0	0	1	0	0	0	1	1	0	0	5	0	0	0	5	5	0	0	2	0	0	0	2	2

	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	1	0	0	0	1	1	0	0	3	1	0	0	4	4	0	0	0	1	0	0	1	1
16:15	0	0	1	0	0	0	1	1	0	0	2	0	0	0	2	2	0	0	0	0	0	0	0	0
16:30	0	0	1	0	0	0	1	1	0	0	1	2	0	0	3	3	0	0	0	0	0	0	0	0
16:45	0	0	1	0	0	0	1	1	0	0	2	0	0	0	2	2	0	0	0	0	0	0	0	0
H/TOT	0	0	4	0	0	0	4	4	0	0	8	3	0	0	11	11	0	0	0	1	0	0	1	1
17:00	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0
17:15	0	0	1	0	0	0	1	1	0	0	1	2	0	0	3	3	0	0	0	0	0	0	0	0
17:30	0	0	1	0	0	0	1	1	0	0	2	0	0	0	2	2	0	0	2	0	0	0	2	2
17:45	0	0	2	0	0	0	2	2	0	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0
H/TOT	0	0	4	0	0	0	4	4	0	0	4	3	0	0	7	7	0	0	2	0	0	0	2	2
18:00	0	0	1	0	0	0	1	1	0	0	2	0	1	0	3	4	0	0	0	0	0	0	0	0
18:15	0	0	1	0	0	0	1	1	0	0	2	0	0	0	2	2	0	0	1	0	0	0	1	1
H/TOT	0	0	2	0	0	0	2	2	0	0	4	0	1	0	5	6	0	0	1	0	0	0	1	1
P/TOT	0	0	10	0	0	0	10	10	0	0	16	6	1	0	23	24	0	0	3	1	0	0	4	4

TRAFFINOMICS LIMITED

BRAY TRAFFIC COUNTS **DECEMBER 2020**

MANUAL CLASSIFIED JUNCTION TURNING COUNTS **TRA/20/137**

SITE: 06 DATE: 9th December 2020

LOCATION: Dublin Road/Lower Dargle Road/Ravenswell 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	88	17	5	5	115	125	0	0	1	0	0	0	1	1
07:45	1	0	2	0	0	0	3	2	4	0	101	16	2	7	130	136	0	0	2	0	0	0	2	2
08:00	0	0	5	0	0	0	5	5	5	0	126	19	1	9	160	166	0	0	0	0	0	0	0	0
08:15	0	0	4	1	0	0	5	5	5	1	137	8	1	6	158	160	0	0	0	0	0	0	0	0
H/TOT	1	0	11	1	0	0	13	12	14	1	452	60	9	27	563	587	0	0	3	0	0	0	3	3
08:30	0	0	7	0	0	0	7	7	7	2	115	15	3	6	148	150	0	0	0	0	0	0	0	0
08:45	0	0	2	0	1	0	3	4	5	0	109	14	0	3	131	130	0	0	0	0	0	0	0	0
09:00	0	0	1	0	0	0	1	1	7	2	74	10	5	8	106	112	0	0	3	0	0	0	3	3
09:15	0	0	1	1	0	0	2	2	3	1	111	12	8	8	143	156	0	0	0	0	0	0	0	0
H/TOT	0	0	11	1	1	0	13	14	22	5	409	51	16	25	528	548	0	0	3	0	0	0	3	3
P/TOT	1	0	22	2	1	0	26	26	36	6	861	111	25	52	1091	1136	0	0	6	0	0	0	6	6

	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	3	0	124	9	2	4	142	146	0	0	0	1	0	0	1	1
16:15	0	0	3	0	0	0	3	3	2	1	124	20	1	5	153	157	0	0	0	0	1	0	1	2
16:30	0	0	0	0	0	0	0	0	1	0	131	13	1	5	151	156	0	0	1	0	0	0	1	1
16:45	0	0	0	0	0	0	0	0	5	0	117	7	0	10	139	145	0	0	0	0	0	0	0	0
H/TOT	0	0	3	0	0	0	3	3	11	1	496	49	4	24	585	604	0	0	1	1	1	0	3	4
17:00	0	0	1	1	0	0	2	2	2	0	124	14	0	4	144	146	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0	3	1	126	18	3	5	156	161	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0	2	0	130	5	2	4	143	147	0	0	2	0	0	0	2	2
17:45	0	0	0	0	0	0	0	0	1	1	143	18	0	3	166	168	0	0	1	0	0	0	1	1
H/TOT	0	0	1	1	0	0	2	2	8	2	523	55	5	16	609	622	0	0	3	0	0	0	3	3
18:00	0	0	0	0	0	0	0	0	1	2	114	9	2	7	135	142	0	0	1	0	0	0	1	1
18:15	0	0	0	0	0	0	0	0	1	0	118	11	1	8	139	147	0	0	2	0	0	0	2	2
H/TOT	0	0	0	0	0	0	0	0	2	2	232	20	3	15	274	289	0	0	3	0	0	0	3	3
P/TOT	0	0	4	1	0	0	5	5	21	5	1251	124	12	55	1468	1515	0	0	7	1	1	0	9	10

TRAFFINOMICS LIMITED

BRAY TRAFFIC COUNTS **DECEMBER 2020**

MANUAL CLASSIFIED JUNCTION TURNING COUNTS **TRA/20/137**

SITE: 06 DATE: 9th December 2020

LOCATION: Dublin Road/Lower Dargle Road/Ravenswell 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	0	0	2	2	0	0	0	0	0	0	0	0	0	0	10	0	0	0	10	10
07:45	0	1	1	0	0	0	2	1	0	0	1	0	0	0	1	1	0	0	20	4	1	0	25	26
08:00	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	15	5	0	0	20	20
08:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	24	0	1	0	26	26
H/TOT	0	1	3	0	0	0	4	3	0	0	2	0	0	0	2	2	1	0	69	9	2	0	81	82
08:30	0	0	0	1	0	0	1	1	0	0	2	0	0	0	2	2	0	0	18	1	1	0	20	21
08:45	0	0	1	0	1	0	2	3	0	0	1	0	0	0	1	1	1	0	28	1	0	0	30	29
09:00	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	21	1	1	0	23	24
09:15	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	18	4	1	0	24	24
H/TOT	0	0	1	1	1	0	3	4	0	0	5	0	0	0	5	5	2	0	85	7	3	0	97	98
P/TOT	0	1	4	1	1	0	7	7	0	0	7	0	0	0	7	7	3	0	154	16	5	0	178	181

	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	0	2	0	0	2	2	0	0	0	0	0	0	0	0	1	0	25	4	0	2	32	33
16:15	0	0	2	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	18	1	0	1	20	21
16:30	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	25	1	2	0	28	30
16:45	0	0	2	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	30	1	0	0	31	31
H/TOT	0	0	5	2	0	0	7	7	0	0	0	0	0	0	0	0	1	0	98	7	2	3	111	115
17:00	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	27	3	0	0	30	30
17:15	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	1	0	18	4	0	0	23	22
17:30	0	0	1	0	0	0	1	1	0	0	1	0	0	0	1	1	0	0	26	1	0	0	27	27
17:45	0	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	1	15	4	0	0	20	19
H/TOT	0	0	3	1	0	0	4	4	0	0	1	0	0	0	1	1	1	1	86	12	0	0	100	99
18:00	0	0	2	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	18	1	0	0	19	19
18:15	0	0	2	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	28	1	0	0	29	29
H/TOT	0	0	4	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	46	2	0	0	48	48
P/TOT	0	0	12	3	0	0	15	15	0	0	1	0	0	0	1	1	2	1	230	21	2	3	259	262

TRAFFINOMICS LIMITED

BRAY TRAFFIC COUNTS **DECEMBER 2020**

MANUAL CLASSIFIED JUNCTION TURNING COUNTS **TRA/20/137**

SITE: 06 DATE: 9th December 2020

LOCATION: Dublin Road/Lower Dargle Road/Ravenswell 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	1	0	9	2	0	0	12	11	1	0	111	18	3	6	139	147	0	0	7	0	0	0	7	7
07:45	0	0	17	1	0	0	18	18	0	0	134	13	1	4	152	157	0	0	4	1	0	0	5	5
08:00	0	0	11	3	0	0	14	14	4	0	132	12	0	8	156	161	0	0	19	0	0	1	20	21
08:15	0	0	14	4	1	0	19	20	2	0	145	14	2	6	169	175	1	0	37	0	0	1	39	39
H/TOT	1	0	51	10	1	0	63	63	7	0	522	57	6	24	616	640	1	0	67	1	0	2	71	72
08:30	1	0	19	0	0	1	21	21	10	0	138	14	2	3	167	164	0	0	30	2	0	0	32	32
08:45	1	0	29	4	0	0	34	33	2	0	125	7	3	6	143	150	0	0	30	3	0	0	33	33
09:00	1	0	18	1	0	0	20	19	3	1	135	11	4	12	166	179	0	0	6	0	0	0	6	6
09:15	0	0	14	0	0	0	14	14	1	0	129	23	2	4	159	164	0	0	9	0	0	0	9	9
H/TOT	3	0	80	5	0	1	89	88	16	1	527	55	11	25	635	658	0	0	75	5	0	0	80	80
P/TOT	4	0	131	15	1	1	152	151	23	1	1049	112	17	49	1251	1298	1	0	142	6	0	2	151	152

	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	1	0	19	4	0	0	24	23	6	1	130	20	2	6	165	168	0	0	3	1	0	0	4	4
16:15	0	0	27	3	1	0	31	32	5	1	139	21	3	4	173	175	0	0	1	0	0	0	1	1
16:30	2	0	15	4	1	0	22	21	1	0	124	20	0	6	151	156	0	0	0	0	0	0	0	0
16:45	0	0	20	3	0	0	23	23	3	1	122	12	2	4	144	147	0	0	1	0	0	0	1	1
H/TOT	3	0	81	14	2	0	100	100	15	3	515	73	7	20	633	646	0	0	5	1	0	0	6	6
17:00	1	0	19	4	0	0	24	23	2	1	127	14	1	4	149	152	0	0	1	0	0	0	1	1
17:15	1	0	20	3	0	0	24	23	2	1	133	19	0	5	160	163	0	0	3	0	0	0	3	3
17:30	0	0	25	3	0	0	28	28	1	1	148	12	1	5	168	173	0	0	1	0	0	0	1	1
17:45	0	0	19	1	0	0	20	20	2	0	132	5	1	4	144	147	0	0	0	0	0	0	0	0
H/TOT	2	0	83	11	0	0	96	94	7	3	540	50	3	18	621	635	0	0	5	0	0	0	5	5
18:00	0	0	20	1	0	0	21	21	3	2	135	11	1	4	156	157	0	0	1	0	0	0	1	1
18:15	0	0	19	0	0	0	19	19	1	0	128	11	0	6	146	151	0	0	0	0	0	0	0	0
H/TOT	0	0	39	1	0	0	40	40	4	2	263	22	1	10	302	309	0	0	1	0	0	0	1	1
P/TOT	5	0	203	26	2	0	236	234	26	8	1318	145	11	48	1556	1589	0	0	11	1	0	0	12	12

TRAFFINOMICS LIMITED

BRAY TRAFFIC COUNTS **DECEMBER 2020**

MANUAL CLASSIFIED JUNCTION TURNING COUNTS **TRA/20/137**

SITE: 06 DATE: 9th December 2020

LOCATION: Dublin Road/Lower Dargle Road/Ravenswell 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	0	0	0	0	0	0
07:45	0	0	4	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00	0	0	4	0	0	2	6	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15	0	0	34	0	0	0	34	34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	42	0	0	2	44	46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30	0	0	47	1	0	0	48	48	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	2
08:45	0	0	26	0	0	0	26	26	0	0	4	0	0	0	4	4	0	0	1	0	0	0	1	1
09:00	0	0	25	1	0	0	26	26	0	0	3	0	0	0	3	3	0	0	4	0	0	0	4	4
09:15	1	0	7	1	0	1	10	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	1	0	105	3	0	1	110	110	0	0	7	0	0	0	7	7	0	0	7	0	0	0	7	7
P/TOT	1	0	147	3	0	3	154	156	0	0	7	0	0	0	7	7	0	0	7	0	0	0	7	7

	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	8	3	0	0	11	11	0	0	1	0	0	0	1	1	0	0	5	0	0	0	5	5
16:15	0	0	14	0	0	1	15	16	0	0	2	0	0	0	2	2	0	0	1	1	1	0	3	4
16:30	0	0	11	1	0	0	12	12	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0
16:45	0	0	10	0	0	0	10	10	0	0	0	0	0	0	0	0	0	0	4	0	0	0	4	4
H/TOT	0	0	43	4	0	1	48	49	0	0	4	0	0	0	4	4	0	0	10	1	1	0	12	13
17:00	0	0	20	2	0	0	22	22	0	0	0	0	0	0	0	0	0	0	5	1	0	0	6	6
17:15	0	0	17	0	0	0	17	17	0	0	1	0	0	0	1	1	0	0	2	0	0	0	2	2
17:30	0	0	13	0	0	0	13	13	0	0	2	0	0	0	2	2	0	0	9	1	0	0	10	10
17:45	0	0	11	1	0	0	12	12	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3	3
H/TOT	0	0	61	3	0	0	64	64	0	0	3	0	0	0	3	3	0	0	19	2	0	0	21	21
18:00	0	0	8	0	0	0	8	8	0	0	0	0	0	0	0	0	0	0	3	1	0	0	4	4
18:15	0	0	10	1	0	0	11	11	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
H/TOT	0	0	18	1	0	0	19	19	0	0	0	0	0	0	0	0	0	0	4	1	0	0	5	5
P/TOT	0	0	122	8	0	1	131	132	0	0	7	0	0	0	7	7	0	0	33	4	1	0	38	39

TRAFFINOMICS LIMITED

BRAY TRAFFIC COUNTS **DECEMBER 2020**

MANUAL CLASSIFIED JUNCTION TURNING COUNTS **TRA/20/137**

SITE: 07 DATE: 9th December 2020

LOCATION: Main Street/Herbert Road/Quinsborough 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	10	3	2	2	17	21	3	0	49	6	2	2	62	64	0	0	4	1	0	0	5	5
07:45	1	0	10	2	3	3	19	24	4	0	91	14	0	3	112	112	0	0	4	1	1	0	6	7
08:00	2	0	8	4	0	4	18	20	2	0	86	8	1	6	103	108	0	0	7	3	0	0	10	10
08:15	2	0	8	5	1	2	18	19	4	1	110	4	1	1	121	119	1	0	4	1	0	1	7	7
H/TOT	5	0	36	14	6	11	72	85	13	1	336	32	4	12	398	403	1	0	19	6	1	1	28	29
08:30	1	0	15	5	0	5	26	30	3	1	119	5	1	5	134	137	0	0	11	0	0	0	11	11
08:45	0	1	22	7	1	1	32	33	6	0	78	8	2	0	94	91	0	0	12	2	0	0	14	14
09:00	0	0	23	2	4	3	32	39	5	1	74	5	2	2	89	88	2	0	13	0	0	1	16	15
09:15	1	2	22	4	2	7	38	45	2	0	54	6	5	2	69	74	0	0	13	2	0	0	15	15
H/TOT	2	3	82	18	7	16	128	148	16	2	325	24	10	9	386	391	2	0	49	4	0	1	56	55
P/TOT	7	3	118	32	13	27	200	233	29	3	661	56	14	21	784	794	3	0	68	10	1	2	84	85

	MOVEMENT 1								MOVEMENT 2								MOVEMENT 3							
TIME	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**
16:00	1	0	28	4	2	0	35	36	1	0	72	11	2	1	87	89	0	0	12	3	0	1	16	17
16:15	2	0	29	3	0	5	39	42	1	1	85	7	1	3	98	101	0	0	18	2	0	0	20	20
16:30	1	0	27	2	3	3	36	41	0	0	92	10	0	2	104	106	0	0	25	1	0	0	26	26
16:45	1	0	20	1	0	3	25	27	3	1	87	8	1	4	104	106	0	0	21	2	0	0	23	23
H/TOT	5	0	104	10	5	11	135	147	5	2	336	36	4	10	393	402	0	0	76	8	0	1	85	86
17:00	0	0	19	2	0	3	24	27	2	0	86	9	0	3	100	101	0	0	25	1	0	0	26	26
17:15	0	1	20	7	0	3	31	33	2	1	87	9	1	3	103	105	0	0	21	3	0	0	24	24
17:30	0	0	30	0	0	2	32	34	2	0	93	9	1	2	107	108	0	0	12	2	1	0	15	16
17:45	0	0	28	4	1	3	36	40	1	1	100	12	0	1	115	115	0	0	11	2	0	0	13	13
H/TOT	0	1	97	13	1	11	123	134	7	2	366	39	2	9	425	429	0	0	69	8	1	0	78	79
18:00	0	0	20	1	0	4	25	29	2	0	62	7	2	2	75	77	0	0	15	1	0	0	16	16
18:15	0	0	24	0	0	6	30	36	0	0	83	3	1	3	90	94	0	0	14	4	0	0	18	18
H/TOT	0	0	44	1	0	10	55	65	2	0	145	10	3	5	165	171	0	0	29	5	0	0	34	34
P/TOT	5	1	245	24	6	32	313	346	14	4	847	85	9	24	983	1002	0	0	174	21	1	1	197	199

TRAFFINOMICS LIMITED

BRAY TRAFFIC COUNTS **DECEMBER 2020**

MANUAL CLASSIFIED JUNCTION TURNING COUNTS **TRA/20/137**

SITE: 07 DATE: 9th December 2020

LOCATION: Main Street/Herbert Road/Quinsborough 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	29	4	1	1	35	37	0	0	4	0	0	0	4	4	0	0	0	0	0	0	0	0
07:45	0	0	24	2	0	1	27	28	0	0	13	0	0	0	13	13	0	0	2	0	0	0	2	2
08:00	0	0	36	3	0	2	41	43	0	0	16	1	0	0	17	17	0	0	1	0	0	0	1	1
08:15	0	0	52	4	0	1	57	58	0	0	15	0	0	0	15	15	0	0	3	0	0	0	3	3
H/TOT	0	0	141	13	1	5	160	166	0	0	48	1	0	0	49	49	0	0	6	0	0	0	6	6
08:30	0	0	47	2	0	1	50	51	1	0	28	0	1	0	30	30	0	0	4	0	0	0	4	4
08:45	1	0	53	4	0	1	59	59	0	0	22	0	0	0	22	22	0	0	7	0	0	0	7	7
09:00	1	1	37	4	0	2	45	46	1	0	18	2	0	0	21	20	0	0	5	0	0	0	5	5
09:15	0	0	37	3	0	2	42	44	1	0	16	1	1	0	19	19	0	0	5	0	1	0	6	7
H/TOT	2	1	174	13	0	6	196	200	3	0	84	3	2	0	92	92	0	0	21	0	1	0	22	23
P/TOT	2	1	315	26	1	11	356	366	3	0	132	4	2	0	141	141	0	0	27	0	1	0	28	29

	MOVEMENT 4								MOVEMENT 5								MOVEMENT 6							
TIME	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**
16:00	0	0	33	4	0	0	37	37	1	1	20	2	0	0	24	23	0	0	3	0	0	0	3	3
16:15	0	0	28	4	1	0	33	34	0	0	17	0	0	0	17	17	0	0	2	0	0	0	2	2
16:30	0	0	36	4	0	0	40	40	0	0	14	1	0	0	15	15	0	0	5	0	0	0	5	5
16:45	0	0	28	5	0	0	33	33	0	0	17	1	0	0	18	18	0	0	3	0	0	0	3	3
H/TOT	0	0	125	17	1	0	143	144	1	1	68	4	0	0	74	73	0	0	13	0	0	0	13	13
17:00	0	0	37	2	0	0	39	39	0	0	17	2	0	0	19	19	0	0	7	0	0	0	7	7
17:15	1	0	31	3	0	0	35	34	0	0	13	0	0	0	13	13	0	0	5	0	0	0	5	5
17:30	0	0	30	2	0	0	32	32	0	0	17	0	0	0	17	17	0	0	4	0	0	0	4	4
17:45	0	0	17	2	0	0	19	19	0	0	20	2	0	0	22	22	0	0	3	0	0	0	3	3
H/TOT	1	0	115	9	0	0	125	124	0	0	67	4	0	0	71	71	0	0	19	0	0	0	19	19
18:00	0	0	34	2	0	0	36	36	0	0	9	1	0	0	10	10	2	0	2	0	0	0	4	2
18:15	0	0	32	3	1	0	36	37	2	0	12	0	0	0	14	12	0	0	1	0	1	0	2	3
H/TOT	0	0	66	5	1	0	72	73	2	0	21	1	0	0	24	22.4	2	0	3	0	1	0	6	5.4
P/TOT	1	0	306	31	2	0	340	341	3	1	156	9	0	0	169	166	2	0	35	0	1	0	38	37

TRAFFINOMICS LIMITED

BRAY TRAFFIC COUNTS **DECEMBER 2020**

MANUAL CLASSIFIED JUNCTION TURNING COUNTS **TRA/20/137**

SITE: 07 DATE: 9th December 2020

LOCATION: Main Street/Herbert Road/Quinsborough 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	1	0	0	0	1	1	2	0	67	13	2	4	88	92	0	0	3	2	0	1	6	7
07:45	0	0	2	0	0	1	3	4	0	0	89	8	1	5	103	109	0	0	9	2	1	1	13	15
08:00	0	0	5	0	0	0	5	5	4	0	80	10	0	6	100	103	0	1	3	2	1	3	10	13
08:15	0	0	3	0	0	0	3	3	1	0	102	7	3	7	120	129	0	0	10	2	0	1	13	14
H/TOT	0	0	11	0	0	1	12	13	7	0	338	38	6	22	411	433	0	1	25	8	2	6	42	49
08:30	0	0	7	0	0	0	7	7	2	0	95	11	1	4	113	116	0	0	8	2	0	3	13	16
08:45	0	0	6	0	0	0	6	6	2	0	78	8	3	5	96	102	0	0	15	0	1	2	18	21
09:00	0	0	5	0	1	0	6	7	3	0	82	10	4	9	108	119	0	0	22	2	0	0	24	24
09:15	0	0	7	0	0	0	7	7	1	0	96	9	1	3	110	113	0	0	26	3	0	3	32	35
H/TOT	0	0	25	0	1	0	26	27	8	0	351	38	9	21	427	451	0	0	71	7	1	8	87	96
P/TOT	0	0	36	0	1	1	38	40	15	0	689	76	15	43	838	884	0	1	96	15	3	14	129	145

	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	7	1	0	0	8	8	3	0	84	12	1	5	105	109	0	0	38	2	0	1	41	42
16:15	1	1	8	0	0	0	10	9	2	1	85	15	3	4	110	115	0	0	35	2	0	3	40	43
16:30	0	0	12	0	0	0	12	12	3	0	67	11	1	6	88	93	0	0	23	2	0	1	26	27
16:45	0	0	7	1	0	0	8	8	2	0	69	7	1	4	83	86	1	0	28	2	0	1	32	32
H/TOT	1	1	34	2	0	0	38	37	10	1	305	45	6	19	386	402	1	0	124	8	0	6	139	144
17:00	0	0	8	0	0	0	8	8	2	0	82	10	1	4	99	102	1	0	28	2	0	2	33	34
17:15	0	0	12	1	0	0	13	13	1	1	83	15	0	5	105	109	0	0	26	2	2	2	32	36
17:30	0	0	7	0	0	0	7	7	2	2	96	10	1	5	116	119	0	0	22	2	0	2	26	28
17:45	0	0	6	1	0	0	7	7	3	0	95	5	1	4	108	111	0	0	20	5	0	2	27	29
H/TOT	0	0	33	2	0	0	35	35	8	3	356	40	3	18	428	441	1	0	96	11	2	8	118	127
18:00	0	0	7	0	0	0	7	7	3	0	85	5	1	5	99	103	1	0	21	2	0	1	25	25
18:15	0	0	8	0	0	0	8	8	0	0	94	7	0	6	107	113	0	0	23	2	0	3	28	31
H/TOT	0	0	15	0	0	0	15	15	3	0	179	12	1	11	206	216	1	0	44	4	0	4	53	56.2
P/TOT	1	1	82	4	0	0	88	87	21	4	840	97	10	48	1020	1059	3	0	264	23	2	18	310	328

APPENDIX C

TRICS Trip Generation Output
(Private Apartments & Créche)

Calculation Reference: AUDIT-160301-201009-1036

TRIP RATE CALCULATION SELECTION PARAMETERS:

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

Selected regions and areas:

02	SOUTH EAST		
	BD	BEDFORDSHIRE	3 days
	ES	EAST SUSSEX	1 days
	EX	ESSEX	2 days
	HC	HAMPSHIRE	1 days
	HF	HERTFORDSHIRE	1 days
03	SOUTH WEST		
	DC	DORSET	1 days
	DV	DEVON	1 days
04	EAST ANGLIA		
	CA	CAMBRIDGESHIRE	1 days
	NF	NORFOLK	2 days
	SF	SUFFOLK	2 days
05	EAST MIDLANDS		
	DS	DERBYSHIRE	1 days
	NT	NOTTINGHAMSHIRE	2 days
06	WEST MIDLANDS		
	WM	WEST MIDLANDS	1 days
07	YORKSHIRE & NORTH LINCOLNSHIRE		
	RI	EAST RIDING OF YORKSHIRE	1 days
08	NORTH WEST		
	MS	MERSEYSIDE	2 days
09	NORTH		
	CB	CUMBRIA	3 days
10	WALES		
	CO	CONWY	1 days
11	SCOTLAND		
	EB	CITY OF EDINBURGH	1 days
	SA	SOUTH AYRSHIRE	1 days
	SR	STIRLING	2 days
12	CONNAUGHT		
	GA	GALWAY	1 days
13	MUNSTER		
	WA	WATERFORD	1 days
14	LEINSTER		
	LU	LOUTH	3 days
15	GREATER DUBLIN		
	DL	DUBLIN	6 days
16	ULSTER (REPUBLIC OF IRELAND)		
	MG	MONAGHAN	1 days
17	ULSTER (NORTHERN IRELAND)		
	AN	ANTRIM	1 days

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

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

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	43	60	0.046	43	60	0.162	43	60	0.208
08:00 - 09:00	43	60	0.056	43	60	0.195	43	60	0.251
09:00 - 10:00	43	60	0.069	43	60	0.097	43	60	0.166
10:00 - 11:00	43	60	0.059	43	60	0.080	43	60	0.139
11:00 - 12:00	43	60	0.066	43	60	0.080	43	60	0.146
12:00 - 13:00	43	60	0.091	43	60	0.088	43	60	0.179
13:00 - 14:00	43	60	0.074	43	60	0.084	43	60	0.158
14:00 - 15:00	43	60	0.079	43	60	0.077	43	60	0.156
15:00 - 16:00	43	60	0.098	43	60	0.064	43	60	0.162
16:00 - 17:00	43	60	0.119	43	60	0.078	43	60	0.197
17:00 - 18:00	43	60	0.177	43	60	0.086	43	60	0.263
18:00 - 19:00	43	60	0.177	43	60	0.096	43	60	0.273
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			1.111			1.187			2.298

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

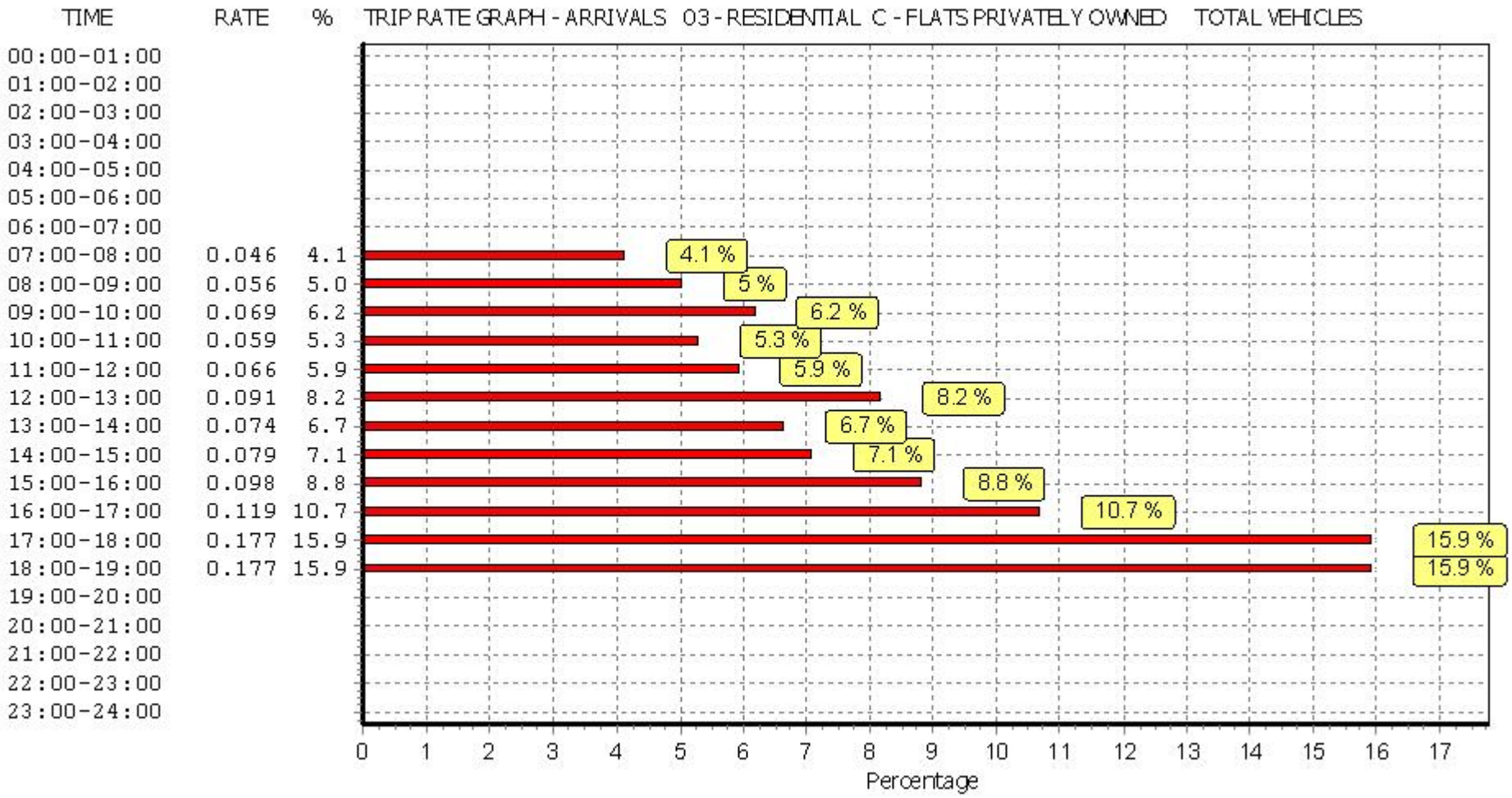
*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected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

Parameter summary

Trip rate parameter range selected:	6 - 184 (units:)
Survey date date range:	01/01/12 - 18/11/19
Number of weekdays (Monday-Friday):	43
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

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

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



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

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

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00	1	400	0.000	1	400	0.000	1	400	0.000
07:00 - 08:00	19	452	2.144	19	452	1.048	19	452	3.192
08:00 - 09:00	19	452	3.716	19	452	3.122	19	452	6.838
09:00 - 10:00	19	452	1.759	19	452	1.666	19	452	3.425
10:00 - 11:00	19	452	0.536	19	452	0.408	19	452	0.944
11:00 - 12:00	19	452	0.722	19	452	0.513	19	452	1.235
12:00 - 13:00	19	452	1.398	19	452	1.503	19	452	2.901
13:00 - 14:00	19	452	0.897	19	452	1.386	19	452	2.283
14:00 - 15:00	19	452	0.664	19	452	0.641	19	452	1.305
15:00 - 16:00	19	452	0.676	19	452	0.909	19	452	1.585
16:00 - 17:00	19	452	1.712	19	452	1.806	19	452	3.518
17:00 - 18:00	19	452	2.854	19	452	3.448	19	452	6.302
18:00 - 19:00	18	469	0.166	18	469	0.771	18	469	0.937
19:00 - 20:00	1	400	0.000	1	400	0.000	1	400	0.000
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			17.244			17.221			34.465

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

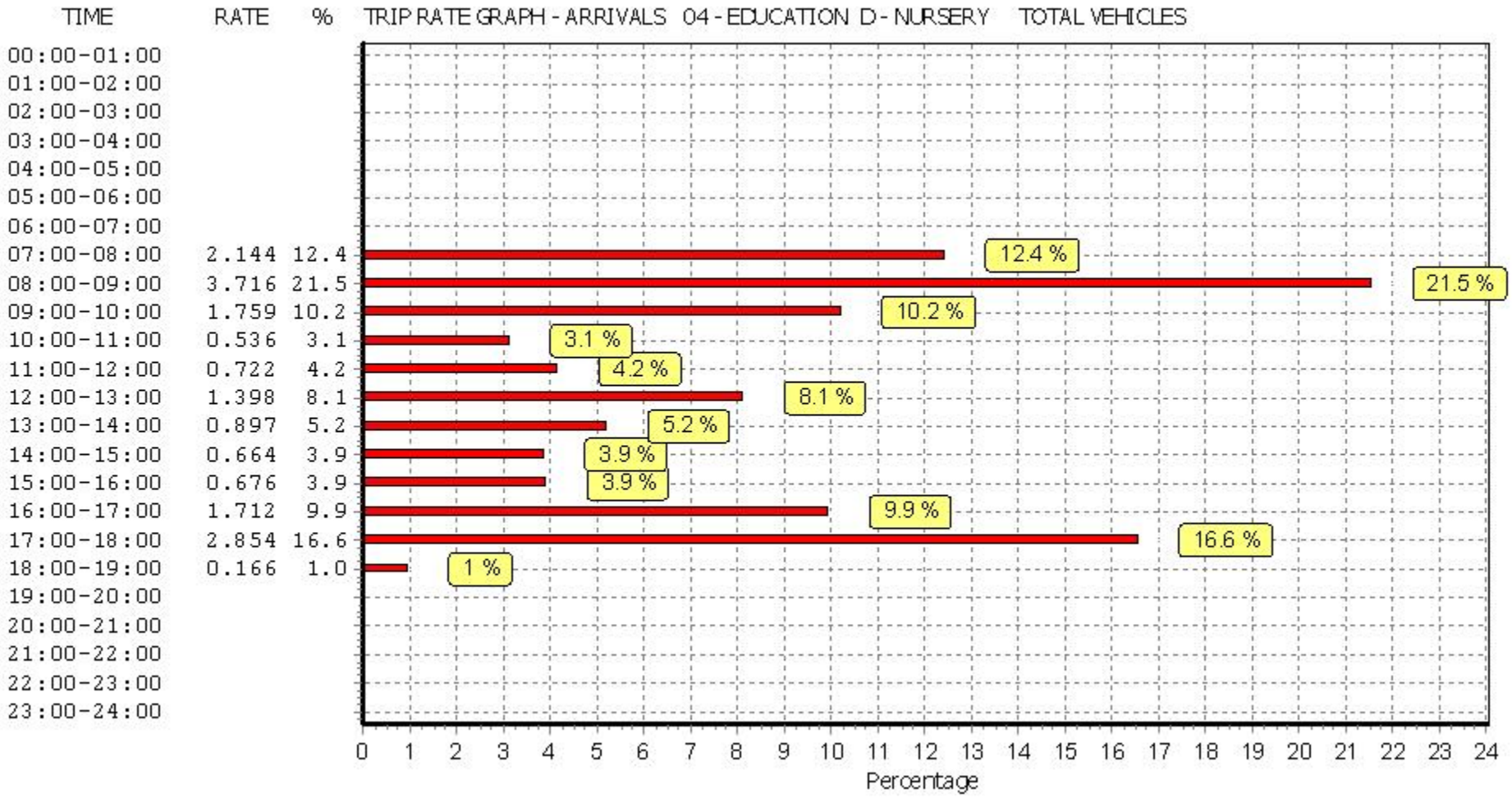
*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected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

Parameter summary

Trip rate parameter range selected:	150 - 860 (units: sqm)
Survey date date range:	01/01/13 - 06/05/21
Number of weekdays (Monday-Friday):	19
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

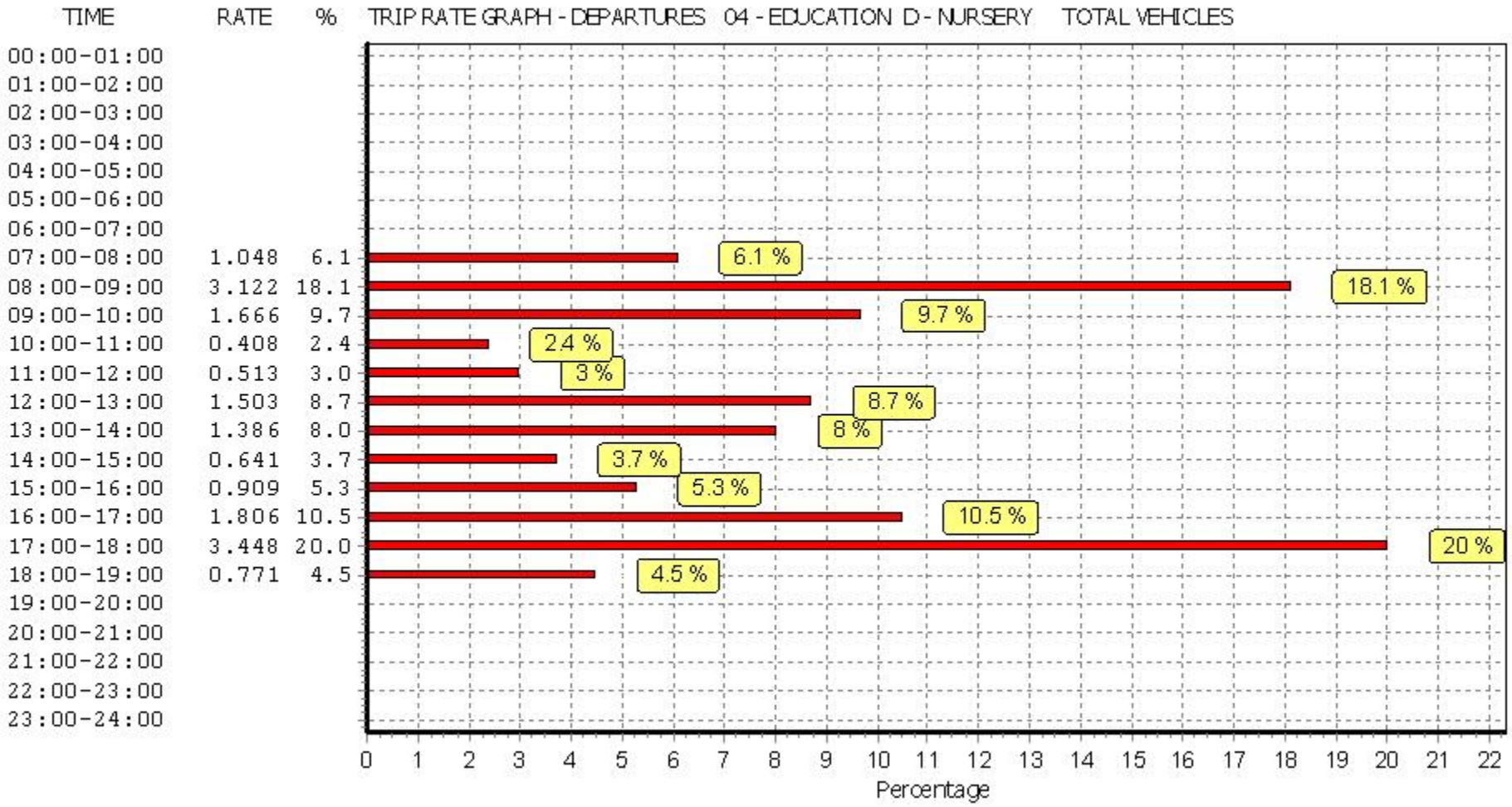
This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected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

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



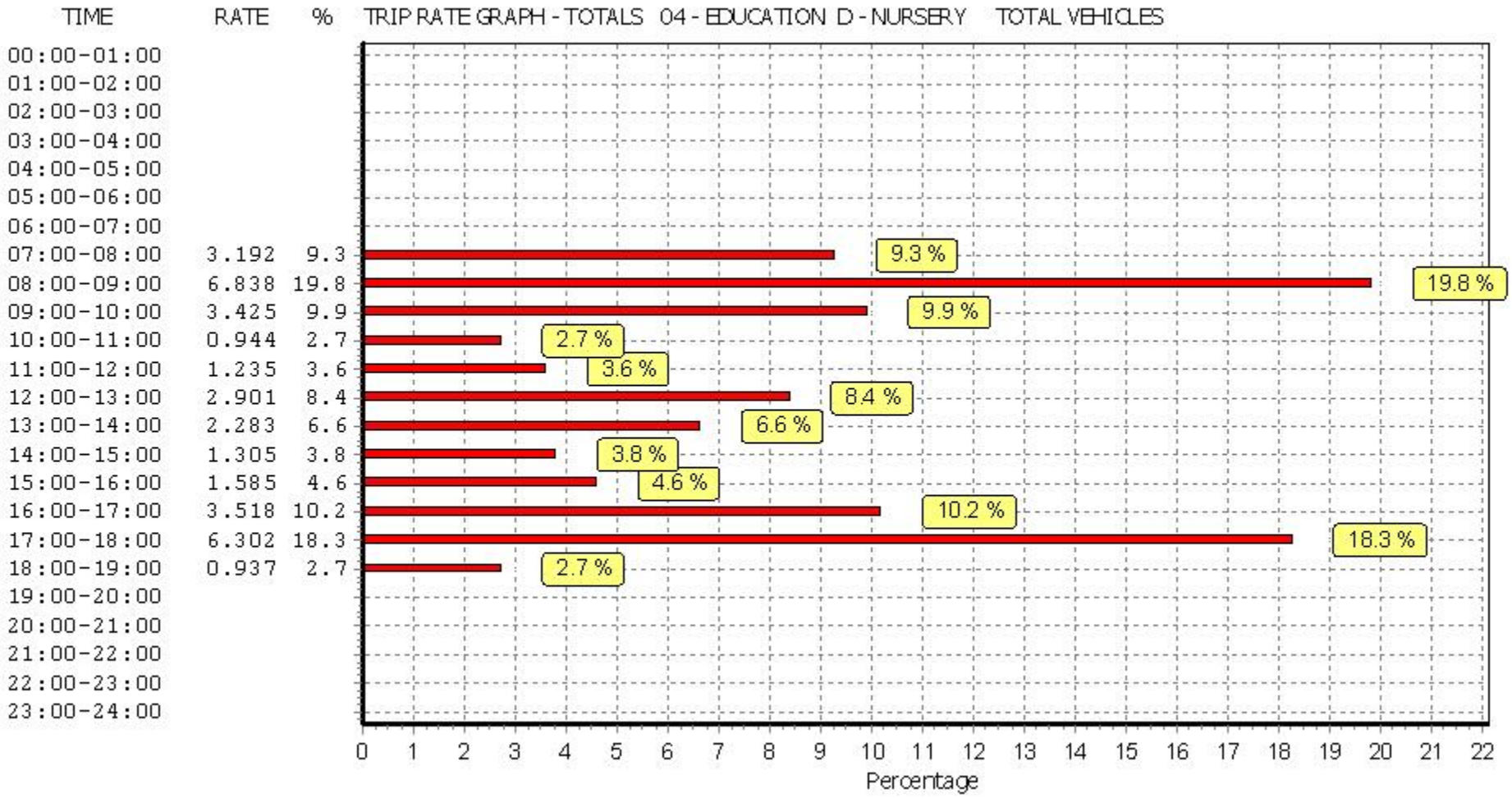
This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through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

