Proposed Amendment to Large-Scale Residential Development (LRD) at No. 2 Firhouse Road and the former 'Morton's The Firhouse Inn', Firhouse Road, Dublin 24 Traffic and Transport Assessment

TRANSPORT INSIGHTS

Final Report

November 2025

Document Control

Contract Name	OMP Bluemont Firhouse Inn LRD
Contract Number	C623.3
Document Type	Report
Document Status	Final
Primary Author(s)	Garret Murphy
Other Author(s)	-
Reviewer(s)	Ciaran McKeon

Document Review

Item No.	Item Description	Reviewer Initials	Review Date
1	Draft Report v1.4	CMcK	17/08/2023
2	Draft Report v1.6	CMcK	20/09/2023
3	Draft Final Report v1.8	CMcK	15/12/2023
4	Final Report v1.9	CMcK	19/01/2024
5	Updated Draft Report v2.0	CMcK	21/10/2025
6	Updated Final Report v2.2	CMcK	06/11/2025
7			
8			

Distribution

Item No.	Item Description	Approvers Initials	Date
1	Draft Report v1.5	CMcK	18/08/2023
2	Draft Report v1.7	CMcK	21/09/2023
3	Draft Final Report v1.8	CMcK	20/12/2023
4	Final Report v1.9	CMcK	19/01/2024
5	Updated Draft Report v2.1	CMcK	22/10/2025
6	Updated Final Report v2.2	CMcK	06/11/2025
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Appendices

1. Introduction

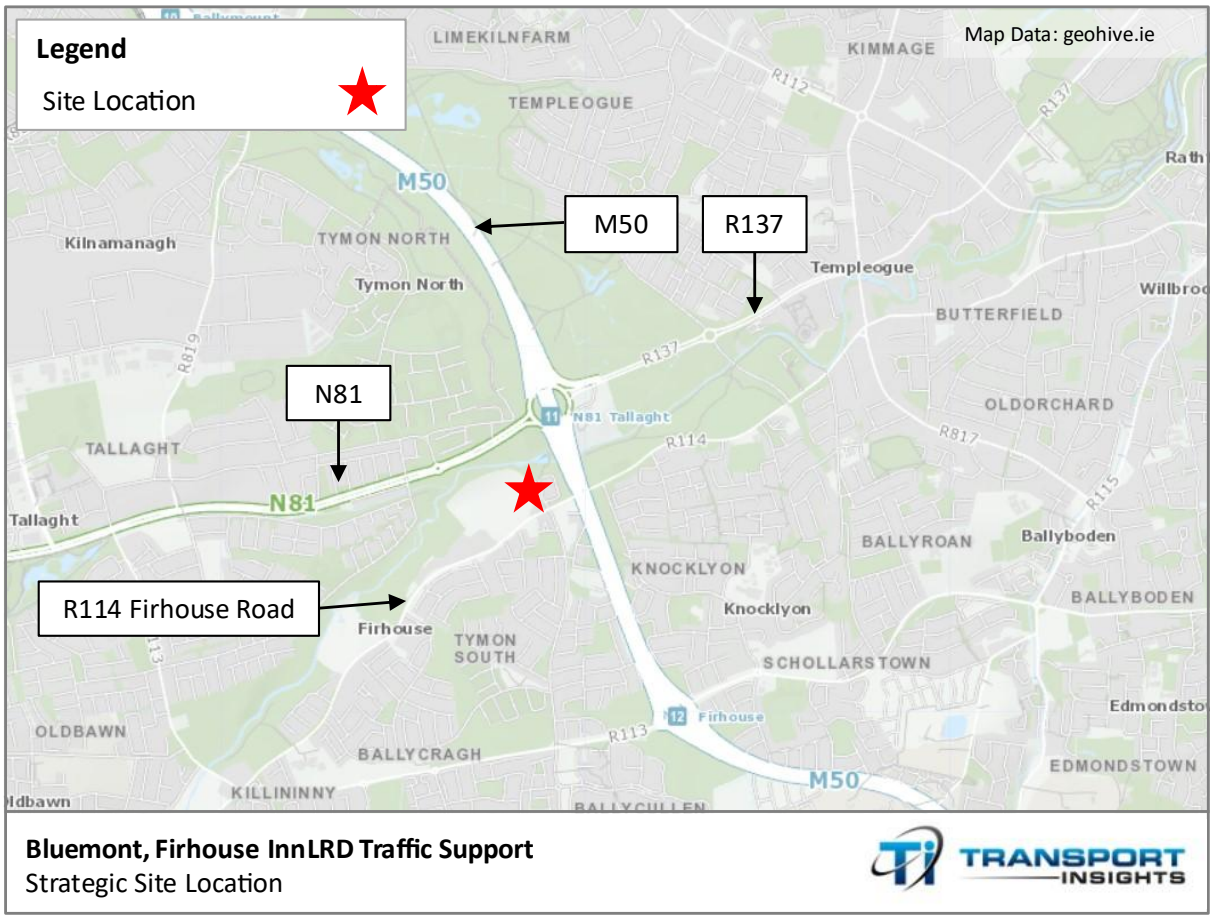
1.1. Overview

Transport Insights has been commissioned by Bluemont Developments (Firhouse) Ltd to provide transport engineering advice and to prepare an updated Traffic and Transport Assessment (TTA) and Residential Travel Plan (RTP) Report for a proposed amendment (the provision of 5 no. additional units) to a previously granted 78 no. unit Large-Scale Residential Development (LRD) at No. 2 Firhouse Road and the former 'Morton's The Firhouse Inn', Firhouse Road, Dublin 24 (SDCC Planning Ref: LRD24A/0001). The additional 5 no. units results in a new total provision of 83 no. units.

1.2. Application Site Location

The proposed development site, measuring ca. 0.46 hectares, is located adjacent to Firhouse Road (R114), Firhouse, Dublin 24. The site's strategic location is presented in the following Figure 1.1.

Figure 1.1 Strategic Site Location



As can be seen from the preceding Figure 1.1, the application site is bounded to the north and west by lands adjacent to the Carmel of the Assumption Convent, to the east by the Mount Carmel Park residential area, and to the south by Firhouse Road (R114). In terms of prevailing land uses, the lands to north and northwest are predominantly recreational in nature, while the lands to the east and also

to the south of Firhouse Road are predominantly low-density residential. The M50 runs in an approximate north-south alignment ca. 150-200 metres to the east of the proposed development site.

1.3. Site Planning History

2022 Strategic Housing Development (SHD) Application

A planning application (ABP Planning Ref: SHD3ABP-313777-22) was previously submitted to An Bord Pleanála (ABP) in 2022 as part of the Strategic Housing Development (SHD) process for the redevelopment of the subject site at Firhouse Road, Dublin 24. A refusal decision in relation to that application was issued by An Coimisiún Pleanála on 03 September 2025, with a lack of compliance with the 'South Dublin Green Space Factor Guidance Note' referenced.

2024 Strategic Housing Development (LRD) Application

A planning application (SDCC Planning Ref: LRD24A/0001) was submitted to SDCC in February 2024, for 100 no. units, with a grant of permission issued by SDCC in March 2024. Subsequently a third-party appeal was submitted to An Bord Pleanála (ABP) in April 2024, with a grant of permission issued by ABP in July 2024 for the proposed development, however the scale of the development is noted to have been reduced by ABP from the 100 no. units proposed to 78 no. units. The current proposed development represents an amendment to this development.

1.4. Overview of Current Proposed Development

The revised application is seeking permission for a total of 83 no. housing units (100 no. units applied for and 78 no. units granted by An Bord Pleanála), providing an increase of 5 no. units within the building footprint granted within Reg. Ref. LRD24A/0001 / ABP Ref. 319568-24. The proposal provides for 2 no. blocks ranging in height from 3- 4-storeys over basement levels comprising:

- 4 no. duplex units (2 no. 1-bedroom units, 1 no. 2-bedroom 3-person unit, and 1 no. 2-bedroom 4-person unit); and 79 no. apartment units (1 no. studio units, 54 no. 1-bedroom units, 5 no. 2-bedroom 3-person units, and 19 no. 2-bedroom 4-person units.
- a ground floor creche (ca. 140 sqm);
- 5 no. commercial/medical units at ground floor (ca. 24-112 sqm);
- 63 no. car parking bays across 3 no. levels (28 no. at basement level B2, 20 no. at basement level B1, 15 no. at surface level 00 - 2 no. of which are dual parking bays);
- 196 no. cycle parking spaces to accommodate resident, visitor and staff needs; and
- 5 no. motorcycle parking spaces.

As per the granted development, it is proposed that the location of the existing access at the site's south-western boundary from Firhouse Road be maintained to accommodate vehicular access to the

proposed development, with the layout of the junction subject to minor revisions (as granted). A more detailed description of the proposed development is provided within Section 5 of this Report.

1.5. LRD Pre-Planning Consultation and TTA Scoping

South Dublin County Council (SDCC) Pre-Planning Engagement

Pre-planning feedback from SDCC in relation to the current proposed development was provided at a Section 247 meeting which took place on 07 May 2025, and subsequent telephone engagement between Transport Insights and a representative from SDCC's Roads Department on 20 May 2025. An overview of feedback provided is set out below:

Table 1.1. Section 247 Meeting Feedback (07 May 2025) – SDCC Traffic and Transport Comments

SDCC Comments	Response
There were a number of discrepancies across the documents about the total number of car parking spaces being proposed. These should be clarified.	• Numerical discrepancies associated with the proposed development have been resolved, with Section 5.4 of this Report setting out final proposals.
Adequate provision to be made for EV car parking.	• Adequate EV parking is proposed, as detailed within Section 5.4 of this Report.
Bicycle parking – provide a detailed breakdown of the spaces.	• A total of 196 no. bicycle parking spaces are to be provided (146 no. long stay + 50 no. short stay), with a full breakdown provided within Section 5.5 of this Report.
Bin storage – clarify the location of the staging area for refuse collection.	• The bin staging area is to be located to the north of the internal servicing/parking aisle, with further details provided within Section 5.6 of this Report.
Loading bay – clarify the location of the loading bay for the commercial units.	• The loading bay/servicing area is located to the southeast of the application site, access via the main internal access road, as highlighted within Section 5.3 (Figure 5.1) of this Report.
Provide an updated Taking in Charge (TIC) plan. Include a CTMP and Mobility Management Plan – applicant to contact Tony Mangan at the	• A Framework Residential Travel Plan is contained within Section 8 of this Report. • An outline CTMP is separately included within the application package. • Contact with Tony Mangan from SDCC was undertaken by phone, during which it was

SDCC Comments	Response
SDCC Roads Department to clarify whether more up to date survey work is needed.	agreed that an updated desktop public transport capacity study, as included within the TTA Report submitted as part of the granted application (SDCC Planning Ref: LRD24A/0001) would suffice.
Include AutoTRAK plan.	• Updated swept path drawings for both a refuse vehicle and fire tender have been provided within Appendix D to this Report.

A Briefing Note for this proposed LRD, included at Appendix A, was issued to SDCC's Land Use Planning and Transportation Department in June 2025 as part of the pre-application consultation process. Thereafter, the Section 32(D) pre-planning meeting took place between SDCC (with representatives from the Land Use Planning and Transportation Department also in attendance) and the Applicant (including the Applicant's design team, with Transport Insights also in attendance), on the 21 August 2025. The following Table 1.2 summarises traffic, transport and mobility related feedback issued by SDCC within the Opinion Report following the aforementioned second LRD meeting.

Table 1.2 LRD Meeting (21 August 2025) – SDCC Opinion Report

SDCC Comments	Response
Car Parking Ratio: The SDCC Roads Department raised significant concerns over the revised car parking rates being proposed, particularly in light of the limited public transport available in the area and the proposed increase in apartment numbers. It was advised that any amendment application should seek to retain the rate approved under the parent planning application and that very strong justification would be required to support any reduction in car parking rates below the levels currently permitted on site.	• Further car parking bays have been provided within the proposed development, with a revised total of 63 no. car parking bays provided, with 48 no. bays provided within the 2 no. basement levels, and 15 no. bays provided at surface level. • Of the 13 no. bays at surface level, 2 no. accessible bays are to be dual use bays – available for use by commercial units during day time hours, and by residents in the evening/overnight. • 1 no. car sharing vehicle is also now to be provided at surface level. • Based on the available bays for residents and commercial units (including the 2 no. dual use bays at surface level), a parking ratio of 0.63 bays per residential unit is provided (the same ratio as the previously granted development by SDCC).

SDCC Comments	Response
	• Further details on the provision of car parking within the proposed development is provided within Sections 5.4 (Description of Proposed Development – Car Parking) and 9 (Parking Strategy) of this Report.
Taking in Charge: Any areas to be taken in charge should be clearly marked on a separate TIC plan.	• Details of areas to be taken in charge are clarified within drawing(s) to be provided by O'Mahony Pike Architects as part of the application submission.
Turning Circles: Show tracking for all vehicles and turning circles for refuse vehicle on final plans.	• Updated swept path drawings for both a refuse vehicle and fire tender have been provided within Appendix D to this Report.

TTA Scope

The scope of this TTA is consistent with Transport Infrastructure Ireland's *Traffic and Transport Assessment Guidelines* (May 2014) and has been agreed in principle with SDCC's Land Use Planning and Transportation Department. The approach underpinning the RTP has also been guided by international best practice, including Transport for London's (UK) *Guidance for Residential Travel Planning*.

1.6. Report Structure

The remainder of this Report is structured as follows:

- **Chapter 2** provides an overview of the relevant local, regional and national policy;
- **Chapter 3** describes the proposed development's receiving environment;
- **Chapter 4** provides an overview of traffic survey data collection and analysis;
- **Chapter 5** describes key transport related characteristics of the development proposal;
- **Chapter 6** comprises a DMURS Statement of Compliance;
- **Chapter 7** provides details of traffic growth forecasting, trip generation and assignment, and sets out the appraisal of the development's traffic impacts;
- **Chapter 8** presents the Framework RTP;
- **Chapter 9** presents a car parking strategy; and
- **Chapter 10** provides an overall summary and conclusion.

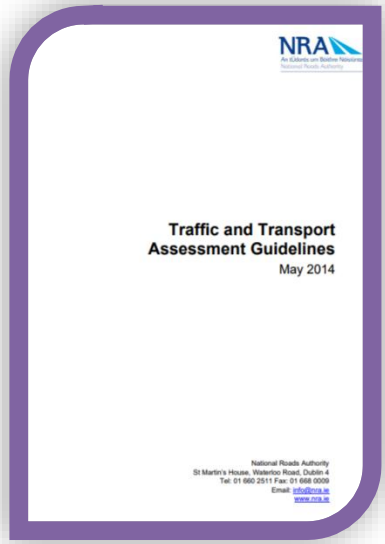
2. Policy Review

2.1. Introduction

This section of the Report provides an overview of national, regional, and local planning policy and guidance deemed relevant to the proposed development and its assessment.

2.2. National and International Guidance

Traffic and Transport Assessment Guidelines (2014)



Transport Infrastructure Ireland's (TII's) *Traffic and Transport Assessment Guidelines* (May 2014) provides guidelines for best practice in relation to the preparation of a Traffic and Transport Assessment.

In relation to scoping, the guidance states:

> *"The scoping study is a very important part of the TTA process. It is a precursor to the preparation of a TTA and should be undertaken at the earliest stages of planning for development. For a planning application, this phase may be the initial contact between the developer and the planning authority and, as such, the opportunity should be taken to emphasise the role of transport as both a possible asset and liability to the development. The planning authority should avail of such contact to address traffic and transport implications as an integral element of the development proposal."*

In relation to the Assessment:

> *"The Traffic and Transport Assessment should be written as an impartial assessment of the traffic impacts of a scheme and it should not be seen to be a "best case" promotion of the development. All impacts, whether positive or negative, should be recorded. The level of detail to be included within the report should be sufficient to enable an experienced practitioner to be able to follow all stages of the assessment process and to reach a similar set of results and conclusions."*

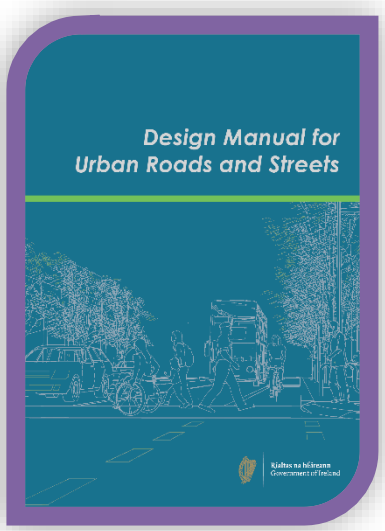
Within Table 2.2 of the *TTA Guidelines*, the following thresholds are provided in relation to the requirement for a TTA *"where national roads are affected"* i.e. the most onerous thresholds presented within the *Guidelines*:

- *"Housing - 100 dwellings within urban areas with a population equal to or greater than 30,000."*
- *"1,000 sqm GFA retail"*

- *"Development traffic exceeds 5% of turning movements at junctions with National Roads if location has potential to become congested or sensitive."*

It is noted that the threshold of 100 no. residential units contained within the *Guidelines* is not met by the current proposed development, however as a TTA was previously undertaken in relation to the original LRD application (for 100 no. units), the previous TTA Report has been updated (in the form of this document) as part of this amended application. As the development's traffic impact, assessed in Section 7 of this Report, has been determined to be below the 5% of additional turning movements through any junction within the development site's vicinity, more detailed analysis of traffic impacts, i.e. traffic modelling, is deemed unnecessary.

Design Manual for Urban Roads and Streets (DMURS)



The *Design Manual for Urban Roads and Streets* (*DMURS*) was jointly published by the Department of Transport, Tourism and Sport and Department of Environment, Community and Local Government in 2013, and updated in 2019. The principles, approaches and standards set out in the Manual apply to the design of all urban roads and streets (streets and roads with a speed limit of 60 km/ h or less).

DMURS provides detailed guidance in relation to stopping sight distances and visibility splay requirements at new accesses (Section 4.4.4 Forward Visibility and Section 4.4.5 Visibility Splays). For an access to a road with a 50 km/ h design speed which accommodates bus services, as is the case with Firhouse Road, the standard visibility splays required are 2.4 metres ('x' distance) * 49 metres ('y' distance). *DMURS* also recommends that *"priority junctions in urban areas should be designed as Stop junctions…."*. It should be noted that the existing vehicular access junction between the proposed development site and Firhouse is currently a Stop junction.

In terms of road width, *DMURS* guidance indicates that "t*he standard carriageway width on Local streets should be between 5-5.5m*". Furthermore, *DMURS* states that "w*here additional space on Local streets is needed to accommodate additional manoeuvrability for vehicles entering/leaving perpendicular parking spaces, this should be provided within the parking bay and not on the vehicle carriageway*".

Sustainable Urban Housing: Design Standards for New Apartments, Guidelines for Planning Authorities, December 2022

The *Sustainable Urban Housing: Design Standards for New Apartments Guidelines for Planning Authorities* (most recent revision issued in December 2022) provides guidance on different aspects of new residential developments, including cycle parking and car parking provision.

Cycle Parking Provision

According to Section 4.17 of the *Design Standards*, *"the accessibility to, and secure storage of, bicycles is a key concern for apartment residents"*, with specific guidance provided in relation to the location, quantity, design and management of cycle parking facilities. In terms of cycle parking quantity, "*a general minimum standard of 1 cycle storage space per bedroom shall be applied. For studio units, at least 1 cycle storage space shall be provided. Visitor cycle parking shall also be provided at a standard of 1 space per 2 residential units.*"

The above standards indicate a requirement for 153 no. cycle parking spaces to meet the needs of the proposed residential component of the development, as outlined in Table 2.1 which follows.

