consulting engineers

NRB

Traffic and Transport Assessment Report

including….

Mobility Management Plan *(App F),*

DMURS Statement of Consistency

(App G),

Bus/LUAS Capacity Report

(App I),

Car / Bicycle Parking Management Plan

/ Strategy (App I), &

Independent Stage 1 Road

Safety/Quality Audit

(App J)

For

Proposed Large-Scale Residential Development (LRD)

at

Kilgobbin Road Stepaside, Co. Dublin.

on behalf of

Kilgobbin Apartments Limited.

SUBMISSION ISSUE

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EXECUTIVE SUMMARY

NRB Consulting Engineers Ltd were appointed to address the Traffic & Transportation impact associated with the construction of a proposed residential development on lands adjacent to Kilgobbin Road, Stepaside, Co. Dublin. The proposed development consists of the construction of a residential development principally comprising 120 No. apartments.

We have assessed the impact of the traffic associated with the proposed development, together with the established traffic on the adjacent affected road network for the AM Peak and PM Peak Hours, with a new traffic survey undertaken for the purposes of this study.

The Traffic and Transport Assessment has been prepared in accordance with the TII's Traffic & Transport Assessment Guidelines and addresses the traffic impact of the proposals in association with a comprehensive assessment of Public and Alternative Transport Options as part of the MMP and PT Capacity Assessment. The Traffic Assessment is based on comprehensive Weekday AM & Weekday PM Peak classified interval turning movement surveys of the local roads carried out in 2024, when schools were fully open. This traffic survey data formed the basis of the study, and the survey data is included herein as ***Appendix B***.

The Report & analysis includes an assessment of impact of the proposed development traffic during the projected Opening Year 2027 together with an assessment of the Design Year 2042 (15 years following opening). Whilst we have selected an opening year of 2027, it should be noted that, if required, minor changes of 2-3 years in the choice of opening or design year would have no effect on the conclusions of this study.

The Traffic and Transport Assessment Report confirms that there is a negligible and unnoticeable traffic impact associated with the opening of the proposed subject development, and that it can be accommodated without any adverse traffic impact arising.

The scheme also delivers pedestrian and cycle connections to Kilgobbin Road, improving permeability for all pedestrians and cyclists, including those associated with the proposed development.

The assessment includes a Preliminary Mobility Management Plan (MMP or Travel Plan) for the site which is included as ***Appendix F***.

We have also prepared a Statement of Consistency with DMURS and confirm that the internal layout is compliant with the requirements, included as ***Appendix G***.

An assessment of impact/capacity on Bus/LUAS has also been undertaken and is included as ***Appendix H***. A Car / Bicycle Parking Management Report is included in ***Appendix I***. The DLRCC 'Cycle Audit' table is included at Section 2.0 below.

An independent Stage 1 Road Safety Audit including Quality Audit (incl Walking & Cycling), together with the Designer Feedback form, has been undertaken and is included as ***Appendix J***.

Based on our studies, we conclude that there are no adverse traffic/transportation capacity or operational issues associated with the construction and occupation of the proposed development that would prevent a positive determination of the planning application by DLRCC.

1.0 INTRODUCTION

1.1 This Traffic and Transport Assessment (TTA) has been prepared by NRB Consulting Engineers Ltd and addresses the transportation capacity considerations relating to the proposal to construct a residential development on lands adjacent to Kilgobbin Road, Stepaside, Co. Dublin.

1.2 The proposed development consists of the construction of a residential development principally comprising 120 No. apartments.

1.3 A *Google* site location plan for the development is included below as ***Figure 1.1***.

Figure 1.1: Site Location Plan in Context of Dublin (Google)

1.4 This Report addresses the impact of the proposed development and the implications for the adjacent road network for the weekday AM and PM Peak Hours, taking account of existing traffic conditions factored to projected opening and design year.

1.5 The site is considered to represent a sustainable location for residential development of the nature proposed, in the context of both the short term and medium term Bus Services available, proximity to LUAS, and its location adjacent to numerous Retail and

Employment Zones. This is clearly supported by the Preliminary Mobility Management Plan included as ***Appendix F***.

1.6 It is proposed to provide vehicular access to the site by way of extending Belarmine Vale road carriageway, which is currently extended to the site boundary to facilitate this proposed residential development. A pedestrian / cycle link is proposed onto Kilgobbin Road, thus facilitating pedestrian & cycle access to the proposed site and the wider Belarmine residential area. Drawings showing the access arrangement are included herein within ***Appendix A***.

1.7 The layout and design of the scheme meets the requirements of DMURS in terms of layout & geometric design (Refer to layout plan included herein as ***Appendix A***).

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

- Appropriate Scale of Development Proposals (conscious that the development constitutes primarily residential development in a long-established area), with access via a short extension of Belarmine Vale road carriageway,
- Location of the development adjacent to relatively frequent bus services, the Green Luas line, and the services and facilities available locally,
- The site location with its proximity to the Luas,
- Traffic & Transportation impact,
- Capacity of the Access Junction to accommodate the worst-case development traffic flows,
- Pedestrian and cyclist permeability and promotion,
- Impact of the development on the free flow and capacity of the adjacent road network and affected junctions, and,
- The locational characteristics of the site being in a sustainable location in terms of travel characteristics (Refer to the Preliminary Mobility Management Plan included herein).

1.9 The Recommendations contained within this Traffic and Transport 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,

- ‘Smarter Travel, A Sustainable Transport Future 2009-2020’,
- the NTA’s ‘Greater Dublin Area Transport Strategy 2022-2044’,
- the NTAs ‘Integrated Implementation Plan 2019-2027’,
- Traffic Survey Data collected,
- Relevant Design Guidance,
- Our experience in assessing the impact of Developments of this Nature, and
- Site Visits and Observations.

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

1.11 The assessment includes a Preliminary Mobility Management Plan (MMP or Travel Plan) for the site which is included as ***Appendix F***. We have also prepared a Statement of Consistency with DMURS and confirm that the internal layout is compliant with the requirements, included as ***Appendix G***.

1.12 An assessment of impact/capacity on Bus/LUAS has also been undertaken and is included as ***Appendix H***. An assessment of impact/capacity on Bus/LUAS has also been undertaken and is included as ***Appendix I***.

1.13 An independent Stage 1 Road Safety Audit including Quality Audit (incl Walking & Cycling), together with the Designer Feedback form, has been undertaken and is included as ***Appendix J***. All issues raised in the Audit are addressed in the feedback form, signed off by the Auditor Team and incorporated into the proposed scheme layout.

2.0 RECEIVING ENVIRONMENT/DEVELOPMENT PROPOSALS/PARKING

2.1 The proposed development is residential in nature, consisting of 120 No. residential Apartments, with the detailed description of the development and associated work included below.

2.2 The site is bound by a residential development known as ‘Belarmine’ to the west, by a detached residential dwelling known as ‘Riverside’, and by Kilgobbin Road to the east, Kilgobbin Castle (in ruins) and a residential dwelling to the south, and Sandyford Hall to the north.

2.3 Belarmine Vale serving the site is classified as a Residential Road, is subject to an urban 30km/h speed limit and is provided with footpaths, signalised pedestrian crossing facilities and off-road cycle lanes. It consists of a single carriageway road, approximately 6.0m wide. An image showing Belarmine Vale to the west of the site, adjacent to Gaelscoil Thaobh na Coille is included below as ***Figure 2.1***.

Figure 2.1 – Belarmine Vale at the Site

2.4 Being a residential area, all of the roads are subject to a 30km/h urban speed restriction. Based on the Traffic Survey, Belarmine Vale at the site carries a weekday AM Peak Hour 2-way flow of approximately 307 PCUs and a weekday PM Peak Hour 2-Way flow of approximately 66 PCUs, measured to the west of the Belarmine Vale / Belarmine Drive

junction. In these terms, it can be considered as very lightly trafficked, with the majority of the traffic generated by the local schools (Gaelscoil Thaobh-na-Cóille & Educate Together/Ag Foghlaim-Lé-Chéile).

2.5 A single carriageway in an urban area has a carrying capacity of 1,200 to 1,500 PCUs per-lane per-hour. In these terms it has a 2-way traffic carrying or 'link capacity' of approximately 2,400-3,000 PCUs. In this regard, Belarmine Vale is considered lightly trafficked in terms of its Link Capacity.

2.6 We have nonetheless undertaken detailed modelling and analysis of the effect of the development on the local road network and adjacent junctions surrounding the site. Assessment and resulting Capacity Modelling using TII-approved software was undertaken for a selected year of opening 2027 and associated design year 2042 in accordance with industry Guidelines.

Development Proposals

2.7 The site is bound by a residential development known as 'Belarmine' to the west, a detached residential dwelling known as 'Riverside' and Kilgobbin Road to the east, Kilgobbin Castle (in ruins) and a residential dwelling to the south, and Sandyford Hall to the north.

2.8 Works are also proposed at Kilgobbin Road, which include the removal of a wall and the creation of a new pedestrian / cycle connection through the site to Belarmine Vale, providing a new multi-modal path and landscaping.

2.9 The proposed Large-Scale Residential Development (LRD) will provide 120 no. apartment units within 2 no. blocks ranging in height from 4- to 6-storeys. The development will consist of; Block A, consisting of 44 no. units (27 no. 1 bed (2-person), 13 no. 2 bed (3-persons), 1 no. 2 bed (4-persons) and 3 no. 3 bed (5-persons) of 4- to 5-storeys height and of Block B, consisting of 76 no. units (40 no. 1 bed (2-persons), 12 no. 2 bed (3-persons), 16 no. 2 bed (4-persons) and 8 no. 3 bed (4-persons) of 5- to 6-storeys height.

2.10 The proposed development will provide all associated public open space and play area, 54 no. car parking spaces including accessible parking and Electric Vehicle parking, 273no. bicycle parking spaces, 3 no. motorcycle parking spaces, bin/waste store and a plant room at ground floor level, 1 no. detached ESB substation and 1 no. detached

bicycle store for Block A residents. The proposed development will also provide for all associated site development and infrastructural works including foul and surface water drainage, roads, footpaths, landscaping, boundary treatment and a pedestrian and cycling pathway connecting Belarmine Vale and Kilgobbin Road. Vehicular access to the development will be via Belarmine Vale."

2.11 Similar to all residential developments, it is anticipated that the development will be serviced using regular weekly refuse lorries within the site as required, with small transit vans or small-wheelbase trucks for day-to-day servicing of the apartments, vehicles which do not have onerous swept-paths and can easily be facilitated on the site.

2.12 Bins will be collected directly from the bin stores in the two blocks by the refuse collection company on collection day, at the scheduled bin collection time, before being returned to the secure refuse stores. The refuse collection company will have access to the bin stores for bin collection purposes and this will be part of the contractual arrangements.

2.13 In traffic terms, for residential schemes of this nature on the edge of the city centre with good transport links, do not generate a significant volume of commuter car movements. In this regard, the small scale of the entire development is confirmed through the robust assessment of Car Traffic Generated, which is addressed further within Section 3 of this Report.

2.14 With the proposed pedestrian / cycle link to Kilgobbin Road, the development itself and the adjacent Belarmine area is located within 10-12mins walk of the Green Luas Line. The site is also very well located to benefit both from existing Dublin Bus services and from future service proposed as part of the BusConnects Network Plans. All of the beneficial public and alternative Transportation Modes are defined in the Preliminary Mobility Management Plan included as ***Appendix F***, and this should be read as an integral part of this study and assessment.

Car Parking Considerations

2.15 The **Car Parking** standards originally to be applied in new residential developments in Dún Laoghaire-Rathdown are set out in Table 12.5 of the County Development Plan (2022-2028). Zone 1 standards are defined as "Maximum" requirements, whilst Zones 2/3/4 are not. The provision is to be determined in accordance with the DLRCC Development Plan on a case-by-case basis, depending on the particular circumstances.

2.16 However, these requirements are now supplemented by Table 3.1 of the recent Compact Settlement Guidelines (CSG) which set out the three different areas and density categories for Dublin City, namely City Centre, City- Urban Neighbourhoods and City - Suburban / Urban Extension. Having reviewed the site location we believe that the site, falls within a ***City- Urban Neighbourhoods*** (as defined in Table 3.8).

2.17 The relevant extract is included below as ***Figure 2.2***.

Table 3.1 - Areas and Density Ranges Dublin and Cork City and Suburbs

City - Centre The city centres of Dublin and Cork, comprising the city core and immediately surrounding neighbourhoods[6], are the most central and accessible urban locations nationally with the greatest intensity of land uses, including higher order employment, recreation, cultural, education, commercial and retail uses. It is a policy and objective of these Guidelines that residential densities in the range 100 dph to 300 dph (net) shall generally be applied in the centres of Dublin and Cork.
City - Urban Neighbourhoods The city urban neighbourhoods category includes: (i) the compact medium density residential neighbourhoods around the city centre that have evolved overtime to include a greater range of land uses, (ii) strategic and sustainable development locations[7], (iii) town centres designated in a statutory development plan, and (iv) lands around existing or planned high-capacity public transport nodes or interchanges (defined in Table 3.8) – all within the city and suburbs area. These are highly accessible urban locations with good access to employment, education and institutional uses and public transport. It is a policy and objective of these Guidelines that residential densities in the range 50 dph to 250 dph (net) shall generally be applied in urban neighbourhoods of Dublin and Cork.
City - Suburban/Urban Extension Suburban areas are the lower density car-orientated residential suburbs constructed at the edge of cities in the latter half of the 20th and early 21st century, while urban extension refers to the greenfield lands at the edge of the existing built up footprint that are zoned for residential or mixed-use (including residential) development[8]. It is a policy and objective of these Guidelines that residential densities in the range 40 dph to 80 dph (net) shall generally be applied at suburban and urban extension locations in Dublin and Cork, and that densities of up to 150 dph (net) shall be open for consideration at 'accessible' suburban / urban extension locations (as defined in Table 3.8).

Figure 2.2 – Extract Table 3.1 – Areas and Density Ranges from the CSG

2.18 Section 3.4 of the CSG sets out how to establish the housing density ranges at various locations, with Step 1 being an assessment of Accessibility to both Services and Public Transport, with Table 3.8 setting out definitions for terms used for defining accessibility. In terms of Accessibility we have reviewed Table 3.8 (See Extract below as ***Figure 2.3***) and note that the Site is located an approx 850m walk from the Luas Green Line Station at The Gallops (and therefore is inside the requirements of falling within a High Capacity Public Transport Node or Interchange, namely an interchange or node that includes DART, high frequency Commuter Rail, light rail or MetroLink services).

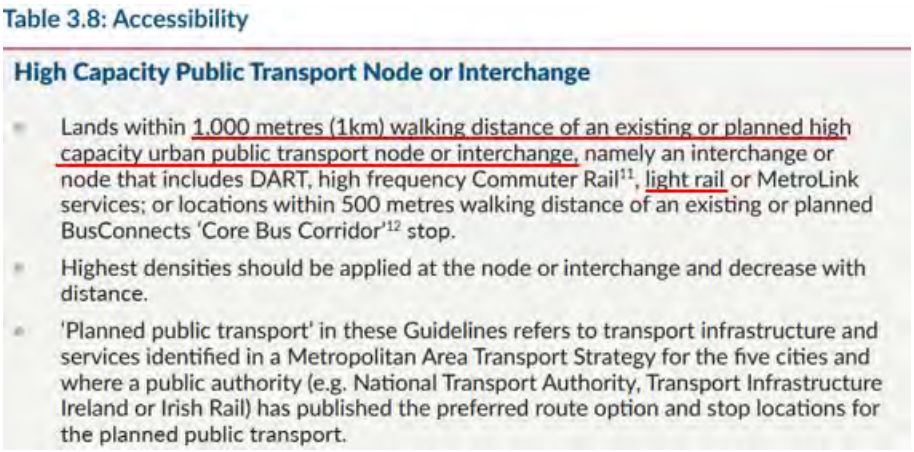


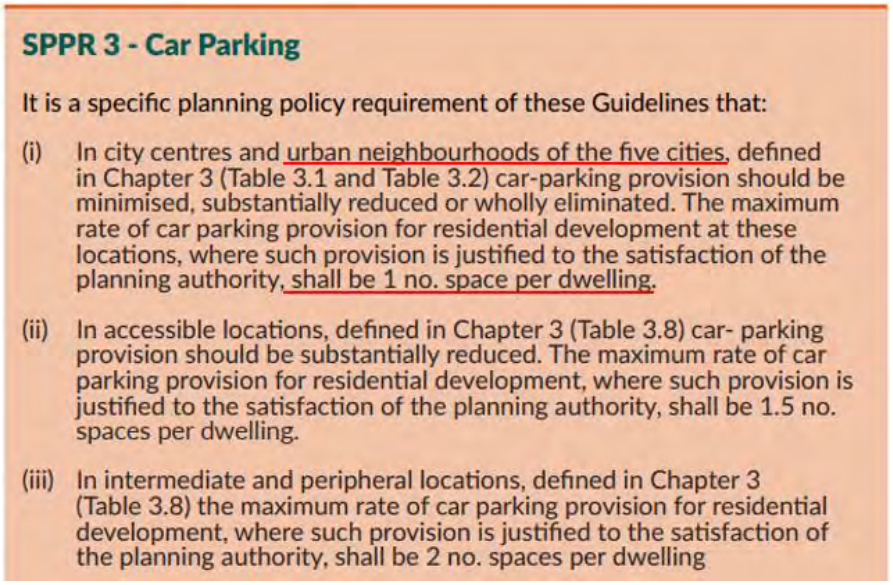
Table 3.8: Accessibility

High Capacity Public Transport Node or Interchange

- Lands within 1,000 metres (1km) walking distance of an existing or planned high capacity urban public transport node or interchange, namely an interchange or node that includes DART, high frequency Commuter Rail[11], light rail or MetroLink services; or locations within 500 metres walking distance of an existing or planned BusConnects 'Core Bus Corridor'[12] stop.
- Highest densities should be applied at the node or interchange and decrease with distance.
- 'Planned public transport' in these Guidelines refers to transport infrastructure and services identified in a Metropolitan Area Transport Strategy for the five cities and where a public authority (e.g. National Transport Authority, Transport Infrastructure Ireland or Irish Rail) has published the preferred route option and stop locations for the planned public transport.

Figure 2.3 – Extract Table 3.8 – Locational Characteristics in CSG

2.19 Examination of the proposed site location confirms that the site can best be described as "urban neighbourhood" solely in the context of the CSG definitions for calculating appropriate car parking provision. We include below the associated Parking Provision Table 3.8 extract from the CSG as ***Figure 2.4***.



SPPR 3 - Car Parking

It is a specific planning policy requirement of these Guidelines that:

(i) In city centres and urban neighbourhoods of the five cities, defined in Chapter 3 (Table 3.1 and Table 3.2) car-parking provision should be minimised, substantially reduced or wholly eliminated. The maximum rate of car parking provision for residential development at these locations, where such provision is justified to the satisfaction of the planning authority, shall be 1 no. space per dwelling.

(ii) In accessible locations, defined in Chapter 3 (Table 3.8) car- parking provision should be substantially reduced. The maximum rate of car parking provision for residential development, where such provision is justified to the satisfaction of the planning authority, shall be 1.5 no. spaces per dwelling.

(iii) In intermediate and peripheral locations, defined in Chapter 3 (Table 3.8) the maximum rate of car parking provision for residential development, where such provision is justified to the satisfaction of the planning authority, shall be 2 no. spaces per dwelling

Figure 2.4 – Extract SPPR3 – Car Parking Standards in CSG

2.20 Note that the parking provision in the CSG does NOT include car club spaces, set down spaces, public EV Spaces or Accessible spaces, but does include visitor provision. Based on the above, **applying the CSG to the Housing Element** would strictly require the maximum following:

- 1 x Car Parking Space per Residential Apartment (120 Spaces),
- Accessible/Set Down and Public EV **in addition** to the above.

2.21 The proposed development includes a total of 54 No. car parking spaces (including 3 No. accessible parking spaces & 15 EV spaces), being a parking ratio of approximately 0.45 per unit, which we consider to be appropriate in this location.

2.22 Motorcycle spaces are also accommodated in line with DLRCC County Development Plan 2022 - 2028 Section 12.4.7 Motorcycle Parking i.e. at a rate of 4% of the number of car parking spaces provided (space for 3 motorcycle spaces is provided which is in excess of 4% of the number of car parking spaces provided).

DLRCC Application of Car Parking Standards

2.23 To justify a reduction in car parking provision to 54 spaces for the proposed 120no. unit residential development, we have demonstrated compliance with the assessment criteria outlined in Table 12.5 and Section 12.4.5.2 of the DLRCC Development Plan 2022–2028 below, with a detailed rationale addressing each criterion:

- Proximity to public transport services - The development is situated within a 1min walk of a number of bus routes and a 10-12 minute walk (approximately 850 meters) of a Luas station, offering direct connections to key destinations. This accessibility supports reduced car dependency among residents.
- Walking and cycling accessibility/permeability and any improvement to same - The area is well-served by dedicated cycle lanes and pedestrian paths. it is proposed to provide a dedicated pedestrian and cycle route through the site, connecting Belarmine Vale to Kilgobbin Road, as per **Specific Local Objective 81 of the DLRCC County Development Plan 2022-2028**. This improvement promotes sustainable transport modes and reduces the need for private car use.
- The need to safeguard investment in sustainable transport and encourage a modal shift - through reducing car parking provision, the development aligns with the Council's objectives to promote sustainable transport options, thereby safeguarding investments in public transport infrastructure and encouraging a shift towards more sustainable modes of transport. Furthermore, high quality of the cycle parking is provided with a total of 273 new dedicated cycle parking spaces.
- Availability of car sharing and bike / e-bike sharing facilities - the development will incorporate shared mobility solutions, including discussion with car-share service providers and electric vehicle charging points, to further reduce the need for private car ownership.

- Existing availability of parking and its potential for dual use - On-street parking in the vicinity is subject to controlled parking zones, limiting long-term parking. Car parking spaces will not be sold with units, but are leased and managed by the management company for the overall development, thus allowing a level of dual use.
- The particular nature, scale and characteristics of the proposed development - The development is located in a well-connected area with access to public transport and sustainable transport options. The scale and characteristics of the development support a reduction in car parking provision, aligning with the Council's objectives for sustainable development.
- The range of services available within the area - The development is situated within close proximity to a range of services (6-7min walk to Belarmine Plaza), including retail, educational, and recreational facilities, reducing the need for residents to travel by private car for everyday provisions.
- Impact on traffic safety and the amenities of the area – This TTA indicates that the existing road network can accommodate the expected traffic generated by the development without any adverse effects on congestion or safety.
- Capacity of the surrounding road network - The surrounding road network has sufficient capacity to accommodate the expected traffic generated by the development, and the reduction in parking spaces will not adversely affect traffic flow or congestion.
- Urban design, regeneration and civic benefits including street vibrancy - The reduction in car parking provision allows for more efficient use of land, enabling the creation of high-quality public spaces and enhancing the overall urban design and vibrancy of the area.
- Robustness of Mobility Management Plan to support the development - A comprehensive Working Mobility Management Plan will be implemented to promote sustainable transport options among residents, including initiatives to encourage walking, cycling, and the use of public transport. A Preliminary MMP is provided in Appendix F to inform this process.
- The availability of on street parking controls in the immediate vicinity - The area is subject to controlled parking zones, limiting long-term on-street parking and encouraging residents to utilise alternative modes of transport.

Cycle Parking

2.24 The requirement for bicycle parking has also been assessed in accordance with the ***DLRCC Development Plan*** 2022-2028 (Table 12.23) and this is included below as ***Table 2.1*** below:

Table 2.1: Minimum Residential Bicycle Parking as per DLRCC Development Plan

Element	***DLRCC Min Parking Rate***		***Requires***	
	Long Term	Short Stay	Long Stay	Short Stay
67no. 1-bed Apartments	1/unit	1 / 5 units	67	13
42no. 2-bed Apartments	1/unit	1 / 5 units	42	8
11no. 3-bed Apartments	1/unit	1 / 5 units	11	2
Total			**120**	**24**
Total Min Cycle Parking Required Under DLRCC Plan			***144***	

2.25 For the apartments, the 'Sustainable Urban Housing: Design Standards for New Apartments Guidelines for Planning Authorities' states that 1 bicycle parking space per bedroom plus 1 visitor space per 2 units is a requirement, which would indicate that significantly more cycle parking is required than is set out in the DLRCC CDP Cycle Policy. In this case there are a total of 120 apartments (67 No. one bed units, 42 No. two bed units and 11 No. three bed units) – a total of 184 Bedrooms. This translates to a requirement for 184 residential bicycle parking spaces and 60 visitor bicycle parking spaces, strictly applying the Guidelines – being a requirement for a total of 244 spaces.

Table 2.2: Minimum Residential Bicycle Parking as per Apartment Guidelines

Element	***AG Min Parking Rate***		***Requires***	
	Long Term	Short Stay	Long Stay	Short Stay
67no. 1-bed Apartments	1/bedroom	1/unit	67	34
42no. 2-bed Apartments	1/bedroom	1/unit	84	21
11no. 3-bed Apartments	1/bedroom	1/unit	33	6
Total			**184**	**60**
Total Min Cycle Parking Required Under Apartment Guidelines			***244***	

2.26 The New Apartments Guidelines also states that 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.

2.27 The high quality of the cycle parking is reflected in the provision of a total of 273 new dedicated cycle parking spaces. Of these, 205 no. are provided within the Apartment Blocks, 12 within a secure external building and 56 external visitor spaces within the

hard landscaping. Much of the cycle parking are Sheffield stands in line with DLR Cycle Policy preference for Sheffield Stands, with double stackers above the Sheffield Stands internally. This also supports the case for a slight reduction in car parking provision.

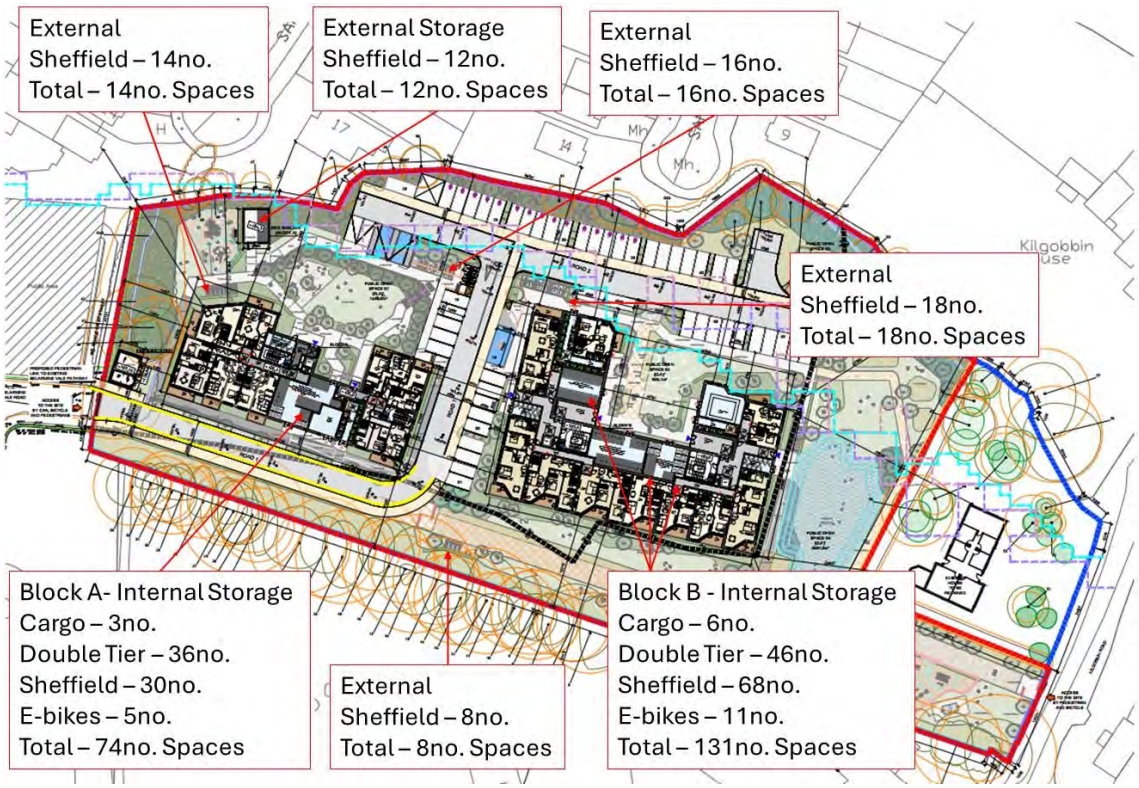


Figure 2.5 – Cycle Parking Locations

Pedestrian and Cycle Accessibility

2.28 As part of the development proposals, it is proposed to provide a dedicated pedestrian and cycle route through the site, connecting Belarmine Vale to Kilgobbin Road, as per Specific Local Objective 81 of the DLRCC County Development Plan 2022-2028, as shown below.

81	To ensure the provision of a combined pedestrian footpath/cycleway connection between Belarmine and Kilgobbin Road to improve overall local permeability and to facilitate direct access from new residential communities to the Luas Line B1 public transport corridor.

2.29 Therefore, the applicant has demonstrated a major commitment to the local pedestrians & cycle network, delivering an important strategic link between Belarmine and Kilgobbin Road, improving the overall local permeability, and reducing walking and cycle times to Ballyogan Road and the Green Luas line. The Applicant has agreed to allow cycle and pedestrian facilities within their development site boundary, in order to deliver the required combined pedestrian footpath / cycleway.

2.30 The improved accessibility is demonstrated in Figures 2.6 and 2.7, with Figure 2.6 showing the 20minute walking times without the pedestrian / cycle link, and Figure 2.7 showing the 20 minute walking times with the pedestrian / cycle link, and showing how the overall local permeability is improved and that the Green Luas line will now be accessible within a 10-15min walking time.

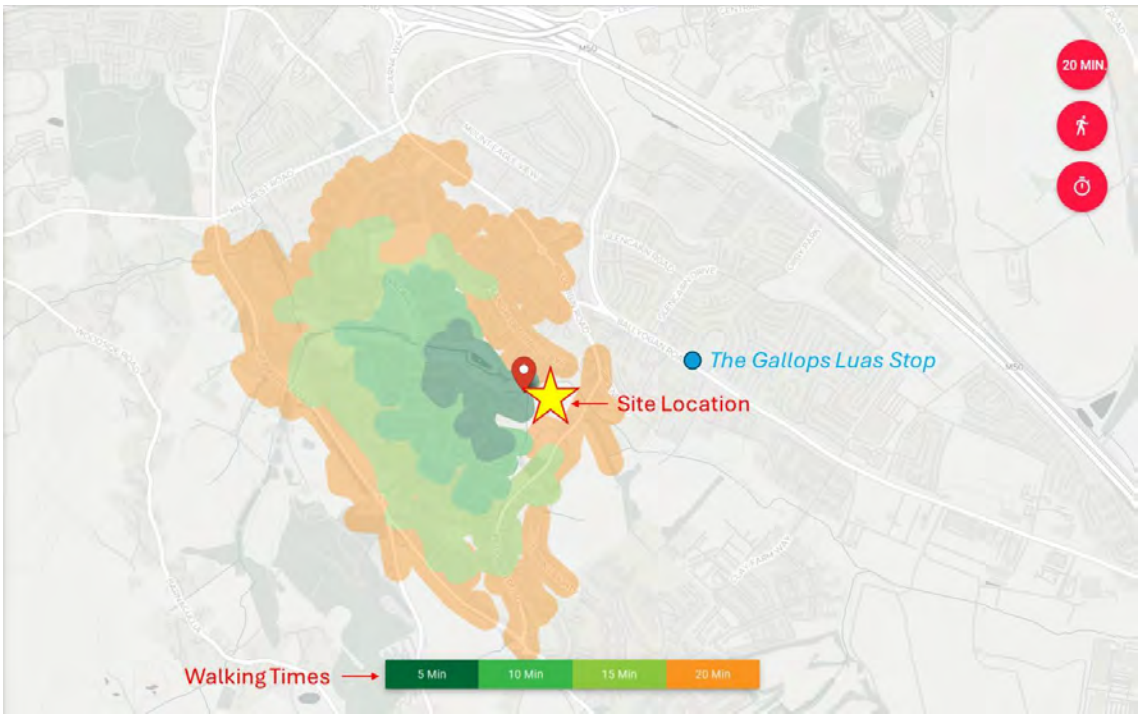


Figure 2.6 – Walking Times WITHOUT Ped/Cycle Link

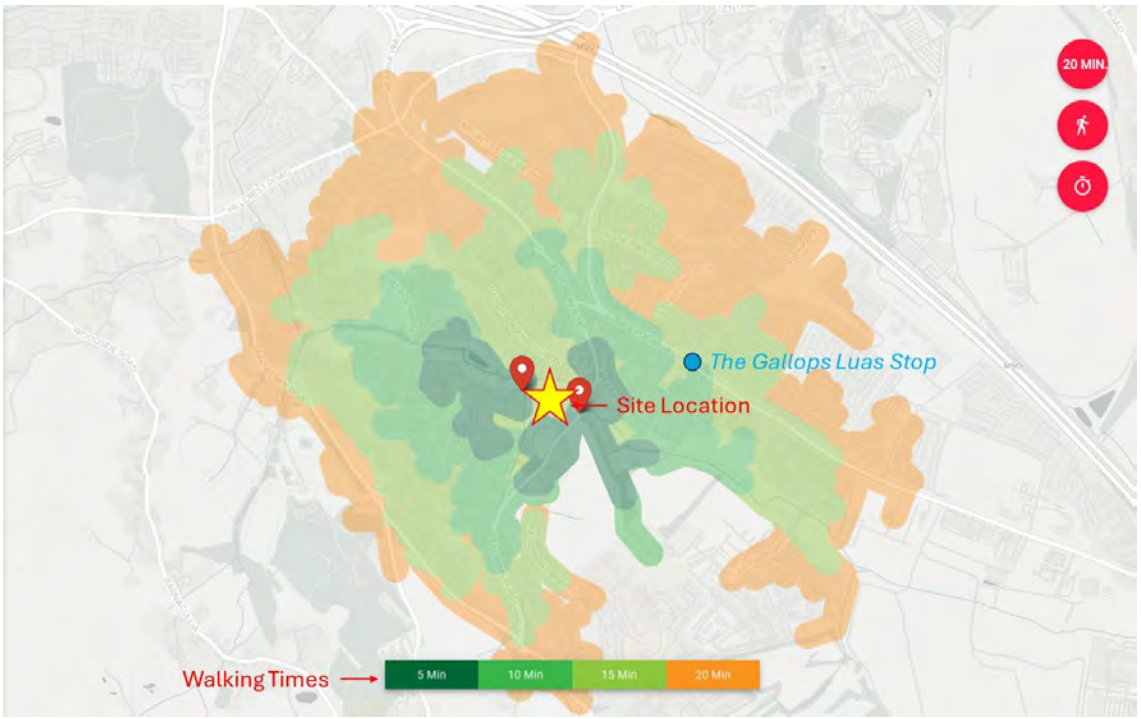


Figure 2.7 – Walking Times WITH Ped/Cycle Link

Public Transport – Bus Services

2.31 The site is within easy walking distance of **existing bus services** as confirmed within the table and data illustrated below.

Table 2.1 – Adjacent Existing Proximate Bus Services

Service #	Route	Operator	No. Buses 8-9am (Mon - Fri)	Thru City Core (Y/N)
44	Enniskerry Towards DCU	Dublin Bus	3	Y
47	Belarmine Towards Poolbeg St.	Dublin Bus	2	Y
118	Kilternan Towards Eden Quay	Dublin Bus	1	Y

2.32 In terms of **Proposed Bus services**, and *Bus Connects* Plans, the current NTA Future 'Big Picture' Network plan extract is included below as ***Figure 2.8***. This indicates that the site will be served by Local Routes #L13, and Express Route #P13. The extract from the Frequency Tables for these services are also included below as ***Figure 2.9***.