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



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

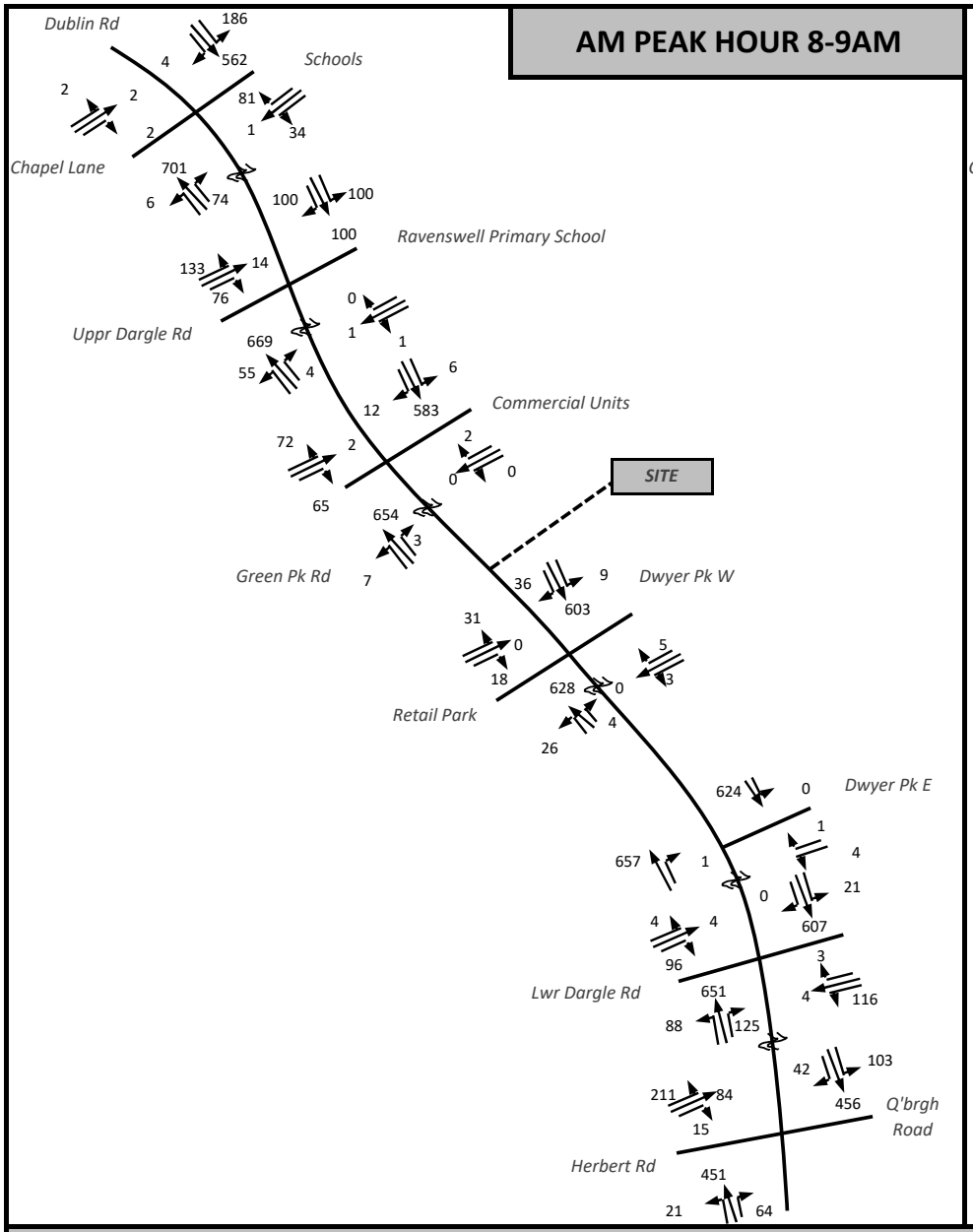
NRB Consulting Engineers Ltd 8 Leopardstown Business Centre, Ballyogan Avenue Dublin 18 Licence No: 160301

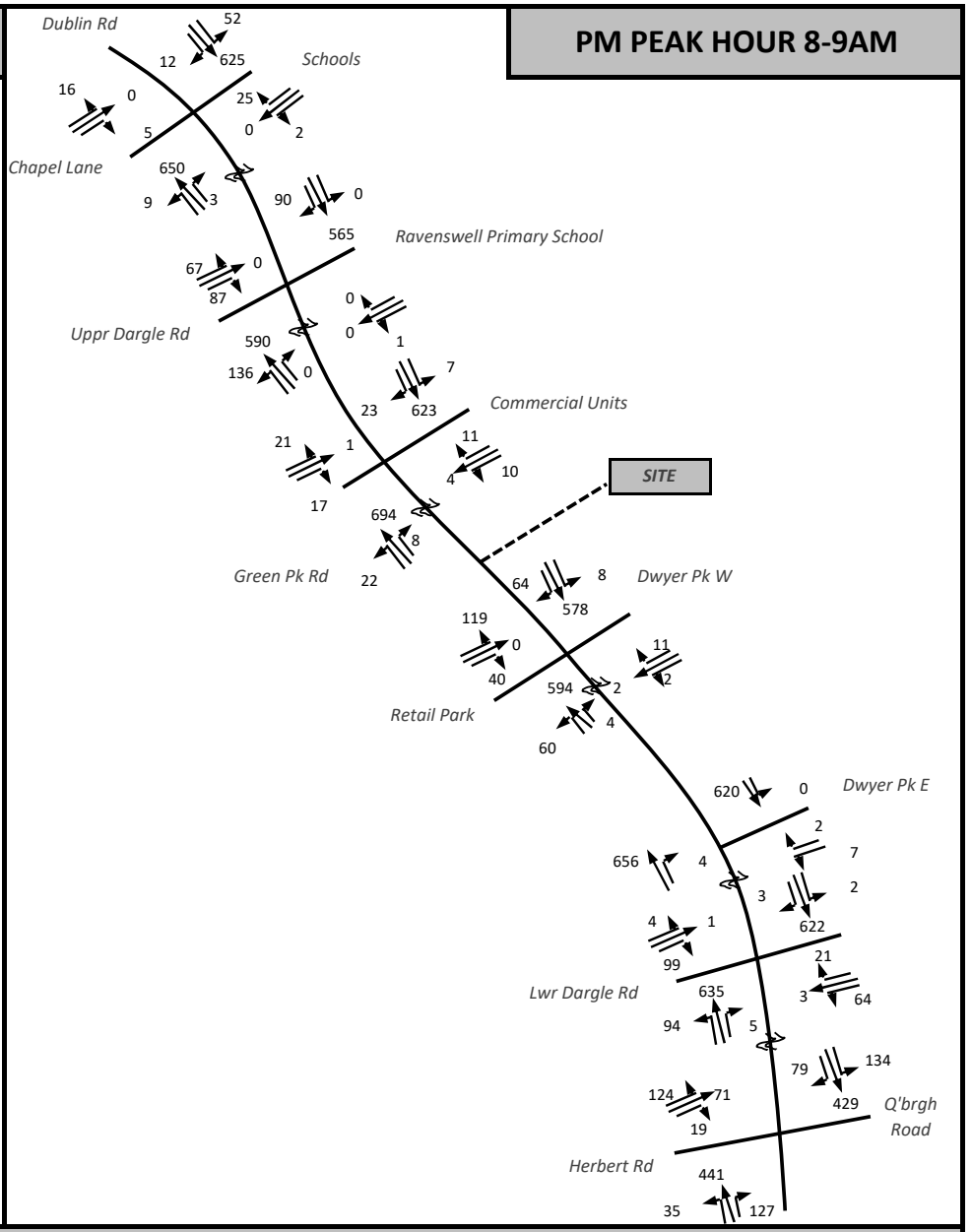


This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through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

APPENDIX D

Traffic Surveys, Trip Distribution & Network Traffic Flow Projections & Diagrams





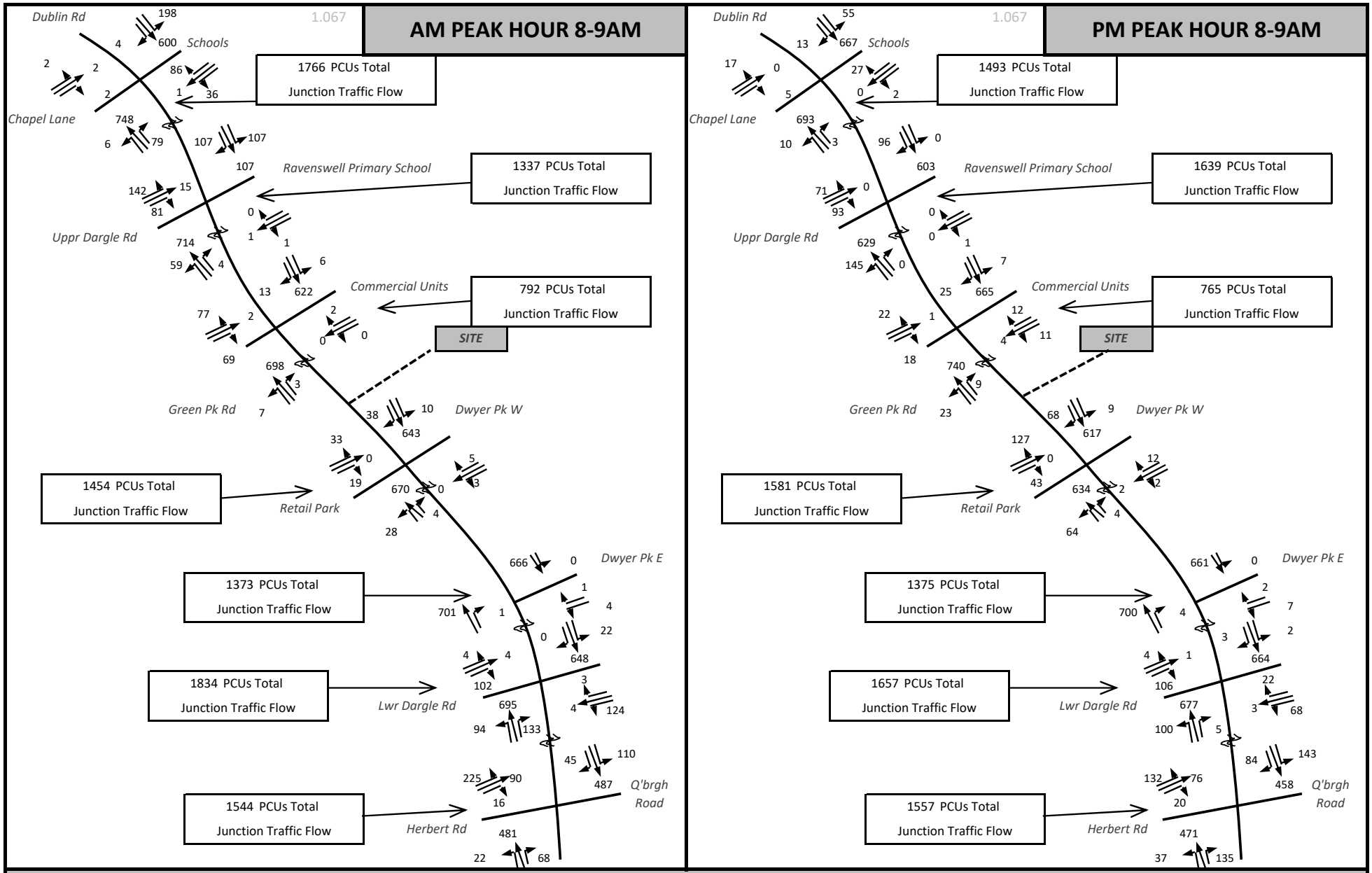
Existing As Surveyed Dec 2020 Weekday Peak Hour Traffic Volumes
As Surveyed (PCUs) - WITHOUT NEW DEVELOPMENT (Refer Appendix B).

CALCULATION OF COVID FACTORS TO APPLY TO SURVEYED FLOWS…	
TII Permanent Counter at N11 Bray - 09/12/2020, AM 5385, PM 5077, gives equiv AADT =	*52310*
TII Permanent Counter at N11 - PreCovid - 04/12/2019, AM 5735, PM 5427, gives equiv AADT =	*55810*
Resulting Covid Factor =	***1.067***

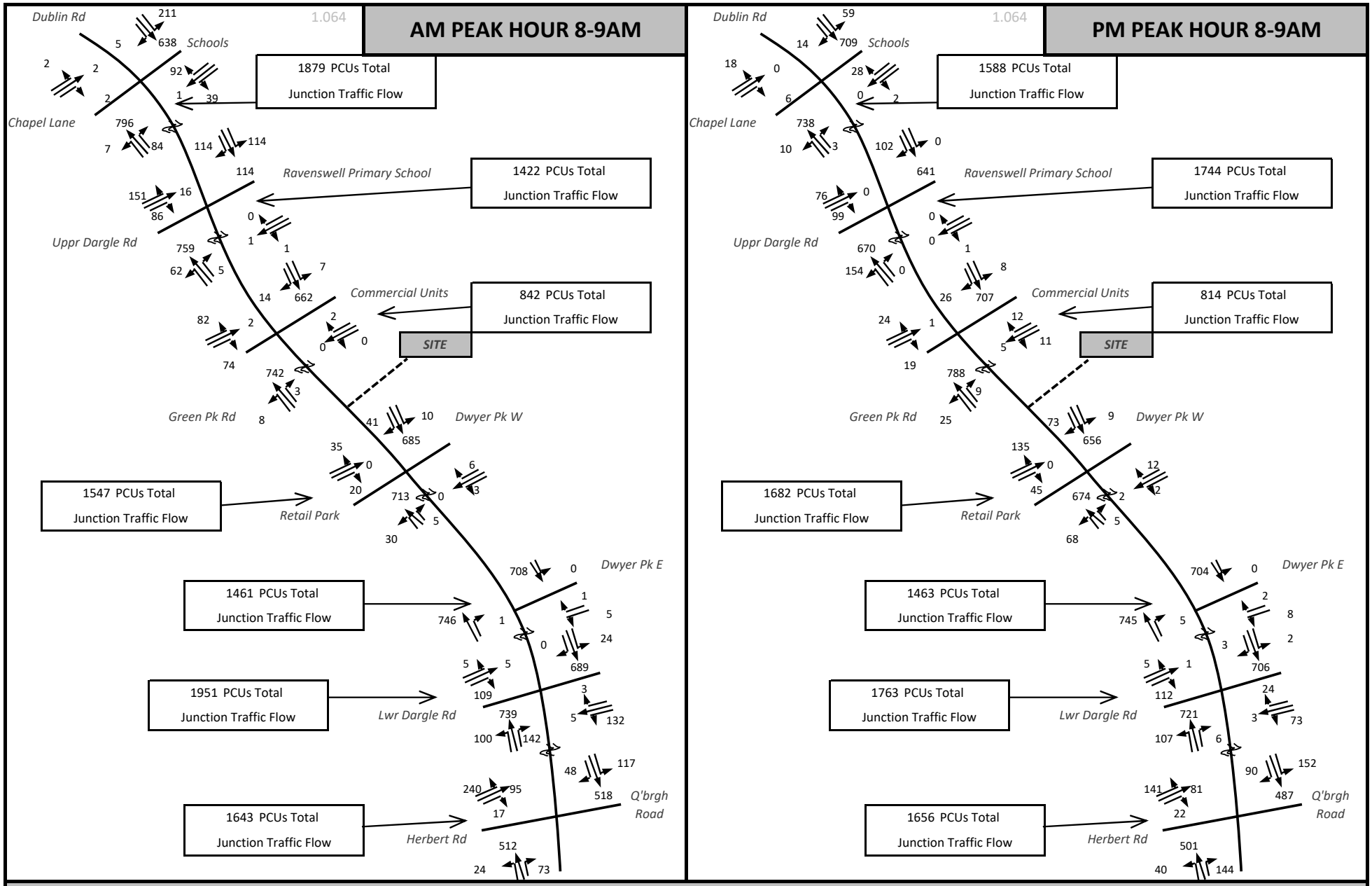
CALCULATION OF NETWORK GROWTH FACTORS YEARLY….	
TII PE-PAG-02017 Project Appraisal Guidelines for National Roads Unit 5.3 (Travel Demand Projections 2019, Table 6.2: Central Growth Rates: Annual Growth Factors Wicklow)	*2020 to 2024 = 1.064* *2024 to 2039 = 1.179*

TRICS Database; Traffic Generation Calculations…..

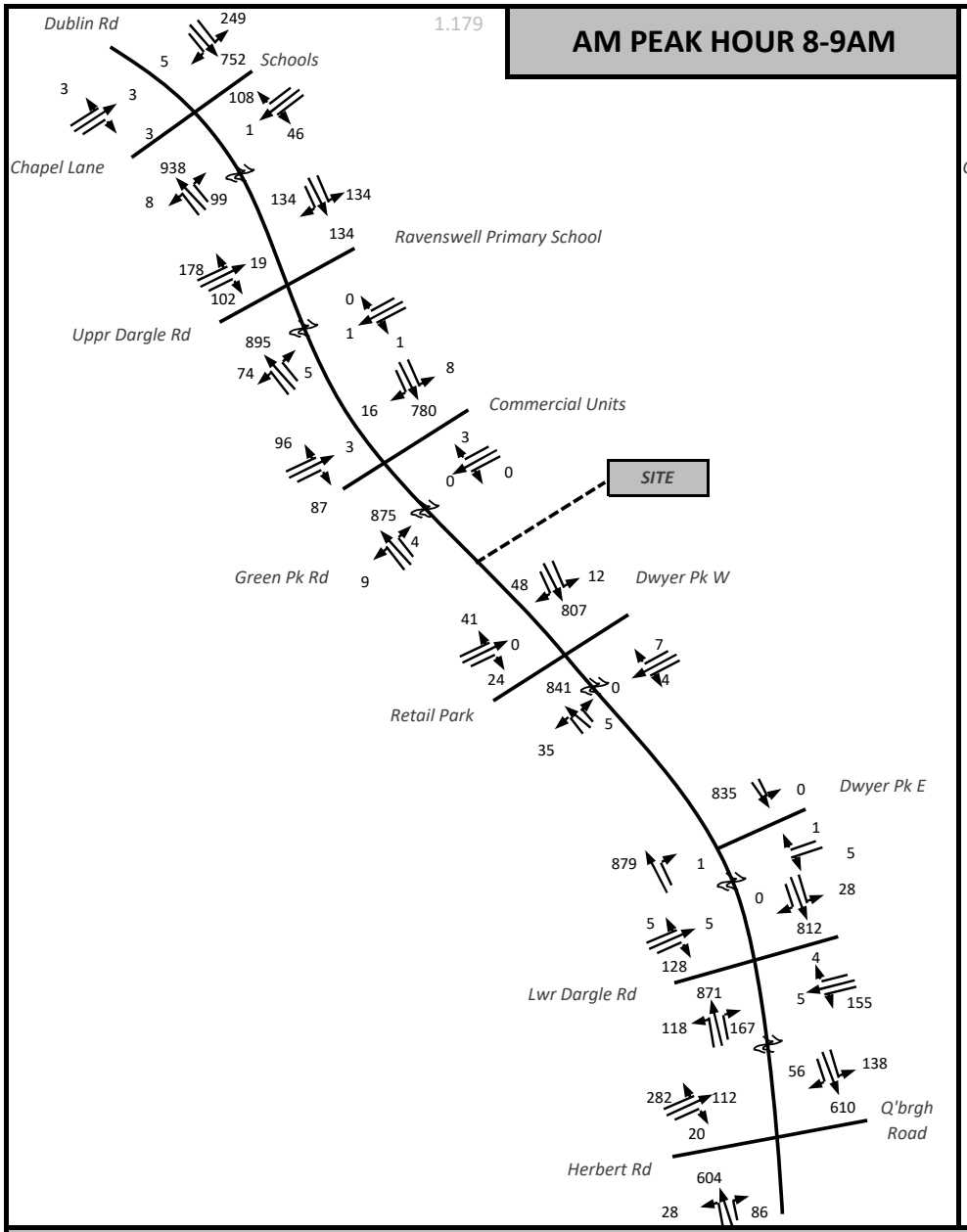
139 No Apartments	**Arrivals (PCUs)**		**Departures (PCUs)**		**Total 2-Way Traffic Generated**	
Network Hour	**Per Unit**	**139 units**	**Per Unit**	**139 units**		
Weekday AM Peak Hr	0.062	9	0.203	28	37	***Apartments***
Weekday PM Peak Hr	0.178	25	0.088	12	37	
300 m2 Creche	**Arrivals (PCUs)**		**Departures (PCUs)**		**Total 2-Way Traffic Generated**	
Network Hour	**Per 100m2**	**Dev**	**Per 100m2**	**Dev**		
Weekday AM Peak Hr	3.716	11	3.122	9	21	***Creche***
Weekday PM Peak Hr	2.854	9	3.448	10	19	
Network Hour	**Arrivals (PCUs)**		**Departures (PCUs)**		**Total (PCUs)**	
Weekday AM Peak Hr	20		38		58	***Total Traffic***
Weekday PM Peak Hr	33		23		56	

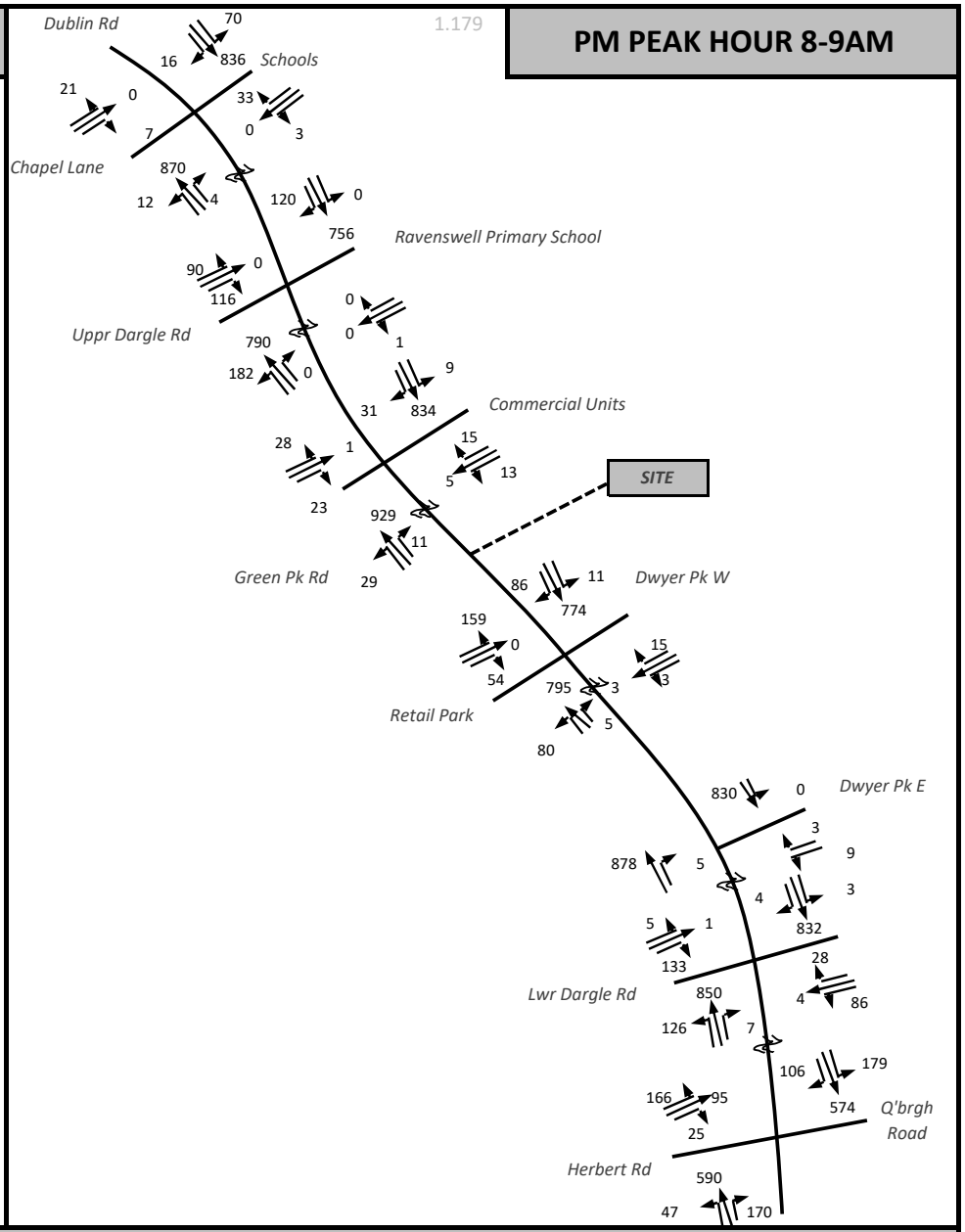


Corrected 2020 Weekday Peak Hour Traffic Volumes
'Covid Factors' Applied (PCUs) - WITHOUT NEW DEVELOPMENT

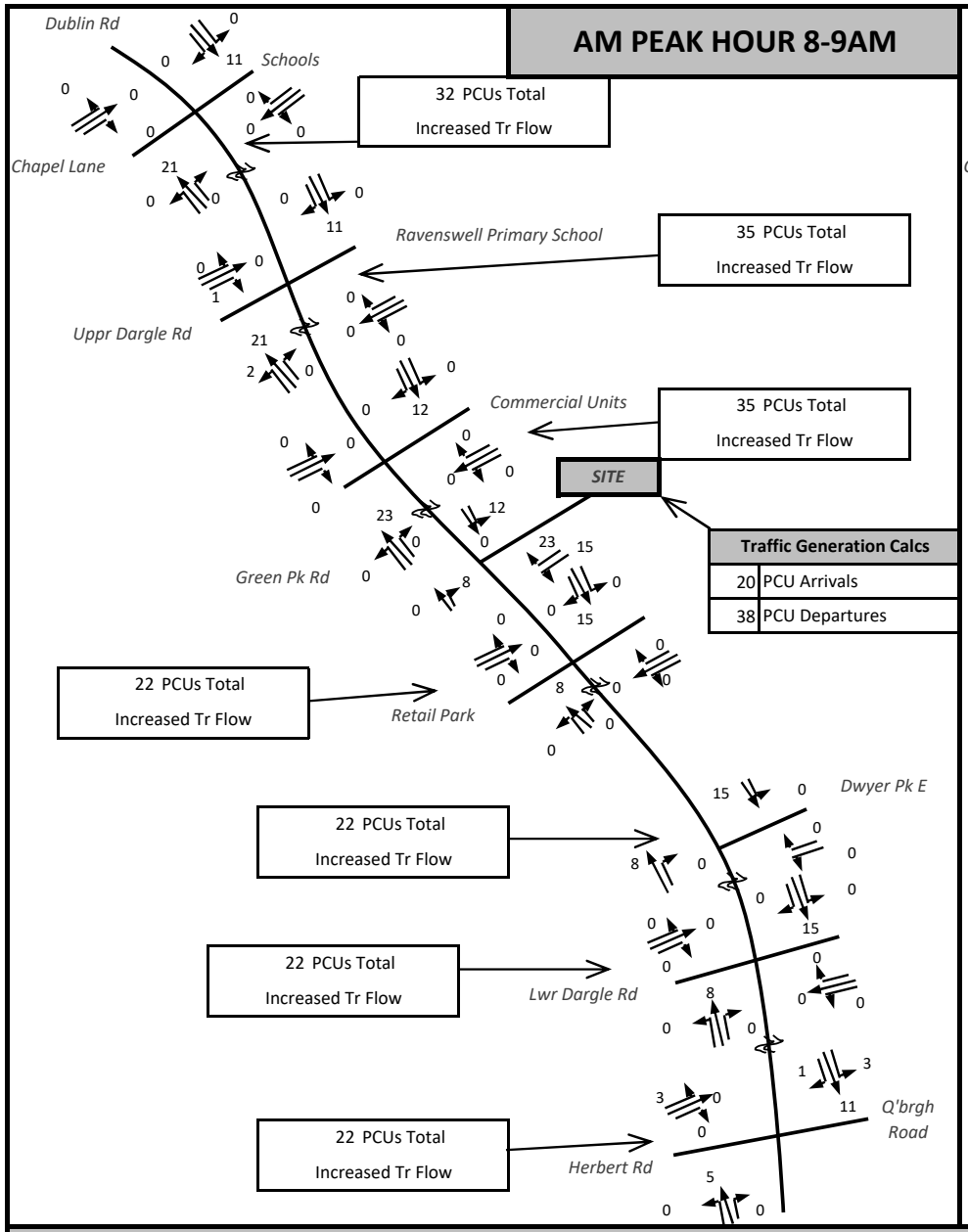


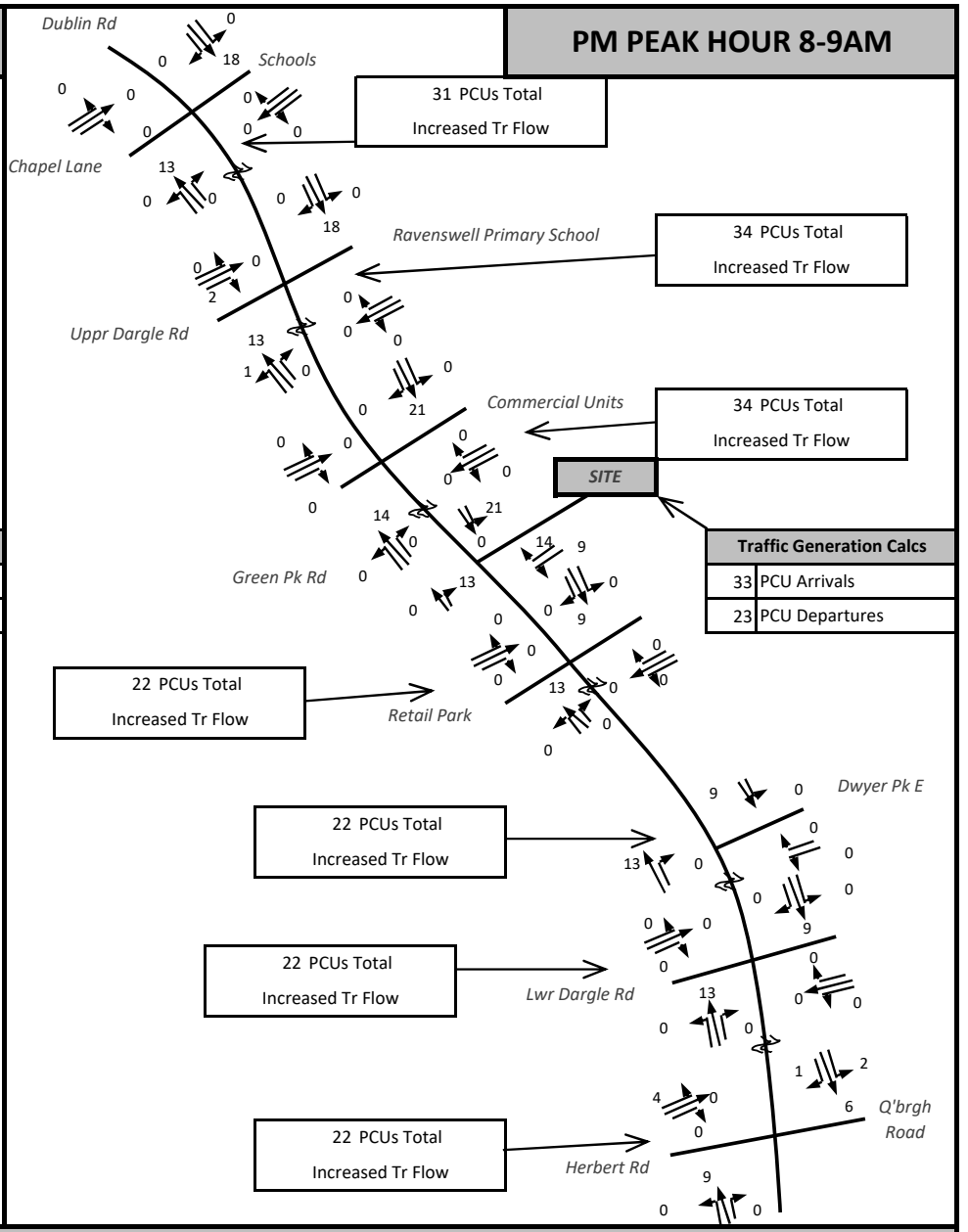
Projected Selected Opening Year 2024 Weekday Peak Hour Traffic Volumes
TII Annual Growth Factors Applied (PCUs) - WITHOUT NEW DEVELOPMENT





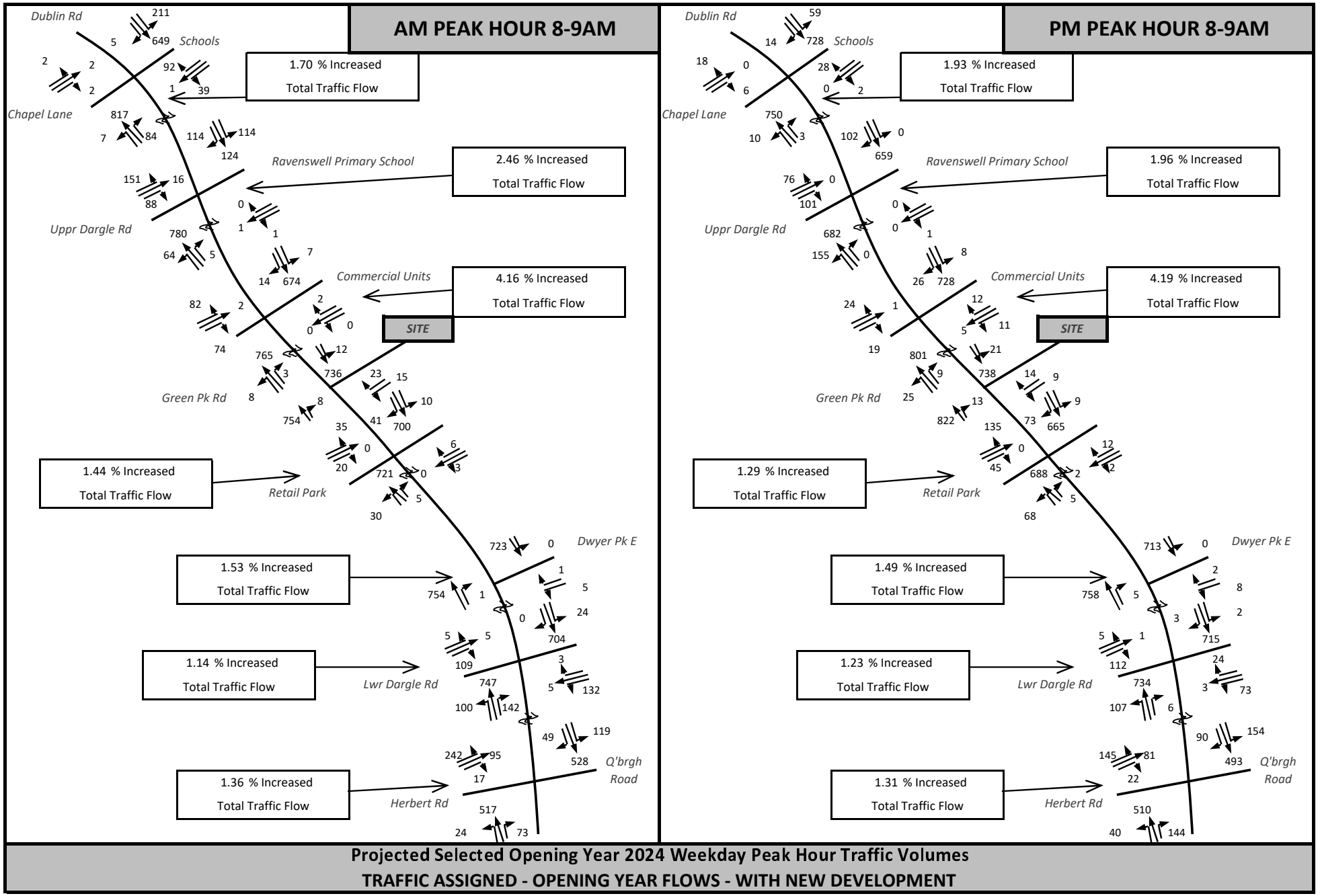
Associated Design Year 2039 Weekday Peak Hour Traffic Volumes
TII Annual Growth Factors Applied (PCUs) - WITHOUT NEW DEVELOPMENT



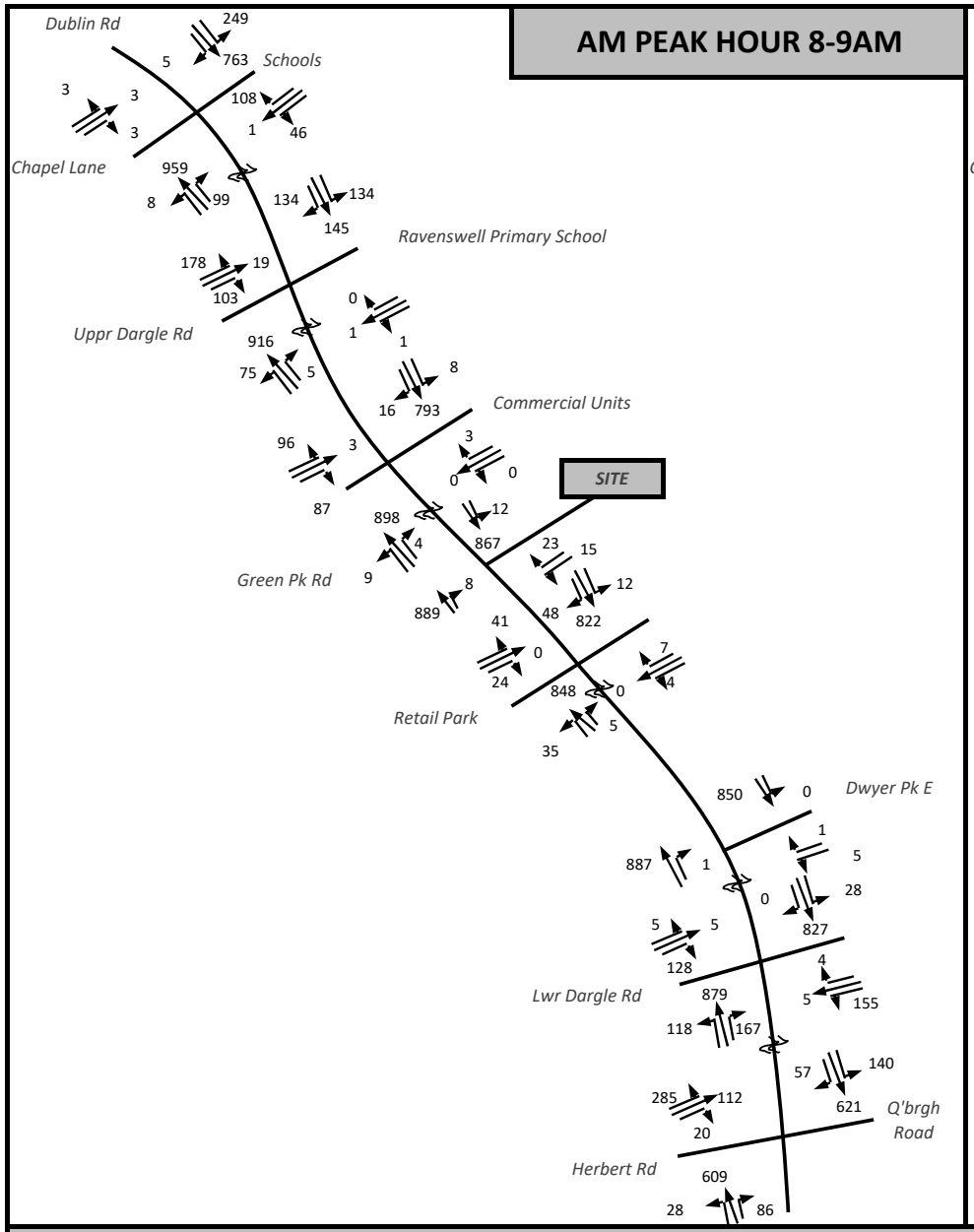


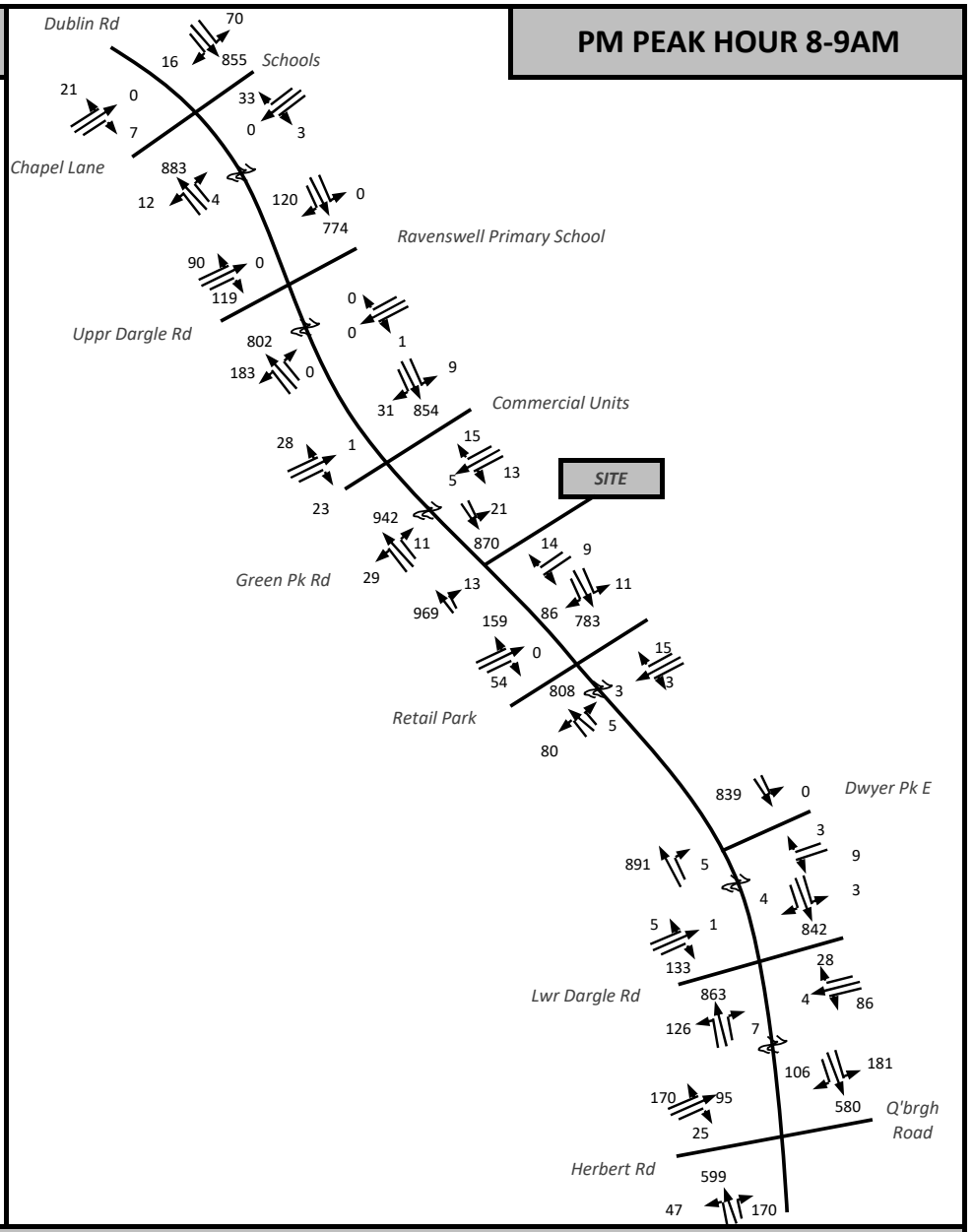
ASSIGNMENT OF DEVELOPMENT TRAFFIC TO NETWORK ***(BASED ON***

ESTABLISHED OBSERVED PROPORTIONS BEING INDUSTRY STANDARD PRACTICE)



Projected Selected Opening Year 2024 Weekday Peak Hour Traffic Volumes
TRAFFIC ASSIGNED - OPENING YEAR FLOWS - WITH NEW DEVELOPMENT





Projected Selected Design Year 2039 Weekday Peak Hour Traffic Volumes

TRAFFIC ASSIGNED - OPENING +15 YEAR FLOWS - 2039 - WITH NEW DEVELOPMENT

APPENDIX E

JUNCTION9 - PICADY
Simulation Capacity Model Output
Proposed Site Access T-Junction

Proposed Main Site Access T Junction R139
Summary PICADY Results in Order as included herein
(Robust & Worst Case)

Modelled Scenario	Period Mean Max Q (PCUs)	Period Max RFC
2024 Opening Year AM Peak	<1	0.13
2024 Opening Year PM Peak	<1	0.08
2039 Design Year AM Peak	<1	0.16
2039 Design Year PM Peak	<1	0.1

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

NB Any Small Changes to Selected Opening Year 2024 or Design Year 2039, or indeed significantly higher traffic volumes experienced, will clearly have no significant implications in terms of the conclusions of the Study. It should also be note that in Town Centre Environments, Driver Courtesy further facilitates access to developments of this nature and provides further reassurance in terms of Access Junction Capacity.