Table 2.1 Design Standards for New Apartments, Cycle Parking Calculations

Land Use	No. Units	Bedrooms	Total Cycle Parking Spaces Required	Total Cycle Parking Spaces Provided
Residents' Spaces: Studios, 1-Bedroom Apartments and 1-Bedroom Duplexes	55	55	55	140
Residents' Spaces: 2-Bedrooms Apartments and 2-Bedroom Duplexes	28	56	56	
Residents' Spaces: 3-Bedrooms Apartments	0	0	0	
Visitor Spaces (1 per 2 Units)	83	-	42	42
Total			**153**	**182**

In terms of qualitative requirements, it is stressed that cycle storage/ parking facilities shall be sufficiently accessible, offer an adequate level of safety and security, be well-lit and properly maintained. It is further recommended that cycle parking is provided within *"a dedicated facility of permanent construction."*

Car Parking Provision

Section 4.18 of the *Design Standards* stipulates that car parking provision at apartment developments shall have regard to the type of location, based on "*proximity and accessibility criteria*". As per Section 4.24, *"as a benchmark guideline for apartments in relatively peripheral or less accessible urban locations, one car parking space per unit, together with an element of visitor parking, such as one space every 3-4 apartments, should generally be required."*

It is noted in Section 4.23 of the *Design Standards* that *"**In suburban/urban locations served by public transport** or close to town centres or employment areas and particularly for housing schemes with more than 45 dwellings per hectare net (18 per acre), **planning authorities must consider a reduced overall car parking standard** and apply an appropriate maximum car parking standard."* (Supplemental annotation in bold by Transport Insights).

As detailed above, the *Design Standards* recommend a reduced level of car parking provision based on accessibility and proximity criteria for sites which are well served by alternative transport modes. As the application site is located within a short walk from several bus stops with high frequency services and a bus stop located outside the proposed development on Firhouse Road and Ballycullen Road (as per Section 3.5 of this Report), **a reduced level of on-site car parking provision is deemed consistent with its policy provisions**.

According to Section 4.25 of the *Design Standards*, "*where it is sought to eliminate or reduce car parking provision, it is necessary to ensure, where possible, the provision of an appropriate number of drop off, service, visitor parking spaces and parking for the mobility impaired. Provision is also to be made for alternative mobility solutions including facilities for car sharing club vehicles and cycle parking and secure storage. It is also a requirement to demonstrate specific measures that enable car parking provision to be reduced or avoided*." In terms of alternative mobility options, Section 4.26 of the *Design Standards* states that "*it is important that access to a car sharing club or other non-car based modes of transport are available and/or can be provided to meet the needs of residents, whether as part of the proposed development, or otherwise.*"

The above considerations of the *Design Standards* have been considered in detail, and where beneficial to support the mobility needs of residents, incorporated within the current proposed development – this is elaborated upon within Section 5 of this Report.

Car Park Design

The international guidance document, *Car Park Design (2023)* published by *The Institution of Structural Engineers*, has been referred to in relation to the design of the underground car park and associated ramps etc.

Guidance for Residential Travel Planning

Development of the Framework Residential Travel Plan set out in Section 8 of this Report has been guided by international best practice, including Transport for London's (UK) *Guidance for Residential Travel Planning*.

2.3. Regional Policy

Greater Dublin Area Transport Strategy 2022-2042 (2023)

The Final *Greater Dublin Area Transport Strategy 2022-2042* was published by the National Transport Authority (NTA) in January 2023 and represents the key policy/ strategy document of relevance to the current development proposal. The *Strategy* provides a framework for the planning and delivery of transport infrastructure and services over the next two decades. It also provides the overarching transport planning policy framework for the region.

The *Strategy* sets out the necessary transport provision, for the period up to 2042 to deliver the measures of existing national transport policy. Section 12.2 of the *Strategy* provides overview of proposed bus infrastructure, with a number of key measures proposed, as identified below:

- **Measure BUS 1 – Core Bus Corridor Programme:** "*Subject to receipt of statutory consents, it is the intention of the NTA to implement the 12 Core Bus Corridors as set out in the BusConnects Dublin programme.*"
- **Measure BUS 2 – Additional Radial Core Bus Corridors:** *"It is the intention of the NTA to evaluate the need for, and deliver, additional priority on radial corridors.''*
- **Measure BUS 3 – Orbital and Local Bus Routes:** *"It is the intention of the NTA to provide significant improvements to orbital and local bus services in the following ways:*
  1. *Increased frequencies on the BusConnects orbital and local services;*
  2. *Providing bus priority measures at locations on the routes where delays to services are identified. "*
- **Measure BUS4 – New Dublin Area Bus Service Network:** *"It is the intention of the NTA to complete the delivery of the new Dublin Area Bus Service Network in 2024."*
- **Measure BUS5 – Bus Service Network Monitoring and Review:** *"It is the intention of the NTA to continually monitor the demand for bus services in the Dublin Area as part of the roll-out of the new service network and as part of the monitoring and periodic review of the Transport Strategy, and enhance or amend the service network as appropriate.''*

Development of the *BusConnects* programme is being advanced by the NTA, as described below.

BusConnects: Bus Network Redesign and Core Bus Corridors Project

The *BusConnects* programme was launched by the NTA in May 2017 and is described as[1] *"a programme of public transport investment in Ireland's major urban centres. It is developed and managed by the National Transport Authority (NTA), and funded by Project Ireland 2040. It is a key part of the Government's polices to improve public transport and address climate change in Irish cities."*

The *BusConnects* programme contains the following key elements:

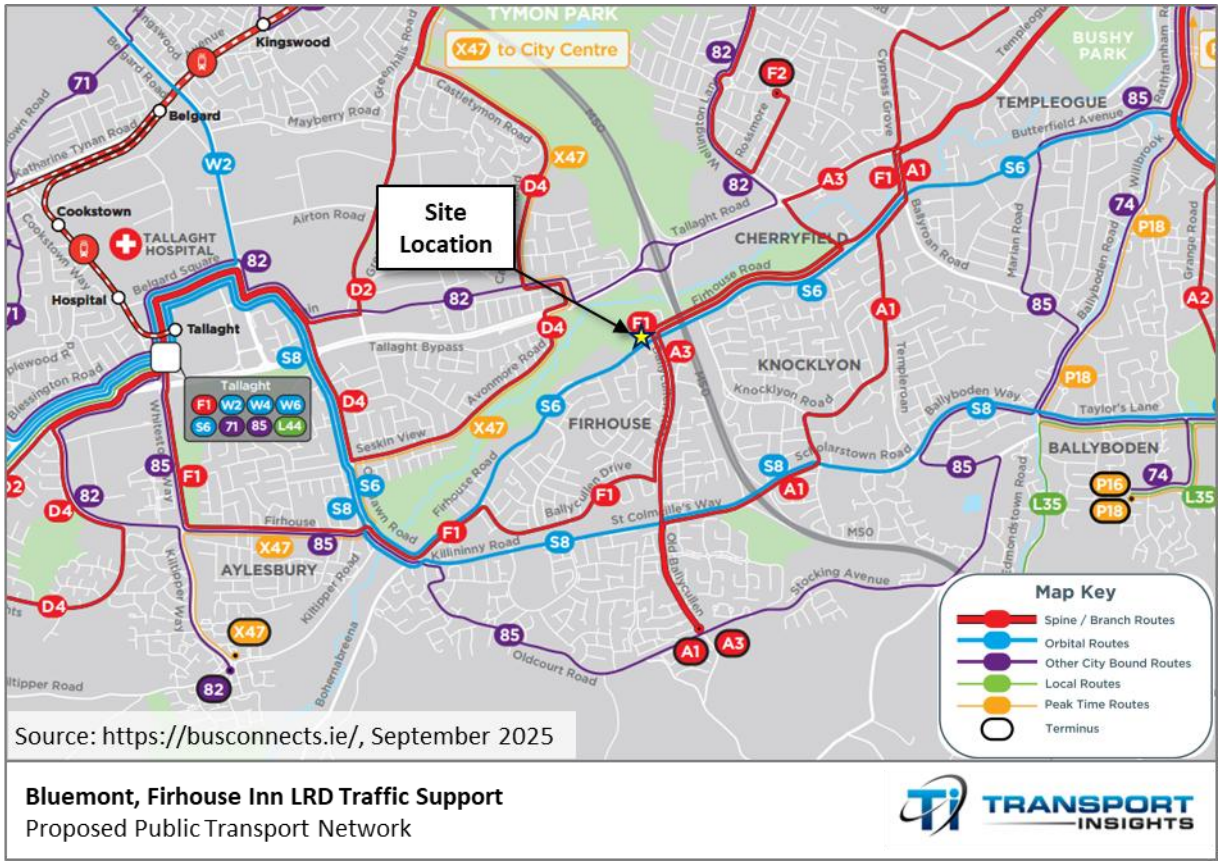
- Redesigning the bus network;
- Building new bus corridors and cycle lanes;
- Implementing a state of the art ticketing system;
- Implementing a cashless payment system;
- Simpler fare structure;
- New bus livery;
- New bus stops and shelters;
- New Park & Ride sites in key locations; and
- Transitioning to a new zero emissions bus fleet.

The revised proposed bus network plan emerging from the *Dublin Area Bus Network Redesign Project* were published by the NTA in 2020 (with revised plans for routes A3, D4, D5 and 82 in the Tallaght and Ballycullen areas published in September 2025) and include substantial changes in the bus network in the application site's vicinity. Figure 2.1 (overleaf) presents the updated (September 2025) proposed bus network in the application site's surrounds.

As can be seen in Figure 2.1, substantial changes are proposed to bus services in the application site's vicinity, some of which have already been implemented as part of Phases 1-7, the most recent of which (Phase 7) was implemented in October 2025. Of direct relevance to the application site, as part of Phase 7, the F1 (24-hour service between Tallaght and Ballymun via Dublin City Centre) and 82 (Kiltipper – St. Stephen's Green – Poolbeg) services have been introduced. The F1 route replaces bus services operating on Ballycullen Road and will maintain direct access to Dublin City Centre, combining with routes F2 and F3 forming the F-spine, and providing a high frequency bus service to/ from Dublin City Centre.

[1] https://www.busconnects.ie/about/

Figure 2.1 BusConnects: Proposed Bus Network in Application Site's Vicinity



Previously, as part of Phase 5b (implemented November 2023) the 75/ 75A was replaced by the orbital S6 service which operates between Tallaght and Blackrock DART Station via Firhouse Road. This orbital route enables access to numerous other bus routes, both radial and orbital, the Luas Red Line at Tallaght, and Luas Green Line at Dundrum. The S8 orbital route, also implemented as part of the Phase 5b operates along St. Colmcille's Way, on its route between Tallaght and Dun Laoghaire.

Scheduled for Autumn 2026, the A3 will operate via Ballycullen Road to the immediate southeast of the subject site and will combine with the A1 at Templeogue and the A2 and A4 at Terenure Road East to form the high frequency A-spine between Terenure Road East and Whitehall on the northside of Dublin, via Dublin City Centre. The A1 will replace route 15 on St. Colmcille's Way to the south of the proposed development site. Routes D4 and X47 (peak hour only route) will operate via the N81 and provide alternative routes to Dublin City Centre.

Details of the proposed routes and peak frequencies are presented within the following Table 2.2.

Table 2.2 Proposed Public Transport Services in Application Site's Vicinity

Route No.	Route	Weekday Peak Frequency
F1 (already implemented)	Charlestown - Finglas Bypass - City Centre - Tallaght	8 minutes
S6 (already implemented)	Tallaght - Dundrum - UCD - Blackrock	15 minutes
A3	DCU - City Centre - Tallaght	12 minutes
82 (already implemented)	Killinarden - Crumlin - Mountjoy Square	15 minutes
D4	Swords Road - City Centre - Castletymon - Killinarden	10-12 minutes
X47	Kiltipper - Seskin View - Tymon North - City Centre	1 AM service
A1	Beaumont - City Centre - Knocklyon	12 minutes
S8 (already implemented)	Tallaght - Sandyford - Dún Laoghaire	15 minutes

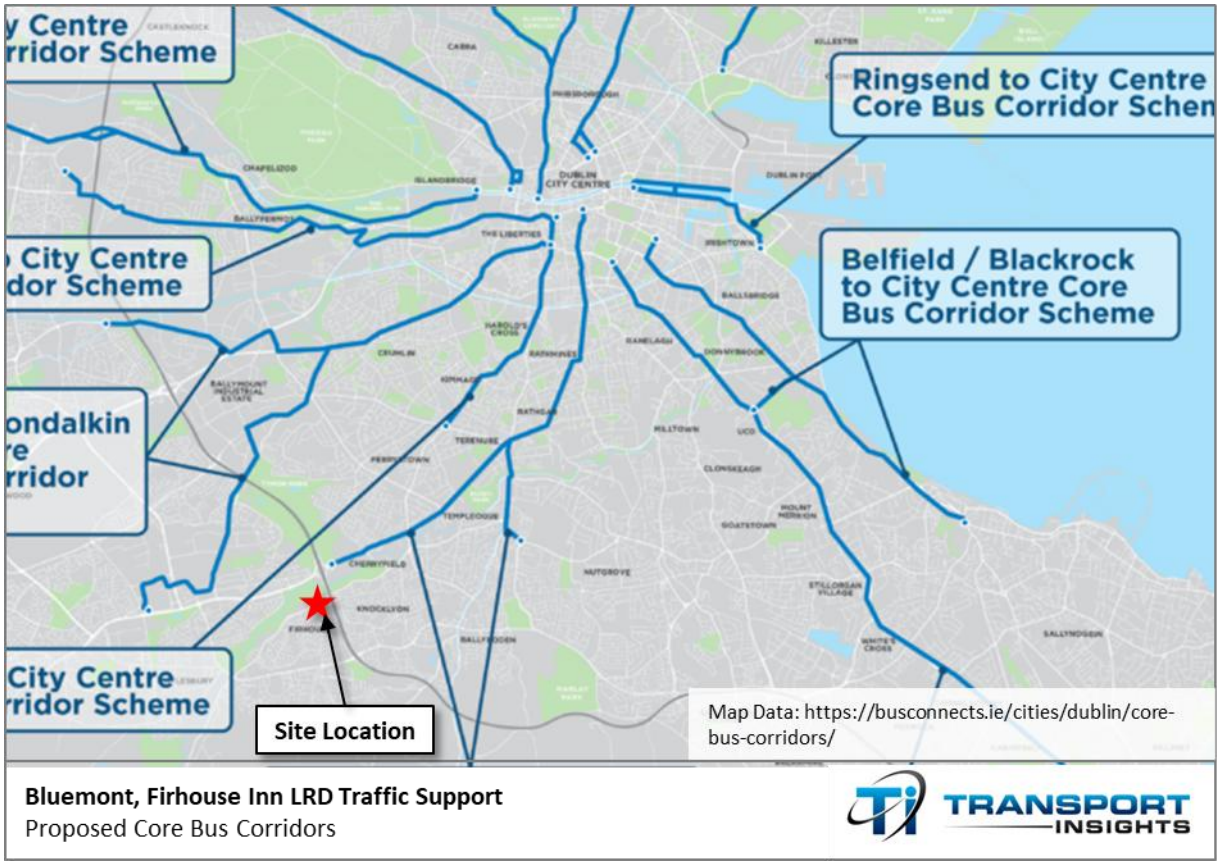
As can be seen from the preceding Figure 2.1 and Table 2.2, routes F1, S6 and the A3 shall all operate within ca. 150 metres of the proposed development and will offer peak frequencies of 8, 15 and 12 minutes respectively. Considering F1 and S6 services currently operating within the application site's immediate vicinity (< 150 metres), and the upcoming A3 service, they will offer a cumulative peak frequency of one bus every ca. 4 minutes, thereby continuing to fulfil a key criterion with the *Sustainable Urban Housing: Design Standards for New Apartments* (DoHPLG 2022) whereby a reduced level of on-site car parking provision is deemed appropriate.

Proposed Improvements to Urban Bus Infrastructure

In addition to the revised planned bus services emerging from the New Dublin Area Bus Network Project, it is proposed to implement a network of core bus corridors (CBCs) to enhance bus priority throughout the network. The application site is located ca. 700 metres to the southwest of the proposed Templeogue/ Rathfarnham to City Centre CBC Scheme, the alignment of which (in addition to other corridors), is shown in the Figure 2.2 (overleaf). Planning approval for the Templeogue/ Rathfarnham to City Centre CBC Scheme was granted by ABP in December 2024. It is understood that construction works on the entire CBC network is due to be completed by 2030.

When implemented, proposed bus priority enhancement measures along this Templeogue/ Rathfarnham to City Centre corridor are forecast to contribute to reduced travel times for destinations to the east of the site, including Dublin City Centre, in addition to improved journey time reliability.

Figure 2.2 Proposed Radial BusConnects Core Bus Corridors



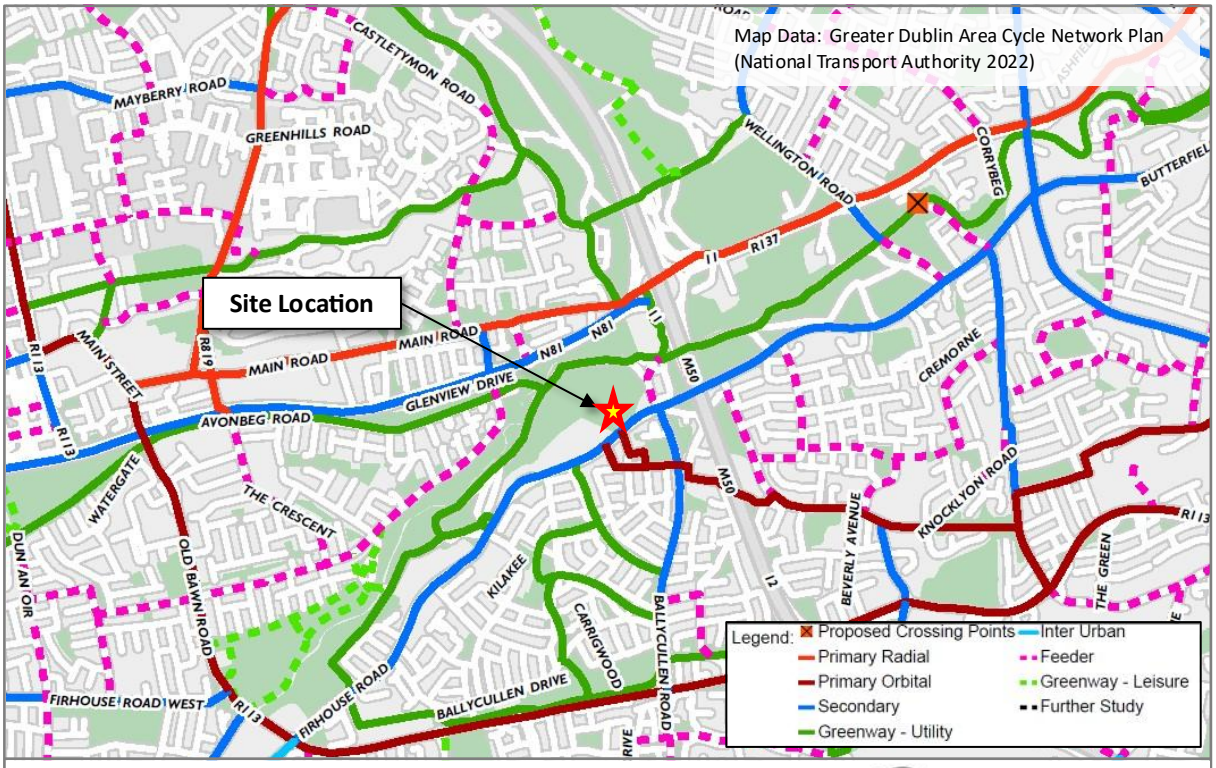
Greater Dublin Area Cycle Network Plan (2023)

The proposed development site is currently served by well-developed cycle infrastructure. There are existing cycle tracks and cycle lanes on much of Firhouse Road which connect the proposed development site to Old Bawn in the southwest and to Knocklyon, Templeogue, Terenure, Rathmines and ultimately to south Dublin City in the northwest. Cycling infrastructure also connects the site to south Dublin City Centre via Kimmage, Harold's Cross and Templeogue.