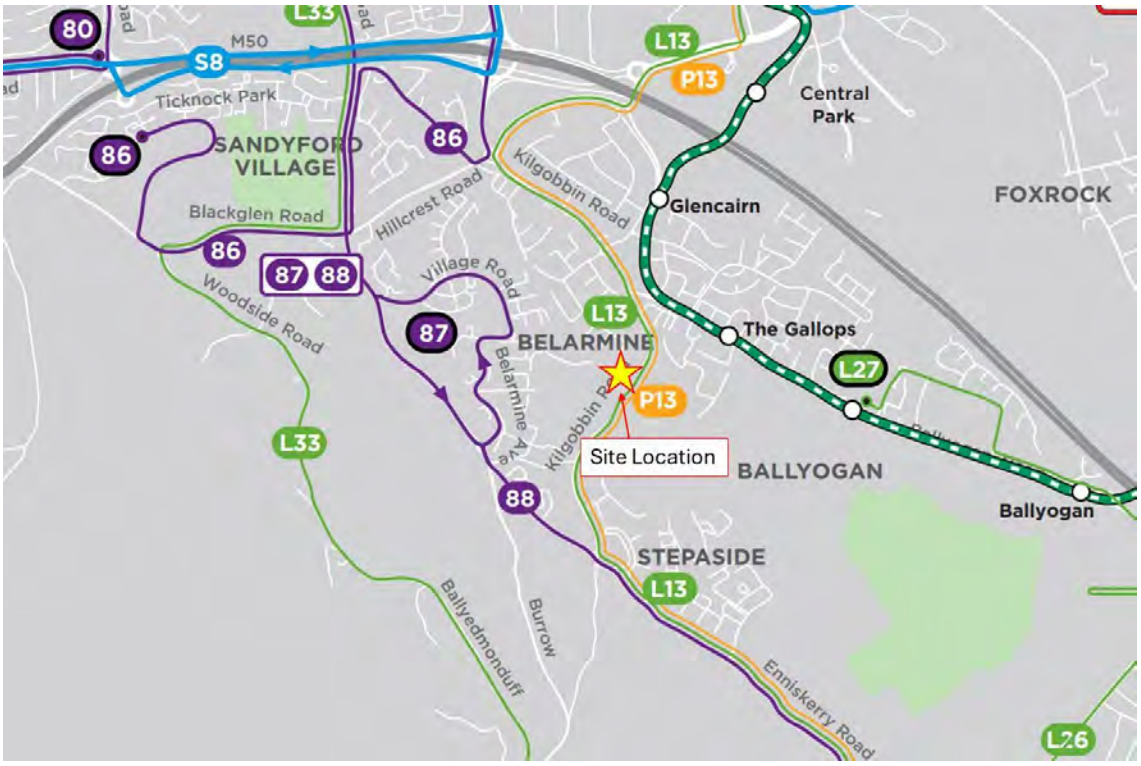


Figure 2.8 – Bus Connects Network Plan & Site

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
L13	Kilternan - Stillorgan Village - UCD - Ringsend		60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60

Peak-Only/ Express Routes			Weekday											
Route no.	To and From	Existing Similar Route	5	6	7	8	9	10	11	12	1	2	3	4	5
P13	Kilternan - Stepaside - UCD				2	2								2	2

Figure 2.9 – Bus Connects, Radial and Local Route Frequencies

Public Transport – Luas Services

2.33 The **LUAS Green Line** Service runs via Ballyogan Road to/from the city centre. **Luas Green Line** is c24.5km in length and has 35 Stops along the route. It runs from Brides Glen to Broombridge via the City Centre and provides connectivity to public transport hubs and interchanges. The Green Line has *Park & Ride* and *Cycle & Ride* facilities incorporated into the design. The service operates on a continual basis throughout the day, with Trams running on an approximate average 5 minute interval basis during the morning and evening peaks (in both directions).

2.34 As an illustration of reasonable walk time to LUAS we include below the *Google* walk time to the Green Line LUAS Services at the Gallops Luas Stop as ***Figure 2.9***, and the *Google* Cycle time to the Green Line LUAS Services at the Gallops as ***Figure 2.10.*** The close cycling/walking distance to/from LUAS will ensure it is a viable alternative for use by residents.

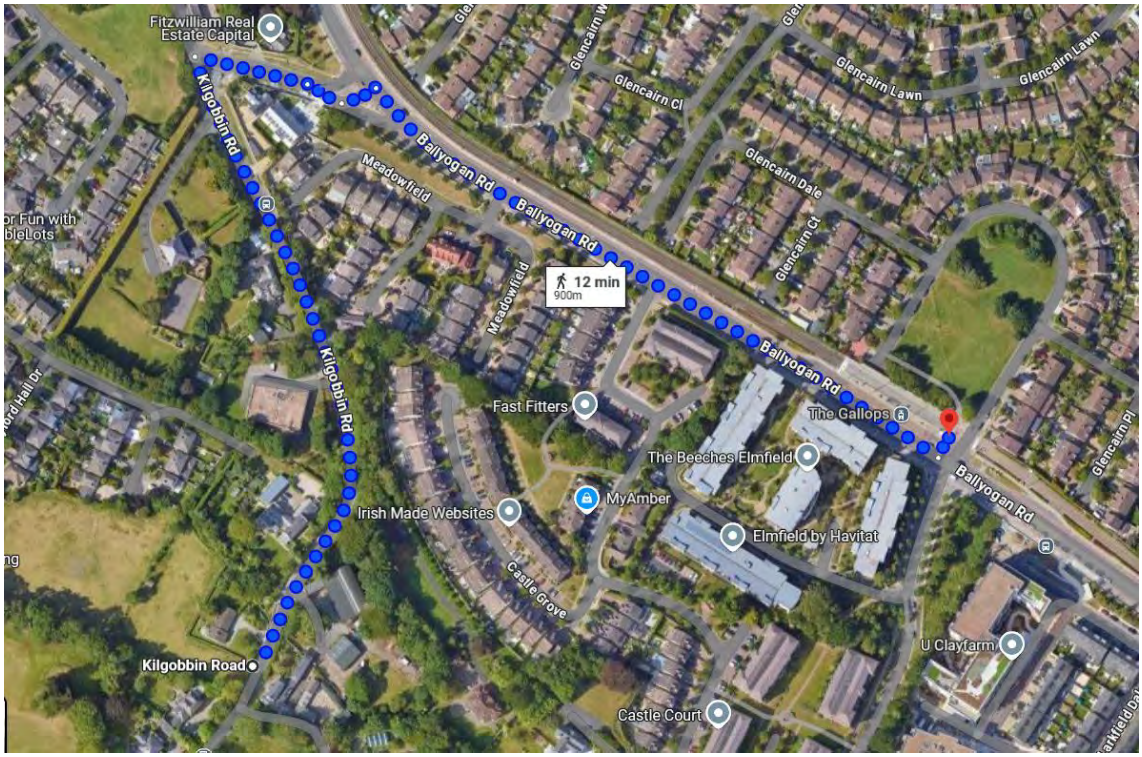


Figure 2.9 – 10-12 Minute Walk to LUAS at the Gallops Luas Stop

Figure 2.10 - 3 Minute Cycle to LUAS at the Gallops Luas Stop

2.35 The LUAS Green Line intersects the Red Line which connects Busarus Bus Depot with the mainline train stations at Heuston Station and train & DART at Connolly Station. This allows connections to suburban and outer-urban areas by way of Bus, DART and main-line rail.

2.36 Therefore, with the proposed new pedestrian and cycle link through the proposed development, it will now be able to access the Green Line Luas in a 10-12 minute walk.

2.37 In terms of number of alternative modes of travel easily available to Residents, it is considered that the proposed development is very highly sustainable in terms of mode choice and reducing the need to own a car. The proximity of the development to existing and planned 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.

Car Park Management

2.38 Given the slightly restricted number of car parking spaces provided, the 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 be managed on an on-going basis to ensure that the reduced car dependency nature of the development is continually promoted and enhanced.

2.39 The development will be managed and operated by a Management Company. Car parking will not be an automatic entitlement with the apartments, but spaces will be available to rent and purchase. Renting/sales of parking will be allocated to residents mainly on a first come first served basis by the Management Company and will be continually managed by the Management.

2.40 Some parking spaces will be reserved for visitors with other car parking spaces allocated for rent/sale to larger units. The allocation of car parking spaces will be reviewed/renewed on an annual/ongoing basis to suit demand.

2.41 Dedicated Clauses can and will be contained within Letting / Sales Agreements for all Residential Apartments, which specifically address Car Parking. In the event where a parking space is an entitlement as part of a Letting / Sales 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.

2.42 Accordingly, unless they are dedicated to individual Residential Apartments, on-site parking will otherwise remain in the control of the Management Company. A car parking 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.

2.43 A clamping enforcement regime can also be in place within the entire site to ensure that parking restrictions are adhered to if required following occupation of the scheme.

2.44 If considered appropriate by DLRCC, the development can include dedicated Car Club Spaces ('Go Cars') to offset the need for residents and guests to have cars and car parking spaces, and a Letter of Support was previously received from an Operator. These could be prominently located parking spaces allocated specifically to car club parking (e.g. "Go Car" spaces).

2.45 In terms of EV, all car parking spaces can easily be upgraded to allow conversion for Electric Vehicles. In the case of a residential development of the nature proposed, with specific spaces likely dedicated to specific apartments, it is considered appropriate to facilitate the retrofitting of spaces, based on demand following occupation, rather than a percentage of spaces being defined as such and provided from the outset, however a minimum of 20% are proposed as EV charging initially in line with the Development Plan.

2.46 Car parking spaces can be upgraded to allow conversion for Electric Vehicles. 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 will have a lockable cover on it so that only that resident may use the power point.

2.47 Other suitable alternative supply arrangements will be considered as charging facilities change and technology improves.

2.48 The car park of the subject scheme will therefore be ducted to accept future cabling to serve a charging point for every car space as demanded. Within the site, ducts or conduits can be run within landscaped areas or on walls, where charging points can also be mounted. This provision around the entire parking area will allow future charging points to be installed at any of the car parking spaces with minimum works as and when required.

Cycle Audit

2.49 We have prepared Table 2.2 below which responds to Section 12.4.6.2 Cycle Parking Assessment Criteria included in the 2022-2028 Development Plan to show how the scheme meets these cycle requirements. The scheme drawing prepared by the Architects and those included at ***Appendix A*** demonstrate, in plan format, how the requirements of Council's Standards for Cycle Parking and Associated Cycling Facilities for New Developments, are met within the development.

Table 2.2 Response to DLR Cycle Parking Assessment Criteria

DLR Cycle Parking Assessment Criteria	Response
Is the number of cycle parking spaces and footprint adequate and is there suitable provision for parking of outsized formats (cargo bikes etc)?	Yes – cycle parking provided in excess of the DLR Cycle Policy numbers and spacing guidance along with designated cargo bike spaces plus room for more outsized format bikes
Is the location of cycle parking convenient, appropriate and secure with adequate provision for covered parking?	Yes – conveniently located near the main development accesses, secure and can be covered.
Is the cycle parking area accessible in terms of dedicated access routes with ramps and/or kerb dishing where required?	Yes - cycle parking areas area are accessible, with direct access available to all cycle parking via the main development accesses.
Do the internal cycle access routes connect well with off-site cycle facilities – existing and proposed?	Yes – scheme connects to off-site cycle facilities – existing and proposed at Belarmine Vale.
Is there adequate and appropriately designed and integrated provision for ancillary cycling and pedestrian facilities including showers, locker / changing rooms and drying areas?	Yes – contained within apartments.
Where cycle parking cannot be conveniently provided within the development, a financial contribution of €500 per cycle parking stand will be required to provide alternative on-street cycle parking provision in the vicinity of the development	N/A as cycle parking provided within the development.
Consideration should be given to requiring the provision of cycle parking-related directional signage, in particular for storage and commercial parking facilities. Bike lockers, showers and changing rooms should be available at destination storage facilities (private).	Residential scheme so much of this is not applicable. Cycle parking is conveniently located near the main development accesses visitor parking is evident to arrivals.
For short-term cycle parking (e.g. for customers or visitors), cycle parking is required at ground level. This should be located within 25 metres of the destination in an area of good passive surveillance. Weather protected covered facilities should be considered where appropriate.	Yes – at ground level near the main development accesses by way of Sheffield Stands. Apartment cycle parking in within bike stores and covered. Spaces benefit from passive surveillance.
For long-term cycle parking (e.g. for more than 3 hours for residents, staff, students), secure covered cycle parking is a requirement. This should be conveniently located within 50 metres of the destination and located near building access points where possible.	Yes – Apartment cycle parking in within bike stores and covered. Spaces benefit from passive surveillance.
In all cases it is a requirement to provide showers, changing facilities, lockers and clothes drying facilities, for use by staff that walk or cycle to work. CCTV cameras or passive surveillance of car parks and cycle parks may be required for personal safety and security considerations.	Yes – contained within the apartments. CCTV to be provided if required
All cycle facilities in multi-storey car parks shall be at ground floor level and completely segregated from vehicular traffic. Cyclists should also have designated entry and exit routes at the car park and with minimum headroom of 2.4 metres to facilitate access by cyclists.	Not a multi-storey car park.
Within larger new developments cycle routes shall link to the existing cycle network where possible and maintain a high degree of permeability through developments. Cycle Audits may be required in such developments.	Yes – scheme connects to off-site cycle facilities – existing and proposed. DMURS Quality Audit including Cycle Audit included with scheme.

3.0 TRIP GENERATION, ASSIGNMENT AND DISTRIBUTION

3.1 In terms of assessing Car Traffic and the impact of same on the local road network, the Trip Rate Information Computer System database is ordinarily used to ascertain vehicular trip generation associated with the use of any particular site. This represents industry standard practice for Traffic and Transport Assessments in Ireland. Indeed it is the recommended method of assessing traffic generation, specifically referenced in the TII Guidelines.

3.2 We have included as ***Appendix C*** the TRICS output for traditional Residential Apartments, and this provides a robust estimation of traffic as illustrated in ***Table 3.1*** below.

3.3 The following Table summarised the Output from the TRICS database which is included herein as ***Appendix C*** for comparison purposes.

Table 3.1: TRICS Data Summary, 120 Apartments Proposed Scheme

120 No. Apartments	Arrivals (PCUs)		Departures (PCUs)		Total 2-Way Traffic Generated
Network Hour	Per Unit	Site	Per Unit	Site	
Weekday AM Peak Hr	0.053	6	0.187	22	28
Weekday PM Peak Hr	0.154	18	0.082	10	28
24 Hours	1.058	127	1.136	136	263
TOTAL PRIMARY DEVELOPMENT VEHICULAR TRAFFIC GENERATED BY SUBJECT SITE					
Network Hour	**Arrivals (PCUs)**		**Departures (PCUs)**		**2-way**
Weekday AM Peak Hr	6		22		28
Weekday PM Peak Hr	18		10		28
24 Hours	127		136		263

3.4 In the case of residential apartments, the application of TRICS in this case specifically excludes the effect of Shared Visits and quantifies the volumes of traffic on an individual basis with the traffic assigned as 100% primary trips - in these terms the assessment can be considered further robust.

3.5 Therefore, we consider that the use of TRICS in the methodology adopted is Robust and Onerous and the Trip Rates applied and used provide for a robust reflection of the expected worst case traffic generated by the proposed development. This is particularly the case for the subject site where there is restricted and managed residential car parking provision, which further limits or controls trip generation.

3.6 Notwithstanding, in light of observation of existing capacity conditions, the use of higher Trip Rates, if required, would have absolutely no impact upon the conclusions of the study. This is particularly the case given the low traffic impact associated with the development.

Assessment Methodology

3.7 We have used hand assignment techniques based on the observed movements, with the worst case traffic assigned to the roads based on the observed established traffic patterns, being the industry standard methodology. The standard methodology applied was to firstly ascertain the base background traffic conditions for both the weekday AM and weekday PM Commuter Peak periods. To this end we commissioned and undertook a new 2024 Traffic Survey of the existing affected roads and junctions in order to establish base background traffic conditions.

3.8 We then applied TII recommended annual growth factors to calculate Opening and Design Year traffic conditions. Details of the traffic surveys are included as ***Appendix B*** and are reproduced as commuter peak hour Network Flow Diagrams as ***Appendix D.***

3.9 We used TII PE-PAG-02017 Project Appraisal Guidelines for National Roads Unit 5.3 (Travel Demand Projections, Table 6.1: Central Growth Rates: Annual Growth Factors, Metropolitan Dublin), to establish projected occupation/opening year 2027 and design year 2042 traffic conditions 15 years following opening on the local road network. The worst case traffic based on the content of ***Table 3.1*** above was then applied in order to establish Opening Year and Design Year Traffic Conditions with the proposed development in place and fully occupied. This is all included in the calculations included herein as ***Appendix D***.

3.10 It should be noted that we have selected an opening year of 2027 as being reasonable and appropriate. However, in our experience, varying the opening year and design year by 1-3 years, if required for whatever reason, would have no significant impact upon the conclusions of the study. In addition, given the favourable results reported in this study, if required to apply higher background traffic conditions for any reason we would not anticipate any changes whatsoever to the conclusions.

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

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

Year	to Year	Table 6.1:
Surveyed	2027	1.049
2027	2042	1.114

4.0 TRAFFIC IMPACT – ROADS IMPACT AND CAPACITY

4.1 The TII Traffic and Transport Assessment Guidelines sets out a strict mechanism for assessment of developments of this nature and determining whether further assessment is indeed required. This Guidelines requires a **Threshold Assessment** of the impact on the local roads to be provided in order to determine whether further more detailed modelling and assessment of particular critical junctions is necessary.

4.2 We have assessed the impact of the proposed development with a wide area of influence included. The professional guidance referenced above sets out specific increases in traffic volume associated with new development, which, when breached, requires further detailed analysis to be undertaken. The recommendation is that, if the expected increase is 5% for networks that are considered heavily trafficked or congested, then further analysis is warranted. As noted above Belarmine is lightly trafficked here, and a 10% threshold has been applied. However, a prudent/conservative approach was adopted for Enniskerry Road. In this case, and for robustness the 5% threshold has been applied.

4.3 In this regard, it is demonstrated herein that the proposed occupation of the Apartments, with relatively low volumes of vehicular traffic added to a busy network, will not result in any significant or noticeable level of new trips on the local roads, with all anticipated traffic increases beyond the Proposed Access junctions expected to be **well below** the Industry-Standard level of 5% above which further assessment is required.

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

Table 4.1; - All of Proposed Development Open & Occupied - Threshold Assessment, Worst-Case Impact - AM & PM Peak Hours 2027

Assessed Road or Junction	Traffic Increase %		COMMENT
	AM Pk Hr	PM Pk Hr	
Enniskerry Road / Hillcrest Road Signal Controlled Junction	1.0%	1.1%	<<5% No Further Assessment Required
Enniskerry Road / Village Road Signal Controlled Junction	1.3%	1.4%	<<5% No Further Assessment Required
Enniskerry Road / Belarmine Road Roundabout junction	0.8%	1.0%	<<5% No Further Assessment Required
Belarmine Vale / Belarmine Road Roundabout junction	2.9%	5.8%	<10% No Further Assessment Required
Belarmine Vale / Belarmine Drive Priority junction	9%	42%	Further Assessment Required

4.5 These worst-case traffic increases beyond the access junctions are below the Guideline and industry standard level above which further assessment is required, in accordance with the Guidelines.

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

4.7 If required for any reason, adding additional background traffic volumes e.g. additional background traffic associated with recently permitted small developments local to the site, will further reduce the percentage impact of the development as part of the above threshold assessments.

4.8 We have undertaken traffic modelling of the Belarmine Vale / Belarmine Drive T-Junction for weekday AM and PM Periods (2027 Opening Year and 2042 Design Year +15) purely to confirm & demonstrate adequate capacity exists to accommodate the increased traffic associated with the development.

Belarmine Vale / Belarmine Drive T-Junctions Capacity Modelling

4.9 We have used the TII-approved software package 'Junctions 10' PiCADY' (**P**riority **I**ntersection **C**apacity **A**nd **D**ela**y**) software package (as part of the TRL Package 'Junction 10') to assess the capacity of the junction. PiCADY produces results based on a ratio of flow to capacity (RFC) and queue length. An RFC greater that 1.00 indicates that a junction is operating at or above capacity, with 0.85 considered to be the optimum RFC value. We have appended the detailed computer simulation model results for the proposed site access in ***Appendix E***.

4.10 We have undertaken the detailed assessment of the capacity of the proposed access arrangement onto Sandyford Road, with the entire subject development in place and occupied. The detailed output of the models is summarised below as ***Table 4.2***.

Table 4.2: PiCADY Results, Weekday AM & PM Commuter Pk Hours - 2027 & 2042

Modelled Scenario	*Period Mean Max Q (PCUs)*	*Period Max RFC*
2027 Opening Year AM Peak Hr	<1	0.16
2027 Opening Year PM Peak Hr	<1	0.07
2042 Design Year AM Peak Hr	<1	0.18
2042 Design Year PM Peak Hr	<1	0.08

4.11 The results of the modelling clearly show that the junction will have way more than adequate capacity to accommodate the worst case traffic associated with the fully complete and occupied scheme in opening and design years, conscious of the very small increases in traffic associated with the subject development.

4.12 The above analysis confirms that the proposed development will have a negligible impact upon the capacity and safety of the road network in the area and can easily be accommodated.

5.0 CONCLUSIONS

5.1 This Traffic & Transport Assessment Report assesses the impact of the proposal to construct and occupy a proposed residential development adjacent to Kilgobbin Road, Stepaside, Co. Dublin. The proposed development consists of the construction of a residential development principally comprising 120 No. apartments.

5.2 This Report has been prepared in accordance with the TII Traffic & Transport Assessment Guidelines and is based on industry-standard Trip Generation Rates established using the most up to date version of the TRICS Database. The impact of the development traffic on the local roads has been modelled and assessed, based on a traffic survey/vehicle turning movement survey during normal school period in 2024. Appropriate TII recommended annual traffic growth factors have been applied to establish selected opening year and design year traffic conditions.

5.3 The assessment includes a Preliminary Mobility Management Plan (MMP or Travel Plan) for the site which is included as ***Appendix F***. We have also prepared a Statement of Consistency with DMURS and confirm that the internal layout is compliant with the requirements, included as ***Appendix G***.

5.4 An assessment of impact/capacity on Bus/LUAS has also been undertaken and is included as ***Appendix H***. An assessment of impact/capacity on Bus/LUAS has also been undertaken and is included as ***Appendix I***.

5.5 An independent Stage 1 Road Safety Audit including Quality Audit, together with the Designer Feedback form, has been undertaken and is included as ***Appendix J***.

5.6 An assessment of Car Parking and Bicycle Parking quantum and design provided has been undertaken, and the provision is consistent with the requirements of the National Apartment Guidelines and best sustainability practices.

5.7 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.

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

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

APPENDICES - CONTENT

A	Proposed Development – Site Layout Plans & Drawings
B	2024 New Classified Turning Movement Traffic Survey Output Data
C	TRICS Output Data – Residential Apartments
D	Traffic Calculations, Trip Distribution, Network Traffic Flow Diagrams & Projections
E	Junction 10 PiCADY – Belarmine Vale / Belarmine Drive Priority Junction
F	Preliminary Mobility Management Plan/Travel Plan
G	DMURS Statement of Consistency
H	Bus/LUAS Capacity Assessment Report
I	Car / Bicycle Parking Management Report
J	Stage 1 Independent Road Safety Audit including Quality Audit (incl Walking/Cycling)

APPENDIX A

Proposed Development -
Site Layout Plans & Drawings

PROPOSED SITE PLAN WITH GROUND FLOOR
SCALE 1:250

SITE STATISTICS / INFO

- ONWERSHIP SITE BOUNDARY 13753.7 SQ.M / 1.37 HA / 3.39 ACRES
- SUBJECT APPLICATION SITE BOUNDARY 12193.9 SQ.M / 1.21 HA / 2.99 ACRES
- ZONING DIVISION (*O.A & *O.F)

GROSS FLOOR AREAS	10,564 SQ.M (including Substation and External Bike Store Building)
FOOTPRINT OF BUILDINGS	2,234 SQ.M
PLOT RATIO	0.87
DENSITY	98.4 UNITS/HA
SITE COVERAGE	18%
PUBLIC OPEN SPACE (O.A)*	19.6% - 2,387SQ.M
PUBLIC OPEN SPACE (O.F)*	30.3% - 3,698 SQ.M
COMMUNAL OPEN SPACE	7% - 852 SQ.M

*O.A: Zoning Objective A; O.F: Zoning Objective F

LEGEND

- FLOOD ZONE A
- FLOOD ZONE B
- CSFRS 1.0% BASELINE SCENARIO
- ACCESS TO THE SITE
- MAIN ENTRANCES BLOCK A AND B
- CAR PARKING
- CAR PARKING WITH E.V CHARGING POINT
- DISABLE CAR PARKING
- MOTORBIKE SPACE

NUMBER OF MOTORBIKE SPACE

REGULAR MOTORBIKE PARKING	03

NUMBER OF CAR SPACE

REGULAR CAR PARKING	36
CAR PARKING WITH E.V CHARGING POINT	15
DISABLE CAR PARKING	3
TOTAL	54

NUMBER OF BICYCLE STORAGE

	TWO-TIER SPACES	SHEFFIELD SPACES	CARGO BIKE	TOTAL
BLOCK A	36	35 (including 5 e-bike spaces)	3	74
BLOCK B (B-1+B-2+B-3)	46	79 (including 11 e-bike spaces)	6	131
BLOCK A - external block	0	12	0	12
EXTERNAL VISITORS	-	56	-	44
TOTAL	82	182	09	273

BLOCK A SCHEDULE OF ACCOMODATION - 4 TO 5 STOREYS

FLOORS	1 BED (2P)	2 BED (3P)	2 BED (4P)	3 BED (5P)	TOTAL UNITS	DUAL ASPECT
GROUND FLOOR	6	2	-	-	8	6
FIRST FLOOR	6	3	-	1	10	6
SECOND FLOOR	6	3	-	1	10	6
THIRD FLOOR	6	3	-	1	10	6
FOURTH FLOOR	3	2	1	-	6	4
TOTAL UNITS	27	13	1	3	44	28
TOTAL %	61.36%	29.54%	2.27%	6.81%	100%	63.6%

GROSS EXTERNAL FLOOR AREA (GEFA)

GROUND FLOOR	780.2 SQ.M
FIRST FLOOR	780.2 SQ.M
SECOND FLOOR	780.2 SQ.M
THIRD FLOOR	780.2 SQ.M
FOURTH FLOOR	493.8 SQ.M
TOTAL	3614.6 SQ.M

BLOCK B SCHEDULE OF ACCOMODATION - 5 TO 6 STOREYS

FLOORS	1 BED (2P)	2 BED (3P)	2 BED (4P)	3 BED (4P)	TOTAL UNITS	DUAL ASPECT
GROUND FLOOR	5	-	5	-	10	5
FIRST FLOOR	10	2	3	1	16	8
SECOND FLOOR	8	2	3	2	15	7
THIRD FLOOR	7	3	2	2	14	7
FOURTH FLOOR	7	3	2	2	14	7
FIFTH FLOOR	3	2	1	1	7	2
TOTAL UNITS	40	12	16	8	76	36
TOTAL %	53%	16%	21%	10%	100%	47%

GROSS EXTERNAL FLOOR AREA (GEFA)

GROUND FLOOR	1389.1 SQ.M
FIRST FLOOR	1241.0 SQ.M
SECOND FLOOR	1230.2 SQ.M
THIRD FLOOR	1168.9SQ.M
FOURTH FLOOR	1168.9 SQ.M
FIFTH FLOOR	685.9 SQ.M
TOTAL	6884.0 SQ.M

BLOCK A + BLOCK B

SCHEDULE OF ACCOMODATION - 4-6 STOREYS

	1 BED (2P)	2 BED (3P)	2 BED (4P)	3 BED (5P)	TOTAL UNITS	DUAL ASPECT
BLOCK A	27	13	1	3	44	28
BLOCK B	40	12	16	8	76	36
TOTAL UNITS	67	25	17	11	120	64
TOTAL %	56%	21%	14%	09%	100%	53%

GROSS EXTERNAL FLOOR AREA OF THE APARTMENT BLOCKS (GEFA)

BLOCK A	3614.6 SQ.M
BLOCK B	6884.0 SQ.M
TOTAL	10498.6 SQ.M

MAP SERIES: 1:1,000 1:1,000 1:2,500
MAP SHEETS: 3455-09 3455-10 3455-B

PLEASE REFER TO ACCOMPANYING DRAWINGS AND REPORTS AS PREPARED BY:

STUDIO GLASU (LANDSCAPE), NRB CONSULTING ENGINEERS (TRAFFIC) , KAVCO GROUP (ENVIROGUIDE), MOLONY MILLAR CONSULTING ENGINEERS (CIVIL, STRUCTURAL), RM BREEN & ASSOCIATES (M&E), JOHN MORRIS ARBORICULTURAL CONSULTANCY LTD (ARBORIST), COURTNEY DEERY ARCHEOLOGY & CULTURAL HERITAGE (ARCHAEOLOGY), WAVE DYNAMICS ACOUSTIC CONSULTANTS (ACOUSTIC) & DIGITAL DIMENSIONS (DAYLIGHT ANALISYS AND 3D DIMENSIONS).

PLANNING

Rev	Initial	Date	Revision Description

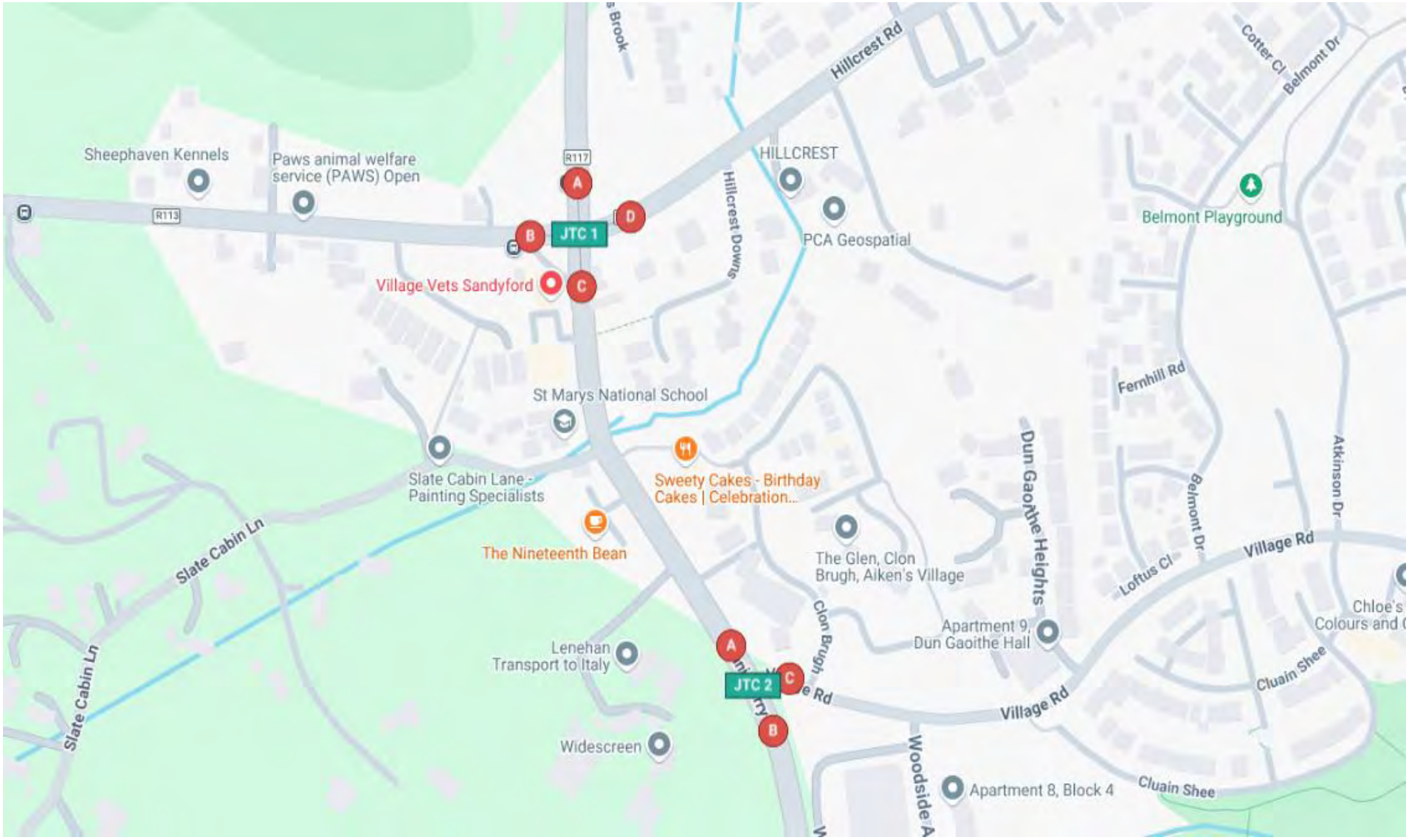
DOWNEY
29 Merrion Square, D02RW64
+353 (0) 1 253 0220
info@dwny.ie
RIAI Practice Member 2025

CLIENT	KILGOBBIN APARTMENTS LIMITED	SCALE @ A1: 1:250	PAPER SIZE A0
		SCALE @ A3:	
PROJECT	KILGOBBIN ROAD, STEPASIDE, CO. DUBLIN	DRAWN BY: LC&RA	JOB NO. 698_008
		CHECKED BY: IF	
DWG. TITLE	PROPOSED SITE PLAN WITH GROUND FLOOR	DATE: SEPT 2025	DRWG NO. PL-100
		REVISION:	

APPENDIX B

2024 Raw Traffic Survey Data Collected

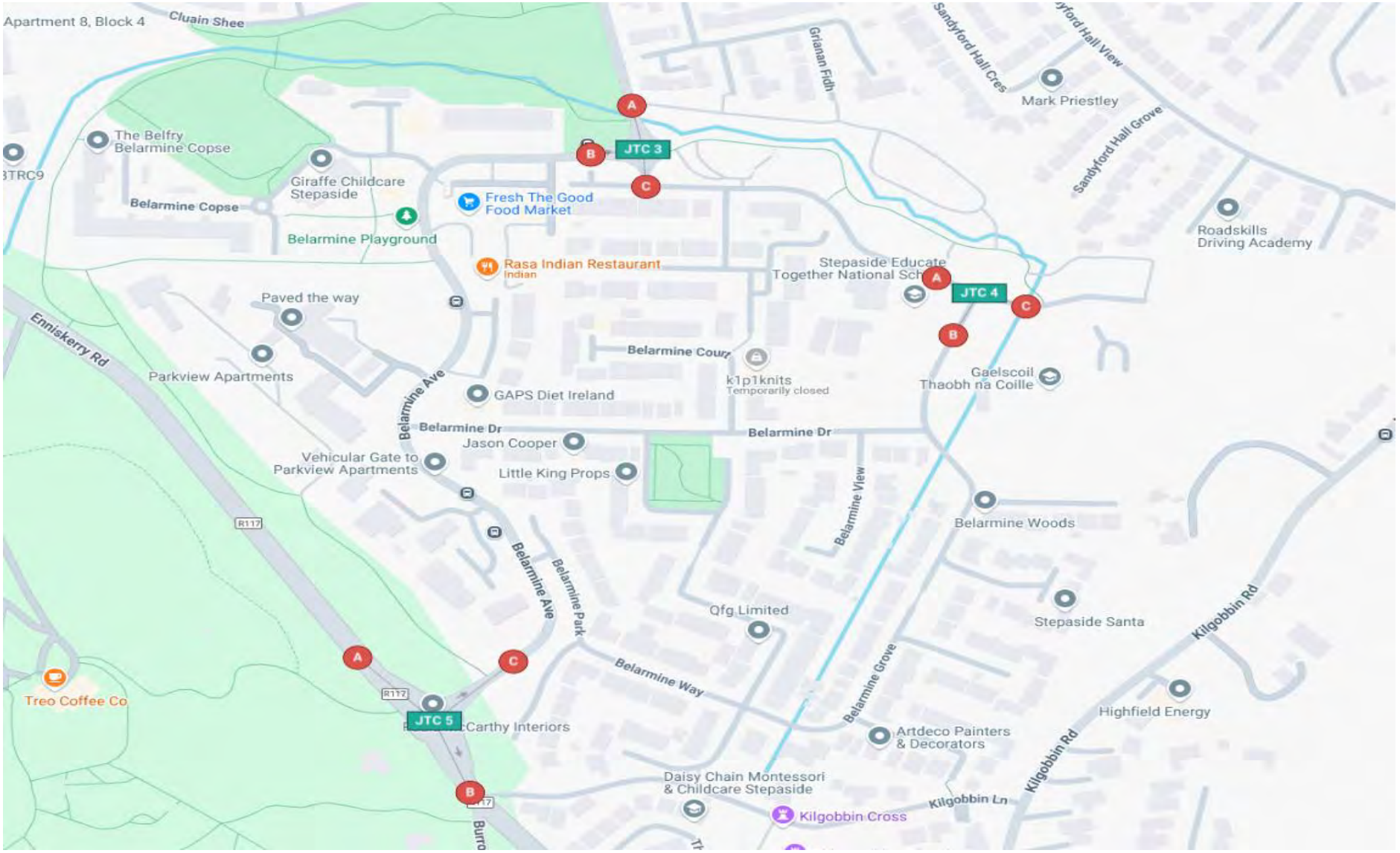
Site/Movement Labelling



	Job number: IDA/24/846	Job Dates: 23/10/2024	Drawing No: IDA/24/846-01
	Client: NRB Consulting Engineers	Job Days: Wednesday	Author: MK

IDASO
Innovative Data Solutions

Site/Movement Labelling



	Job number: IDA/24/846	Job Dates: 23/10/2024	Drawing No: IDA/24/846-02
	Client: NRB Consulting Engineers	Job Days: Wednesday	Author: MK