Junctions 9

PICADY 9 - Priority Intersection Module

Filename: 2024 AM PM.j9
Path: C:\Users\Eoin\NRB Consulting Engineers Ltd\NRB Server - Documents\2020\20-082 Castle St Bray SHD CH\Calculations\Access Picadys
Report generation date: 14/03/2022 09:07:07

Summary of junction performance

	AM				PM			
	Q (PCU)	Delay (s)	RFC	LOS	Q (PCU)	Delay (s)	RFC	LOS
	2024							
Stream B-AC	0.2	13.23	0.13	B	0.1	13.09	0.08	B
Stream C-B	0.0	7.38	0.02	A	0.0	7.51	0.03	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	23/06/2021
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	NRB-004\Eoin
Description	

Units

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

Analysis Options

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

Demand Set Summary

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

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

2024, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	Main Site Access	T-Junction	Two-way	0.36	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Dublin Rd N		Major
B	Site Access		Minor
C	Dublin Rd S (Bray Side)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Width for right turn (m)	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C	9.00		✓	3.00	100.0		-

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

Minor Arm Geometry

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

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	552	0.087	0.221	0.139	0.316
1	B-C	681	0.091	0.229	-	-
1	C-B	687	0.231	0.231	-	-

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		✓	748	100.000
B		✓	38	100.000
C		✓	762	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	12	736
	B	23	0	15
	C	754	8	0

Vehicle Mix

HV %s

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Q (PCU)	Max LOS
B-AC	0.13	13.23	0.2	B
C-A				
C-B	0.02	7.38	0.0	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	29	408	0.070	28	0.1	9.490	A
C-A	568			568			
C-B	6	557	0.011	6	0.0	6.538	A
A-B	9			9			
A-C	554			554			

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	34	369	0.093	34	0.1	10.744	B
C-A	678			678			
C-B	7	531	0.014	7	0.0	6.868	A
A-B	11			11			
A-C	662			662			

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	42	314	0.133	42	0.2	13.213	B
C-A	830			830			
C-B	9	496	0.018	9	0.0	7.383	A
A-B	13			13			
A-C	810			810			

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	42	314	0.133	42	0.2	13.231	B
C-A	830			830			
C-B	9	496	0.018	9	0.0	7.383	A
A-B	13			13			
A-C	810			810			

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	34	369	0.093	34	0.1	10.763	B
C-A	678			678			
C-B	7	531	0.014	7	0.0	6.871	A
A-B	11			11			
A-C	662			662			

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	29	408	0.070	29	0.1	9.504	A
C-A	568			568			
C-B	6	557	0.011	6	0.0	6.538	A
A-B	9			9			
A-C	554			554			

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	Main Site Access	T-Junction	Two-way	0.25	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		✓	759	100.000
B		✓	23	100.000
C		✓	835	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	21	738
	B	14	0	9
	C	822	13	0

Vehicle Mix

HV %s

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Q (PCU)	Max LOS
B-AC	0.08	13.09	0.1	B
C-A				
C-B	0.03	7.51	0.0	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	17	399	0.043	17	0.0	9.421	A
C-A	619			619			
C-B	10	555	0.018	10	0.0	6.606	A
A-B	16			16			
A-C	556			556			

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	21	358	0.058	21	0.1	10.655	B
C-A	739			739			
C-B	12	529	0.022	12	0.0	6.958	A
A-B	19			19			
A-C	663			663			

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	25	300	0.084	25	0.1	13.079	B
C-A	905			905			
C-B	14	494	0.029	14	0.0	7.511	A
A-B	23			23			
A-C	813			813			

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	25	300	0.084	25	0.1	13.089	B
C-A	905			905			
C-B	14	494	0.029	14	0.0	7.511	A
A-B	23			23			
A-C	813			813			

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	21	358	0.058	21	0.1	10.666	B
C-A	739			739			
C-B	12	529	0.022	12	0.0	6.961	A
A-B	19			19			
A-C	663			663			

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	17	399	0.043	17	0.0	9.432	A
C-A	619			619			
C-B	10	555	0.018	10	0.0	6.606	A
A-B	16			16			
A-C	556			556			

Junctions 9

PICADY 9 - Priority Intersection Module

Filename: 2039 AM PM.j9
Path: C:\Users\Eoin\NRB Consulting Engineers Ltd\NRB Server - Documents\2020\20-082 Castle St Bray SHD CH\Calculations\Access Picadys
Report generation date: 14/03/2022 09:10:09

Summary of junction performance

	AM				PM			
	Q (PCU)	Delay (s)	RFC	LOS	Q (PCU)	Delay (s)	RFC	LOS
	2039							
Stream B-AC	0.2	16.60	0.16	C	0.1	16.62	0.10	C
Stream C-B	0.0	7.93	0.02	A	0.0	8.08	0.03	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	23/06/2021
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	Main Site Access	T-Junction	Two-way	0.38	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Dublin Rd N		Major
B	Site Access		Minor
C	Dublin Rd S (Bray Side)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Width for right turn (m)	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C	9.00		✓	3.00	100.0		-

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

Minor Arm Geometry

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

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	552	0.087	0.221	0.139	0.316
1	B-C	681	0.091	0.229	-	-
1	C-B	687	0.231	0.231	-	-

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		✓	879	100.000
B		✓	38	100.000
C		✓	897	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	12	867
	B	23	0	15
	C	889	8	0

Vehicle Mix

HV %s

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Q (PCU)	Max LOS
B-AC	0.16	16.60	0.2	C
C-A				
C-B	0.02	7.93	0.0	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	29	373	0.077	28	0.1	10.445	B
C-A	669			669			
C-B	6	534	0.011	6	0.0	6.820	A
A-B	9			9			
A-C	653			653			

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	34	326	0.105	34	0.1	12.324	B
C-A	799			799			
C-B	7	504	0.014	7	0.0	7.244	A
A-B	11			11			
A-C	779			779			

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	42	259	0.162	42	0.2	16.557	C
C-A	979			979			
C-B	9	463	0.019	9	0.0	7.926	A
A-B	13			13			
A-C	955			955			

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	42	259	0.162	42	0.2	16.604	C
C-A	979			979			
C-B	9	463	0.019	9	0.0	7.926	A
A-B	13			13			
A-C	955			955			

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	34	326	0.105	34	0.1	12.358	B
C-A	799			799			
C-B	7	504	0.014	7	0.0	7.248	A
A-B	11			11			
A-C	779			779			

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	29	373	0.077	29	0.1	10.475	B
C-A	669			669			
C-B	6	534	0.011	6	0.0	6.821	A
A-B	9			9			
A-C	653			653			

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	Main Site Access	T-Junction	Two-way	0.26	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		✓	891	100.000
B		✓	23	100.000
C		✓	982	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	21	870
	B	14	0	9
	C	969	13	0

Vehicle Mix

HV %s

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Q (PCU)	Max LOS
B-AC	0.10	16.62	0.1	C
C-A				
C-B	0.03	8.08	0.0	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	17	362	0.048	17	0.0	10.418	B
C-A	730			730			
C-B	10	532	0.018	10	0.0	6.897	A
A-B	16			16			
A-C	655			655			

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	21	313	0.066	21	0.1	12.293	B
C-A	871			871			
C-B	12	502	0.023	12	0.0	7.348	A
A-B	19			19			
A-C	782			782			

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	25	242	0.105	25	0.1	16.592	C
C-A	1067			1067			
C-B	14	460	0.031	14	0.0	8.079	A
A-B	23			23			
A-C	958			958			

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	25	242	0.105	25	0.1	16.621	C
C-A	1067			1067			
C-B	14	460	0.031	14	0.0	8.079	A
A-B	23			23			
A-C	958			958			

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	21	313	0.066	21	0.1	12.313	B
C-A	871			871			
C-B	12	502	0.023	12	0.0	7.352	A
A-B	19			19			
A-C	782			782			

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	17	362	0.048	17	0.1	10.436	B
C-A	730			730			
C-B	10	532	0.018	10	0.0	6.900	A
A-B	16			16			
A-C	655			655			

APPENDIX F

Preliminary Travel Plan
(aka Mobility Management Plan)

consulting engineers

NRB

Preliminary
Travel Plan

(Mobility Management Plan)

(Appendix F)

for

Proposed Apartment Development

At

Castle Street,

Bray, Co Wicklow.

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 Preliminary Travel Plan in support of an application for the development of 139 Apartments with an ancillary crèche and small street fronting commercial units at Castle Street, Bray, in order to explain the applicants commitment to the promotion of more sustainable and cost effective travel habits among the end occupiers/residents of the scheme.

What is a Travel Plan?

1.2 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.

1.3 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 residents, 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

1.4 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. This TP supports the reduced provision of car parking and higher cycle parking space numbers at the subject development.

1.5 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.

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

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

Methodology

1.7 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)

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

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

2.0 ACCESS TO THE SITE - BY MODE

2.1 The proposed development consists of a 139 unit apartment scheme, including a supporting Creche and small street fronting commercial units, with secure off-street parking areas for bicycles & a reduced number of private cars along with landscaping, bins storage and all associated site works.

2.2 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.

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 cycle lanes/facilities.

2.4 Many of the surrounding roads in Bray, such as the adjacent R761 serving the site, include a combination of cycle tracks, cycle lanes and / or cycle lanes shared with Bus Lanes which will provide access to the development. Whilst some of the facilities are discontinuous, they are nonetheless clearly undergoing continuous improvement. The existing cyclist/pedestrian facilities on Castle Street Serving the site are illustrated below as Figure 2.1. These will be improved as part of Bus Connects proposal past the site.

Figure 2.1 – Pedestrian & Cycle Facilities in Place at Castle Street

2.5 On a macro level, the National Transport Authority (NTA) have published the GDA Cycle Network Plan. This includes an extensive network of cycle facilities and includes significant links to and through Bray. An extract from the high-level plan is included below as Figure 2.2.

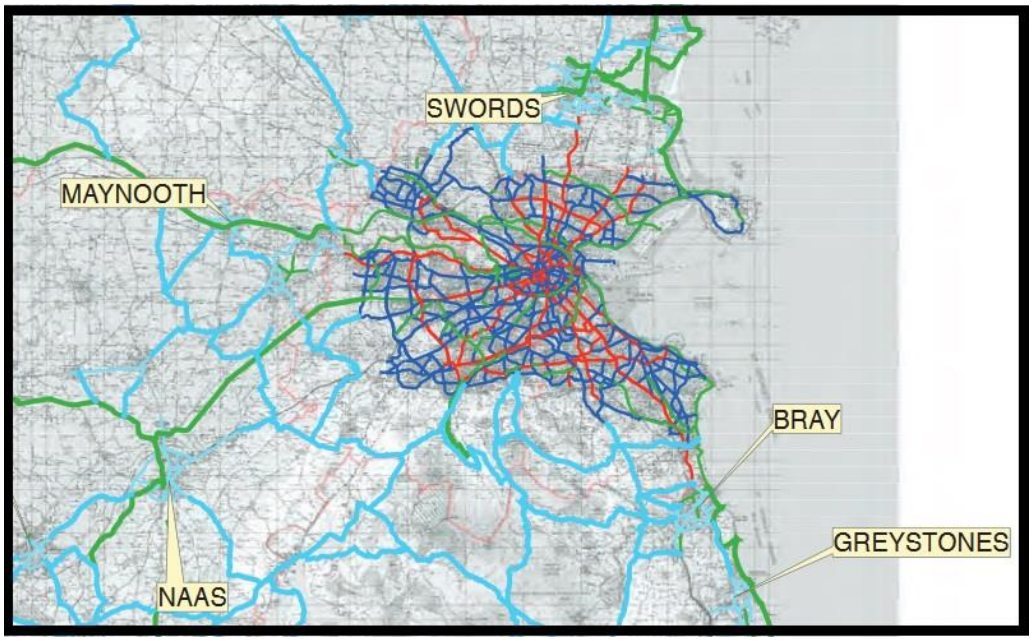


Figure 2.2 – GDA Cycle Network Plan Extract incl Bray

2.6 On a local level there are significant plans to further improve links within and through Bray itself as part of the GDA Strategy, with the plans are available on the NTA and Wicklow County Council websites. As part of these improvements Castle Street passing the site is clearly identified as a primary link (B1), and the site is well placed to benefit from these improved cycling links. An extract from the Bray Plan showing the site location is included below as ***Figure 2.3.***

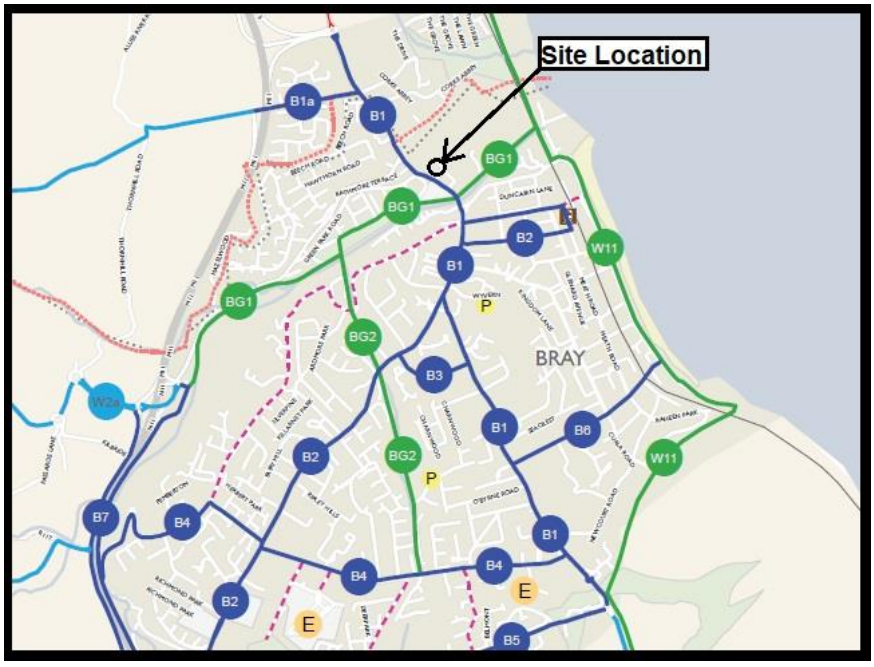


Figure 2.3 – GDA Proposed Cycle Network Plan for Bray, showing site.

2.7 Within the development, as required, cyclists will share the space with other street users as per the NCM guidance for such situations and best practice.

2.8 The key to cycle accessibility is convenient safe links, with secure and carefully sited cycle parking. Cycling is ideal for shorter journeys. 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 Bicycle sharing facilities are becoming ever more popular with the Dublin Bikes and more so Bleeperbike initiatives spreading ever further throughout the City and into Suburbs. These facilities offer a bicycle sharing alternative mode of transport.

Cycle Parking

2.10 It is anticipated that a very significant number of residents can be encouraged to cycle to work and school etc. with the safe links and secure parking which are in place (and that is reflected in the provision of a total of 330 dedicated secure cycle parking spaces in the scheme. This number is in line with WCC requirements, and is also consistent with the requirements as set out in the National Apartment Guidelines.

2.11 It is acknowledged that for visitors, cyclists need to be confident that their cycles will not be tampered with. The cycle parking spaces at ground level is beneficially in an area subject to passive surveillance and will also be monitored by CCTV.

2.12 It is important 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 Provision

2.13 There are very frequent bus services along Castle Street immediately adjacent the site. The proximity and the provision of services are as depicted below as ***Figure 2.4.***

Figure 2.4 – Site and Bus Services

2.14 These include service numbers 45a (Kilmacanogue–Bray–Shankill–Dun Laoghaire), 45b (Kilmacanogue–Dun Laoghaire), 185 Go-Ahead Service Bray to Enniskerry, 84 (Blackrock-Newcastle via Bray), 145 Ballywaltrim Service, 155 Ballymun to Bray, in addition to a multitude of local services. The Dublin Bus Services provide a frequent link to Bray DART Station for Dublin City bound commuters. These bus services combined with the proximity to DART Services ensure that the development is very well placed to take advantage of the existing and future Dublin Bus and services.

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

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

Planned Bus Provision - Bus Connects

2.17 There are plans to significantly improve bus accessibility to/from Bray, with Bus Connects Core Corridor #13 (Bray to City Centre) forming part of the plans. This is illustrated in ***Figure 2.5*** below. This will provide very significantly enhanced accessibility for residents of the site to and from Dublin City Centre, as the intended route passes the site on Castle Street.

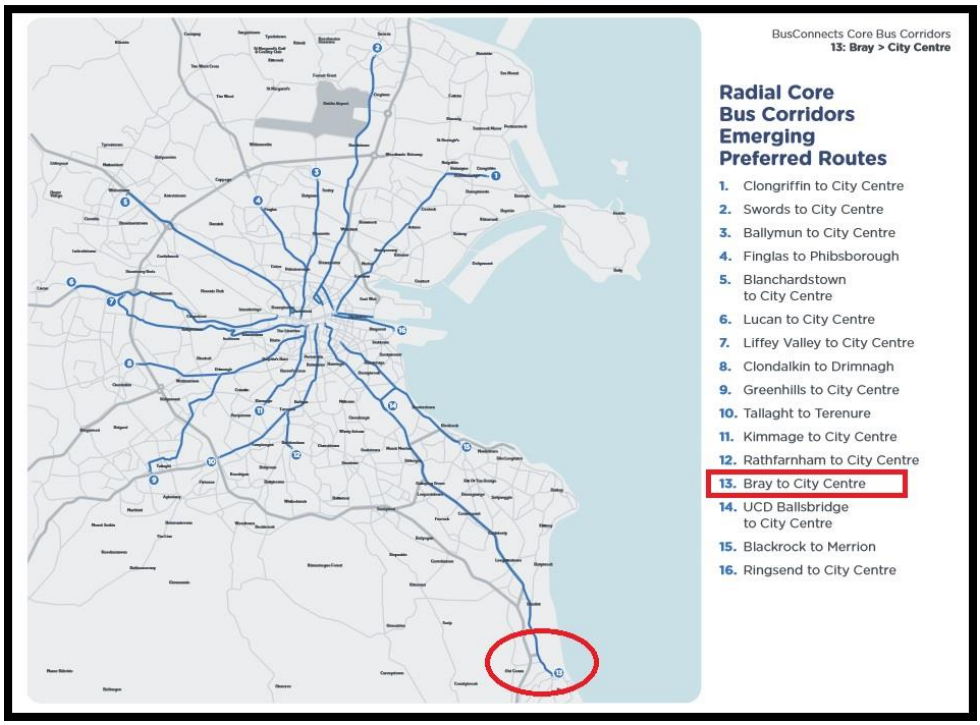


Figure 2.5 - Bus Connects Corridor #13

DART

2.18 The site is in close proximity to Dublin DART Suburban rail services, via Bray Daly Station. The DART services are within an acceptable c12 min walk of the station (refer ***Figure 2.6*** below).

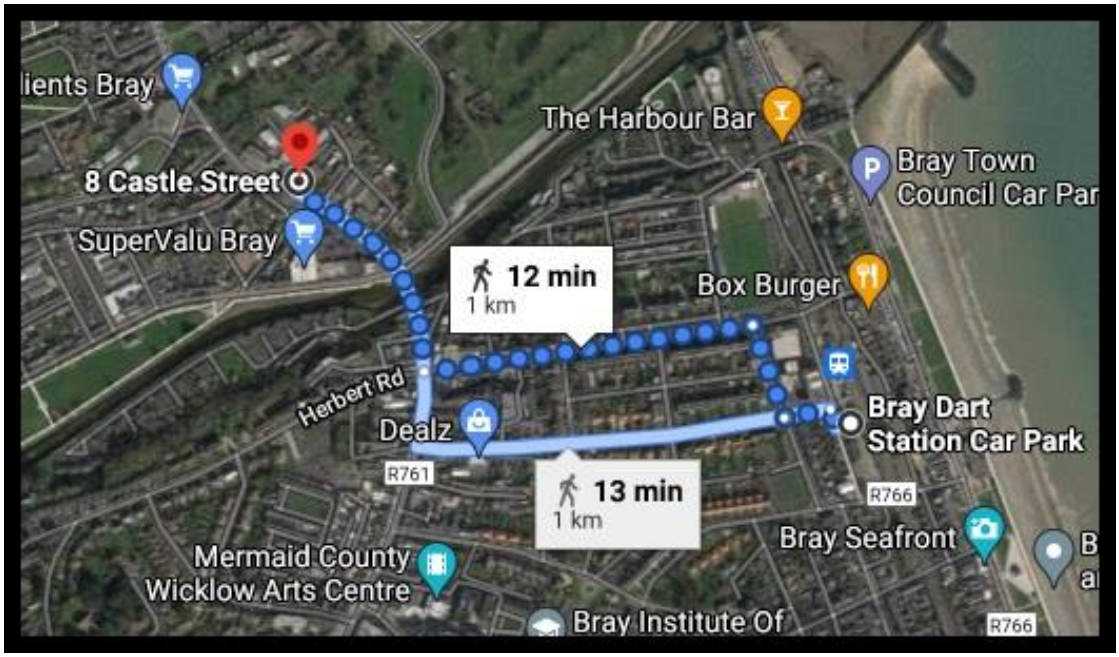
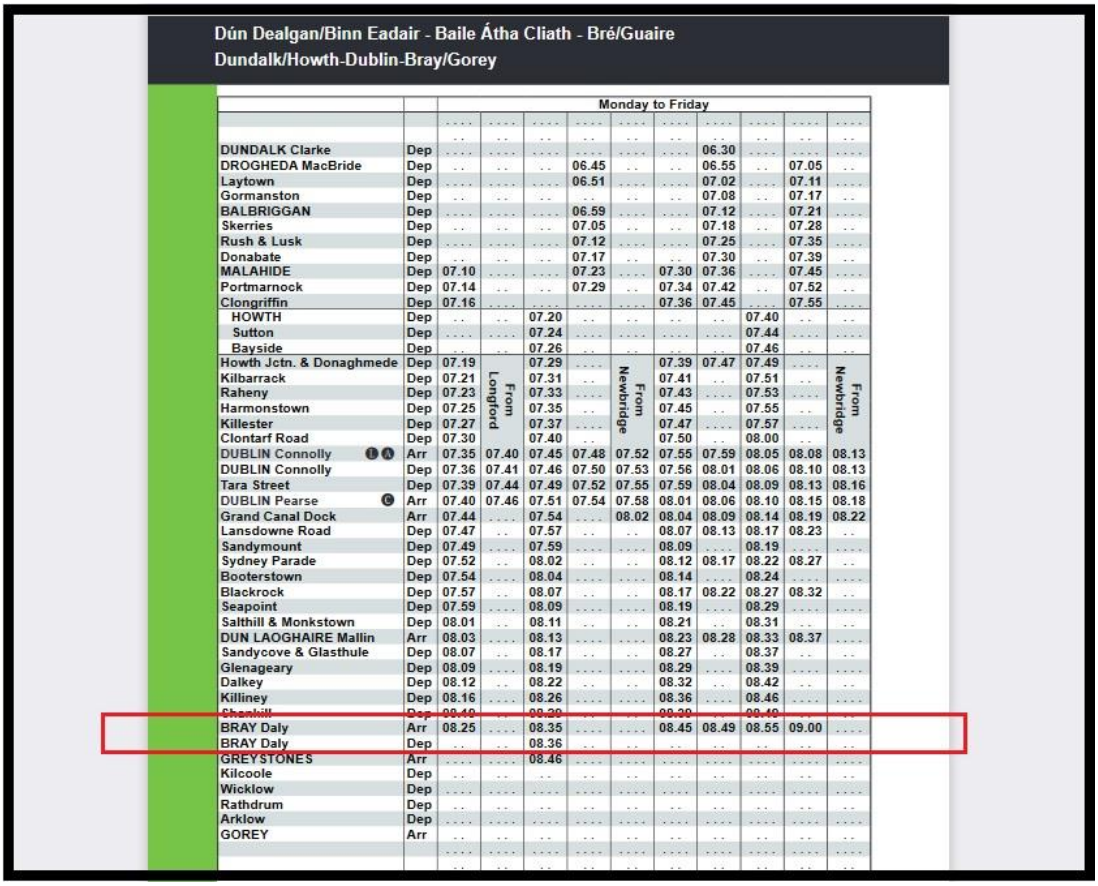


Figure 2.6 – Walk Distance Site to DART

2.19 In addition, the site is within an **easy 5 min cycle distance** to the DART Station, and of course cycle storage/lock facilities are available at the station. The Cycle distance from the DART Station is illustrated below as ***Figure 2.7***.

Figure 2.7 – Cycle Distance to/from DART

2.20 Bray is well served by frequent DART services to and from the city centre, with a commuter peak hour service frequency of approximately 10minute intervals. Bray is also served by mainline services between Dublin and Rosslare Europort. An annotated extract from the current DART Commuter timetable confirming this is included below as ***Figure 2.8***



Dún Dealgan/Binn Eadair - Baile Átha Cliath - Bré/Guaire
Dundalk/Howth-Dublin-Bray/Gorey

		Monday to Friday									
DUNDALK Clarke	Dep	....	....	....	....	....	....	06.30	....	....	....
DROGHEDA MacBride	Dep	..	..	..	06.45	..	..	06.55	..	07.05	..
Laytown	Dep	....	....	....	06.51	....	....	07.02	....	07.11	....
Gormanston	Dep	..	..	..	..	..	..	07.08	..	07.17	..
BALBRIGGAN	Dep	....	....	....	06.59	....	....	07.12	....	07.21	....
Skerries	Dep	..	..	..	07.05	..	..	07.18	..	07.28	..
Rush & Lusk	Dep	....	....	....	07.12	....	....	07.25	....	07.35	....
Donabate	Dep	..	..	..	07.17	..	..	07.30	..	07.39	..
MALAHIDE	Dep	07.10	....	....	07.23	....	07.30	07.36	....	07.45	....
Portmarnock	Dep	07.14	..	..	07.29	..	07.34	07.42	..	07.52	..
Clongriffin	Dep	07.16	....	....	....	....	07.36	07.45	....	07.55	....
HOWTH	Dep	..	..	07.20	..	..	..	..	07.40	..	..
Sutton	Dep	....	....	07.24	....	....	....	....	07.44	....	....
Bayside	Dep	..	..	07.26	..	..	..	..	07.46	..	..
Howth Jctn. & Donaghmede	Dep	07.19	From Longford	07.29	....	From Newbridge	07.39	07.47	07.49	....	From Newbridge
Kilbarrack	Dep	07.21		07.31	..		07.41	..	07.51	..	
Raheny	Dep	07.23		07.33	....		07.43	....	07.53	....	
Harmonstown	Dep	07.25		07.35	..		07.45	..	07.55	..	
Killester	Dep	07.27		07.37	....		07.47	....	07.57	....	
Clontarf Road	Dep	07.30		07.40	..		07.50	..	08.00	..	
DUBLIN Connolly	Arr	07.35	07.40	07.45	07.48	07.52	07.55	07.59	08.05	08.08	08.13
DUBLIN Connolly	Dep	07.36	07.41	07.46	07.50	07.53	07.56	08.01	08.06	08.10	08.13
Tara Street	Dep	07.39	07.44	07.49	07.52	07.55	07.59	08.04	08.09	08.13	08.16
DUBLIN Pearse	Arr	07.40	07.46	07.51	07.54	07.58	08.01	08.06	08.10	08.15	08.18
Grand Canal Dock	Arr	07.44	....	07.54	....	08.02	08.04	08.09	08.14	08.19	08.22
Lansdowne Road	Dep	07.47	..	07.57	..	..	08.07	08.13	08.17	08.23	..
Sandymount	Dep	07.49	....	07.59	....	....	08.09	....	08.19	....	....
Sydney Parade	Dep	07.52	..	08.02	..	..	08.12	08.17	08.22	08.27	..
Booterstown	Dep	07.54	....	08.04	....	....	08.14	....	08.24	....	....
Blackrock	Dep	07.57	..	08.07	..	..	08.17	08.22	08.27	08.32	..
Seapoint	Dep	07.59	....	08.09	....	....	08.19	....	08.29	....	....
Salthill & Monkstown	Dep	08.01	..	08.11	..	..	08.21	..	08.31	..	..
DUN LAOGHAIRE Mallin	Arr	08.03	....	08.13	....	....	08.23	08.28	08.33	08.37	....
Sandycove & Glasthule	Dep	08.07	..	08.17	..	..	08.27	..	08.37	..	..
Glenageary	Dep	08.09	....	08.19	....	....	08.29	....	08.39	....	....
Dalkey	Dep	08.12	..	08.22	..	..	08.32	..	08.42	..	..
Killiney	Dep	08.16	....	08.26	....	....	08.36	....	08.46	....	....
~~Shankill~~	~~Dep~~	~~08.19~~	~~....~~	~~08.29~~	~~....~~	~~....~~	~~08.39~~	~~....~~	~~08.49~~	~~....~~	~~....~~
BRAY Daly	Arr	08.25	....	08.35	....	....	08.45	08.49	08.55	09.00	....
BRAY Daly	Dep	..	..	08.36	..	..	..	..	..	..	..
GREYSTONES	Arr	....	....	08.46	....	....	....	....	....	....	....
Kilcoole	Dep	..	..	..	..	..	..	..	..	..	..
Wicklow	Dep	....	....	....	....	....	....	....	....	....	....
Rathdrum	Dep	..	..	..	..	..	..	..	..	..	..
Arklow	Dep	....	....	....	....	....	....	....	....	....	....
GOREY	Arr	..	..	..	..	..	..	..	..	..	..
		....	....	....	....	....	....	....	....	....	....
		..	..	..	..	..	..	..	..	..	..

Figure 2.8: - Bray Commuter DART Services – Timetable Extract

Mainline Bus & Rail

2.21 With the high frequency bus services and Dart to the city, the site is therefore also within easy reach of the mainline trains via Connolly & Heuston Stations and Nationwide Bus Buses services via Busarus.

2.22 With ease of accessibility by Bus and Rail, and in particular with the high frequency existing bus services, it is therefore considered that the proposed development is very highly sustainable in terms of current and future public transport accessibility. The proximity of the development to existing public transport services means that residents 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. This will also be greatly improved when Core Bus Connects Corridor #13 is operational.

Accessibility By Taxi

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

Car Parking

2.24 Car Parking is being provided broadly in accordance with the National Apartment Guidelines, which is significantly lower than normal historic requirements of Local Development Plans. It is clear that the lower provision of car parking will therefore assist in acting as a **demand management measure**, ensuring that the development is occupied in the most sustainable manner being almost predominantly reliant on non-car modes of travel.

2.25 It is proposed that parking spaces can be allocated to car club parking spaces (e.g. Go Car spaces) as required. These would be located near the access for ease of use for residents.

Communication

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

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

2.28 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.

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

2.30 Working Residents are generally offered the opportunity to purchase public transport commuter tickets under the current 'Employer Pass' & 'TaxSaver' programmes, by 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.

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

3.0 COLLECTION OF BASELINE INFORMATION

Possible Travel Pattern Questionnaires

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

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

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

3.4 It is anticipated that, given the location and good transport links at this development, combined with the reduced level of available car parking on site, there will be a high percentage of use via public and alternative transport.

3.5 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 for 2020 is to achieve a reduced work related commuting by car modal share of 65% to 45%.

4.0 THE TRAVEL PLAN

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

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

Walking

Walking - Key Information	
Approx Zone of Influence	3.5km
Percentage of end occupiers/residents in area of influence	TBC in each survey when occupied
Percentage of end occupiers/residents interested in Walking	TBC in each survey when occupied

Table 4.1: Key Information - Walking

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

- **W** - Wake Up! - Studies have shown that people who walk to work are more awake and find it easier to concentrate.
- **A** - Always one step ahead - Walking makes people more aware of road safety issues and helps them develop stronger personal safety skills.
- **L** - Less congestion - If you leave the car at home and walk, there are fewer cars on the road which makes it safer for those who walk and cycle.
- **K** - Kinder to the environment - By leaving the car at home you are reducing the amount of CO 2 produced and helping to reduce the effects of climate change and air pollution.
- **I** - Interpersonal skills - Walking to work or school can be a great way to meet other walkers, share the experience, and develop personal skills.
- **N** - New adventures - Walking to work or school is a great way to learn about your local environment and community. It's also a fun way to learn about the weather, landscape, and local ecosystems.
- **G** - Get fit and stay active - Walking to and from work or school 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) to work. Residents working within a 3.5 km radius of the site will be encouraged to walk to work as often as their schedule permits. Similarly, school trips can be encouraged on foot.

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

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

Cycling

Cycling – Key Information	
Approx. zone of influence	10km
Percentage of end occupiers/residents in area of influence	TBC in each survey when occupied
Percentage of end occupiers/residents interested in cycling	TBC in each survey when occupied

Table 4.2: Key Information - Cycling

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

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

4.8 Some positive aspects of cycling to work or school are listed following:

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

- **C** - Confidence building - travelling to work as an independent cyclist can give people increased confidence proving beneficial in all aspects of life;
- **L** - Less congestion - If you leave the car at home and cycle to work there are fewer cars on the road which makes it safer for those who cycle and walk to work or school;
- **I** - Interpersonal skills - Cycling to work or to school can be a great way to meet other cyclists and share the experience;
- **N** - New adventures - Cycling to work or school is a great way to learn about your local environment and community. It helps people to understand where they live and how their actions affect their local environment;
- **G** - Get fit and stay active - cycling to and from work or school helps people incorporate physical activity into their daily routines. Research shows that regular physical activity can benefit your body and mind.

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

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

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

Public Transport

Public Transport – Key Information	
Approx. zone of influence	All Residents
Percentage of end occupiers/residents in area of influence	100%
Percentage of end occupiers/residents interested in Public Transport	TBC in each survey when occupied

Table 4.3: Key Information: Public Transport

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

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

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

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

time it takes to walk to them;

- Contact local providers about issues such as location of existing and new bus stops, timing of routes, or where you have market information about a potential new route.

Go-Car/Car Sharing

Car Sharing – Key Information	
Approx. zone of influence	All Residents
Percentage of end occupiers/residents in area of influence	100%
Percentage of end occupiers/residents interested in Car Sharing	TBC in each survey when occupied

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

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

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

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

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

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

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

Action Plan Summary Table

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

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

Action Plan Summary Table

5.0 IMPLEMENTING THE PLAN

Background

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

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

The Travel Plan Coordinator

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

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

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

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

Promoting the Travel Plan

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

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

- **Identify the Aim** – e.g., to reduce low occupancy car commuting, school, and business travel & to promote active travel, public transport & alternatives to travelling by car.

- **Brand the Plan** – as part of communicating the Travel Plan, visually brand all work relating to it with a consistent look, slogan, identity or logo.

- **Identify the Target Audience** – 'segment the audience' (e.g., shift workers, school travel, sedentary workers, people travelling long/ short distances, mode used, members of a walking club or green team) so you can target the message and events towards these different groups.

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

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

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

5.12 The plan should be about promoting equity among modes and offering choice and accessibility.

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

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

6.0 CONCLUSIONS

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

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

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

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

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

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

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

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

APPENDIX G

Independent Stage 1 Road Safety Audit & Designer Feedback Form

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

Proposed Apartment Development, Castle Street, Bray, Co. Wicklow.

Client: **NRB Consulting Engineers Ltd.**

Date: **March 2022**

Report reference: **1236R01**

VERSION: **FINAL**

Prepared By:

Bruton Consulting Engineers Ltd

Glaspistol
Clogherhead
Drogheda
Co. Louth.

Tel: 041 9881456
Mob: 086 8067075
E: admin@brutonceng.ie
W: www.brutonceng.ie

CONTENTS SHEET

Contents

1.0 Introduction

This report was prepared in response to a request from Mr. Eoin Reynolds of NRB Consulting Engineers Ltd for a Stage 1 Road Safety Audit for a proposed residential development Castle Street , Bray, Co. Wicklow. Corrigan Hodnett is the Designer for the scheme and has therefore completed the Feedback Form.

The Road Safety Audit has been carried out in accordance with TII Publication GE-STY-01024, Road Safety Audit, dated December 2017.

The Road Safety Audit Team comprised of;

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

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

The Audit involved the examination of drawings and other material provided by NRB/Corrigan Hodnett and a site visit on the 15th of December 2021.

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

The information supplied to the Audit Team is listed in **Appendix A.**

A feedback form for the Designer to complete is contained in **Appendix B.**

A plan drawing showing the problem locations is contained in **Appendix C**.

2.0 Background

It is proposed to construct a 139 unit apartment scheme, including a supporting Creche and small street fronting commercial units with secure off -street bicycle parking (330 no.)and car parking (59 no.) on (R761) Castle Street, Bray, Co. Wicklow.

Vehicular access will be via a priority junction on Castle Street. The access road will be 5m wide with a 1.8m footpath on one side and a 0.5m buffer zone to the buildings on the other side.

Castle street is a single carriageway road with a southbound bus lane. There is a on-street cycle lane in the northbound direction.

The site is located opposite the Castle Street Shopping Centre. It is proposed to provide a break in the hatched ghost island leading to the right turning lane into Castle Street Shopping Centre to facilitate right turning traffic movements into the development.

The site is located approximately 12 minute walk from Bray DART station.