The site is located to the immediate south of Dodder Valley Park within which there is existing infrastructure that allows cyclists to access Old Bawn, the N81, and the northern end of the Knocklyon without interacting with motorised traffic. Via infrastructure located under M50 Junction 11, Tymon Park can be accessed which can be then used to reach areas such as Kilnamanagh, Ballymount Industrial Estate, Limekiln Road and Walkinstown, again fully segregated from motorised vehicular traffic.

The above-mentioned cycling infrastructure in the site's environs shall be enhanced by planned future schemes. The planned layout of cycle infrastructure network within Dublin has been set out within the *Greater Dublin Area Cycle Network Plan*, published by the NTA in January 2023 as part of the *Greater Dublin Area Transport Strategy 2022-2042*. The proposed network in the application site's vicinity is illustrated in the following Figure 2.3.

Figure 2.3 Planned Greater Dublin Area Cycle Network[2]



Bluemont, Firhouse Inn LRD Traffic Support
Planned Cycle Network in Application Site's Vicinity

Local Cycle Network Enhancements

Dodder Greenway

As can be seen from the preceding Figure 2.3, the proposed development site is ideally located to benefit from high-quality cycling infrastructure. It lies just to the south of a confluence of greenways which will provide full segregated cycling infrastructure, thus making cycling within the application site's vicinity an attractive, convenient and safe means of sustainable transport. The *Plan* proposes that the subject development site be connected to the Dodder Greenway by a 'feeder' route to the Dodder Greenway in Dodder Valley Park. This section of road (Mount Carmel Park) already acts as a shared space, based upon its alignment, width, low volume of traffic and low vehicle speeds. It is also noted that a footpath is provided to the east of the road's carriageway, and as a result Mount Carmel Park is ideally placed to accommodate the movements of pedestrians as well as cyclists between Dodder Valley Park and the application site.

[2] Greater Dublin Area Cycle Network Plan (NTA, 2023)

It is understood that Phases 1-3 of the Dodder Greenway route have been completed, with Phases 4-5 currently under construction. Construction is noted to be currently in progress at Firhouse Road and Butterfield Avenue, with works expected to be completed imminently.

The Dodder Greenway will connect the site to Dublin City Centre via Templeogue, Rathfarnham, Ballsbridge and the Docklands while will also give access to minor greenways and feeder routes connecting the proposed development site to Tallaght to the west. The greenway heading north from the proposed development site will also connect the site to the Grand Canal Greenway at a location to the northeast of Clondalkin via Kilnamanagh and the Red Cow, a route which runs approximately parallel to the M50 motorway.

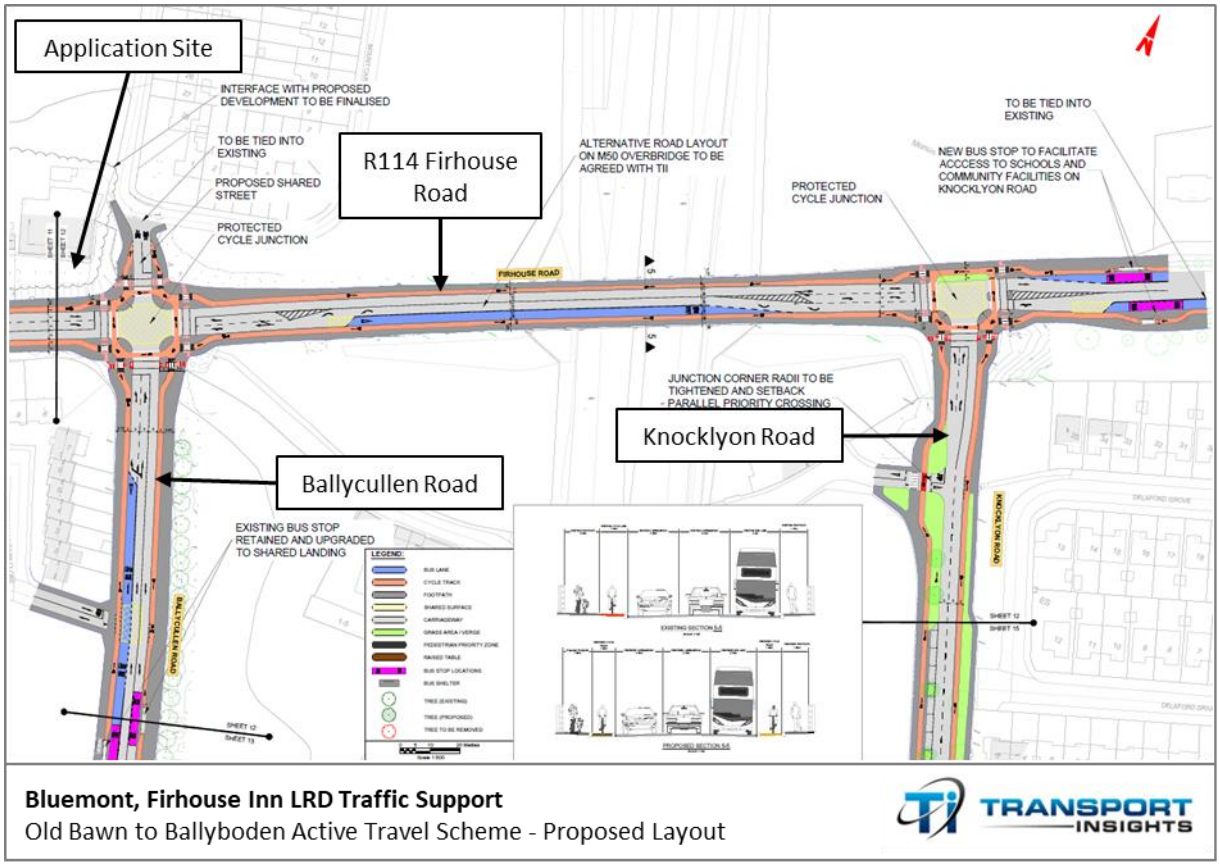
Old Bawn to Ballyboden Active Travel Scheme

In addition to the Dodder Greenway scheme, SDCC are also advancing the Old Bawn to Ballyboden Active Travel Scheme, which will pass in front of the application site, along the R114 Firhouse Road. It is intended that the scheme will be delivered in two phases, with the first phase seeing substantial improvement in pedestrian and cyclist facilities along a number of roads in the vicinity of the application site, including sections of Old Bawn Road, Firhouse Road, Ballycullen Road, Castlefield Avenue and Knocklyon Road, along with several secondary links connecting the main corridor to schools, community centres, employment hubs, and residential areas. The second phase shall focus on Firhouse Road West, Templeroan Road, Knocklyon Road, Scholarstown Road and Ballyboden Way.

An excerpt from the draft proposed site layout plan (drawing no. 284940-ARUP-ZZ-ZZ-DR-CH-0012, produced by ARUP) is presented within Figure 2.4 (overleaf). As can be seen from this figure, the proposed active travel scheme shall result in significant improvements to cycling infrastructure in the vicinity of the application site.

As part of the previously granted LRD application to SDCC, design discussions between SDCC's Land Use and Transportation Department and Transport Insights were previously undertaken to ensure that the Old Bawn to Ballyboden Active Travel Scheme is optimally integrated with the proposed LRD layout. Changes incorporated following design discussions include amended footpath and cycle lane widths and alignment.

Figure 2.4 Proposed Old Bawn to Ballyboden Active Travel Scheme



Other Local Cycle Network Improvements

An overview of other planned cycle routes in the vicinity of the proposed development site are:

- Secondary Route 10A: Route 10 will run from Camden Street through Rathmines, Rathgar and Terenure to Rathfarnham, where it splits into several branches, one of which is Route 10A which runs parallel to the River Dodder to Firhouse and Oldcourt beside Old Bawn Bridge on Orbital Route SO6.
- Primary Route 9A: Route 9 runs from Clanbrassil Street to Tallaght via Harold's Cross, where it branches into two routes, one of which is Route 9A which runs via Kimmage Road, Fortfield Road, Wainsfort Road, the N81 to the north of the subject site terminating at Tallaght Town Centre.
- Orbital Route SO5: Dundrum to Tallaght via Ballyboden and Knocklyon and Firhouse.
- Orbital Route SO6: Dun Laoghaire to Tallaght via Ballycullen and Old Bawn.

Overall, the proposed cycle network improvements result in the site being ideally located to benefit from high-quality cycle infrastructure, which will contribute to substantial increase in attractiveness and uptake of cycling for both leisure and commuting for both radial trips to areas between the site and Dublin City Centre, and orbital trips to Tallaght, Clondalkin and further afield. This is particularly true of the greenways in the vicinity of the site which offer increased safety and amenity to those who may be apprehensive about cycling on heavily trafficked roads.

2.4. Local Policy

South Dublin County Council Development Plan 2022-2028

The *South Dublin County Council Development Plan 2022-2028* provides the overarching planning framework for development in the South Dublin authority area until 2028. Of primary importance from a traffic and transportation perspective are sustainable travel accessibility and development car and cycle parking standards, outlined hereunder.

Sustainable Movement Overarching Policies and Objectives

- **Policy SM1: Overarching – Transport and Movement:** *"Promote ease of movement within, and access to South Dublin County, by integrating sustainable land-use planning with a high-quality sustainable transport and movement network for people and goods".*

Walking and Cycling

- **Policy SM2:** *"Walking and Cycling Re-balance movement priorities towards sustainable modes of travel by prioritising the development of walking and cycling facilities and encouraging a shift to active travel for people of all ages and abilities, in line with the County targets."*

Public Transport

- **Policy SM3:** *"Public Transport – General Promote a significant shift from car-based travel to public transport in line with County targets and facilitate the sustainable development of the County by supporting and guiding national agencies in delivering major improvements to the public transport network."*

Road and Street Design

- **Policy SM5:** *"Street and Road Design Ensure that streets and roads within the County are designed to balance the needs of all road users and promote place making, sustainable movement and road safety providing a street environment that prioritises active travel and public transport."*

Traffic and Transport

- **SM6 Objective 3:** *"To minimise the impact of new development on the County's road and street network through prioritising active travel and public transport and implementing appropriate traffic and transport management measures."*

Electric Vehicle Parking

- **Policy SM7:** *"Car Parking and EV Charging Implement a balanced approach to the provision of car parking with the aim of using parking as a demand management measure to promote a transition towards more sustainable forms of transportation, while meeting the needs of businesses and communities."*

Bicycle Parking Standards

Section 12.7.1 of the *Development Plan* provides recommendations in relation to the provision of cycle parking. Bicycle parking rates are divided into two main categories which are as follows:

- **Long-Term:** These are to be designed for use by residents and employees. Such spaces should be located in a secure area that is not freely accessible to the general public.
- **Short-Stay:** These are to be designed for ease of use by the general public. Such spaces should be located in highly visible areas that are easy to access and allow for cargo bikes.

The rate of cycle parking required to serve the proposed development, alongside proposed provision, is summarised in the following Table 2.3.

Table 2.3 South Dublin County Development Plan Cycle Parking Standards

Land Use	Required				Proposed	
	Long-Term		Short-Stay			
	Standard	No.	Standard	No.	No. Long-Term Proposed	No. Short-Stay Proposed
1-bed Apartments/ studios / 1-bed duplex	1 per bedroom	111	1 per 2 apartments	42	140	42
2-bed Apartments / 2 -bed duplex	1 per bedroom		1 per 2 apartments			
3-bed Apartments	1 per bedroom		1 per 2 apartments			
Creche	1 per 5 staff	1	1 per 10 children	2	1	2
Café	1 per 5 staff	1	1 per 10 seats	1	1	1
Bookmaker*	1 per 5 staff	1	1 per 50 sqm GFA	2	1	2
Barber's*	1 per 5 staff	1	1 per 50 sqm GFA	1	1	1
GP / Dental Practice	1 per 5 staff	1	0.5 per consulting room	1	1	1

Land Use	Required				Proposed	
	Long-Term		Short-Stay			
	Standard	No.	Standard	No.	No. Long-Term Proposed	No. Short-Stay Proposed
Office	1 per 200 Sqm GFA	1	1 per 200 Sqm GFA	1	1	1
Sub-total	-	117	-	50	146	50
Total		**167**			**196**	

**Retail convenience/ retail comparison deemed to be most comparable land use for calculation of required cycle parking quantum.*

As can be seen from the preceding Table 2.3, according to the current *Development Plan*, the proposed development would require a total of 167 no. on-site cycle parking spaces, with the proposed provision exceeding the minimum standards. Further to the quantum of cycle parking provision, the current *Development Plan* also states that all bicycle parking spaces shall be designed in accordance with the requirements of the *National Cycle Manual*, NTA (2011).

Car Parking and Electrical Vehicle Car Parking

Car parking standards are outlined within Section 12.7.4 of the current *Development Plan* (Tables 12.25 and 12.26) for residential and commercial developments. These standards are presented for two separate zones, which are as follows:

Zone 1:

- General rate applicable throughout the County.

Zone 2:

- **Non-Residential**: More restrictive rates for application within town and village centre, lands zoned REGEN, and brownfield / infill sites within Dublin City and Suburbs settlement boundary within 800 metres of a train or Luas station and within 400-500 metres of a high-quality bus service (including proposed services that have proceeded to construction).
- **Residential:** More restrictive rates for application within town and village centres, lands zoned REGEN, and brownfield / infill sites within Dublin City and Suburbs settlement boundary within 400-500 metres of a high-quality public transport service (includes a train station, Luas station or bus stop with a high quality service).

Maximum car parking standards in relation to the proposed development are summarised in Table 2.4 which follows, with Zone 2 parking rates in effect.

Table 2.4 South Dublin County Development Plan Car Parking Standards

Category	Land Use/Dwelling Type	Zone 2 Rate	No. Apartments/ GFA/ Classrooms / Consulting Rooms	Max. Car Parking Spaces	Proposed Car Parking Spaces
Residential	1-bed Apartment	0.75 spaces	55	41	52**
	2-bed Apartment	1 space	28	28	
	3-bed Apartment	1.25 spaces	0	0	
Education	Creche	0.5 per classroom	1	1	4 (incl. drop-off spaces)
Retail and Retail Service	Café	1 per 20 sqm GFA	52	3	2
Retail and Retail Service	Bookmaker*	1 per 25 sqm GFA	67	3	1
Retail and Retail Service	Barber's*	1 per 25 sqm GFA	24	1	2
Medical	GP / Dental Practice	1.5 per consulting room	3	5	4**
Enterprise and Employment	Office	1 per 75 sqm GFA	28	1	0
Total				**83**	**63**

**Retail convenience deemed to be most comparable land use for calculation of required parking quantum.*
***Parking total includes 2 no. accessible bays which act as dual use between the medical centre and residential use.*

As can be seen from the preceding Table 2.4, according to the current *Development Plan*, the proposed development could require a maximum of 83 no. on-site car parking spaces. The Plan states that *"The provision of parking spaces for car sharing / pooling will be encouraged and will*

not impact on the maximum rates in Table 12.25". Furthermore, the *Plan* also notes that lower rates of car parking may be acceptable subject to the following regarding parking standards:

- *"The proximity of the site to public transport and the quality of the transport service it provides. (This should be clearly outlined in a Design Statement submitted with a planning application),*
- *The proximity of the development to services that fulfil occasional and day to day needs,*
- *The existence of a robust and achievable Workforce Management or Mobility Management Plan for the development,*
- *The ability of people to fulfil multiple needs in a single journey,*
- *The levels of car dependency generated by particular uses within the development,*
- *The ability of residents to live in close proximity to the workplace,*
- *Peak hours of demand and the ability to share spaces between different uses,*
- *Uses for which parking rates can be accumulated, and*
- *The ability of the surrounding road network to cater for an increase in traffic."*

Further to the quantum of car parking required, SDCC's car parking standards also contain a requirement for a provision of 5% accessible parking as required by Part M of Building Regulations 2010, as well as 20% of car parking spaces being electric charging enabled.

- *"EV charging shall be provided in all residential, mixed use and commercial development and shall comprise a minimum of 20% of the total parking spaces provided, with higher provision within this range required in urban areas.*
- *"The remainder of the parking spaces should be constructed to be capable of accommodating future charging points."*

It should be noted that these provisions are inclusive of the figures outlined above. Section 5 of this Report presents the proposed car parking provision and assesses the suitability of such provision to serve the needs of the proposed development.

3. Site Context

3.1. Introduction

To assess the proposed development's potential traffic impacts, an appreciation of the existing situation first needs to be established. This section of the Report describes the existing site layout, access arrangements, the local road network and background traffic conditions. The existing conditions presented here represents an evidence-based review, and have been informed by:

- a high-level desktop review of the study area and its surrounding transport network, including general traffic road infrastructure, facilities for pedestrians and cyclists and public transport infrastructure and service provision; and
- a site assessment, undertaken on Tuesday 06 October 2020 (between 15:00hrs and 17:00hrs) to confirm facilities and operating conditions for all road users on the adjoining road network.

The above activities have been supplemented by analysis of classified junction turning count survey data collected to determine existing background traffic conditions on the local road network. The location of the junction surveyed and the survey periods is as follows: 4-Arm Firhouse Road/ Ballycullen Road/ Mount Carmel Park signalised junction; Tuesday 30 May 2023 – 07:00hrs to 18:59hrs.

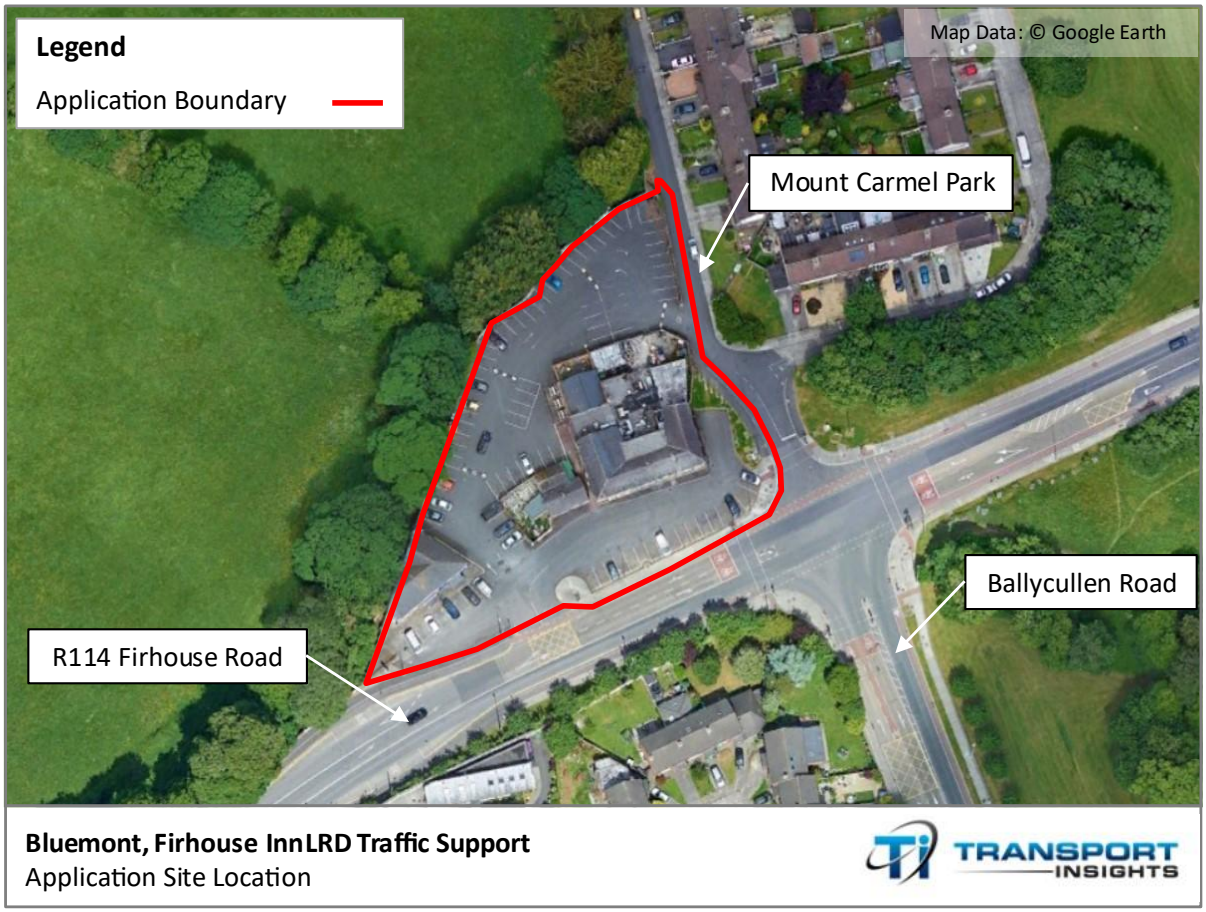
Further detail in relation to traffic survey data collection, analysis and validation is given within Section 0 of this Report.