IDASO
Innovative Data Solutions

IDASO

24846 - Stepaside Kilgobbin **OCTOBER 2024**

MANUAL CLASSIFIED JUNCTION TURNING COUNTS **IDA/24/846**

SITE: Site 1 DATE: 23rd October 2024

LOCATION: Enniskerry Road/Blackglen Road/Hillcrest Road DAY: Wednesday

	MOVEMENT 1 (A => D)								MOVEMENT 2 (A => C)								MOVEMENT 3 (A => B)							
TIME	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**
07:30	0	0	2	1	0	0	3	3	1	0	15	2	0	2	20	21	0	0	3	1	0	1	5	6
07:45	0	0	0	0	0	0	0	0	0	0	39	0	0	1	40	41	0	0	12	0	0	1	13	14
H/TOT	0	0	2	1	0	0	3	3	1	0	54	2	0	3	60	62	0	0	15	1	0	2	18	20
08:00	0	0	2	0	0	0	2	2	5	0	40	4	0	2	51	49	0	1	13	0	0	1	15	15
08:15	0	0	3	0	0	0	3	3	6	1	72	0	1	0	80	76	0	0	21	2	1	0	24	25
08:30	0	0	0	1	0	0	1	1	0	0	61	4	2	0	67	69	0	0	21	1	1	0	23	24
08:45	0	0	4	0	0	0	4	4	2	1	63	3	2	0	71	71	0	0	22	0	0	0	22	22
H/TOT	0	0	9	1	0	0	10	10	13	2	236	11	5	2	269	265	0	1	77	3	2	1	84	86
09:00	0	0	2	0	0	0	2	2	0	0	57	2	2	1	62	65	0	0	19	0	0	1	20	21
09:15	0	0	1	0	0	0	1	1	1	0	23	3	0	0	27	26	0	0	15	0	0	1	16	17
09:30	0	0	0	0	0	0	0	0	0	0	29	3	1	0	33	34	1	0	11	2	0	0	14	13
09:45	0	0	1	0	0	0	1	1	7	0	26	3	1	0	37	32	0	1	10	2	1	0	14	14
H/TOT	0	0	4	0	0	0	4	4	8	0	135	11	4	1	159	157	1	1	55	4	1	2	64	65
P/TOT	0	0	15	2	0	0	17	17	22	2	425	24	9	6	488	484	1	2	147	8	3	5	166	171

	MOVEMENT 1 (A => D)								MOVEMENT 2 (A => C)								MOVEMENT 3 (A => B)							
TIME	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**
16:00	0	0	1	0	0	0	1	1	3	1	79	7	0	1	91	89	0	0	21	2	1	0	24	25
16:15	0	0	0	0	0	0	0	0	4	2	82	9	0	0	97	93	0	0	24	2	1	0	27	28
16:30	0	0	4	0	0	0	4	4	2	5	106	11	1	0	125	121	0	0	24	1	0	1	26	27
16:45	1	0	0	0	0	0	1	0	3	2	104	6	0	0	115	111	0	0	25	1	0	0	26	26
H/TOT	1	0	5	0	0	0	6	5	12	10	371	33	1	1	428	414	0	0	94	6	2	1	103	106
17:00	0	0	1	1	0	0	2	2	6	0	86	5	1	0	98	94	0	0	27	3	2	0	32	34
17:15	0	0	1	1	0	0	2	2	4	0	70	5	1	0	80	78	0	0	19	0	0	0	19	19
17:30	0	0	2	0	0	0	2	2	6	2	80	2	1	0	91	86	0	0	19	1	0	1	21	22
17:45	0	0	3	0	0	0	3	3	6	0	109	3	1	0	119	115	0	0	30	1	0	0	31	31
H/TOT	0	0	7	2	0	0	9	9	22	2	345	15	4	0	388	373	0	0	95	5	2	1	103	106
18:00	0	0	1	0	0	0	1	1	4	1	99	2	0	1	107	104	1	0	23	0	0	0	24	23
18:15	0	0	2	0	0	0	2	2	12	2	109	2	1	0	126	116	0	0	40	0	0	1	41	42
H/TOT	0	0	3	0	0	0	3	3	16	3	208	4	1	1	233	220	1	0	63	0	0	1	65	65
P/TOT	1	0	15	2	0	0	18	17	50	15	924	52	6	2	1049	1007	1	0	252	11	4	3	271	277

24846 - Stepaside Kilgobbin **OCTOBER 2024**

MANUAL CLASSIFIED JUNCTION TURNING COUNTS **IDA/24/846**

SITE: Site 1 DATE: 23rd October 2024

LOCATION: Enniskerry Road/Blackglen Road/Hillcrest Road DAY: Wednesday

	MOVEMENT 4 (B => A)								MOVEMENT 5 (B => D)								MOVEMENT 6 (B => C)							
TIME	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**
07:30	1	0	32	1	2	1	37	39	0	0	34	5	1	0	40	41	0	0	13	3	0	0	16	16
07:45	0	0	36	2	0	1	39	40	1	0	38	5	0	0	44	43	1	0	19	3	0	0	23	22
H/TOT	1	0	68	3	2	2	76	79	1	0	72	10	1	0	84	84	1	0	32	6	0	0	39	38
08:00	1	1	34	1	0	0	37	36	0	0	39	3	2	0	44	46	0	0	29	4	0	0	33	33
08:15	0	0	27	0	1	0	28	29	1	0	39	2	0	0	42	41	2	0	24	2	0	0	28	26
08:30	0	0	37	2	0	2	41	43	0	0	31	3	0	0	34	34	1	0	13	1	0	1	16	16
08:45	0	1	32	2	0	0	35	34	5	1	30	5	0	0	41	36	0	0	29	1	0	0	30	30
H/TOT	1	2	130	5	1	2	141	142	6	1	139	13	2	0	161	157	3	0	95	8	0	1	107	105
09:00	0	0	17	3	1	0	21	22	1	1	43	3	1	0	49	49	1	0	30	0	0	1	32	32
09:15	0	0	26	3	0	0	29	29	1	0	28	1	0	0	30	29	0	0	21	4	0	0	25	25
09:30	0	0	12	2	0	2	16	18	0	0	22	1	0	0	23	23	0	0	18	0	1	0	19	20
09:45	0	0	6	0	0	0	6	6	0	0	16	1	0	0	17	17	0	0	14	1	1	0	16	17
H/TOT	0	0	61	8	1	2	72	75	2	1	109	6	1	0	119	118	1	0	83	5	2	1	92	94
P/TOT	2	2	259	16	4	6	289	296	9	2	320	29	4	0	364	359	5	0	210	19	2	2	238	237

	MOVEMENT 4 (B => A)								MOVEMENT 5 (B => D)								MOVEMENT 6 (B => C)							
TIME	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**
16:00	1	1	18	1	0	0	21	20	1	0	18	6	0	0	25	24	0	0	28	4	2	0	34	36
16:15	0	0	12	1	0	1	14	15	0	0	24	1	0	0	25	25	0	0	16	3	0	0	19	19
16:30	0	0	18	0	0	0	18	18	0	0	23	1	0	0	24	24	1	1	28	5	0	0	35	34
16:45	1	0	25	1	1	2	30	32	2	0	10	1	0	0	13	11	1	0	24	2	0	0	27	26
H/TOT	2	1	73	3	1	3	83	85	3	0	75	9	0	0	87	84	2	1	96	14	2	0	115	115
17:00	0	0	16	0	0	0	16	16	0	0	19	0	0	0	19	19	1	0	29	2	1	0	33	33
17:15	0	0	14	0	0	0	14	14	0	0	9	0	0	0	9	9	0	0	20	3	0	0	23	23
17:30	1	0	21	2	0	1	25	25	0	0	27	1	0	0	28	28	2	0	29	1	0	0	32	30
17:45	0	0	18	1	0	0	19	19	0	0	19	0	0	0	19	19	1	0	21	1	0	0	23	22
H/TOT	1	0	69	3	0	1	74	74	0	0	74	1	0	0	75	75	4	0	99	7	1	0	111	108
18:00	0	0	16	0	0	0	16	16	0	1	20	1	0	0	22	21	1	0	24	1	1	0	27	27
18:15	0	0	17	2	0	1	20	21	1	0	19	3	0	0	23	22	0	0	20	1	0	0	21	21
H/TOT	0	0	33	2	0	1	36	37	1	1	39	4	0	0	45	43	1	0	44	2	1	0	48	48
P/TOT	3	1	175	8	1	5	193	196	4	1	188	14	0	0	207	202	7	1	239	23	4	0	274	271

24846 - Stepaside Kilgobbin **OCTOBER 2024**

MANUAL CLASSIFIED JUNCTION TURNING COUNTS **IDA/24/846**

SITE: Site 1 DATE: 23rd October 2024

LOCATION: Enniskerry Road/Blackglen Road/Hillcrest Road DAY: Wednesday

	MOVEMENT 7 (C => B)								MOVEMENT 8 (C => A)								MOVEMENT 9 (C => D)							
TIME	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**
07:30	0	0	11	0	0	0	11	11	3	1	124	5	1	0	134	132	0	0	50	6	0	0	56	56
07:45	1	0	17	2	1	0	21	21	4	2	116	0	1	3	126	126	0	0	60	7	0	0	67	67
H/TOT	1	0	28	2	1	0	32	32	7	3	240	5	2	3	260	258	0	0	110	13	0	0	123	123
08:00	0	0	31	1	1	0	33	34	9	0	92	9	2	0	112	107	0	2	61	3	0	0	66	65
08:15	0	0	36	2	1	0	39	40	6	0	93	2	1	1	103	100	2	2	69	2	0	0	75	72
08:30	1	0	24	2	0	0	27	26	13	0	70	7	2	0	92	84	0	2	55	2	0	0	59	58
08:45	1	0	15	3	1	1	21	22	8	0	78	4	1	0	91	86	0	0	57	3	0	0	60	60
H/TOT	2	0	106	8	3	1	120	122	36	0	333	22	6	1	398	377	2	6	242	10	0	0	260	255
09:00	1	0	28	1	0	1	31	31	8	1	73	6	2	1	91	87	1	0	52	2	1	0	56	56
09:15	2	0	17	3	1	0	23	22	6	0	68	6	1	1	82	79	0	0	33	1	0	0	34	34
09:30	0	0	16	2	0	0	18	18	2	0	60	6	1	1	70	70	0	0	30	1	0	0	31	31
09:45	0	0	12	1	0	0	13	13	1	0	45	4	1	0	51	51	0	0	27	1	1	0	29	30
H/TOT	3	0	73	7	1	1	85	84	17	1	246	22	5	3	294	287	1	0	142	5	2	0	150	151
P/TOT	6	0	207	17	5	2	237	238	60	4	819	49	13	7	952	922	3	6	494	28	2	0	533	529

	MOVEMENT 7 (C => B)								MOVEMENT 8 (C => A)								MOVEMENT 9 (C => D)							
TIME	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**
16:00	3	0	21	2	0	0	26	24	1	0	51	3	1	0	56	56	0	1	31	2	0	0	34	33
16:15	0	0	23	1	0	0	24	24	5	0	43	0	0	0	48	44	2	0	24	2	1	0	29	28
16:30	0	0	22	2	0	0	24	24	1	2	38	7	1	2	51	52	0	0	19	0	0	0	19	19
16:45	0	0	18	3	0	0	21	21	3	1	56	3	0	0	63	60	0	1	14	3	0	0	18	17
H/TOT	3	0	84	8	0	0	95	93	10	3	188	13	2	2	218	212	2	2	88	7	1	0	100	97
17:00	1	0	15	1	0	0	17	16	1	3	33	2	1	0	40	38	1	0	23	2	0	0	26	25
17:15	0	1	20	4	0	0	25	24	3	0	58	3	2	0	66	66	1	2	28	2	0	0	33	31
17:30	1	0	22	3	0	0	26	25	2	2	56	5	0	0	65	62	0	0	24	3	0	0	27	27
17:45	1	0	29	1	0	0	31	30	3	1	49	0	0	0	53	50	0	0	28	1	0	0	29	29
H/TOT	3	1	86	9	0	0	99	95	9	6	196	10	3	0	224	216	2	2	103	8	0	0	115	112
18:00	1	0	16	1	0	0	18	17	5	1	62	4	3	0	75	73	1	0	20	0	0	0	21	20
18:15	0	0	19	0	0	0	19	19	4	2	53	5	1	0	65	62	0	1	37	1	0	0	39	38
H/TOT	1	0	35	1	0	0	37	36	9	3	115	9	4	0	140	135	1	1	57	1	0	0	60	58
P/TOT	7	1	205	18	0	0	231	224	28	12	499	32	9	2	582	563	5	5	248	16	1	0	275	267

24846 - Stepaside Kilgobbin **OCTOBER 2024**

MANUAL CLASSIFIED JUNCTION TURNING COUNTS **IDA/24/846**

SITE: Site 1 DATE: 23rd October 2024

LOCATION: Enniskerry Road/Blackglen Road/Hillcrest Road DAY: Wednesday

	MOVEMENT 10 (D => C)								MOVEMENT 11 (D => B)								MOVEMENT 12 (D => A)								PCU's Through Junction
TIME	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU	
07:30	1	0	14	2	1	0	18	18	0	0	6	2	0	0	8	8	0	0	0	0	0	0	0	0	351
07:45	1	0	12	3	0	0	16	15	1	0	12	4	0	0	17	16	0	0	2	0	0	0	2	2	407
H/TOT	2	0	26	5	1	0	34	33	1	0	18	6	0	0	25	24	0	0	2	0	0	0	2	2	758
08:00	0	0	32	2	0	0	34	34	0	1	11	0	0	0	12	11	0	0	2	0	0	0	2	2	434
08:15	0	1	40	2	0	0	43	42	0	0	16	0	0	0	16	16	1	0	1	0	0	0	2	1	471
08:30	0	0	38	0	1	0	39	40	1	0	13	2	0	0	16	15	0	0	1	0	0	0	1	1	411
08:45	0	0	33	3	0	0	36	36	1	0	28	3	1	0	33	33	0	0	0	1	0	0	1	1	435
H/TOT	0	1	143	7	1	0	152	152	2	1	68	5	1	0	77	75	1	0	4	1	0	0	6	5	1751
09:00	1	0	26	2	0	0	29	28	0	0	28	3	1	0	32	33	0	0	1	0	0	0	1	1	427
09:15	1	0	24	3	1	0	29	29	2	0	23	0	0	0	25	23	0	0	2	2	0	0	4	4	318
09:30	0	0	13	4	1	0	18	19	0	0	25	3	0	0	28	28	0	0	2	1	0	0	3	3	277
09:45	0	0	8	6	0	0	14	14	0	0	15	2	0	0	17	17	0	0	1	0	0	0	1	1	213
H/TOT	2	0	71	15	2	0	90	90	2	0	91	8	1	0	102	101	0	0	6	3	0	0	9	9	1235
P/TOT	4	1	240	27	4	0	276	275	5	1	177	19	2	0	204	200	1	0	12	4	0	0	17	16	3744

	MOVEMENT 10 (D => C)								MOVEMENT 11 (D => B)								MOVEMENT 12 (D => A)								PCU's Through Junction
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	2	39	3	0	0	44	43	0	0	21	3	1	0	25	26	0	0	1	1	0	0	2	2	379
16:15	1	1	34	2	0	0	38	37	0	1	18	2	0	0	21	20	0	0	2	0	0	0	2	2	335
16:30	0	0	42	3	0	0	45	45	1	0	28	2	0	0	31	30	0	0	3	0	0	0	3	3	401
16:45	1	1	45	4	0	0	51	50	1	0	40	6	0	0	47	46	0	0	4	0	0	0	4	4	404
H/TOT	2	4	160	12	0	0	178	175	2	1	107	13	1	0	124	122	0	0	10	1	0	0	11	11	1519
17:00	0	0	60	2	0	0	62	62	0	1	28	3	1	0	33	33	0	0	3	0	0	0	3	3	375
17:15	3	0	69	5	0	0	77	75	0	0	37	5	0	0	42	42	0	0	0	0	0	0	0	0	383
17:30	0	0	58	2	0	0	60	60	2	0	30	2	1	0	35	34	0	0	7	1	0	0	8	8	409
17:45	1	0	55	1	0	0	57	56	1	0	34	2	0	0	37	36	2	0	5	0	0	0	7	5	415
H/TOT	4	0	242	10	0	0	256	253	3	1	129	12	2	0	147	145	2	0	15	1	0	0	18	16	1582
18:00	2	0	63	3	1	0	69	68	3	0	31	0	0	0	34	32	0	0	0	0	0	0	0	0	402
18:15	0	0	58	3	0	0	61	61	0	0	28	0	1	0	29	30	0	0	0	0	0	0	0	0	434
H/TOT	2	0	121	6	1	0	130	129	3	0	59	0	1	0	63	62	0	0	0	0	0	0	0	0	836
P/TOT	8	4	523	28	1	0	564	557	8	2	295	25	4	0	334	329	2	0	25	2	0	0	29	27	3937

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24846 - Stepaside Kilgobbin **OCTOBER 2024**

MANUAL CLASSIFIED JUNCTION TURNING COUNTS **IDA/24/846**

SITE: Site 2 DATE: 23rd October 2024

LOCATION: Enniskerry Road/Village Road DAY: Wednesday

	MOVEMENT 1 (A => C)								MOVEMENT 2 (A => B)								MOVEMENT 3 (B => A)							
TIME	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**
07:30	0	0	13	1	0	1	15	16	2	0	29	4	0	1	36	35	2	1	121	7	0	0	131	129
07:45	0	0	22	2	0	1	25	26	2	0	45	3	0	0	50	48	5	1	115	8	2	3	134	134
H/TOT	0	0	35	3	0	2	40	42	4	0	74	7	0	1	86	83	7	2	236	15	2	3	265	263
08:00	1	0	28	1	0	0	30	29	4	0	57	5	0	2	68	67	6	1	125	7	2	0	141	138
08:15	5	0	49	1	0	0	55	51	3	1	80	6	1	0	91	89	5	1	119	6	1	1	133	130
08:30	0	0	55	0	2	1	58	61	1	1	59	4	1	0	66	66	8	0	117	6	2	0	133	129
08:45	1	0	58	1	1	0	61	61	1	1	64	3	3	0	72	74	4	0	87	7	3	0	101	101
H/TOT	7	0	190	3	3	1	204	202	9	3	260	18	5	2	297	296	23	2	448	26	8	1	508	498
09:00	0	0	48	4	1	0	53	54	2	0	77	1	1	2	83	84	10	1	76	7	1	4	99	95
09:15	0	0	25	4	1	0	30	31	2	0	40	5	0	0	47	45	5	0	70	7	1	0	83	80
09:30	0	0	20	2	2	0	24	26	0	0	39	3	1	0	43	44	2	0	66	2	0	0	70	68
09:45	0	0	12	4	0	0	16	16	8	0	36	5	2	0	51	47	1	0	48	5	2	0	56	57
H/TOT	0	0	105	14	4	0	123	127	12	0	192	14	4	2	224	220	18	1	260	21	4	4	308	300
P/TOT	7	0	330	20	7	3	367	371	25	3	526	39	9	5	607	599	48	5	944	62	14	8	1081	1061

	MOVEMENT 1 (A => C)								MOVEMENT 2 (A => B)								MOVEMENT 3 (B => A)							
TIME	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**
16:00	1	2	45	4	0	0	52	50	1	1	89	9	2	1	103	105	3	0	54	7	0	0	64	62
16:15	2	1	48	4	0	0	55	53	4	2	95	11	0	0	112	108	4	1	63	2	1	0	71	68
16:30	1	2	52	4	1	0	60	59	3	4	114	12	0	0	133	128	1	2	56	3	0	1	63	62
16:45	3	2	53	4	0	0	62	58	3	1	120	7	0	0	131	128	2	1	58	4	0	0	65	63
H/TOT	7	7	198	16	1	0	229	220	11	8	418	39	2	1	479	469	10	4	231	16	1	1	263	255
17:00	2	0	68	3	1	0	74	73	7	0	87	7	1	0	102	97	2	3	48	4	0	0	57	54
17:15	2	0	66	7	0	0	75	73	4	0	102	10	1	0	117	115	3	1	63	7	1	0	75	73
17:30	2	1	59	2	1	0	65	64	6	1	99	2	0	0	108	103	2	2	69	10	0	0	83	80
17:45	2	0	48	2	0	0	52	50	5	0	125	3	1	0	134	131	3	0	69	2	1	0	75	74
H/TOT	8	1	241	14	2	0	266	260	22	1	413	22	3	0	461	446	10	6	249	23	2	0	290	281
18:00	1	1	69	2	0	0	73	72	7	0	119	4	1	1	132	128	5	1	45	2	2	0	55	52
18:15	5	1	58	2	2	0	68	65	8	1	126	3	0	0	138	131	1	0	59	5	0	0	65	64
H/TOT	6	2	127	4	2	0	141	137	15	1	245	7	1	1	270	259	6	1	104	7	2	0	120	116
P/TOT	21	10	566	34	5	0	636	617	48	10	1076	68	6	2	1210	1174	26	11	584	46	5	1	673	652

IDASO

24846 - Stepaside Kilgobbin **OCTOBER 2024**

MANUAL CLASSIFIED JUNCTION TURNING COUNTS **IDA/24/846**

SITE: Site 2 DATE: 23rd October 2024

LOCATION: Enniskerry Road/Village Road DAY: Wednesday

	MOVEMENT 4 (B => C)								MOVEMENT 5 (C => B)								MOVEMENT 6 (C => A)								PCU's Through Junction
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	1	0	0	2	2	0	0	2	0	0	0	2	2	2	1	72	4	1	0	80	79	263
07:45	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3	3	2	0	73	2	0	0	77	75	286
H/TOT	0	0	1	1	0	0	2	2	0	0	5	0	0	0	5	5	4	1	145	6	1	0	157	154	549
08:00	0	0	1	0	0	0	1	1	0	0	5	1	1	0	7	8	3	1	63	2	0	0	69	66	309
08:15	0	0	6	0	0	0	6	6	0	0	7	0	0	0	7	7	7	1	67	1	1	0	77	72	355
08:30	0	0	2	0	0	0	2	2	1	0	4	0	0	0	5	4	16	2	58	4	0	1	81	68	330
08:45	1	0	2	0	0	0	3	2	0	0	1	0	1	0	2	3	2	0	47	2	0	0	51	49	290
H/TOT	1	0	11	0	0	0	12	11	1	0	17	1	2	0	21	22	28	4	235	9	1	1	278	255	1284
09:00	0	0	1	0	0	0	1	1	0	0	7	0	1	0	8	9	3	0	58	3	1	0	65	64	307
09:15	0	0	5	0	0	0	5	5	0	0	2	0	0	0	2	2	0	0	40	1	2	0	43	45	208
09:30	0	0	2	0	0	0	2	2	0	0	1	0	0	0	1	1	1	0	36	5	0	0	42	41	182
09:45	0	0	2	0	0	0	2	2	0	0	5	0	1	0	6	7	0	0	32	0	0	0	32	32	161
H/TOT	0	0	10	0	0	0	10	10	0	0	15	0	2	0	17	19	4	0	166	9	3	0	182	182	858
P/TOT	1	0	22	1	0	0	24	23	1	0	37	1	4	0	43	46	36	5	546	24	5	1	617	591	2691

	MOVEMENT 4 (B => C)								MOVEMENT 5 (C => B)								MOVEMENT 6 (C => A)								PCU's Through Junction
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	0	0	1	4	5	0	2	49	2	1	0	54	54	277
16:15	1	0	4	0	0	0	5	4	0	0	8	1	0	0	9	9	2	0	22	1	0	1	26	25	267
16:30	0	0	2	0	1	0	3	4	0	0	3	0	0	0	3	3	0	0	24	2	0	0	26	26	282
16:45	0	0	5	0	0	0	5	5	0	0	5	1	0	0	6	6	2	0	26	1	0	0	29	27	287
H/TOT	1	0	12	0	1	0	14	14	0	0	19	2	0	1	22	23	4	2	121	6	1	1	135	132	1113
17:00	0	0	5	0	0	0	5	5	1	0	6	0	0	0	7	6	1	1	24	2	1	0	29	29	264
17:15	0	0	5	0	0	0	5	5	2	0	6	0	0	0	8	6	2	0	31	1	0	0	34	32	304
17:30	0	0	5	0	0	0	5	5	0	0	4	1	0	0	5	5	1	0	30	1	0	0	32	31	288
17:45	0	0	6	0	0	0	6	6	0	0	9	0	0	0	9	9	1	1	49	1	0	0	52	51	321
H/TOT	0	0	21	0	0	0	21	21	3	0	25	1	0	0	29	26	5	2	134	5	1	0	147	143	1177
18:00	0	0	10	1	0	0	11	11	1	0	2	0	0	0	3	2	3	0	40	2	1	0	46	45	310
18:15	0	0	7	0	0	0	7	7	0	0	3	1	0	0	4	4	1	3	42	4	0	0	50	47	318
H/TOT	0	0	17	1	0	0	18	18	1	0	5	1	0	0	7	6	4	3	82	6	1	0	96	92	628
P/TOT	1	0	50	1	1	0	53	53	4	0	49	4	0	1	58	55	13	7	337	17	3	1	378	367	2918

IDASO

24846 - Stepaside Kilgobbin **OCTOBER 2024**

MANUAL CLASSIFIED JUNCTION TURNING COUNTS **IDA/24/846**

SITE: Site 3 DATE: 23rd October 2024

LOCATION: Village Road/Belarmine Avenue/Belarmine Vale DAY: Wednesday

	MOVEMENT 1 (A => C)								MOVEMENT 2 (A => B)								MOVEMENT 3 (B => A)							
TIME	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**
07:30	0	0	2	0	0	0	2	2	0	0	12	0	0	1	13	14	1	0	14	0	0	0	15	14
07:45	0	0	8	0	0	0	8	8	0	0	18	2	0	0	20	20	0	0	15	1	0	0	16	16
H/TOT	0	0	10	0	0	0	10	10	0	0	30	2	0	1	33	34	1	0	29	1	0	0	31	30
08:00	0	0	12	0	0	0	12	12	0	0	21	0	0	1	22	23	5	0	9	0	1	0	15	12
08:15	6	0	37	0	0	0	43	38	2	0	30	1	0	0	33	31	3	0	14	1	0	0	18	16
08:30	11	0	47	0	0	1	59	51	0	0	21	0	0	0	21	21	0	2	10	0	0	0	12	11
08:45	0	0	36	1	0	0	37	37	0	0	16	2	0	0	18	18	0	0	15	1	0	0	16	16
H/TOT	17	0	132	1	0	1	151	138	2	0	88	3	0	1	94	93	8	2	48	2	1	0	61	55
09:00	0	0	6	0	1	0	7	8	0	0	22	1	0	0	23	23	1	0	9	0	0	0	10	9
09:15	0	0	2	0	0	0	2	2	1	0	13	1	0	0	15	14	1	0	10	1	0	0	12	11
09:30	0	0	3	1	0	0	4	4	1	0	6	1	0	0	8	7	1	0	9	1	0	0	11	10
09:45	0	0	4	2	0	0	6	6	1	0	4	2	1	0	8	8	2	0	9	2	2	0	15	15
H/TOT	0	0	15	3	1	0	19	20	3	0	45	5	1	0	54	52	5	0	37	4	2	0	48	45
P/TOT	17	0	157	4	1	1	180	168	5	0	163	10	1	2	181	179	14	2	114	7	3	0	140	130

	MOVEMENT 1 (A => C)								MOVEMENT 2 (A => B)								MOVEMENT 3 (B => A)							
TIME	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**
16:00	3	0	8	0	0	0	11	9	0	0	16	4	0	0	20	20	0	0	13	0	0	1	14	15
16:15	1	0	3	1	0	0	5	4	2	1	18	0	0	0	21	19	0	0	8	2	0	1	11	12
16:30	1	0	8	1	0	0	10	9	0	0	12	2	1	0	15	16	1	0	12	0	0	0	13	12
16:45	1	1	9	0	0	0	11	10	0	0	28	2	0	0	30	30	2	0	19	0	0	0	21	19
H/TOT	6	1	28	2	0	0	37	32	2	1	74	8	1	0	86	85	3	0	52	2	0	2	59	58
17:00	1	0	14	0	0	0	15	14	1	0	27	1	0	0	29	28	1	0	15	0	0	0	16	15
17:15	1	0	20	1	0	0	22	21	2	0	22	0	0	0	24	22	1	0	12	2	0	0	15	14
17:30	1	0	8	1	0	0	10	9	2	1	21	0	0	0	24	22	0	0	21	0	0	0	21	21
17:45	2	0	10	0	0	0	12	10	1	0	23	1	0	0	25	24	1	1	19	0	0	0	21	20
H/TOT	5	0	52	2	0	0	59	54	6	1	93	2	0	0	102	96	3	1	67	2	0	0	73	70
18:00	2	0	13	0	0	0	15	13	1	0	23	2	0	0	26	25	1	0	17	0	0	0	18	17
18:15	2	0	9	0	0	0	11	9	0	0	21	1	0	0	22	22	0	1	14	2	0	0	17	16
H/TOT	4	0	22	0	0	0	26	22	1	0	44	3	0	0	48	47	1	1	31	2	0	0	35	33
P/TOT	15	1	102	4	0	0	122	108	9	2	211	13	1	0	236	228	7	2	150	6	0	2	167	161

24846 - Stepaside Kilgobbin **OCTOBER 2024**

MANUAL CLASSIFIED JUNCTION TURNING COUNTS **IDA/24/846**

SITE: Site 3 DATE: 23rd October 2024

LOCATION: Village Road/Belarmine Avenue/Belarmine Vale DAY: Wednesday

	MOVEMENT 4 (B => C)								MOVEMENT 5 (C => B)								MOVEMENT 6 (C => A)								PCU's Through Junction
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	1	0	5	0	0	0	6	5	0	0	7	0	0	0	7	7	42
07:45	0	0	1	0	0	0	1	1	0	0	6	0	0	0	6	6	0	0	7	0	0	0	7	7	58
H/TOT	0	0	1	0	0	0	1	1	1	0	11	0	0	0	12	11	0	0	14	0	0	0	14	14	100
08:00	0	0	5	0	0	0	5	5	0	0	8	0	0	0	8	8	10	0	5	0	0	0	15	7	67
08:15	3	0	18	0	0	0	21	19	1	0	11	0	0	0	12	11	2	0	11	0	0	0	13	11	126
08:30	1	0	27	0	0	0	28	27	3	0	63	0	0	0	66	64	7	0	20	1	0	1	29	24	198
08:45	0	0	31	0	0	0	31	31	0	0	50	0	0	0	50	50	2	0	36	0	0	0	38	36	188
H/TOT	4	0	81	0	0	0	85	82	4	0	132	0	0	0	136	133	21	0	72	1	0	1	95	78	579
09:00	0	0	5	0	0	0	5	5	1	0	19	0	0	0	20	19	0	0	22	0	0	0	22	22	86
09:15	0	0	3	0	0	0	3	3	0	0	0	0	0	0	0	0	1	0	8	0	1	0	10	10	40
09:30	0	0	2	0	0	0	2	2	3	0	2	0	0	0	5	3	1	0	3	0	0	0	4	3	29
09:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	4	4	33
H/TOT	0	0	10	0	0	0	10	10	4	0	21	0	0	0	25	22	2	0	37	0	1	0	40	39	188
P/TOT	4	0	92	0	0	0	96	93	9	0	164	0	0	0	173	166	23	0	123	1	1	1	149	131	867

	MOVEMENT 4 (B => C)								MOVEMENT 5 (C => B)								MOVEMENT 6 (C => A)								PCU's Through Junction
TIME	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	
16:00	0	0	2	0	0	0	2	2	0	0	7	0	0	0	7	7	1	0	15	0	0	0	16	15	68
16:15	0	0	2	0	0	0	2	2	0	0	0	0	0	0	0	0	1	0	7	0	0	0	8	7	44
16:30	2	0	1	0	0	0	3	1	0	0	1	0	0	0	1	1	0	0	5	0	0	0	5	5	44
16:45	0	0	2	0	0	0	2	2	0	1	4	0	0	0	5	4	0	0	9	0	0	0	9	9	74
H/TOT	2	0	7	0	0	0	9	7	0	1	12	0	0	0	13	12	2	0	36	0	0	0	38	36	230
17:00	0	0	3	0	0	0	3	3	0	0	3	1	0	0	4	4	2	0	2	0	0	0	4	2	66
17:15	0	0	4	0	0	0	4	4	1	0	9	0	0	0	10	9	0	0	5	0	0	0	5	5	75
17:30	3	0	5	0	0	0	8	6	2	0	6	0	0	0	8	6	1	0	4	1	0	0	6	5	69
17:45	1	0	5	0	0	0	6	5	1	0	10	0	0	0	11	10	2	0	6	0	0	0	8	6	75
H/TOT	4	0	17	0	0	0	21	18	4	0	28	1	0	0	33	29	5	0	17	1	0	0	23	18	285
18:00	0	0	2	0	0	0	2	2	2	0	1	0	0	0	3	1	3	0	6	0	0	0	9	7	65
18:15	0	0	1	0	0	0	1	1	1	0	1	0	0	0	2	1	1	0	8	1	0	0	10	9	58
H/TOT	0	0	3	0	0	0	3	3	3	0	2	0	0	0	5	2	4	0	14	1	0	0	19	16	123
P/TOT	6	0	27	0	0	0	33	28	7	1	42	1	0	0	51	43	11	0	67	2	0	0	80	70	638

IDASO

24846 - Stepaside Kilgobbin **OCTOBER 2024**

MANUAL CLASSIFIED JUNCTION TURNING COUNTS **IDA/24/846**

SITE: Site 4 DATE: 23rd October 2024

LOCATION: Belarmine Vale/Belarmine Lawns DAY: Wednesday

	MOVEMENT 1 (A => C)								MOVEMENT 2 (A => B)								MOVEMENT 3 (B => A)							
TIME	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**
07:30	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	2	0	0	2	0	0	0	2	2
07:45	0	0	0	0	0	0	0	0	0	0	8	0	0	0	8	8	1	0	2	0	0	0	3	2
H/TOT	0	0	0	0	0	0	0	0	0	0	10	0	0	0	10	10	1	0	4	0	0	0	5	4
08:00	0	0	4	0	0	0	4	4	0	0	7	0	0	0	7	7	3	0	2	0	0	0	5	3
08:15	1	0	10	0	0	0	11	10	4	0	18	0	0	0	22	19	2	0	12	0	0	0	14	12
08:30	0	0	37	0	0	1	38	39	3	0	19	0	0	0	22	20	4	0	41	0	0	0	45	42
08:45	0	0	55	1	0	0	56	56	0	0	8	0	0	0	8	8	0	0	14	0	0	0	14	14
H/TOT	1	0	106	1	0	1	109	109	7	0	52	0	0	0	59	54	9	0	69	0	0	0	78	71
09:00	0	0	9	0	0	0	9	9	0	0	3	0	0	0	3	3	0	0	3	0	0	0	3	3
09:15	0	0	2	0	0	0	2	2	0	0	0	0	1	0	1	2	0	0	1	0	1	0	2	3
09:30	0	0	0	0	0	0	0	0	0	0	2	1	0	0	3	3	1	0	0	0	0	0	1	0
09:45	0	0	1	1	0	0	2	2	0	0	1	0	0	0	1	1	1	0	0	1	0	0	2	1
H/TOT	0	0	12	1	0	0	13	13	0	0	6	1	1	0	8	9	2	0	4	1	1	0	8	7
P/TOT	1	0	118	2	0	1	122	122	7	0	68	1	1	0	77	73	12	0	77	1	1	0	91	82

	MOVEMENT 1 (A => C)								MOVEMENT 2 (A => B)								MOVEMENT 3 (B => A)							
TIME	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**
16:00	1	0	0	0	0	0	1	0	3	0	7	0	0	0	10	8	3	0	10	0	0	0	13	11
16:15	0	0	0	0	0	0	0	0	0	0	3	1	0	0	4	4	1	0	2	0	0	0	3	2
16:30	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	2	0	0	3	0	0	0	3	3
16:45	0	0	0	0	0	0	0	0	2	0	6	0	0	0	8	6	3	0	8	1	0	0	12	10
H/TOT	1	0	0	0	0	0	1	0	5	0	18	1	0	0	24	20	7	0	23	1	0	0	31	26
17:00	0	0	0	0	0	0	0	0	0	0	7	0	0	0	7	7	0	0	4	0	0	0	4	4
17:15	0	0	0	0	0	0	0	0	0	0	11	0	0	0	11	11	0	0	10	0	0	0	10	10
17:30	0	0	0	0	0	0	0	0	0	0	9	0	0	0	9	9	3	0	7	1	0	0	11	9
17:45	0	0	0	0	0	0	0	0	0	0	7	0	0	0	7	7	2	0	9	0	0	0	11	9
H/TOT	0	0	0	0	0	0	0	0	0	0	34	0	0	0	34	34	5	0	30	1	0	0	36	32
18:00	0	0	1	0	0	0	1	1	2	0	5	0	0	0	7	5	2	0	3	0	0	0	5	3
18:15	0	0	0	0	0	0	0	0	1	0	4	0	0	0	5	4	1	0	2	0	0	0	3	2
H/TOT	0	0	1	0	0	0	1	1	3	0	9	0	0	0	12	9	3	0	5	0	0	0	8	5
P/TOT	1	0	1	0	0	0	2	1	8	0	61	1	0	0	70	63	15	0	58	2	0	0	75	63