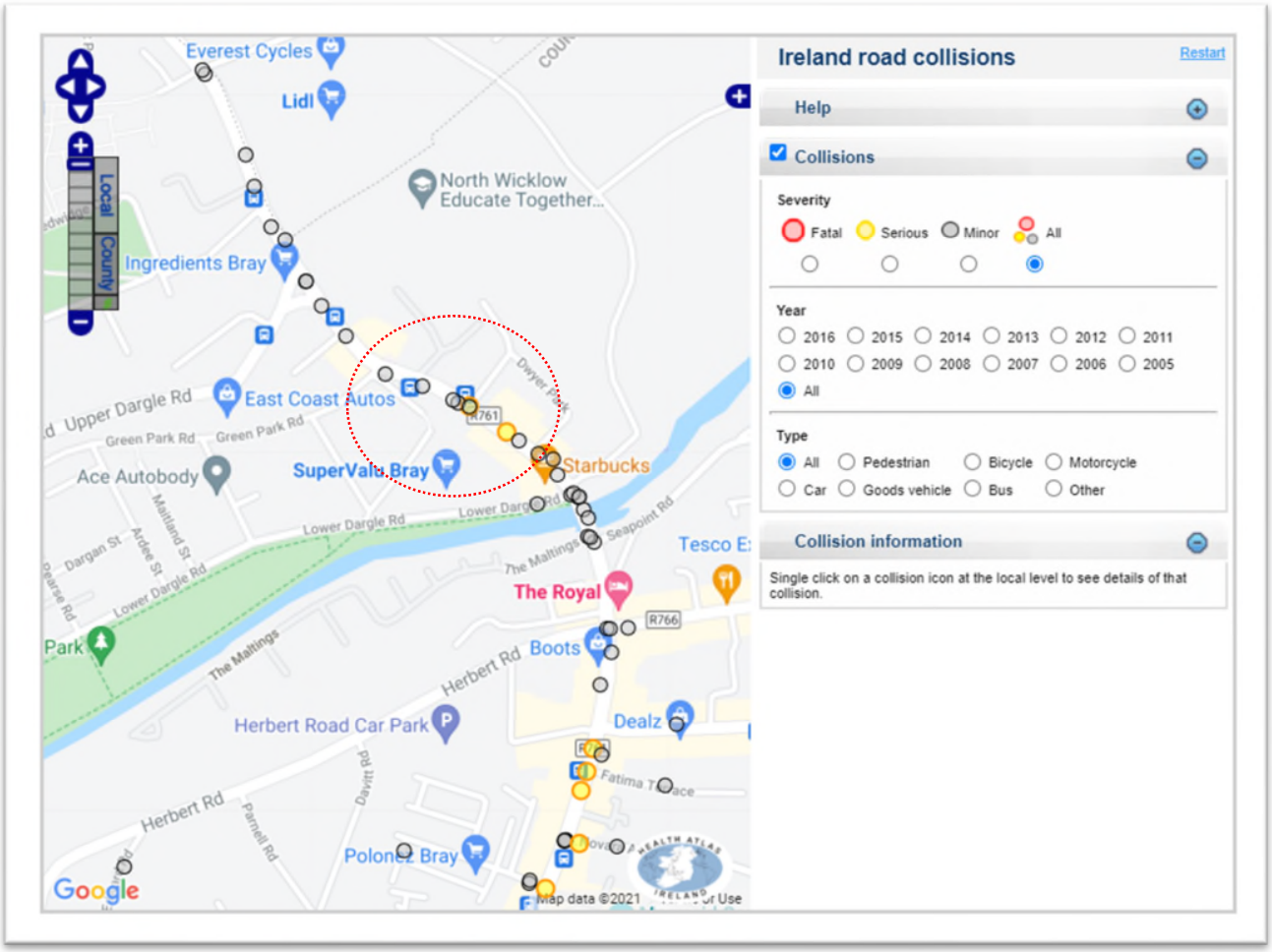
The speed limit on Castle Street is 50km/hr.

Layouts have been provided to the Audit Team which show the future BusConnects proposals and how the scheme accommodates these. A section of on-road cycle track will be required to facilitate vehicular access at that stage. The BusConnects scheme will include the provision of a signalised pedestrian crossing of Castle Street just East of the Dwyer Park junction.

The location of the site is shown below.

Image courtesy of *openstreetmap.org*

A review of the Road Safety Authority's website shows that between the years 2005 and 2016 there have been two serious injury collisions a number of minor injury collisions adjacent to the site access along Castle Street.



3.0 Issues Identified in This Road Safety Audit.

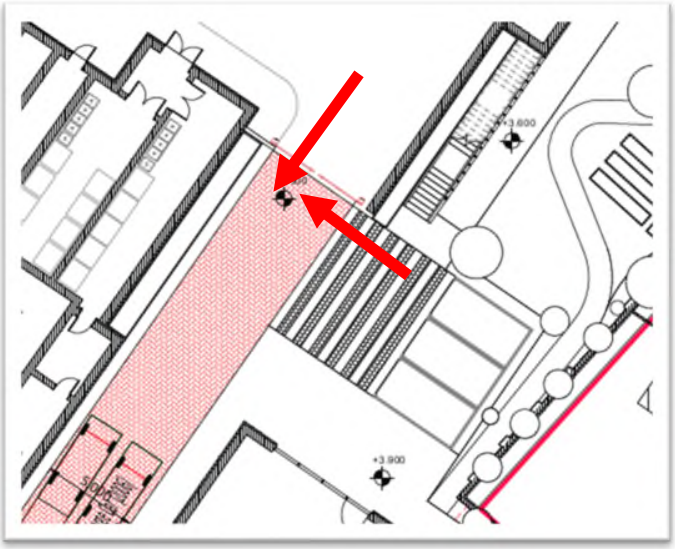
3.1 Problem

LOCATION

Drawing CHC-00-GR-DR-C-00101 Rev P03 S4

PROBLEM

It is unclear if drivers reversing out of the creche drop off car parking spaces will have suitable intervisibility with vehicles exiting the car park and if there will be sufficient room to turn given the presence of the barriers at the entrance to the car park. A lack of visibility could lead to collisions.



RECOMMENDATION

It is recommended that a swept path analysis be carried out for a large family car and that suitable intervisibility be provided.

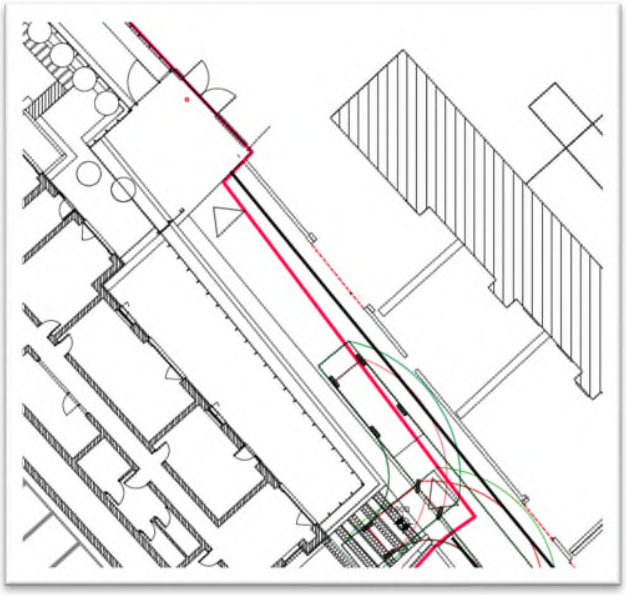
3.2 Problem

LOCATION

Drawing CHC-00-GR-DR-C-00101 Rev P03 S4

PROBLEM

It is proposed to have pedestrian access points off Dwyer Park. There are trip hazards along Dwyer Park between the concrete carriageway edge and the edge of the footpaths. This could lead to trips and falls for pedestrians, especially the mobility impaired.



RECOMMENDATION

It is recommended that the trip hazards be removed from Dwyer Park.

4.0 Observations

4.1 Observation.

At the detailed design stage a broken bus lane line will be required to prohibit vehicular access across the solid line.

5.0 Road Safety Audit Statement

We certify that we have examined the site on the 15th December 2021. The examination has been carried out with the sole purpose of identifying any aspects of the design which could be added, removed or modified in order to improve the safety of the scheme.

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

Norman Bruton **Signed:** Norman Bruton

(Audit Team Leader) **Dated:** 28/3/2022

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

(Audit Team Member) **Dated:** 28/3/2022

Appendix A

List of Material Supplied for this Road Safety Audit;

Drawing CHC-00-GR-DR-C-00101-S4-P03
Drawing CHC-00-GR-DR-C-00200-S4-P01
Drawing CHC-00-GR-DR-C-00201-S4-P01
Drawing CHC-00-GR-DR-C-00300-S4-P01
Drawing CSB-HJL-AB-00-DR-A-1010
Drawing CSB-HJL-AB-01-DR-A-1011
Drawing 20051-E040-A1
Drawing 20051-E041-A1
Drawing CHC-00-GR-DR-C-00015-S4-P02
Drawing CHC-00-GR-DR-C-00016-S4-P02
Drawing CHC-00-GR-DR-C-00100-S4-P01
Drawing CHC-00-GR-DR-C-00017-S2-P01

For Information

NRB Transport Assessment Report, June 2021 and updated March 2022.

Appendix B

Feedback Form

RSA FORM – FEEDBACK ON AUDIT

Scheme: Proposed Residential Development, Castle Street, Bray.
Road Safety Audit Stage 1
Date Audit (Site visit) Completed: 15-12-2021

Paragraph No. in Audit Report	Problem accepted (yes/no)	Recommended measure accepted (yes/no)	Alternative measures (describe)	Alternative measures accepted by Auditors (Yes/No)
3.1	Yes	Yes	Vehicle swept path assessment carried out and barrier introduced to ensure vehicular conflict is reduced by increasing intervisibility.	Yes
3.2	Yes	Yes	There are areas of Dwyer Park which are outside of the ownership of the applicant which are in poor repair. The applicant does not have a right to remediate these areas. All defects in areas within the applicants control to be made good as part of the works and prior to occupation. These areas are in the control of Wicklow County Council and we will liaise with WCC at detailed Design stage.	Yes

Signed…….. **Date: 28.03.2022**
Design Team Leader

Signed…… **Date**: 28-3-2022
Audit Team Leader

Signed……. **Date**:
Employer/Developer

Appendix C

Problem Location Plan.

Corrigan Hodnett Consulting
Civil & Structural Engineers

Extract from DMURS - Table 4.2 SSD Standards

SSD STANDARDS

DESIGN SPEED (km/h)	SSD STANDARDS (meters)	DESIGN SPEED (km/h)	SSD STANDARDS (meters)
10	7	10	8
20	14	20	15
30	23	30	24
40	33	40	36
50	45	50	49
60	59	60	65
FORWARD VISIBILITY		FORWARD VISIBILITY ON BUS ROUTES	

Table 4.2 : Reduced SSD standards for application within cities, towns and villages. Reduced forward visibility increases driver caution and reduces vehicle speeds.

Unit 8A, Quay Park SC, Sandy, Dublin 5
T: +353 1 (0) 1 8553782 | info@corrigan-hodnett.ie | www.corrigan-hodnett.ie

General Notes

1. Do not scale from this drawing. Refer to Architects drawings for all works levels and setting out.
2. This drawing is to be read in conjunction with all other Engineer's and Architect's drawings and specifications. Where discrepancies are observed please notify CHC for clarification.
3. Contractor to check all levels (existing and proposed), setting out and dimensions on site prior to commencement of the works and advise the consultants of any discrepancies.
4. All works to be constructed in accordance with current building control legislation, local authority requirements and good building practice.
5. All Insulation, weathering materials (dpc, dpm, flashings etc), radon barriers and sumps and all sub-floor ducting all to Architect's details.
6. Location of all service pop-ups to be confirmed and set out by the Architect.
7. Refer to Architect's drawings and specifications for fire strategy and all fire protection requirements
8. All materials and products specified must carry CE marking and Declarations of Performance as appropriate.
9. Contractor shall note the recommendations of the site investigation report in respect of all excavation depths, ground water levels and identification of required adequate bearing strata. All foundation formation soft spots or disturbed ground not covered in SI report to be recorded and notified to the Engineer.

A1

Problem 3.2

Problem 3.1

EXISTING THIRD PARTY CAR PARK

49.0m forward visibility

EXISTING ADJACENT THIRD PARTY BLOCKWORK PIER AND PALASIDE FENCE

FORWARD VISIBILITY DISTANCE OF 49.0m WITH A 2.4m SET BACK FOR A 50 km/h SPEED LIMIT ON A BUS ROUTE. SEE SSD STANDARDS TABLE 4.2

ST. CRONANS ROAD

ST. COLUMCILLE'S TERRACE

DWYER PARK

Car Park

STOP

SITE LAYOUT
SCALE 1:250

Issue	Suitability	Date	Description	Designed	Drawn	Approved
P02	S4	03.03.2022	Issued for Planning.	P.C.	N.N.	P.C.
P03	S2	04.02.2022	Issued For information.	P.C.	N.N.	P.C.
P01	S4	24.09.2021	Issued for SHD Tripartite.	P.C.	N.N.	P.C.
P02	S2	12.07.2021	Issued for information.	P.C.	N.N.	P.C.
P01	S2	01.07.2021	Issued for information.	P.C.	N.N.	P.C.

Project: Castle Street, Bray, Co. Wicklow.

Drawing Title: Site entrance layout for existing road layout

Client: Silver Bow Limited

Originator. Area. Level. Type. Role. Number.
CHC - 00 - GR - DR - C - 00015

APPENDIX H

Bus/DART Capacity & Demand Report

consulting engineers

NRB

Bus/DART Capacity Assessment Report

(Appendix H)

For

Residential Apartment Development

At

Castle Street,
Bray, Co. Wicklow.

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

Appendices.....

1.0 INTRODUCTION

1.1 NRB Consulting Engineers Ltd were appointed to address the Bus & DART demand and capacity associated with a planning application for a Residential Development, with ancillary commercial elements including a creche, on a site at Castle Street, Bray, Co Wicklow.

1.2 The development consists of a 139-unit apartment scheme, including a supporting Creche and small street fronting commercial units, with secure off-street parking areas for bicycles and a reduced number of private cars (along with landscaping, bins storage and all associated site works). The site is located in the heart of Bray, representing sustainable living.

1.3 Clearly, with its history as a commercial town-centre site, it has long established transportation demands associated with its established prior use (which are most likely to have been significantly greater than the now-proposed use as a residential development). However, robustly, this report has been prepared as if the Bus & DART demand created is additional new demand for these services.

1.4 The NRB commission on the project consists of this assessment of current & future Bus & DART capacity, a 'Bus & DART Capacity Assessment Report'.

1.5 Whilst this Report contains an assessment of Bus & DART Capacity and demand, it should be remembered that Service Providers are commercial in nature, running their businesses based on current demand rather than medium to longer term future demand. In simple terms, transport services are provided based on actual existing footfall rather than potential future demand. If there is an increased demand for services with full or over-capacity services, Operators then generally react to improve the facilities if it makes commercial sense to do so. More customers means more revenue generated by the transport services.

1.6 Notwithstanding the above, the purpose of this Study is to review the potential impact of the development upon the existing and future Bus & DART services in the vicinity of the site.

1.7 The analysis of the existing and future services is based on an assessment methodology which includes trip generation assessment, modal split assumptions, and assignment/distribution. These assumptions have been based on real data extracted from the Central Statistics Office (CSO) 2016 Small Area Map Data, available through the SAP

online mapping tool. This data was used to quantify the anticipated demand for services as a result of the proposed development locally, based fully on adjacent CSO Statistical Small Areas.

1.8 The first step was to review the current and future planned services. The bus stops within an easy walking distance of the subject site were identified, with the current bus services, bus service frequency and capacity studied and assessed. Similarly, the demand for DART services at Bray Station was assessed based on current provision.

1.9 *Bus Connects* is expected to be implemented within a relatively short timeframe. This initiative will reconfigure the bus services for the Greater Dublin Area completely, including Bray. This Study therefore considers both the existing bus network and the planned *Bus Connects* Network.

1.10 The current and future improved DART services are also considered within the Report.

1.11 The Study focuses on the peak commuter periods for the development, and in particular the busiest weekday AM commuter peak demand for services – this represents the period of highest demand on the network consistent with the TII Traffic & Transport Assessment Guidelines (May 2014). The methodology assumes that the trips will be assigned to the nearest available bus stops and of course to Bray DART Station, which is closest DART Station, and which has good alternative transports links to it already in place.

2.0 BUS/DART - LOCATIONS & SERVICES (CURRENT & FUTURE)

CURRENT SERVICES

2.1 For commuting, a walk distance to/ from Bus Stops or Public Transport Hubs of up to 1km is generally considered to be acceptable. For the purposes of this assessment, we have assumed a 10-12min walk time as being appropriate, reflecting a distance of 800-1,200m (depending on speed of walking).

2.2 The site is well served by frequent ***Bus Services***, and this is illustrated below within ***Figure 2.1*** and ***Figure 2.2*** which illustrate the existing bus services & Stops within acceptable walking distance of the site. Clearly, there are numerous frequent services passing the site directly on the R761 Castle Street at the site. The existing Bus Stops and Services to the north of the site are illustrated below as ***Figure 2.1*** (correct at time of writing), with the walk time of 10min from *Google Streetview* illustrated by way of the 'blue bubbles'.

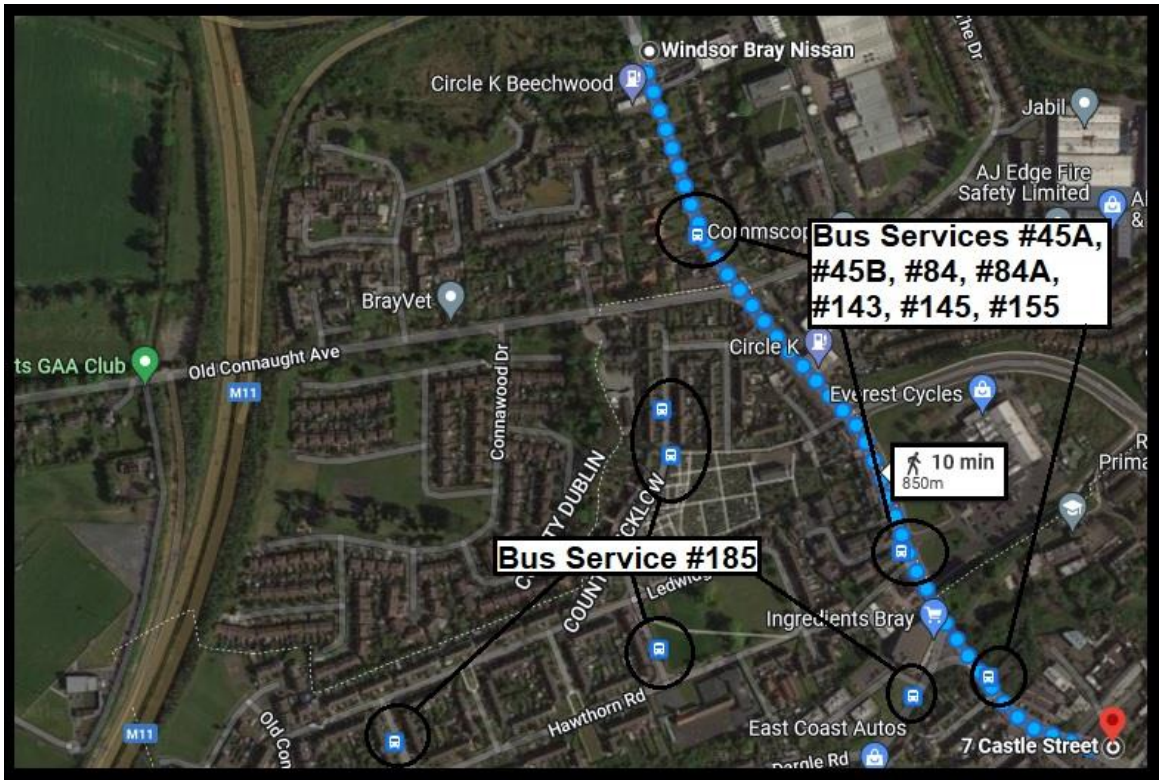


Figure 2.1 – Existing Bus Stops North of the Site

2.3 The existing Bus Stops and Services to the south of the site are illustrated below as ***Figure 2.2***. Again, we have illustrated the walk time of 10min from *Google Streetview* illustrated by way of the 'blue bubbles'.

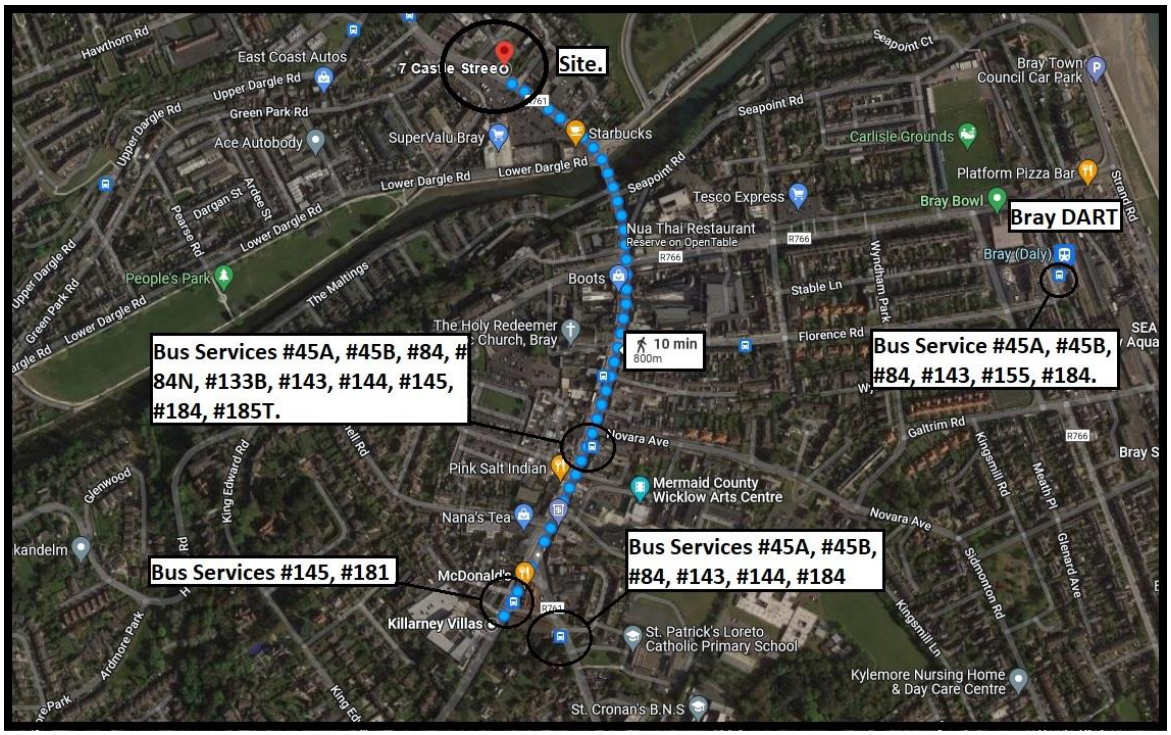


Figure 2.2 – Existing Bus Stops South of the Site

2.4 We have included the services linking directly to Bray Daly Station, which is itself a short walk of cycle from the subject site. There are also bus services linking directly to LUAS. Both DART and LUAS provide linkage to City Centre Transport Hubs and inter-city bus and rail services.

2.5 As an illustration of walk time to DART, we include below the *Google* walk time to Bray Daly Station as ***Figure 2.3***, and the *Google* Cycle time to Bray Daly Station as ***Figure 2.4***.

2.6 In our experience, a significant proportion of residents within any residential scheme are cyclists, and the cycling/walking distance to/from the DART will ensure it is a viable alternative for use.

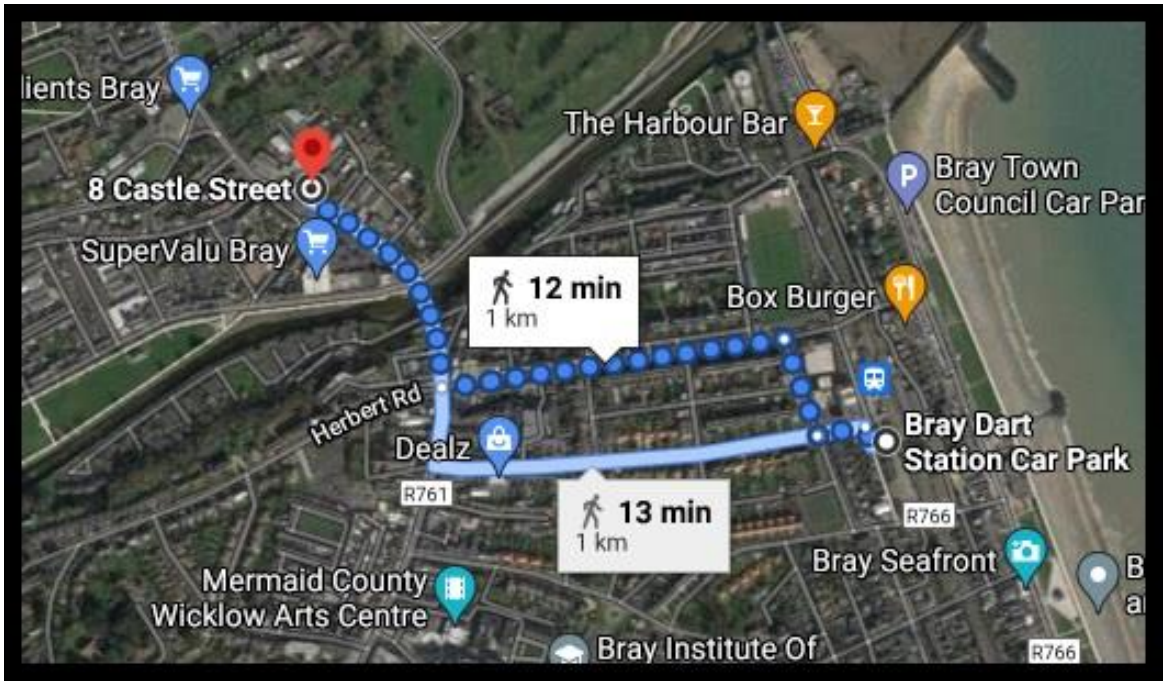


Figure 2.3 – Walk Time of 12 Mins to Bray Daly Station & DART

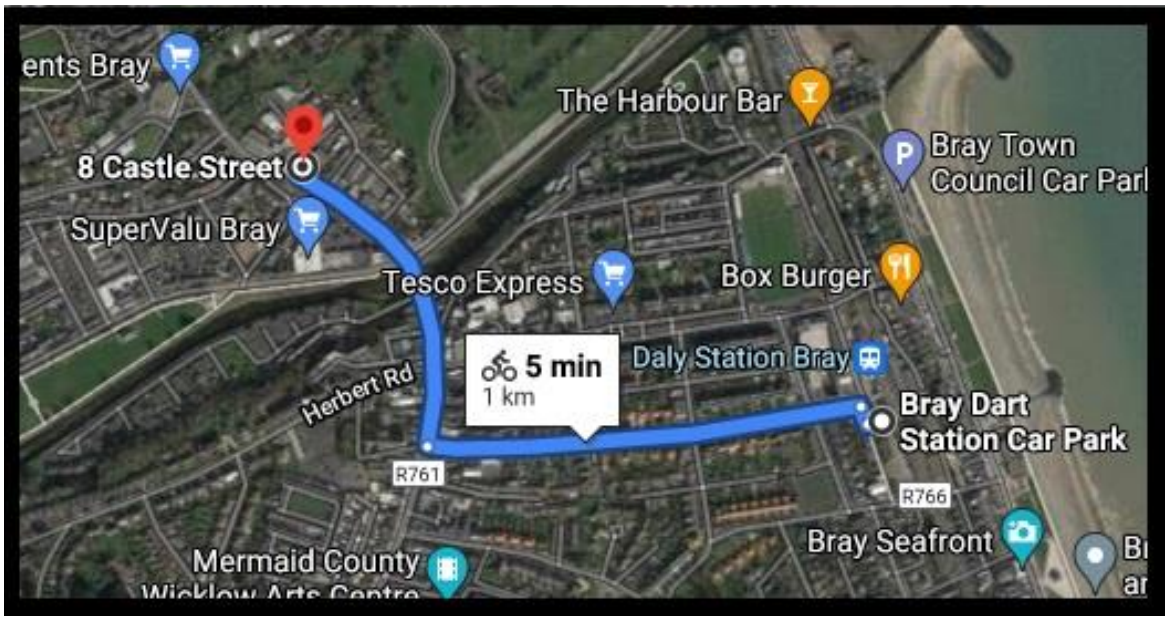


Figure 2.4 – Cycle Time of 5 Mins to Bray Daly Station & DART

2.7 In terms of the Existing Bus Service Provision and Service Frequency, the Timetables for each existing Service within a generally-acceptable walking distance as outlined above are included herein as ***Appendix A***. These details have been collated and are summarised below as ***Table 2.1,*** extracting information relating to the busy 7-9am weekday AM Commuter Period.

Table 2.1; - Buses within 10min Walk Distance, 7-9am Approx Capacity.

Service #	Route	Operator	No. Buses 7-9am (Mon - Fri)	Total Person Capacity (7-9am)	Thru City Core (Y/N)
45a/45b	Dun Laoghaire - Kilmacanogue & Return	Go Ahead Ireland	4	364	N
84a	Blackrock-Newcastle (Via Bray) & Return (via Luas)	Dublin Bus	5	455	N
84n	D'Olier St - Greystones (via Bray) Night Bus	Dublin Bus	0	NA	Y
133/133b	Wicklow- Bray – Dublin & Return	Bus Eireann	1	91	Y
143/144	Southern Cross - Bray - Sandyford Luas & Return	Finnegan Bray	3	108	N
145	Heuston - Ballywaltrim, via Bray & Return	Dublin Bus	12	1092	Y
155	Ikea - Bray & Return	Dublin Bus	6	546	Y
181	Glendalough - Dublin & Return	Glendalough Bus	1	52	Y
184	Bray - Newtownmountkennedy & Return	Go Ahead Ireland	4	364	N
185	Bray - Enniskerry & Return	Go Ahead Ireland	5	455	N
		Total (7-9am) All Routes	**41**	**3527**	
		Total (7-9am) Routes Via City Centre	**20**	**1781**	

2.8 The above demonstrates that the site is clearly accessible to a significant and high capacity existing bus provision, with a capacity of c3,527 bus seats during the 7-9am commuter peak period, all within a 10 minute walk-distance of the site**.** There is a capacity of 1,781 Bus Seats to/from Dublin City centre during this period.

2.9 And of course, the majority of these bus services provide for connectivity to Public Transports Hubs and Interchanges (Rail, Intercity Bus Services, LUAS, DART etc) located within the City Core.

2.10 The **Dublin Area Rapid Transit (DART)** is an electric rail system running along the east costs between Greystones to the south and Malahide or Howth in the north. It is a quick and easy way to get around Dublin. The service operates on a frequency of approximately every 10 minutes all day. Extracts from the DART timetable can be found herein as ***Appendix B***.

2.11 We have assessed the DART Service intervals during the weekday 7-9am period, and the approximate total DART people capacity is then illustrated below as ***Table 2.2***

Table 2.2; - DART Approximate Existing Capacity Each Way (7-9am) – Bray Daly Station

DART Capacity/Demand Details	No. 7-9am	People Capacity
Commuter Services Leaving Bray 7-9am*	14	660
Total Approximate People Capacity 7-9am	9240	

** Based on published details of New Extended Trains introduced in 2021, with Train capacity increased by 30%*

2.12 The Transport for Ireland & Irish Rail websites (and Mobile Phone Apps) now provide a service that allows customers access up to date real information for Arrivals and departures on a stop-by-stop basis. This information on Arrivals and Departures allows customers to plan their arrivals and departures & associated walk/cycle times accurately, facilitating efficient journey planning (and minimising congestion on platforms or stops).

2.13 Transport for Ireland also provides an interactive online tool that enables the user to plan journeys, with real time information on Bus & Rail services on a nationwide basis.

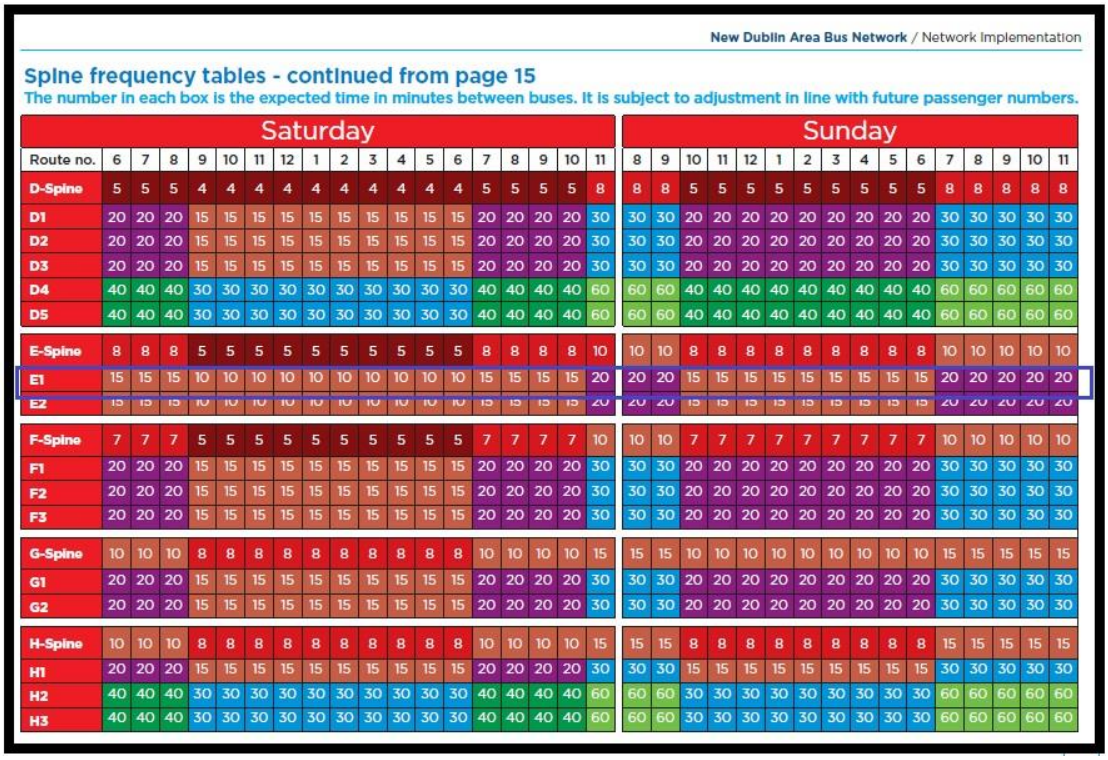
2.14 The DART Trains have been recently upgraded and extended with new carriages increasing the capacity of each train. We have also set out below details of the proposed future improvements to the DART Services and also bus service improvements locally as part of *Bus Connects* plans.

FUTURE IMPROVED BUS SERVICES

2.15 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. These plans extend to Bray as part of the GDA. An extract from the NTA Plans showing the site location is included below as ***Figure 2.5***.

Figure 2.5 – Extract Current NTA Network Plans & Site

2.16 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. The site is located served by ***Spine Route E1 (Red)*** and **Local Routes L11-L15** ***(Green)*** with the expected frequency of these services as illustrated in extracts included ***Figure 2.6*** and ***Figure 2.7*** below.



New Dublin Area Bus Network / Network Implementation

Spine frequency tables - continued from page 15

The number in each box is the expected time in minutes between buses. It is subject to adjustment in line with future passenger numbers.

	Saturday																	Sunday												
Route no.	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11
D-Spine	5	5	5	4	4	4	4	4	4	4	4	4	4	5	5	5	5	8	8	8	5	5	5	5	5	5	5	5	5	8	8	8	8	8
D1	20	20	20	15	15	15	15	15	15	15	15	15	15	20	20	20	20	30	30	30	20	20	20	20	20	20	20	20	20	30	30	30	30	30
D2	20	20	20	15	15	15	15	15	15	15	15	15	15	20	20	20	20	30	30	30	20	20	20	20	20	20	20	20	20	30	30	30	30	30
D3	20	20	20	15	15	15	15	15	15	15	15	15	15	20	20	20	20	30	30	30	20	20	20	20	20	20	20	20	20	30	30	30	30	30
D4	40	40	40	30	30	30	30	30	30	30	30	30	30	40	40	40	40	60	60	60	40	40	40	40	40	40	40	40	40	60	60	60	60	60
D5	40	40	40	30	30	30	30	30	30	30	30	30	30	40	40	40	40	60	60	60	40	40	40	40	40	40	40	40	40	60	60	60	60	60
E-Spine	8	8	8	5	5	5	5	5	5	5	5	5	5	8	8	8	8	10	10	10	8	8	8	8	8	8	8	8	8	10	10	10	10	10
E1	15	15	15	10	10	10	10	10	10	10	10	10	10	15	15	15	15	20	20	20	15	15	15	15	15	15	15	15	15	20	20	20	20	20
E2	15	15	15	10	10	10	10	10	10	10	10	10	10	15	15	15	15	20	20	20	15	15	15	15	15	15	15	15	15	20	20	20	20	20
F-Spine	7	7	7	5	5	5	5	5	5	5	5	5	5	7	7	7	7	10	10	10	7	7	7	7	7	7	7	7	7	10	10	10	10	10
F1	20	20	20	15	15	15	15	15	15	15	15	15	15	20	20	20	20	30	30	30	20	20	20	20	20	20	20	20	20	30	30	30	30	30
F2	20	20	20	15	15	15	15	15	15	15	15	15	15	20	20	20	20	30	30	30	20	20	20	20	20	20	20	20	20	30	30	30	30	30
F3	20	20	20	15	15	15	15	15	15	15	15	15	15	20	20	20	20	30	30	30	20	20	20	20	20	20	20	20	20	30	30	30	30	30
G-Spine	10	10	10	8	8	8	8	8	8	8	8	8	8	10	10	10	10	15	15	15	10	10	10	10	10	10	10	10	10	15	15	15	15	15
G1	20	20	20	15	15	15	15	15	15	15	15	15	15	20	20	20	20	30	30	30	20	20	20	20	20	20	20	20	20	30	30	30	30	30
G2	20	20	20	15	15	15	15	15	15	15	15	15	15	20	20	20	20	30	30	30	20	20	20	20	20	20	20	20	20	30	30	30	30	30
H-Spine	10	10	10	8	8	8	8	8	8	8	8	8	8	10	10	10	10	15	15	15	8	8	8	8	8	8	8	8	8	15	15	15	15	15
H1	20	20	20	15	15	15	15	15	15	15	15	15	15	20	20	20	20	30	30	30	15	15	15	15	15	15	15	15	15	30	30	30	30	30
H2	40	40	40	30	30	30	30	30	30	30	30	30	30	40	40	40	40	60	60	60	30	30	30	30	30	30	30	30	30	60	60	60	60	60
H3	40	40	40	30	30	30	30	30	30	30	30	30	30	40	40	40	40	60	60	60	30	30	30	30	30	30	30	30	30	60	60	60	60	60

Figure 2.6 – Extract NTA Core Bus Network GDA, Spine Route Frequencies

New Dublin Area Bus Network / Network Implementation

Local frequency tables

The number in each box is the expected time in minutes between buses. It is subject to adjustment in line with future passenger numbers.

Local Routes		Weekday																		
Route no.	To and From	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11
L1	Greystones - Newcastle Loop Clockwise - Bray		40	40	40	40	40	40	40	40	40	40	40	40	40	60	60	60	60	60
L2	Greystones - Newcastle Loop Anticlockwise - Bray		40	40	40	40	40	40	40	40	40	40	40	40	40	60	60	60	60	60
L3	Greystones Circulator (1-way loop)		30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	60
L11	Kilmacanogue - Bray - Dún Laoghaire		20	20	20	20	20	20	20	20	20	20	20	20	20	30	30	30	30	30
L12	Ballywaltrim - Bray Station		20	20	20	20	20	20	20	20	20	20	20	20	20	30	30	30	30	30
L13	Kilternan - Stillorgan Village - UCD - Ringsend		60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
L14	Southern Cross Rd - Bray Station - Palermo		30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	60
L15	Shop River - Enniskerry - Bray		60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
L21	Dalkey - Dún Laoghaire		60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
L22	Brides Glen - Sally Glen Road - Dún Laoghaire	30	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	30
L25	Dundrum - Dún Laoghaire	30	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	30
L26	Kilternan - Cabinteely - Deansgrange - Blackrock		30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	60
L27	Ballyogan - Cabinteely - NRH - Dún Laoghaire		30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	60
L33	Glenculien - Dundrum			60	60	60		60		60		60		60	60		60			
L35	Rockbrook - Dundrum				60		60		60		60		60							
L44	Ballymore Eustace - Blessington - Tallaght		60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
L51	Adamstown - Lucan Village - Esker - Liffey Valley		60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60

Figure 2.7 – Extract NTA Core Bus Network GDA, Local Route Frequencies

2.17 The site is therefore also ideally placed in terms of future high frequency bus availability, based on the NTAs published Plans.

FUTURE IMPROVED DART SERVICES

2.18 The DART & DART West project has been given government approval to enter the planning system, which is a crucial milestone in further expanding and transforming the rail network in the Greater Dublin Area. The Government has also approved the preliminary business case for the wider DART+ Programme, which will:

- Double passenger capacity per hour to 52,000 and treble the length of the DART network to 150km;
- Facilitate sustainable mobility and transport-orientated development in the capital and surrounding counties; and
- Provide clean and green electrified rail services in line with the targets set in the Climate Action Plan.

2.19 Funded under the National Development Plan, DART & DART West is key to the entire programme and the project will see construction of a new depot near Maynooth as well as electrification of the current Maynooth Line and upgrade of infrastructure at both Connolly and Docklands stations in the city centre. Government approval means the project can enter the statutory planning system. Iarnród Éireann are currently considering submissions received during the second round of non-statutory public consultation on DART+ West and it is intended that Iarnród Éireann will apply to An Bord Pleanála for a Railway Order in the short term.

2.20 Part of the already funded plans include significant signal and crossing upgrades along the southern coastal section serving Bray, which will facilitate improved services.

2.21 In terms of assessing **Bus Passenger Capacity** herein the Go-Ahead Ireland services and a typical old-type Dublin Bus double decker bus have a capacity to accommodate ~91 passengers. However, it should be noted Dublin Bus are introducing new hybrid buses, some of which have significant extra capacity e.g. the new Wrightbus StreetDeck HEV 96 double-decker buses.