3.2. Site Description, Location and Access

Proposed Development Site

The proposed development site, measuring ca. 0.46 hectares, is located adjacent to Firhouse Road (R114), Firhouse, Dublin 24. The application site's location is presented in Figure 3.1 (overleaf). As can be seen from this figure, the proposed development site is bounded to the north and west by lands adjacent to the Carmel of the Assumption Convent, to the east by the Mount Carmel Park residential area, and to the south by Firhouse Road (R114). In terms of prevailing land uses, the lands to north and northwest are predominantly recreational in nature, while the lands to the east and also to the south of Firhouse Road are predominantly low-density residential. The M50 runs in an approximate north-south alignment ca. 150-200 metres to the east of the proposed development site.

Figure 3.1 Site Location



Existing Site Access Arrangements

Vehicular access to the site is currently possible at 2 no. locations. The main vehicular access to the site, measuring ca. 12.5 metres wide (which is illustrated in Figure 3.2 overleaf), is via Firhouse Road at a location ca. 60 metres to the west of the Firhouse Road/ Ballycullen Road/ Mount Carmel Park four-arm signalised junction. A yellow box is provided on the two eastbound lanes of Firhouse Road immediately adjacent to the existing site access, facilitating ease of access and egress to/ from the application site.

As illustrated by Figure 3.3 (overleaf), there is a secondary ca. 8.0 metres wide gated access to the site at the eastern boundary from Mount Carmel Park. The vehicular carriageway of Mount Carmel Park adjacent to this access is relatively narrow, with a width of ca. 5.2 metres.

Figure 3.2 Primary Access to Site from Firhouse Road

Bluemont, Firhouse Inn LRD Traffic Support
Primary Access to Site from Firhouse Road

Figure 3.3 Secondary Access to Site from Mount Carmel Park

Bluemont, Firhouse Inn LRD Traffic Support
Secondary Access to Site from Mount Carmel Park

3.3. Local Road Network

Firhouse Road (R114)

The site is located adjacent to Firhouse Road (R114) which is a two-way regional road which runs between the Dublin Mountains at its southern end and Rathfarnham at its northern end. The vehicular carriageway of the R114 incorporates bus lanes intermittently along its length on one or both sides.

In the vicinity of the proposed development site, the vehicular carriageway is ca. 10.5 metres wide and incorporates two eastbound lanes and one westbound lane. To the west of the existing vehicular access, one of these westbound lanes is a bus lane with the other lane accommodating all other traffic. The eastbound bus lane ends ca. 20 metres to the west of the existing vehicular access to the proposed development site from Firhouse Road and in the vicinity of the Firhouse Road/ Ballycullen Road/ Mount Carmel Park four-arm signalised junction, the two vehicular lanes become a right-turning lane for vehicles turning onto Ballycullen Road and a straight-ahead and left-turning lane for vehicles continuing on Firhouse Road or turning left onto Mount Carmel Park respectively. Ca. 200 metres to the east of the existing primary access to the proposed development site, Firhouse Road crosses the M50 motorway.

The R114 incorporates cyclist provision along much of its length. To the west of the proposed development site, this cycling infrastructure is provided in the form of grade separated cycle tracks which extend as far as Old Bawn. To the east of proposed development site, cycling infrastructure is provided as a mix of off-road and on-road cycle tracks and advisory cycle lanes. Advisory cycle lanes are also provided across the primary access junction to the subject site and through the Firhouse Road/ Ballycullen Road/ Mount Carmel Park four-arm signalised junction and the Firhouse Road and Ballycullen Road arms of the junction also feature advanced stop lines and storage space for cyclists.

Pedestrian infrastructure is provided along both sides of Firhouse Road in the form of footpaths. The footpath along the northern carriageway edge (i.e. adjacent to the site) is ca. 2.0 metres wide, whereas the footpath opposite the site entrance is ca. 1.6 metres and adjacent to a ca. 1.5 metres wide cycle track which is separated from the vehicular carriageway. The Firhouse Road/ Ballycullen Road/ Mount Carmel Park four-arm signalised junction also includes pedestrian crossing lights on all four arms in addition to dropped kerbs, tactile paving and crossing markings.

As an urban road, a 50 km/ h speed limit is in operation on Firhouse Road. Public lighting is in place along the entire section of the road adjacent to the application site. There are on-street car parking

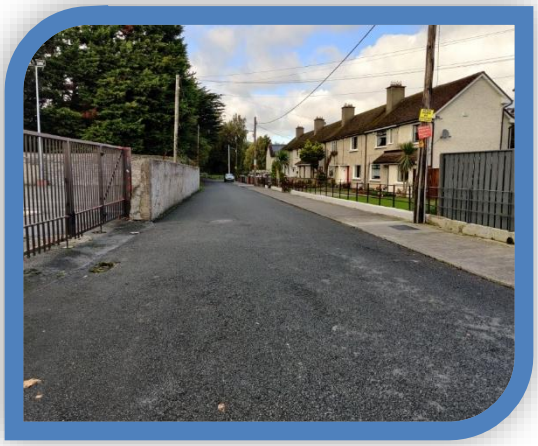
restrictions in the form of double yellow lines in the vicinity of the primary site access junction to the proposed development site.

Ballycullen Road

Ballycullen Road is a two-way road with an approximately north-south alignment which runs between Firhouse Road (R114) at its northern end and the R113 at its southern end. The vehicular carriageway typically incorporates 3 no. vehicular lanes including a single northbound and southbound lane in addition to a bus lane facilitating northbound bus traffic along the majority of its length. This is discontinued in the vicinity of several junctions to allow for left-turning traffic. Ballycullen Road also incorporates cycling infrastructure along the majority of its length in the form of off-road cycle tracks and mandatory and advisory cycle lanes. In the vicinity of the proposed development site, these cycle lanes are ca. 1.5 metres wide.

At the northern end of Ballycullen Road, the vehicular carriageway is ca. 14 metres wide incorporating 2 no. cycle tracks, one at each edge of the carriageway. Ballycullen Road also incorporates ca. 1.5 metres and 2.0 metres wide footpaths on the western and eastern side of the vehicular carriageway respectively. On the eastern side of Ballycullen Road, the footpath is separated from the road via a ca. 1.5 metres wide grass verge. Street lighting is provided along the road. The posted speed limit on Ballycullen Road is 50 km/ h.

Mount Carmel Park



Mount Carmel Park is a small residential area to the immediate east of the proposed development site, located between Firhouse Road and Dodder Valley Park. Mount Carmel Park is typified by its low-speed, lightly-trafficked residential nature.

The vehicular carriageway of Mount Carmel Park is ca. 5.2 metres wide immediately adjacent to the existing secondary access to the proposed development site. At the entrance to Mount Carmel Park there are ca. 2.2 metres wide footpaths on either side of the vehicular carriageway. In the vicinity of the secondary access to the site, the vehicular

carriageway of Mount Carmel Park narrows with the footpath continuing on the one side of the vehicular carriageway only.

At the northern end of Mount Carmel Park there are 2 no. paved accesses to Dodder Valley Park. It should be noted however that there is full permeability between Mount Carmel Park and the surrounding Dodder Valley Park along its northern and eastern boundaries.

4-Arm Firhouse Road/ Ballycullen Road/ Mount Carmel Park Signalised Junction

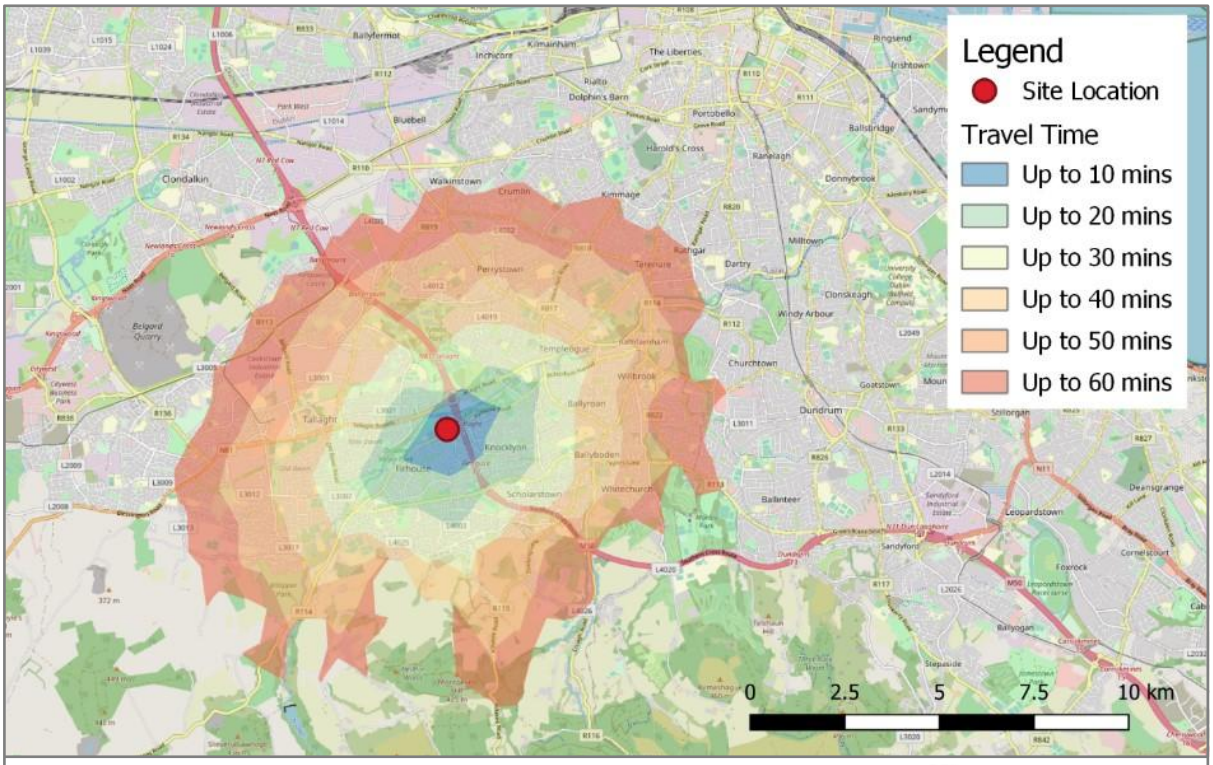
Firhouse Road intersects Ballycullen Road and Mount Carmel Park at a 4-arm signal-controlled junction to the immediate southeast of the proposed development site. The western and eastern approaches to the junction on Firhouse Road feature lane dualling to allow for the separation of straight-ahead and left-turning traffic from right-turning traffic. The southern approach to the junction from Ballycullen Rod also features lane dualling to allow for the separation of left-turning traffic from straight-ahead and right turning traffic. The northern Mount Carmel Park arm of the junction features a single lane on approach to the junction.

All arms of the junction include signalised pedestrian crossing facilities, in addition to dropped kerbs, tactile paving and crossing markings. The approaches to the junction from Firhouse Road and Ballycullen Road also feature advanced stop lines and storage space for cyclists. Advisory cycle lanes are also present through the junction on Firhouse Road. The Ballycullen Road arm of the junction also includes an advisory cycle lanes which accommodates right-turning cyclists.

3.4. Walking and Cycling Catchment Analysis

The application site's accessibility by walking and cycling has been assessed regarding each respective catchment. For the purposes of the analysis, the site's 60-minute walking and cycling catchments have been analysed at 10-minute isochrone intervals. The application site's mapped walking catchment is presented in Figure 3.4 (overleaf).

Figure 3.4 Site Accessibility Analysis: Walking Catchment



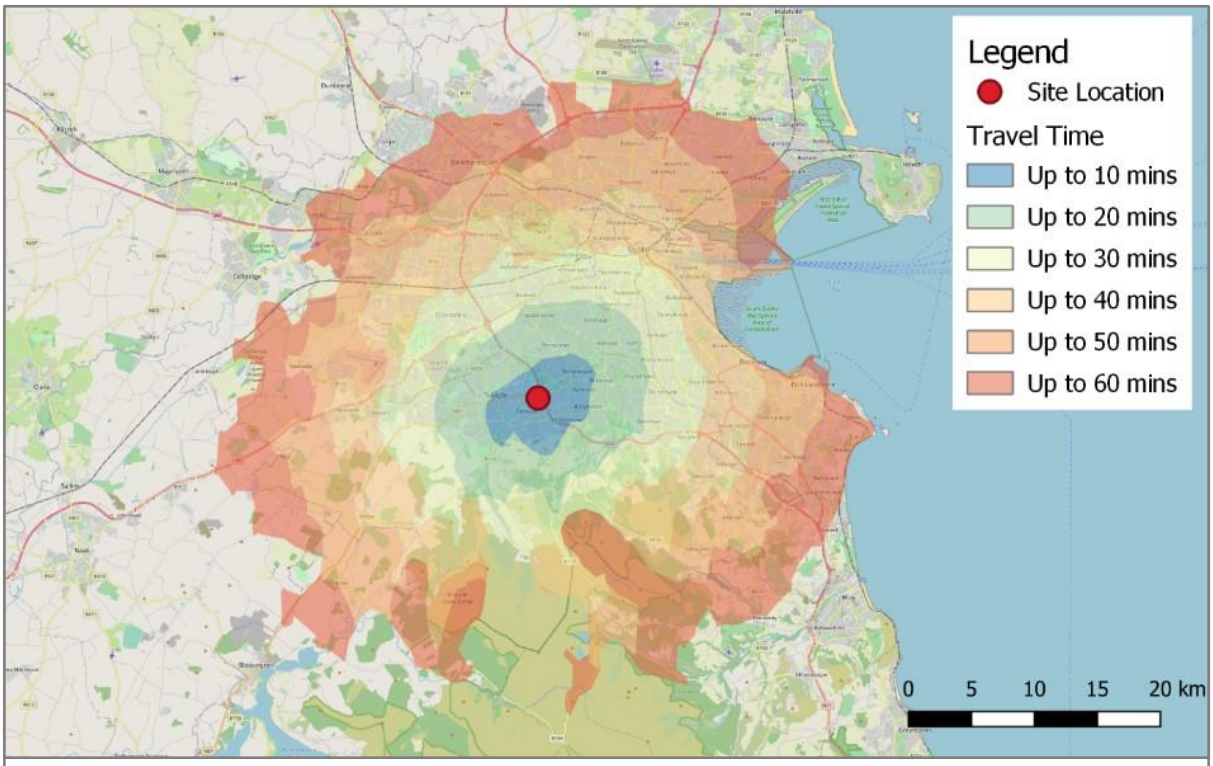
Bluemont, Firhouse Inn LRD Traffic Support
Site Accessibility Analysis: Walking Catchment

As can be seen in the preceding figure, the wider 60 minutes' walking catchment of the site extends approximately to Rockbrook and Bohernabreena in the south, Jobstown in the west, Walkinstown to the north and Rathfarnham to the east. Tallaght Town Centre, which includes ample employment, educational, retail and cultural amenities is noted to be located within a ca. 45 minutes' walk from the application site, whereas the site's 20 minutes' walking catchment includes such shopping destinations as Knocklyon Shopping Centre and Firhouse Shopping Centre (which both include large grocery supermarket stores), Delaney's Public House and Firhouse Community and Leisure Centre. Recreational amenities in the site's direct vicinity include Dodder Valley Park, a linear park which stretches from Old Bawn in the southwest to the Knocklyon Road in the northeast.

The application site's mapped 60 minutes' cycling catchment is presented in Figure 3.5 (overleaf). As per analysis presented within this figure, the cycle catchment extends to just south of Dublin Airport in the north, to Dun Laoghaire in the east, the Wicklow Mountains in the south, and to the vicinity of Kill, Co. Kildare in the west. The cycling catchment includes the entirety of the area inside the M50 and a range of employment and education clusters located within the 40 minute's cycling catchment including such destinations as Dublin City Centre, Docklands, Sandyford Business Park, industrial estates such as Cookstown, Hibernian, Ballymount, John F. Kennedy and Robinhood, TU Tallaght

Campus etc. Based on this analysis, it has been concluded that there are ample such opportunities within the range of a convenient and sustainable commute by cycling.

Figure 3.5 Site Accessibility Analysis: Cycling Catchment



Bluemont, Firhouse Inn LRD Traffic Support
Site Accessibility Analysis: Cycling Catchment

3.5. Public Transport – Existing Bus Services

The proposed development site is served by a number of bus routes serving stops located on Firhouse Road and Ballycullen Road, namely the F1, S6, and 65b. Furthermore, the 82 and 65 routes operate on the N81 to the north of the site which can be accessed via pedestrian infrastructure through Dodder Valley Park and under the M50 junction to the northeast of the site. The high frequency route 15 also currently operates on the St. Colmcille's Way (R113) to the south of the site. Details in relation local bus service provision, including the proximity of applicable services to the application site and peak/ off-peak frequencies set out in the Table 3.1 (overleaf).

As noted within Section 2 of this Report, as part of recent Phases (5b and 7) of the BusConnects Dublin Network Redesign, new Southern Orbital, Radial and Local routes have been introduced, with the operation of some existing services terminated. In the vicinity of the application site, this has included the introduction of the orbital S6 and S8 services and the introduction of the 24-hour F1 radial service. It is noted that the high frequencies of the S6 and F1 offer an enhanced level of service (compared to previous services) while also enabling improved connectivity to other public transport services that intersect with them.