24846 - Stepaside Kilgobbin **OCTOBER 2024**

MANUAL CLASSIFIED JUNCTION TURNING COUNTS **IDA/24/846**

SITE: Site 4 DATE: 23rd October 2024

LOCATION: Belarmine Vale/Belarmine Lawns DAY: Wednesday

	MOVEMENT 4 (B => C)								MOVEMENT 5 (C => B)								MOVEMENT 6 (C => A)								PCU's Through Junction
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	4
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	10
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14
08:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	14
08:15	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	41
08:30	5	0	3	0	0	0	8	4	2	0	1	0	0	0	3	1	0	0	9	0	0	1	10	11	117
08:45	2	0	6	0	0	0	8	6	0	0	6	1	0	0	7	7	3	0	61	0	0	0	64	62	153
H/TOT	7	0	9	0	0	0	16	10	3	0	7	1	0	0	11	8	4	0	70	0	0	1	75	73	325
09:00	0	0	2	0	0	0	2	2	0	0	3	0	0	0	3	3	1	0	21	0	0	0	22	21	41
09:15	0	0	0	0	0	0	0	0	1	0	1	0	0	0	2	1	0	0	2	0	0	0	2	2	10
09:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	2	5
09:45	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	1	0	0	0	1	1	6
H/TOT	0	0	2	0	0	0	2	2	1	0	4	1	0	0	6	5	1	0	26	0	0	0	27	26	62
P/TOT	7	0	11	0	0	0	18	12	4	0	11	2	0	0	17	13	5	0	96	0	0	1	102	99	401

	MOVEMENT 4 (B => C)								MOVEMENT 5 (C => B)								MOVEMENT 6 (C => A)								PCU's Through Junction
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	0	0	0	3	3	0	0	9	0	0	0	9	9	32
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	7
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16
H/TOT	0	0	1	0	0	0	1	1	0	0	3	0	0	0	3	3	0	0	10	0	0	0	10	10	60
17:00	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11
17:15	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	21
17:30	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	18
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	16
H/TOT	1	0	0	0	0	0	1	0	3	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	66
18:00	4	0	0	0	0	0	4	1	1	0	0	0	0	0	1	0	0	0	1	0	0	0	1	1	11
18:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
H/TOT	4	0	0	0	0	0	4	1	1	0	0	0	0	0	1	0	0	0	1	0	0	0	1	1	17
P/TOT	5	0	1	0	0	0	6	2	4	0	3	0	0	0	7	3	0	0	11	0	0	0	11	11	143

IDASO

24846 - Stepaside Kilgobbin **OCTOBER 2024**

MANUAL CLASSIFIED JUNCTION TURNING COUNTS **IDA/24/846**

SITE: Site 5 DATE: 23rd October 2024

LOCATION: Enniskerry Road/Belarmine Avenue DAY: Wednesday

	MOVEMENT 1 (A => C)								MOVEMENT 2 (A => B)								MOVEMENT 3 (B => A)							
TIME	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**
07:30	1	0	9	0	0	0	10	9	1	0	14	4	0	1	20	20	1	1	73	6	0	0	81	80
07:45	0	0	5	2	0	0	7	7	1	0	36	1	0	0	38	37	2	1	77	4	2	2	88	90
H/TOT	1	0	14	2	0	0	17	16	2	0	50	5	0	1	58	57	3	2	150	10	2	2	169	170
08:00	0	0	9	2	0	0	11	11	2	0	37	3	1	1	44	44	5	0	78	6	2	0	91	89
08:15	0	0	18	2	0	0	20	20	1	0	51	2	1	0	55	55	3	0	91	3	2	0	99	99
08:30	0	0	15	0	0	0	15	15	2	1	45	4	0	0	52	50	3	0	60	4	1	0	68	67
08:45	0	1	16	1	1	0	19	19	1	0	36	1	2	0	40	41	3	0	48	5	1	0	57	56
H/TOT	0	1	58	5	1	0	65	65	6	1	169	10	4	1	191	190	14	0	277	18	6	0	315	311
09:00	0	0	24	1	0	0	25	25	2	0	61	2	2	0	67	67	7	0	43	6	1	1	58	54
09:15	0	0	9	1	0	0	10	10	1	0	41	2	0	0	44	43	4	0	44	9	1	0	58	56
09:30	0	0	5	3	0	0	8	8	1	0	35	1	0	0	37	36	0	0	49	1	1	0	51	52
09:45	0	0	7	4	0	0	11	11	8	0	32	1	4	0	45	43	1	0	29	4	0	0	34	33
H/TOT	0	0	45	9	0	0	54	54	12	0	169	6	6	0	193	189	12	0	165	20	3	1	201	195
P/TOT	1	1	117	16	1	0	136	135	20	1	388	21	10	2	442	436	29	2	592	48	11	3	685	676

	MOVEMENT 1 (A => C)								MOVEMENT 2 (A => B)								MOVEMENT 3 (B => A)							
TIME	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**
16:00	0	0	22	2	0	0	24	24	0	1	73	7	2	2	85	88	3	0	45	3	0	0	51	49
16:15	0	1	20	1	0	0	22	21	4	1	78	11	0	0	94	90	6	0	48	1	1	0	56	52
16:30	1	1	24	1	0	0	27	26	2	3	90	9	0	0	104	101	3	1	42	3	1	1	51	50
16:45	0	1	26	1	0	0	28	27	2	0	91	9	0	0	102	100	1	1	38	4	0	0	44	43
H/TOT	1	3	92	5	0	0	101	98	8	5	332	36	2	2	385	379	13	2	173	11	2	1	202	194
17:00	0	0	23	0	0	0	23	23	6	0	83	5	1	0	95	91	1	1	38	1	0	0	41	40
17:15	1	0	29	3	0	0	33	32	3	0	68	8	1	0	80	79	2	1	55	6	1	0	65	64
17:30	3	0	38	0	0	0	41	39	4	0	70	3	0	0	77	74	2	1	40	3	0	0	46	44
17:45	1	0	36	0	0	0	37	36	4	0	79	3	1	0	87	85	1	0	43	3	1	0	48	48
H/TOT	5	0	126	3	0	0	134	130	17	0	300	19	3	0	339	329	6	3	176	13	2	0	200	196
18:00	1	0	29	2	1	0	33	33	3	0	85	1	0	1	90	89	5	1	36	1	2	0	45	42
18:15	1	0	40	1	0	0	42	41	7	1	81	2	0	0	91	85	0	0	53	3	0	0	56	56
H/TOT	2	0	69	3	1	0	75	74	10	1	166	3	0	1	181	174	5	1	89	4	2	0	101	98
P/TOT	8	3	287	11	1	0	310	302	35	6	798	58	5	3	905	882	24	6	438	28	6	1	503	488

IDASO

24846 - Stepaside Kilgobbin **OCTOBER 2024**

MANUAL CLASSIFIED JUNCTION TURNING COUNTS **IDA/24/846**

SITE: Site 5 DATE: 23rd October 2024

LOCATION: Enniskerry Road/Belarmine Avenue DAY: Wednesday

	MOVEMENT 4 (B => C)								MOVEMENT 5 (C => B)								MOVEMENT 6 (C => A)								PCU's Through Junction
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	11	2	1	1	15	17	1	0	37	1	0	3	42	44	0	0	45	4	0	0	49	49	219
07:45	0	0	18	1	1	0	20	21	1	0	57	1	0	0	59	58	1	1	36	5	0	1	44	44	257
H/TOT	0	0	29	3	2	1	35	38	2	0	94	2	0	3	101	102	1	1	81	9	0	1	93	93	476
08:00	0	1	29	4	0	0	34	33	0	0	69	1	0	1	71	72	1	1	43	3	0	0	48	47	296
08:15	0	0	75	0	1	1	77	79	0	1	65	0	0	0	66	65	1	1	57	0	1	0	60	60	378
08:30	0	0	96	1	0	0	97	97	0	0	150	0	0	0	150	150	4	0	50	1	0	0	55	52	431
08:45	1	0	71	1	1	1	75	76	0	0	68	2	1	0	71	72	1	0	42	4	0	0	47	46	310
H/TOT	1	1	271	6	2	2	283	285	0	1	352	3	1	1	358	359	7	2	192	8	1	0	210	205	1415
09:00	0	0	28	0	0	0	28	28	1	0	55	2	1	1	60	61	1	1	38	2	0	1	43	43	278
09:15	0	0	25	2	0	0	27	27	1	0	23	1	0	0	25	24	1	0	14	0	0	0	15	14	174
09:30	0	0	12	0	0	1	13	14	1	0	18	2	0	0	21	20	0	0	17	0	0	0	17	17	147
09:45	0	0	10	0	1	0	11	12	0	0	22	1	0	0	23	23	0	0	13	0	1	0	14	15	137
H/TOT	0	0	75	2	1	1	79	81	3	0	118	6	1	1	129	128	2	1	82	2	1	1	89	89	736
P/TOT	1	1	375	11	5	4	397	404	5	1	564	11	2	5	588	589	10	4	355	19	2	2	392	387	2627

	MOVEMENT 4 (B => C)								MOVEMENT 5 (C => B)								MOVEMENT 6 (C => A)								PCU's Through Junction
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	23	0	0	1	24	25	0	0	33	1	1	0	35	36	0	0	11	1	0	0	12	12	234
16:15	0	0	33	2	0	3	38	41	2	0	27	0	0	0	29	27	0	1	18	1	0	0	20	19	250
16:30	0	0	25	0	0	0	25	25	0	0	25	3	0	1	29	30	0	1	17	0	0	0	18	17	249
16:45	0	0	44	0	0	0	44	44	1	0	26	1	1	0	29	29	0	1	20	1	0	0	22	21	264
H/TOT	0	0	125	2	0	4	131	135	3	0	111	5	2	1	122	122	0	3	66	3	0	0	72	69	997
17:00	0	0	37	4	0	1	42	43	0	0	41	1	0	0	42	42	0	1	20	1	0	0	22	21	260
17:15	0	0	40	0	0	0	40	40	0	0	23	0	0	2	25	27	1	0	18	2	0	0	21	20	262
17:30	1	0	46	2	0	0	49	48	1	0	30	1	0	0	32	31	0	1	26	3	0	0	30	29	265
17:45	1	0	32	0	0	1	34	34	2	0	57	1	0	0	60	58	2	0	23	0	0	0	25	23	284
H/TOT	2	0	155	6	0	2	165	165	3	0	151	3	0	2	159	158	3	2	87	6	0	0	98	93	1071
18:00	0	1	38	1	0	1	41	41	0	0	32	1	0	1	34	35	0	0	17	1	0	0	18	18	258
18:15	0	1	35	2	0	0	38	37	2	0	28	1	1	0	32	31	0	0	22	3	0	0	25	25	275
H/TOT	0	2	73	3	0	1	79	78	2	0	60	2	1	1	66	66	0	0	39	4	0	0	43	43	533
P/TOT	2	2	353	11	0	7	375	378	8	0	322	10	3	4	347	346	3	5	192	13	0	0	213	205	2601

APPENDIX C

TRICS - Trip Generation Output (Residential Apartments)

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

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	18	71	0.046	18	71	0.177	18	71	0.223
08:00 - 09:00	18	71	0.053	18	71	0.187	18	71	0.240
09:00 - 10:00	18	71	0.068	18	71	0.087	18	71	0.155
10:00 - 11:00	18	71	0.061	18	71	0.075	18	71	0.136
11:00 - 12:00	18	71	0.059	18	71	0.078	18	71	0.137
12:00 - 13:00	18	71	0.091	18	71	0.096	18	71	0.187
13:00 - 14:00	18	71	0.080	18	71	0.076	18	71	0.156
14:00 - 15:00	18	71	0.061	18	71	0.061	18	71	0.122
15:00 - 16:00	18	71	0.107	18	71	0.061	18	71	0.168
16:00 - 17:00	18	71	0.113	18	71	0.071	18	71	0.184
17:00 - 18:00	18	71	0.154	18	71	0.082	18	71	0.236
18:00 - 19:00	18	71	0.165	18	71	0.085	18	71	0.250
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			1.058			1.136			2.194

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

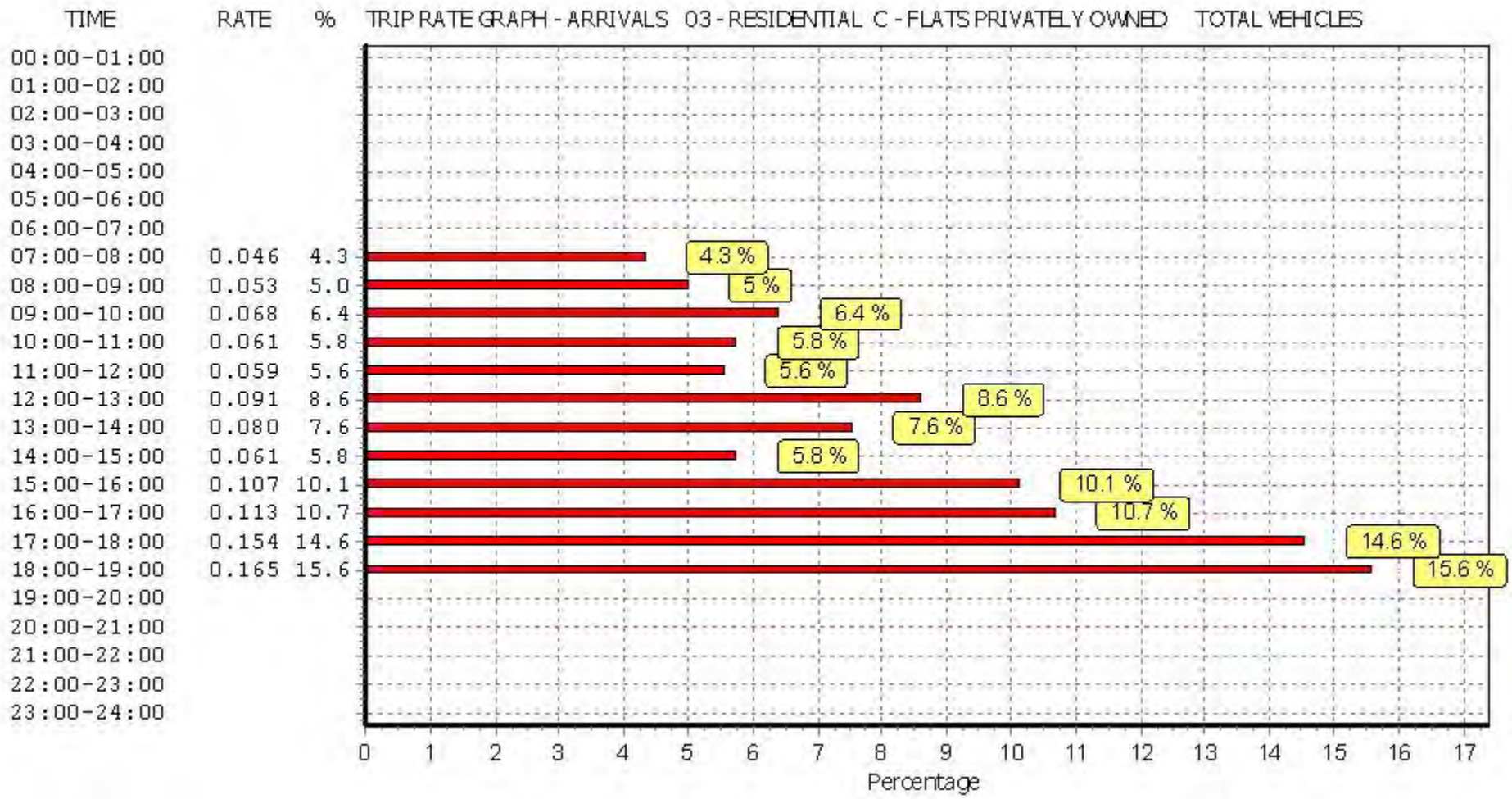
*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected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

Parameter summary

Trip rate parameter range selected:	9 - 184 (units:)
Survey date date range:	01/01/16 - 02/10/23
Number of weekdays (Monday-Friday):	18
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	2
Surveys manually removed from selection:	7

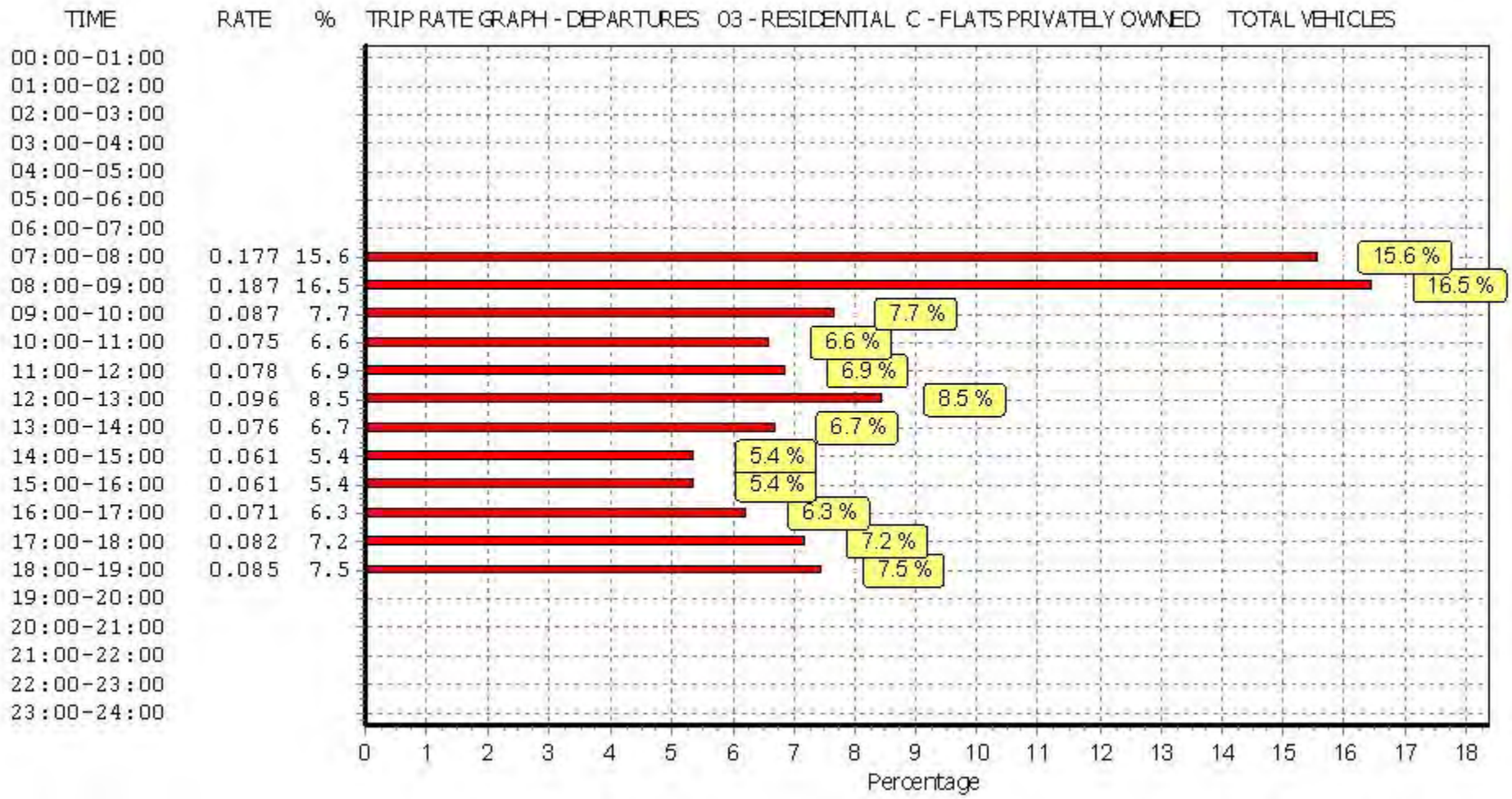
This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected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



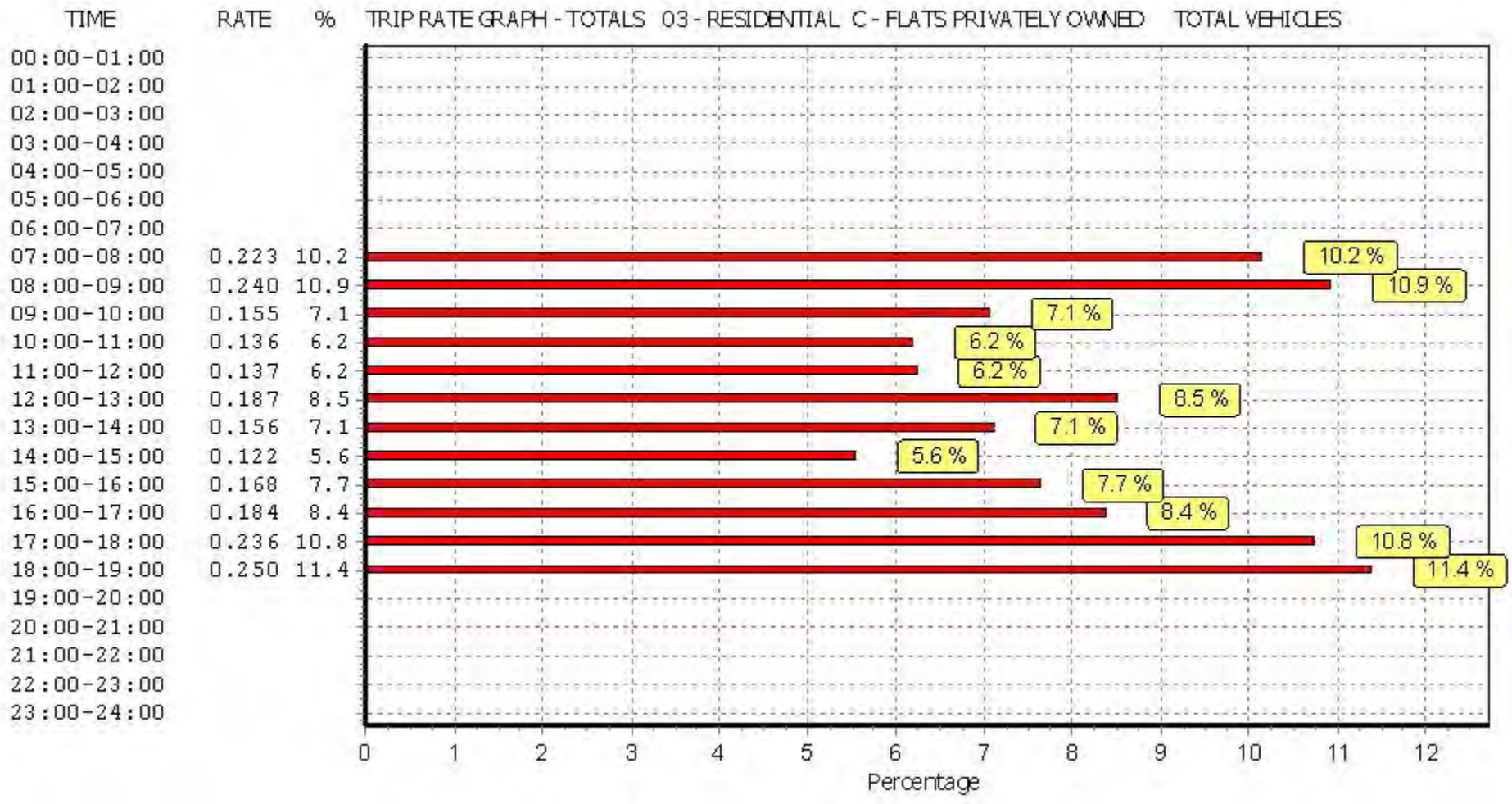
This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through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

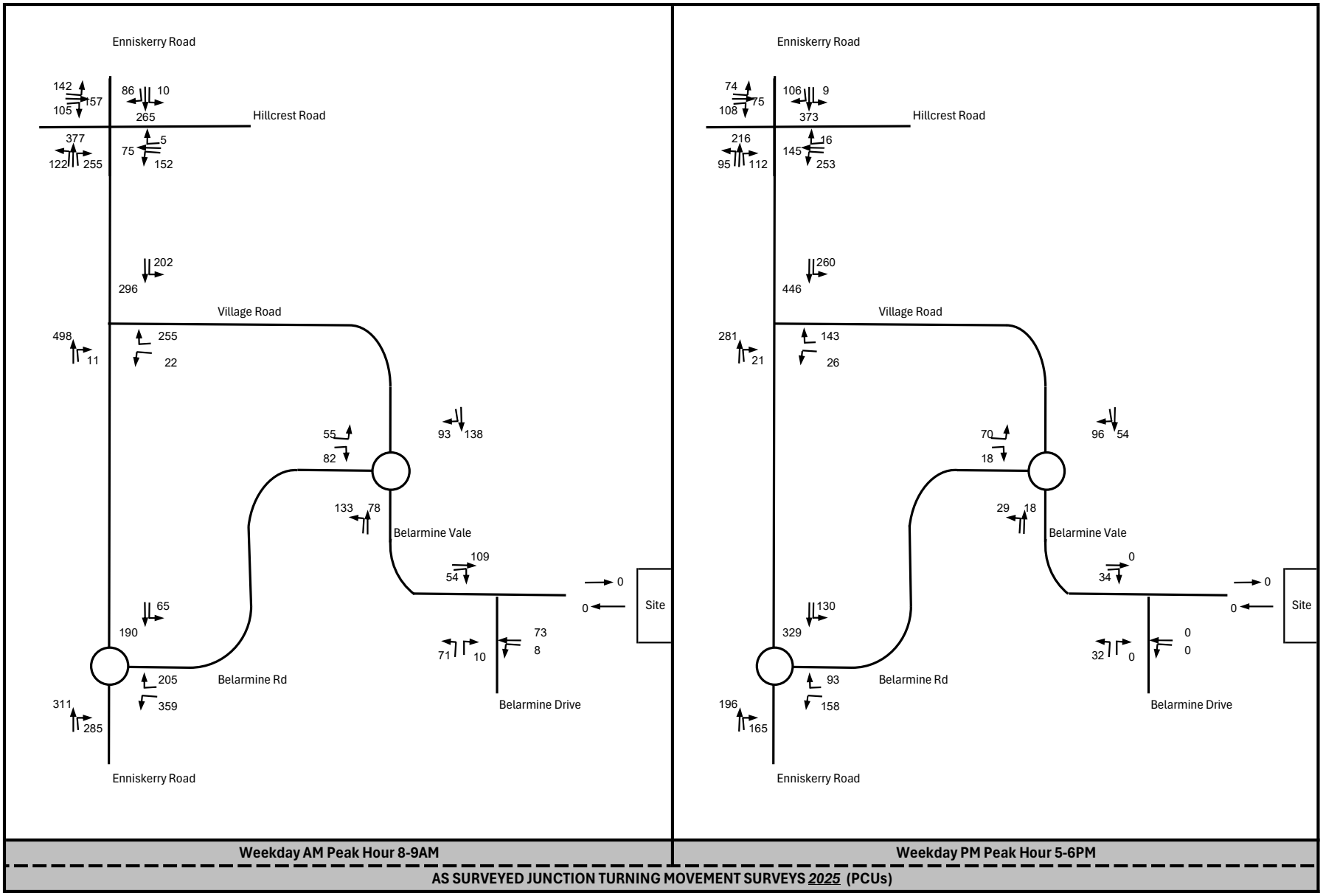
NRB Consulting Engineers Ltd 8 Leopardstown Business Centre, Ballyogan Avenue Dublin 18 Licence No: 160301



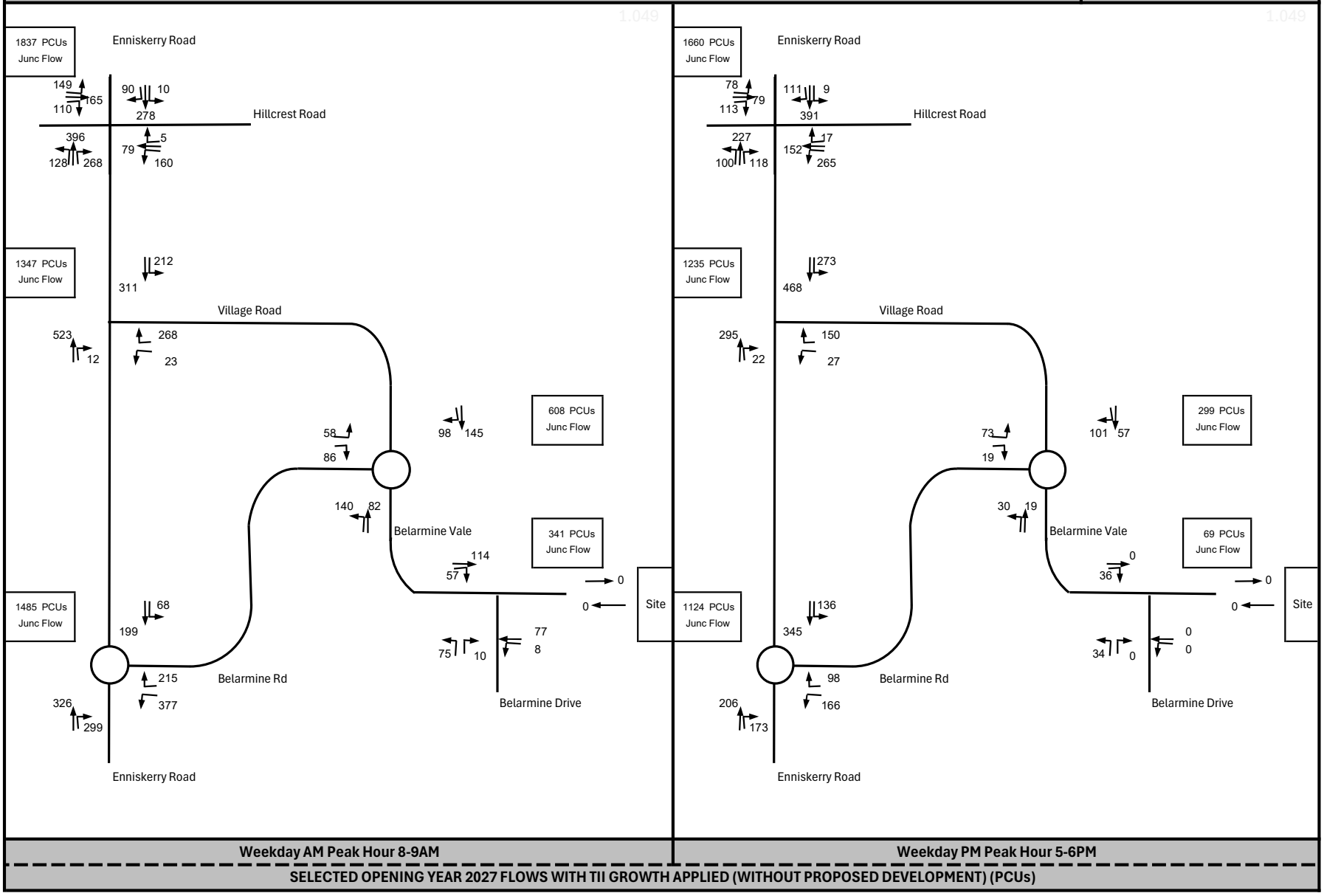
This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through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

APPENDIX D

Trip Generation, Trip Distribution & Network Traffic Flow Diagrams


Enniskerry Road
142
105
157
86
265
10
Hillcrest Road
377
122
255
75
152
5
202
296
Village Road
498
11
255
22
55
82
93
138
133
78
Belarmine Vale
109
54
0
0
Site
65
190
73
8
71
10
205
359
Belarmine Rd
Belarmine Drive
311
285
Enniskerry Road
Weekday AM Peak Hour 8-9AM
Enniskerry Road
74
108
75
106
373
9
Hillcrest Road
216
95
112
145
253
16
260
446
Village Road
281
21
143
26
70
18
96
54
29
18
Belarmine Vale
0
34
0
0
Site
130
329
0
0
32
0
93
158
Belarmine Rd
Belarmine Drive
196
165
Enniskerry Road
Weekday PM Peak Hour 5-6PM
AS SURVEYED JUNCTION TURNING MOVEMENT SURVEYS 2025 (PCUs)

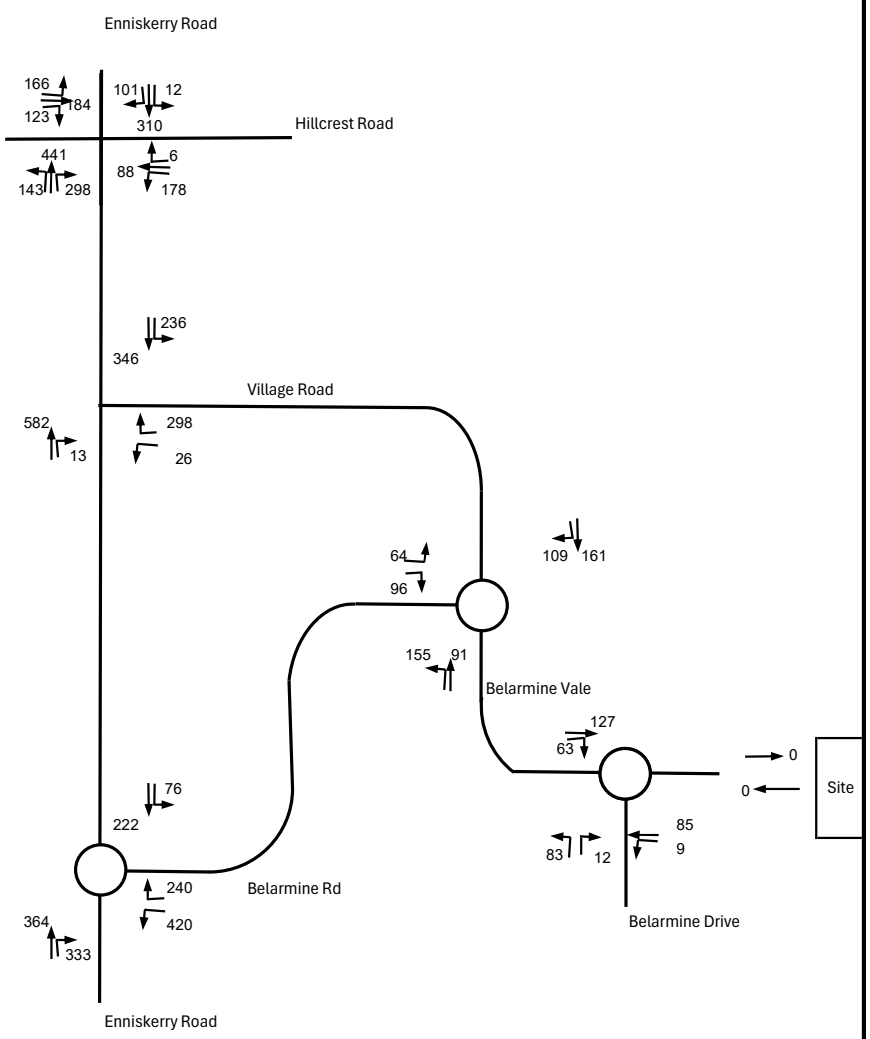
TII PE-PAG-02017 Project Appraisal Guidelines for National Roads Unit 5.3 (Travel Demand Projections 2021, Table 6.1: Central Growth Rates: Link-Based Growth Factors (Dublin City Area)	2025 to 2027 = 1.049 2027 to 2042 = 1.114