3.0 BUS USE PREDICTIONS, CAPACITY & DEMAND

3.1 We have used the CSO Local Small Area Mapping to establish the proportion of Bus & DART Users within the local area surrounding the site in order to estimate the additional demand for services, utilising real data rather than unreliable estimations of modal split. An annotated extract from the CSO Database Small Area Mapping used for this purpose is included below as ***Figure 3.1.***

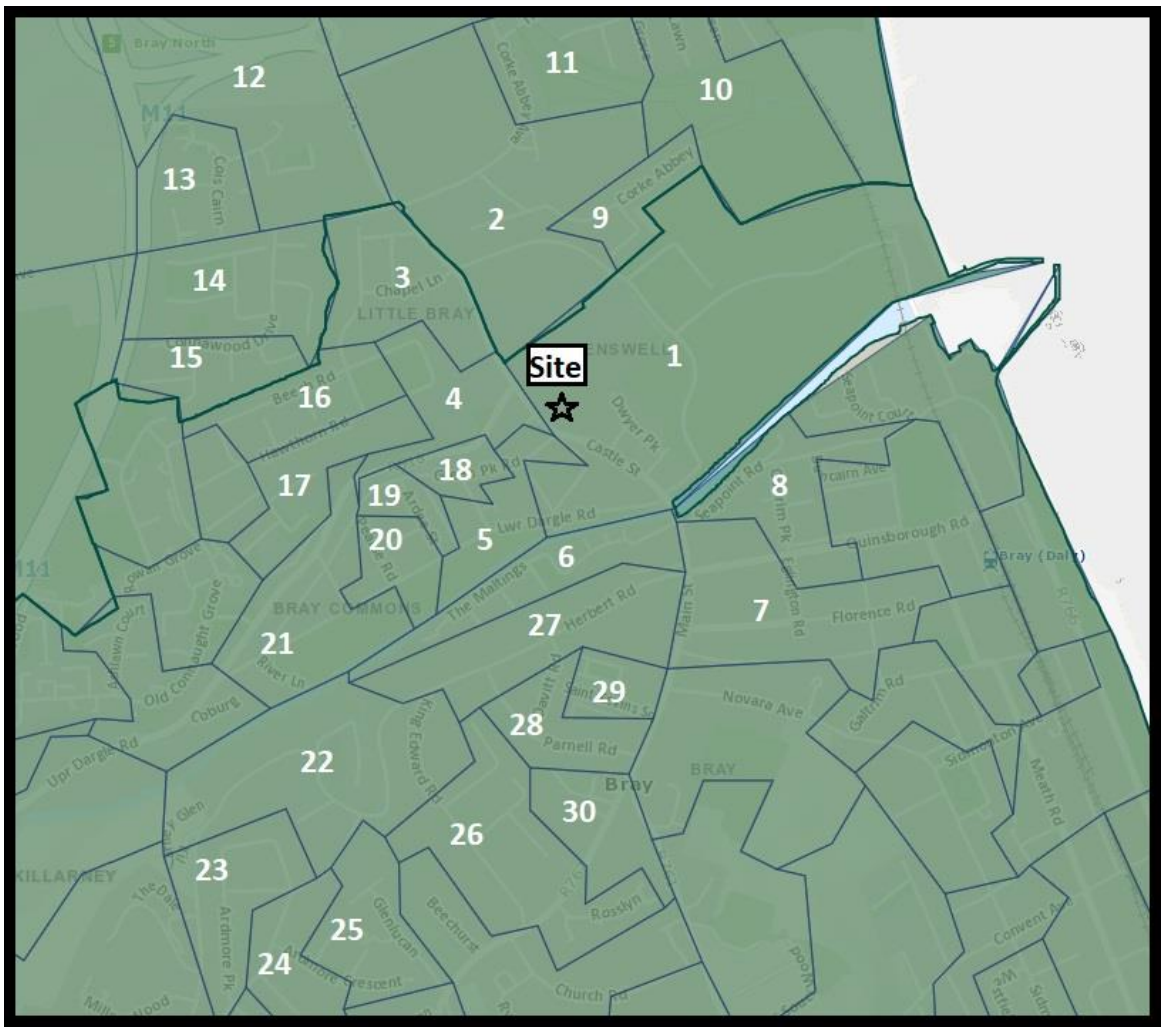


Figure 3.1 – Collated CSO Local Area Data

3.2 We have extracted information from the Census Data for these local small statistical areas to calculate the demand for bus & DART during the busy weekday AM Commuter period, and this is illustrated below as ***Table 3.1***. The busy AM period represents the worst case demand for Buses/DART services for assessment purposes, as 'peak spreading' or staggered commuter departures occurs during the evening commuter peak.

Table 3.1 – Bus & DART Demand Based on CSO Data & Expected Residential Population

CSO Small Area Ref. Above	Total Population	Total Commuters Age 5+ to Work, School or College	No. of Bus Users	No. of DART Users	No. of Commuters Leaving Home 7-9am to Work/Schl or College
1	198	111	16	6	54
2	452	320	55	22	212
3	363	242	51	17	161
4	275	178	26	14	117
5	267	147	31	8	80
6	227	177	22	24	112
7	326	205	21	41	125
8	321	208	31	37	131
9	331	218	25	12	158
10	325	243	20	12	176
11	429	307	57	16	213
12	364	239	30	20	163
13	292	194	48	16	134
14	304	214	29	16	163
15	359	278	34	20	222
16	291	163	24	6	115
17	239	130	18	6	86
18	139	64	8	6	32
19	103	46	5	4	22
20	199	116	12	7	72
21	295	158	22	11	105
22	240	162	12	13	104
23	270	173	11	20	131
24	210	122	14	13	87
25	264	150	25	15	103
26	239	118	7	11	79
27	210	120	16	15	75
28	333	226	27	40	139
29	209	124	15	13	81
30	176	105	11	17	74
Totals	8250	5258	723	478	3526

CALCULATION OF BUS & DART DEMAND DUE TO DEVELOPMENT BASED ON LOCAL CSO DATA	
Percentage of Total Population in Area Commuting =	63.7%
Percentage of Total Population in Area Commuting By Bus =	8.8%
Percentage of Total Population in Area Commuting By DART =	5.8%
Percentage of Commuters Leaving Home 7-9am =	67.1%
520	Residents within Occupied Development, based on Bed Spaces
46	Bus Commuters (Consistent with the Local Area Census Data)
31	**Total Additional Bus Commuters Between 7am and 9am**
30	DART Commuters (Consistent with the Local Area Census Data)
20	**Total Additional DART Commuters Between 7am and 9am**

BUS/DART CAPACITY & DEMAND

3.3 Based on exiting travel patterns in the locality, the above confirms that the Development will create an additional worst case demand for approximately 31 seats on bus services between 7am and 9am. There will be an additional worst case demand for 20 DART seats between 7am and 9am. Of course, it is not possible to predict the commuting destination of future residents. Although it would sensibly be expected to be the City centre.

3.4 The predicted increased service demand should be considered in terms of the available capacity locally, for both Buses and DART.

3.5 In terms of **Buses**, the demand is illustrated in ***Table 3.2*** below - with c3,527 bus seats available during the weekday AM commuter peak period, all within an 10 minute walk of the subject site. There are a similar number of services and seats during the weekday PM Peak period 4pm-6pm, however demand is greater during the weekday AM Peak (due to 'peak spreading' that occurs in the evenings, with much more significant staggered departure times from work or College locations).

Table 3.2; Total Peak Demand for Bus Seats Due to Development

Details	Buses	Seats
Total Number of Buses (7-9am) All Routes	**41**	**3527**
Total Number of Buses (7-9am) Routes Via City Centre	**20**	**1781**
Total Demand for Seats Created by Proposed Development (7-9am)		**31**
Percentage Impact Upon Existing Services within 10min Walk (All Routes)		**0.9%**
Percentage Impact Upon Existing Services within 10min Walk (Routes Via City)		**1.7%**

3.6 The resulting increased demand for bus seats is less than 2% of the total available 7-9am seat capacity locally. This is considered negligible, and we believe it can easily be accommodated within the current service provision. This is particularly the case given that the demand is generally accepted to vary +/-10% due to day-of-week or weather conditions.

3.7 In terms of **DART** services, the demand associated with the development is illustrated in ***Table 3.3*** below & this was used to calculate the demand and impact upon services.

Table 3.3; Total Peak Demand for DART Due to Development

DART Capacity/Demand Details	No. 7-9am	People Capacity
Commuter Services Leaving Bray 7-9am*	14	660
Total Approx People Capacity 7-9am	9240	
Total Demand Created by Proposed Development	20	
% Additional Demand Created	0.22%	

** Based on published details of New Extended Trains introduced in 2021, with Train capacity increased by 30%*

3.8 The proposed development will therefore also create an additional demand for DART seats, equating to 0.22% of the current carrying capacity. This is also considered negligible and we believe it can easily be accommodated within the current service provision.

3.9 In terms of assessing current service capacity, details of seat or space availability on any particular individual bus or DART service, at any particular stop, is just not available. Service operators themselves accept cash fares, and as a result the availability of space for additional passengers cannot be accurately measured using Leap-Card software output (commercial information which is unavailable in any event). We therefore undertook a sample survey of the space availability on buses and DART Trains on Wednesday 6th & Thursday 7th April. We observed occupancy at the Castle Street Bus Stops (#4154) together with observation of DART Train occupancy at Bray Station. The demand for services appeared greater on Thursday 7th April, and we have therefore used observations on the Thursday for the purposes of this assessment.

3.10 For the **Bus Services**, we observed occupancy over a one hour period on both days (730am to 830am). This observation survey confirmed that the buses are running with significant seat/space availability on both days, with the maximum observed occupancy being c45 people on a double decker bus (which has a capacity for 91 persons). We conclude that the small additional demand for Bus services created by the development can be accommodated within the existing services, as there appears to be adequate capacity available.

3.11 In terms of **DART Services**, we observed Train arrivals & departures over the 2 days for a 1 hour period on each day (also 730am to 830am). During this time all waiting passengers were able to board the next available train, and there was no observed congestion, either on the platform or on the trains themselves. In fact on the majority of the trains there were empty seats available to passengers. This would appear to confirm that there is adequate capacity in the existing DART service to accommodate the small additional demand created by the proposed residential development

3.12 We conclude that this very small additional demand for DART and Bus services can easily be accommodated within the existing services. In future, there are additional services to be created as part of Bus Connects as set out within Section 2.0 above, with additional further improvements to DART Services. There will also therefore be more than adequate capacity on the further improved services locally.

3.13 The analysis is based on 2016 CSO travel patterns, and whilst the development seeks to encourage modal shift, given the small increase in predicted bus and DART demand, any possible future changes in demand due to improve modal shift (walking, cycling, increased working from home and public transport etc) will still have negligible impact on bus or DART capacity here.

4.0 CONCLUSIONS

4.1 NRB Consulting Engineers Ltd were appointed to address the Bus & DART Demand and capacity associated with a planning application for a for a Residential Development, with ancillary commercial elements and a creche, on a site at Castle Street, Bray, Co Wicklow.

4.2 The development consists of a 139-unit apartment scheme, including a supporting Creche and small street fronting commercial units, with secure off-street parking areas for bicycles and a reduced number of private cars (along with landscaping, bins storage and all associated site works). The site is located in the heart of Bray, representing sustainable living.

4.3 The analysis of the existing and future Bus/DART services has been undertaken based on an assessment methodology which includes trip generation assessment, modal split assumptions, and assignment/distribution. These assumptions have been based on real data extracted from the Central Statistics Office (CSO) 2016 Small Area Map Data, available through the CSO online mapping tool. This data was used to quantify the anticipated demand for Bus/DART as a result of the proposed development in this particular location, utilising current local modal shift patterns & statistics.

4.4 This Report contains details of current and future Bus & DART Services and Bus & DART Capacity serving the site and the local area. The assessment confirms that the completion and full occupation of the development will result in an increased demand for Bus/DART seats, with an additional 31 Bus customers and 20 DART customers during the weekday AM Commuter Peak hours 7-9am (and less during the PM Commuter peak period). This represents a total of way less than 2% of the Bus capacity and less than 0.3% of DART capacity available locally during this AM Period. The study also includes details of seat/space availability of existing services locally, based on an observation survey over 2 days.

4.5 We conclude that the additional demand for Bus/DART trips as a result of the proposed development can be accommodated on the existing and future improved services in the area without any noticeable effect.

4.6 Whilst this Report contains an assessment of current capacity, it should be remembered that service providers are commercial in nature, running their businesses based on existing demand, rather than medium to longer term future demand. Transport services are provided based on real demand rather than potential demand. If there is an increased demand for services, or indeed if there is a deficit in a service provision, Operators generally react to improve facilities if it makes commercial sense to do so. More customers means more revenue generated.

APPENDIX A

A	Bus Timetable Information *(Correct at Time of Collating Data & Writing Report)*

Table No.

WICKLOW - BRAY - DUBLIN 133

MONDAY TO FRIDAY

ROUTE	133	133	133	133	133	133	133	133	133	133	133	133	133	133	133	133	133	133	133	133	133	133
Arklow (Euro Shop)					07:00																	
Arklow (Ferrybank Church)					07:03																	
Jack Whites Cross (Opp Pub)					07:15																	
Ballincor (Barrindarrig Station)					07:18																	
Beehive (Opp Beehive Pub)					07:21																	
Wicklow (Monument)	05:00	05:30	06:00	06:40	-	07:30	09:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	
Wicklow (Convent Hill)	05:01	05:32	06:02	06:42	-	07:32	09:02	10:02	11:02	12:02	13:02	14:02	15:02	16:02	17:02	18:03	19:03	20:03	21:03	22:03	23:03	
Wicklow (Opp Ballyguile)	05:02	05:33	06:03	06:43	-	07:34	09:04	10:04	11:04	12:04	13:04	14:04	15:04	16:04	17:04	18:04	19:04	20:04	21:04	22:04	23:04	
Wicklow (Grand Hotel)	05:07	05:37	06:08	06:48	-	07:39	09:10	10:09	11:09	12:09	13:09	14:09	15:09	16:09	17:09	18:10	19:10	20:09	21:09	22:09	23:09	
Wicklow (Opp Tesco)	05:09	05:39	06:10	06:50	-	07:41	09:14	10:12	11:12	12:12	13:12	14:12	15:12	16:12	17:12	18:12	19:12	20:12	21:10	22:10	23:10	
Rathnew (St Ernans School)	05:12	05:43	06:13	06:53	-	07:45	09:18	10:16	11:16	12:16	13:16	14:16	15:17	16:17	17:17	18:16	19:16	20:16	21:13	22:13	23:13	
Ashford (Ballinalea Northbound)	05:15	05:46	06:17	06:57	-	07:49	09:22	10:20	11:20	12:20	13:20	14:20	15:21	16:21	17:21	18:19	19:19	20:19	21:17	22:17	23:17	
Ashford (Ashford House)	05:17	05:48	06:19	06:59	-	07:50	09:24	10:22	11:22	12:22	13:22	14:22	15:23	16:23	17:23	18:21	19:21	20:20	21:18	22:18	23:18	
Rathmore (Northbound)	05:22	05:53	06:25	07:05	-	07:56	09:30	10:27	11:27	12:27	13:27	14:27	15:28	16:28	17:28	18:25	19:25	20:25	21:23	22:23	23:23	
Newcastle (Opp Hospital)	05:25	05:56	06:28	07:08	-	07:59	09:33	10:30	11:30	12:30	13:30	14:30	15:31	16:31	17:31	18:28	19:28	20:28	21:25	22:25	23:25	
Newtownmountkennedy (Smyths Leisure)	05:25	05:57	06:29	07:09	-	08:00	09:34	10:32	11:32	12:32	13:32	14:32	15:32	16:32	17:32	18:29	19:29	20:28	21:26	22:26	23:26	
Newtownmountkennedy (Opp Town House)	05:26	05:58	06:30	07:10	-	08:01	09:35	10:33	11:33	12:33	13:33	14:33	15:33	16:33	17:33	18:30	19:30	20:29	21:27	22:27	23:27	
Newtownmountkennedy (Parkview Hotel)	05:27	05:59	06:32	07:12	-	08:03	09:37	10:34	11:34	12:34	13:34	14:34	15:34	16:34	17:34	18:31	19:31	20:30	21:28	22:28	23:28	
Coillte Offices	05:28	06:00	06:34	07:14	-	08:05	09:39	10:35	11:35	12:35	13:35	14:35	15:35	16:35	17:35	18:31	19:31	20:31	21:28	22:28	23:28	
Newtownmountkennedy (Old Wexford Rd)	05:29	06:01	06:35	07:15	-	08:06	09:40	10:36	11:36	12:36	13:36	14:36	15:36	16:36	17:36	18:32	19:32	20:32	21:29	22:29	23:29	
Kilpedder Footbridge	05:30	06:02	06:36	07:16	-	08:08	09:41	10:37	11:37	12:37	13:37	14:37	15:37	16:37	17:37	18:33	19:33	20:33	21:30	22:30	23:30	
Glenview Park	05:31	06:03	06:37	07:17	-	08:09	09:42	10:38	11:38	12:38	13:38	14:38	15:38	16:38	17:38	18:34	19:34	20:34	21:31	22:31	23:31	
Glenview (Willow Grove)	05:32	06:05	06:38	07:18	-	08:11	09:44	10:40	11:40	12:40	13:40	14:40	15:39	16:39	17:39	18:36	19:36	20:35	21:33	22:33	23:33	
Glenview (Glenview Hotel)	05:34	06:08	06:42	07:22	-	08:16	09:48	10:42	11:42	12:42	13:42	14:42	15:42	16:42	17:42	18:38	19:38	20:37	21:36	22:36	23:36	
Kilmurry Northbound	05:35	06:09	06:43	07:23	-	08:18	09:49	10:43	11:43	12:43	13:43	14:43	15:43	16:43	17:43	18:39	19:39	20:38	21:37	22:37	23:37	
Kilmacanogue (Esso Garage)	05:37	06:11	06:44	07:24	-	08:21	09:51	10:45	11:45	12:45	13:45	14:45	15:45	16:45	17:45	18:41	19:41	20:40	21:38	22:38	23:38	
Bray (Upper Dargle Rd (Castle St)	D 05:42	-	-	-	-	-	-	D 10:51	D 11:51	D 12:51	D 13:51	D 14:51	D 15:51	-	D 17:51	D 18:47	D 19:46	D 20:45	D 21:43	D 22:43	D 23:43	
Loughlinstown (Hospital)	D 05:46	D 06:19	D 06:52	D 07:32	D 08:10	D 08:33	D 09:58	D 10:58	D 11:58	D 12:58	D 13:58	D 14:58	D 15:57	D 16:57	D 17:57	D 18:53	D 19:51	D 20:50	D 21:47	D 22:47	D 23:47	
Cabinteely Northbound	D 05:50	D 06:23	D 06:56	D 07:36	D 08:15	D 08:38	D 10:03	D 11:02	D 12:02	D 13:02	D 14:02	D 15:02	D 16:01	D 17:02	D 18:01	D 18:56	D 19:54	D 20:53	D 21:50	D 22:50	D 23:50	
Leopardstown Northbound	D 05:53	D 06:26	D 07:00	D 07:40	D 08:18	D 08:43	D 10:07	D 11:06	D 12:06	D 13:06	D 14:06	D 15:06	D 16:05	D 17:06	D 18:05	D 19:00	D 19:58	D 20:56	D 21:53	D 22:53	D 23:53	
Laurence Park	D 05:55	D 06:28	D 07:02	D 07:42	D 08:20	D 08:46	D 10:09	D 11:08	D 12:08	D 13:08	D 14:08	D 15:08	D 16:08	D 17:09	D 18:08	D 19:03	D 20:00	D 20:58	D 21:55	D 22:55	D 23:55	
UCD Belfield	D 05:58	D 06:32	D 07:08	D 07:48	D 08:23	D 08:55	D 10:15	D 11:13	D 12:13	D 13:13	D 14:13	D 15:13	D 16:14	D 17:15	D 18:14	D 19:09	D 20:05	D 21:03	D 21:58	D 22:58	D 23:58	
Dublin (Opposite RTE)	D 05:59	D 06:32	D 07:09	D 07:49	D 08:25	D 08:56	D 10:16	D 11:14	D 12:14	D 13:14	D 14:14	D 15:14	D 16:15	D 17:16	D 18:15	D 19:10	D 20:06	D 21:04	D 21:59	D 22:59	D 23:59	
Donnybrook Garage	D 06:00	D 06:33	D 07:11	D 07:51	D 08:28	D 08:58	D 10:17	D 11:16	D 12:16	D 13:16	D 14:16	D 15:16	D 16:16	D 17:17	D 18:16	D 19:11	D 20:07	D 21:05	D 22:00	D 23:00	D 00:00[+1]	
Dublin (Leeson St Ormonde House)	D 06:04	D 06:39	D 07:21	D 08:01	D 08:31	D 09:09	D 10:24	D 11:23	D 12:23	D 13:23	D 14:23	D 15:23	D 16:23	D 17:26	D 18:23	D 19:18	D 20:13	D 21:09	D 22:04	D 23:04	D 00:04[+1]	
Dublin (Dawson St)	D 06:06	D 06:41	D 07:25	D 08:05	D 08:34	D 09:14	D 10:28	D 11:27	D 12:27	D 13:27	D 14:27	D 15:27	D 16:27	D 17:31	D 18:27	D 19:21	D 20:16	D 21:12	D 22:07	D 23:07	D 00:07[+1]	
Dublin (Westland Row Opp Rail Stn)	D 06:10	D 06:46	D 07:29	D 08:09	D 08:38	D 09:19	D 10:34	D 11:32	D 12:32	D 13:32	D 14:32	D 15:32	D 16:33	D 17:38	D 18:33	D 19:26	D 20:20	D 21:16	D 22:11	D 23:11	D 00:11[+1]	

MONDAY TO FRIDAY

ROUTE	133	133	133	133	133	133	133	133	133	133	133	133	133	133	133	133	133	133	133	133	133	133
Dublin (Custom House Quay)	D 06:13	D 06:48	D 07:33	D 08:13	t D 08:46	D 09:23	D 10:37	D 11:35	D 12:35	D 13:35	D 14:35	D 15:35	D 16:37	D 17:42	D 18:37	D 19:29	D 20:23	D 21:18	D 22:13	D 23:13	D 00:13[+1]	
Custom House Quay (Hilton Garden Inn)	D 06:13	D 06:50	D 07:36	D 08:16	08:49	D 09:26	D 10:39	D 11:38	D 12:38	D 13:38	D 14:38	D 15:38	D 16:39	D 17:44	D 18:39	D 19:30	D 20:24	D 21:20	D 22:14	D 23:14	D 00:14[+1]	

MONDAY TO FRIDAY

ROUTE	133	133	133	133	133	133	133	133	133	133	133	133	133	133	133	133	133	133	133	133	133	133
Dublin (Connolly LUAS stop)	05:55	07:00	08:00	09:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	16:20	17:00		18:00	19:00	20:00	21:00	22:00	23:00	00:00[+1]	
Dublin (Busáras)	-	-	-	-	-	-	-	-	-	-	-	-	-	17:45	-	-	-	-	-	-	-	
South Townsend St	P 06:00	P 07:05	P 08:07	P 09:08	P 10:06	P 11:06	P 12:06	P 13:06	P 14:06	P 15:06	P 16:08	P 16:28	P 17:08	-	P 18:08	P 19:06	P 20:06	P 21:05	P 22:05	P 23:05	P 00:05[+1]	
Dublin (Westland Row Church)	P 06:04	P 07:09	P 08:13	P 09:13	P 10:11	P 11:11	P 12:11	P 13:11	P 14:10	P 15:10	P 16:15	P 16:35	P 17:15	-	P 18:15	P 19:11	P 20:10	P 21:09	P 22:09	P 23:09	P 00:09[+1]	
Merrion St (Natural History Museum)	P 06:05	P 07:11	P 08:15	P 09:15	P 10:13	P 11:13	P 12:13	P 13:13	P 14:13	P 15:13	P 16:18	P 16:38	P 17:18	-	P 18:18	P 19:13	P 20:12	P 21:11	P 22:11	P 23:11	P 00:11[+1]	
Dublin (Leeson St (Fitzwilliam Place)	P 06:08	P 07:15	P 08:20	P 09:20	P 10:18	P 11:18	P 12:19	P 13:19	P 14:18	P 15:18	P 16:24	P 16:44	P 17:24	-	P 18:24	P 19:19	P 20:17	P 21:16	P 22:16	P 23:16	P 00:16[+1]	
Dublin (Burlington Hotel)	P 06:10	P 07:16	P 08:21	P 09:22	P 10:19	P 11:19	P 12:20	P 13:20	P 14:20	P 15:20	P 16:28	P 16:48	P 17:28	-	P 18:28	P 19:21	P 20:19	P 21:18	P 22:18	P 23:18	P 00:18[+1]	
Dublin (Donnybrook Church)	P 06:13	P 07:21	P 08:26	P 09:27	P 10:24	P 11:24	P 12:25	P 13:25	P 14:25	P 15:25	P 16:34	P 16:54	P 17:34	-	P 18:34	P 19:27	P 20:23	P 21:22	P 22:22	P 23:22	P 00:22[+1]	
Dublin (RTE)	P 06:14	P 07:22	P 08:27	P 09:28	P 10:25	P 11:25	P 12:26	P 13:26	P 14:26	P 15:26	P 16:35	P 16:55	P 17:35	-	P 18:35	P 19:28	P 20:24	P 21:23	P 22:23	P 23:23	P 00:23[+1]	
Dublin (Montrose Hotel)	P 06:16	P 07:24	P 08:29	P 09:30	P 10:27	P 11:27	P 12:28	P 13:28	P 14:28	P 15:28	P 16:38	P 16:58	P 17:38	-	P 18:38	P 19:29	P 20:26	P 21:24	P 22:24	P 23:24	P 00:24[+1]	
Dublin (Talbot Hotel Stillorgan)	P 06:19	P 07:27	P 08:32	P 09:33	P 10:30	P 11:30	P 12:32	P 13:32	P 14:32	P 15:32	P 16:42	P 17:02	P 17:42	-	P 18:42	P 19:33	P 20:29	P 21:27	P 22:27	P 23:27	P 00:27[+1]	
Stillorgan Park	P 06:21	P 07:29	P 08:34	P 09:34	P 10:31	P 11:31	P 12:33	P 13:33	P 14:34	P 15:34	P 16:44	P 17:04	P 17:44	-	P 18:44	P 19:34	P 20:31	P 21:29	P 22:29	P 23:29	P 00:29[+1]	
Newtownpark Avenue	P 06:23	P 07:32	P 08:37	P 09:37	P 10:34	P 11:34	P 12:36	P 13:36	P 14:36	P 15:36	P 16:47	P 17:07	P 17:47	-	P 18:47	P 19:37	P 20:33	P 21:31	P 22:31	P 23:31	P 00:31[+1]	
Dublin (Cabinteely Cross)	P 06:27	P 07:36	P 08:41	P 09:42	P 10:38	P 11:38	P 12:41	P 13:41	P 14:41	P 15:41	P 16:53	P 17:13	P 17:53	-	P 18:53	P 19:42	P 20:37	P 21:35	P 22:35	P 23:35	P 00:35[+1]	
Loughlinstown (Opp Hospital)	P 06:29	P 07:38	P 08:44	P 09:44	P 10:40	P 11:40	P 12:43	P 13:43	P 14:44	P 15:44	P 16:56	P 17:16	P 17:56	-	P 18:56	P 19:44	P 20:39	P 21:37	P 22:37	P 23:37	P 00:37[+1]	
Bray (Upper Dargle Rd (Castle St)	P 06:34	P 07:43	P 08:49	P 09:49	P 10:45	P 11:45	P 12:49	P 13:49	P 14:51	P 15:51	-	-	-	-	-	P 19:49	P 20:44	P 21:42	P 22:42	P 23:42	P 00:42[+1]	
Kilmacanogue (Topaz)	06:42	07:51	08:56	09:56	10:52	11:52	12:57	13:57	15:00	16:00	17:09	17:29	18:09	-	19:09	19:56	20:51	21:49	22:49	23:49	00:49[+1]	
Beehive (Beehive Pub)	-	-	-	-	-	-	-	-	-	-	-	-	-	18:58	-	-	-	-	-	-	-	
Ballincor (Opp Barrindarrig Station)	-	-	-	-	-	-	-	-	-	-	-	-	-	19:01	-	-	-	-	-	-	-	
Jack Whites Cross (Pub)	-	-	-	-	-	-	-	-	-	-	-	-	-	19:04	-	-	-	-	-	-	-	
Arklow (Ferrybank EBS)	-	-	-	-	-	-	-	-	-	-	-	-	-	19:12	-	-	-	-	-	-	-	
Kilmurray	06:43	07:52	08:58	09:58	10:54	11:54	12:59	13:59	15:02	16:02	17:10	17:30	18:10	-	19:10	19:57	20:52	21:51	22:51	23:51	00:51[+1]	
Glenview (Opp Glenview Hotel)	06:44	07:53	08:59	09:59	10:55	11:55	13:00	14:00	15:03	16:03	17:12	17:32	18:12	-	19:12	19:59	20:54	21:52	22:52	23:52	00:52[+1]	
Kilpedder (Opp Whistle Stop)	06:48	07:56	09:02	10:02	10:58	11:58	13:03	14:03	15:06	16:06	17:15	17:35	18:15	-	19:15	20:02	20:57	21:56	22:56	23:56	00:56[+1]	
Garden Village	06:49	07:58	09:03	10:03	10:59	11:59	13:04	14:04	15:08	16:08	17:17	17:37	18:17	-	19:17	20:04	20:59	21:57	22:57	23:57	00:57[+1]	
Coillte Offices	06:50	07:59	09:04	10:04	11:00	12:00	13:05	14:05	15:09	16:09	17:18	17:38	18:18	-	19:18	20:05	21:00	21:58	22:58	23:58	00:58[+1]	
Newtownmountkennedy (Op Parkview)	06:51	08:00	09:05	10:05	11:01	12:01	13:06	14:06	15:10	16:10	17:19	17:39	18:19	-	19:19	20:06	21:01	21:59	22:59	23:59	00:59[+1]	
Newtownmountkennedy (Town House)	06:52	08:01	09:06	10:07	11:03	12:03	13:08	14:08	15:11	16:11	17:21	17:41	18:21	-	19:21	20:07	21:02	22:01	23:01	00:01[+1]	01:01[+1]	
Newtownmountkennedy (Opp Smyths)	06:53	08:02	09:07	10:08	11:04	12:04	13:08	14:08	15:12	16:12	17:22	17:42	18:22	-	19:22	20:08	21:03	22:02	23:02	00:02[+1]	01:02[+1]	
Newcastle (Hospital)	06:54	08:03	09:08	10:09	11:05	12:05	13:09	14:09	15:13	16:13	17:23	17:43	18:23	-	19:23	20:09	21:04	22:03	23:03	00:03[+1]	01:03[+1]	
Rathmore (Wicklow)	06:58	08:06	09:12	10:12	11:08	12:08	13:13	14:13	15:16	16:16	17:27	17:47	18:27	-	19:27	20:13	21:08	22:06	23:06	00:06[+1]	01:06[+1]	
Ashford (Romany Stone)	07:03	08:11	09:17	10:17	11:13	12:13	13:18	14:18	15:21	16:21	17:32	17:52	18:32	-	19:32	20:18	21:13	22:11	23:11	00:11[+1]	01:11[+1]	
Ashford (Ballinalea)	07:05	08:13	09:18	10:19	11:15	12:15	13:20	14:20	15:23	16:23	17:34	17:54	18:34	-	19:34	20:20	21:15	22:13	23:13	00:13[+1]	01:13[+1]	
Rathnew (Opp Village Store)	07:08	08:16	09:21	10:22	11:18	12:18	13:23	14:23	15:27	16:27	17:37	17:57	18:37	-	19:37	20:23	21:18	22:15	23:15	00:15[+1]	01:15[+1]	
Wicklow (Lidl)	07:10	08:20	09:25	10:25	11:21	12:21	13:26	14:26	15:30	16:30	17:40	18:00	18:40	-	19:40	20:26	21:21	22:18	23:18	00:18[+1]	01:18[+1]	
Wicklow (Community College)	07:11	08:21	09:26	10:27	11:23	12:23	13:28	14:28	15:32	16:32	17:41	18:01	18:41	-	19:41	20:27	21:22	22:19	23:19	00:19[+1]	01:19[+1]	
Wicklow (Opp Grand Hotel)	07:12	08:23	09:28	10:28	11:24	12:24	13:30	14:30	15:34	16:34	17:43	18:03	18:43	-	19:43	20:28	21:23	22:20	23:20	00:20[+1]	01:20[+1]	

	MONDAY TO FRIDAY																				
ROUTE	***133***	***133***	***133***	***133***	***133***	***133***	***133***	***133***	***133***	***133***	***133***	***133***	***133***	***133***	***133***	***133***	***133***	***133***	***133***	***133***	***133***
Wicklow (Ballynerrin)	07:15	08:25	09:30	10:30	11:26	12:26	13:32	14:32	15:36	16:36	17:45	18:05	18:45	-	19:45	20:30	21:25	22:22	23:22	00:22**[+1]**	01:22**[+1]**
Wicklow (Ballyguile)	07:18	08:29	09:34	10:35	11:31	12:31	13:37	14:37	15:41	16:41	17:50	18:10	18:50	-	19:50	20:35	21:29	22:26	23:26	00:26**[+1]**	01:26**[+1]**
Wicklow (Monument)	07:19	08:32	09:37	10:38	11:34	12:34	13:40	14:40	15:44	16:44	17:53	18:13	18:53	-	19:53	20:38	21:32	22:29	23:29	00:29**[+1]**	01:29**[+1]**
Gorey (Main St - Gerry's Supermarket)														19:38							

P: Pick-up only

D: Drop off only

Follow us on Twitter: *@buseireann*

or Facebook: *www.facebook.com/buseireann*

For further information phone: Bus ?ireann 1850 836 611

Or see Homepage: *www.buseireann.ie*

Table No.

WICKLOW - BRAY 133B

MONDAY TO FRIDAY

ROUTE	***133B***	***133B***
Bray (Opp Superquinn)	16:50	18:05
Bray (Kennedy Pharmacy)	**P**16:51	**P**18:06
Bray (Opp Glenlucan)	**P**16:52	**P**18:07
Bray (Opp Killarney Lane)	**P**16:53	**P**18:08
Bray (Ballywaltrim)	**P**16:53:30	**P**18:09
Kilmacanogue (Topaz)	16:55	18:15
Kilmurray	16:57	18:17
Glenview (Opp Glenview Hotel)	16:59	18:19
Kilpedder (Opp Whistle Stop)	17:02	18:23
Newtownmountkennedy (Garden Village)	**D**17:03	**D**18:25
Newtownmountkennedy (Opp Coillte)	17:04	18:26
Newtownmountkennedy (Op Parkview)	17:06	18:28
Newtownmountkennedy (Town House)	17:07	18:29
Newtownmountkennedy (Opp Smyths)	17:08	18:30
Newcastle (Hospital)	17:10	18:32
Rathmore (Wicklow)	17:15	18:37
Ashford (Romany Stone)	17:20	18:42
Ashford (Ballinalea)	17:22	18:44
Rathnew (Opp Village Store)	17:25	18:47
Wicklow (Lidl)	17:27	18:49
Wicklow (Community College)	17:28	18:50
Wicklow (Opp Grand Hotel)	17:29	18:51
Wicklow (Ballynerrin)	17:32	
Wicklow (Ballyguile)	17:34	
Wicklow (Monument)	17:35	

	MONDAY TO FRIDAY	
ROUTE	***133B***	***133B***
Wicklow (Monument)	07:40	16:00
Wicklow (Convent Hill)	07:41	16:01
Wicklow (Opp Ballyguile)	07:42	16:02
Wicklow (Grand Hotel)	07:46	16:06
Wicklow (Opp Tesco)	07:47	16:07
Rathnew (St Ernans School)	07:50	16:10
Ashford (Ballinalea Northbound)	07:53	16:13
Ashford (Ashford House)	07:55	16:15
Rathmore (Northbound)	08:01	16:21
Newcastle (Opp Hospital)	08:05	16:25
Newtownmountkennedy (Smyths Leisure)	08:07	16:27
Newtownmountkennedy (Opp Town House)	08:08	16:28
Newtownmountkennedy (Parkview Hotel)	08:10	16:30
Newtownmountkennedy (Coillte)	08:11	16:31
Newtownmountkennedy (Old Wexford Rd)	08:12	16:32
Kilpedder (Whistle Stop)	08:15	16:34
Glenview (Opp Glenview Park)	08:16	16:35
Glenview (Willow Grove)	08:17	16:36
Glenview (Glenview Hotel)	08:20	16:39
Kilmurry Northbound	08:21	16:40
Kilmacanogue (Esso Garage)	08:23	16:42
Bray (Ballywaltrim Northbound)	08:26	16:45
Bray (Killarney Lane)	08:27	16:46
Bray (Glenlucan)	**D**08:28	**D**16:47
Bray (Opp Kennedy Pharmacy)	**D**08:29	**D**16:48
Bray (Superquinn)	**D**08:30	**D**16:49

Follow us on Twitter: *@buseireann*

or Facebook: *www.facebook.com/buseireann*

For further information phone: Bus ?ireann 1850 836 611

Or see Homepage: *www.buseireann.ie*

Full Southern Cross/Bray Dart / Sandyford Luas service resumed Monday 12th October 2020

Southern Cross Road to Bray Dart Station & Sandyford Luas Stop resumed full schedule from Monday 12th October 2020, subject to government guidelines which include mand Public Transport Services' capacity returned to 100% on September 1st 2021.

Monday to Friday only, excluding Bank Holidays.

Departure times Southern Cross Road Northbound

06:45* , 07:15, 07:45*, 08:15*, 09:30, 10:15, 11:45, 12:15, 12:45, 13:15, 13:45, 14:15, 15:15, 16:15*, 16:45, 17:15*, 18:00*, 18:45

*Denotes to Sandyford Luas via Bray Dart Station , all other listed are to Bray Dart Station only.

Departure times Bray Dart Station to Southern Cross Road

07:30, 08:00, 09:15, 10:00, 10:30. 12:00, 12:30, 13:00, 13:30, 14:00, 14:40, 15:40, 17:00, 17:45, 18:30, 19:00, 19:15

Departure times Sandyford Luas to Bray

07:30, 08:45, 09:30, 17:15, 18:00, 18:45

Fares

Adult : 1 Zone €2.00, 2 Zones €3.50. Ten Journey 1 Zone €18.00, 2 Zones €30.00

Child : 1 Zone €1.00, 2 Zones €2.00. Ten Journey 1 Zone €9.00, 2 Zones €18.00

Geographical marker between zones is Loughlinstown Hospital.

Free Travel Pass accepted on route 143 (ie to/from Sandyford Luas times).