Table 3.1 Current Public Transport Services in Application Site's Vicinity

Route No.	Route	Weekday Off-Peak Frequency	Average Weekday Peak Frequency	Distance to Nearest Stops
S6	Tallaght – Rathfarnham Shopping Centre – UCD – Blackrock Station	15 minutes	15 minutes	Adjacent to the site
F1	Ballymun (IKEA) – Finglas – City Centre – Tallaght (The Square)	15 minutes	8 minutes	ca. 150m
65b	Citywest – Poolbeg Street	60 minutes	30 minutes	ca. 150m
82	Kiltipper - Crumlin - Ringsend	20 minutes	15 minutes	ca. 750m
77a	Citywest – Ringsend	20 minutes	20 minutes	ca. 1.1 km
S8	Citywest – Tallaght – Sandyford Luas – Dún Laoghaire	20 minutes	15 minutes	ca. 1.2 km
15	Ballycullen Road - Clongriffin	8-12 minutes	8-12 minutes	ca. 1.2 km

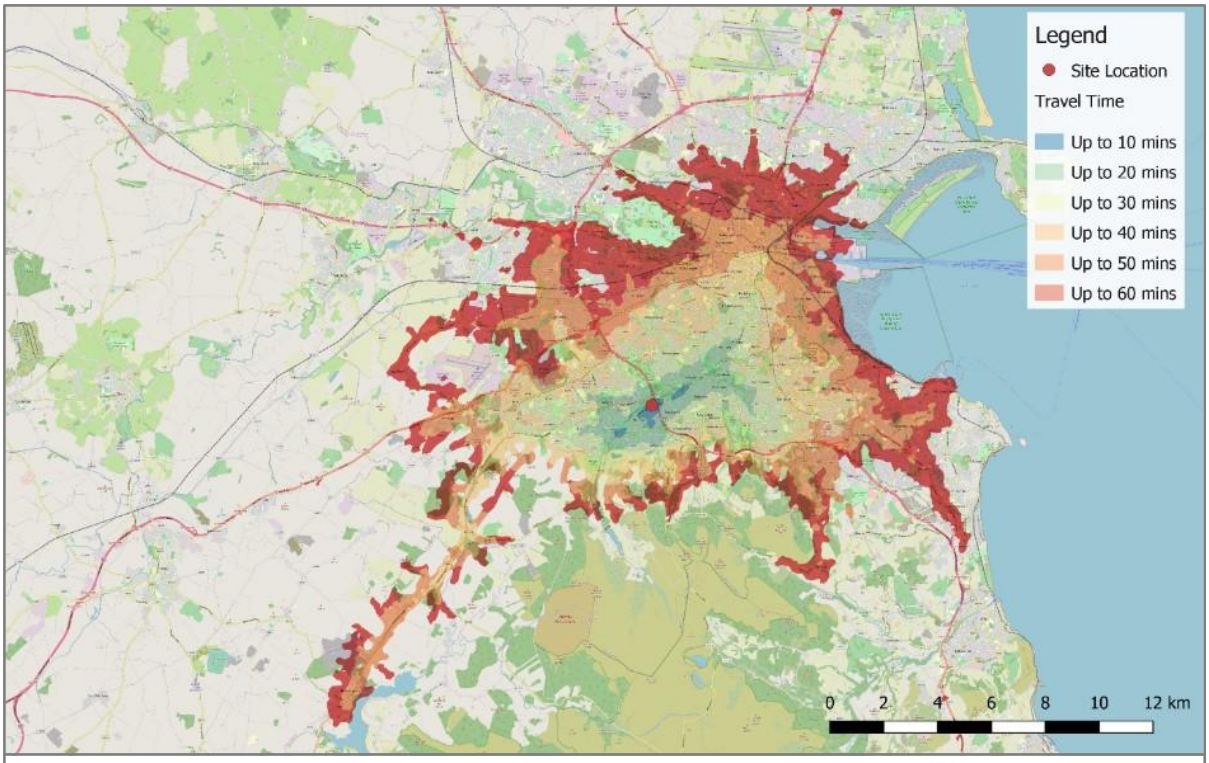
As can be seen in the preceding Table 3.1, the application site's immediate vicinity is served by three bus routes, one of which, the S6, serves a stop on Firhouse Road to the immediate west of the site and connects the site to Tallaght and Blackrock, via Rathfarnham Shopping Centre and UCD. The newly introduced 24-hour F1 service and the 65b serve a bus stop on Ballycullen Road ca. 150 metres to the south of the subject site, while the 82 and 77a serve bus stops on the N81 to the north of the site. Furthermore, the high frequency, 24-hour bus route 15 serves St. Colmcille's Way, ca 1.2 kilometres to the south of the subject site.

As outlined above, routes currently operating within the application site's immediate vicinity (< 150 metres) offer a cumulative peak frequency of one bus every ca. 5 minutes. In light of the site's proximity to these services, the site is "*within 5 minutes walking distance of high frequency (min 10 minute peak hour frequency) bus services*", it thereby fulfils a key criterion with the *Sustainable Urban Housing: Design Standards for New Apartments* (DoHPLG 2018) whereby a reduced level of on-site car parking provision is deemed appropriate.

To further improve the project team's understanding of the site's accessibility by public transport, a travel time analysis using Geographic Information System (GIS) software was undertaken, with travel

time isochrones generated based on bus, Luas, and rail timetables published by the National Transport Authority. The output of the public transport accessibility analysis is presented in the following Figure 3.6 in the form of an isochrone map illustrating travel time from the site by public transport on a working day (including walk and wait time), during the AM commuting peak (assuming a departure time from the site between 08:00-08:30hrs).

Figure 3.6 Site Accessibility Analysis: Public Transport Catchment



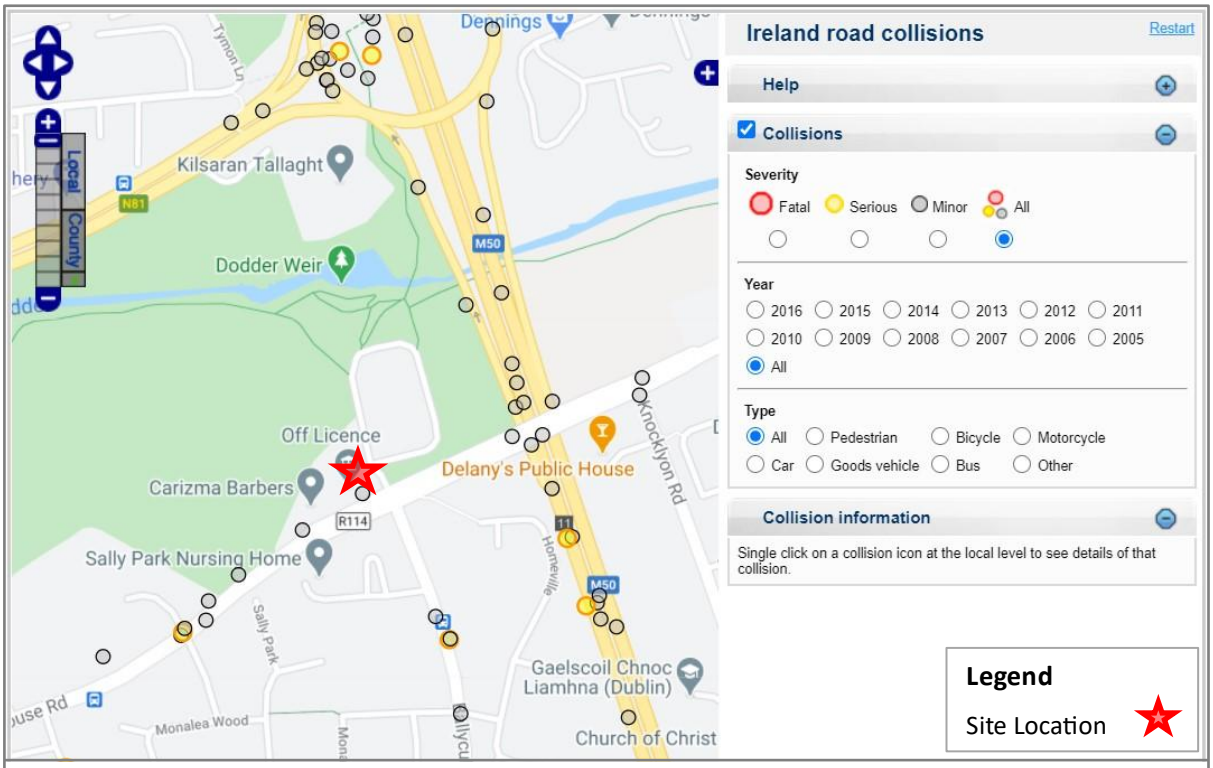
Bluemont, Firhouse Inn LRD Traffic Support
Site Accessibility Analysis: Public Transport Catchment

As can be seen from the preceding Figure 3.6, the available public transport services enable access to a significant portion of Dublin including Dublin City Centre in under 60 minutes with many key employment areas such as Tallaght, Dublin City Centre, the Docklands, Dun Laoghaire, Sandyford, Dundrum, Drumcondra, etc. accessible within that timeframe. Considering the above, the analysis indicates that much of Dublin's southside and Dublin City Centre are accessible from the site within a convenient commute by public transport.

3.6. Road Traffic Collision Data Analysis

Data from the Road Safety Authority (RSA) collision database was used to assess the safety performance characteristics of the local road network. The database contains information on all reported collisions by severity of injury incurred (i.e. fatal, serious or minor) and by year the collision occurred. Figure 3.7 (overleaf) illustrates the location of all collisions in the vicinity of the site for the 12-year period from 2005 to 2016 inclusive.

Figure 3.7 Road Collision Data 2005-2016



Bluemont, Firhouse Inn LRD Traffic Support
RSA Collision Map

As can be seen from the preceding Figure 3.7, a number of minor collisions have occurred on the road network surrounding the site during the assessed period. One such minor collision involving a car, occurring in 2005, appears to be recorded within the existing car parking area to the immediate south of the site boundary. A further minor collision also involving a car, occurring in 2009, appears to have been recorded in the vicinity of the existing site access junction. The circumstances of this collision are recorded as *"angle, right turn"*.

5 no. further minor collisions appear to have occurred to the west of the proposed development site during the assessment period. 3 no. of these minor collisions involved cars with the remaining 2 no. involving a bicycle and a pedestrian and occurred in 2015 and 2016 respectively. To the east of the proposed development site, a further 3 no. minor collisions are recorded on the bridge crossing the M50, all occurring between the years 2009 and 2012, and all involving cars.

Over the assessed period, 2 no. serious collisions occurred. The locations of these collisions are ca. 190 metres to the west of the site and 160 metres to the south of the site. Both of these collisions involved bicycles, with the collision to the west occurring in 2015 and the collision to the south occurring 2016. Records also show that no fatal collisions occurred over the assessed period in the vicinity of the proposed development site.

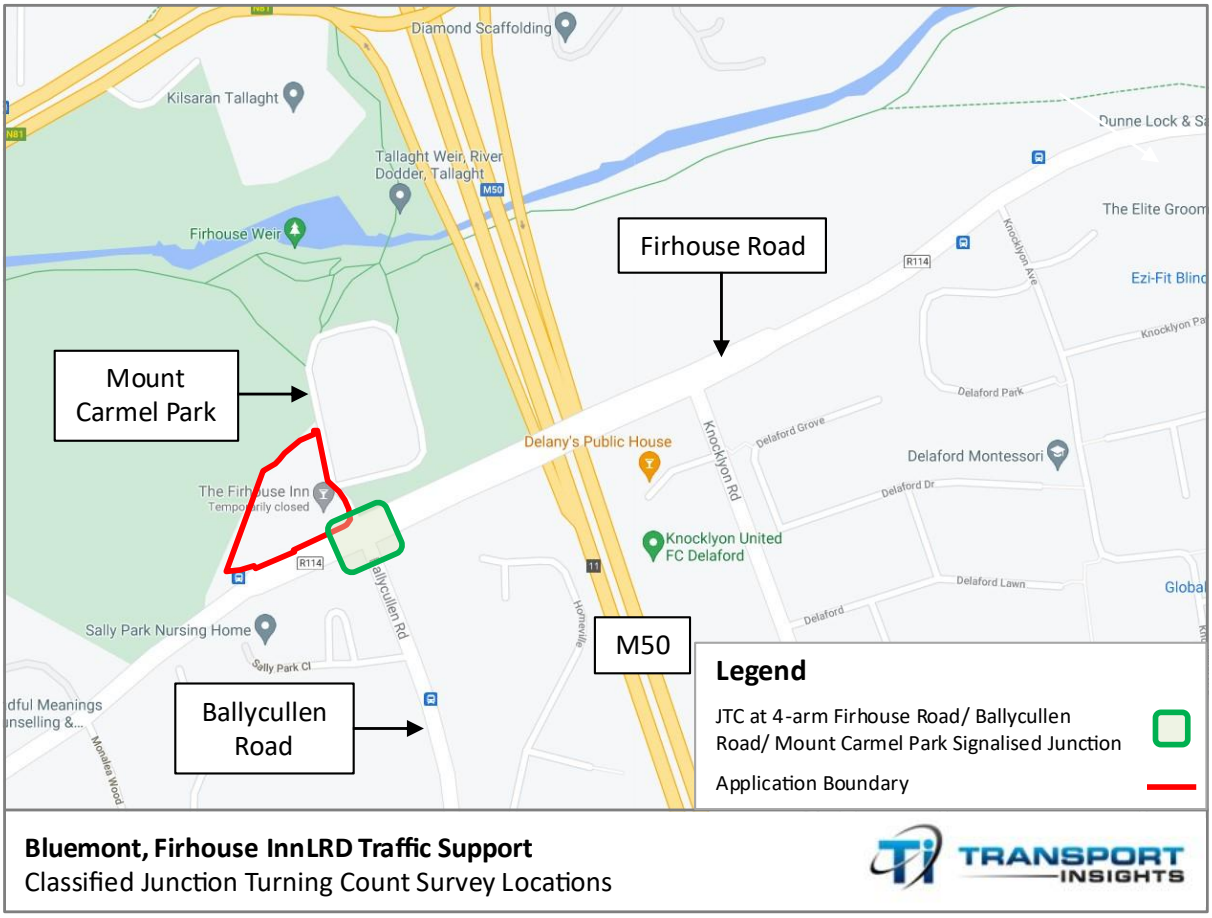
The available data outlined above indicates that there are no location-specific road safety concerns of relevance to the proposed development considering the volume of traffic on the road network.

4. Traffic Survey Data Collection and Analysis

4.1. Introduction

To determine baseline traffic conditions and to provide a basis from which future development traffic impact can be measured, a classified junction turning count survey was undertaken on Tuesday 30 May 2023 between 07:00hrs and 18:59hrs at the 4-arm Firhouse Road/ Ballycullen Road/ Mount Carmel Park signalised junction. Figure 4.1 below illustrates the junction, which is located adjacent to the application site.

Figure 4.1 Classified Junction Turning Count Survey Locations



4.2. Summary Traffic Survey Results

Following analysis of the traffic survey data, the AM peak hour was determined to be between 08:00hrs and 08:59hrs, while the PM peak hour was between 17:15hrs and 18:14hrs. A summary of the survey results is provided in the following Table 4.1.

Table 4.1 Recorded Approach Flows

Year	Junction Location	Road Link	AM Peak Hour		PM Peak Hour	
			Light Vehicles	Heavy Vehicles	Light Vehicles	Heavy Vehicles
2023	4-arm Firhouse Road/ Ballycullen Road/ Mount Carmel Park Junction	Ballycullen Road (S)	535	12	282	4
		Firhouse Road (W)	556	7	291	4
		Mount Carmel Park (N)	14	0	9	0
		Firhouse Road (E)	460	10	816	19
		Sub-total	1,565	29	1,398	27
		Total	**1,594**		**1,425**	

As can be seen from the preceding Table 4.1, the AM peak was recorded as having slightly greater approach flows when compared to the PM peak hour during the traffic survey. Full traffic survey results are included within Appendix B of this Report.

5. Description of Proposed Development

5.1 Introduction

This section of the TTA Report describes key physical attributes of the proposed development including site access and internal site layout arrangements, proposed car and cycle parking provision, and servicing arrangements.

5.2 Proposed Development

As outlined within Section 1.4, the proposed development comprises the following:

- The provision of 5 no. additional residential units, resulting in a total of 4 no. duplex units (2 no. 1-bedroom units, 1 no. 2-bedroom 3-person unit, and 1 no. 2-bedroom 4-person unit); and 79 no. apartment units (1 no. studio units, 54 no. 1-bedroom units, 5 no. 2-bedroom 3-person units, and 19 no. 2-bedroom 4-person units.
- a ground floor creche (ca. 140 sqm);
- 5 no. commercial/medical units at ground floor (ca. 24-112 sqm);
- 63 no. car parking bays across 3 no. levels (28 no. at basement level B2, 20 no. at basement level B1, 15 no. at surface level 00 - 2 no. of which are dual parking bays);
- 196 no. cycle parking spaces to accommodate resident, visitor and staff needs; and
- 5 no. motorcycle parking spaces.

Further information in relation to traffic and transport characteristics of the development proposal is provided in the remainder of this section of the Report.

5.3 Proposed Access/ Egress and Layout Arrangements

Overview

The proposed surface level site layout which includes pedestrian and vehicular access arrangements relative to local roads is shown in Figure 5.1 (overleaf). It is noted that the interface between the proposed development and the adjoining public roads are consistent with the granted development.

Figure 5.1 Proposed Site Layout – Level 00*

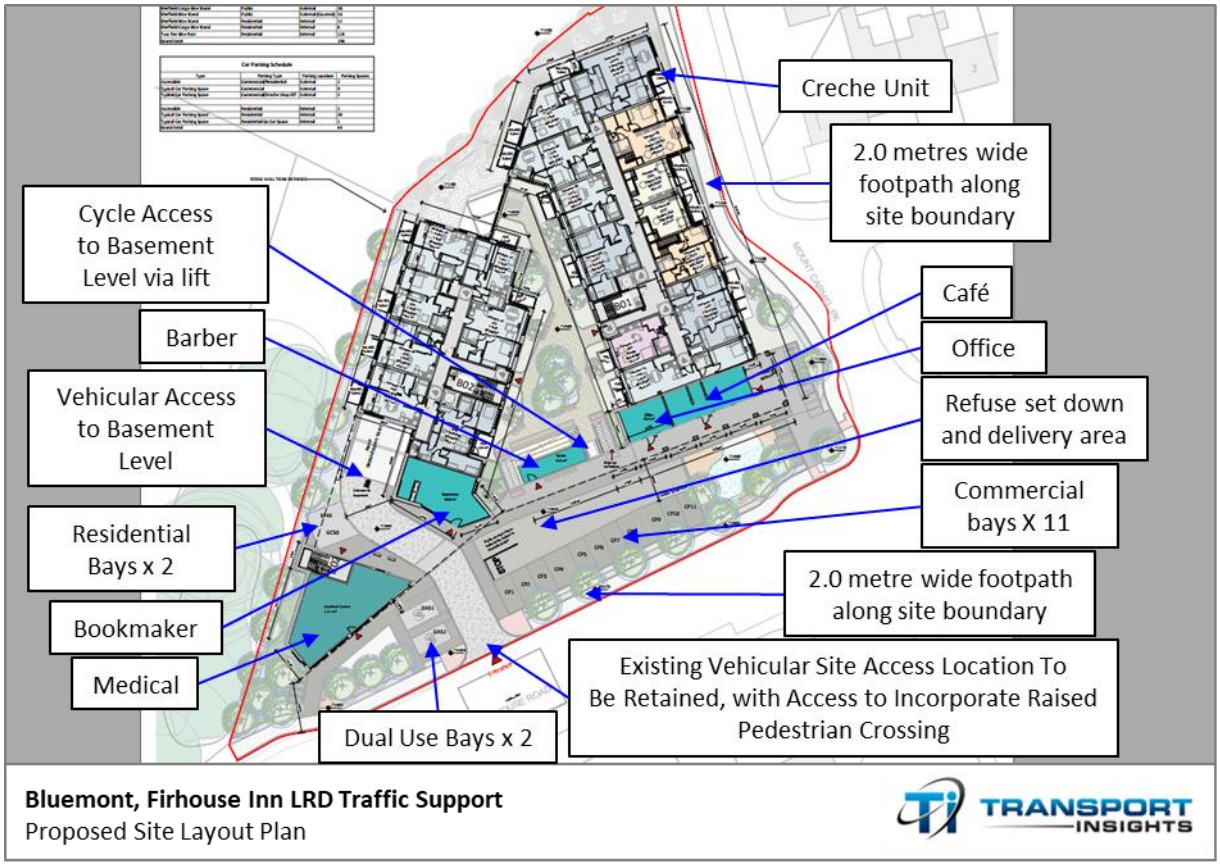


*Image courtesy of O'Mahoney Pike (Drawing Reference: 20022B-OMP-ZZ-00-DR-A-1000) with supplemental annotation by Transport Insights.

A to-scale architectural version of the preceding Figure 5.1 is included within the overall planning pack.

Pedestrian Access Arrangements

Pedestrian access to the site will be via the southern, eastern and western sides of the site. A 2.0 metres wide footpath is proposed along the length of the eastern side of the development on the western side of Mount Carmel Park and along the southern side of the development along the northern side of Firhouse Road. All proposed pedestrian footpaths at the development's perimeter shall align with the layout and design of the footpaths that form part of the proposed Old Bawn to Ballyboden Active Travel Scheme. Pedestrian access will be possible from these footpaths from 5 no. locations, 1 no. at the proposed creche, 2 no. adjacent the main site access junction (i.e. either side of the vehicular carriageway), 1 no. at the south-western corner of the proposed development and 1 no. at the south-eastern corner.