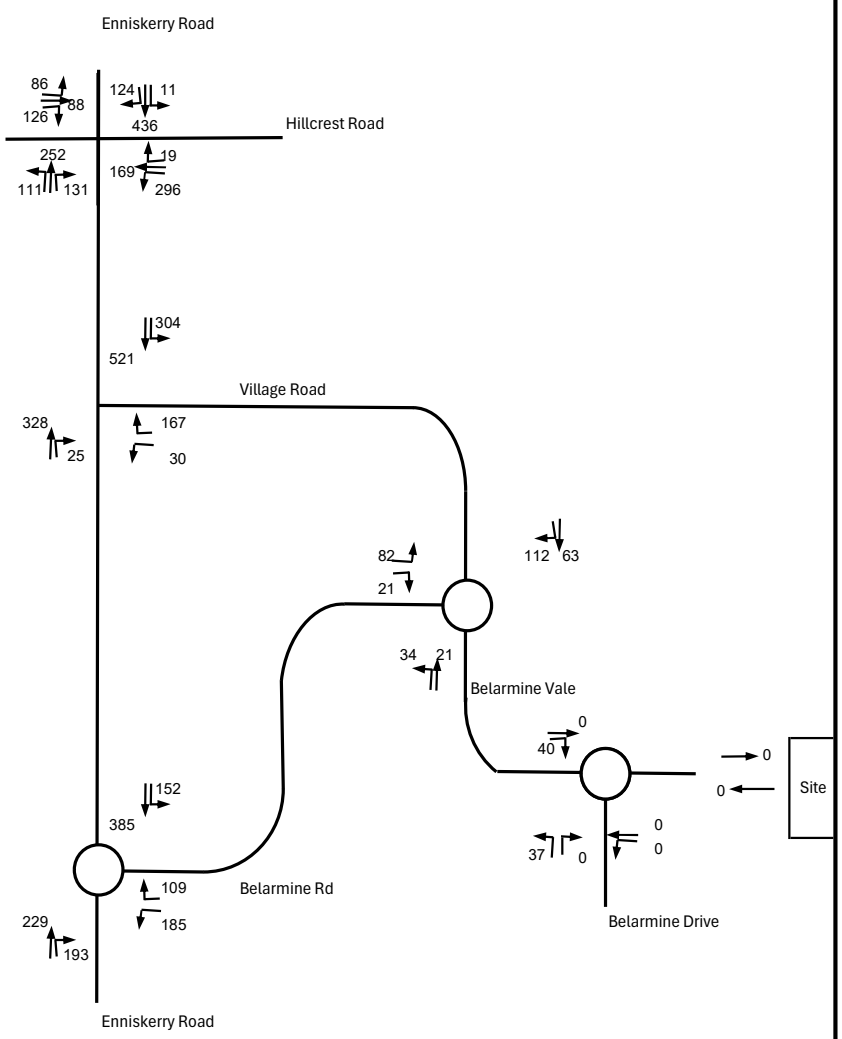
Weekday AM Peak Hour 8-9AM	Weekday PM Peak Hour 5-6PM

SELECTED OPENING YEAR 2027 FLOWS WITH TII GROWTH APPLIED (WITHOUT PROPOSED DEVELOPMENT) (PCUs)

TII PE-PAG-02017 Project Appraisal Guidelines for National Roads Unit 5.3 (Travel Demand Projections 2021, Table 6.1: Central Growth Rates: Link-Based Growth Factors (Dublin City Area)	2024 to 2026 = 1.049 2026 to 2041 = 1.114



Weekday AM Peak Hour 8-9AM



Weekday PM Peak Hour 5-6PM

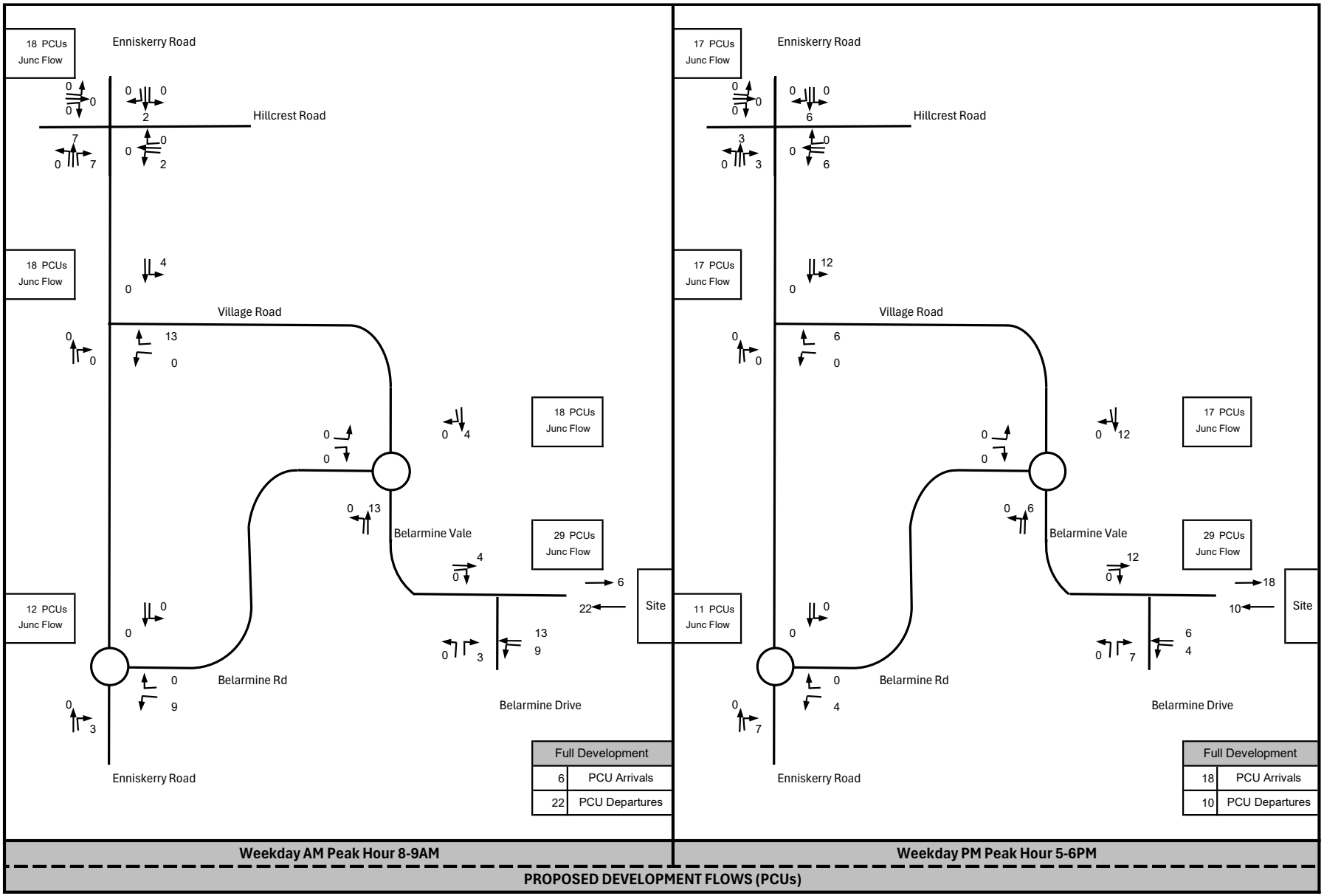
SELECTED DESIGN YEAR 2042 FLOWS WITH TII GROWTH APPLIED (WITHOUT PROPOSED DEVELOPMENT) (PCUs)

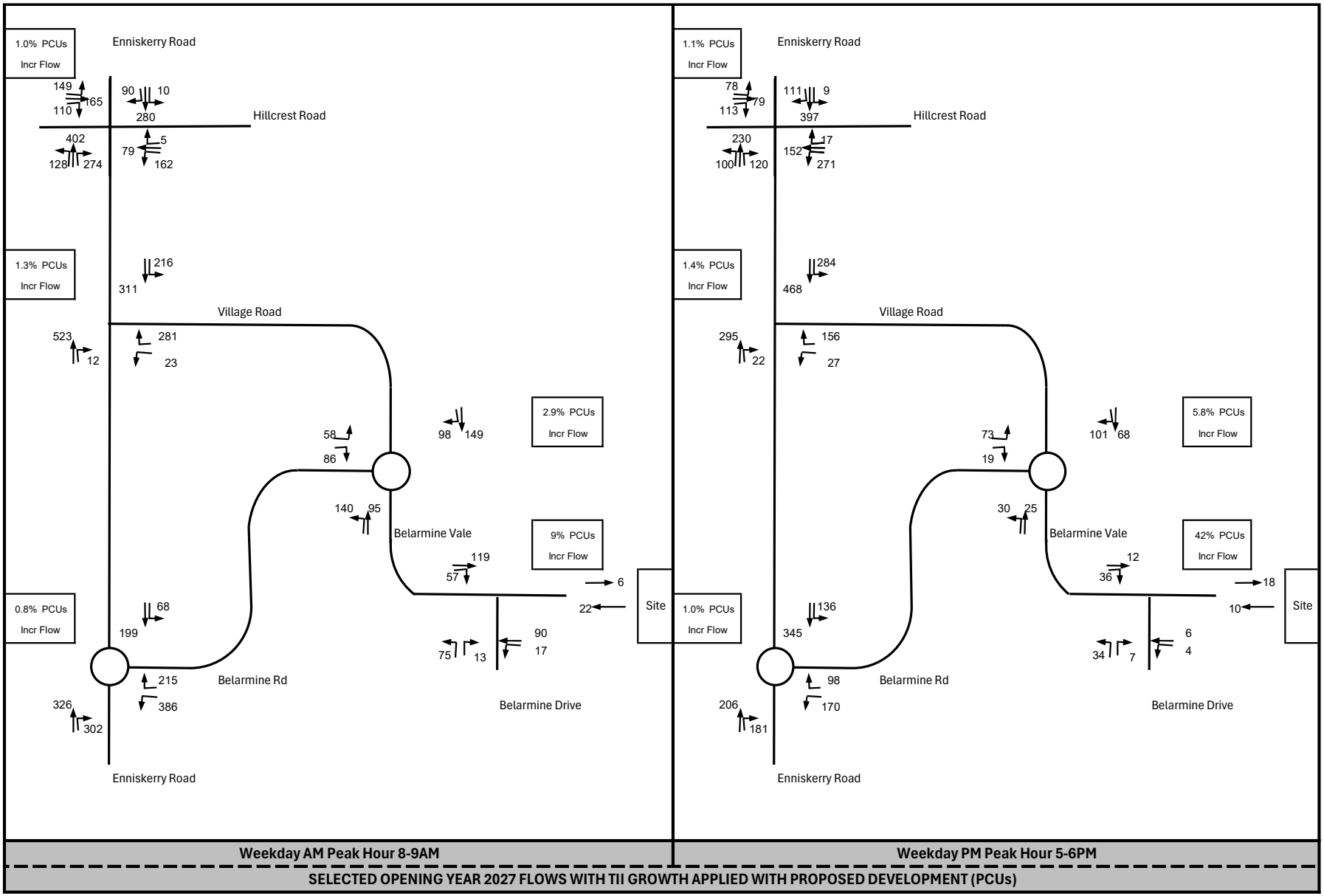
TRICS ASSESSMENT OF TRAFFIC GENERATED BY PROPOSED DEVELOPMENT ELEMENTS
(*USING TRICS OUTPUT IN APPENDIX C*)

TRICS ASSESSMENT OF WORST-CASE TRAFFIC GENERATED BY PROPOSED DEVELOPMENT (REFER APPENDIX C)

120 Apartment	Arrivals (PCUs)		Departures (PCUs)		Total 2-Way Vehicular Traffic Generated	
Network Hour	Per Unit	Site	Per Unit	Site		
Weekday AM Peak Hr 8-9	0.053	6	0.187	22	28	120 Apartments
Weekday PM Peak Hr 5-6	0.154	18	0.082	10	28	
24 Hours	1.058	127	1.136	136	263	

Total	Arrivals (PCUs)		Departures (PCUs)		Total 2-Way Vehicular Traffic Generated	
Network Hour	Per Unit	Site	Per Unit	Site		
Weekday AM Peak Hr 8-9	6		22		28	Full Development
Weekday PM Peak Hr 5-6	18		10		28	
24 Hours	127		136		263	

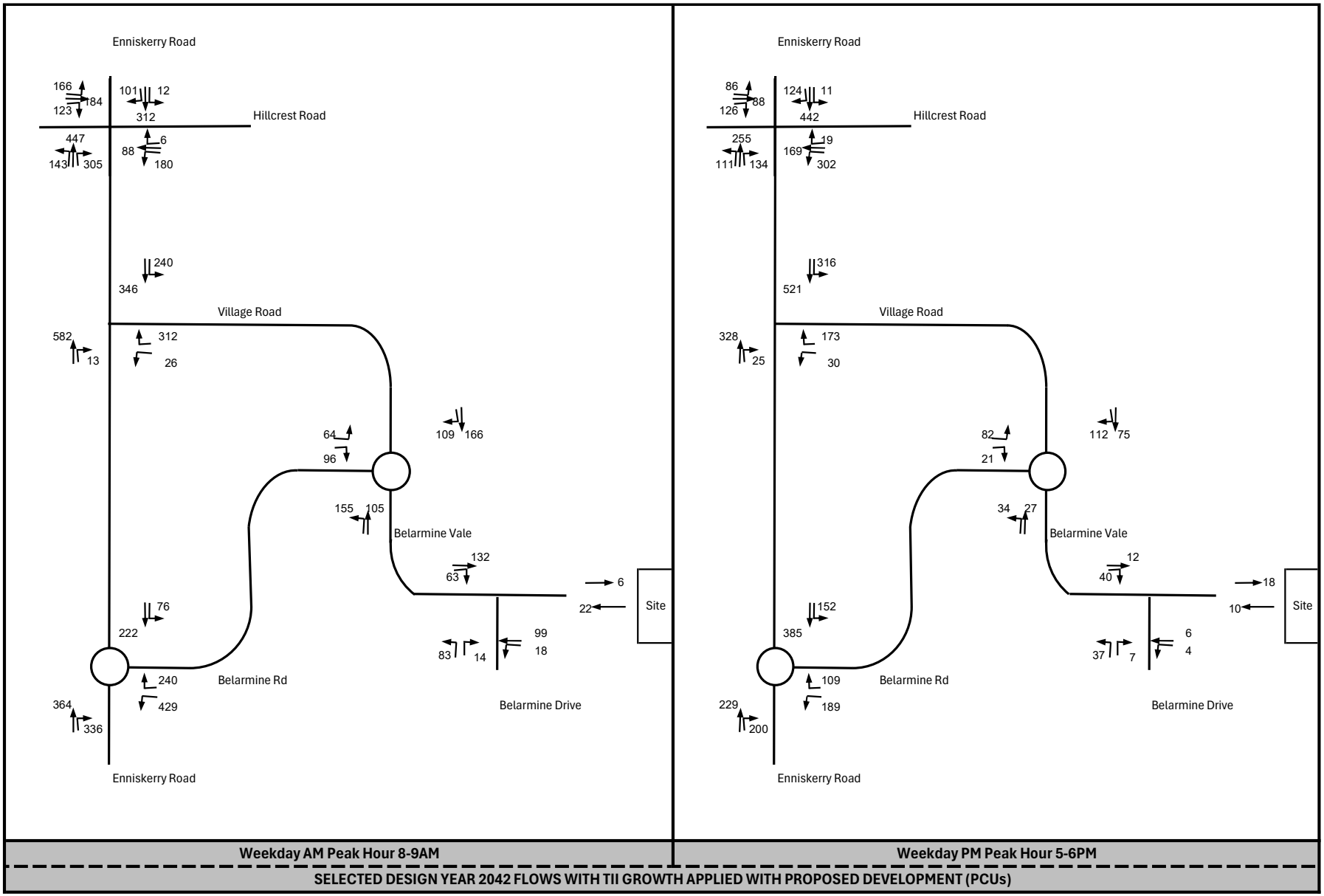

18 PCUs Junc Flow
Enniskerry Road
Hillcrest Road
18 PCUs Junc Flow
Village Road
18 PCUs Junc Flow
29 PCUs Junc Flow
Belarmine Vale
12 PCUs Junc Flow
Site
Belarmine Rd
Belarmine Drive
Enniskerry Road
Full Development
6 PCU Arrivals
22 PCU Departures
Weekday AM Peak Hour 8-9AM
17 PCUs Junc Flow
Enniskerry Road
Hillcrest Road
17 PCUs Junc Flow
Village Road
17 PCUs Junc Flow
29 PCUs Junc Flow
Belarmine Vale
11 PCUs Junc Flow
Site
Belarmine Rd
Belarmine Drive
Enniskerry Road
Full Development
18 PCU Arrivals
10 PCU Departures
Weekday PM Peak Hour 5-6PM
PROPOSED DEVELOPMENT FLOWS (PCUs)



Weekday AM Peak Hour 8-9AM

Weekday PM Peak Hour 5-6PM

SELECTED OPENING YEAR 2027 FLOWS WITH TII GROWTH APPLIED WITH PROPOSED DEVELOPMENT (PCUs)



Weekday AM Peak Hour 8-9AM

Weekday PM Peak Hour 5-6PM

SELECTED DESIGN YEAR 2042 FLOWS WITH TII GROWTH APPLIED WITH PROPOSED DEVELOPMENT (PCUs)

APPENDIX E

JUNCTION 10 - PICADY
Simulation Capacity Model Output

Existing Belarmine Vale / Belarmine Drive Priority Junction
Summary PICADY Results in Order as included herein

Modelled Scenario	Period Mean Max Q (PCUs)	Period Max RFC
2027 Opening Year AM Peak Hr	<1	0.16
2027 Opening Year PM Peak Hr	<1	0.07
2042 Design Year AM Peak Hr	<1	0.18
2042 Design Year PM Peak Hr	<1	0.08

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 2027 or Design Year 2042, or indeed significantly higher traffic volumes experienced, as clearly deductable from the positive results presented, will clearly have no significant implications in terms of the conclusions of the Study.

Junctions 10

PICADY 10 - Priority Intersection Module

Filename: Belarmine Vale - Drive Junction.j10
Path: C:\Users\BrianMc\OneDrive\OneDrive - NRB Consulting Engineers Ltd\Documents\2024\24-131 Kilgobbin LRD\Calculations\August 2025 Calcs\Belarmine Vale - Belarmine Drive Jct
Report generation date: 21/08/2025 16:05:19

Summary of junction performance

	AM						PM					
	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Network Residual Capacity	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Network Residual Capacity
	2027											
Stream B-AC	D1	0.2	7.25	0.16	A	286 %	D2	0.1	6.26	0.07	A	900 %
Stream C-AB		0.2	6.17	0.12	A	[Stream B-AC]		0.1	6.34	0.07	A	[]
	2042											
Stream B-AC	D3	0.2	7.44	0.18	A	251 %	D4	0.1	6.27	0.08	A	848 %
Stream C-AB		0.2	6.21	0.13	A	[Stream B-AC]		0.1	6.39	0.07	A	[Stream B-AC]

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

File summary

File Description

Title	
Location	
Site number	
Date	13/05/2025
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	Office-LT\BrianMc
Description	

Units

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

Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	Residual capacity criteria type	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
	✓	Delay	0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2027	AM	ONE HOUR	07:45	09:15	15
D2	2027	PM	ONE HOUR	16:45	18:15	15
D3	2042	AM	ONE HOUR	07:45	09:15	15
D4	2042	PM	ONE HOUR	16:45	18:15	15

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

2027, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	Two-way	Two-way		2.87	A

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	286	Stream B-AC	2.87	A

Arms

Arms

Arm	Name	Description	Arm type
A	Belarmine Vale		Major
B	Belarmine Drive		Minor
C	Belarmine Vale		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right-turn storage	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C	6.00			49.0	✓	0.00

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

Minor Arm Geometry

Arm	Minor arm type	Lane width (m)	Visibility to left (m)	Visibility to right (m)
B	One lane	3.00	49	49

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
B-A	518	0.094	0.238	0.150	0.340
B-C	655	0.100	0.254	-	-
C-B	602	0.233	0.233	-	-

The slopes and intercepts shown above include custom intercept adjustments only.

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	2027	AM	ONE HOUR	07:45	09:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	107	100.000
B		✓	88	100.000
C		✓	176	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	17	90
	B	13	0	75
	C	119	57	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.16	7.25	0.2	A
C-AB	0.12	6.17	0.2	A
C-A				
A-B				
A-C				

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	66	605	0.109	66	0.1	6.667	A
C-AB	50	644	0.077	49	0.1	6.069	A
C-A	83			83			
A-B	13			13			
A-C	68			68			

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	79	600	0.132	79	0.2	6.903	A
C-AB	61	652	0.094	61	0.1	6.108	A
C-A	97			97			
A-B	15			15			
A-C	81			81			

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	97	593	0.163	97	0.2	7.246	A
C-AB	78	664	0.118	78	0.2	6.166	A
C-A	115			115			
A-B	19			19			
A-C	99			99			

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	97	593	0.163	97	0.2	7.249	A
C-AB	78	664	0.118	78	0.2	6.173	A
C-A	115			115			
A-B	19			19			
A-C	99			99			

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	79	600	0.132	79	0.2	6.911	A
C-AB	61	652	0.094	62	0.1	6.117	A
C-A	97			97			
A-B	15			15			
A-C	81			81			

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	66	605	0.109	66	0.1	6.681	A
C-AB	50	644	0.077	50	0.1	6.082	A
C-A	83			83			
A-B	13			13			
A-C	68			68			

2027, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	Two-way	Two-way		4.94	A

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	900		4.94	A

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	2027	PM	ONE HOUR	16:45	18:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	10	100.000
B		✓	41	100.000
C		✓	48	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	4	6
	B	7	0	34
	C	12	36	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.07	6.26	0.1	A
C-AB	0.07	6.34	0.1	A
C-A				
A-B				
A-C				

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	31	622	0.050	31	0.1	6.083	A
C-AB	28	607	0.045	27	0.0	6.215	A
C-A	9			9			
A-B	3			3			
A-C	5			5			

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	37	621	0.059	37	0.1	6.156	A
C-AB	33	607	0.054	33	0.1	6.267	A
C-A	10			10			
A-B	4			4			
A-C	5			5			

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	45	620	0.073	45	0.1	6.257	A
C-AB	41	609	0.067	40	0.1	6.339	A
C-A	12			12			
A-B	4			4			
A-C	7			7			

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	45	620	0.073	45	0.1	6.257	A
C-AB	41	609	0.067	41	0.1	6.341	A
C-A	12			12			
A-B	4			4			
A-C	7			7			

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	37	621	0.059	37	0.1	6.158	A
C-AB	33	607	0.054	33	0.1	6.269	A
C-A	10			10			
A-B	4			4			
A-C	5			5			

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	31	622	0.050	31	0.1	6.089	A
C-AB	28	607	0.045	28	0.0	6.221	A
C-A	9			9			
A-B	3			3			
A-C	5			5			

2042, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	Two-way	Two-way		2.94	A

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	251	Stream B-AC	2.94	A

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)
D3	2042	AM	ONE HOUR	07:45	09:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	117	100.000
B		✓	97	100.000
C		✓	195	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	18	99
	B	14	0	83
	C	132	63	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.18	7.44	0.2	A
C-AB	0.13	6.21	0.2	A
C-A				
A-B				
A-C				

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	73	603	0.121	72	0.1	6.773	A
C-AB	56	649	0.086	56	0.1	6.080	A
C-A	91			91			
A-B	14			14			
A-C	75			75			

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	87	598	0.146	87	0.2	7.044	A
C-AB	69	658	0.105	69	0.1	6.128	A
C-A	106			106			
A-B	16			16			
A-C	89			89			

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	107	590	0.181	107	0.2	7.436	A
C-AB	89	671	0.132	88	0.2	6.200	A
C-A	126			126			
A-B	20			20			
A-C	109			109			

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	107	590	0.181	107	0.2	7.442	A
C-AB	89	672	0.132	89	0.2	6.208	A
C-A	126			126			
A-B	20			20			
A-C	109			109			

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	87	598	0.146	87	0.2	7.055	A
C-AB	69	658	0.105	69	0.1	6.141	A
C-A	106			106			
A-B	16			16			
A-C	89			89			

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	73	603	0.121	73	0.1	6.790	A
C-AB	56	649	0.086	56	0.1	6.097	A
C-A	91			91			
A-B	14			14			
A-C	75			75			

2042, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	Two-way	Two-way		5.06	A

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	848	Stream B-AC	5.06	A

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)
D4	2042	PM	ONE HOUR	16:45	18:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	10	100.000
B		✓	44	100.000
C		✓	52	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	4	6
	B	7	0	37
	C	12	40	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.08	6.27	0.1	A
C-AB	0.07	6.39	0.1	A
C-A				
A-B				
A-C				

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	33	624	0.053	33	0.1	6.088	A
C-AB	31	607	0.050	30	0.1	6.248	A
C-A	9			9			
A-B	3			3			
A-C	5			5			

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	40	623	0.063	40	0.1	6.166	A
C-AB	37	607	0.060	37	0.1	6.308	A
C-A	10			10			
A-B	4			4			
A-C	5			5			

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	48	622	0.078	48	0.1	6.274	A
C-AB	45	609	0.074	45	0.1	6.389	A
C-A	12			12			
A-B	4			4			
A-C	7			7			

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	48	622	0.078	48	0.1	6.274	A
C-AB	45	609	0.074	45	0.1	6.392	A
C-A	12			12			
A-B	4			4			
A-C	7			7			

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	40	623	0.063	40	0.1	6.168	A
C-AB	37	607	0.060	37	0.1	6.310	A
C-A	10			10			
A-B	4			4			
A-C	5			5			

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	33	624	0.053	33	0.1	6.092	A
C-AB	31	607	0.050	31	0.1	6.252	A
C-A	9			9			
A-B	3			3			
A-C	5			5			

APPENDIX F

Preliminary Mobility Management Plan / Travel Plan

consulting engineers

NRB

Residential Travel Plan
(Mobility Management Plan)

Appendix F

For

Proposed Large-Scale
Residential Development
(LRD)
at

Kilgobbin Road
Stepaside,
Co. Dublin.

on behalf of

Kilgobbin Apartments
Limited.

SUBMISSION ISSUE

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Registered in Ireland No. 491679

Contents

1.0 INTRODUCTION

1.1 NRB Consulting Engineers have been commissioned to prepare a Residential Travel Plan in support of a proposed residential development on lands adjacent to Kilgobbin Road, Stepaside, Co. Dublin. The proposed development consists of the construction of a residential development principally comprising 120 No. apartments.

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

What is a Travel Plan?

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

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

1.5 **It should be recognised that a Travel Plan/Mobility Management Plan prepared at planning application stage, when the development is un-built and unoccupied, can only highlight the current and proposed Alternative Transport initiatives in place at the site, and set out the applicant's commitment to the promotion of sustainable transport measures.**

Aims and Objectives of this Travel Plan

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

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

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

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

Methodology

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

- Your Step By Step Guide To Travel Plans (NTA 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);
- Greater Dublin Area Transport Strategy 2022 - 2044 (NTA);
- Integrated Implementation Plan 2019-2024 (NTA).

1.10 Consultation with key stakeholders is an essential part of any Travel plan. As discussed below, as part of the operational phase of this development, a Travel Plan Coordinator Role will be appointed from within the Management Company responsible for the development. Following on,

once occupied, residents will be asked to complete detailed questionnaires on essential data in relation to their existing travel patterns. This information will be used to inform the ongoing implementation, monitoring and review of the plan for this development.

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

2.0 ACCESS TO THE SITE - BY MODE

2.1 The development consists of a total of 120 Apartments with secure off street parking areas for bicycles and a reduced number of private cars proposed along with bins storage, electrical room, plant enclosures and all associated site works.

2.2 For a Residential Development, it is essential for the successful Travel Planning to concentrate on journeys associated with work and school commuting patterns. These are the groups which can most practically be encouraged to use modes of transport other than the car.

2.3 It should be noted that, being located in a long established residential area, a 7 minute walk of Belarmine Plaza which has retail and services, a ~10-12-minute walk (~6 minute cycle) from the Luas, this contributes to sustainable living, with employment opportunities, retail and leisure all located within reasonable proximity. The measures and initiatives below are relevant and assist in addressing the transportation demands of the proposed scheme.

Cycling and Walking Facilities

2.4 At present, pedestrian/cycle traffic at/to the existing site is served by an extensive network of footpaths, signalised pedestrian crossings and cycle lanes/facilities. On Belarmine Vale at and west of the site, there are off road cycle paths provided providing the highest quality linkage to/from the local area. This is as illustrated in ***Figure 2.1*** below. The scheme also delivers a new pedestrian connection to Kilgobbin Road to the west of the site, improving permeability for all pedestrians and cyclists, including the proposed development.

Figure 2.1 – Belarmine Vale

2.5 DLRCC have published a Cycle Network Plan, and an annotated extract from this is included below as ***Figure 2.2*** showing the site in context and demonstrating the cyclist permeability of the location.

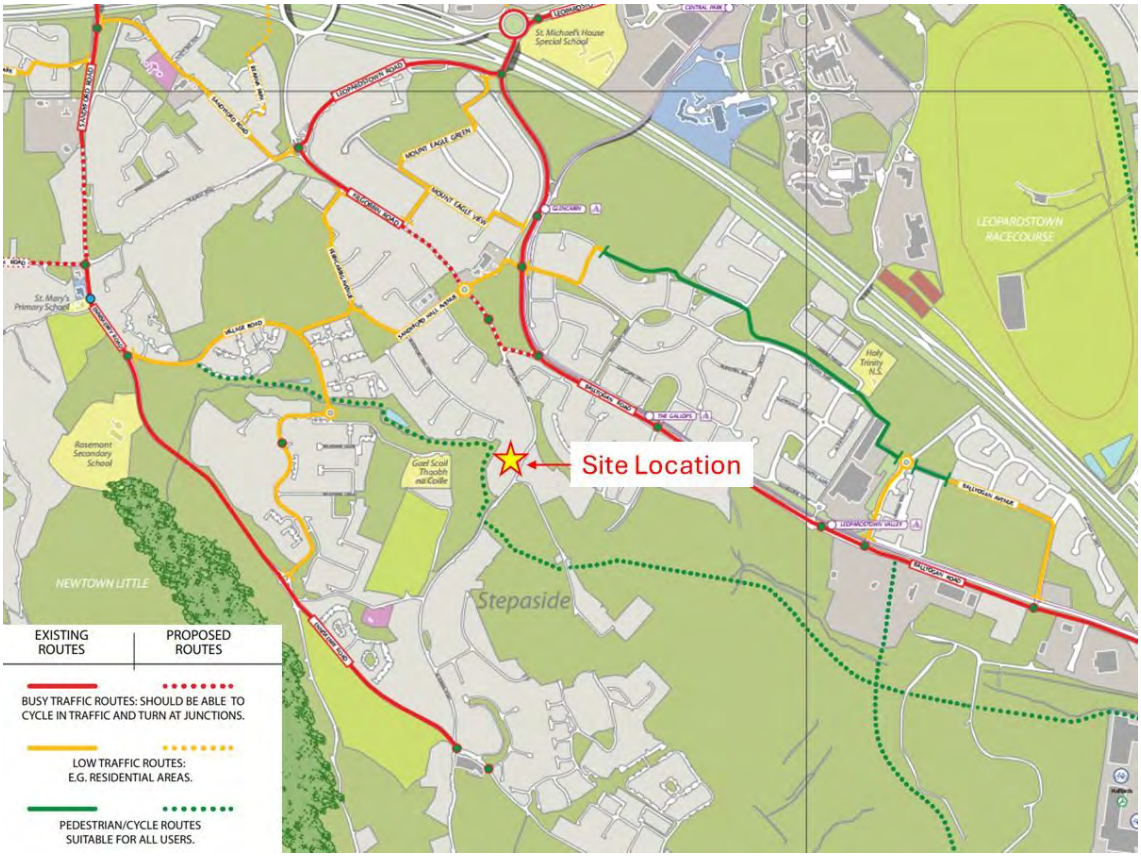

Figure 2.2 – DLRCC Cycle Network Plan, Showing Site Location

2.6 The key to cycle accessibility is convenient safe links, with secure and carefully sited cycle parking. Cycling is ideal for shorter journeys. The generous provision of cycle parking for the site is addressed in more detail within ***Section 2.0*** of the ***TA Report***.

2.7 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.

2.8 To illustrate the extent of the GDA accessible by both Foot and Bicycle we have included below approximate isochrone for a 20min walk and 15min cycle from the site. These illustrate the extent of the employment, retail and schools within sustainable travel distance of the site, included below as ***Figure 2.3*** and ***Figure 2.4***.

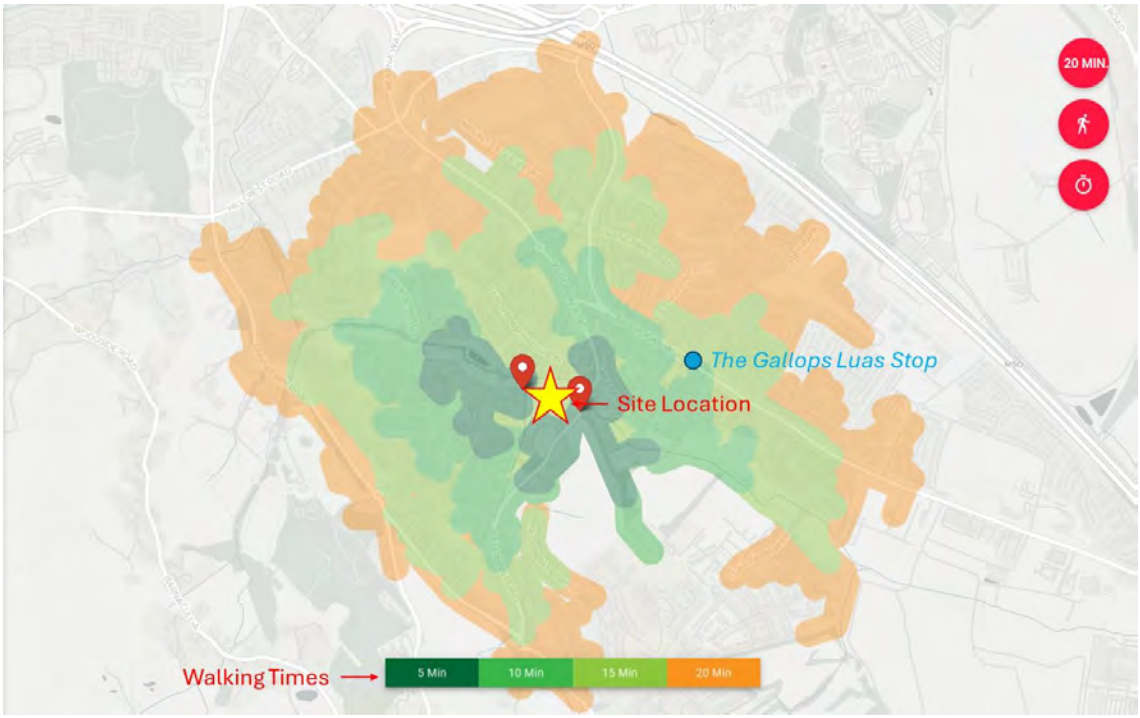

Figure 2.3 – 20 minute Walking Isochrone of the Subject Site

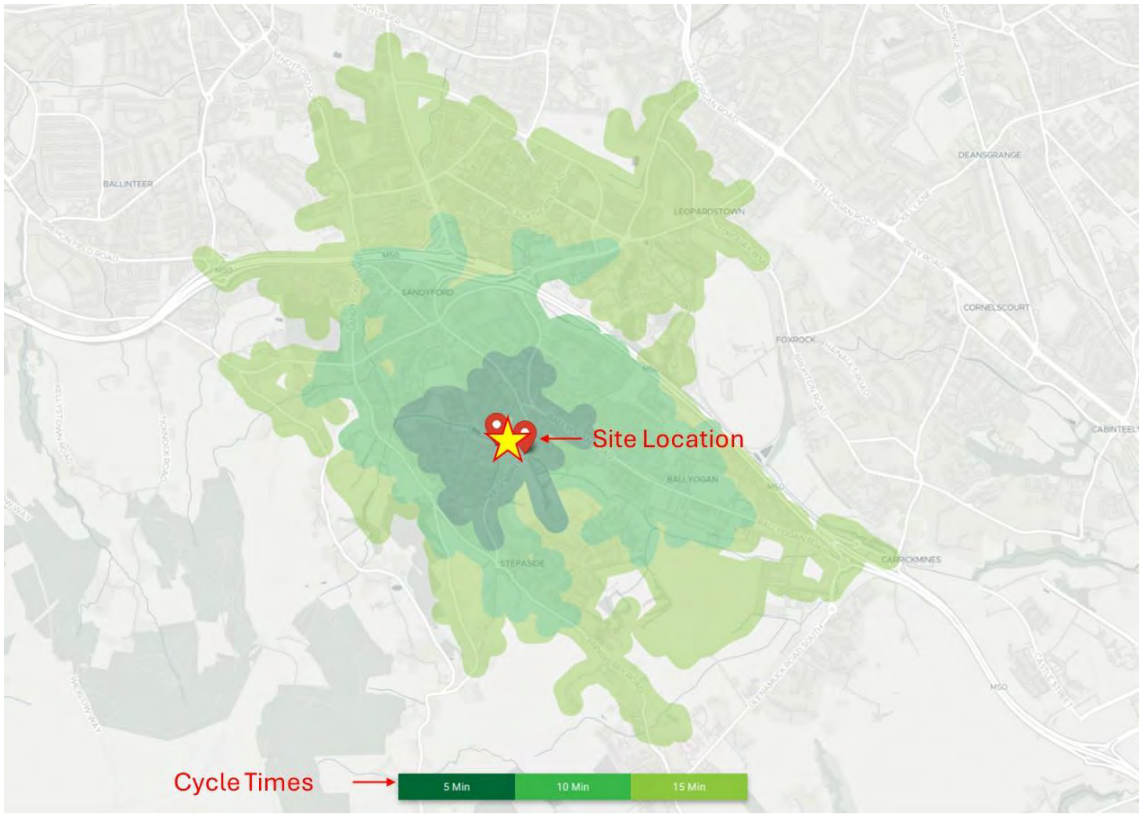

Figure 2.4 – 15 minute Cycling Isochrone of the Subject Site

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

2.10 Of course, being within close proximity to the major employment district of Sandyford Business Park, this means that a very significant number of Employment Destinations and Offices are within an easy and acceptable walk-cycle-Luas commute of the site.