Updated 21/12/2021

FINNEGAN SERVICE 143 AND 144

A A A

145

Buses from/to
From Heuston Rail Station Towards Ballywaltrim
Operative Date: 12/12/2021
Version: TT 21.1

From Heuston Rail Station Towards Ballywaltrim

Stáisiún Iarnróid Heuston , Lár na Cathrach , Domhnach Broc , Cabán tSíle , Bré , Baile Ualtraim

Buses leave terminus at:

Route Variations
d From Heuston Rail Station departs D'Olier St. at 23:30

Monday - Friday	Saturday
06:20 06:30 06:40 06:50	07:00 07:20 07:40 08:00
then every 10 minutes	then every 15 minutes
21:00 21:20 21:40 22:00	18:30 18:50 19:10 19:30
22:20 22:40 23:00 23:25d	19:50 20:10 20:30 20:50
Departures at 16:00, and 17:40 from UCD to Kilmacanogue during term time only.	21:10 21:30 21:50 22:10
	22:30 23:00 23:25d

Sunday			
08:30	09:00	09:30	10:00
10:20	10:40	11:00	11:20
11:40	12:00	12:20	12:40
13:00	13:20	13:40	14:00
14:20	14:40	15:00	15:20
15:40	16:00	16:20	16:40
17:00	17:20	17:40	18:00
18:20	18:40	19:00	19:20
19:40	20:00	20:20	20:40
21:00	21:20	21:40	22:00
22:20	22:40	23:00	23:20d

Heuston Rail Station » 8mins » City Centre » 17mins » Donnybrook » 18mins » Cabinteely » 15mins » Bray » 10mins » Ballywaltrim

All times are off peak estimates

From Ballywaltrim Towards Heuston Rail Station

Baile Ualtraim , Bré , Cabán tSíle , Domhnach Broc , Lár na Cathrach , Stáisiún Iarnróid Heuston

Buses leave terminus at:

Route Variations
w To Westmoreland St.
k From Kilmacanogue to Heuston Rail Station

Monday - Friday	Saturday
06:10 06:25 06:40 06:50	06:40 07:00 07:20 07:40
07:00 07:10 07:20 07:30	08:00
07:35k 07:40	then every 15 minutes
then every 10 minutes	19:00 19:20 19:40 20:00
21:00 21:20 21:40 22:00	20:20 20:40 21:00 21:20
22:20 22:40 23:00w 23:20w	21:40 22:00 22:20 22:40
	23:00w 23:20w

Sunday			
07:30	08:00	08:30	09:00
09:20	09:40	10:00	10:20
10:40	11:00	11:20	11:40
12:00	12:20	12:40	13:00
13:20	13:40	14:00	14:20
14:40	15:00	15:20	15:40
16:00	16:20	16:40	17:00
17:20	17:40	18:00	18:20
18:40	19:00	19:20	19:40
20:00	20:20	20:40	21:00
21:20	21:40	22:00	22:20
22:40	23:00	23:20w	

Ballywaltrim » 10mins » Bray » 15mins » Cabinteely » 18mins » Donnybrook » 17mins » City Centre » 8mins » Heuston Rail Station

All times are off peak estimates

Fare Stages

22 78	Heuston Rail Station	43 57	Stillorgan Rd. (Kill Lane)
23 77	Mellowes Bridge	44 56	Cornelscourt Bypass
24 76	Capel St. Bridge	45 55	Monaloe Corner
25 75	Aston Quay / D'Olier St.	46 54	Cabinteely Bypass
26 74	Kildare St. / Dawson St.	47 53	Bray Rd. (Marley)
27 73	Leeson St. (Pembroke St.)	48 52	Beechgrove Cottages
28 72	Leeson St. Bridge	49 51	Loughlinstown (Cullenswood Rd.)
29 71	Wellington Place (Waterloo Rd.)	50 50	Loughlinstown Hospital
30 70	Morehampton Rd. (Marlboro Rd.)	51 49	Shankill Church

31	69	Morehampton Rd. (Belmont Ave.)
32	68	Donnybrook Church
33	67	Stillorgan Rd. (Nutley Lane)
34	66	Stillorgan Rd. (Woodbine Rd.)
35	65	Stillorgan Rd. (Seafield Rd.)
36	64	Stillorgan Rd. (Booterstown Ave.)
37	63	Stillorgan Rd. (Mount Merrion Ave.)
38	62	Stillorgan Rd. (Woodlands Ave.)
39	61	Stillorgan bypass
40	60	Stillorgan Rd. (Merville Rd.)
41	59	Stillorgan Rd. (Galloping Green)
42	58	Stillorgan Rd. (Newtown Park Ave.)
52	48	Shankill (The Gap)
53	47	Crinkin Lane
54	46	Crinkin Church
55	45	Woodbrook Golf Club
56	44	Old Connaught
57	43	Sunnybank
58	42	Bray Main St.
59	41	Killarney Rd.
60	40	Killarney Lane
61	39	Herbert Rd.
62	38	Kilbride Lane
63	37	Ballywaltrim

Customer Comment Desk: (01) 8734222
Phone lines open: Monday to Saturday 08:30hrs – 18:00hrs (except public holidays)

A A A

155

Buses from/to
Ikea Towards Bray Rail Station
Operative Date: 24/03/2019
Version: Version 9.1

From IKEA (Ballymun) Towards Bray Rail Station

IKEA (Baile Munna) , Bóthar Bhaile Munna , Ascaill Gharraithe na Lus , Ionad Siopadóireachta Bhaile Phib , Sráid Uí Chonaill , Domhnach Broc , Cabán tSíle , Stáisiún Bhré

Buses leave terminus at:

Route Variations
c To city centre only

Monday - Friday				Saturday				Sunday			
06:00	06:20	06:40	07:00	06:00	06:20	06:40	07:00	08:00	08:20	08:40	09:00
07:20	07:40	08:00	08:20	07:20	07:40	08:00	08:20	09:20	09:40	10:00	10:20
08:40	09:00	09:20	09:40	08:40	09:00	09:20	09:40	10:40	11:00	11:20	11:40
10:00	10:20	10:40	11:00	10:00	10:20	10:40	11:00	12:00	12:20	12:40	13:00
11:20	11:40	12:00	12:20	11:20	11:40	12:00	12:20	13:20	13:40	14:00	14:20
12:40	13:00	13:20	13:40	12:40	13:00	13:20	13:40	14:40	15:00	15:20	15:40
14:00	14:20	14:40	15:00	14:00	14:20	14:40	15:00	16:00	16:20	16:40	17:00
15:20	15:40	16:00	16:20	15:20	15:40	16:00	16:20	17:20	17:40	18:00	18:20
16:40	17:00	17:20	17:40	16:40	17:00	17:20	17:40	18:40	19:00	19:20	19:40
18:00	18:20	18:40	19:00	18:00	18:20	18:40	19:00	20:00	20:20	20:40	21:00
19:20	19:40	20:00	20:20	19:20	19:40	20:00	20:20	21:20	21:40	22:00	22:20
20:40	21:00	21:20	21:40	20:40	21:00	21:20	21:40	22:40	23:00	23:20c	
22:00	22:20	22:40	23:00	22:00	22:20	22:40	23:00				
23:20c				23:20c							

IKEA (Ballymun) >> 5mins >> Ballymun Rd. >> 9mins >> Botanic Ave. >> 4mins >> Phibsboro Shopping Centre >> 8mins >> O'Connell St. >> 17mins >> Donnybrook >> 18mins >> Cabinteely >> 15mins >> Bray Rail Station

All times are off peak estimates

From Bray Rail Station Towards IKEA (Ballymun)

Stáisiún Bhré , Cabán tSíle , Domhnach Broc , Sráid Uí Chonaill , Ionad Siopadóireachta Bhaile Phib , Ascaill Gharraithe na Lus , Bóthar Bhaile Munna , IKEA (Baile Munna)

Buses leave terminus at:

Route Variations
c To city centre only

Monday - Friday				Saturday				Sunday			
06:00	06:20	06:40	07:00	06:00	06:20	06:40	07:00	08:00	08:20	08:40	09:00
07:20	07:40	08:00	08:20	07:20	07:40	08:00	08:20	09:20	09:40	10:00	10:20
08:40	09:00	09:20	09:40	08:40	09:00	09:20	09:40	10:40	11:00	11:20	11:40
10:00	10:20	10:40	11:00	10:00	10:20	10:40	11:00	12:00	12:20	12:40	13:00
11:20	11:40	12:00	12:20	11:20	11:40	12:00	12:20	13:20	13:40	14:00	14:20
12:40	13:00	13:20	13:40	12:40	13:00	13:20	13:40	14:40	15:00	15:20	15:40
14:00	14:20	14:40	15:00	14:00	14:20	14:40	15:00	16:00	16:20	16:40	17:00
15:20	15:40	16:00	16:20	15:20	15:40	16:00	16:20	17:20	17:40	18:00	18:20
16:40	17:00	17:20	17:40	16:40	17:00	17:20	17:40	18:40	19:00	19:20	19:40
18:00	18:20	18:40	19:00	18:00	18:20	18:40	19:00	20:00	20:20	20:40	21:00
19:20	19:40	20:00	20:20	19:20	19:40	20:00	20:20	21:20	21:40	22:00	22:20
20:40	21:00	21:20	21:40	20:40	21:00	21:20	21:40	22:40	23:00c	23:20c	
22:00	22:20	22:40	23:00c	22:00	22:20	22:40	23:00c				
23:20c				23:20c							

Bray Rail Station >> 15mins >> Cabinteely >> 18mins >> Donnybrook >> 17mins >> O'Connell St. >> 8mins >> Phibsboro Shopping Centre >> 4mins >> Botanic Ave. >> 9mins >> Ballymun Rd. >> 5mins >> IKEA (Ballymun)

All times are off peak estimates

Fare Stages

85	15	IKEA (Ballymun)
84	16	Ballymun Rd.
83	17	Ballymun Rd. (Santry Ave.)
82	18	Ballymun Rd. (Glasnevin Ave.)
81	19	Ballymun Rd. (The Rise)
80	20	Botanic Ave.
79	21	Hart's Corner
78	22	Phibsboro Shopping Centre
77	23	Broadstone
76	24	Blessington St. / Western Way
75	25	O'Connell St.
74	26	Kildare St. / Dawson St.
73	27	Leeson St. (Pembroke St.)
72	28	Leeson St. Bridge
71	29	Wellington Place (Waterloo Rd.)
70	30	Morehampton Rd. (Waterloo Rd.)
69	31	Morehampton Rd. (Belmont Ave.)
68	32	Donnybrook Church
67	33	Stillorgan Rd. (Nutley Lane)
66	34	Stillorgan Rd. (Woodbine Rd.)
65	35	Stillorgan Rd. (Seafield Rd.)
64	36	Stillorgan Rd. (Booterstown Ave.)
63	37	Stillorgan Rd. (Mount Merrion Ave.)
62	38	Stillorgan Rd. (Woodlands Ave.)
61	39	Stillorgan bypass
60	40	Stillorgan Rd. (Merville Rd.)
59	41	Stillorgan Rd. (Galloping Green)
58	42	Stillorgan Rd. (Newtown Park Ave.)
57	43	Stillorgan Rd. (Kill Lane)
56	44	Cornelscourt Bypass
55	45	Monaloe Corner
54	46	Cabinteely Bypass
53	47	Bray Rd. (Marley)
52	48	Beechgrove Cottages
51	49	Loughlinstown (Cullenswood Rd.)
50	50	Loughlinstown Hospital
49	51	Shankill Church
48	52	Shankill (The Gap)
47	53	Crinkin Lane
46	54	Crinkin Church
45	55	Woodbrook Golf Club
44	56	Old Connaught
43	57	Sunnybank
42	58	Bray Rail Station

Customer Comment Desk: (01) 8734222
Phone lines open: Monday to Saturday 08:30hrs – 18:00hrs (except public holidays)

Timetable

DUBLIN – GLENDALOUGH — Winter Timetable *01 October–28 February*

			MONDAY TO FRIDAY			SAT/SUN/PUBLIC HOLIDAY	
LOCATION	**STOP**		**TIME**	**TIME**	**TIME**	**TIME**	**TIME**
St. Stephen's Green North	181	**DEPART**	11.30	18.00	---	11.30	18.00
Leeson Street Lower	DB847		11.32	18.02	---	11.32	18.02
Leeson Street Upper	DB845		11.35	18.05	---	11.35	18.05
Donnybrook	DB760		11.40	18.10	---	11.40	18.10
UCD	DB2007		11.45	18.15	---	11.45	18.15
Mount Merrion	DB2010		11.47	18.17	---	11.47	18.17
Stillorgan	DB4571		11.50	18.20	---	11.50	18.20
Foxrock	DB2017		11.52	18.22	---	11.52	18.22
Cornelscourt	DB7362		11.56	18.23	---	11.56	18.23
Cabinteely	DB3129		11.58	18.25	---	11.58	18.25
Loughlinstown	DB3135		12.00	18.27	---	12.00	18.27
Shankill	DB3139		---	18.30	---	---	---
Bray	DB4171		12.10	18.40	---	12.10	18.40
Kilbride	DB4175		12.15	18.45	---	12.15	18.45
Kilmacanogue	DB6000		12.20	18.55	---	12.20	18.55
Long Hill	Kilough Junction		12.25	19.00	---	12.25	19.00
Calary	Calary Filling Station		12.27	19.02	---	12.27	19.02
Ballinastoe	Djouce Golf Club		12.30	19.05	---	12.30	19.05
Roundwood	Roundwood Inn		12.35	19.10	---	12.35	19.10
Annamoe	Annamoe Bridge		12.38	19.15	---	12.38	19.15
Laragh	Opp. Lynham's Hotel		12.48	19.20	---	12.43	19.20
Glendalough	Visitor Centre	**ARRIVE**	12.50	19.25	---	12.50	19.25

GLENDALOUGH – DUBLIN — Winter Timetable *01 October–28 February*

**DENOTES FRIDAYS ONLY ALL YEAR ROUND			MONDAY TO FRIDAY			SAT/SUN/PUBLIC HOLIDAY	
LOCATION	**STOP**		**TIME**	**TIME**	**TIME**	**TIME**	**TIME**

Glendalough	Visitor Centre	DEPART	07.00	16.30	09.45**	09.45	16.30
Laragh	Opp. Lynham's Hotel		07.02	16.32	09.47**	09.47	16.32
Annamoe	Annamoe Bridge		07.10	16.40	09.55**	09.55	16.40
Roundwood	Roundwood Inn		07.15	16.45	10.00**	10.00	16.45
Ballinastoe	Djouce Golf Club		07.20	16.50	10.05**	10.05	16.50
Calary	Calary Filling Station		07.25	16.55	10.10**	10.10	16.55
Long Hill	Kilough Junction		07.30	17.00	10.15**	10.15	17.00
Kilmacanogue	DB4533		07.35	17.05	10.20**	10.20	17.05
Kilbride	DB4178		---	---	10.25**	---	---
Bray	DB4182		07.45	17.15	10.30**	10.30	17.15
Shankill	DB3140		07.55	---	---	---	---
Loughlinstown	DB3143		08.00	17.25	---	10.40	17.25
Cabinteely	DB5127		08.02	17.27	---	10.42	17.27
Cornelscourt	DB5158		08.05	17.30	---	10.45	17.30
Foxrock	DB2060		08.10	17.35	---	10.50	17.35
Stillorgan	DB4727		08.15	17.40	---	10.55	17.40
Mount Merrion	DB2068		08.20	17.45	---	11.00	17.45
UCD	DB0768		08.25	17.50	---	11.05	17.50
Donnybrook	DB0773		08.30	17.53	---	11.10	17.53
Leeson Street Upper	DB0908		08.35	---	---	---	---
Leeson Street Lower	DB0786		08.40	17.55	---	11.15	17.55
St. Stephen's Green North	181	ARRIVE	08.45	18.00	---	11.20	18.00

DUBLIN – GLENDALOUGH **Summer Timetable** *01 March–30 September*

			MONDAY TO FRIDAY			SAT/SUN/PUBLIC HOLIDAY	
LOCATION	**STOP**		**TIME**	**TIME**	**TIME**	**TIME**	**TIME**
St. Stephen's Green North	181	DEPART	11.30	18.00	---	11.30	19.00
Leeson Street Lower	DB847		11.32	18.02	---	11.32	---
Leeson Street Upper	DB845		11.35	18.05	---	11.35	---
Donnybrook	DB760		11.40	18.10	---	11.40	---
UCD	DB2007		11.45	18.15	---	11.45	19.15
Mount Merrion	DB2010		11.47	18.17	---	11.47	---
Stillorgan	DB4571		11.50	18.20	---	11.50	19.20
Foxrock	DB2017		11.52	18.22	---	11.52	---
Cornelscourt	DB7362		11.56	18.23	---	11.56	---
Cabinteely	DB3129		11.58	18.25	---	11.58	---
Loughlinstown	DB3135		12.00	18.27	---	12.00	19.25
Shankill	DB3139		---	18.30	---	---	---
Bray	DB4171		12.10	18.40	---	12.10	19.30
Kilbride	DB4175		12.15	18.45	---	12.15	---
Kilmacanogue	DB6000		12.20	18.55	---	12.20	19.40
Long Hill	Kilough Junction		12.25	19.00	---	12.25	---
Calary	Calary Filling Station		12.27	19.02	---	12.27	---
Ballinastoe	Djouce Golf Club		12.30	19.05	---	12.30	19.55
Roundwood	Roundwood Inn		12.35	19.10	---	12.35	20.00
Annamoe	Annamoe Bridge		12.38	19.15	---	12.38	20.05
Laragh	Opp. Lynham's Hotel		12.48	19.20	---	12.43	20.08
Glendalough	Visitor Centre	ARRIVE	12.50	19.25	---	12.50	20.10

GLENDALOUGH – DUBLIN **Summer Timetable** *01 March–30 September*

*DENOTES EXTRA SERVICE JULY AND AUGUST ONLY			MONDAY TO FRIDAY			SAT/SUN/PUBLIC HOLIDAY	
LOCATION	**STOP**		**TIME**	**TIME**	**TIME**	**TIME**	**TIME**

Glendalough	Visitor Centre	DEPART	07.00	16.30	09.45*	09.45	17.40
Laragh	Opp. Lynham's Hotel	↓	07.02	16.32	09.47*	09.47	17.45
Annamoe	Annamoe Bridge	↓	07.10	16.40	09.55*	09.55	17.55
Roundwood	Roundwood Inn	↓	07.15	16.45	10.00*	10.00	18.00
Ballinastoe	Djouce Golf Club	↓	07.20	16.50	10.05*	10.05	18.05
Calary	Calary Filling Station	↓	07.25	16.55	10.10*	10.10	18.10
Long Hill	Kilough Junction	↓	07.30	17.00	10.15*	10.15	18.15
Kilmacanogue	DB4533	↓	07.35	17.05	10.20*	10.20	18.20
Kilbride	DB4178	↓	---	---	10.25*	---	---
Bray	DB4182	↓	07.45	17.15	10.30*	10.30	18.30
Shankill	DB3140	↓	07.55	---	---	---	---
Loughlinstown	DB3143	↓	08.00	17.25	10.40*	10.40	18.40
Cabinteely	DB5127	↓	08.02	17.27	10.42*	10.42	18.42
Cornelscourt	DB5158	↓	08.05	17.30	10.45*	10.45	18.45
Foxrock	DB2060	↓	08.10	17.35	10.50*	10.50	18.47
Stillorgan	DB4727	↓	08.15	17.40	10.55*	10.55	18.50
Mount Merrion	DB2068	↓	08.20	17.45	11.00*	11.00	18.52
UCD	DB0768	↓	08.25	17.50	11.05*	11.05	18.54
Donnybrook	DB0773	↓	08.30	17.53	11.10*	11.10	18.56
Leeson Street Upper	DB0908	↓	08.35	---	---	---	---
Leeson Street Lower	DB0786	↓	08.40	17.55	11.13*	11.15	18.58
St. Stephen's Green North	181	ARRIVE	08.45	18.00	11.15*	11.20	19.00

Website Design by Total Digital

St. Kevins Bus Service,
Roundwood, Co Wicklow, Ireland.

Tel: +353 (0)1 281 8119
Email: info@glendaloughbus.com

Cookie information

Newtownmountkennedy - Greystones - Bray **184** **Monday to Friday** **Valid from 23rd of January 2022**

Service Number	184	184	184	184	184	184	184	184	184	184	184	184	184	184	184	184	184	184
Newcastle Hospital (4657)	06:20	06:47	07:12	07:42	08:12	08:47	09:27	09:57	10:27	10:57	11:27	11:57	12:27	12:57	13:27	13:57	14:27	14:57
Glenview Park (4239)	06:26	06:54	07:19	07:49	08:19	08:54	09:34	10:04	10:34	11:04	11:34	12:04	12:34	13:04	13:34	14:04	14:34	15:04
Health Centre (4242)	06:35	07:03	07:28	07:58	08:28	09:03	09:43	10:13	10:43	11:13	11:43	12:13	12:43	13:13	13:43	14:13	14:43	15:13
Charlesland (7462)	06:42	07:11	07:36	08:06	08:36	09:11	09:51	10:21	10:51	11:21	11:51	12:21	12:51	13:21	13:51	14:21	14:51	15:21
Greystones Station (4283)	06:46	07:16	07:41	08:11	08:41	09:16	09:56	10:26	10:56	11:26	11:56	12:26	12:56	13:26	13:56	14:26	14:56	15:26
Redford Park (4296)	06:52	07:23	07:49	08:19	08:49	09:23	10:03	10:33	11:03	11:33	12:03	12:33	13:03	13:33	14:03	14:33	15:03	15:33
St Andrew's NS (4304)	06:58	07:30	07:57	08:27	08:57	09:30	10:10	10:40	11:10	11:40	12:10	12:40	13:10	13:40	14:10	14:40	15:10	15:40
Bray Station (4168)	07:05	07:42	08:12	08:42	09:12	09:42	10:22	10:52	11:22	11:52	12:22	12:52	13:22	13:52	14:22	14:52	15:22	15:52

Service Number	184	184	184	184	184	184	184	184	184	184	184	184	184	184	184	184
Newcastle Hospital (4657)	15:27	15:57	16:27	16:57	17:27	17:57	18:29	18:59	19:29	19:59	20:29	20:59	21:29	21:59	22:29	22:59
Glenview Park (4239)	15:34	16:04	16:34	17:04	17:34	18:04	18:35	19:05	19:35	20:05	20:35	21:05	21:35	22:05	22:35	23:05
Health Centre (4242)	15:43	16:13	16:43	17:13	17:43	18:13	18:44	19:14	19:44	20:14	20:44	21:14	21:44	22:14	22:44	23:14
Charlesland (7462)	15:51	16:21	16:51	17:21	17:51	18:21	18:51	19:21	19:51	20:21	20:51	21:21	21:51	22:21	22:51	23:21
Greystones Station (4283)	15:56	16:26	16:56	17:26	17:56	18:26	18:55	19:25	19:55	20:25	20:55	21:25	21:55	22:25	22:55	23:25
Redford Park (4296)	16:03	16:33	17:03	17:33	18:03	18:33	19:01	19:31	20:01	20:31	21:01	21:31	22:01	22:31	23:01	23:31
St Andrew's NS (4304)	16:10	16:40	17:10	17:40	18:10	18:40	19:07	19:37	20:07	20:37	21:07	21:37	22:07	22:37	23:07	23:37
Bray Station (4168)	16:22	16:52	17:22	17:52	18:22	18:52	19:14	19:44	20:14	20:44	21:14	21:44	22:14	22:44	23:14	23:44

Bray - Greystones - Newtownmountkennedy **184** **Monday to Friday** **Valid from 23rd of January 2022**

Service Number	184	184	184	184	184	184	184	184	184	184	184	184	184	184	184	184	184	184
Bray Station (4168)	06:25	06:55	07:25	07:53	08:33	09:03	09:38	10:08	10:38	11:08	11:38	12:08	12:38	13:08	13:38	14:08	14:35	15:05
St Andrew's NS (4207)	06:32	07:02	07:32	08:02	08:42	09:12	09:47	10:17	10:47	11:17	11:47	12:17	12:47	13:17	13:47	14:17	14:47	15:17
Redford Park (4215)	06:38	07:08	07:38	08:09	08:49	09:19	09:54	10:24	10:54	11:24	11:54	12:24	12:54	13:24	13:54	14:24	14:57	15:27
Greystones Station (4224)	06:45	07:15	07:45	08:17	08:57	09:27	10:02	10:32	11:02	11:32	12:02	12:32	13:02	13:32	14:02	14:32	15:09	15:39
Charlesland (7462)	06:48	07:18	07:48	08:21	09:01	09:31	10:06	10:36	11:06	11:36	12:06	12:36	13:06	13:36	14:06	14:36	15:13	15:43
Health Centre (4234)	06:55	07:25	07:55	08:29	09:09	09:39	10:14	10:44	11:14	11:44	12:14	12:44	13:14	13:44	14:14	14:44	15:21	15:51
Kilpeddar Grove (4650)	06:59	07:29	07:59	08:34	09:14	09:44	10:19	10:49	11:19	11:49	12:19	12:49	13:19	13:49	14:19	14:49	15:29	15:59
Newcastle Hospital (4656)	07:05	07:35	08:05	08:40	09:20	09:50	10:25	10:55	11:25	11:55	12:25	12:55	13:25	13:55	14:25	14:55	15:35	16:05

Service Number	184	184	184	184	184	184	184	184	184	184	184	184	184	184	184	184	184
Bray Station (4168)	15:35	16:05	16:35	17:05	17:38	18:08	18:40	19:10	19:45	20:15	20:45	21:15	21:45	22:15	22:45	23:15	23:50
St Andrew's NS (4207)	15:47	16:17	16:47	17:17	17:48	18:18	18:49	19:19	19:52	20:22	20:52	21:22	21:52	22:22	22:52	23:22	23:57
Redford Park (4215)	15:57	16:27	16:57	17:27	17:57	18:27	18:56	19:26	19:58	20:28	20:58	21:28	21:58	22:28	22:58	23:28	24:03
Greystones Station (4224)	16:09	16:39	17:09	17:39	18:09	18:39	19:04	19:34	20:05	20:35	21:05	21:35	22:05	22:35	23:05	23:35	24:05
Charlesland (7462)	16:13	16:43	17:13	17:43	18:13	18:43	19:08	19:38	20:08	20:38	21:08	21:38	22:08	22:38	23:08	23:38	24:13
Health Centre (4234)	16:21	16:51	17:21	17:51	18:21	18:51	19:16	19:46	20:15	20:45	21:15	21:45	22:15	22:45	23:15	23:45	24:20
Kilpeddar Grove (4650)	16:29	16:59	17:29	17:59	18:29	18:59	19:21	19:51	20:19	20:49	21:19	21:49	22:19	22:49	23:19	23:49	24:24
Newcastle Hospital (4656)	16:35	17:05	17:35	18:05	18:35	19:05	19:27	19:57	20:25	20:55	21:25	21:55	22:25	22:55	23:25	23:55	24:30

Newtownmountkennedy - Greystones - Bray **184** **Saturday** **Valid from 23rd of January 2022**

Service Number	184	184	184	184	184	184	184	184	184	184	184	184	184	184	184	184	184	184
Newcastle Hospital (4657)	06:29	06:59	07:29	07:59	08:29	08:59	09:29	09:57	10:27	10:57	11:27	11:57	12:27	12:57	13:27	13:57	14:27	14:57
Glenview Park (4239)	06:35	07:05	07:35	08:05	08:35	09:05	09:35	10:04	10:34	11:04	11:34	12:04	12:34	13:04	13:34	14:04	14:34	15:04
Health Centre (4242)	06:44	07:14	07:44	08:14	08:44	09:14	09:44	10:13	10:43	11:13	11:43	12:13	12:43	13:13	13:43	14:13	14:43	15:13
Charlesland (7462)	06:51	07:21	07:51	08:21	08:51	09:21	09:51	10:21	10:51	11:21	11:51	12:21	12:51	13:21	13:51	14:21	14:51	15:21
Greystones Station (4283)	06:55	07:25	07:55	08:25	08:55	09:25	09:55	10:26	10:56	11:26	11:56	12:26	12:56	13:26	13:56	14:26	14:56	15:26
Redford Park (4296)	07:01	07:31	08:01	08:31	09:01	09:31	10:01	10:33	11:03	11:33	12:03	12:33	13:03	13:33	14:03	14:33	15:03	15:33
St Andrew's NS (4304)	07:07	07:37	08:07	08:37	09:07	09:37	10:07	10:40	11:10	11:40	12:10	12:40	13:10	13:40	14:10	14:40	15:10	15:40
Bray Station (4168)	07:14	07:44	08:14	08:44	09:14	09:44	10:14	10:52	11:22	11:52	12:22	12:52	13:22	13:52	14:22	14:52	15:22	15:52

Service Number	184	184	184	184	184	184	184	184	184	184	184	184	184	184	184	184
Newcastle Hospital (4657)	15:27	15:57	16:27	16:57	17:27	17:57	18:27	18:59	19:29	19:59	20:29	20:59	21:29	21:59	22:29	22:59
Glenview Park (4239)	15:34	16:04	16:34	17:04	17:34	18:04	18:34	19:05	19:35	20:05	20:35	21:05	21:35	22:05	22:35	23:05
Health Centre (4242)	15:43	16:13	16:43	17:13	17:43	18:13	18:43	19:14	19:44	20:14	20:44	21:14	21:44	22:14	22:44	23:14
Charlesland (7462)	15:51	16:21	16:51	17:21	17:51	18:21	18:51	19:21	19:51	20:21	20:51	21:21	21:51	22:21	22:51	23:21
Greystones Station (4283)	15:56	16:26	16:56	17:26	17:56	18:26	18:56	19:25	19:55	20:25	20:55	21:25	21:55	22:25	22:55	23:25
Redford Park (4296)	16:03	16:33	17:03	17:33	18:03	18:33	19:03	19:31	20:01	20:31	21:01	21:31	22:01	22:31	23:01	23:31
St Andrew's NS (4304)	16:10	16:40	17:10	17:40	18:10	18:40	19:10	19:37	20:07	20:37	21:07	21:37	22:07	22:37	23:07	23:37
Bray Station (4168)	16:22	16:52	17:22	17:52	18:22	18:52	19:22	19:44	20:14	20:44	21:14	21:44	22:14	22:44	23:14	23:44

Bray - Greystones - Newtownmountkennedy **184** **Saturday** **Valid from 23rd of January 2022**

Service Number	184	184	184	184	184	184	184	184	184	184	184	184	184	184	184	184	184	184
Bray Station (4168)	06:15	06:45	07:15	07:45	08:15	08:45	09:15	09:45	10:15	10:45	11:08	11:38	12:08	12:38	13:08	13:38	14:08	14:38
St Andrew's NS (4207)	06:22	06:52	07:22	07:52	08:22	08:52	09:22	09:52	10:22	10:52	11:17	11:47	12:17	12:47	13:17	13:47	14:17	14:47
Redford Park (4215)	06:28	06:58	07:28	07:58	08:28	08:58	09:28	09:58	10:28	10:58	11:24	11:54	12:24	12:54	13:24	13:54	14:24	14:54
Greystones Station (4224)	06:35	07:05	07:35	08:05	08:35	09:05	09:35	10:05	10:35	11:05	11:32	12:02	12:32	13:02	13:32	14:02	14:32	15:02
Charlesland (7462)	06:38	07:08	07:38	08:08	08:38	09:08	09:38	10:08	10:38	11:08	11:36	12:06	12:36	13:06	13:36	14:06	14:36	15:06
Health Centre (4234)	06:45	07:15	07:45	08:15	08:45	09:15	09:45	10:15	10:45	11:15	11:44	12:14	12:44	13:14	13:44	14:14	14:44	15:14
Kilpeddar Grove (4650)	06:49	07:19	07:49	08:19	08:49	09:19	09:49	10:19	10:49	11:19	11:49	12:19	12:49	13:19	13:49	14:19	14:49	15:19
Newcastle Hospital (4656)	06:55	07:25	07:55	08:25	08:55	09:25	09:55	10:25	10:55	11:25	11:55	12:25	12:55	13:25	13:55	14:25	14:55	15:25

Service Number	184	184	184	184	184	184	184	184	184	184	184	184	184	184	184	184	184
Bray Station (4168)	15:08	15:38	16:08	16:38	17:08	17:38	18:08	18:38	19:15	19:45	20:15	20:45	21:15	21:45	22:15	22:45	23:23
St Andrew's NS (4207)	15:17	15:47	16:17	16:47	17:17	17:47	18:17	18:47	19:22	19:52	20:22	20:52	21:22	21:52	22:22	22:52	23:30
Redford Park (4215)	15:24	15:54	16:24	16:54	17:24	17:54	18:24	18:54	19:28	19:58	20:28	20:58	21:28	21:58	22:28	22:58	23:36
Greystones Station (4224)	15:32	16:02	16:32	17:02	17:32	18:02	18:32	19:02	19:35	20:05	20:35	21:05	21:35	22:05	22:35	23:05	23:43
Charlesland (7462)	15:36	16:06	16:36	17:06	17:36	18:06	18:36	19:06	19:38	20:08	20:38	21:08	21:38	22:08	22:38	23:08	23:46
Health Centre (4234)	15:44	16:14	16:44	17:14	17:44	18:14	18:44	19:14	19:45	20:15	20:45	21:15	21:45	22:15	22:45	23:15	23:53
Kilpeddar Grove (4650)	15:49	16:19	16:49	17:19	17:49	18:19	18:49	19:19	19:49	20:19	20:49	21:19	21:49	22:19	22:49	23:19	23:57
Newcastle Hospital (4656)	15:55	16:25	16:55	17:25	17:55	18:25	18:55	19:25	19:55	20:25	20:55	21:25	21:55	22:25	22:55	23:25	24:03

Newtownmountkennedy - Greystones - Bray **184** **Sunday** **Valid from 23rd of January 2022**

Service Number	184	184	184	184	184	184	184	184	184	184	184	184	184	184	184	184	184	184
Newcastle Hospital (4657)	08:38	09:08	09:38	10:08	10:38	11:06	11:36	12:06	12:36	13:06	13:36	14:06	14:36	15:06	15:36	16:06	16:36	17:06
Glenview Park (4239)	08:44	09:14	09:44	10:14	10:44	11:13	11:43	12:13	12:43	13:13	13:43	14:13	14:43	15:13	15:43	16:13	16:43	17:13
Health Centre (4242)	08:53	09:23	09:53	10:23	10:53	11:22	11:52	12:22	12:52	13:22	13:52	14:22	14:52	15:22	15:52	16:22	16:52	17:22
Charlesland (7462)	09:00	09:30	10:00	10:30	11:00	11:30	12:00	12:30	13:00	13:30	14:00	14:30	15:00	15:30	16:00	16:30	17:00	17:30
Greystones Station (4283)	09:04	09:34	10:04	10:34	11:04	11:35	12:05	12:35	13:05	13:35	14:05	14:35	15:05	15:35	16:05	16:35	17:05	17:35
Redford Park (4296)	09:10	09:40	10:10	10:40	11:10	11:42	12:12	12:42	13:12	13:42	14:12	14:42	15:12	15:42	16:12	16:42	17:12	17:42
St Andrew's NS (4304)	09:16	09:46	10:16	10:46	11:16	11:49	12:19	12:49	13:19	13:49	14:19	14:49	15:19	15:49	16:19	16:49	17:19	17:49
Bray Station (4168)	09:23	09:53	10:23	10:53	11:23	12:01	12:31	13:01	13:31	14:01	14:31	15:01	15:31	16:01	16:31	17:01	17:31	18:01

Service Number	184	184	184	184	184	184	184	184	184	184	184	184
Newcastle Hospital (4657)	17:36	18:06	18:38	19:08	19:38	20:08	20:38	21:08	21:38	22:08	22:38	23:08
Glenview Park (4239)	17:43	18:13	18:44	19:14	19:44	20:14	20:44	21:14	21:44	22:14	22:44	23:14
Health Centre (4242)	17:52	18:22	18:53	19:23	19:53	20:23	20:53	21:23	21:53	22:23	22:53	23:23
Charlesland (7462)	18:00	18:30	19:00	19:30	20:00	20:30	21:00	21:30	22:00	22:30	23:00	23:30
Greystones Station (4283)	18:05	18:35	19:04	19:34	20:04	20:34	21:04	21:34	22:04	22:34	23:04	23:34
Redford Park (4296)	18:12	18:42	19:10	19:40	20:10	20:40	21:10	21:40	22:10	22:40	23:10	23:40
St Andrew's NS (4304)	18:19	18:49	19:16	19:46	20:16	20:46	21:16	21:46	22:16	22:46	23:16	23:46
Bray Station (4168)	18:31	19:01	19:23	19:53	20:23	20:53	21:23	21:53	22:23	22:53	23:23	23:53

Bray - Greystones - Newtownmountkennedy **184** **Sunday** **Valid from 23rd of January 2022**

Service Number	184	184	184	184	184	184	184	184	184	184	184	184	184	184	184	184	184	184
Bray Station (4168)	08:23	08:53	09:23	09:53	10:23	10:53	11:23	11:53	12:17	12:47	13:17	13:47	14:17	14:47	15:17	15:47	16:17	16:47
St Andrew's NS (4207)	08:30	09:00	09:30	10:00	10:30	11:00	11:30	12:00	12:26	12:56	13:26	13:56	14:26	14:56	15:26	15:56	16:26	16:56
Redford Park (4215)	08:36	09:06	09:36	10:06	10:36	11:06	11:36	12:06	12:33	13:03	13:33	14:03	14:33	15:03	15:33	16:03	16:33	17:03
Greystones Station (4224)	08:43	09:13	09:43	10:13	10:43	11:13	11:43	12:13	12:41	13:11	13:41	14:11	14:41	15:11	15:41	16:11	16:41	17:11
Charlesland (7462)	08:46	09:16	09:46	10:16	10:46	11:16	11:46	12:16	12:45	13:15	13:45	14:15	14:45	15:15	15:45	16:15	16:45	17:15
Health Centre (4234)	08:53	09:23	09:53	10:23	10:53	11:23	11:53	12:23	12:53	13:23	13:53	14:23	14:53	15:23	15:53	16:23	16:53	17:23
Kilpeddar Grove (4650)	08:57	09:27	09:57	10:27	10:57	11:27	11:57	12:27	12:58	13:28	13:58	14:28	14:58	15:28	15:58	16:28	16:58	17:28
Newcastle Hospital (4656)	09:03	09:33	10:03	10:33	11:03	11:33	12:03	12:33	13:04	13:34	14:04	14:34	15:04	15:34	16:04	16:34	17:04	17:34

Service Number	184	184	184	184	184	184	184	184	184	184	184	184	184
Bray Station (4168)	17:17	17:47	18:17	18:47	19:23	19:53	20:23	20:53	21:23	21:53	22:23	22:53	23:23
St Andrew's NS (4207)	17:26	17:56	18:26	18:56	19:30	20:00	20:30	21:00	21:30	22:00	22:30	23:00	23:30
Redford Park (4215)	17:33	18:03	18:33	19:03	19:36	20:06	20:36	21:06	21:36	22:06	22:36	23:06	23:36
Greystones Station (4224)	17:41	18:11	18:41	19:11	19:43	20:13	20:43	21:13	21:43	22:13	22:43	23:13	23:43
Charlesland (7462)	17:45	18:15	18:45	19:15	19:46	20:16	20:46	21:16	21:46	22:16	22:46	23:16	23:46
Health Centre (4234)	17:53	18:23	18:53	19:23	19:53	20:23	20:53	21:23	21:53	22:23	22:53	23:23	23:53
Kilpeddar Grove (4650)	17:58	18:28	18:58	19:28	19:57	20:27	20:57	21:27	21:57	22:27	22:57	23:27	23:57
Newcastle Hospital (4656)	18:04	18:34	19:04	19:34	20:03	20:33	21:03	21:33	22:03	22:33	23:03	23:33	24:03

Powerscourt - Bray via Palermo | **185** | **Monday to Friday** | **Valid from 23rd of January 2022**

Service Number	185	185	185	185	185	185	185	185	185	185	185	185	185	185	185	185	185
Enniskerry Golf Club (4108)	06:15	....	07:15	....	08:10	....	09:20	....	10:20	....	11:20	....	12:20	....	13:20	....	14:20
Enniskerry Village (4095)	06:20	....	07:20	....	08:15	....	09:25	....	10:25	....	11:25	....	12:25	....	13:25	....	14:25
Upper Dargle Road (4196)	06:26	....	07:26	....	08:22	....	09:32	....	10:32	....	11:32	....	12:32	....	13:32	....	14:32
Maple Grove (4420)	06:33	07:03	07:33	08:00	08:30	09:05	09:40	10:10	10:40	11:10	11:40	12:10	12:40	13:10	13:40	14:10	14:40
Bray Station (4167)	06:41	07:11	07:41	08:10	08:40	09:15	09:50	10:20	10:50	11:20	11:50	12:20	12:50	13:20	13:50	14:20	14:50

Service Number	185	185	185	185	185	185	185	185	185	185	185	185	185	185	185	185	185
Enniskerry Golf Club (4108)	....	15:20	....	16:20	....	17:20	....	18:20	....	19:12	....	20:12	....	21:12	....	22:12	22:52
Enniskerry Village (4095)	....	15:25	....	16:25	....	17:25	....	18:25	....	19:17	....	20:17	....	21:17	....	22:17	22:57
Upper Dargle Road (4196)	....	15:32	....	16:32	....	17:32	....	18:32	....	19:23	....	20:23	....	21:23	....	22:23	23:03
Maple Grove (4420)	15:10	15:40	16:10	16:40	17:10	17:40	18:10	18:40	19:10	19:30	20:00	20:30	21:00	21:30	22:00	22:30	....
Bray Station (4167)	15:20	15:50	16:20	16:50	17:20	17:50	18:20	18:50	19:20	19:38	20:08	20:38	21:08	21:38	22:08	22:38	23:10

Bray - Powerscourt via Palermo | **185** | **Monday to Friday** | **Valid from 23rd of January 2022**

Service Number	185	185	185	185	185	185	185	185	185	185	185	185	185	185	185	185	185
Bray Station (4167)	06:55	07:25	07:50	08:20	08:55	09:30	10:00	10:30	11:00	11:30	12:00	12:30	13:00	13:30	14:00	14:30	15:00
Maple Grove (4420)	07:03	07:33	08:00	08:30	09:05	09:40	10:10	10:40	11:10	11:40	12:10	12:40	13:10	13:40	14:10	14:40	15:10
Bray Commons (4186)	....	07:40	....	08:38	....	09:48	....	10:48	....	11:48	....	12:48	....	13:48	....	14:48	....
Enniskerry Village (10395)	....	07:48	....	08:47	....	09:57	....	10:57	....	11:57	....	12:57	....	13:57	....	14:57	....
Enniskerry Golf Club (4108)	....	07:54	....	08:55	....	10:05	....	11:05	....	12:05	....	13:05	....	14:05	....	15:05	....

Service Number	185	185	185	185	185	185	185	185	185	185	185	185	185	185	185	185	185
Bray Station (4167)	15:30	16:00	16:30	17:00	17:30	18:00	18:30	19:00	19:22	19:52	20:22	20:52	21:22	21:52	22:22	22:52	23:30
Maple Grove (4420)	15:40	16:10	16:40	17:10	17:40	18:10	18:40	19:10	19:30	20:00	20:30	21:00	21:30	22:00	22:30	23:00	....
Bray Commons (4186)	15:48	....	16:48	....	17:48	....	18:48	....	19:37	....	20:37	....	21:37	....	22:37	....	23:37
Enniskerry Village (10395)	15:57	....	16:57	....	17:57	....	18:57	....	19:45	....	20:45	....	21:45	....	22:45	....	23:45
Enniskerry Golf Club (4108)	16:05	....	17:05	....	18:05	....	19:05	....	19:51	....	20:51	....	21:51	....	22:51	....	23:51

Powerscourt - Bray via Palermo | **185** | **Saturday** | **Valid from 23rd of January 2022**

Service Number	185	185	185	185	185	185	185	185	185	185	185	185	185	185	185	185	185
Enniskerry Golf Club (4108)	06:12	....	07:12	....	08:12	....	09:12	....	10:20	....	11:20	....	12:20	....	13:20	....	14:20
Enniskerry Village (4095)	06:17	....	07:17	....	08:17	....	09:17	....	10:25	....	11:25	....	12:25	....	13:25	....	14:25
Upper Dargle Road (4196)	06:23	....	07:23	....	08:23	....	09:23	....	10:32	....	11:32	....	12:32	....	13:32	....	14:32
Maple Grove (4420)	06:30	07:00	07:30	08:00	08:30	09:00	09:30	10:10	10:40	11:10	11:40	12:10	12:40	13:10	13:40	14:10	14:40
Bray Station (4167)	06:38	07:08	07:38	08:08	08:38	09:08	09:38	10:20	10:50	11:20	11:50	12:20	12:50	13:20	13:50	14:20	14:50

Service Number	185	185	185	185	185	185	185	185	185	185	185	185	185	185	185	185	185
Enniskerry Golf Club (4108)	....	15:20	....	16:20	....	17:20	....	18:15	....	19:12	....	20:12	....	21:12	....	22:12	23:00
Enniskerry Village (4095)	....	15:25	....	16:25	....	17:25	....	18:20	....	19:17	....	20:17	....	21:17	....	22:17	23:05
Upper Dargle Road (4196)	....	15:32	....	16:32	....	17:32	....	18:27	....	19:23	....	20:23	....	21:23	....	22:23	23:11
Maple Grove (4420)	15:10	15:40	16:10	16:40	17:10	17:40	18:10	18:35	19:00	19:30	20:00	20:30	21:00	21:30	22:00	22:30	....
Bray Station (4167)	15:20	15:50	16:20	16:50	17:20	17:50	18:20	18:45	19:08	19:38	20:08	20:38	21:08	21:38	22:08	22:38	23:18

Bray - Powerscourt via Palermo | **185** | **Saturday** | **Valid from 23rd of January 2022**

Service Number	185	185	185	185	185	185	185	185	185	185	185	185	185	185	185	185	185
Bray Station (4167)	06:52	07:22	07:52	08:22	08:52	09:22	10:00	10:30	11:00	11:30	12:00	12:30	13:00	13:30	14:00	14:30	15:00
Maple Grove (4420)	07:00	07:30	08:00	08:30	09:00	09:30	10:10	10:40	11:10	11:40	12:10	12:40	13:10	13:40	14:10	14:40	15:10
Bray Commons (4186)	....	07:37	....	08:37	....	09:37	....	10:48	....	11:48	....	12:48	....	13:48	....	14:48	....
Enniskerry Village (10395)	....	07:45	....	08:45	....	09:45	....	10:57	....	11:57	....	12:57	....	13:57	....	14:57	....
Enniskerry Golf Club (4108)	....	07:51	....	08:51	....	09:51	....	11:05	....	12:05	....	13:05	....	14:05	....	15:05	....