An internal footpath of typical ca. 2.75 metres width (with localised narrowing noted) will also connect the pedestrian access at the south-western corner of the site, through the site to Mount Carmel Park and will provide access to the southern side of the development buildings. This footpath will also facilitate access to the site from the vicinity of the existing signalised pedestrian crossing at the

Firhouse Road/ Mount Carmel Park junction. As per the preceding Figure 5.1, a dropped kerb courtesy crossing onto the Mount Carmel Park carriageway (which as per SDCC engagement, the road has been deemed to act as a shared surface), shall also be provided at the north-eastern corner of the site.

Internal pedestrian routes provide access from the development buildings to podium level. It should be noted that the podium level is proposed to accommodate private access only.

Cycling Access Arrangements

Cyclist access to the site is primarily via the main site access junction at the southern boundary of the site which in turn provides access to cycle parking provided within basement level -2, to be accessed to the east of the barber unit to the south of the site via a bicycle lift, with the vehicular access ramp utilised as a backup in instances where the lift is out of service.

In addition, cyclists can also access the site via the pedestrian access points which provide convenient access to the numerous short-stay cycle parking stands provided throughout the site.

Vehicular Site Access/ Egress Arrangements

Vehicular access/ egress to the proposed development will be from Firhouse Road via the existing site access junction. This junction will be subject to minor modifications such as decreasing the corner radii to 4.0 metres and decreasing the access width to 5.5 metres in order to ensure its suitability for the site and its compliance with *DMURS*. Resulting from the Stage 1 and 2 Road Safety Audit (RSA) carried out during the SHD application process for the proposed development, a bevelled kerb is also proposed on the southern side of Firhouse Road (see Appendix G for further details). Pedestrian crossing facilities in the form of dropped kerbs and tactile paving will also be implemented at the junction and the existing cycle lane shall continue to operate on the adjoining Firhouse Road across the junction as an advisory cycle lane. It should be noted that the site access junction shall continue to operate as a stop-controlled junction.

The access junction will lead to an internal site access road from which a delivery/ refuse vehicle set-down bay at surface level will be accessible, as will access to the proposed vehicular ramp to basement level.

Visibility splays at the new junction will accord with *DMURS*, with in excess of 49 metres of sightlines provided in each direction along Firhouse Road, measured 2.4 metres from the edge of the carriageway along the centre of the site access. A to-scale visibility splay drawing has been produced and is included in Appendix C of this document.

As per pre-planning feedback provided by SDCC during the SHD application process, the need for a right turning pocket for vehicles entering the site from Firhouse Road was investigated. An assessment of the quantum of trips generated by existing on-site land uses, namely the existing ca. 580 sqm public

house, and proposed on-site land uses, namely the then proposed 100 no. apartment units, a creche, a café and a GP's surgery/ dental practice was undertaken using the TRICS database and the outputs were compared. It should be noted that the existing and proposed commercial units and office space within the site were not included within this assessment as they are assumed to continue to generate a comparable number of trips in the development Year of Opening as they have done previously. It should also be noted that this assessment has been carried out for the PM peak hour only as this the period in which the greatest amount of traffic would access the proposed development site from Firhouse Road (based on both its current and proposed land uses). The output of this analysis is shown in Table 5.1 that follows.

Table 5.1 Existing and Proposed PM Peak Hour Right-Turning Arrivals to Site

	Existing	Proposed
Total Arrivals	16	24
No. of Right-Turning Arrivals	10	15
Difference in No. of Right-Turning Arrivals	**N/A**	**+5**

As set out in Table 5.1 above, the proposed development site is projected to generate 5 no. more right turning vehicles into the site during the PM peak hour period than the site does under its current land use, i.e. as a public house. Under the site's current land use, an average of 1 no. vehicle would turn right into the site every 6 minutes. In comparison, upon implementation of the proposed development, an average of 1 no. vehicle would turn right into the site approximately every 4 minutes. Due to this minor increase in the number of right-turning vehicles, it is deemed unnecessary to implement a right-turning pocket in order to accommodate the proposed development. The current proposed development (83 no. apartment units) is noted to be smaller than the 100 no. unit development previously considered, and the previous analysis and related conclusions are therefore considered robust.

Proposed Old Bawn to Ballyboden Active Travel Scheme

As noted in Section 2.3, following a meeting with the Land Use Planning and Transportation Department within SDCC on the 04 August 2023, it was advised that the Old Bawn to Ballyboden Active Travel Scheme will pass in front of the application site, along the R114 Firhouse Road.

Subsequent design discussions between SDCC's Land Use and Transportation Department and Transport Insights took place to ensure that the Old Bawn to Ballyboden Active Travel Scheme is optimally integrated with the current proposed LRD layout.

Internal Site Layout

The proposed site consists of a mixed-use residential and commercial building, with the commercial units located in each of the blocks. The site also features a central courtyard (at podium level), pedestrian footways, refuse and delivery set-down area, public spaces and short-stay cycle parking facilities located within the southern portion of the development and at the northern end of the development adjacent to the proposed creche.

Stage 1 & 2 Road Safety Audit

As per pre-planning feedback provided by SDCC during the SHD application process, a Road Safety Audit (RSA) was required to be completed in relation to the proposed development. A combined Stage 1 & 2 RSA of the updated site layout plan, as per *TII Publication TII GE-STY-01024,* was completed by a certified independent auditor for the proposed development scheme. Two items were identified, with the recommendations agreed upon by Transport Insights as per the Audit Feedback Form, with relevant changes to be incorporated into the development layout at the detailed design stage following a grant of permission on the application from SDCC. The RSA principally focused on the application site's access arrangements and interface with adjoining public roads. As neither have changed from the granted scheme, the Audit's findings are considered directly relevant to the current application.

The full RSA Report is contained within Appendix G to this Report.

5.4 Car Parking

A new 2-storey basement car park shall be provided beneath the proposed development site, having a total of 63 no. car parking bays across 3 no. levels, comprising the following:

Surface Level 00 – Residential and Commercial Car Parking

- 1 no. standard residential car parking bay, measuring 2.4 metres * 4.8 metres.
- 1 no. car-sharing residential car parking bay, measuring 2.4 metres * 4.8 metres.
- 11 no. standard commercial car parking bays, measuring 2.4 metres * 4.8 metres.
- 2 no. accessible EV car parking bay, measuring 2.5 metres * 4.8 metres, with a 1.2 metres buffer provided either side and to the rear of the bay. These bays are to be dual use for both commercial and residential needs.

As per above, a total of 15 no. car parking spaces are provided at Level 00, of which 2 no. are dual use for both residential and commercial uses, depending on the time of day.

Basement Level B01 – Residential Car Parking

- 19 no. standard residential car parking bays, measuring 2.4 metres * 4.8 metres.
- 1 no. accessible residential car parking bay, measuring 2.5 metres * 4.8 metres, with a 1.2 metres buffer provided either side and to the rear of the bay.

A total of 20 no. car parking spaces are provided in Level B01.

Basement Level B02 – Residential Only Car Parking

- 28 no. standard residential car parking bays, measuring 2.4 metres * 4.8 metres.

20% of car parking spaces across levels (i.e. 13 no. spaces) shall be equipped to allow for charging of electric vehicles on the development Day of Opening, with 100% of spaces being capable of being upgraded to include electric vehicle charging points as demand for them increase. 5 no. motorcycle parking spaces are also provided within the basement car park across Levels B01 and B02.

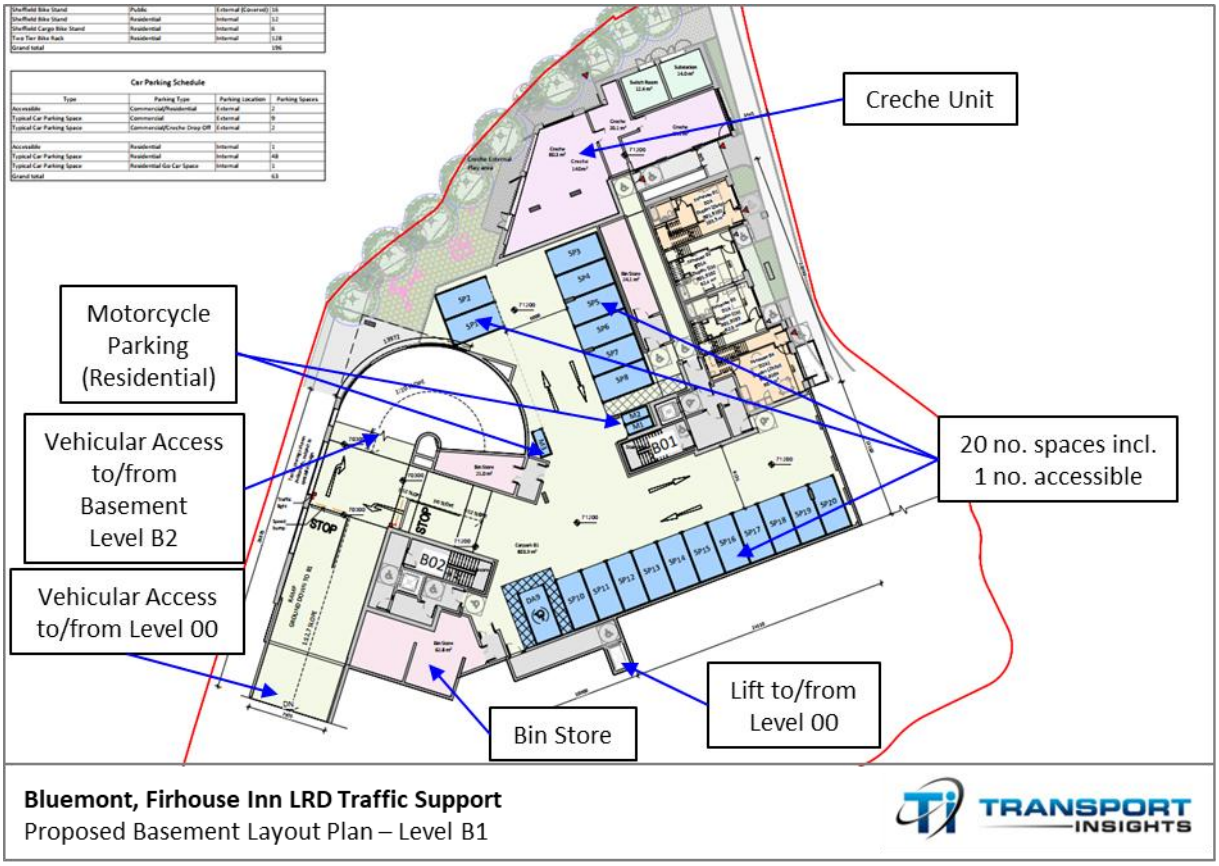
The quantum of residential car parking proposed, representing a ratio of ca. 0.63 bays per apartment (which is noted to be the same residential parking ratio as per the granted LRD24A/0001 by SDCC), is noted to be below *South Dublin County Development Plan 2022-2028* maximum standards of 0.75 car parking bay per 1-bed unit, 1 car parking bay per 2-bed unit and 1.25 bays per 3-bed unit. However, due to the site's favourable accessibility characteristics, including high frequency bus services (as detailed in Section 3.5 of this Report), and within a range of employment, retail and amenity opportunities within its walking and cycling catchments, the proposed car parking provision is considered appropriate. A further assessment of the appropriateness of the proposed car parking provision is provided below.

Access and Layout Arrangements for Basement Car Park

Access to the basement car parking shall be via a dedicated access ramp used by vehicles while cyclists will have a separate primary access via a via a bicycle lift from surface level to basement level B2. The vehicular ramp has been designed in accordance with *Car Park Design* as set out within Section 2.2 of this Report. The proposed B1 and B2 basement layout are shown at the following Figures 5.2 and 5.3 (both overleaf).

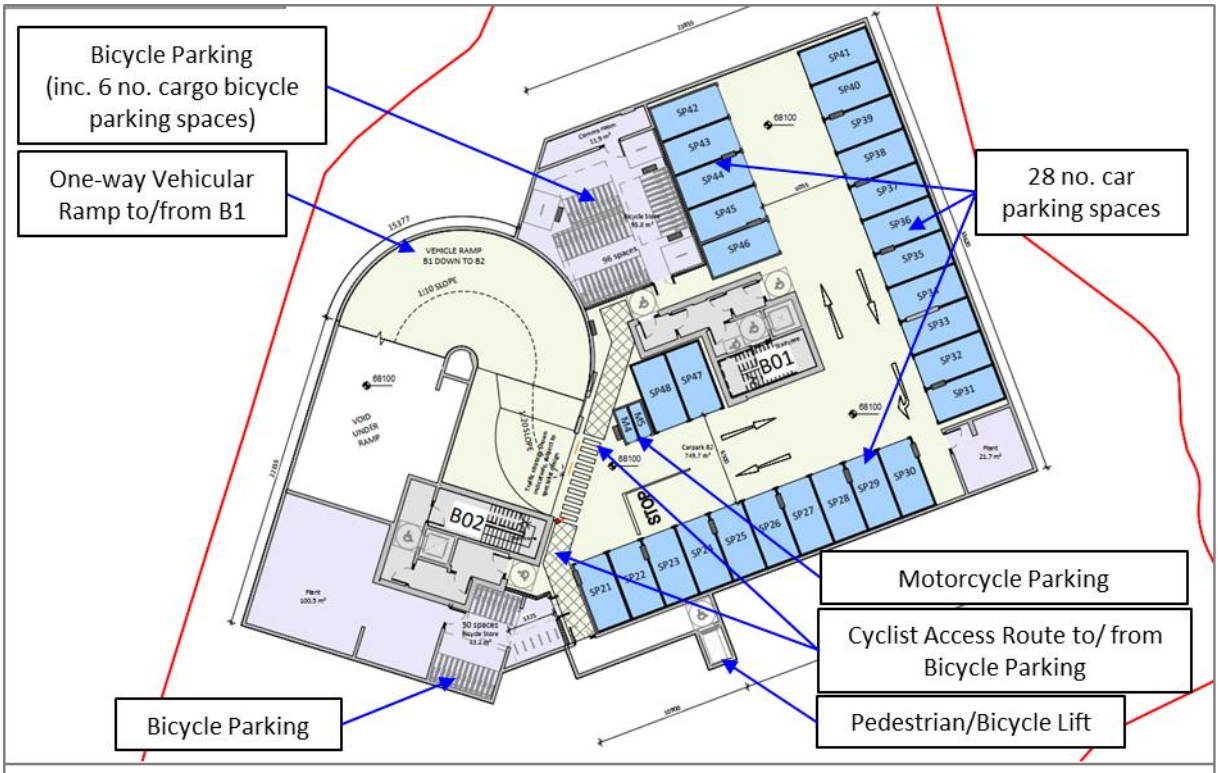
Aisles within the basement measure 6.0 metres minimum in width which is sufficient to accommodate traffic circulation and access/ egress to/ from perpendicular car parking bays within the car park.

Figure 5.2 Proposed Basement Layout – Level B1*



Bluemont, Firhouse Inn LRD Traffic Support
Proposed Basement Layout Plan – Level B1

Figure 5.3 Proposed Basement Layout – Level B2**



Bluemont, Firhouse Inn LRD Traffic Support
Proposed Basement Layout Plan – Level B2

*Image courtesy of O'Mahoney Pike (Drawing Reference: 20022B-OMP-ZZ-B1-DR-A-1099) with supplemental annotation by Transport Insights.

**Image courtesy of O'Mahoney Pike (Drawing Reference: 20022A-OMP-ZZ-B2-DR-A-1098) with supplemental annotation by Transport Insights. A to-scale architectural version of the preceding Figure 5.3 is included within the overall planning pack.

To-scale architectural version of the preceding Figures 5.2 and 5.3 are included within the overall planning pack.

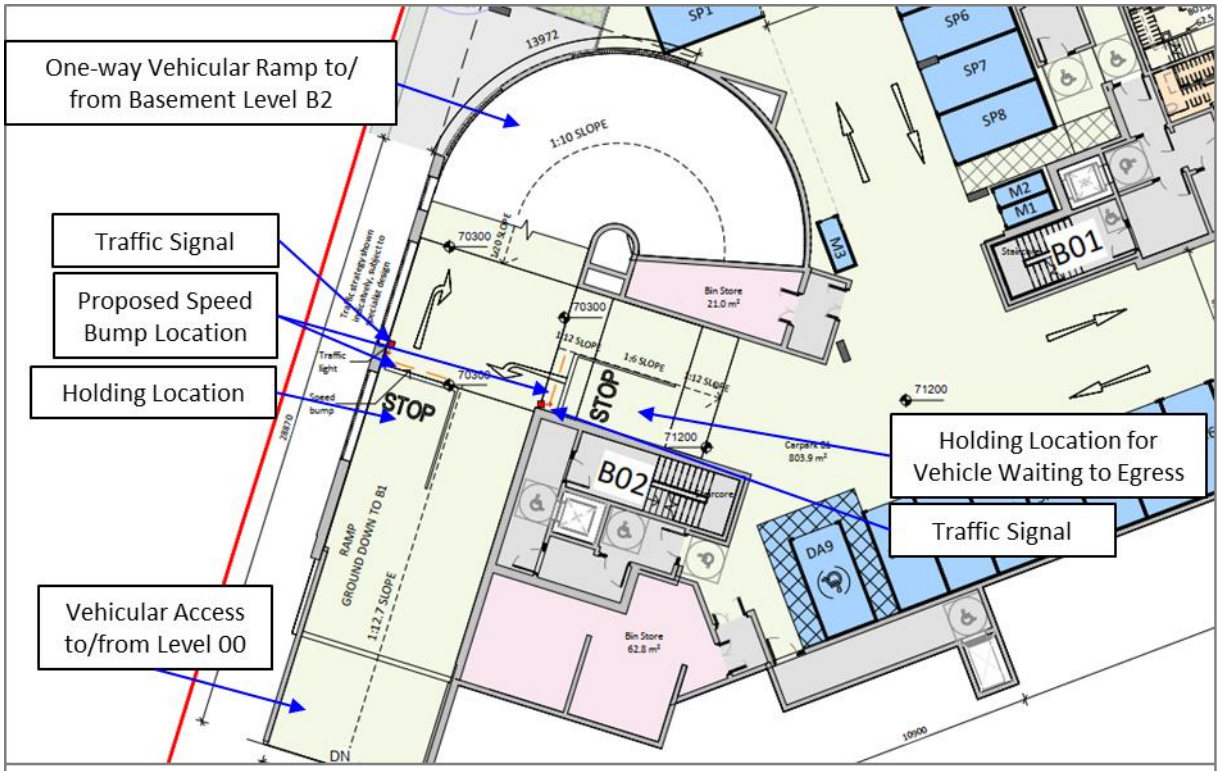
Internal Vehicular Ramps Characteristics

The vehicular access ramp will measure ca. 6.1 metres width at surface level (00) upon entry to the building, with the ramp widening to a width of ca. 7.35 metres width between level 00 and B1. The ramp width will widen slightly to ca. 7.7 metres width along the higher section of the ramp between level B1 and B2, however due to the constrained site footprint this will narrow to ca. 5.4 metres width toward the bottom of the ramp on approach to level B2. Due to the narrowing of the vehicular ramp between levels B1 and B2, the ramp will only be able to accommodate one-way movements at any given time through that section, with a traffic signal system proposed to manage the movement of vehicles through this section. An overview of this traffic signal system is provided below.