2.11 The site is also within the heart of Stepaside Communities and is within the catchment for local Primary and Secondary Schools.

2.12 In these terms we believe that walking will represent the most popular mode of home-work-home and home-school-home travel for residents of the Apartments.

Cycle Parking

2.13 The high quality of the cycle parking is reflected in the provision of a total of 273 new dedicated cycle parking spaces. Of these, 205no. are provided within the Apartment Blocks, 12 within a secure external building and 56 external visitor spaces within the hard landscaping. Much of the cycle parking are Sheffield stands in line with DLR Cycle Policy preference for Sheffield Stands, with double stackers above the Sheffield Stands internally. This also supports the case for a slight reduction in car parking provision.

2.14 Cycle parking provision is over and above the DLR Cycle Policy requirements (1 long stay cycle space per apartment plus 1 short stay visitor cycle space per 5 apartments) and in line with new national Design Standards for Apartments. Once occupied, advice can be provided on routes by the appointed Travel Plan Coordinator, possibly with the help of a bicycle user group. This can be further facilitated in consultation with the DLR Unit, as the ongoing provision of cycle facilities is fully implemented.

2.15 It is acknowledged that cyclists need to be confident that their bicycles will not be tampered with while they are in storage. Cycle parking are located in secure, active, well lit and actively monitored places where they can be passively surveyed, or by closed circuit television.

2.16 The DLRCC Development Plan and Policy Documents vision is to cultivate a cycling culture, through the implementation of appropriate infrastructure and promotional measures, which positively encourages all members of the community to cycle at all life stages and abilities as a mode of sustainable transport that delivers environmental, health and economic benefits to both the individual and the community.

BUS ACCESSIBILITY

2.17 The development is well placed to take advantage of the existing and future Dublin Bus and Go-Ahead services, with existing stops in close proximity to the site. The location and proximity to the established bus stops and services (NB accurate at the time of writing) are illustrated on ***Figure 2.5*** below.

Figure 2.5 – Existing Dublin Bus Services

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

2.19 The site is clearly accessible to the existing Bus Stops on Kilgobbin Road which are served by reasonably frequent Bus Services. The combination of these services provide a maximum frequency of 20-30 minutes to and from the city during peak commuter periods, with accessibility to/from the City Centre by way of the #44 & #47.

2.20 In terms of Future Planned Services, the NTA have published details of Bus Connects and the overall bus network for the GDA, the 'New Dublin Area Network' - showing Spine Routes, Feeder and Orbital Routes. An extract from the NTA Plans showing the site location is included below as ***Figure 2.6.***

2.21 This future network shows that the site's accessibility to bus services will be further enhanced.

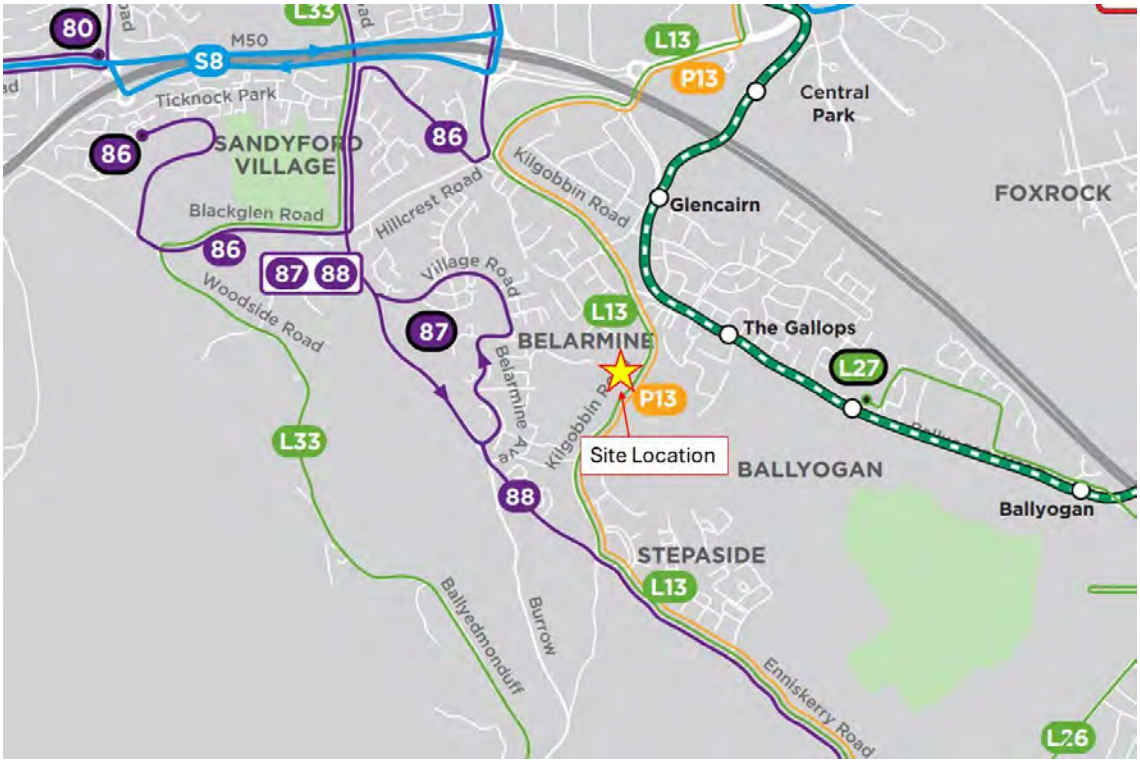

Figure 2.6 – NTA GDA New Dublin Area Network - Bus Services Plan

LUAS

2.22 The site is located close to LUAS Services at The Gallops, which provides an alternative commuting mode for residents. Glencairn Stop is within an 10-12 minute walk time of the site as illustrated in ***Figure 2.7*** below.

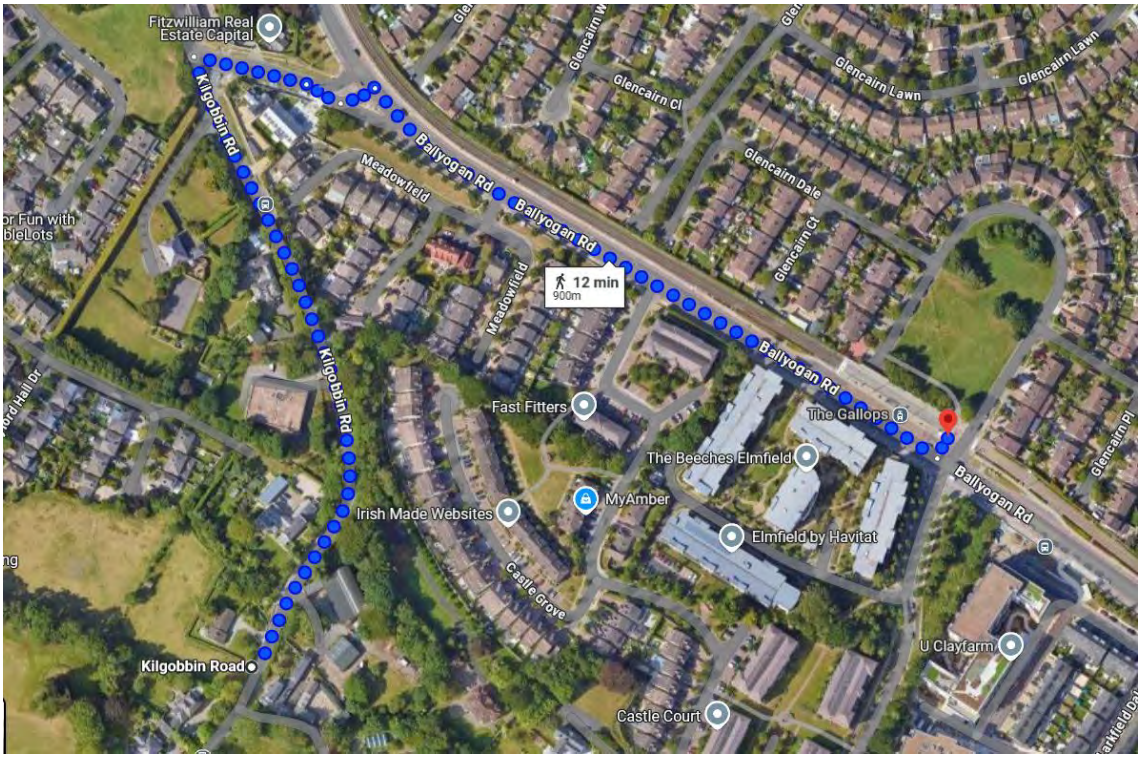

Figure 2.7 – Cycle Distance/Proximity to LUAS Services at The Gallops

2.23 Working Residents will likely be offered the opportunity to purchase public transport commuter tickets under the current ‘Employer Pass’ and ‘TaxSaver’ programmes. 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

MAINLINE BUS AND RAIL

2.24 With the existing and proposed bus and LUAS services to/from the city, the site is therefore also within easy reach of the mainline Nationwide Bus and Train Services - trains via Connolly and Heuston Stations and Buses via Busarus Terminus.

2.25 With ease of accessibility by Bus and Rail, and with the existing services, it is therefore considered that the proposed development is sustainable in terms of public transport accessibility. The proximity of the development to existing public transport services means that end occupiers/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.

GO CAR

2.26 Go Car is a pay-as-you-go car rental scheme which is easy to join with multiple locations around the city including in the vicinity of the subject development, with free parking at Dublin on-street pay and display spaces. This is another option available to residents and visitors. If deemed appropriate by DLRCC, the development can include dedicated Car Club Spaces ('Go Cars') to offset the need for residents and guests to have cars and car parking spaces.

TAXI ACCESSIBILITY

2.27 In terms of taxis, modern communication devices (e.g. 'Freenow' and 'Lynk') now allow taxis to be ordered on a demand-basis, without any requirement for formal taxi ranks or dedicated taxi holding areas. Setdown spaces are included near the entry to the scheme to accommodate taxis / drop off / set down etc when needed.

CAR PARKING

2.28 A total of 54 car parking spaces are to be provided within the development This is an effective travel demand management measure in itself. Details of the justification of the parking provision are set out in the main body of the TTA Report. However, it is clear that the lower provision of car parking will act as a travel demand management measure, ensuring that the development is occupied in the most sustainable manner being reliant on non-car modes of travel.

2.29 It is proposed that car parking spaces can be allocated to car club parking spaces (e.g. Go Car spaces). These can be located near the access for ease for use for end occupiers/residents.

POTENTIAL FOR OVERSPILL CAR PARKING

2.30 The Management Company will adopt a proactive approach to preventing overspill parking into

adjoining residential areas, in particular Belarmine Vale and the vicinity of the two existing schools. All residents and visitors will be formally notified, through welcome packs, tenancy/ownership agreements, and on-site signage, that on-street parking in these neighbouring areas is not permitted and will be actively discouraged.

2.31 To ensure compliance, the Management Company will operate a robust enforcement regime within the development. This will include the use of parking permits for authorised vehicles, regular monitoring of parking activity, and the imposition of fines or other penalties for breaches of the parking regulations. Clear signage will be installed throughout the site to reinforce these requirements and inform residents and visitors of the enforcement measures in place.

2.32 In addition, the Management Company will liaise with the local authority and neighbouring residents' associations to address any reported incidents of overspill parking, ensuring that issues are resolved promptly and that parking demand is effectively managed within the site itself.

Residents Communication

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

2.34 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.

2.35 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.

2.36 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.

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

3.0 COLLECTION OF BASELINE INFORMATION

Possible Travel Pattern Questionnaires

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

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

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

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

4.0 THE TRAVEL PLAN

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

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

Walking

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

Table 4.1: Key Information: Walking

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

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

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

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

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

Cycling

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

Table 4.2: Key Information: Cycling

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

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

4.8 Some positive aspects of cycling are listed following:

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

increased confidence proving beneficial in all aspects of life;

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

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

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

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

Public Transport

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

Table 4.3: Key Information: Public Transport

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

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

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

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

Go-Car/Car Sharing

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

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

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

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

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

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

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

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

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

Action Plan Summary Table

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

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

Action Plan Summary Table

5.0 IMPLEMENTING THE PLAN

Background

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

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

The Travel Plan Coordinator

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

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

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

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

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

Promoting the Travel Plan

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

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

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

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

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

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

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

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

6.0 CONCLUSIONS

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

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

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

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

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

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

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

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

APPENDIX G

DMURS Statement of Consistency

consulting engineers

NRB

DMURS Design Compliance Statement Technical Note

Appendix G

For

Proposed Large-Scale Residential Development (LRD)

At

Kilgobbin Road
Stepaside,
Co. Dublin.

SUBMISSION ISSUE

5th Floor, 40 Mespil Road, Dublin 4
Tel/fax: +353 1 292 1941, E-mail: info@nrb.ie, Web: www.nrb.ie
Registered in Ireland No. 491679

1.0 INTRODUCTION

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

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

2.0 DESIGN ATTRIBUTES

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

2.2 High Quality Connections link the development and the local roads and public transport services as set out in the preliminary Mobility Management Plan. The external perimeter setting itself been designed to deliver a hierarchy which provides safe access within / across the proposed new residential community. The external perimeter design serves to link the site & community with the established and proposed local network. Safe well - designed routes are provided for pedestrians and for cyclists, with easy access to both Belarmine Vale and Kilgobbin Road.

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

‘transition’ solutions particularly at the access internally and at the Kilgobbin Road intersection.

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

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

a) The 4.0m wide combined pedestrian / cycle path linking Belarmine Vale and Kilgobbin Road maximise permeability between the Belarmine area and the residential development to the Kilgobbin Road thereby reducing walking and cycle times to Ballyogan Road and the Green Luas line.

b) With the landscaped plans for the site it offers a well-connected and permeable network to link to Belarmine Vale and Kilgobbin Road to the west and east respectively.

c) The main access road is proposed as a 4.8m wide carriageway, to help reduce vehicle speeds.

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

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

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

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

h) With the objective of encouraging low vehicle speeds and maximising pedestrian safety and convenience, corner radii will be 6m where swept path analysis permits and are further reduced radii where feasible in line with DMURS guidance.

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

j) Within the development, as required, cyclists will share the carriageway with other street users as per the National Cycle Manual guidance for such situations and best practice for residential streets of this nature.

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

APPENDIX H

Bus/LUAS Capacity Assessment Report

consulting engineers

NRB

Bus/LUAS Capacity Assessment Report

(Appendix H)

For

Proposed Large-Scale Residential Development (LRD)

at

Kilgobbin Road
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SUBMISSION ISSUE

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Registered in Ireland No. 491679

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1.0 INTRODUCTION

1.1 NRB Consulting Engineers Ltd were appointed to address the Bus and LUAS Demand and capacity associated with a planning application for a proposed residential development on lands adjacent to Kilgobbin Road, Stepaside, Co. Dublin.

1.2 The proposed development consists of the construction of a residential development principally comprising 120 No. apartments.

1.3 The NRB commission on the project consists of this assessment of current and future Bus and LUAS capacity, a 'Bus and LUAS Capacity Assessment Report'.

1.4 Whilst this Report contains an assessment of Bus & LUAS 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, commercial 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 facilities if it makes commercial sense to do so. More customers means more revenue generated by the services.

1.5 Notwithstanding the above, the purpose of this Study is to review the potential impact of the development upon the existing and future bus and LUAS services in the vicinity of the site.

1.6 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) 2022 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.

1.7 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 LUAS services at the nearest stop (The Gallops) was assessed based on current provision.

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

1.9 The Luas Green Line Capacity Enhancement Project commenced in 2019 and has provided significant extra capacity on the Luas Green Line serving The Gallops. It included lengthening the existing green line trams to 55m in length, plus the purchase of 8 additional 55m long trams. A major expansion of Sandyford Depot was also undertaken to facilitate the growth in the green line fleet. Power system upgrades also facilitated the additional and longer trams. The €11.1m extension of the service increased the length of the existing trams from 44m to 55m and increased passenger capacity by 30%. Each of the 26 extended trams (with the addition of 2 new modules per tram measuring 11.1m long in total) increased passenger capacity from 319 to 408, with 89 more passengers per-tram accommodated than had previously been the case.

1.10 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 and Transport Assessment Guidelines (May 2014). The methodology assumes that the trips will be assigned to the nearest available bus stops and of course to The Gallops LUAS, which is closest LUAS Station.

2.0 BUS/LUAS LOCATIONS AND SERVICES (CURRENT AND FUTURE)

CURRENT SERVICES

2.1 For commuting, a walk distance to/ from Bus Stops of up to 1km is generally considered to be acceptable. For the purposes of this assessment, we have assumed a 7-10min walk time as being appropriate, reflecting a distance of circa 700-1,000m depending on speed of walking.

2.2 However, all the local bus services pass 100m from the proposed site on Kilgobbin Road, and is reasonably well served by Bus Services, and this is illustrated below within ***Figures 2.1 and 2.2*** below illustrating the existing bus services and stops within acceptable walking distance of the site.

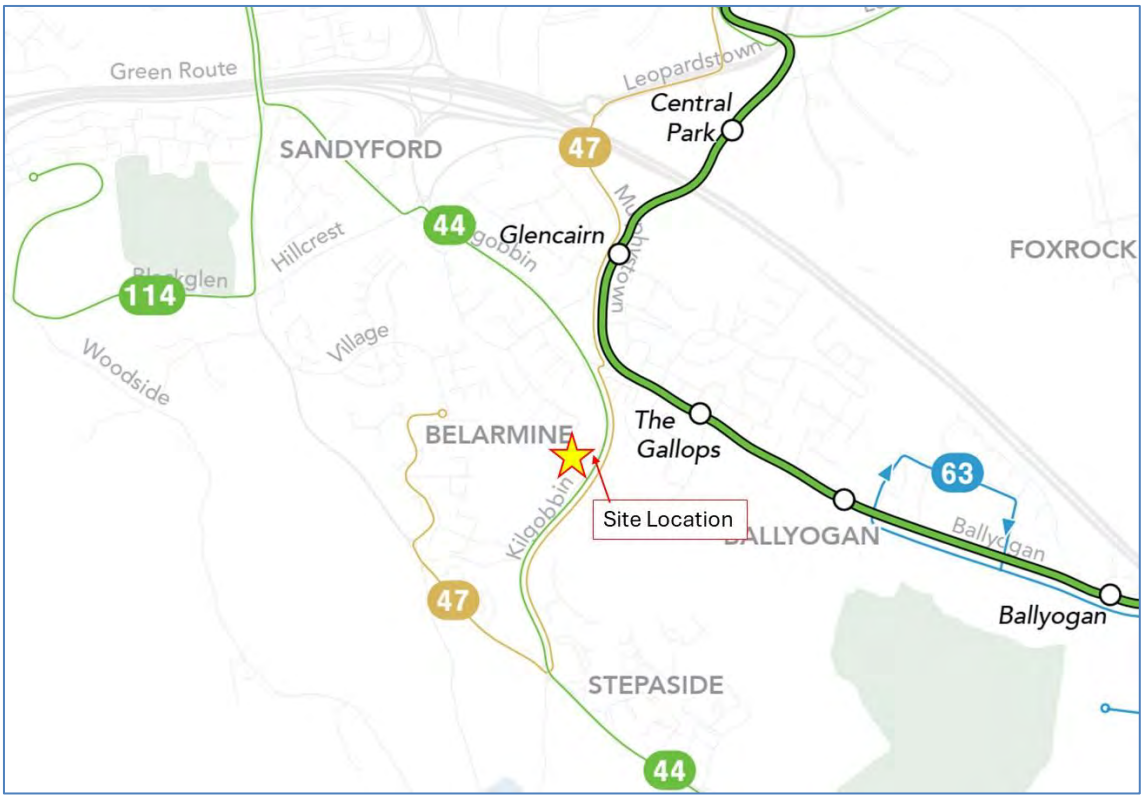


Figure 2.1 – Existing Bus Stops Serving the Site

2.3 Clearly, the Number 44 and 47 services pass near the site, and these services, including the #118 are the focus of this Study. The walk time to the existing Bus Stops and Services to the north of the site are illustrated below as ***Figure 2.2*** and ***Figure 2.3*** (correct at time of writing).

Figure 2.2 – Walk Time to Bus Stops North of the Site

2.4 The scheme also delivers a new pedestrian connection to link to Kilgobbin Road directly to the west of the site, vastly improving permeability for all pedestrians, including the proposed development. This creates pedestrian linkage through the existing Belarmine residential estate to Kilgobbin Road and the bus stops therein.

2.5 It should be noted that the #44 & #47 provide access to LUAS Stops. These services supplement and enhance the multi modal accessibility of the site to DART/LUAS and onwards to City Centre Transport Hubs and inter-city services.

2.6 As an illustration of walk time to LUAS, we include below the *Google* walk time to the Green Line Luas Services at The Gallops as ***Figure 2.4***, and the *Google* Cycle time to the Green Line Luas Services at The Gallops as ***Figure 2.5***. In our experience, a significant and growing proportion of DLRCC residents are cyclists, and the cycling/walking distance to/from LUAS will ensure it is also a viable alternative for use by residents.

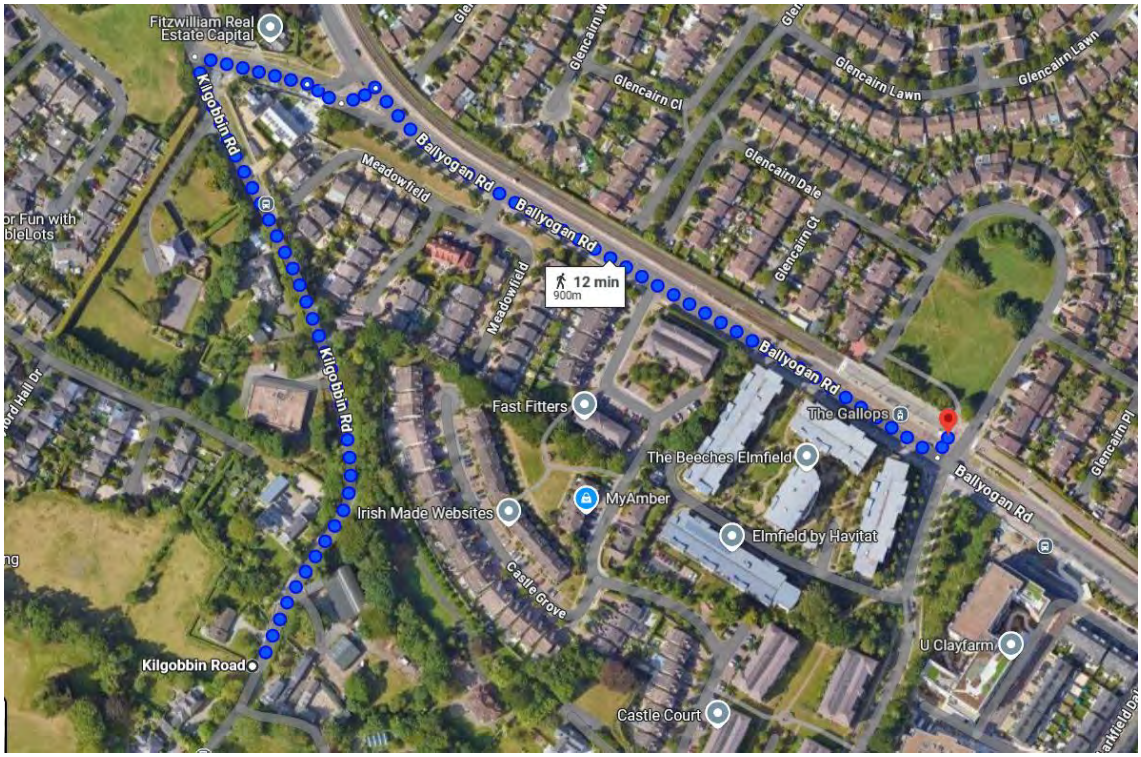


Figure 2.4 – Walk Time of 12 Mins to The Gallops LUAS

Figure 2.5 – Cycle Time of 3 Mins to The Gallops LUAS

2.7 In terms of the Existing Bus Service Provision and Service Frequency, the Timetables for each existing Services within a generally-acceptable walking distance 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)
44	Enniskerry – DCU	Dublin Bus	6	546
47	Belarmine Towards Poolbeg St.	Dublin Bus	7	637
118	Kilternan Towards Eden Quay	Dublin Bus	1	91
		Total (7-9am) All Routes	**14**	**1,274**

2.8 The above demonstrates that the site is clearly accessible to a significant existing bus provision, with a capacity of approximately 1,274 bus seats during the 7-9am commuter peak period citybound, all within an easy walk-distance of the site.

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

2.10 The approximate citybound LUAS capacity 7-9am is then illustrated below as ***Table 2.2.***

Table 2.2; - LUAS Approximate Existing Capacity Each Way (7-9am)

Details	No. 7-9am	People Capacity
LUAS Trams via Dundrum (Green Line)*	24	408
Total LUAS People Capacity 7-9am (each direction)	9792	

**Based on LUAS Frequency of 1 Tram Every 5 minutes*

2.11 The Transport for Ireland, LUAS and Dublin Bus 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 and associated walk/cycle times accurately, facilitating efficient journey planning (and minimising congestion on platforms or stops).

2.12 The LUAS Trams are of course modern and of high quality. Almost all of Dublin Bus and Go-Ahead Bus Services consist of fleets of high quality comfortable 'Double Decker' Buses, being accessible buses with 'low-floor' technology incorporated into their design.

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

2.14 The LUAS Green Line Services have been recently upgraded as set out above. We have also set out below details of the proposed bus service improvements locally as part of BusConnects.

FUTURE 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. An extract from the NTA Plans showing the site location is included below as ***Figure 2.6***.

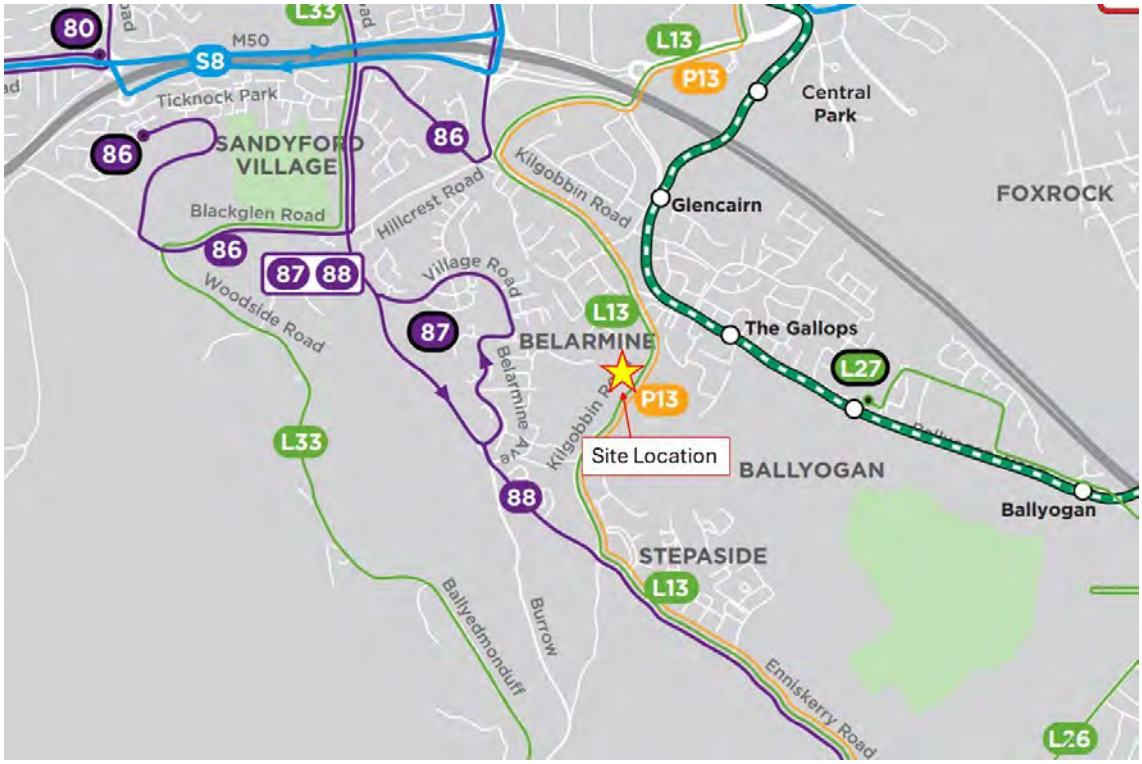


Figure 2.6 – Extract Current NTA Network Plans and Site

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.

2.17 The site is located served by **Radial Route 87** and **88** (Purple), and **Local Route L13** (Green) and **Express Route P13** with the expected frequency of these services as illustrated in extracts included in ***Figure 2.7*** below.

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
L13	Kilternan - Stillorgan Village - UCD - Ringsend		60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60

Peak-Only/ Express Routes			Weekday												
Route no.	To and From	Existing Similar Route	5	6	7	8	9	10	11	12	1	2	3	4	5
P13	Kilternan - Stepaside - UCD				2	2								2	2

Radial 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
87	Belarmine - Dundrum - Mountjoy Square		60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	
88	Enniskerry - Belarmine - Dundrum - Mountjoy Square		60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60

Figure 2.7 – Bus Connects, Radial and Local Route Frequencies

2.18 The site is therefore ideally placed in terms of future frequent bus availability, based on the NTAs published Plans.

2.19 In terms of **Bus Passenger Capacity**, the Dublin Bus 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 extra capacity e.g. the new Wrightbus StreetDeck HEV 96 double-decker buses. The 44B is generally a single decker bus with a capacity for ~45 passengers.

3.0 BUS USE PREDICTIONS, CAPACITY AND DEMAND

3.1 We have used the CSO Local Small Area Mapping to establish the proportion of Bus and LUAS Users within the local area surrounding the site in order to estimate the additional demand for services, utilising real data rather than estimations of modal split. An annotated extract from the CSO Database Local Electoral Area of Glencullen Sandyford 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 the Electoral Area to calculate the typical demand for Bus and LUAS during the busy weekday AM Commuter period, and this is illustrated below as ***Table 3.1***.

Table 3.1 – Bus and LUAS Demand Based on CSO Data and Expected Residential Population

Electoral Area	Total Population	Total Commuters Age 5+ to Work, School or College	No. of Train/LUAS Users	No. of Bus Users	No. of Commuters Leaving Home 7-9am to Work/Schl or College
Glencullen Sandyford	48568	30605	5524	2333	22272
CALCULATION OF BUS and LUAS DEMAND DUE TO DEVELOPMENT					
				Percentage of Total Population in Area Commuting =	63.0%
				Percentage of Total Population in Area Commuting By Train/LUAS =	11.4%
				Percentage of Total Population in Area Commuting By Bus =	4.8%
				Percentage of Commuters Leaving Home 7-9am =	72.8%
324	New Residents in Proposed Development				
37	LUAS/Train Commuters (Consistent with the Local Area Census Data)				
27	Total Additional LUAS/Train Commuters Between 7am and 9am Due to Development				
16	Bus Commuters (Consistent with the Local Area Census Data)				
12	Total Additional Bus Commuters Between 7am and 9am Due to Development				

BUS/LUAS CAPACITY and DEMAND

3.3 Based on the Unit Types and Mix, we have assumed a total normally resident Population of 270 persons for the purposes of this assessment, and this is considered to be robust.

3.4 Based on existing travel patterns in the locality, the above confirms that the fully occupied development will create an additional worst case demand for approximately 12 seats on bus services between 7am and 9am. There will be an additional worst case demand for 27 LUAS seats on Green Line Services between 7am and 9am. Of course, it is not possible to predict the commuting destination of future residents.

3.5 Based on current frequencies, the calculated additional demand for seats would result in ~12 additional bus passengers during the AM Peak period. Based on the on-site surveys of services it is clear that there is way more than adequate spare capacity on these bus services to cater for the increase in demand.

3.6 Exact details of bus passenger numbers are not available as this information is commercially sensitive, and due to cash fares taken on board it is not possible to determine seat availability on a service-by-service basis, even by operators themselves. Therefore, on site visual surveys to review existing demand and to confirm seat availability on Bus Services on Kilgobbin Road were undertaken on a weekday in April 2025 during normal school term. From these on-site visual surveys of routes 44 and 47, bus services in the AM and PM peak periods had in excess of 50% spare capacity available,.

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

3.8 In terms of **Buses**, the demand is illustrated in ***Table 3.2*** below - with c.1,274 bus seats available locally during the weekday AM commuter peak period, all within a short 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	14	1,274
Total Demand for Seats Created by Proposed Development (7-9am)		12
Percentage Impact Upon Existing Services within 10min Walk (Routes Via City)		0.9%

3.9 The resulting increased demand for bus seats is approximately 1% of the total available seat capacity locally. This is considered negligible, and we believe it can easily be accommodated within the current service provision.

3.10 In terms of **LUAS** services at The Gallops, the demand associated with the development is illustrated in ***Table 3.3*** below, and this has then been used to calculate the demand and impact upon services.

Table 3.3; Total Peak Demand for LUAS Seats Due to Development

Details	No. 7-9am	People Capacity
LUAS Trams via The Gallops (Green Line)*	24	408
Total LUAS People Capacity 7-9am	9792	
Total Demand Created by Proposed Development	27	
% Additional Demand Created	0.27%	
* *Based on New Extended Trams introduced in 2019, with Tram capacity increased by 30%, 1 Tram every 5 mins*		

3.11 The proposed development will therefore also create an additional demand for LUAS seats, equating to 0.27% of the current carrying capacity. At way less than 1%, this is also considered negligible and we believe it can easily be accommodated within the current service provision, and more than adequate space is available on the service based on our recent observation surveys.

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

3.13 The analysis is based on 2022 CSO travel patterns, and whilst the development seeks to encourage modal shift, given the small increase in predicted Bus and LUAS 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 capacity here.

4.0 CONCLUSIONS

4.1 NRB Consulting Engineers Ltd were appointed to address the Bus and LUAS Demand and capacity associated with a planning application for a proposed residential development on lands adjacent to Kilgobbin Road, Stepaside, Co. Dublin.

4.2 The NRB commission on the project consists of this assessment of current and future Bus and LUAS capacity, a 'Bus and LUAS Capacity Assessment Report'. The analysis of the existing and future Bus/LUAS 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) 2022 Small Area Map Data, available through the CSO online mapping tool. This data was used to quantify the anticipated demand for Bus/LUAS as a result of the proposed development in this particular location, utilising current local modal shift patterns and statistics.

4.3 The assessment confirms that the completion and full occupation of the development will result in an increased demand for Bus/LUAS seats, with an additional 12 Bus customers and 27 LUAS customers during the weekday AM Commuter Peak 7-9am (and less during the PM Commuter peak period). This represents a total of less than 0.9% of the Bus and 0.27% of LUAS seating capacity available locally during this AM Period.

4.4 A recent observation survey of bus/LUAS seat availability was undertaken to aid this study, and this confirms that adequate capacity exists. We conclude that the additional demand for Bus/LUAS trips as a result of the proposed development can be accommodated on the existing and improved services without any noticeable effect.

4.5 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. 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.