Service Number	185	185	185	185	185	185	185	185	185	185	185	185	185	185	185	185	185
Bray Station (4167)	15:30	16:00	16:30	17:00	17:30	18:00	18:30	18:52	19:22	19:52	20:22	20:52	21:22	21:52	22:22	22:52	23:30
Maple Grove (4420)	15:40	16:10	16:40	17:10	17:40	18:10	18:40	19:00	19:30	20:00	20:30	21:00	21:30	22:00	22:30	23:00	....
Bray Commons (4186)	15:48	....	16:48	....	17:48	....	18:48	....	19:37	....	20:37	....	21:37	....	22:37	....	23:37
Enniskerry Village (10395)	15:57	....	16:57	....	17:57	....	18:57	....	19:45	....	20:45	....	21:45	....	22:45	....	23:45
Enniskerry Golf Club (4108)	16:05	....	17:05	....	18:05	....	19:05	....	19:51	....	20:51	....	21:51	....	22:51	....	23:51

Powerscourt - Bray via Palermo | **185** | **Sunday** | **Valid from 23rd of January 2022**

Service Number	185	185	185	185	185	185	185	185	185	185	185	185	185	185	185	185	185
Enniskerry Golf Club (4108)	07:50	....	....	09:20	....	10:20	....	11:20	....	12:20	....	13:20	....	14:20	....	15:20	....
Enniskerry Village (4095)	07:55	....	....	09:25	....	10:25	....	11:25	....	12:25	....	13:25	....	14:25	....	15:25	....
Upper Dargle Road (4196)	08:01	....	....	09:31	....	10:31	....	11:32	....	12:32	....	13:32	....	14:32	....	15:32	....
Maple Grove (4420)	08:08	08:38	09:08	09:38	10:08	10:38	11:10	11:40	12:10	12:40	13:10	13:40	14:10	14:40	15:10	15:40	16:10
Bray Station (4167)	08:16	08:46	09:16	09:46	10:16	10:46	11:20	11:50	12:20	12:50	13:20	13:50	14:20	14:50	15:20	15:50	16:20

Service Number	185	185	185	185	185	185	185	185	185	185	185	185	185	185
Enniskerry Golf Club (4108)	16:20	....	17:20	....	18:20	....	19:20	....	20:20	....	21:20	....	22:20	23:00
Enniskerry Village (4095)	16:25	....	17:25	....	18:25	....	19:25	....	20:25	....	21:25	....	22:25	23:05
Upper Dargle Road (4196)	16:32	....	17:32	....	18:32	....	19:31	....	20:31	....	21:31	....	22:31	23:11
Maple Grove (4420)	16:40	17:10	17:40	18:10	18:40	19:08	19:38	20:08	20:38	21:08	21:38	22:08	22:38	....
Bray Station (4167)	16:50	17:20	17:50	18:20	18:50	19:16	19:46	20:16	20:46	21:16	21:46	22:16	22:46	23:18

Bray - Powerscourt via Palermo | **185** | **Sunday** | **Valid from 23rd of January 2022**

Service Number	185	185	185	185	185	185	185	185	185	185	185	185	185	185	185	185	185
Bray Station (4167)	08:30	09:00	09:30	10:00	10:30	11:00	11:30	12:00	12:30	13:00	13:30	14:00	14:30	15:00	15:30	16:00	16:30
Maple Grove (4420)	08:38	09:08	09:38	10:08	10:38	11:10	11:40	12:10	12:40	13:10	13:40	14:10	14:40	15:10	15:40	16:10	16:40
Bray Commons (4186)	08:45	....	09:45	....	10:45	....	11:48	....	12:48	....	13:48	....	14:48	....	15:48	....	16:48
Enniskerry Village (10395)	08:53	....	09:53	....	10:53	....	11:57	....	12:57	....	13:57	....	14:57	....	15:57	....	16:57
Enniskerry Golf Club (4108)	08:59	....	09:59	....	10:59	....	12:05	....	13:05	....	14:05	....	15:05	....	16:05	....	17:05

Service Number	185	185	185	185	185	185	185	185	185	185	185	185	185	185
Bray Station (4167)	17:00	17:30	18:00	18:30	19:00	19:30	20:00	20:30	21:00	21:30	22:00	22:30	23:00	23:30
Maple Grove (4420)	17:10	17:40	18:10	18:40	19:08	19:38	20:08	20:38	21:08	21:38	22:08	22:38	23:08	....
Bray Commons (4186)	....	17:48	....	18:48	....	19:45	....	20:45	....	21:45	....	22:45	....	23:37
Enniskerry Village (10395)	....	17:57	....	18:57	....	19:53	....	20:53	....	21:53	....	22:53	....	23:45
Enniskerry Golf Club (4108)	....	18:05	....	19:05	....	19:59	....	20:59	....	21:59	....	22:59	....	23:51

Kilmacanogue - Dun Laoghaire	**45A**	**Monday to Friday**	**Valid from 23rd of January 2022**
Kilmacanogue - Dun Laoghaire via Shanganagh Cliffs	**45B**		

Service Number	45A	45A	45A	45A	45A	45A	45A	45A	45A	45B	45A	45A	45A	45A	45A	45A	45A
Kilmacanogue (4533)	06:20	06:55	07:25	07:55	08:25	08:55	09:15	09:35	09:55	**10:10**	10:30	10:50	11:10	11:30	11:50	12:10	12:30
Wolfe Tone Square (5089)	06:27	07:03	07:33	....	....	09:03	09:23	09:43	10:03	**10:18**	10:38	10:58	11:18	11:38	11:58	12:18	12:38
St Andrew's NS (4304)	....	....	....	08:05	08:35	....	....	....	....	....	....	....	....	....	....	....	....
Bray Station (4169) arr	06:35	07:15	07:45	08:15	08:45	09:15	09:35	09:55	10:15	**10:30**	10:50	11:10	11:30	11:50	12:10	12:30	12:50
Bray Station (4169) dep	06:40	07:20	07:50	08:25	09:00	09:20	09:40	10:00	10:20	**10:33**	10:55	11:15	11:35	11:55	12:15	12:35	12:55
Shankill Church (3545)	06:52	07:34	08:04	08:44	09:14	09:34	09:54	10:14	10:34	**10:47**	11:09	11:29	11:49	12:09	12:29	12:49	13:09
Shanganagh Park (3547)	....	....	....	....	....	....	....	....	....	**10:54**	....	....	....	....	....	....	....
Ballybrack SC (3225)	07:02	07:45	08:15	08:55	09:25	09:45	10:05	10:25	10:45	**11:05**	11:20	11:40	12:00	12:20	12:40	13:00	13:20
O'Rourke Park (3343)	07:09	07:54	08:24	09:04	09:34	09:54	10:14	10:34	10:54	**11:14**	11:29	11:49	12:09	12:29	12:49	13:09	13:29
Dun Laoghaire Stn (4983)	07:19	08:07	08:37	09:17	09:47	10:07	10:27	10:47	11:07	**11:27**	11:42	12:02	12:22	12:42	13:02	13:22	13:42

Service Number	45A	45A	45A	45A	45A	45A	45A	45A	45A	45A	45A	45A	45A	45A	45A	45A	45A
Kilmacanogue (4533)	12:50	13:10	13:30	13:50	14:13	14:33	14:53	15:13	15:33	15:53	16:13	16:33	16:53	17:13	17:35	17:55	18:15
Wolfe Tone Square (5089)	12:58	13:18	13:38	13:58	14:21	14:41	....	....	....	....	....	....	17:01	17:21	17:43	18:03	18:22
St Andrew's NS (4304)	....	....	....	....	....	....	15:03	15:23	15:43	16:03	16:23	16:43	....	....	....	....	....
Bray Station (4169) arr	13:10	13:30	13:50	14:10	14:33	14:53	15:13	15:33	15:53	16:13	16:33	16:53	17:13	17:33	17:55	18:15	18:30
Bray Station (4169) dep	13:15	13:35	13:55	14:15	14:38	14:58	15:18	15:38	15:58	16:18	16:38	16:58	17:18	17:38	18:00	18:20	18:35
Shankill Church (3545)	13:29	13:49	14:09	14:29	14:52	15:12	15:36	15:56	16:16	16:36	16:54	17:14	17:32	17:52	18:14	18:34	18:47
Shanganagh Park (3547)	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Ballybrack SC (3225)	13:40	14:00	14:20	14:40	15:03	15:23	15:47	16:07	16:27	16:47	17:05	17:25	17:43	18:03	18:25	18:45	18:57
O'Rourke Park (3343)	13:49	14:09	14:29	14:49	15:12	15:32	15:56	16:16	16:36	16:56	17:14	17:34	17:52	18:12	18:34	18:54	19:04
Dun Laoghaire Stn (4983)	14:02	14:22	14:42	15:02	15:25	15:45	16:09	16:29	16:49	17:09	17:27	17:47	18:05	18:25	18:47	19:07	19:14

Service Number	45A	45A	45A	45A	45A	45A	45A	45A	45A	45A	45A
Kilmacanogue (4533)	18:35	18:55	19:25	19:55	20:25	21:00	21:35	22:05	22:35	23:05	23:35
Wolfe Tone Square (5089)	18:42	19:02	19:32	20:02	20:32	21:07	21:42	22:12	22:42	23:12	23:42
St Andrew's NS (4304)	....	....	....	....	....	....	....	....	....	....	....
Bray Station (4169) arr	18:50	19:10	19:40	20:10	20:40	21:14	21:49	22:19	22:49	23:19	23:49
Bray Station (4169) dep	18:55	19:15	19:45	20:15	20:45	21:15	21:50	22:21	22:51	23:21	23:51
Shankill Church (3545)	19:07	19:27	19:57	20:27	20:57	21:25	22:00	22:29	22:59	23:29	23:59
Shanganagh Park (3547)	....	....	....	....	....	....	....	....	....	....	....
Ballybrack SC (3225)	19:17	19:37	20:07	20:37	21:07	21:35	22:10	22:38	23:08	23:38	24:08
O'Rourke Park (3343)	19:24	19:44	20:14	20:44	21:14	21:41	22:16	22:43	23:13	23:43	24:13
Dun Laoghaire Stn (4983)	19:34	19:54	20:24	20:54	21:24	21:51	22:26	22:50	23:20	23:50	24:20

TFI TRANSPORT FOR IRELAND

Go-Ahead Ireland

Dun Laoghaire - Kilmacanogue	**45A**	**Monday to Friday**	**Valid from 23rd of January 2022**
Dun Laoghaire - Kilmacanogue via Shanganagh Cliffs	**45B**		

Service Number	45A	45A	45A	45A	45A	45A	45A	45A	45A	45A	45A	45A	45A	45A	45A	45A	45A
Dun Laoghaire Stn (2037)	06:25	06:55	07:25	07:55	08:25	08:55	09:15	09:40	10:00	10:20	10:40	11:00	11:20	11:40	12:00	12:20	12:40
O'Rourke Park (3242)	06:32	07:04	07:34	08:07	08:37	09:07	09:24	09:49	10:09	10:29	10:49	11:09	11:29	11:49	12:09	12:29	12:49
Ballybrack SC (3217)	06:36	07:09	07:42	08:15	08:45	09:15	09:32	09:57	10:17	10:37	10:57	11:17	11:37	11:57	12:17	12:37	12:57
Shanganagh Park (3547)	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
St Anne's Church (3543)	06:46	07:21	07:54	08:29	08:59	09:29	09:44	10:09	10:29	10:49	11:09	11:29	11:49	12:09	12:29	12:49	13:09
Bray Station (4169) arr	06:56	07:33	08:06	08:44	09:14	09:44	09:56	10:21	10:41	11:01	11:21	11:41	12:01	12:24	12:44	13:04	13:24
Bray Station (4169) dep	07:00	07:38	08:16	08:50	09:18	09:48	10:01	10:26	10:46	11:06	11:26	11:46	12:06	12:28	12:48	13:08	13:28
Boghall Road (4137)	....	....	08:25	09:02	....	....	....	....	....	....	....	....	....	....	....	....	....
Wolfe Tone Square (4147)	07:07	07:47	....	....	09:27	09:57	10:10	10:35	10:55	11:15	11:35	11:55	12:15	12:37	12:57	13:17	13:37
Kilmacanogue (6000)	07:15	07:55	08:35	09:12	09:35	10:05	10:18	10:43	11:03	11:23	11:43	12:03	12:23	12:45	13:05	13:25	13:45

Service Number	45B	45A	45A	45A	45A	45A	45A	45A	45A	45A	45A	45A	45A	45A	45A	45A	45A
Dun Laoghaire Stn (2037)	**13:00**	13:20	13:40	14:00	14:20	14:40	15:00	15:20	15:40	16:00	16:20	16:40	17:00	17:20	17:40	18:00	18:20
O'Rourke Park (3242)	**13:09**	13:29	13:49	14:12	14:32	14:52	15:12	15:32	15:52	16:12	16:32	16:52	17:12	17:32	17:52	18:12	18:32
Ballybrack SC (3217)	**13:17**	13:37	13:57	14:20	14:40	15:00	15:20	15:40	16:00	16:20	16:40	17:00	17:20	17:40	18:00	18:20	18:40
Shanganagh Park (3547)	**13:30**	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
St Anne's Church (3543)	**13:36**	13:49	14:09	14:34	14:54	15:14	15:34	15:54	16:14	16:34	16:54	17:14	17:34	17:54	18:14	18:34	18:54
Bray Station (4169) arr	**13:51**	14:04	14:24	14:49	15:09	15:29	15:49	16:09	16:29	16:49	17:09	17:29	17:49	18:09	18:29	18:49	19:09
Bray Station (4169) dep	**13:53**	14:08	14:28	14:53	15:15	15:35	15:55	16:15	16:35	16:55	17:15	17:33	17:53	18:13	18:33	18:51	19:11
Boghall Road (4137)	....	....	....	....	15:27	15:47	16:07	16:27	16:47	17:07	17:27	....	....	....	....	....	....
Wolfe Tone Square (4147)	**14:02**	14:17	14:37	15:02	....	....	....	....	....	....	....	17:42	18:02	18:22	18:42	19:00	19:20
Kilmacanogue (6000)	**14:10**	14:25	14:45	15:10	15:37	15:57	16:17	16:37	16:57	17:17	17:37	17:50	18:10	18:30	18:50	19:08	19:28

Service Number	45A	45A	45A	45A	45A	45A	45A	45A	45A	45A
Dun Laoghaire Stn (2037)	18:45	19:20	19:50	20:25	21:00	21:30	22:05	22:35	23:05	23:45
O'Rourke Park (3242)	18:54	19:29	19:59	20:34	21:09	21:39	22:12	22:42	23:12	23:52
Ballybrack SC (3217)	19:02	19:34	20:04	20:39	21:14	21:44	22:16	22:46	23:16	23:56
Shanganagh Park (3547)	....	....	....	....	....	....	....	....	....	....
St Anne's Church (3543)	19:14	19:46	20:16	20:51	21:26	21:56	22:26	22:56	23:26	24:04
Bray Station (4169) arr	19:26	19:58	20:28	21:03	21:38	22:08	22:36	23:06	23:36	24:14
Bray Station (4169) dep	19:31	20:03	20:33	21:08	21:43	22:13	22:40	23:10	23:40	24:15
Boghall Road (4137)	....	....	....	....	....	....	....	....	....	....
Wolfe Tone Square (4147)	19:40	20:12	20:42	21:17	21:52	22:22	22:47	23:17	23:47	24:22
Kilmacanogue (6000)	19:48	20:20	20:50	21:25	22:00	22:30	22:55	23:25	23:55	24:30

TFI TRANSPORT FOR IRELAND

Go-Ahead Ireland

Kilmacanogue - Dun Laoghaire	**45A**	**Saturday**	**Valid from 23rd of January 2022**
Kilmacanogue - Dun Laoghaire via Shanganagh Cliffs	**45B**		

Service Number	45A	45A	45A	45A	45A	45A	45A	45A	45A	45B	45A	45A	45A	45A	45A	45A	45A
Kilmacanogue (4533)	06:25	06:55	07:25	07:55	08:25	08:55	09:15	09:35	09:55	**10:10**	10:30	10:50	11:10	11:30	11:50	12:10	12:30
Wolfe Tone Square (5089)	06:32	07:02	07:32	08:02	08:32	09:02	09:22	09:42	10:03	**10:18**	10:38	10:58	11:18	11:38	11:58	12:18	12:38
St Andrew's NS (4304)	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Bray Station (4169) arr	06:39	07:09	07:39	08:10	08:40	09:10	09:30	09:50	10:13	**10:30**	10:50	11:10	11:30	11:50	12:10	12:30	12:50
Bray Station (4169) dep	06:46	07:16	07:46	08:15	08:45	09:15	09:35	09:55	10:15	**10:33**	10:55	11:15	11:35	11:55	12:15	12:35	12:55
Shankill Church (3545)	06:54	07:24	07:54	08:25	08:55	09:25	09:47	10:07	10:29	**10:47**	11:09	11:29	11:49	12:09	12:29	12:49	13:09
Shanganagh Park (3547)	....	....	....	....	....	....	....	....	....	**10:54**	....	....	....	....	....	....	....
Ballybrack SC (3225)	07:03	07:33	08:03	08:35	09:05	09:35	09:57	10:17	10:40	**11:05**	11:20	11:40	12:00	12:20	12:40	13:00	13:20
O'Rourke Park (3343)	07:08	07:38	08:08	08:41	09:11	09:41	10:04	10:24	10:49	**11:14**	11:29	11:49	12:09	12:29	12:49	13:09	13:29
Dun Laoghaire Stn (4983)	07:15	07:45	08:15	08:51	09:21	09:51	10:14	10:34	11:02	**11:27**	11:42	12:02	12:22	12:42	13:02	13:22	13:42

Service Number	45A	45A	45A	45A	45A	45A	45A	45A	45A	45A	45A	45A	45A	45A	45A	45A	45A
Kilmacanogue (4533)	12:50	13:10	13:30	13:50	14:13	14:33	14:53	15:13	15:33	15:53	16:13	16:33	16:53	17:13	17:35	17:55	18:15
Wolfe Tone Square (5089)	12:58	13:18	13:38	13:58	14:21	14:41	15:01	15:21	15:41	16:01	16:21	16:41	17:01	17:21	17:42	18:02	18:22
St Andrew's NS (4304)	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Bray Station (4169) arr	13:10	13:30	13:50	14:10	14:31	14:51	15:11	15:31	15:51	16:11	16:31	16:51	17:11	17:31	17:50	18:10	18:30
Bray Station (4169) dep	13:15	13:35	13:55	14:15	14:35	14:55	15:15	15:35	15:55	16:15	16:35	16:55	17:15	17:35	17:55	18:15	18:35
Shankill Church (3545)	13:29	13:49	14:09	14:29	14:49	15:09	15:29	15:49	16:09	16:29	16:49	17:09	17:29	17:49	18:07	18:27	18:47
Shanganagh Park (3547)	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Ballybrack SC (3225)	13:40	14:00	14:20	14:40	15:00	15:20	15:40	16:00	16:20	16:40	17:00	17:20	17:40	18:00	18:17	18:37	18:57
O'Rourke Park (3343)	13:49	14:09	14:29	14:49	15:09	15:29	15:49	16:09	16:29	16:49	17:09	17:29	17:49	18:09	18:24	18:44	19:04
Dun Laoghaire Stn (4983)	14:02	14:22	14:42	15:02	15:22	15:42	16:02	16:22	16:42	17:02	17:22	17:42	18:02	18:22	18:34	18:54	19:14

Service Number	45A	45A	45A	45A	45A	45A	45A	45A	45A	45A	45A
Kilmacanogue (4533)	18:35	18:55	19:25	19:55	20:25	21:00	21:35	22:05	22:35	23:05	23:35
Wolfe Tone Square (5089)	18:42	19:02	19:32	20:02	20:32	21:07	21:42	22:12	22:42	23:12	23:42
St Andrew's NS (4304)	....	....	....	....	....	....	....	....	....	....	....
Bray Station (4169) arr	18:50	19:10	19:40	20:10	20:40	21:14	21:49	22:19	22:49	23:19	23:49
Bray Station (4169) dep	18:55	19:15	19:45	20:15	20:45	21:15	21:50	22:21	22:51	23:21	23:51
Shankill Church (3545)	19:07	19:27	19:57	20:27	20:57	21:25	22:00	22:29	22:59	23:29	23:59
Shanganagh Park (3547)	....	....	....	....	....	....	....	....	....	....	....
Ballybrack SC (3225)	19:17	19:37	20:07	20:37	21:07	21:35	22:10	22:38	23:08	23:38	24:08
O'Rourke Park (3343)	19:24	19:44	20:14	20:44	21:14	21:41	22:16	22:43	23:13	23:43	24:13
Dun Laoghaire Stn (4983)	19:34	19:54	20:24	20:54	21:24	21:51	22:26	22:50	23:20	23:50	24:20

TFI TRANSPORT FOR IRELAND

Go-Ahead Ireland

Dun Laoghaire - Kilmacanogue	45A	Saturday	Valid from 23rd of January 2022
Dun Laoghaire - Kilmacanogue via Shanganagh Cliffs	45B		

Service Number	45A	45A	45A	45A	45A	45A	45A	45A	45A	45A	45A	45A	45A	45A	45A	45A	45A
Dun Laoghaire Stn (2037)	06:25	06:55	07:25	07:55	08:25	08:55	09:15	09:40	10:00	10:20	10:40	11:00	11:20	11:40	12:00	12:20	12:40
O'Rourke Park (3242)	06:32	07:02	07:32	08:02	08:32	09:02	09:22	09:49	10:09	10:29	10:49	11:09	11:29	11:49	12:09	12:29	12:49
Ballybrack SC (3217)	06:36	07:06	07:36	08:06	08:36	09:06	09:26	09:54	10:14	10:34	10:57	11:17	11:37	11:57	12:17	12:37	12:57
Shanganagh Park (3547)	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
St Anne's Church (3543)	06:46	07:16	07:46	08:16	08:46	09:16	09:36	10:06	10:26	10:46	11:09	11:29	11:49	12:09	12:29	12:49	13:09
Bray Station (4169) arr	06:56	07:26	07:56	08:26	08:56	09:26	09:46	10:18	10:38	10:58	11:21	11:41	12:01	12:24	12:44	13:04	13:24
Bray Station (4169) dep	07:00	07:30	08:00	08:30	09:00	09:30	09:50	10:23	10:43	11:03	11:26	11:46	12:06	12:28	12:48	13:08	13:28
Boghall Road (4137)	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Wolfe Tone Square (4147)	07:07	07:37	08:07	08:37	09:07	09:37	09:57	10:32	10:52	11:12	11:35	11:55	12:15	12:37	12:57	13:17	13:37
Kilmacanogue (6000)	07:15	07:45	08:15	08:45	09:15	09:45	10:05	10:40	11:00	11:20	11:43	12:03	12:23	12:45	13:05	13:25	13:45

Service Number	45B	45A	45A	45A	45A	45A	45A	45A	45A	45A	45A	45A	45A	45A	45A	45A	45A
Dun Laoghaire Stn (2037)	**13:00**	13:20	13:40	14:00	14:20	14:40	15:00	15:20	15:40	16:00	16:20	16:40	17:00	17:20	17:40	18:00	18:20
O'Rourke Park (3242)	**13:09**	13:29	13:49	14:09	14:29	14:49	15:09	15:29	15:49	16:09	16:29	16:49	17:09	17:29	17:49	18:09	18:29
Ballybrack SC (3217)	**13:17**	13:37	13:57	14:17	14:37	14:57	15:17	15:37	15:57	16:17	16:37	16:57	17:17	17:37	17:57	18:17	18:34
Shanganagh Park (3547)	**13:30**	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
St Anne's Church (3543)	**13:36**	13:49	14:09	14:29	14:49	15:09	15:29	15:49	16:09	16:29	16:49	17:09	17:29	17:49	18:09	18:29	18:46
Bray Station (4169) arr	**13:51**	14:04	14:21	14:41	15:01	15:21	15:41	16:01	16:21	16:41	17:01	17:21	17:41	18:01	18:21	18:41	18:58
Bray Station (4169) dep	**13:52**	14:08	14:26	14:46	15:06	15:26	15:46	16:06	16:26	16:46	17:06	17:26	17:46	18:06	18:26	18:46	19:03
Boghall Road (4137)	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Wolfe Tone Square (4147)	**14:01**	14:17	14:35	14:55	15:15	15:35	15:55	16:15	16:35	16:55	17:15	17:35	17:55	18:15	18:35	18:55	19:12
Kilmacanogue (6000)	**14:09**	14:25	14:43	15:03	15:23	15:43	16:03	16:23	16:43	17:03	17:23	17:43	18:03	18:23	18:43	19:03	19:20

Service Number	45A	45A	45A	45A	45A	45A	45A	45A	45A	45A
Dun Laoghaire Stn (2037)	18:50	19:20	19:50	20:25	21:00	21:35	22:05	22:35	23:05	23:45
O'Rourke Park (3242)	18:59	19:29	19:59	20:34	21:09	21:42	22:12	22:42	23:12	23:52
Ballybrack SC (3217)	19:04	19:34	20:04	20:39	21:14	21:46	22:16	22:46	23:16	23:56
Shanganagh Park (3547)	....	....	....	....	....	....	....	....	....	....
St Anne's Church (3543)	19:16	19:46	20:16	20:51	21:26	21:56	22:26	22:56	23:26	24:04
Bray Station (4169) arr	19:28	19:58	20:28	21:03	21:38	22:06	22:36	23:06	23:36	24:14
Bray Station (4169) dep	19:33	20:03	20:33	21:08	21:43	22:10	22:40	23:10	23:40	24:15
Boghall Road (4137)	....	....	....	....	....	....	....	....	....	....
Wolfe Tone Square (4147)	19:42	20:12	20:42	21:14	21:49	22:17	22:47	23:17	23:47	24:22
Kilmacanogue (6000)	19:50	20:20	20:50	21:25	22:00	22:25	22:55	23:25	23:55	24:30

TFI TRANSPORT FOR IRELAND

Go-Ahead Ireland

Kilmacanogue - Dun Laoghaire **45A** **Sunday** **Valid from 23rd of January 2022**

Service Number	45A	45A	45A	45A	45A	45A	45A	45A	45A	45A	45A	45A	45A	45A	45A	45A	45A
Kilmacanogue (4533)	08:30	09:00	09:25	09:55	10:25	10:50	11:20	11:50	12:20	12:50	13:20	13:50	14:20	14:50	15:20	15:50	16:20
Wolfe Tone Square (5089)	08:37	09:07	09:32	10:02	10:32	10:58	11:28	11:58	12:28	12:58	13:28	13:58	14:28	14:58	15:28	15:58	16:28
St Andrew's NS (4304)	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Bray Station (4169) arr	08:44	09:14	09:39	10:09	10:39	11:08	11:38	12:08	12:38	13:08	13:38	14:08	14:38	15:08	15:38	16:08	16:38
Bray Station (4169) dep	08:51	09:21	09:45	10:15	10:45	11:10	11:40	12:10	12:40	13:10	13:40	14:10	14:40	15:10	15:40	16:10	16:40
Shankill Church (3545)	08:59	09:29	09:55	10:25	10:55	11:24	11:54	12:24	12:54	13:24	13:54	14:24	14:54	15:24	15:54	16:24	16:54
Shanganagh Park (3547)	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Ballybrack SC (3225)	09:08	09:38	10:05	10:35	11:05	11:35	12:05	12:35	13:05	13:35	14:05	14:35	15:05	15:35	16:05	16:35	17:05
O'Rourke Park (3343)	09:13	09:43	10:11	10:41	11:11	11:44	12:14	12:44	13:14	13:44	14:14	14:44	15:14	15:44	16:14	16:44	17:14
Dun Laoghaire Stn (4983)	09:20	09:50	10:21	10:51	11:21	11:57	12:27	12:57	13:27	13:57	14:27	14:57	15:27	15:57	16:27	16:57	17:27

Service Number	45A	45A	45A	45A	45A	45A	45A	45A	45A	45A	45A	45A	45A	45A
Kilmacanogue (4533)	16:50	17:20	17:55	18:25	18:55	19:25	19:55	20:25	21:00	21:35	22:05	22:35	23:05	23:35
Wolfe Tone Square (5089)	16:58	17:28	18:02	18:32	19:02	19:32	20:02	20:32	21:07	21:42	22:12	22:42	23:12	23:42
St Andrew's NS (4304)	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Bray Station (4169) arr	17:08	17:38	18:10	18:40	19:10	19:40	20:09	20:39	21:14	21:49	22:19	22:49	23:19	23:49
Bray Station (4169) dep	17:10	17:40	18:15	18:45	19:15	19:45	20:10	20:40	21:15	21:50	22:21	22:51	23:21	23:51
Shankill Church (3545)	17:24	17:54	18:27	18:57	19:27	19:57	20:20	20:50	21:25	22:00	22:29	22:59	23:29	23:59
Shanganagh Park (3547)	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Ballybrack SC (3225)	17:35	18:05	18:37	19:07	19:37	20:07	20:30	21:00	21:35	22:10	22:38	23:08	23:38	24:08
O'Rourke Park (3343)	17:44	18:14	18:44	19:14	19:44	20:14	20:36	21:06	21:41	22:16	22:43	23:13	23:43	24:13
Dun Laoghaire Stn (4983)	17:57	18:27	18:54	19:24	19:54	20:24	20:46	21:16	21:51	22:26	22:50	23:20	23:50	24:20

***45B - No Sunday Service**

TFI TRANSPORT FOR IRELAND

Go-Ahead Ireland

Dun Laoghaire - Kilmacanogue **45A** **Sunday** **Valid from 23rd of January 2022**

Service Number	45A	45A	45A	45A	45A	45A	45A	45A	45A	45A	45A	45A	45A	45A	45A	45A	45A
Dun Laoghaire Stn (2037)	08:25	08:55	09:25	09:55	10:25	10:55	11:25	11:40	12:10	12:40	13:10	13:40	14:10	14:40	15:10	15:40	16:10
O'Rourke Park (3242)	08:32	09:02	09:32	10:02	10:32	11:02	11:32	11:49	12:19	12:49	13:19	13:49	14:19	14:49	15:19	15:49	16:19
Ballybrack SC (3217)	08:36	09:06	09:36	10:06	10:36	11:06	11:36	11:57	12:27	12:57	13:27	13:57	14:27	14:57	15:27	15:57	16:27
Shanganagh Park (3547)	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
St Anne's Church (3543)	08:46	09:16	09:46	10:16	10:46	11:16	11:46	12:09	12:39	13:09	13:39	14:09	14:39	15:09	15:39	16:09	16:39
Bray Station (4169) arr	08:56	09:26	09:56	10:26	10:56	11:26	11:56	12:21	12:51	13:21	13:51	14:24	14:54	15:24	15:54	16:21	16:51
Bray Station (4169) dep	09:00	09:30	10:00	10:30	11:00	11:30	12:00	12:26	12:56	13:26	13:56	14:29	14:59	15:29	15:59	16:26	16:56
Boghall Road (4137)	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Wolfe Tone Square (4147)	09:07	09:37	10:07	10:37	11:07	11:37	12:07	12:35	13:05	13:35	14:05	14:38	15:08	15:38	16:08	16:35	17:05
Kilmacanogue (6000)	09:15	09:45	10:15	10:45	11:15	11:45	12:15	12:43	13:13	13:43	14:13	14:46	15:16	15:46	16:16	16:43	17:13

Service Number	45A	45A	45A	45A	45A	45A	45A	45A	45A	45A	45A	45A	45A	45A
Dun Laoghaire Stn (2037)	16:40	17:10	17:40	18:15	18:45	19:15	19:50	20:25	21:00	21:35	22:05	22:35	23:05	23:35
O'Rourke Park (3242)	16:49	17:19	17:49	18:24	18:54	19:24	19:59	20:34	21:09	21:42	22:12	22:42	23:12	23:42
Ballybrack SC (3217)	16:57	17:27	17:57	18:29	18:59	19:29	20:04	20:39	21:14	21:46	22:16	22:46	23:16	23:46
Shanganagh Park (3547)	....	....	....	....	....	....	....	....	....	....	....	....	....	....
St Anne's Church (3543)	17:09	17:39	18:09	18:41	19:11	19:41	20:16	20:51	21:26	21:56	22:26	22:56	23:26	23:56
Bray Station (4169) arr	17:21	17:51	18:21	18:53	19:23	19:53	20:28	21:03	21:38	22:06	22:36	23:06	23:36	24:06
Bray Station (4169) dep	17:26	17:56	18:26	18:58	19:28	19:58	20:35	21:10	21:45	22:10	22:40	23:10	23:40	24:10
Boghall Road (4137)	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Wolfe Tone Square (4147)	17:35	18:05	18:35	19:07	19:37	20:07	20:42	21:17	21:52	22:17	22:47	23:17	23:47	24:17
Kilmacanogue (6000)	17:43	18:13	18:43	19:15	19:45	20:15	20:50	21:25	22:00	22:25	22:55	23:25	23:55	24:25

***45B - No Sunday Service**

A A A

84n

Buses from/to
D'Olier St. Towards Greystones
Operative Date: 01/12/2018
Version: TT 8.1

From D'Olier St. **Towards** Greystones

Areas Served

Ringsend, Sandymount Tower, Strand Road, Merrion Gates, Blackrock Park, Temple Hill, Deansgrange, Cabinteely Village, Shankill, Woodbrook roundabout, Bray Main Street, Greystones, Charlesland

NOTE
Buses may leave more frequently if demand dictates

Monday - Thursday	Friday - Saturday	Sunday
	00:00 02:00 04:00	

Pick-up Points Ringsend Village, Blackrock Park, Cabinteely, Bray Main Street (outside McCarthy's Shop)

All times are off peak estimates

Fare Information

Leap Fare: €4.50

Cash Fare: €6.60

Customer Comment Desk: (01) 8734222
Phone lines open: Monday to Saturday 08:30hrs – 18:00hrs (except public holidays)

A A A

84/a

Buses from/to
From Blackrock To Newcastle
Operative Date: 28/11/2021
Version: TT 21.1

From Blackrock Towards Newcastle

An Charraig Dhubh , Gráinseach an Déin , Cabán tSíle , Ghleann Bhríde (Stáisiún Luas) , Bré , An Caisleán Nua

Monday - Friday

Buses leave terminus at

Blackrock		07:10	07:30a	08:00	08:30a	09:00	09:30a	10:00
Bray	07:10	08:00	08:15a	08:50	09:35a	09:50	10:20a	10:50
Greystones	07:25	08:25		09:10		10:05		11:05
Kilcoole	07:35	08:35		09:20		10:15		11:15
Newcastle	07:45	08:45		09:30		10:25		11:25

Blackrock	10:15h	11:00k	12:00	13:00	14:00k	14:30t	15:00	16:00
Bray	11:45h	11:50k	12:45	13:50	14:50k	15:20t	15:50	16:50
Greystones		12:05k	13:05	14:05	15:05k	15:40t	16:10	17:10
Kilcoole		12:15k	13:15	14:15	15:15k	15:50t	16:20	17:20
Newcastle		12:25k	13:25	14:25	15:25k	16:00t	16:30	17:30

Blackrock	16:20a	17:00	17:20a	18:00k	19:00	19:20k	20:20	21:20
Bray	17:25a	17:50	18:25a	18:50k	19:50	20:00k	21:00	22:00
Greystones		18:15		19:10k	20:05	20:25k	21:20	22:20
Kilcoole		18:25		19:20k	20:15	20:35k	21:30	22:30
Newcastle		18:35		19:30k	20:25	20:45k	21:40	22:40

Blackrock	22:20	23:30						
Bray	23:00	00:10						
Greystones	23:20	00:20						
Kilcoole	23:30	00:30						
Newcastle	23:40	00:40						

Route Variations
a From Blackrock Towards Bray Rail Station.
k Operates via Sea Rd, Kilcoole.
h 84a operates from St. Vincent's Hospital towards Bray Rail Station.
t Term time only

Saturday

Buses leave terminus at

Blackrock	06:40	07:40	09:00	10:40k	11:30	12:35k	14:00	15:05
Bray	07:30	08:30	09:45	11:25k	12:20	13:25k	14:50	16:00
Greystones	07:40	08:40	10:00	11:40k	12:35	13:40k	15:05	16:15
Kilcoole	07:45	08:45	10:05	11:45k	12:40	13:45k	15:10	16:20
Newcastle	07:55	08:50	10:10	11:50k	12:45	13:50k	15:15	16:25

Blackrock	16:20k	17:35	18:40k	19:55	21:00	22:00	23:30
Bray	17:10k	18:20	19:30k	20:45	21:50	22:50	00:10
Greystones	17:25k	18:35	19:45k	21:00	22:00	23:00	00:20
Kilcoole	17:30k	18:40	19:50k	21:05	22:05	23:05	00:25
Newcastle	17:40k	18:45	19:55k	21:10	22:10	23:10	00:30

Sunday

Buses leave terminus at

Blackrock	10:35	11:45	12:55k	14:15	15:20	16:25k	17:45	18:50
Bray	11:15	12:25	13:35k	14:55	16:00	17:05k	18:25	19:30
Greystones	11:40	12:45	13:55k	15:15	16:20	17:25k	18:45	19:50
Kilcoole	11:45	12:50	14:00k	15:20	16:25	17:30k	18:50	19:55
Newcastle	11:50	12:55	14:05k	15:25	16:30	17:35k	18:55	20:00

Blackrock	19:55k	21:05	22:05	23:30
Bray	20:35k	21:45	22:45	00:00
Greystones	20:55k	22:05	23:00	00:15
Kilcoole	21:00k	22:10	23:05	00:20
Newcastle	21:05k	22:15	23:10	00:25

Blackrock » 10mins » Deans Grange » 5mins » Cabinteely » 5mins » Brides Glen (Luas Station) » 10mins » Bray » 40mins » Newcastle

All times are off peak estimates

From Newcastle Towards Blackrock

An Caisleán Nua , Bré , Ghleann Bhríde (Stáisiún Luas) , Cabán tSíle , Gráinseach an Déin , An Charraig Dhubh

Monday - Friday

Buses leave terminus at

Route Variations
a From Bray Rail Station Towards Blackrock
k Operates via Sea Rd, Kilcoole
h 84a operates from Bray Rail Station towards St. Vincent's Hospital
t Term time only

Newcastle	05:00	05:55			06:50k		07:20kt	07:50
Kilcoole	05:05	06:00			06:55k		07:25kt	07:55
Greystones	05:20	06:15			07:15k		07:40kt	08:15
Bray	05:45	06:40	06:55a	07:20a	07:40k	08:15h	08:20kt	08:40
Blackrock	06:25	07:20	07:30a	08:15a	08:30k	09:15h	09:20kt	09:30
Newcastle		09:10		09:50	10:50k	11:50	12:50k	13:50
Kilcoole		09:15		09:55	10:55k	11:55	12:55k	13:55
Greystones		09:35		10:10	11:10k	12:10	13:10k	14:10
Bray	09:35h	09:50	10:20h	10:40	11:45k	12:40	13:40k	14:40
Blackrock	10:10h	10:30	11:00h	11:20	12:25k	13:20	14:20k	15:20
Newcastle		14:50k		15:50	16:20t		16:50k	
Kilcoole		14:55k		15:55	16:25t		16:55k	
Greystones		15:10k		16:10	16:40t		17:10k	
Bray	15:30a	15:40k	16:20a	16:40	17:10t	17:25a	17:50k	18:25a
Blackrock	16:10a	16:20k	17:20a	17:30		18:15a	18:40k	19:15a
Newcastle	17:50	18:50	19:50	20:50	21:50	22:50		
Kilcoole	17:55	18:55	19:55	20:55	21:55	22:55		
Greystones	18:10	19:10	20:10	21:10	22:10	23:10		
Bray	18:40	19:40	20:35	21:30	22:40	23:30		
Blackrock	19:30	20:20	21:15	22:10	23:20	00:00		

Saturday

Buses leave terminus at

Newcastle	05:15	06:05	07:20	08:40k	09:50	10:50k	12:15	13:20
Kilcoole	05:20	06:10	07:25	08:45k	09:55	10:55k	12:20	13:25
Greystones	05:35	06:25	07:40	09:10k	10:10	11:10k	12:40	13:40
Bray	05:55	06:45	08:05	09:20k	10:30	11:45k	12:55	14:05
Blackrock	06:30	07:25	08:45	10:00k	11:10	12:25k	13:35	14:45
Newcastle	14:20k	15:45	16:50	18:20	19:15k	20:20	21:50	22:50
Kilcoole	14:25k	15:50	16:55	18:25	19:20k	20:25	21:55	22:55
Greystones	14:40k	16:10	17:10	18:40	19:40k	20:40	22:10	23:10
Bray	15:05k	16:30	17:40	19:00	19:55k	21:05	22:30	23:30
Blackrock	15:45k	17:10	18:20	19:40	20:35k	20:40	23:05	00:00
Newcastle	23:30							
Kilcoole	23:35							
Greystones	23:50							
Bray	00:10							
Blackrock								

Buses leave terminus at

Sunday

Newcastle	08:55k	10:00	11:00k	12:25	13:30	14:35	15:55k	17:00
Kilcoole	09:00k	10:05	11:05k	12:30	13:35	14:40	16:00k	17:05
Greystones	09:15k	10:20	11:20k	12:45	13:50	14:55	16:15k	17:20
Bray	09:30k	10:40	11:50k	13:05	14:10	15:20	16:35k	17:40
Blackrock	10:00k	11:10	12:20k	13:35	14:40	15:50	17:05k	18:10

Newcastle	18:05	19:25	20:30	21:35	22:55	23:30
Kilcoole	18:10	19:30	20:35	21:40	23:00	23:35
Greystones	18:25	19:45	20:50	21:55	23:15	23:50
Bray	18:50	20:05	21:10	22:20	23:30	00:05
Blackrock	19:20	20:35	21:40	22:50	00:00	

Newcastle » 40mins » Bray » 10mins » Brides Glen (Luas Station) » 5mins » Cabinteely » 5mins » Deans Grange » 10mins » Blackrock

All times are off peak estimates

Fare Stages

38	62	Blackrock Temple Road	
39	61	Stradbrook Rd. (Newtown Park Ave.)	
40	60	Stradbrook	
41	59	Deans Grange Rd. (Springhill Park)	
42	58	Deans Grange Cemetery	
43	57	Deans Grange Cross	
44	56	Cornelscourt	
45	55	Monaloe Corner	
46	54	Cabinteely Village	
47	53	Bray Rd. (Marley)	
48	52	Beechgrove Cottages	
49	51	Loughlinstown (Cullenswood Rd.)	
50	50	Loughlinstown Hospital	
51	49	Shankill Church	
52	48	Shankill (The Gap)	
53	47	Crinkin Lane	
54	46	Crinkin Church	
55	45	Woodbrook Golf Club	
56	44	Old Connaught	
57	43	Sunnybank	
58	42	Bray Rail Station	
59	41	Putland Rd. (The Vevay)	
60	40	Boghall Rd.	
61	39	Lord Meath's Gate	

Fare Information

Download fare chart for further information on stages and fares.