Internal Traffic Signal System – Overview

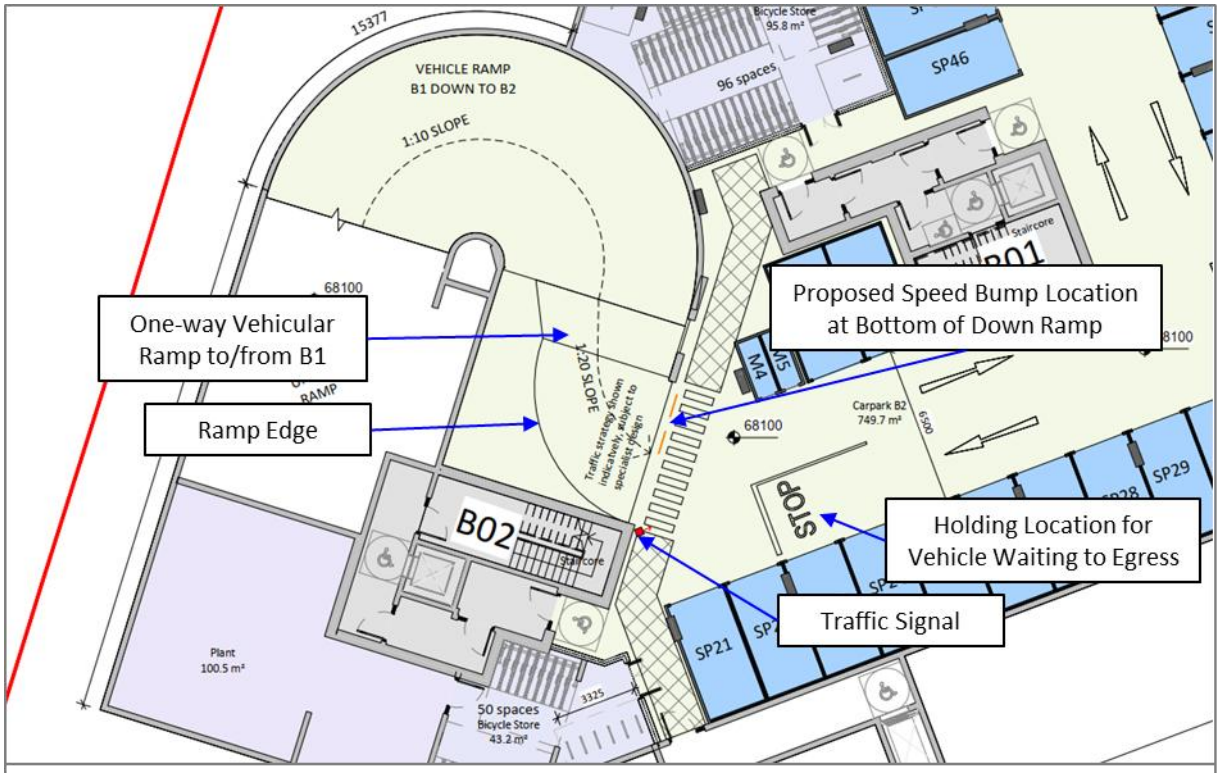
As can be seen from Figures 5.4 and 5.5 (overleaf), there shall be holding areas both on level B1 and B2, with vehicles to stop and wait while the traffic signal displays a red light. Vehicles accessing the basement car park from the surface level and egressing from B1 to surface shall be given default green priority over egressing vehicles from B2.

Figure 5.4 Proposed Traffic Light System – Level B1



Bluemont, Firhouse Inn LRD Traffic Support
Proposed Basement Layout Plan – Level B1 Traffic Signal System

Figure 5.5 Proposed Traffic Light System – Level B2



Bluemont, Firhouse Inn LRD Traffic Support
Proposed Basement Layout Plan – Level B2 Traffic Signal System

Figure 5.6 Internal Traffic Light System – Proposed Sequencing

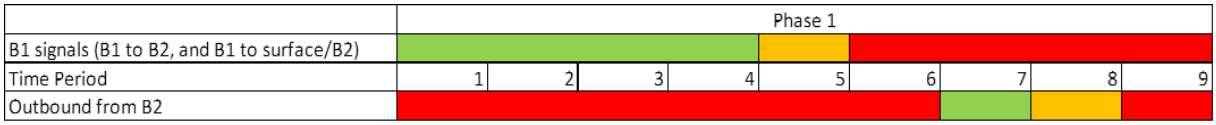


Figure 5.6 above details the proposed signal phasing arrangements which shall control inbound and outbound traffic to the site, described below:

- the default inbound from surface to B1/B2 and egress from B1 to surface/B2 are green, and default egress from B2 is red (time period 1-4);
- when a vehicle wishes to exit from B2, its presence is detected by a sensor (inductive loop or similar) and the inbound signals will turn amber (time period 5);
- both signals on B1 change to red, outbound signal from B2 remains red (time period 6);
- both signals on B1 remain red, outbound signal from B2 changes to green – egressing vehicle can exit via the ramp to B1 and on to surface level (time period 7);
- assuming no more egressing vehicles are detected to be exiting from B2, both signals on B1 remain red, outbound signal from B2 changes to amber (time period 8);
- both signals on B1 remain red, outbound from B2 changes to red (time period 9); and
- cycle resumes with signals on B1 returning to green, and outbound from B2 staying on red as the default setting until the sequence is activated again by a vehicle egressing from B2.

As noted the default setting will be green for inbound from surface to B1/B2 and egress from B1 to surface/B2. In instances where more than one vehicle will be exiting the car park at once, additional green time will be allocated to the outbound signal stage (period 7). The system shall also incorporate a means to detect cyclists should the ramp be required as a secondary means of access should the bicycle lift be out of order.

The above proposed traffic signal phasing arrangements will need to be reviewed and elaborated upon by an appropriate signal system provider/ contractor.

Appropriateness of Development Car Parking Provision – CSO Data

A Central Statistics Office (CSO) Census 2016 Small Area Population Statistics data analysis has been undertaken to inform the proposed development's car parking provision. It is noted that at the time of initial drafting of this Report equivalent data from Census 2022 was unavailable. The analysis has involved selecting small areas within Dublin City and County, where residential apartments form a dominating proportion (at least 80%) of the overall housing stock and identifying the average car ownership level among resident households. In doing so, the central area delineated by the Royal Canal in the north and the Grand Canal in the south was deemed not representative for the application site and has therefore been excluded.

The analysis has revealed that within the study area comprising small areas with at least 80% of apartments among the overall housing stock, located within outer suburbs of Dublin City and the entirety of Counties Fingal, South Dublin and Dún Laoghaire-Rathdown, an average of 34% of privately rented apartment households outside of Dublin City Centre (Canal Cordon) do not own a car.

Based on the above considerations, it appears that ca. 34% of residential units within the development i.e. 28 no. units would not own a car, while the remaining 66% of residential units (55 no. units) may require one. As part of the development, it is proposed to provide 52 no. residential car parking spaces (including 2 no. dual use spaces). In order to address any shortfall with regards to the mobility requirements of future residents, an integrated package of measures have been developed and are set out within the Framework Residential Travel Plan (Section 8). This includes measures aimed at reducing car ownership and use among the proposed development's residents and visitors and measures to increase the uptake it active travel modes, particularly cycling. A Car Parking Strategy has also been developed, and this is set out in Section 9.

Furthermore, the proposed quantum of car parking provision has been considered appropriate in the context of the following:

- the site's public transport accessibility including bus routes S6, F1 and 65b on the adjoining Firhouse Road and Ballycullen Road, and proposals to enhance bus infrastructure and services at a local and city-wide level contained within the BusConnects programme (see Section 2.3);
- the range of destinations reachable within a convenient cycle commute, including Dublin City Centre, Docklands, Sandyford Business Park, industrial estates such as Cookstown, Hibernian, Ballymount, John F. Kennedy and Robinhood, TU Tallaght Campus, etc (see cycle travel time isochrone map in Figure 3.5); and
- immediate employment opportunities within walking distance of the site Tallaght Town Centre, TU Tallaght Campus, Cookstown Industrial Estate, Broomhill Industrial Estate, etc. (see walk travel time isochrone map in Figure 3.4).

5.5 Cycle Parking

It is proposed to provide a total of 196 no. cycle parking spaces as part of the development for both residential and commercial land uses. Along with proposed cycle parking spaces, 5 no. motorcycle parking spaces are proposed across basement levels B1 and B2. Cycle parking facilities will be provided in the form of 146 no. long-stay cycle parking spaces within basement level B2 which will accommodate both residential and staff cycle parking needs. A further 50 no. short-stay cycle parking spaces (including 10 no. cargo/large bicycle parking spaces) are proposed at surface level.

Cycle parking provision is in accordance with the *South Dublin County Development Plan 2022-2028* – see Section 2.4 of this Report for further details. It is noted that the provision of 196 no. cycle parking spaces is as per requirements of the *Sustainable Urban Housing: Design Standards for New Apartments, Guidelines for Planning Authorities* (see Section 2.2 of this Report for further details) to accommodate the residential portion of development alone. It is also noted that the qualitative specification of facilities provided within the proposed development accords with its requirements in the following key respects:

- ***Location***: Cycle parking has been provided at a location which is conveniently accessible. The cycle parking within the development is accessed via a dedicated cyclist lift.
- ***Basement level cycle parking***: There are 146 no. cycle parking spaces within basement level B2, comprised of 128 no. 2-tier bicycle rack spaces across 2 no. areas, 12 no. regular Sheffield stand spaces, and 6 no. cargo/large bicycle parking spaces.
- ***Ground level visitor cycle parking***: The 50 no. cycle parking spaces provided at surface level, comprised of 12 no. regular Sheffield stands (24 no. spaces), 8 no. covered cycle parking stands (16 no. spaces), as well as 5 no. cargo/large bicycle parking stands (10 no. spaces), all of which offer high quality attractive facilities for visitors to the development.

5.6 Servicing, Deliveries, and Emergency Access

Refuse Collection and Deliveries

Refuse and delivery vehicles will access the site via the main site access on Firhouse and make use of a servicing area proposed at surface level. This area has been designed to accommodate a large refuse vehicle and also includes space for the marshalling of bins.

Refuse from both the commercial and residential waste stores will be brought to this area and emptied into the bin lorry. The refuse lorry will then egress the site via the main site access. A further bin store will be located adjacent to the creche, and refuse will be collected on Mount Carmel Park while residential dwellings within Mount Carmel Park are also being serviced. Deliveries associated with the commercial and residential units shall be undertaken from this servicing area.

An AutoTrack analysis of the proposed development has been carried out for a 10.2-metre-long refuse lorry accessing, maneuvering within and egressing the site, and is presented in Appendix D.

Emergency Access

Emergency access will be via the main site access junction on Firhouse Road. From this location, the south-western and southern sides of the development buildings will be accessible. The eastern development building is also accessible to emergency vehicles along the full length of Mount Carmel Park. As outlined above, the proposed development has been assessed by means of an AutoTrack

analysis and, as per the drawing included in Appendix D, is accessible for a 10.2-metre-long refuse lorry and is therefore also deemed to be accessible for a high-reach fire tender.

6. DMURS Compliance Statement

6.1 Introduction

This section of the Report contains a statement that the proposed development is consistent with the *Design Manual for Urban Roads and Streets* (*DMURS*). Compliance of key roads related aspects of the proposed development's layout with the principles of *DMURS* is set out hereunder.

6.2 Carriageway Widths

The main vehicular carriageway width within the development is 5.5 metres wide (although slightly wider at the access to the basement car park). This represents the standard carriageway width for local streets, as per *DMURS* Section 4.4.1.

6.3 Corner Radii

Corner radii at the proposed main site access junction from Firhouse Road are proposed to be 4.0 metres which is compliant with *DMURS* Section 4.4.3.

6.4 Pedestrian Facilities

Proposed pedestrian footpaths are on Mount Carmel Park and Firhouse Road measure 2.0 metres wide. The primary pedestrian route through the site is proposed to be typically ca. 2.75 metres wide (with localised narrowing) in order to accommodate primary pedestrian desire lines through the site, access to the bus stop to the immediate southwest of the site and accommodate areas of pedestrian activity.

Footpaths measuring 1.8 metres are provided either side of the vehicular carriageway at the vehicular access to the site. It is noted that these pedestrian footpaths are not located on a frequently used pedestrian desire lines, with the majority of pedestrians entering the site from the Firhouse Road at the south-western corner of the proposed development site and from the corner of Mount Carmel Park and Firhouse Road at the south-eastern corner of the site which are accommodated by a ca. 2.75 metres wide pedestrian provision described above. Therefore, footpath widths of 1.8 metres at this location, which is the minimum space required for two wheelchairs to pass comfortably in areas of low pedestrian demand, as per *DMURS* Section 4.3.1, are deemed to be appropriate.

A pedestrian priority crossing is proposed at the site access junction which will provide a vertical deflection in order to slow vehicles entering the site and provide a continuation of the footpath on Firhouse Road across the site access junction to ensure pedestrian priority and comfort. A further crossing point is proposed within the development where the footpath to the immediate south of the

development buildings crosses the vehicular carriageway in the vicinity of the access to the proposed basement level car park. This crossing is proposed as a continuation of the pedestrian footpath and shall operate as a courtesy crossing. An additional internal courtesy crossing shall be provided across the junction of the eastern internal servicing/parking aisle. Furthermore, a dropped kerb courtesy crossing point is provided on the proposed new footpath on the western Mount Carmel Park carriageway edge, to the northeast of the site, allowing for suitable access and crossing of Mount Carmel Park by pedestrians (which has been noted by SDCC to act as a shared space).

6.5 Surface Level Refuse/ Delivery Set-down

An area is proposed at surface level to the east of the main internal access road which shall accommodate provide off-street set-down of refuse vehicles servicing the development and for the accommodation of delivery vehicles (serving both the residential and commercial units) to the site. This area will also double up as the parking aisle for the 13 no. surface level commercial parking bays.

6.6 Materials and Finishes

Visually contrasting materials and finishes are proposed to be used within the site in order to delineate shared surface areas, pedestrian footpaths and vehicular carriageways, and in doing so to improve legibility, calm vehicular traffic and reduce the need for line markings and signage etc.

7. Traffic Impact Analysis

7.1 Introduction

This section of the TTA Report sets out the approach pursued in assessing the proposed development's traffic impacts and its findings, specifically identifying the extent of additional traffic the proposed development will add to the adjoining road network.

7.2 Analysis Scope, Assessment Years and Time Periods, and Assessment Scenarios

Analysis Scope

Analysis has focused on assessing the impact of the development proposal on the 4-arm Firhouse Road/ Ballycullen Road/ Mount Carmel Park signalised junction, the location of which is illustrated in in Figure 4.1 of this Report. The impact of the proposed development on the site access junction has also been assessed. Traffic through that junction has been estimated using data from the survey of the Firhouse Road/ Ballycullen Road/ Mount Carmel Park junction.

Assessment Years and Time Periods

As recommended by TII's *TTA Guidelines*, the following assessment years are considered, namely: base year (2023), year of opening (YoO) which is assumed to be 2027; a future year (YoO+5), i.e. 2032, and a horizon year (YoO+15), i.e. 2042. The assessment will focus on the critical time periods for the local road network i.e. the AM peak hour (08:00-08:59hrs) and the PM peak hour (17:15hrs-18:14hrs) for assessing the proposed development's traffic impact.

Assessment Scenarios

The following scenarios have been developed in assessing the proposed development's traffic impacts:

- **Do-Nothing Scenario**: To assess the traffic impact of the development proposals on the local road network, it is first necessary to establish background traffic conditions without the proposed development, also referred to as the 'do-nothing' scenario. Such background traffic flows have been determined from the traffic survey detailed in Section 4 of this Report.
- **Do-Something Scenario**: The with-development or 'do-something' scenario represents traffic conditions following completion of the proposed development, i.e. do-nothing plus additional traffic generated by the proposed development.

The traffic impact of the proposed development is determined by assessing the relative changes between traffic flows in do-nothing versus do-something scenarios, with such impacts determined within the remainder of this section of the Report.

It should be noted that the existing development site incorporates a public house, an off-license, office space, a bookmaker and a barbershop. It should be noted that the public house and off-license have

permanently closed since 2020. While such land uses have had an historic presence within the site, traffic associated with them has not been included within the baseline scenario, and as a result, the impact analysis represents a robust assessment.

7.3 Do-Nothing Traffic Growth Forecasting

In order to understand the impact of the development proposals on the local road network, it is first necessary to understand the without development or do-nothing scenario for the base year (2023), the YoO (Year of Opening) (2027), YoO+5 (2032) and YoO+15 (2042). Traffic levels in the do-nothing scenario comprise forecast background traffic flows, which are assumed to grow organically over the assessment period.

Forecast Background Traffic Flows

Existing traffic flows on the surrounding road network as determined via surveys undertaken in 2023 have been adjusted through application of appropriate growth factors to determine YoO and YoO+15 traffic flows. For this assessment, growth factors have been determined from the TII's *Project Appraisal Guidelines for National Roads Unit 5.3 – Travel Demand Projection*s, October 2021. Information within these guidelines is provided for 'Dublin Metropolitan' from 2016-2030 and from 2030-2040 for low, central and high sensitivity growth scenarios.

This information is provided for light vehicles (LVs) and heavy vehicles (HVs) and was used to determine the future year do-nothing traffic flows. Central growth factors were assumed for this assessment to determine future year background traffic flows on the surrounding road network. These factors are set out in Table 7.1, which follows.

Table 7.1 TII Traffic Growth Factors (Central) – Dublin Metropolitan

Year	Annual Growth Factor – LV	Annual Growth Factor – HV
2016-2030	1.0162	1.0295
2030-2040	1.0051	1.0136

Based on the TII central growth factors in the preceding Table 7.1, 2023 traffic volumes have been factored to 2027, 2032 and 2042 levels, to determine the assumed year of opening and horizon year traffic volumes, without the proposed development in place. Table 7.2 (overleaf) provides an overview of do-nothing base year, YoO, YoO+5 and YoO+15 AM and PM peak hour traffic volumes.

Table 7.2 Do Nothing Scenario – Existing (Base) and Forecast Background Approach Flows, All Arms, AM and PM Peak Periods

	Junction	Peak Period	Approach Flows
Base (2023)	3-arm Site Access Firhouse Road Junction	**AM**	911
		PM	853
	4-arm Firhouse Road/ Ballycullen Road/ Mount Carmel Park Signalised Junction	**AM**	1,594
		PM	1,425
YoO (2027)	3-arm Site Access Firhouse Road Junction	**AM**	972
		PM	910
	4-arm Firhouse Road/ Ballycullen Road/ Mount Carmel Park Signalised Junction	**AM**	1,701
		PM	1,521
(Yoo+5) 2032	3-arm Site Access Firhouse Road Junction	**AM**	1,032
		PM	966
	4-arm Firhouse Road/ Ballycullen Road/ Mount Carmel Park Signalised Junction	**AM**	1,806
		PM	1,614
YoO+15 (2042)	3-arm Site Access Firhouse Road Junction	**AM**	1,087
		PM	1,017
	4-arm Firhouse Road/ Ballycullen Road/ Mount Carmel Park Signalised Junction	**AM**	1,901
		PM	1,700

Committed Developments

A review of committed developments (developments with planning permission, but not yet delivered) in the vicinity of the development site has not identified any of sufficient proximity/ scale to be deemed relevant to this assessment.

7.4 Do-Something Traffic Generation

The do-something or with proposed development scenario, represents the summation of do-nothing future year background traffic and traffic associated with the proposed development.

Traffic Generation Analysis

Data from the industry standard Trip Rate Information Computer System (TRICS) database has been utilised to calculate the quantum of vehicle trips likely to be generated by a development of the scale and type proposed. Trip generation data was determined for the following proposed on-site land uses:

- 'residential – flats privately owned';

- 'nursery – education' (i.e. crèche);
- 'food & drink – café';
- 'health – GP Surgeries'; and
- 'health – Dental Surgery'.