44

From DCU Towards Enniskerry

DCU, Cnoc na Fuiseoige, Sráid Uí Chonaill, Dún Droma, An Chéim, Áth na Sceire

Buses leave terminus at

Route Variations

k Operates from Larkhill to O'Connell Street

p Operates from Parnell Sq. East to Enniskerry

c From DCU departs O'Connell Street at 23:30

Monday – Friday				Saturday				Sunday			
06:45p	07:00k	07:30	08:00k	07:30	08:30	09:30	10:30	09:30	10:30	11:30	12:30
08:30	09:30	10:30	11:30	11:30	12:30	13:30	14:30	13:30	14:30	15:30	16:30
12:30	13:30	14:30	15:30	15:30	16:30	17:30	18:30	17:30	18:30	19:45	21:00
16:30	17:30	18:45	19:45	19:45	21:00	22:00	23:00c	22:00	23:00c		
21:00	22:00	23:00c									

DCU » 5 mins » Larkhill » 25 mins »O'Connell St. » 30 mins » Dundrum » 15 mins » Stepaside » 15 mins » Enniskerry

44

From Enniskerry Towards DCU

Áth na Sceire, An Chéim, Dún Droma, Sráid Uí Chonaill, Cnoc na Fuiseoige, DCU

Buses leave terminus at

Route Variations

d To Dundrum only

c From Enniskerry, departs O'Connell Street at 23:30

Monday – Friday				Saturday				Sunday			
06:35	07:15	08:15	09:30	07:00	08:00	09:00	10:15	09:00	10:00	11:00	12:00
10:30	11:30	12:30	13:30	11:30	12:30	13:30	14:30	13:15	14:30	15:30	16:30
14:30	15:30	16:30	17:30	15:30	16:30	17:30	18:30	17:30	18:30	19:30	20:30
18:45	19:45	20:30	21:30	19:30	20:30	21:30	22:30c	21:30	22:30c	23:30d	
22:30c	23:30d			23:30d							

Enniskerry » 15 mins » Stepaside » 15 mins » Dundrum » 30 mins » O'Connell St. » 25 mins » Larkhill » 5 mins » DCU

All times are off peak estimates

Areas served

DCU
Larkhill
Collins Ave. (Larkhill Rd.)
Drumcondra Rd. Upr. (Griffith Ave.)
Drumcondra Rd. Upr. (Clonturk Park)
Drumcondra Rail Station
Dorset St. (North Circular Rd.)
Dorset St. (North Frederick St.)
O'Connell St.
Merrion Sq./Clare St.
Earlsfort Terrace
Charlemont St.
Ranelagh Rd. (Dartmouth Rd.)
Ranelagh (Chelmsford Rd.)
Sandford Rd. (Marlboro Rd.)
Milltown (Ramleh Park)
Milltown (Church)
Dundrum Rd. (Bird Ave.)
Dundrum Rd. (Columbanus Rd.)
Dundrum Rd. (Frankfort Park)
Dundrum Rd. (Ballinteer Rd.)
Sandyford Rd. (Dundrum Town Centre)
Sandyford Rd. (Balally Cottages)
Sandyford Corner (Kilcross)
Sandyford Village
Murphystown Cross (Hillcrest)
Murphystown Rd.
Kilgobbin Lane
Stepaside Village
Jamestown (St. Norbert's)
Jamestown House
Goldenball (Glenamuck Rd.)
Ballycorus Rd.
Kilternan (Willis)
Kilternan Hotel
The Scalp (Butlers)
Killegar House
Monastery Corner
Enniskerry (National School)

47

From Poolbeg St. Towards Belarmine

Sráid an Phoill Bhig, An Rinn, Baile Átha Cliath An Coláiste Ollscoile, Áth an Ghainimh, Beallairmín

Buses leave terminus at

Monday – Friday				Saturday				Sunday			
07:40	08:30	09:10	10:15v	07:30	08:30	09:30	10:30	09:30	10:30	11:30	12:30
11:30v	12:45v	14:00v	15:15	11:30	12:30	13:30	14:30	13:30	14:30	15:30	16:30
16:00	16:30	17:00	17:30	15:30	16:30	17:30	18:30	17:30	18:30	19:30	20:30
18:00	18:30	19:30	20:30	19:30	20:30	21:30	22:30	21:30	22:30	23:30	
21:30	22:30	23:30		23:30							

Route Variations
v via Mount **Merrion**

Poolbeg St. » 9 mins » **Ringsend** » 15 mins » **UCD Belfield** » 20 mins » **Sandyford** » 15 mins » **Belarmine**

47

From Belarmine Towards Poolbeg St.

Beallairmín, Áth an Ghainimh, Baile Átha Cliath An Coláiste Ollscoile, An Rinn, Sráid an Phoill Bhig

Buses leave terminus at

Monday – Friday				Saturday				Sunday			
06:30	07:00	07:30	07:35t	07:30	08:30	09:30	10:30	09:30	10:30	11:30	12:30
08:05	09:00	10:15v	11:30v	11:30	12:30	13:30	14:30	13:30	14:30	15:30	16:30
12:45v	14:00v	15:15v	16:30	15:30	16:30	17:30	18:30	17:30	18:30	19:30	20:30
17:15	18:00	18:30	19:30	19:30	20:30	21:30	22:30	21:30	22:30	23:30	
20:30	21:30	22:30	23:30	23:30							

Route Variations
v Via Mount Merrion
t During term time only

Belarmine » 15 mins » **Sandyford** » 20 mins » **UCD Belfield** » 15 mins » **Ringsend** » 9 mins » **Poolbeg St.**

All times are off peak estimates

Areas served

Poolbeg St.
Pearse St. (Macken St.)
Ringsend (Thorncastle St.)
Irishtown Rd. (Tritonville Rd.)
Sandymount Rd. (Star of the Sea Church)
Sandymount Green
Sydney Parade Rail Station
Nutley Lane (St. Vincent's Hospital)
Stillorgan Rd. (Nutley Lane)
Stillorgan Rd. (Woodbine Rd.)
Stillorgan Rd. (Seafield Rd.)
Stillorgan Rd. (Booterstown Ave.)
Stillorgan Rd. (Mount Merrion Ave.)
Stillorgan Rd. (Woodlands Ave.)
Stillorgan Heath
Sandyford Business District
Murphystown Way
Kilgobbin Rd.
Stepaside (Smith's)
Enniskerry Rd.
Belarmine

118

From Kilternan Towards Eden Quay

Cill Tiarnáin, Stigh Lorgan, Cé Éidin

Buses leave terminus at

Monday – Friday	Saturday	Sunday
07:45	No Service	No Service

Kilternan » 40 mins » **Stillorgan** » 25 mins » **Eden Quay**

All times are off peak estimates

Areas Served

Kilternan
Ballycorus Rd.
Goldenball (Glenamuck Rd.)
Jamestown House
Jamestown (St. Norbert's)
Stepaside (Smith's)
Kilgobbin Rd.
Murphystown Way
Leopardstown Park Hospital
Brewery Rd. (Leopardstown Ave.)
Stillorgan Rd. (Merville Rd.)
Stillorgan Shopping Centre/Subway
Stillorgan Rd. (Woodlands Ave.)
Stillorgan Rd. (Mount Merrion Ave.)
Stillorgan Rd. (Booterstown Ave.)
Stillorgan Rd. (Seafield Rd.)
Stillorgan Rd. (Woodbine Rd.)
Stillorgan Rd. (Nutley Lane)
Stillorgan Rd. (Donnybrook Church)
Morehampton Rd. (Belmont Ave.)
Morehampton Rd. (Marlboro Rd.)
Wellington Place (Waterloo Rd.)
Leeson St. Bridge
Leeson St. (Pembroke St.)
Kildare St./Dawson St.
Eden Quay

APPENDIX I

Car / Bicycle Parking Management Report

consulting engineers

NRB

CAR & BICYCLE PARKING MANAGEMENT REPORT

For

Proposed Large Scale Residential Development

At

Kilgobbin Road
Stepaside,
Co. Dublin.

SUBMISSION ISSUE

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

Registered in Ireland No. 491679

Contents

1.0 INTRODUCTION

1.1 This Parking Management Report (PMR) has been prepared by NRB Consulting Engineers Ltd and sets out the proposed car parking management strategy for the proposed Large-Scale Residential Development (LRD) residential development on zoned development lands at Kilgobbin Road, Stepaside, Co. Dublin.

1.2 The local area contains a mixture of services, commercial, schools & residential developments within easy walking or cycling distance, 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 proposed development provides a residential scheme of 120 residential apartments.

1.4 The proposed Vehicular access to the development will be via Belarmine Vale, leading to the area containing the main area of controlled development parking.

1.5 An image extract from the Architects Layout Plans showing the parking provision the access road is included as ***Figure 1.2*** for ease of reference.

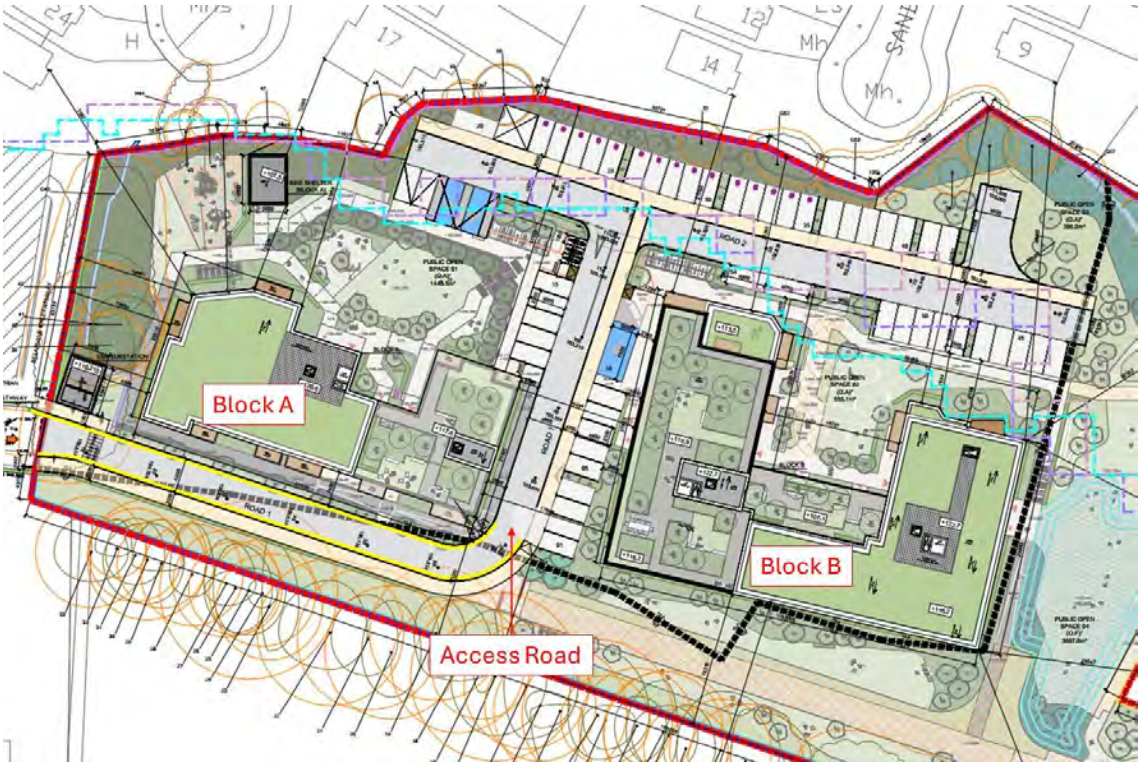


Figure 1.2 –Ground Floor Car Parking

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

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

- The Traffic & Transportation Assessment (TTA),
- The Planning Stage Mobility Management Plan (MMP).

1.8 The TTA and the MMP 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 **Car Parking** standards originally to be applied in new residential developments in Dún Laoghaire-Rathdown are set out in Table 12.5 of the County Development Plan (2022-2028). Zone 1 standards are defined as "Maximum" requirements, whilst Zones 2/3/4 are not. The provision is to be determined in accordance with the DLRCC Development Plan on a case-by-case basis, depending on the particular circumstances.

2.2 However, these requirements are now supplemented by Table 3.1 of the recent Compact Settlement Guidelines (CSG) which set out the three different areas and density categories for Dublin City, namely City Centre, City- Urban Neighbourhoods and City - Suburban / Urban Extension. Having reviewed the site location we believe that the site, falls within a ***City- Urban Neighbourhoods*** (as defined in Table 3.8).

2.3 The relevant extract is included below as ***Figure 2.1***.

Table 3.1 - Areas and Density Ranges Dublin and Cork City and Suburbs

City - Centre The city centres of Dublin and Cork, comprising the city core and immediately surrounding neighbourhoods[6], are the most central and accessible urban locations nationally with the greatest intensity of land uses, including higher order employment, recreation, cultural, education, commercial and retail uses. It is a policy and objective of these Guidelines that residential densities in the range 100 dph to 300 dph (net) shall generally be applied in the centres of Dublin and Cork.
City - Urban Neighbourhoods The city urban neighbourhoods category includes: (i) the compact medium density residential neighbourhoods around the city centre that have evolved overtime to include a greater range of land uses, (ii) strategic and sustainable development locations[7], (iii) town centres designated in a statutory development plan, and (iv) lands around existing or planned high-capacity public transport nodes or interchanges (defined in Table 3.8) – all within the city and suburbs area. These are highly accessible urban locations with good access to employment, education and institutional uses and public transport. It is a policy and objective of these Guidelines that residential densities in the range 50 dph to 250 dph (net) shall generally be applied in urban neighbourhoods of Dublin and Cork.
City - Suburban/Urban Extension Suburban areas are the lower density car-orientated residential suburbs constructed at the edge of cities in the latter half of the 20th and early 21st century, while urban extension refers to the greenfield lands at the edge of the existing built up footprint that are zoned for residential or mixed-use (including residential) development[8]. It is a policy and objective of these Guidelines that residential densities in the range 40 dph to 80 dph (net) shall generally be applied at suburban and urban extension locations in Dublin and Cork, and that densities of up to 150 dph (net) shall be open for consideration at 'accessible' suburban / urban extension locations (as defined in Table 3.8).

Figure 2.1 – Extract Table 3.1 – Areas and Density Ranges from the CSG

2.4 Section 3.4 of the CSG sets out how to establish the housing density ranges at various locations, with Step 1 being an assessment of Accessibility to both Services and Public Transport, with Table 3.8 setting out definitions for terms used for defining

accessibility. In terms of Accessibility we have reviewed Table 3.8 (See Extract below as ***Figure 2.2***) and note that the Site is located an approx 850m walk from the Luas Green Line Station at The Gallops (and therefore is inside the requirements of falling within a High Capacity Public Transport Node or Interchange, namely an interchange or node that includes DART, high frequency Commuter Rail, light rail or MetroLink services).

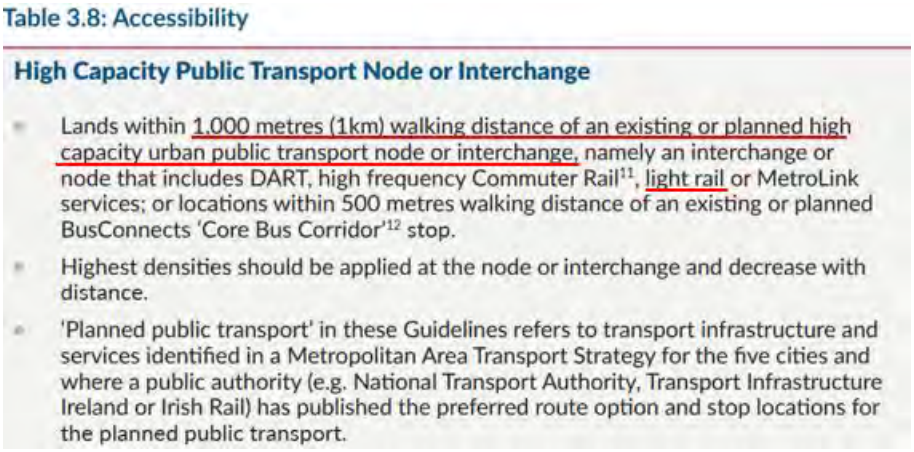


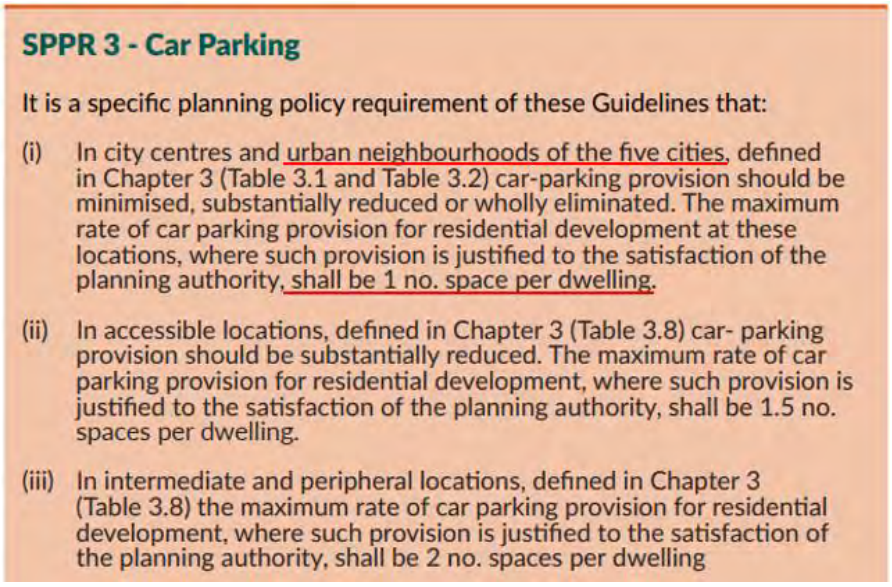
Table 3.8: Accessibility

High Capacity Public Transport Node or Interchange

- Lands within 1,000 metres (1km) walking distance of an existing or planned high capacity urban public transport node or interchange, namely an interchange or node that includes DART, high frequency Commuter Rail[11], light rail or MetroLink services; or locations within 500 metres walking distance of an existing or planned BusConnects 'Core Bus Corridor'[12] stop.
- Highest densities should be applied at the node or interchange and decrease with distance.
- 'Planned public transport' in these Guidelines refers to transport infrastructure and services identified in a Metropolitan Area Transport Strategy for the five cities and where a public authority (e.g. National Transport Authority, Transport Infrastructure Ireland or Irish Rail) has published the preferred route option and stop locations for the planned public transport.

Figure 2.2 – Extract Table 3.8 – Locational Characteristics in CSG

2.5 Examination of the proposed site location confirms that the site can best be described as "unrban neighbourhood" solely in the context of the CSG definitions for calculating appropriate car parking provision. We include below the associated Parking Provision Table 3.8 extract from the CSG as ***Figure 2.3***.



SPPR 3 - Car Parking

It is a specific planning policy requirement of these Guidelines that:

(i) In city centres and urban neighbourhoods of the five cities, defined in Chapter 3 (Table 3.1 and Table 3.2) car-parking provision should be minimised, substantially reduced or wholly eliminated. The maximum rate of car parking provision for residential development at these locations, where such provision is justified to the satisfaction of the planning authority, shall be 1 no. space per dwelling.

(ii) In accessible locations, defined in Chapter 3 (Table 3.8) car- parking provision should be substantially reduced. The maximum rate of car parking provision for residential development, where such provision is justified to the satisfaction of the planning authority, shall be 1.5 no. spaces per dwelling.

(iii) In intermediate and peripheral locations, defined in Chapter 3 (Table 3.8) the maximum rate of car parking provision for residential development, where such provision is justified to the satisfaction of the planning authority, shall be 2 no. spaces per dwelling

Figure 2.3 – Extract SPPR3 – Car Parking Standards in CSG

2.6 Note that the parking provision in the CSG does NOT include car club spaces, set down spaces, public EV Spaces or Accessible spaces, but does include visitor

provision. Based on the above, **applying the CSG to the Housing Element** would strictly require the maximum following:

- 1 x Car Parking Space per Residential Apartment (120 Spaces),
- Accessible/Set Down and Public EV **in addition** to the above.

2.7 The proposed development includes a total of 54 No. car parking spaces (including 3 No. accessible parking spaces & 15 EV spaces), being a parking ratio of approximately 0.45 per unit, which we consider to be appropriate in this location.

2.8 Motorcycle spaces are also accommodated in line with DLRCC County Development Plan 2022 - 2028 Section 12.4.7 Motorcycle Parking i.e. at a rate of 4% of the number of car parking spaces provided (space for 3 motorcycle spaces is provided which is in excess of 4% of the number of car parking spaces provided).

Bicycle Parking

2.9 The requirement for bicycle parking has also been assessed in accordance with the ***DLRCC Development Plan*** 2022-2028 (Table 12.23) and this is included below as ***Table 2.1*** below:

Table 2.1: Minimum Residential Bicycle Parking as per DLRCC Development Plan

Element	***DLRCC Min Parking Rate***		***Requires***	
	Long Term	Short Stay	Long Stay	Short Stay
67no. 1-bed Apartments	1/unit	1 / 5 units	67	13
42no. 2-bed Apartments	1/unit	1 / 5 units	42	8
11no. 3-bed Apartments	1/unit	1 / 5 units	11	2
Total			**120**	**24**
Total Min Cycle Parking Required Under DLRCC Plan			***144***	

2.10 For the apartments, the 'Sustainable Urban Housing: Design Standards for New Apartments Guidelines for Planning Authorities' states that 1 bicycle parking space per bedroom plus 1 visitor space per 2 units is a requirement, which would indicate that significantly more cycle parking is required than is set out in the DLRCC CDP Cycle Policy. In this case there are a total of 120 apartments (67 No. one bed units, 42 No. two bed units and 11 No. three bed units) – a total of 184 Bedrooms. This translates to a requirement for 184 residential bicycle parking spaces and 60 visitor bicycle parking spaces, strictly applying the Guidelines – being a requirement for a total of 244 spaces.

Table 2.2: Minimum Residential Bicycle Parking as per Apartment Guidelines

Element	*AG Min Parking Rate*		*Requires*	
	Long Term	Short Stay	Long Stay	Short Stay
67no. 1-bed Apartments	1/bedroom	1/unit	67	34
42no. 2-bed Apartments	1/bedroom	1/unit	84	21
11no. 3-bed Apartments	1/bedroom	1/unit	33	6
Total			**184**	**60**
Total Min Cycle Parking Required Under Apartment Guidelines			***244***	

2.11 The New Apartments Guidelines also states that 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.

2.12 The high quality of the cycle parking is reflected in the provision of a total of 273 new dedicated cycle parking spaces. Of these, 205no. are provided within the Apartment Blocks, 12 within a secure external building and 56 external visitor spaces within the hard landscaping. Much of the cycle parking are Sheffield stands in line with DLR Cycle Policy preference for Sheffield Stands, with double stackers above the Sheffield Stands internally. This also supports the case for a slight reduction in car parking provision.

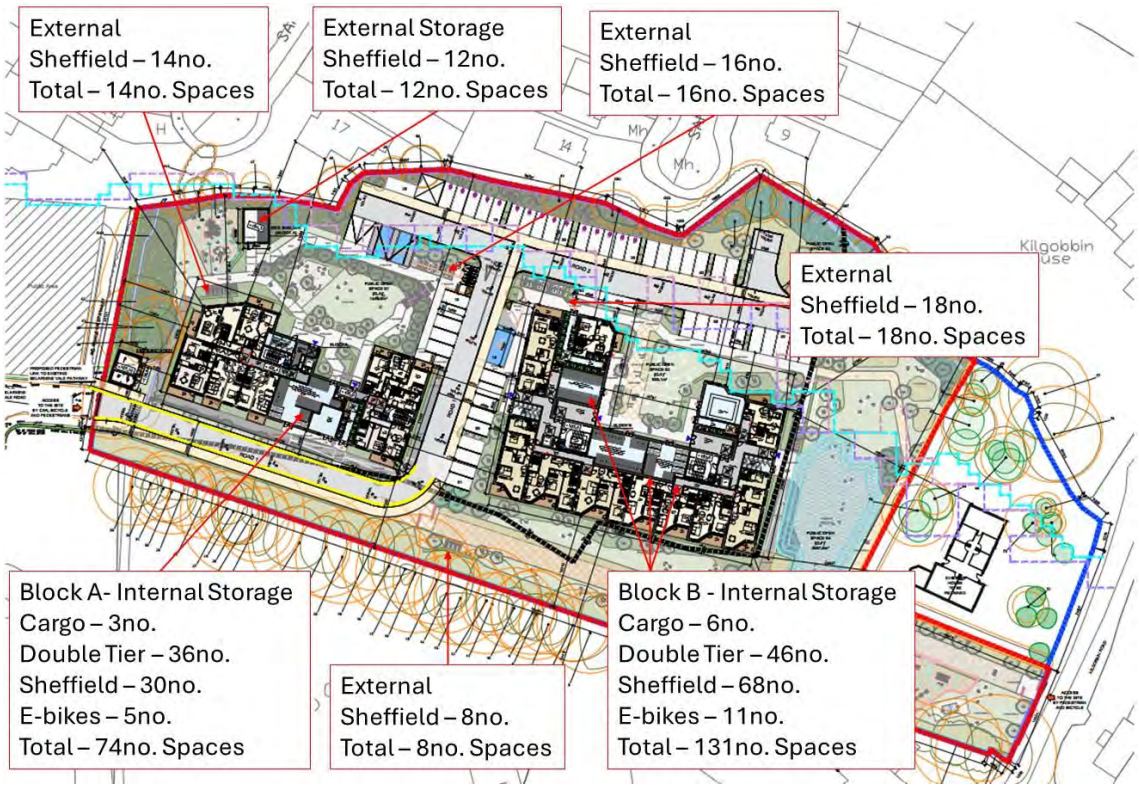


Figure 2.4 – Cycle Parking Locations

3.0 CAR PARKING PROVISION

Overview

3.1 The car parking provision is provided along the access road between the two block and to the north of the blocks. A summary parking schedule has been extracted from the planning information and is included below as ***Figure 3.1***.

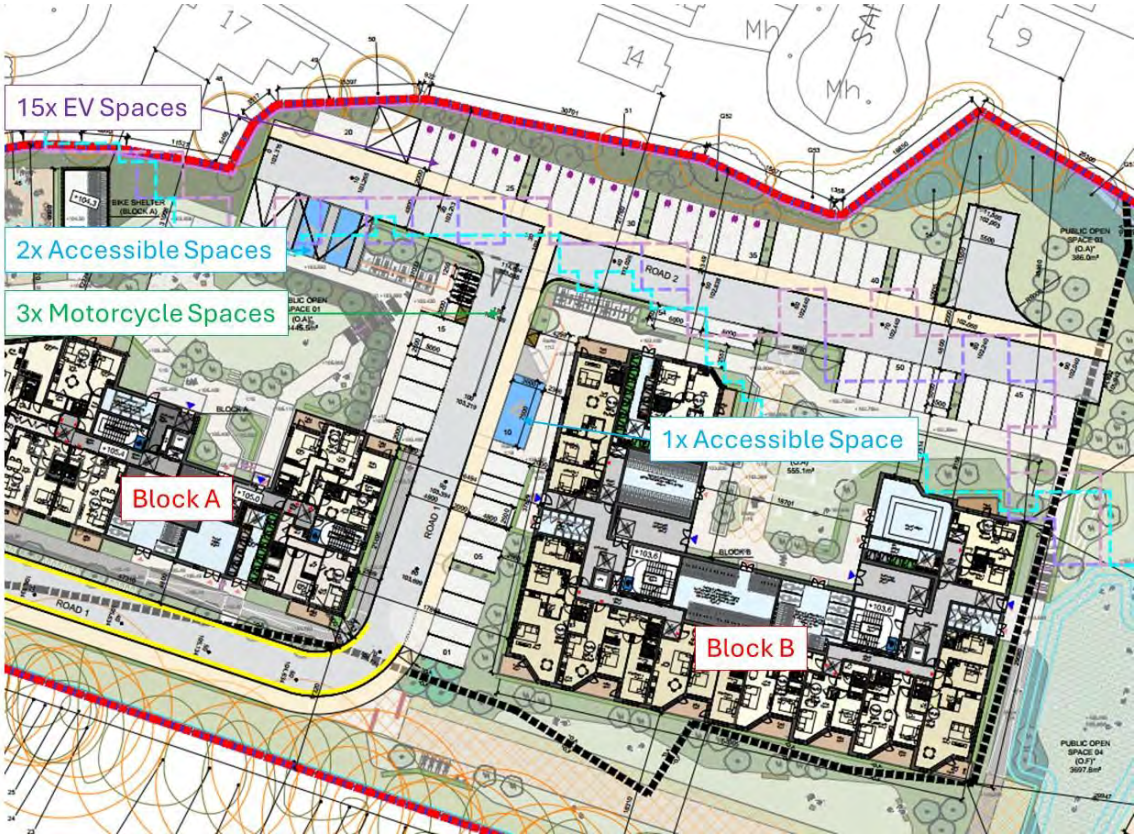


Figure 3.1 – Location of Car Parking

3.2 All of the car parking spaces have been designed with accessibility in mind, having being designed in accordance with best practice and current design guidance. The parking spaces have been TRACKed using proprietary swept path software to ensure ease of accessibility. Whilst 15 of the spaces are defined as EV Spaces, it is proposed that Electric Vehicle (EV) charging will be provided for in a flexible manner as outlined below.

3.3 All of the remaining car parking spaces provided can easily be upgraded to also allow conversion to **Electric Vehicle** charge spaces. In the case of a residential apartment development of the nature proposed, with specific spaces ultimately dedicated to specific apartments, it is considered appropriate to facilitate the retrofitting of spaces, based on demand following occupation, rather than a % of spaces being defined as such and provided from the outset.

3.4 The entire car park of the subject scheme is therefore to be ducted ready to accept future cabling to serve a charging point for every car space, as demanded. On the ground floor, ducts can be run in the ground where charging points can also be mounted.

3.5 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 will have a lockable cover on it so that only that resident may use the power point. This 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 will be in place. There are a total of total of 273 new dedicated cycle parking spaces. Of these, 205no. are provided within the Apartment Blocks, 12 within a secure external building and 56 external visitor spaces within the hard landscaping. These are by way of two-tiered stands (82 spaces top tier & 66 bottom spaces are by way of Sheffield Stands as shown in ***Figure 4.5***), standalone Sheffield stands (88 spaces), e-bikes (16 spaces) and cargo spaces (9spaces). The number of spaces provided exceeds the requirements as set out in the National Apartment Guidelines. An extract showing the bicycle storage area in the ground level, which is compliant with the NTA CDM Design Guidance is included below as ***Figures 4.1 & 4.2.***

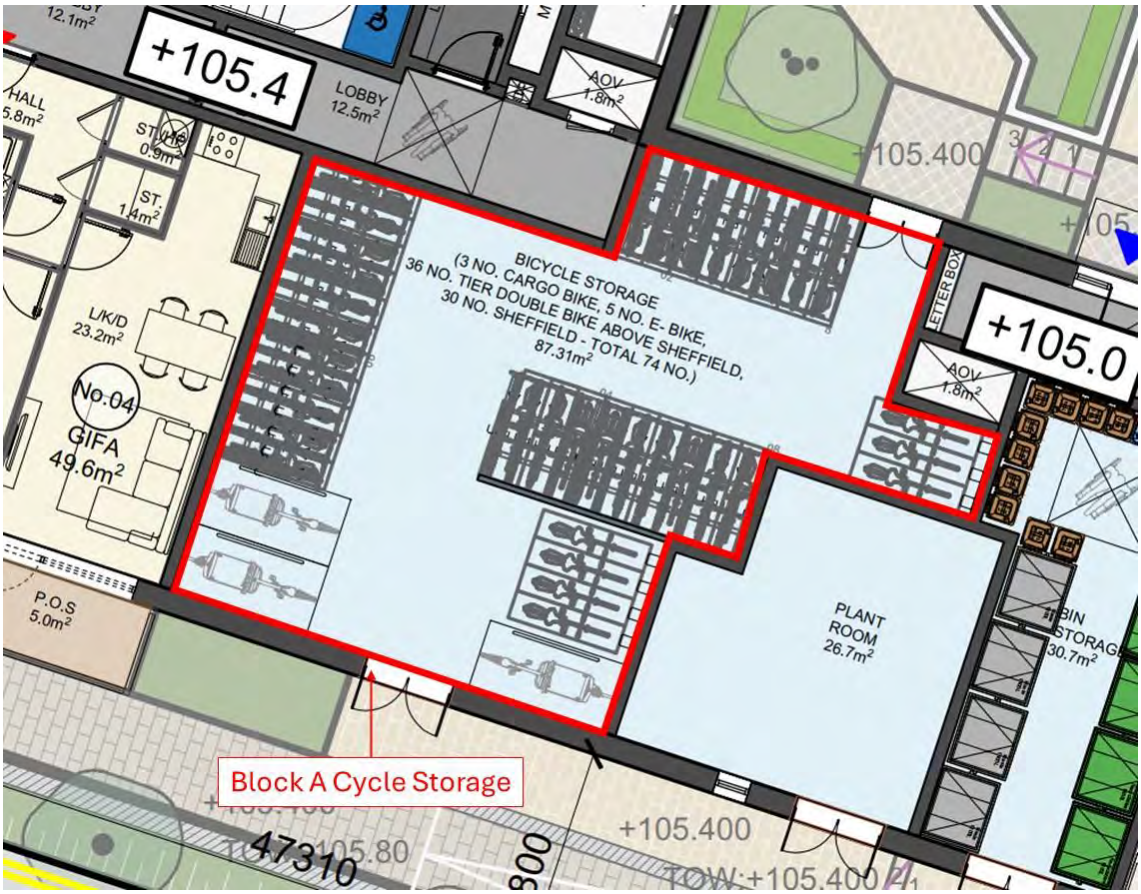


Figure 4.1 – Schedule of Cycle Parking Block A

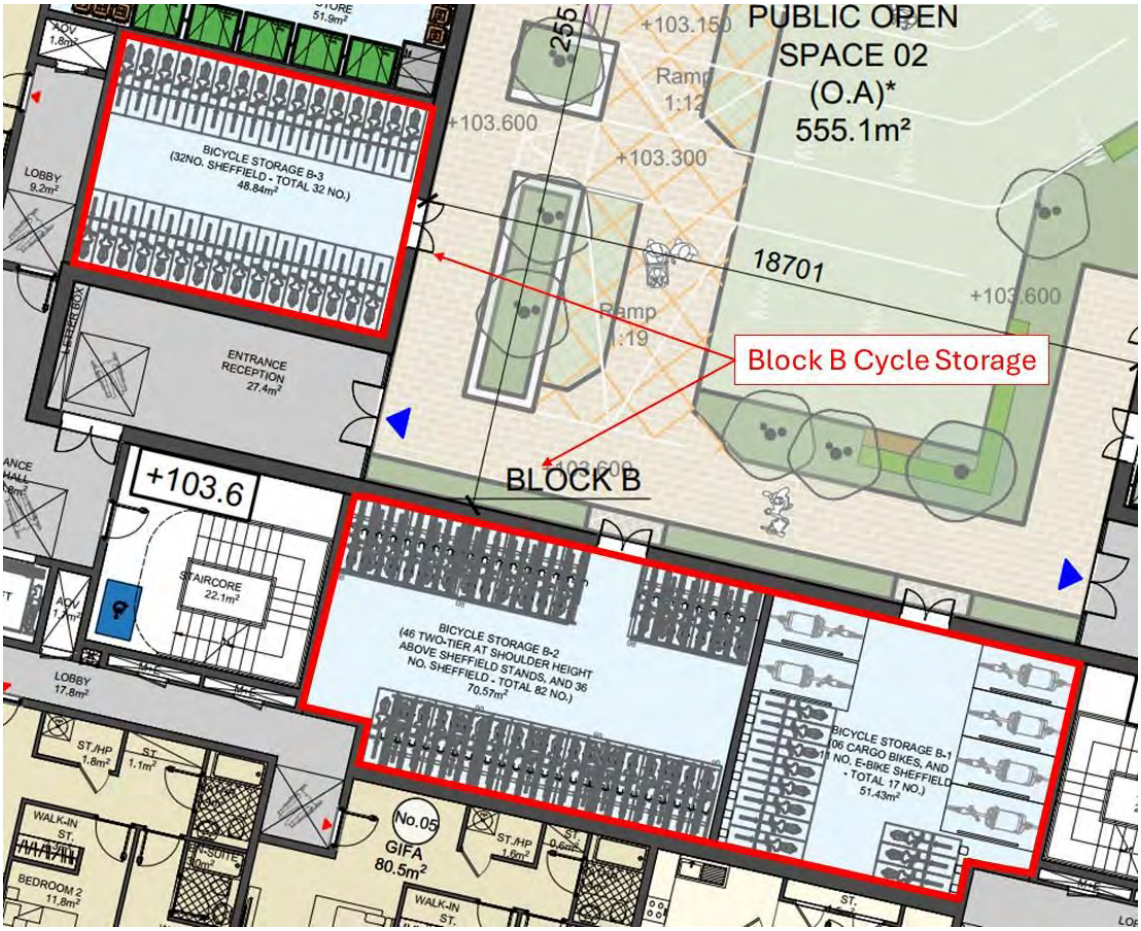


Figure 4.2 – Schedule of Cycle Parking Block B

4.2 There is additional residential cycle parking provided in an external secure shelter, as shown in ***Figure 4.3***.

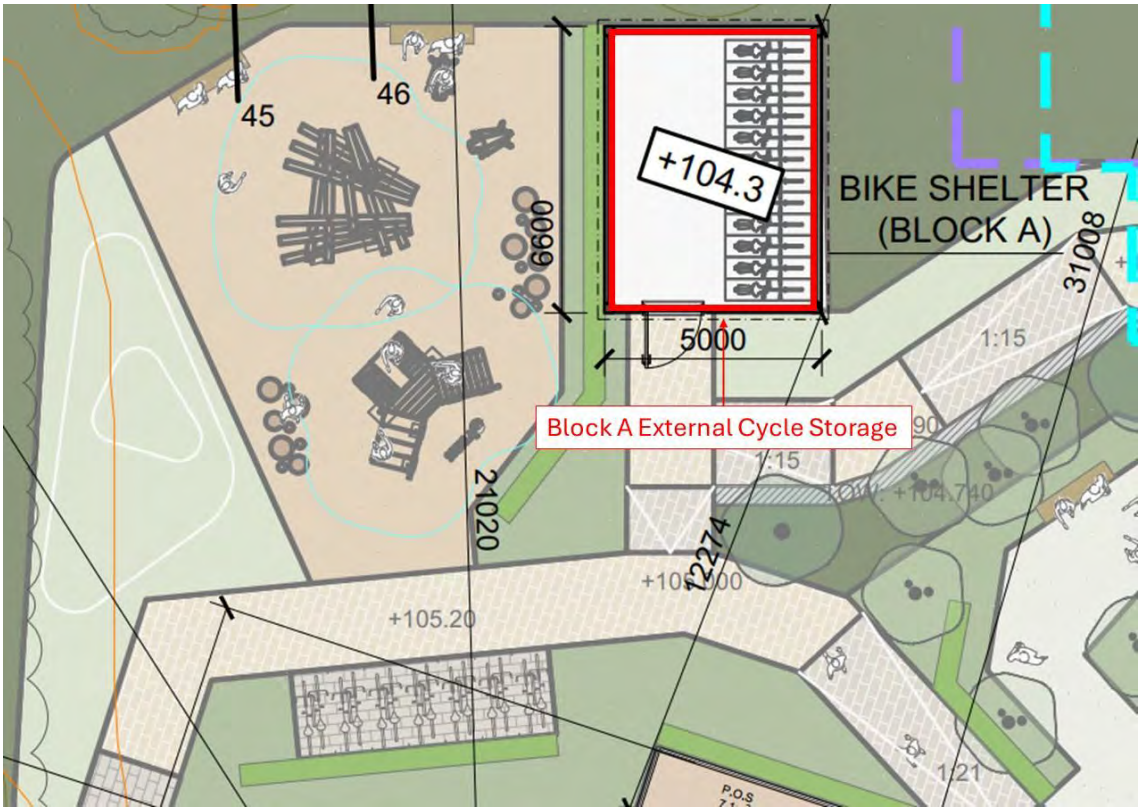


Figure 4.3 – Schedule of External Cycle Parking Block B

4.3 The residential cycle parking spaces are within fob controlled storage areas with locking facilities internally. They are beneficially in areas subject to passive surveillance and they will of course also be monitored by CCTV.