Customer Comment Desk: (01) 8734222
Phone lines open: Monday to Saturday 08:30hrs – 18:00hrs (except public holidays)

APPENDIX B

B	DART Timetable Extract *(Correct at Time of Collating Data & Writing Report)*

		MONDAY TO FRIDAY									
		..	..	..	..	..	..	..	..	..	..
		..	..	..	..	..	..	..	..	..	..
GOREY	Dep	..	..	..	..	..	..	..	..	..	05:50
Arklow	Dep	..	..	..	..	..	..	..	..	..	06:03
Rathdrum	Dep	..	..	..	..	..	..	..	..	..	06:21
Wicklow	Dep	..	..	..	..	..	..	..	..	..	06:33
Kilcoole	Dep	..	..	..	..	..	..	..	..	..	06:43
GREYSTONES	Dep	..	05:44	..	..	..	06:24	..	..	..	06:48
BRAY Daly	Arr	..	05:54	..	..	..	06:34	..	..	..	06:59
BRAY Daly	Dep	05:35	05:55	..	06:15	..	06:35	..	..	06:55	07:00
Shankill	Dep	05:40	06:00	..	06:20	..	06:40	..	..	07:00	..
Killiney	Dep	05:42	06:02	..	06:22	..	06:42	..	..	07:02	..
Dalkey	Dep	05:47	06:07	..	06:27	..	06:47	..	..	07:07	..
Glenageary	Dep	05:50	06:10	..	06:30	..	06:50	..	..	07:10	..
Sandycove & Glasthule	Dep	05:52	06:12	..	06:32	..	06:52	..	..	07:12	..
DUN LAOGHAIRE Mallin	Dep	05:55	06:15	..	06:35	..	06:55	..	..	07:15	07:21
Salthill & Monkstown	Dep	05:57	06:17	..	06:37	..	06:57	..	..	07:17	..
Seapoint	Dep	05:59	06:19	..	06:39	..	06:59	..	..	07:19	..
Blackrock	Dep	06:01	06:22	..	06:41	..	07:01	..	..	07:21	07:27
Booterstown	Dep	06:04	06:24	..	06:44	..	07:04	..	..	07:24	..
Sydney Parade	Dep	06:06	06:26	..	06:46	..	07:06	..	..	07:26	..
Sandymount	Dep	06:09	06:29	..	06:49	..	07:09	..	..	07:29	..
Lansdowne Road	Dep	06:11	06:31	..	06:51	..	07:11	..	..	07:31	07:35
Grand Canal Dock	Dep	06:15	06:35	..	06:55	..	07:15	..	07:26	07:35	07:38
DUBLIN Pearse	Dep	06:17	06:37	..	06:57	07:09	07:18	..	07:29	07:37	07:41
Tara Street Ⓐ	Dep	06:19	06:39	..	06:59	07:11	07:20	..	07:31	07:39	07:44
DUBLIN Connolly ⓁⒶ	Arr	06:21	06:41	..	07:01	07:14	07:22	..	07:35	07:41	07:48
DUBLIN Connolly	Dep	06:23	06:42	06:52	07:03	07:15	07:23	07:35	07:36	07:43	..
Clontarf Road	Dep	06:28	06:48	06:56	07:08	..	07:28	..	To Hazelhatch	07:48	..
Killester	Dep	06:30	06:50	06:59	07:10	..	07:30	..		07:50	..
Harmonstown	Dep	06:32	06:52	07:01	07:12	..	07:32	..		07:52	..
Raheny	Dep	06:34	06:54	07:03	07:14	..	07:34	..		07:54	..
Kilbarrack	Dep	06:36	06:56	07:05	07:16	..	07:36	..		07:57	..
Howth Jctn. & Donaghmede	Dep	06:38	06:58	07:11	07:18	..	07:38	..		08:00	..
Bayside	Dep	..	07:01	..	..	..	07:41	..	..	08:02	..
Sutton	Dep	..	07:03	..	..	..	07:43	..	..	08:05	..
HOWTH	Arr	..	07:09	..	..	..	07:49	..	..	08:10	..
Clongriffin	Dep	06:41	..	07:13	07:26	..	..	..	..	..	..
Portmarnock	Dep	06:44	..	07:16	07:29	..	..	..	..	..	..
MALAHIDE	Arr	06:52	..	07:21	07:34	07:29	..	..	..	..	..
Donabate	Dep	..	..	..	..	07:34	..	..	..	..	..
Rush & Lusk	Dep	..	..	..	..	07:38	..	..	..	..	..
Skerries	Dep	..	..	..	..	07:44	..	..	..	..	..
BALBRIGGAN	Arr	..	..	..	..	07:49	..	..	..	..	..
Gormanston	Dep	..	..	..	..	..	..	..	..	..	..
Laytown	Dep	..	..	..	..	07:57	..	..	..	..	..
DROGHEDA MacBride	Arr	..	..	..	..	08:05	..	08:10	..	..	..
DUNDALK Clarke	Arr	..	..	..	..	..	..	08:31	..	..	..
Newry	Arr	..	..	..	..	..	..	08:48	..	..	..
		..	..	..	..	..	..	To	..	..	..
		..	..	..	..	..	..	Belfast	..	..	..

Ⓐ Bus connection to/from Dublin Airport available nearby
Ⓛ LUAS Tram Link to/from Dublin City Centre and Heuston Station

		MONDAY TO FRIDAY									
		..	..	..	..	..	..	..	..	..	..
		..	..	..	..	..	..	..	..	..	..
GOREY	**Dep**	..	..	..	..	..	..	..	..	..	..
Arklow	**Dep**	..	..	..	..	..	..	..	..	..	..
Rathdrum	**Dep**	..	..	..	..	..	..	..	..	..	..
Wicklow	**Dep**	..	..	..	..	..	..	..	..	..	..
Kilcoole	**Dep**	..	..	..	..	..	..	..	..	..	..
GREYSTONES	**Dep**	..	06:54	..	..	..	..	..	..	07:24	..
BRAY Daly	**Arr**	..	07:04	..	..	..	..	..	..	07:34	..
BRAY Daly	**Dep**	..	07:05	..	..	07:15	..	07:25	..	07:35	..
Shankill	**Dep**	..	07:10	..	..	07:19	..	07:30	..	07:40	..
Killiney	**Dep**	..	07:12	..	..	07:22	..	07:32	..	07:42	..
Dalkey	**Dep**	..	07:17	..	..	07:27	..	07:37	..	07:47	..
Glenageary	**Dep**	..	07:20	..	..	07:30	..	07:40	..	07:50	..
Sandycove & Glasthule	**Dep**	..	07:22	..	..	07:32	..	07:42	..	07:52	..
DUN LAOGHAIRE Mallin	**Dep**	..	07:25	..	..	07:35	..	07:45	..	07:55	..
Salthill & Monkstown	**Dep**	..	07:27	..	..	07:37	..	07:47	..	07:57	..
Seapoint	**Dep**	..	07:29	..	..	07:39	..	07:49	..	07:59	..
Blackrock	**Dep**	..	07:31	..	..	07:41	..	07:51	..	08:01	..
Booterstown	**Dep**	..	07:34	..	..	07:44	..	07:54	..	08:04	..
Sydney Parade	**Dep**	..	07:36	..	..	07:46	..	07:56	..	08:06	..
Sandymount	**Dep**	..	07:39	..	..	07:49	..	07:59	..	08:09	..
Lansdowne Road	**Dep**	..	07:41	..	..	07:51	..	08:01	..	08:11	..
Grand Canal Dock	**Dep**	..	07:45	07:48	..	07:56	..	08:05	08:10	08:15	..
DUBLIN Pearse	**Dep**	..	07:47	07:50	07:54	07:58	08:04	08:07	08:13	08:17	08:23
Tara Street Ⓐ	**Dep**	..	07:49	07:52	07:57	08:00	08:06	08:09	08:15	08:19	08:25
DUBLIN Connolly ⓁⒶ	**Arr**	..	07:51	07:55	08:00	08:02	08:09	08:11	08:18	08:21	08:28
DUBLIN Connolly	**Dep**	07:50	07:53	07:56	08:00	08:04	08:11	08:12	08:19	08:23	08:29
Clontarf Road	**Dep**	..	07:58	To Hazelhatch	..	08:09	To Maynooth	08:18	To Newbridge	08:28	To Maynooth
Killester	**Dep**	..	08:00		..	08:11		08:20		08:30	
Harmonstown	**Dep**	..	08:02		..	08:13		08:22		08:32	
Raheny	**Dep**	..	08:04		..	08:15		08:24		08:34	
Kilbarrack	**Dep**	..	08:06		..	08:17		08:26		08:36	
Howth Jctn. & Donaghmede	**Dep**	..	08:08		..	08:19		08:28		08:38	
Bayside	**Dep**	..	..	..	..	08:22	..	..	..	08:41	..
Sutton	**Dep**	..	..	..	..	08:24	..	..	..	08:43	..
HOWTH	**Arr**	..	..	..	..	08:30	..	..	..	08:49	..
Clongriffin	**Dep**	..	08:11	..	..	..	..	08:31	..	..	..
Portmarnock	**Dep**	..	08:14	..	..	..	..	08:34	..	..	..
MALAHIDE	**Arr**	08:14	08:22	..	08:26	..	..	08:40	..	..	..
Donabate	**Dep**	..	..	..	08:31	..	..	..	..	..	..
Rush & Lusk	**Dep**	..	..	..	08:35	..	..	..	..	..	..
Skerries	**Dep**	08:25	..	..	08:41	..	..	..	..	..	..
BALBRIGGAN	**Arr**	08:30	..	..	08:46	..	..	..	..	..	..
Gormanston	**Dep**	08:35	..	..	08:51	..	..	..	..	..	..
Laytown	**Dep**	08:40	..	..	08:56	..	..	..	..	..	..
DROGHEDA MacBride	**Arr**	08:49	..	..	09:04	..	..	..	..	..	..
DUNDALK Clarke	**Arr**	..	..	..	09:30	..	..	..	..	..	..
Newry	**Arr**	..	..	..	..	..	..	..	..	..	..
		..	..	..	..	..	..	..	..	..	..
		..	..	..	..	..	..	..	..	..	..

Ⓐ Bus connection to/from Dublin Airport available nearby
Ⓛ LUAS Tram Link to/from Dublin City Centre and Heuston Station

		MONDAY TO FRIDAY									
		..	..	From	..	..	..	..	..	..	..
		..	..	Rosslare	..	..	..	..	..	..	..
GOREY	**Dep**	..	..	06:43	..	..	..	..	..	..	..
Arklow	**Dep**	..	..	06:58	..	..	..	..	..	..	..
Rathdrum	**Dep**	..	..	07:16	..	..	..	..	..	..	..
Wicklow	**Dep**	..	..	07:31	..	..	..	..	..	..	..
Kilcoole	**Dep**	..	..	07:41	..	..	..	..	..	..	..
GREYSTONES	**Dep**	..	..	07:48	07:54	..	..	..	..	..	08:24
BRAY Daly	**Arr**	..	..	07:58	08:04	..	..	..	..	..	08:34
BRAY Daly	**Dep**	07:45	07:55	07:59	08:05	08:15	..	08:25	..	..	08:35
Shankill	**Dep**	07:50	08:00	..	08:10	08:20	..	08:30	..	..	08:40
Killiney	**Dep**	07:52	08:02	..	08:12	08:22	..	08:32	..	..	08:42
Dalkey	**Dep**	07:57	08:07	..	08:17	08:27	..	08:37	..	..	08:47
Glenageary	**Dep**	08:00	08:10	..	08:20	08:30	..	08:40	..	..	08:50
Sandycove & Glasthule	**Dep**	08:02	08:12	..	08:22	08:32	..	08:42	..	..	08:52
DUN LAOGHAIRE Mallin	**Dep**	08:05	08:15	08:20	08:25	08:35	..	08:45	..	..	08:55
Salthill & Monkstown	**Dep**	08:07	08:17	..	08:27	08:37	..	08:47	..	..	08:57
Seapoint	**Dep**	08:09	08:19	..	08:29	08:39	..	08:49	..	..	08:59
Blackrock	**Dep**	08:11	08:21	08:27	08:31	08:41	..	08:51	..	..	09:01
Booterstown	**Dep**	08:14	08:24	..	08:34	08:44	..	08:54	..	..	09:04
Sydney Parade	**Dep**	08:16	08:26	..	08:36	08:46	..	08:56	..	..	09:06
Sandymount	**Dep**	08:19	08:29	..	08:39	08:49	..	08:59	..	..	09:09
Lansdowne Road	**Dep**	08:21	08:31	08:35	08:41	08:51	..	09:01	..	..	09:11
Grand Canal Dock	**Dep**	08:25	08:35	08:38	08:45	08:54	..	09:05	..	09:11	09:15
DUBLIN Pearse	**Dep**	08:27	08:37	08:41	08:47	08:57	..	09:07	09:10	09:14	09:17
Tara Street Ⓐ	**Dep**	08:29	08:39	08:44	08:49	08:59	..	09:09	09:12	09:16	09:19
DUBLIN Connolly ⓁⒶ	**Arr**	08:31	08:41	08:47	08:51	09:01	..	09:11	09:15	09:19	09:21
DUBLIN Connolly	**Dep**	08:33	08:43	08:50	08:53	09:03	09:10	09:12	09:17	09:20	09:22
Clontarf Road	**Dep**	08:38	08:48	..	08:58	09:09	..	09:17	To Maynooth	To Hazelhatch	09:27
Killester	**Dep**	08:40	08:50	..	09:00	09:12	..	09:19			09:29
Harmonstown	**Dep**	08:42	08:52	..	09:02	09:14	..	09:21			09:31
Raheny	**Dep**	08:44	08:54	..	09:04	09:16	..	09:23			09:33
Kilbarrack	**Dep**	08:46	08:56	..	09:06	09:18	..	09:25			09:35
Howth Jctn. & Donaghmede	**Dep**	08:48	08:58	..	09:08	09:20	..	09:27			09:37
Bayside	**Dep**	..	09:01	..	..	09:22	..	09:30	..	..	09:40
Sutton	**Dep**	..	09:03	..	..	09:25	..	09:32	..	..	09:42
HOWTH	**Arr**	..	09:09	..	..	09:31	..	09:38	..	..	09:48
Clongriffin	**Dep**	08:55	..	..	09:11	..	..	..	..	..	..
Portmarnock	**Dep**	08:58	..	..	09:14	..	..	..	..	..	..
MALAHIDE	**Arr**	09:04	..	09:14	09:20	..	09:27	..	..	..	..
Donabate	**Dep**	..	..	09:19	..	..	..	..	..	..	..
Rush & Lusk	**Dep**	..	..	09:23	..	..	..	..	..	..	..
Skerries	**Dep**	..	..	09:29	..	..	09:37	..	..	..	..
BALBRIGGAN	**Arr**	..	..	09:34	..	..	09:43	..	..	..	..
Gormanston	**Dep**	..	..	09:39	..	..	..	..	..	..	..
Laytown	**Dep**	..	..	09:44	..	..	09:51	..	..	..	..
DROGHEDA MacBride	**Arr**	..	..	09:52	..	..	09:59	..	..	..	..
DUNDALK Clarke	**Arr**	..	..	10:18	..	..	..	..	..	..	..
Newry	**Arr**	..	..	..	..	..	..	..	..	..	..
		..	..	..	..	..	..	..	..	..	..
		..	..	..	..	..	..	..	..	..	..

Ⓐ Bus connection to/from Dublin Airport available nearby
Ⓛ LUAS Tram Link to/from Dublin City Centre and Heuston Station

		MONDAY TO FRIDAY										
		..	..	..	..	..	..	..	..	..	From	..
		..	..	..	..	..	..	..	..	..	Rosslare	..
GOREY	**Dep**	..	..	..	..	..	..	..	..	..	08:25	..
Arklow	**Dep**	..	..	..	..	..	..	..	..	..	08:38	..
Rathdrum	**Dep**	..	..	..	..	..	..	..	..	..	08:54	..
Wicklow	**Dep**	..	..	..	..	..	..	..	..	..	09:05	..
Kilcoole	**Dep**	..	..	..	..	..	..	..	..	..	..	..
GREYSTONES	**Dep**	..	..	..	..	08:54	..	..	..	..	09:19	09:24
BRAY Daly	**Arr**	..	..	..	..	09:04	..	..	..	..	09:28	09:34
BRAY Daly	**Dep**	..	08:45	08:55	09:00	09:05	..	..	09:15	09:25	09:29	09:35
Shankill	**Dep**	..	08:50	09:00	..	09:10	..	..	09:20	09:29	..	09:40
Killiney	**Dep**	..	08:52	09:02	..	09:12	..	..	09:22	09:32	..	09:42
Dalkey	**Dep**	..	08:57	09:07	..	09:17	..	..	09:27	09:37	..	09:47
Glenageary	**Dep**	..	09:00	09:10	..	09:20	..	..	09:30	09:40	..	09:50
Sandycove & Glasthule	**Dep**	..	09:02	09:12	..	09:22	..	..	09:32	09:42	..	09:52
DUN LAOGHAIRE Mallin	**Dep**	..	09:05	09:15	09:20	09:25	..	..	09:35	09:45	09:49	09:55
Salthill & Monkstown	**Dep**	..	09:07	09:17	..	09:27	..	..	09:37	09:47	..	09:57
Seapoint	**Dep**	..	09:09	09:19	..	09:29	..	..	09:39	09:49	..	09:59
Blackrock	**Dep**	..	09:11	09:21	09:27	09:31	..	..	09:41	09:51	..	10:01
Booterstown	**Dep**	..	09:14	09:24	..	09:34	..	..	09:44	09:54	..	10:04
Sydney Parade	**Dep**	..	09:16	09:26	..	09:36	..	..	09:46	09:56	..	10:06
Sandymount	**Dep**	..	09:19	09:29	..	09:39	..	..	09:49	09:59	..	10:09
Lansdowne Road	**Dep**	..	09:21	09:31	09:36	09:41	..	..	09:51	10:01	..	10:11
Grand Canal Dock	**Dep**	..	09:25	09:35	09:39	09:45	09:48	..	09:55	10:05	..	10:16
DUBLIN Pearse	**Dep**	..	09:27	09:38	09:42	09:47	09:51	09:54	09:58	10:07	10:12	10:19
Tara Street Ⓐ	**Dep**	..	09:29	09:40	09:45	09:49	09:53	09:56	10:00	10:09	10:15	10:22
DUBLIN Connolly Ⓛ Ⓐ	**Arr**	..	09:31	09:42	09:49	09:53	09:56	09:59	10:02	10:11	10:18	10:25
DUBLIN Connolly	**Dep**	09:30	09:33	09:43	..	09:54	09:57	10:00	10:03	10:13	..	10:26
Clontarf Road	**Dep**	..	09:38	09:48	..	09:58	To Hazelhatch	..	10:08	10:18	..	10:31
Killester	**Dep**	..	09:40	09:50	..	10:01		..	10:10	10:20	..	10:34
Harmonstown	**Dep**	..	09:42	09:52	..	10:03		..	10:12	10:22	..	10:36
Raheny	**Dep**	..	09:44	09:55	..	10:05		..	10:14	10:24	..	10:38
Kilbarrack	**Dep**	..	09:46	09:58	..	10:07		..	10:16	10:26	..	10:40
Howth Jctn. & Donaghmede	**Dep**	..	09:48	10:01	..	10:09		..	10:18	10:28	..	10:42
Bayside	**Dep**	..	..	10:04	..	..	..	..	10:21	..	..	10:44
Sutton	**Dep**	..	..	10:06	..	..	..	..	10:23	..	..	10:47
HOWTH	**Arr**	..	..	10:11	..	..	..	..	10:29	..	..	10:53
Clongriffin	**Dep**	..	09:51	..	..	10:11	..	..	..	10:31	..	..
Portmarnock	**Dep**	..	09:54	..	..	10:14	..	..	..	10:34	..	..
MALAHIDE	**Arr**	..	10:00	..	..	10:20	..	10:24	..	10:40	..	..
Donabate	**Dep**	..	..	..	..	..	..	10:29	..	..	..	..
Rush & Lusk	**Dep**	..	..	..	..	..	..	10:33	..	..	..	..
Skerries	**Dep**	..	..	..	..	..	..	10:39	..	..	..	..
BALBRIGGAN	**Arr**	..	..	..	..	..	..	10:44	..	..	..	..
Gormanston	**Dep**	..	..	..	..	..	..	10:48	..	..	..	..
Laytown	**Dep**	..	..	..	..	..	..	10:53	..	..	..	..
DROGHEDA MacBride	**Arr**	10:04	..	..	..	..	..	11:01	..	..	..	..
DUNDALK Clarke	**Arr**	10:25	..	..	..	..	..	..	..	..	..	..
Newry	**Arr**	10:46	..	..	..	..	..	..	..	..	..	..
		To	..	..	..	..	..	..	..	..	..	..
		Belfast	..	..	..	..	..	..	..	..	..	..

Ⓐ Bus connection to/from Dublin Airport available nearby
Ⓛ LUAS Tram Link to/from Dublin City Centre and Heuston Station

APPENDIX I

Parking Management/Strategy Report

consulting engineers

NRB

PARKING MANAGEMENT /STRATEGY REPORT

(Appendix I)

for

Proposed Apartment Development

At

Castle Street,
Bray, Co Wicklow.

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 This Parking Strategy Report (PSR) has been prepared by NRB Consulting Engineers Ltd and addresses the adequacy of the parking provision and sets out the proposed management strategy for same, for the proposed residential apartment development on zoned development lands at Castle Street, Bray, Co Wicklow.

1.2 The local town centre area and the subject site is already a long-established destination, containing a mixture of commercial, retail, employment & residential development and in these terms has very well established urban transportation characteristics in its own right. The proposed development, being on a prominent & highly accessible site should be considered in this context. A site location plan for the site is included below as ***Figure 1.1***.

Figure 1.1 - Site Location

1.3 The development consists of a total of 139 apartments, a mix of units in a total of 2 blocks over podium slab, with an under-croft area together with a supporting ancillary crèche & small commercial units at ground level fronting onto Castle Street. Layout plans are included within Appendix A of the TA Report.

1.4 Visitor car and bicycle parking is to be provided at ground level, with residential bicycle storage within the under-croft, visitor bicycle parking at surface level, with a reduced number of private car parking spaces along with bins storage and all associated site works. A total of 59 car parking spaces are provided for the development including mobility impaired spaces. Provision is made to allow the future provision car sharing (*GoCar*) spaces if required. A total of 330 Bicycle Parking Spaces are provided, 260 for residents & 70 visitor cycle parking spaces.

1.5 This document specifically presents the rationale behind the provision of vehicle parking (including mobility impaired parking, car share spaces, motorcycle parking, service vehicle parking) and cycle parking being proposed as part of the subject site development proposals. The Report also sets out the management measures which will be implemented to allocate the use and control of parking provided at the proposed development site.

1.6 The document sets out the principles of the parking management strategy proposed at the residential development and should be read in conjunction with the following complementary reports;

- Traffic & Transportation Assessment (TTA),
- Mobility Management Plan (MMP), and
- Bus/DART Capacity & Demand Report.

1.7 The TTA and the associated Reports set out the details of the multi-modal accessibility of the site, together with providing details of the existing conditions pertaining.

2.0 POLICY CONTEXT AND STANDARDS

CAR PARKING POLICY

2.1 The adopted 'Sustainable Urban Housing: Design Standards for New Apartments Guidelines for Planning Authorities', updates previous guidance in the context of greater evidence and knowledge of current and likely future housing demand in Ireland taking account of the Housing Agency National Statement on Housing Demand and Supply and projected need for additional housing supply out to 2020, the Government's action programme on housing and homelessness Rebuilding Ireland & National Planning Framework Ireland 2040, (subsequent to 2015 guidelines).

2.2 These new guidelines address car parking and include an objective to 'Remove requirements for car-parking in certain circumstances where there are better mobility solutions, and to reduce costs.' Under Car Parking - Section 4.18 the guidelines acknowledge that the quantum of car parking or the requirement for any such provision for apartment developments will vary, having regard to the types of location in cities and towns that may be suitable for apartment development, broadly based on proximity and accessibility criteria.

2.3 Under Section 4.21 the guidelines note that in larger scale and higher density developments that are well served by public transport, the default policy is for car parking provision to be **wholly eliminated or substantially reduced**. Specifically Paragraph 4.21 states

> ***Intermediate Urban Locations***
>
> ***In suburban/urban locations served by public transport or close to town centres or employment areas and particularly for housing schemes with more than 45 dwellings per hectare net (18 per acre), planning authorities must consider a reduced overall car parking standard and apply an appropriate maximum car parking standard.***

2.4 In terms of the stated Policy, we believe that the subject site meets all the requirements for reducing the provision of Private Car Parking, under the headings;

High Density Development	✓
Comprising Wholly of Apartments	✓
Central Location	✓
Well Served by Public Transport	✓

2.5 The National Apartment Guidance states (Paragraph 4.23);

For all types of location, where it is sought to eliminate or reduce car parking provision, it is necessary to ensure, where possible, the provision of an appropriate number of drop off, service, visitor parking spaces and parking for the mobility impaired. Provision is also to be made for alternative mobility solutions including facilities for car sharing club vehicles and cycle parking and secure storage. It is also a requirement to demonstrate specific measures that enable car parking provision to be reduced or avoided

2.6 Conscious that the scheme is intended to be actively marketed as Reduced Car Dependency, the layout has been designed with the above issues in mind.

2.7 For the proposed development, given the mix of units, it is anticipated that there will be an associated lower car ownership & dependency for this nature of scheme. Given the slightly restricted number of spaces being provided, the entire scheme will be actively marketed and promoted as a "***Reduced Car Dependency***" scheme, and this will be communicated from the outset as part of sales and marketing. The development will also be managed on an on-going basis to ensure that the Reduced Car Dependency nature of the development is continually promoted and enhanced.

2.8 In terms of ***specific measures*** to enable car parking provision to be reduced to the level proposed, with a parking ratio of 0.42, the specific measures are.

- The Active Management and Marketing of the Development from the outset as Reduced Car Dependency',
- Restricted Dedicated Car Parking is intended to be provided to Residents and will be specifically associated with specific private sales or rental properties (and same will be Specified in associated Rental Agreements),
- The Location within walking/cycling distance of all Bray Town Centre amenities, services and facilities,
- Associated Employment Opportunities locally,
- Proximity to the DART at Bray,
- Very highly accessible by bus,

- Provision for Dedicated "Go Car" spaces/cars within the development,

- Copious Cycle Parking and Cycle Storage,

- On site Security and Management by management/security staff and CCTV that will ensure the car parking areas are monitored and policed, with a clamping system in operation, so that the car parking restrictions are closely controlled and enforced,

  and

- The Implementation of a working Mobility Management Plan

Bicycle Parking

2.9 Notwithstanding the lower Bicycle Parking & Storage requirements of the Wicklow Development Plan, cycle storage facilities are generally being provided to meet the requirements of The Department of Housing Planning & Local Government "***Sustainable Urban Housing Design Standards for New Apartments***" to meet the satisfaction of An Bord Pleanála.

> *Quantity* – a general minimum standard of 1 cycle storage space per bedroom shall be applied. For studio units, at least 1 cycle storage space shall be provided. Visitor cycle parking shall also be provided at a standard of 1 space per 2 residential units. Any deviation from these standards shall be at the discretion of the planning authority and shall be justified with respect to factors such as location, quality of facilities proposed, flexibility for future enhancement/enlargement, etc.

Figure 2.1 - Extract from National Apartment Guidelines

2.10 There are a total of 330 Bicycle Parking spaces provided, to be divided between residential spaces and visitor spaces. Applying the Guideline requirements, there are a total of 260 Bedrooms in the development, requiring 260 residential bicycle parking spaces. With 139 apartments, this requires 70 visitor bicycle parking spaces. This results in a Guideline requirement totalling 330 spaces for the residential elements.

3.0 CAR PARKING PROVISION

Overview

3.1 The ground floor area where the parking is provided within the development contains a mix of service areas, access, circulation, bin storage, landscaping and of course car & bicycle parking. An extract from the ground floor plan is included below as ***Figure 3.1.***

Figure 3.1 – Extract from Ground Floor Drawing Showing Proposed Car Parking

3.2 A total of 59 car parking spaces are provided for the development including mobility impaired spaces. Provision is made to allow the provision of 3 x car sharing (*GoCar*) spaces. A total of 330 Bicycle Parking Spaces are provided, with 260 for residents and 70 visitor bicycle parking spaces.

3.3 The car parking space provision is broken down as follows;

- 3 no spaces for Mobility Impaired Residential Users,
- Allowance for Go-Car Spaces,
- 56 no Traditional Residential Parking Spaces, adaptable, with
- Electric Vehicle charging provided for in a flexible manner as set out below

3.4 Car parking spaces provided can easily be upgraded to allow conversion for **Electric Vehicles**. In the case of residential apartment development of the nature proposed, with specific spaces ultimately dedicated to specific apartments, it is considered appropriate to facilitate the retro-fitting of spaces, based on demand following occupation, rather than a % of spaces being defined as such and provided from the outset.

3.5 The entire car park of the subject scheme is therefore to be fitted with conduits to accept future cabling to serve a charging point for every car space as demanded. Within the parking area, conduits can be run where charging points can also be mounted. Where residents request a charging point to be installed, the relevant charging point will be pre-wired back to their home electricity meter in the designated meter location. The socket point at the parking space will have a lockable cover on it so that only that resident may use the power point. This simple provision around the entire parking area allows future charging points to be installed at any of the car parking spaces with minimum works as and when required.

4.0 BICYCLE PARKING

4.1 It is anticipated that a very significant number of residents can be encouraged to cycle to work and school etc., with the safe links and secure parking which is in place. That is reflected in the provision of a total of 260 dedicated secure residential cycle parking spaces within secure fobbed/keypad accessed areas, supported by 70 spaces for visitors at ground level spread throughout the site. This number provided is consistent with the requirements as set out in the National Apartment Guidelines.

4.2 It is acknowledged that for visitors, cyclists need to be confident that their cycles will not be tampered with, and in these terms the cycle storage for residents is in secured locked areas, and which will be monitored by CCTV. An extract showing the internal bicycle storage area is included below as ***Figure 4.1***

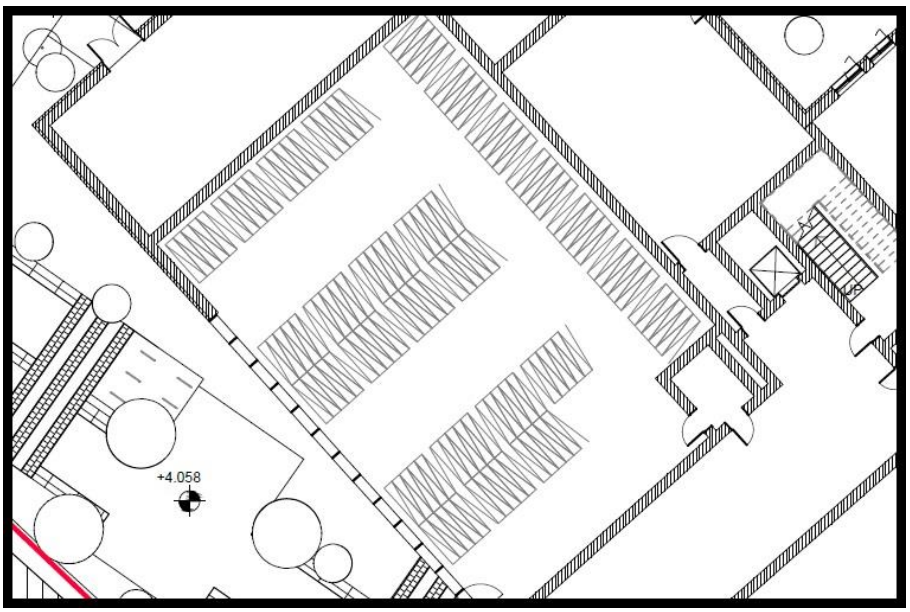


Figure 4.1 – Extract from Drawings Showing Residential Bicycle Storage Area

4.3 There are a total of 70 Bicycle Parking Spaces provided for visitors.

4.4 The cycle parking spaces at ground level are beneficially in areas either subject to passive surveillance and they will also be monitored by CCTV and by way of on site security & management.

4.5 It is important 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.

5.0 INITIATIVES FOR SUSTAINABLE TRAVEL

5.1 It is acknowledged that residents may require a vehicle of some sort for purposes other than commuting on an everyday basis, and simply reducing car parking would not be realistic without implementing alternative measures to accommodate residents and visitors alike. Therefore the following alternative arrangements are proposed in support of the slightly reduced car parking and car ownership levels within the development;

- A working Mobility Management Plan,
- Increased & Well Designed Cycle Parking Provision,
- Parking Management and Control,
- Dedicated legal controls within Sales or Letting Agreements associated with all Residential Apartments, and
- Undertaking to engage with Car Share Operators to provide a base within the site.

Mobility Management Plan (MMP)

5.2 An outline MMP has been prepared and should be read in conjunction with this Parking Management/Strategy Report. The MMP will be further developed at occupation /operational stage by the Development Management Company.

Increased Bicycle Parking

5.3 Increased bicycle parking provides a realistic alternative transport mode when there is reduced car parking provision. As previously set out, the bicycle parking provision exceeds the requirements of the Development Plan and is in line with National Apartment Guidelines. With a total of 330 bicycle parking spaces provided within the site, and with 139 apartments, this represents a provision of 2.4 bicycle spaces per apartment.

Parking Management Strategy

5.4 A key component in ensuring the efficient controlled operation of any car parking is an active and enforced parking management strategy. In this case, this strategy will be managed by the Development Management Company with the specific details as set out in Section 6.0 of this Report.

Legal Controls – Sales/Letting Agreements

5.5 Dedicated Clauses can and will be contained within Sales or Letting Agreements for all Residential Apartments, which specifically address Car Parking. In the event where a parking space is an entitlement as part of a Sale or Letting Agreement, this will be clearly enunciated by way of a dedicated clause, with the specific space or spaces referenced with mapping provided to illustrate the relevant space.

Car Share

5.6 A car club (e.g. Go Car) can provide residents with quick and easy access to a vehicle for short term hire. Well established operators such as Go-Car are active in the Greater Dublin Area and provide a really good alternative for circumstances such as this. A recent survey undertaken by Go-Car indicated that the main uses of the service is for day-trips, family trips and weekly shopping trips. The survey also highlighted that the average use of a car was for 1 hour per day. A screen grab from the Go-Car website included below as ***Figure 5.1*** shows the availability of cars adjacent the site at the time of writing of this report. And the development also can provides for dedicated Car Share Spaces at the site if required.

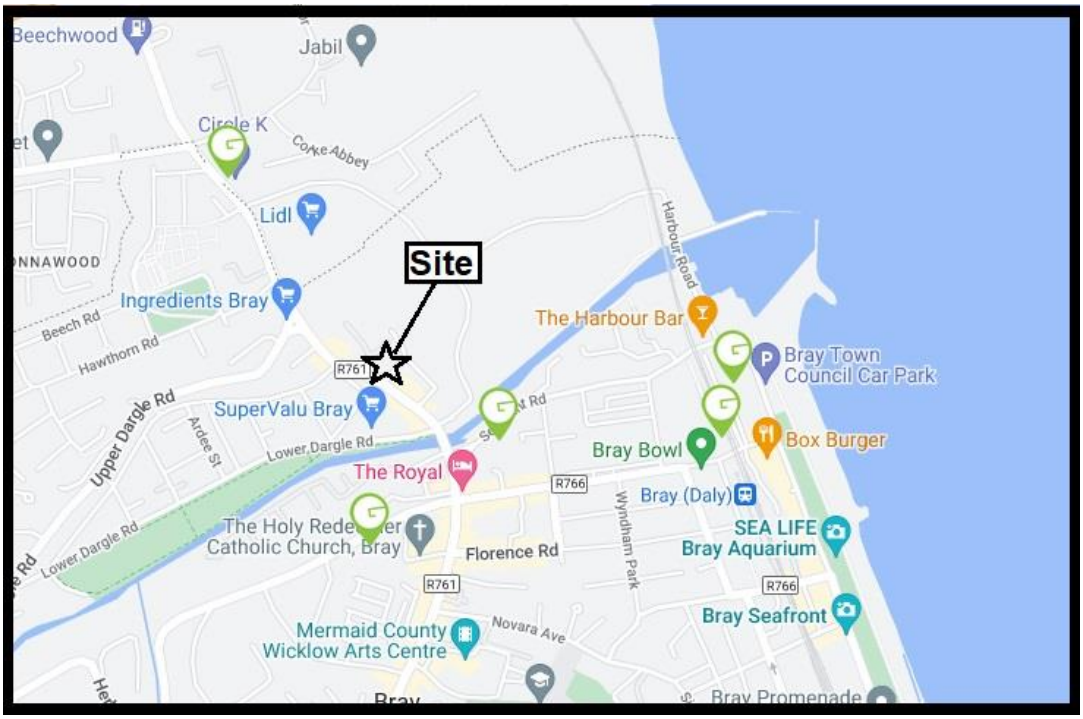


Figure 5.1 – Extract from Go-Car Map Car Locator

6.0 MANAGEMENT OF PARKING FACILITIES

Introduction

6.1 A key component in the effective operation of on-site car parking is an active and enforced parking management strategy. This strategy will be implemented by both the Developer and the Management Company. The Management Company will be charged with responsibility for the control of parking and access within the site.

6.2 It is intended that the proposed development will be actively marketed as 'Reduced Car Dependency'. Consequently, all marketing material for the development will make it clear that the apartments have reduced car parking availability and will also highlight the alternatives available.

6.3 Dedicated Clauses can and will be contained within Sales or Letting Agreements for all Residential Apartments, which specifically address Car Parking. In the event where a parking space is an entitlement as part of a Sale or Letting Agreement, this will be clearly enunciated by way of a dedicated clause, with the specific space or spaces referenced in Agreements, with mapping provided & referenced therein to identify the relevant space. All parking spaces will be clearly numbered.

6.4 Accordingly, unless they are dedicated to individual Residential Apartments, on-site parking will otherwise remain in the control of the Management Company. A management regime will be implemented by the Management Company to control and manage access to the car parking bays, thereby actively managing the availability of on-site car parking for each of the following user profiles;

- Residents of the Apartments,
- Staff based at the proposed development (Crèche, Management Company and Maintenance),
- Visitors/Customers to the site,

Car Parking Allocation

6.5 As stated above, all residents will be advised that unless it is otherwise stated in the Lease or Sales Agreement, there will be very limited or no car parking available on the site.

6.6 In the event that a parking space is part of a Legal Agreement, the apartment resident will have a parking permit for the particular dedicated space to display in the vehicle window.

6.7 The Management Company will have a limited supply of Visitor Car Parking Permits for the site.

6.8 The Management Company will be responsible for the day-to-day management of car parking operations. Other than the dedicated spaces for Apartments, visitors who request a short term permit will be allocated on a 'first-come first-served' basis.

6.9 It is intended that a charge will be applied to obtain a visitor permit with the objective of covering the associated management costs, discouraging long-term usage of the parking space and encouraging more sustainable modes of travel.

Car Parking Access/Control

6.10 Access to the parking area can be controlled by security barriers if necessary to ensure that only permitted vehicles can gain access. If needed, a barrier or barriers can be safely located so as not to result in any hazard or obstruction.

6.11 Access to approved users can be facilitated by coded keypad entry/fob control or Automated Number Plate Recognition (ANPR) technology which only permits registered permitted vehicles to enter.

6.12 A clamping enforcement regime will also be in place within the entire site to ensure that parking restrictions are adhered to.

7.0 CONCLUSION

Based on the information contained within this Parking Strategy Report, it is considered that the parking provision at the subject development is appropriate and sufficient. This is supported by a high number of bicycle parking spaces at the development, combined with controls that are to be put in place to manage use of the spaces, including a Working Mobility Management Plan, Legal Allocation of Spaces to Residents and the day-to-day management/clamping of parking being a role for the management company.