4.4 The visitor parking spaces, in the public realm (total no.56), are all provided in the form of traditional 'Sheffield Stands' avoiding double stack systems. All of the visitor bicycle parking is accessible to all.

4.5 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 are in secure areas, all of which will be monitored through a combination of passive surveillance or by CCTV. An extract showing the visitor bicycle storage areas in the public realm, which is compliant with the NTA CDM Design Guidance is included below as ***Figures 4.4***.

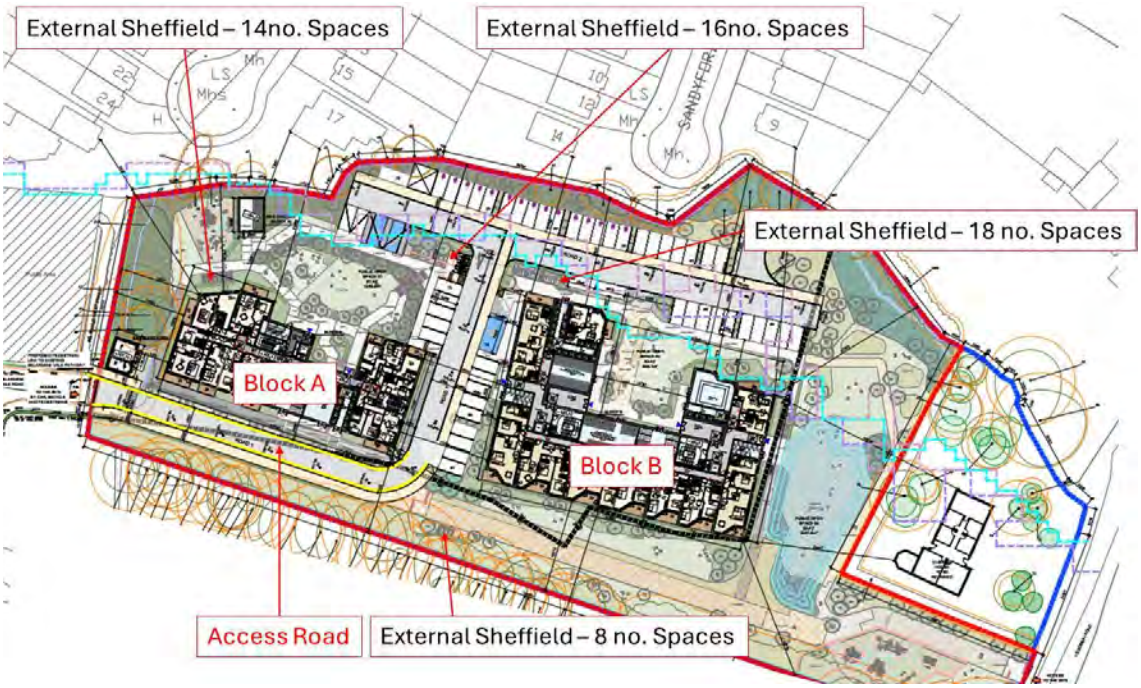


Figure 4.4 – Provision of Visitor Bicycle Parking

4.6 The Double Tier Cycle Stands have been provided with Sheffield Stands, as shown in ***Figure 4.5*** below.

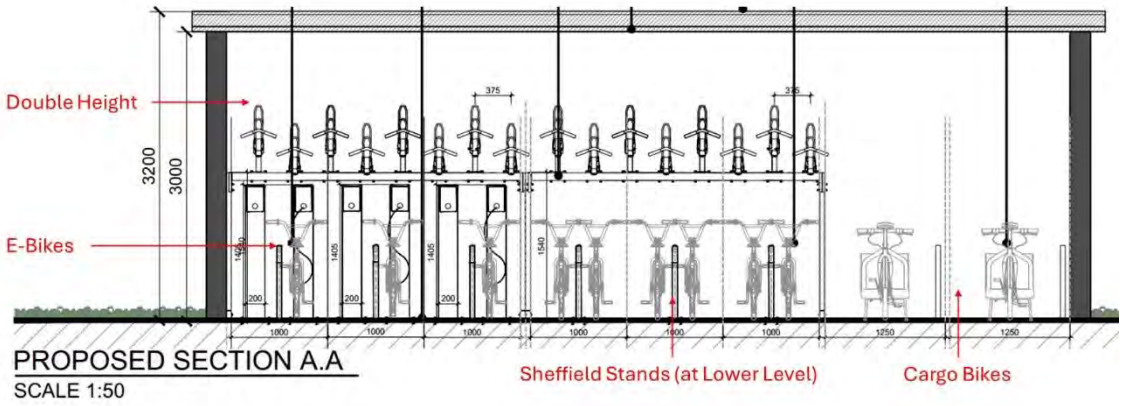


Figure 4.5 – Typical Layout of Bicycle Parking

4.7 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 once Residents are in place,
- Increased & Well Designed Cycle Parking Provision,
- Parking Management and Control (Refer enclosed drawing and details below),
- Dedicated legal controls within Sales or Letting Agreements associated with all Residential Apartments, and
- Provision of dedicated *Go-Car* Spaces within the Site subject to agreement with a service provider.

Mobility Management Plan

5.2 A revised outline MMP has been prepared and should be read in conjunction with this Parking Strategy Report. Separate MMPs 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 restricted car parking provision. As previously set out, the bicycle parking provision exceeds the requirements of the National Apartment Guidelines. With 120 apartments the provision of bicycle parking represents a net provision of c.2.2 bicycle parking spaces per apartment. Copious visitor bicycle parking is also provided at ground floor level.

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 a revised 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 both Car & Bicycle 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 numbered space or spaces referenced with mapping provided to illustrate the relevant space.

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 internal surface parking.

6.2 It is intended that the entire 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 and for the commercial tenants, 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.

6.4 Accordingly, unless they are dedicated to individual Residential Apartments or the commercial elements, on-site parking will otherwise remain in the control of the Management Company. A car parking 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,
- Deliveries (eg E-Shopping).

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 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 be responsible for the day-to-day management of car parking operations.

Car Parking Access/Control

6.8 If necessary in the longer term, access to the parking areas can be controlled by a combination of barriers to ensure that only permitted vehicles can gain access. If required, a barrier can be safely located at the access, set back sufficiently so as not to result in any hazard or obstruction (but this is considered unnecessary at this stage).

6.9 In such circumstances, access to approved users can then be facilitated by coded keypad entry/fob control or Automated Number Plate Recognition (ANPR) technology which only permits registered permitted vehicles to enter.

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

Control and Mitigate Potential Overspill Parking

6.11 The Management Company will adopt a proactive approach to preventing overspill parking into adjoining residential areas, in particular Belarmine Vale and the vicinity of the two existing schools. All residents and visitors will be formally notified, through welcome packs, tenancy/ownership agreements, and on-site signage, that on-street parking in these neighbouring areas is not permitted and will be actively discouraged.

6.12 To ensure compliance, the Management Company will operate a robust enforcement regime within the development. This will include the use of parking permits for authorised vehicles, regular monitoring of parking activity, and the imposition of fines or other penalties for breaches of the parking regulations. Clear signage will be installed throughout the site to reinforce these requirements and inform residents and visitors of the enforcement measures in place.

6.13 In addition, the Management Company will liaise with the local authority and neighbouring residents' associations to address any reported incidents of overspill parking, ensuring that issues are resolved promptly and that parking demand is effectively managed within the site itself.

7.0 CONCLUSION

Based on the information contained within this Parking Strategy Report, it is considered that the car and bicycle 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 Working Mobility Management Plans, Legal Allocation of Spaces to Residents and Commercial elements and the day-to-day management / clamping of parking being a role for the management company.

APPENDIX J

Stage 1 Independent Road Safety Audit including Quality Audit (incl Walking/Cycling)

Title: **STAGE 1 QUALITY AUDIT incl**

ROAD SAFETY AUDIT

For;

Proposed Large Residential Development, Kilgobbin.

Client: **NRB Consulting Engineers Ltd.**

Date: **June 2025**

Report reference: **2729R01**

VERSION: **FINAL (4-9-2025)**

Prepared By:

Bruton Consulting Engineers Ltd

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CONTENTS SHEET

Contents

1.0 Introduction

This report was prepared in response to a request from Brian McMahon, NRB Consulting Engineers, for a Stage 1 Quality Audit including a Stage 1 Road Safety Audit for a proposed large residential scheme at Belarmine Vale, Kilgobbin, Dublin 18.

The Quality Audit has been carried out in accordance with the guidance in the Design Manual for Urban Roads and Streets (DMURS), produced by Department of Transport Tourism and Sport in March 2013 and as updated in June 2019 including Advice Notes.

This portion of the Quality Audit is a design stage audit and includes a Stage 1 Road Safety Audit (in accordance with TII Publication GE-DTY-01024, dated May 2025), an access audit, a walking audit and a cycling audit i.e. aspects of a quality Audit carried out independent of the Design Team.

The Road Safety and Quality Audit Team comprised of;

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

TII Auditor Approval no: NB 168446

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

TII Auditor Approval no: OO 1291756

The Quality Safety Audit comprised an examination of the drawings provided and a site visit on the 20th of June 2025.

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

The problems raised in this Quality Audit may belong to more than one of the categories of Audit named above. A table has been provided at the start of Section 3 of this report detailing which category of audit each problem is associated with.

The scheme has been examined and this report compiled in respect of the consideration of those matters that have an adverse effect on road safety. It has not been examined or verified for compliance with any other standards or criteria.

The problems identified in this report are considered to require action in order to improve the safety of the scheme for road users. Recommendations have been provided to help improve the quality of the design with regard to the areas described above. A feedback form has also been provided for the designer to complete indicating whether or not he/she will accept those recommendations or provide alternative recommendations for implementation.

Comments made within the report under the heading of Observation are intended to be for information only. Written responses to Observations are not required.

A location map showing where each problem occurs is provided in **Appendix A.**

A list of the documents provided to the Audit Team is provided in **Appendix B.**

The feedback form is provided in **Appendix C.**

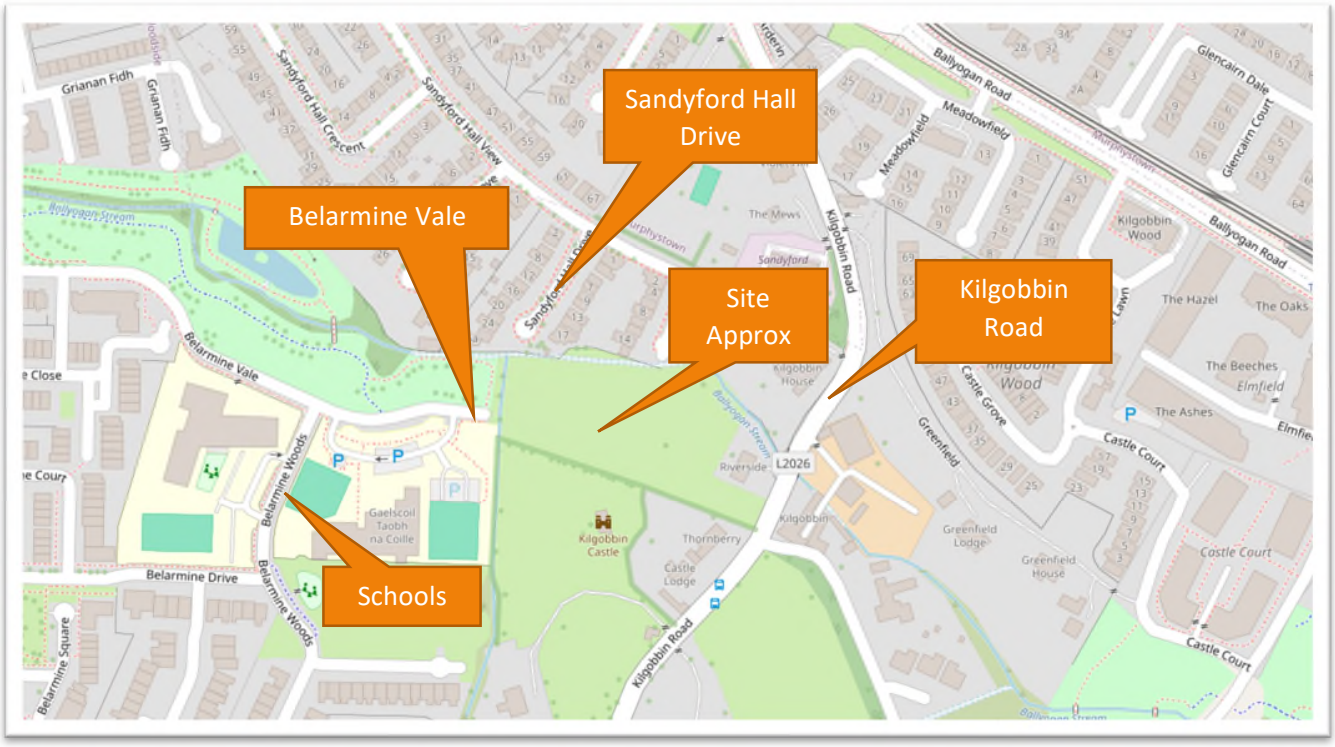
2.0 Background

It is proposed to construct a large residential development at the end of the existing cul-de-sac of Belarmine Vale after Gaelcsoil Thaobh na Coille.

It is proposed to extend the existing road and to convert it to a shared surface for vehicular and vulnerable road users with a speed limit of 30km/hr.

Surface parking is proposed including disabled parking spaces and electric vehicle charging spaces. Bicycle parking is also proposed both external and internal.

The site location is shown below.



3.0 Issued Raised in This Quality Audit.

Issues raised may belong to more than one category and the table below provided a summary of this for brevity and clarity.

Problem Reference	Access Audit	Walking Audit	Cycling Audit	Road Safety Audit	Quality Audit
3.1	✓	✓	✓	✓	✓
3.2				✓	
3.3	✓			✓	✓
3.4	✓	✓		✓	✓
3.5		✓		✓	✓
3.6		✓		✓	✓

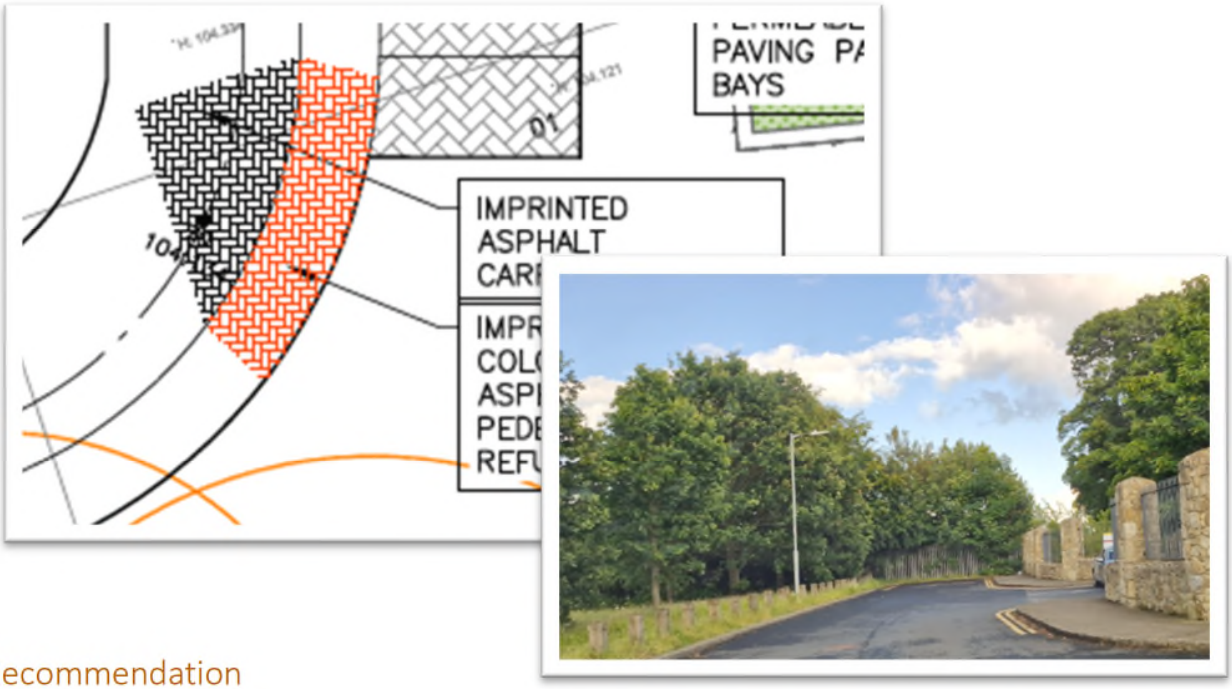
3.1 Problem

Location.

Drawing 1285-8 C04-2 & Drawing 1285-8 C0-1 Rev G, Access Road.

Problem.

It is proposed to provide a shared use surface of 4.8m width along with a 2m pedestrian refuge. The shared surface is to start at the interface with the existing Belarmine Vale Road. There is no transition to highlight a change of street type apart from two signs, the route is relatively long and does not have interface with residential units throughout. There is a risk that this street will not function as a shared street given its geometry, overall width and link to an unshared street. This could result in drivers travelling at higher speeds and colliding with vulnerable road users they do not expect to encounter.



Recommendation

It is recommended that the existing cross section of street and footpath of Belarmine Vale be extended for this development with the proposed widths of 4.8m and 2m respectively. Some local widening may be required on the carriageway at the tight radius bend.

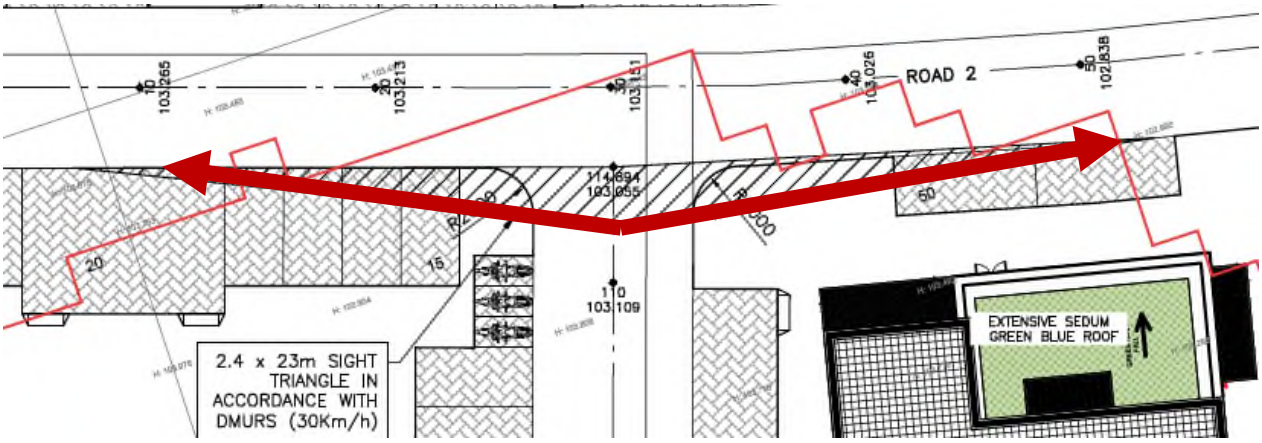
3.2 Problem

Location.

Drawing 1285-8 C0-1 Rev G

Problem.

The visibility splay at the internal T-junction cuts through car parking spaces. If these spaces are occupied drivers will not have sufficient visibility resulting in potential side-impact or rear-end collisions.



Recommendation

It is recommended that the visibility splay be kept free of obstacles.

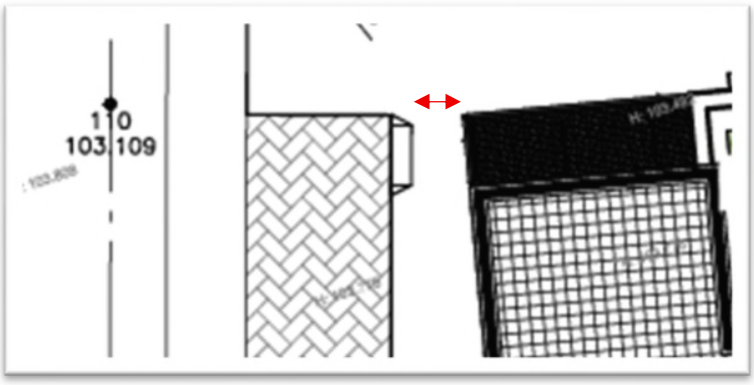
3.3 Problem

Location.

Drawing 1285-8 C0-1 Rev G

Problem.

The dropped kerb for the disabled parking space is close to the building. There may not be enough room for wheelchair users to manoeuvre once they get onto the footpath. This could result in inaccessibility for some and having to travel along the shared area with vehicular traffic which would increase the risk of a collision.



Recommendation

It is recommended that adequate room be provided for wheelchair movements.

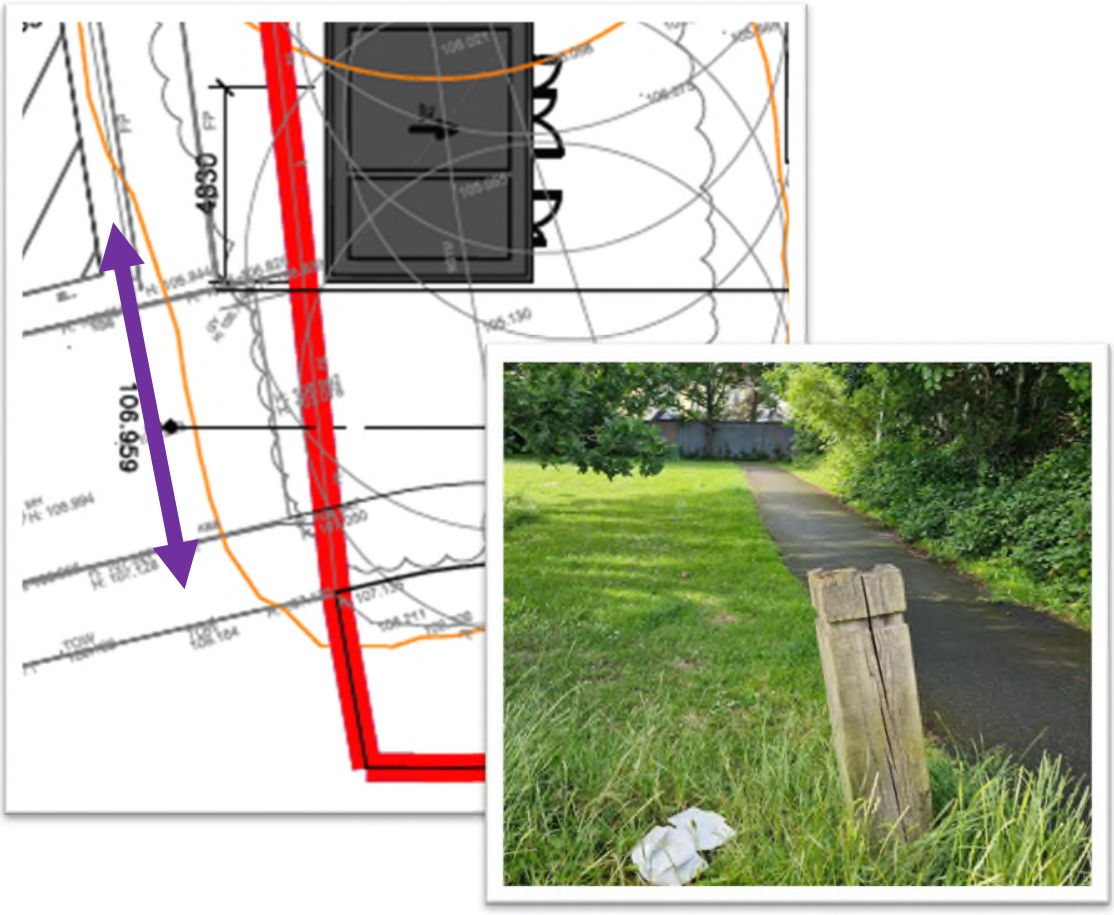
3.4 Problem

Location.

Drawing 1285-8 C0-1 Rev G

Problem.

There will be a demand/desire line for pedestrians to cross the Belarmine Vale Road at the entrance to the development to access the pathway in the public green space. This is currently a quiet cul de-sac but when vehicular traffic from the development is introduced then the risk of crossing the carriageway and the number of people seeking to do so will increase. A lack of crossing facilities could lead to collisions with passing vehicular traffic.



Recommendation

It is recommended that that a suitable crossing be provided for pedestrians. The crossing should be consistent with other crossings along Belarmine Vale.

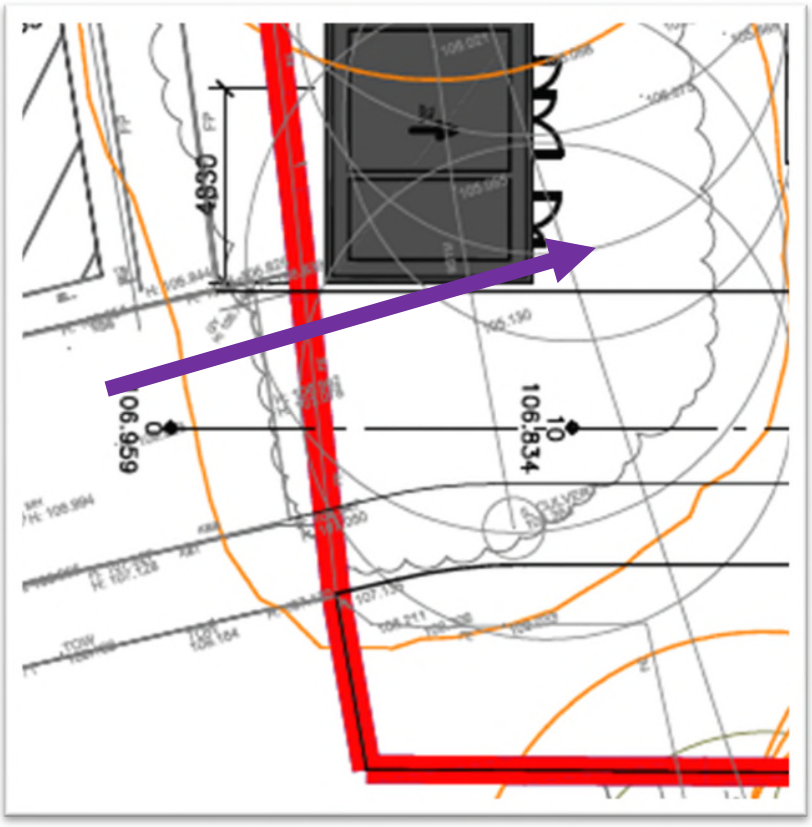
3.5 Problem

Location.

Drawing 1285-8 C0-1 Rev G

Problem.

There is a risk that the building close to the access road will obscure visibility of drivers to crossing pedestrians on the Belarmine Vale road. This could result in collisions.



Recommendation

It is recommended that the building be set back from the carriageway edge so as not to be an obstruction to visibility.

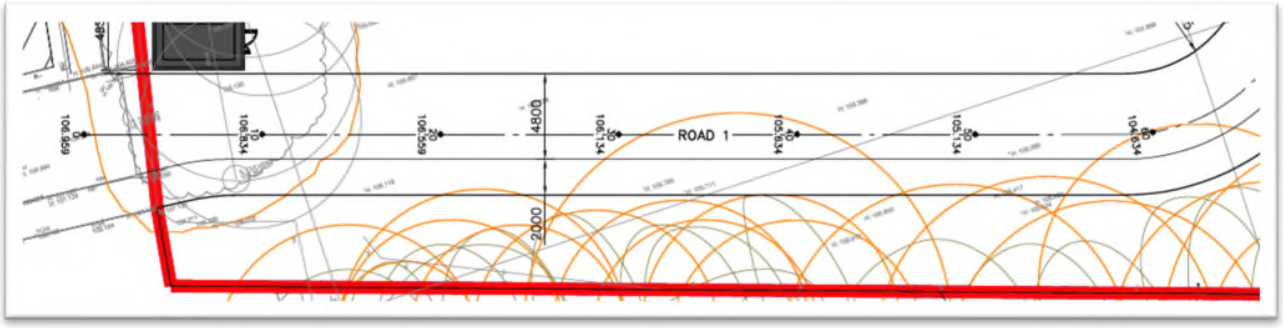
3.6 Problem

Location.

Drawing 1285-8 C0-1 Rev G

Problem.

There is a risk that parking will occur along the development road or that it will be used as a turning facility by school traffic. This increased use of the road , especially if it is to be a shared surface will increase the risk of collisions with vulnerable road users. The 2m wide proposed pedestrian refuge may also be used as a parking zone resulting in less space for pedestrians and more obstacles to visibility for drivers.



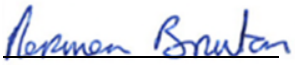
Recommendation

It is recommended that measured be provided to ensure school traffic does not use the development road and that u -turning does not occur at the entrance to the development.

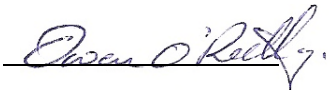
4.0 Audit Statement

This portion of the Quality Audit has been carried out in accordance with the guidance given in DMURS and takes into consideration the principles approaches and standards of that Manual.

The Quality 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.

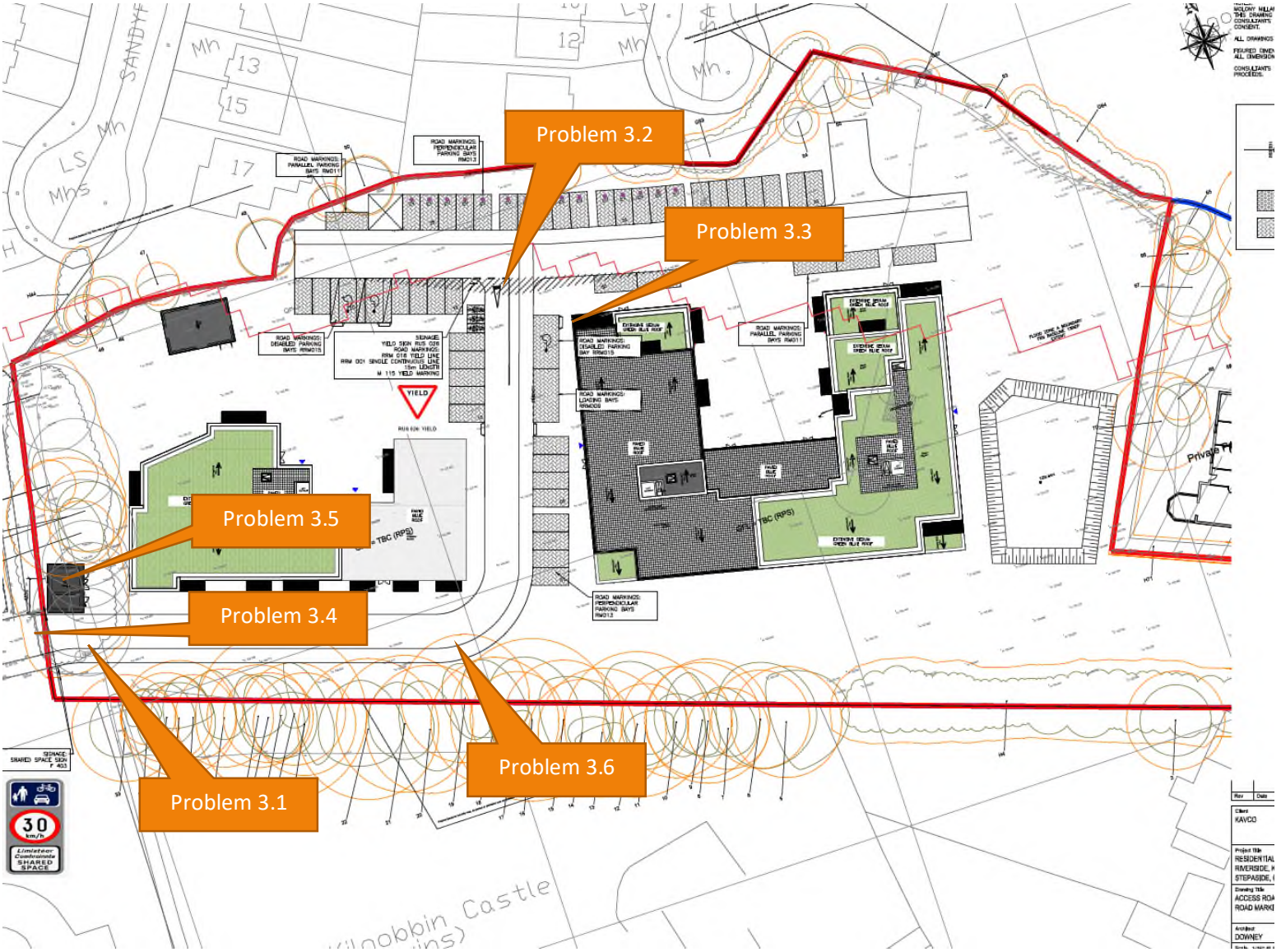
Norman Bruton **Signed:** 

(Audit Team Leader) **Dated: 4-9-2025**

Owen O'Reilly **Signed:** 

(Audit Team Member) **Dated: _4-9-2025**

Appendix A – Problem Location Plan



Appendix B – Information Provided

Information Supplied to the Audit Team

- Drawing 1285-8 C02K SW & Foul Drainage Layout Plan
- Drawing 1285-8 C04-2 Road Markings & Signage
- Drawing 1285-8 AT01C
- Drawing 1285-8 AT02C
- Drawing 1285-8 C01G Road Layout Plan

Appendix C – Feedback Form

Feedback Form

QUALITY AUDIT FORM – FEEDBACK ON AUDIT REPORT

Scheme: LRD Kilgobbin
Stage: 1 Quality Audit
Date Audit (Site Visit) Completed: 20-6-2025

Paragraph No. in Quality Audit Report	Problem accepted (yes/no)	Recommended measure accepted (yes/no)	Alternative measures (describe)	Alternative measures accepted by Auditors (Yes/No)
3.1	Yes	Yes		
3.2	Yes	Yes		
3.3	Yes	Yes		
3.4	Yes	Yes		
3.5	Yes	Yes		
3.6	Yes	Yes		

Signed..... Date..29.08.2025
Design Team Leader

Signed..... Date..1-9-2025
Audit Team Leader

Signed..... Date..1-9-2025
Employer/Developer
PP WITH PERMISSION/CONSENT OF CLIENT.