Given the site's location, developments in 'suburban/edge of town' locations were selected with data analysed for the morning and evening peak periods in order to determine the maximum impact of the proposed development on the local road network. It should be noted that the 2 no. commercial units (the barber and bookmakers) within the western portion of the site are to be demolished and reconstructed and that the traffic generated by commercial units at this location would have been captured in the 2023 traffic surveys. Trips associated with previously present office space within the site (solicitor's office) would also have been captured. As such, separate vehicle trip generation for these land uses has not been undertaken. Trip rates for the AM and PM peak hour hours are shown in Table 7.3, which follows, with full TRICS outputs included in Appendix E.

Table 7.3 TRICS Unit Trip Rates

TRICS Land Use Category	Rate	AM Peak (08:15-09:14Hrs)		PM Peak (17:45-18:44hrs)	
		Arrivals	Departures	Arrivals	Departures
Residential – flats privately owned	per dwelling	0.079	0.223	0.184	0.102
Education – Nursery	per 100 sqm	3.907	3.119	2.468	3.239
Food & Drink – Cafe	No. of Employees	0.148	0.074	0.074	0.111
Health – GP / Dental*	per 100 sqm	2.3995	0.8325	0.772	1.769

**Calculated as the average trip rate resulting from a GP surgery and a dental practice per 100 sqm GFA*

Applying the trips rates shown in Table 7.3 above to the schedule of accommodation, the quantum of trips generated by the development during the AM and PM peak hours has been derived. The result of this exercise is shown in the following Table 7.4.

Table 7.4 Development Trip Generation Outputs

Proposed Land Use	Quantum	AM Peak		PM Peak	
		Arrivals	Departures	Arrivals	Departures
Apartments	83 units	7	19	16	9
Crèche	140 sqm	6	5	4	5

Proposed Land Use	Quantum	AM Peak		PM Peak	
		Arrivals	Departures	Arrivals	Departures
Cafe	3 no. employees (estimated)	1	1	1	1
GP / Dental Surgery	112 sqm	3	1	1	2
Total		17	26	22	17
One-Way Trips		**43**		**39**	

As can be seen from the preceding Table 7.4, the traffic generation estimates indicate that the development proposal would generate 43 no. one-way vehicle trips during the weekday AM peak hour, and 39 no. one-way vehicle trips during the weekday PM peak hour.

Traffic Assignment

For the purposes of this analysis, traffic generated by the proposed development site has been assigned onto the local road network based on the existing traffic flows identified by the traffic surveys carried out. The AM peak sees development traffic distributed onto the local road network at the site access junction in a ratio of 38:62 with 38% of traffic exiting the development heading west from the site towards Old Bawn and 62% of traffic exiting the site heading east from the site towards the 4-arm Firhouse Road/ Ballycullen Road/ Mount Carmel Park signalised junction. For arrival trips to the site, 62% are assumed to arrive from the west, and the remaining 38% from the east.

Similarly, the PM peak sees development traffic distributed onto the local road network at the site access junction in a ratio of 65:35 with 65% of traffic exiting the site heading west from the site towards Old Bawn and 35% of traffic exiting the site heading east from the site towards the 4-arm Firhouse Road/ Ballycullen Road/ Mount Carmel Park signalised junction. For arrival trips to the site, 65% are assumed to travel from the east, and the remaining 35% from the west.

In both the AM and PM peak hours, development traffic is then distributed through the 4-arm Firhouse Road/ Ballycullen Road/ Mount Carmel Park signalised junction based on the proportions of traffic identified by the traffic surveys during these periods. The distribution of traffic from and to the development and through the junction is illustrated graphically in Appendix F for the AM and PM peak hour periods.

Do-Something Traffic Flows

The following Table 7.5 provides an overview of year of opening AM (08:00-08:59hrs) and PM (17:15-18:14hrs) peak hour do-something traffic flows through analysed junctions, i.e. forecast traffic as per Table 7.2 plus traffic generated by the proposed development as per Table 7.4.

Table 7.5 Do-Something Two-Way Traffic, AM and PM Peak Hours

Year	Junction	Peak Period	Do-nothing Flows	Development Flows	Do-Something Flows	% Impact
YoO (2027)	3-arm Site Access Firhouse Road Junction	**AM**	972	43	1,015	4.4%
		PM	910	39	949	4.3%
	4-arm Firhouse Road/ Ballycullen Road/ Mount Carmel Park Signalised Junction	**AM**	1,701	23	1,724	1.3%
		PM	1,521	20	1,541	1.3%
(Yoo+5) 2032	3-arm Site Access Firhouse Road Junction	**AM**	1,032	43	1,075	4.2%
		PM	966	39	1,005	4.0%
	4-arm Firhouse Road/ Ballycullen Road/ Mount Carmel Park Signalised Junction	**AM**	1,806	23	1,828	1.2%
		PM	1,614	20	1,635	1.3%
YoO+15 (2042)	3-arm Site Access Firhouse Road Junction	**AM**	1,087	43	1,130	4.0%
		PM	1,017	39	1,056	3.8%
	4-arm Firhouse Road/ Ballycullen Road/ Mount Carmel Park Signalised Junction	**AM**	1,901	23	1,924	1.2%
		PM	1,700	20	1,720	1.2%

As it can be seen from Table 7.5 above, the percentage change in traffic through the assessed junctions due to traffic generated by the proposed development during both peak hours in the development's assumed year of opening is projected to result in:

- an increase of 4.4% and 4.3% through the 3-arm Site Access/ Firhouse Road junction in the AM and PM peak hours respectively in the Year of Opening; and
- an increase of 1.3% through the 4-arm Firhouse Road/ Ballycullen Road/ Mount Carmel Park signalised junction in both the AM and PM peak hours respectively in the Year of Opening.

Due to the low additional traffic generated at both junctions assessed, i.e. no more than 5% additional traffic in any assessment year, more detailed analysis in the form of traffic modelling has not been deemed necessary in support of the proposed development.

8. Framework Residential Travel Plan

8.1 Introduction

This section of the Report sets out the objectives, mode share targets and a coherent set of Action Plan measures which together comprise the Residential Travel Plan (RTP). These are accompanied by a Monitoring and Management Strategy, to ensure the Action Plan remains relevant in meeting the future needs of residents of the proposed development. It should be noted that measures within this Travel Plan are also applied in order facilitate and promote sustainable travel among staff of the creche and 5 no. small commercial units.

8.2 Travel Plan Status

As the site is not currently developed, the RTP has been developed in 'framework' format.

8.3 Reference Guide

To date, no relevant national (Irish) guidance has been published in relation to the development of RTP. Therefore, its development has been guided by best practice as set out within the Transport for London's (UK) *Guidance for Residential Travel Planning*. This guidance document provides a holistic approach to behavioural change within residential settlements by incorporating both the 'hard' engineering measures and the 'soft' marketing and management measures necessary to address the transport needs of new residential developments.

8.4 Objectives

The overarching objectives of the RTP are to:

- promote sustainable travel choices (walking, cycling and public transport); and
- reduce car dependency, car use and car ownership among residents and staff of the development.

8.5 Modal Split Targets

To establish performance indicators for the RTP, modal split targets for the proposed development have been set. Achieving a sustainable modal split for commuting is of key importance, therefore the modal split targets relate to commuting to work and education only. However, the actions (Section 8.7) aim to influence all residents' trip making needs, including recreational, social and retail trips.

The modal split targets have been set based on the site's accessibility characteristics. The modal split characteristics of Small Areas "*Sa2017_267084039*" and "*Sa2017_267086010*", as per Census 2016 (equivalent data from the 2022 Census was not available at the time of initial Report drafting), in which the proposed development site is situated has been deemed to represent an appropriate baseline for establishing modal split targets for the proposed development. As such the following Table 8.1

presents the identified modal split of these small areas (i.e. the baseline), alongside the mode share targets for the proposed development.

Table 8.1 Baseline and Proposed Modal Split Targets

Mode	Walking	Cycling	Public Transport	Motorcycle / Scooter	Car (Driver)	Car (Passenger)	Other*
Baseline	11%	7%	14%	1%	46%	13%	8%
Target	12%	13%	21%	2%	27%	13%	12%

**Other includes: Van, Lorry, Work mainly at/from home, not stated.*

As can be seen in the preceding Table 8.1 approximately 59% of trips to work by residents of these small areas are undertaken by car, of which 46% are as driver and 13% as passenger. A significant share of public transport is noted at 14%, while walking and cycling also play a prominent role, with 11% and 7% modal shares respectively. In summary sustainable modes of travel to work, school or college account for 32% of all commuting trips.

In developing this RTP, it is intended to achieve the following modal split:

- higher public transport modal share (21% vs 14%);
- higher cycling modal share (13% vs 7%); and
- reduction in car driver and passenger modal share (40% vs 59%).

While no specific mode share targets have been set for site's visitors due to the more limited scope to influence their travel behaviour, the site's accessibility by public transport, along with the ample provision of high-quality visitor bicycle parking spaces, are expected to encourage sustainable mode choices. It should also be noted that with the recent advent in remote and 'hybrid' working, it is envisaged that there will be an increase in the number of residents who work from home. This is reflected in the increase in the share of 'Other' set out in Table 8.1 above.

8.6 Existing Public Transport Capacity Analysis

In order to determine whether the above modal splits are achievable in relation to existing public transport (i.e. bus service) provision in the vicinity of the site, an analysis of the capacity of the existing bus services has been undertaken. This analysis is based on the modal splits set out above, the number of residents expected to occupy the proposed development, existing bus service provision and data given with the *NTA's National Household Travel Survey* (*NHTS*) *2017 Final Report* (December 2018).

The following Table 8.2 gives an overview of residential travel demand based on the proposed no. of units within the development, the assumed average occupancy of these units and the average no. of trips per person per day taken within the Greater Dublin Area, as set out within the *NHTS 2017.*

Table 8.2 Daily Residential Public Transport Demand

No. of units proposed	83	Units
Assumed no. of residents per unit	2.7	Persons
Total residents	224.1	Persons
No. trips per person per day within GDA (As per NHTS 2017)	1.87	trips/person/day
Target PT Modal Split (as per Table 8.1 above)	21%	-
Assumed distribution of travel in the direction of demand	80%	-
Total PT trips per day travelling in the direction of demand	**70**	**trips**

Based on the above, it is estimated that 270 no. persons may occupy the residential portion of the site. As much of the development is comprised of 1- and 2-bed units, this is deemed to a conservative estimate. Based on evidence provided within the *NHTS 2017*, it is assumed that each one of these residents will generate 1.87 trips per day, equating to a total daily production of ca. 419 no. trips. Of these 419 no. daily trips, 21% are assumed to travel by public transport, as per the proposed modal splits outlined in Table 8.1. This equates to ca. 88 no. public transport trips per day. It is also conservatively assumed that 80% of public transport resident trips will take place in the direction of peak demand (i.e. in the direction of Dublin City, Dundrum, Sandyford etc. in the AM peak period and from that direction in the PM peak period). This equates to 70 no. public transport trips in the direction of peak demand throughout the day.

Within Table 8.3 (overleaf), the capacity of bus services, namely the F1, 65B and S6, within the immediate vicinity of the site i.e. <150 metres have been calculated. In order to provide a robust assessment, other bus services in the locale, namely the 15, 82, 77A and S8 have been discounted. As set out in this table, based on the capacity of a typical bus operating on these routes and the average weekday capacity of these routes, the average weekday peak bus service capacity has been estimated as 1,283 passengers per hour per direction (pphpd).

Table 8.3 Existing Bus Service Capacity*

Typical Bus (Volvo B5TL (Euro 6)) Capacity	95	Persons
No. of Services in Vicinity of Site (Peak Frequency)	13.5	Services
Average Weekday Peak Bus Service Capacity	1,283	Pphpd

*Existing capacity based upon local services presented Table 3.1 of this Report.

As set out in Table 8.2, 70 public transport trips are estimated to be made in the direction of peak demand per day. Using data included within the *NHTS 2017 Final Report,* the proportion of these trips undertaken during each hour of the day can be estimated. As set out in the following Table 8.4, 08:00-09:00hrs represents the AM peak hour during which 14% of all daily trips are undertaken. Similarly, 17:00-18:00hrs represents the PM peak hour during which 11% of all daily trips are undertaken. The number of resident trips undertaken by public transport in the direction of demand relative to available capacity has been calculated, with the findings presented in the following Table 8.4.

Table 8.4 Existing Bus Service Capacity

Daily No. of Resident Trips From/ To Development	Time of day (Hr Beginning)	% Share of Daily Trips	No. of Resident PT Trips in Direction of Demand	Average Weekday Peak Bus Service Capacity	% New PT Users/ Capacity
70	08:00hrs	14%	10	1,283	**0.8%**
70	17:00hrs	11%	8	1,283	**0.6%**

As set out in Table 8.4 above, 10 no. and 8 no. trips are expected to be undertaken by public transport in the direction of peak demand during the 08:00-09:00hrs and 17:00-18:00hrs respectively. This demand represents 0.8% and 0.6% of the total capacity of weekday peak bus services in the site's immediate vicinity. As such, it is apparent that current public transport capacity is sufficient to accommodate the small additional demand generated by the proposed development.

It should also be noted with further planned improvements in bus services being implemented as part of future phases of the *BusConnects* network redesign of the Dublin Bus network, such as the A3 service which shall run within 150 metres of the application site at a peak frequency of 1 no. service every 12 minutes, and the availability of additional bus services which are outside the immediate vicinity of the site but still within convenient walking distances, public transport capacity will further improve in the short-medium term.

8.7 Key RTP Measures

To achieve the modal split targets, the following measures are aimed at encouraging walking, cycling and using public transport. These measures compliment the proposed bicycle and car parking provision aimed at reducing the car (driver) modal share, and residents' and staff's car ownership needs.

Appointment of a Travel Plan Coordinator

Encouraging a sustainable modal split is an ongoing behavioural change initiative. Therefore, effective management is critical to the implementation and ongoing success of the Travel Plan. A Travel Plan Coordinator (TPC) will be appointed to oversee the ongoing development and implementation of the RTP, including development of mobility related strategies and identification of newly available opportunities for residents and staff as they emerge.

Residential Sales/ Letting Staff Training

Training shall be provided to staff responsible for meeting with prospective residents and letters of commercial property within the proposed development. The training will focus on ensuring all staff are familiar with the objectives of the RTP and are able to communicate both the limited on-site car parking provision and available local sustainable travel opportunities to prospective buyers or tenants.

Sustainable Travel Information Pack

A Sustainable Travel Information Pack will be issued to each apartment and commercial unit upon first occupation. The aim of the Pack is to raise awareness of local amenities around the site and the available sustainable travel options available to get there. The Pack will include the following promotional materials and leaflets:

- overview of benefits of sustainable travel to individuals, the community and the environment;
- information on available sustainable travel schemes and pricing, including Leap Card (incl. TaxSaver offer), Bike to Work scheme, etc.;
- walking and cycling maps of the site's surroundings, detailing local education, shopping, health, sports, and leisure facilities in addition to public transport stops, and car sharing stations;
- public transport map covering bus services available in site's vicinity, presenting their routes' and typical frequency; and
- contact details of the TPC, to discuss transport or travel problems, or potential new ideas.

Residential Travel Survey

Six months after the development is operational, it is proposed that a travel survey of residents and staff be undertaken to establish the development's baseline modal split and identify measures to

promote travel by sustainable modes. This will allow future modal split targets to be set and actions to be identified to achieve these targets. The survey is also a forum for residents and staff to identify any issues relating to mobility.

Following this, it is envisaged that a travel survey should be carried every two years, enabling changes in travel patterns to be monitored and any issues to be addressed on a regular basis.

8.8 RTP Actions

To assign responsibilities involved in the implementation of the RTP and set out the proposed measures in a systematic manner, the Action Plan is set out in a tabular form and is presented in the following Table 8.2.

Table 8.2 Framework Travel Plan Actions

Action	Why	Who	When	Target: Residents/ Visitors
Coordination				
Appoint a Travel Plan Co-Ordinator (TPC)	To assign responsibility for managing the Travel Plan implementation and ensuring that all actions are completed on time	Bluemont Developments (Firhouse) Ltd	Following planning approval	All
Public Transport				
Promote availability of public transport TaxSaver scheme	To alert residents and staff to possibility and opportunity to engage with their respective employers	TPC	Upon site occupation	Residents, staff
• Sustainable Transport Information Pack to be provided to new residents occupation of apartments to include details of public transport services and stop locations, along with information about the Transport for Ireland journey planner website • Travel information on resident's noticeboard	To inform residents and staff of public transport options and opportunities	TPC	Prior to site occupation	Residents, staff

Action	Why	Who	When	Target: Residents/ Visitors
(Travel Plan Information Board) to include public transport service details and stop locations				
Car Sharing				
Provision of 1 no. car sharing bay within level 00 of the proposed site	• To facilitate travel needs of non-car owning residents	Bluemont Developments (Firhouse) Ltd	Prior to site occupation	Residents, staff, visitors, customers
Review demand for car club and car share spaces	• To ensure provision meets resident demand	TPC	Upon site occupation	Residents & Neighbourhood
Cycling (Hard Measures Promoting Behavioural Change)				
• Provide 146 no. secure cycle parking spaces at basement level (including 6 no. cargo/large bicycle parking spaces) • Provide 50 no. ground-level cycle parking spaces (including 10 no. cargo/large bicycle parking spaces)	• To reduce residents, staff and customer car use and associated car parking demand • To facilitate cycle use	Bluemont Developments (Firhouse) Ltd	Prior to site occupation	Residents, staff, visitors, customers
Cycling (Soft Measures Promoting Behavioural Change)				
Promote availability of Cycle to Work scheme	To alert residents and staff to possibility and opportunity to engage with their respective employers	TPC	Upon site occupation	Residents, staff
• Arrange tours of cycling facilities for new residents and staff • Include information about the on-site cycling facilities in a Sustainable Transport Information Pack • Inform residents and staff of cycle routes	To establish an active cycling culture and raise awareness of in-house cycle facilities to accommodate it	TPC	Upon site occupation	Residents, staff

Action	Why	Who	When	Target: Residents/ Visitors
which may accommodate their travel needs				
Have a bicycle repair kit and pump available for use by residents, staff and visitors	To support cycling	TPC	Upon site occupation	All
Walking				
Promote walking as active travel in the Sustainable Transport Information Pack	To promote fitness, well-being and reduce car dependency	TPC	Upon site occupation	Residents, staff
Taxi				
Include information on local taxi rank facilities and phone numbers for local taxi companies on the residents' and staff noticeboards	To accommodate residents, staff and visitors access requirements	TPC	As relevant in the future	All

8.9 Monitoring and Update Strategy

It is important to monitor and update the RTP to ensure the actions are being implemented and that actions are sustained over time. It also provides an opportunity for the effectiveness of actions to be assessed, and if required, new actions identified. The following steps are recommended to monitor progress:

- Informed by a resident, staff and visitor travel survey, the RTP should be updated within six months of site occupation; and the Action Plan tailored to meet the specific requirements of its residents and visitors.
- A residents, staff and visitors travel survey should be carried out every two years thereafter, forming the baseline from which the RTP's future performance is measured and additional/ amended interventions identified. This information should be disseminated among residents and staff.

- A quarterly review of the actions carried out or due should be undertaken by the TPC. This should take the form of a memo to the development's management company, documenting actions implemented, residents' feedback etc.

Monitoring of bicycle parking facilities should be carried out on a regular basis to determine their level of use and maintenance required.

9. Car Parking Strategy

9.1 Car Parking Strategy's Objectives

The Car Parking Strategy for the proposed development sets out how car parking spaces will be assigned and how the assignment of spaces will be continually managed. While measures and initiatives to provide alternatives to car ownership have been set out within the Framework RTP in Section 8, the proposed car parking allocation rules, monitoring and enforcement protocols are presented below.

9.2 Car Parking Allocation Rules

Residential Car Parking

To enable effective use of the available 52 no. dedicated resident car parking spaces, plus the 2 no. dual use residential/commercial spaces, continuous management of the car park is proposed. This will involve a permit system, with the number of issued permits not exceeding the number of available resident car parking spaces. These permits will be offered by the development's management company to the residents on a first come, first served basis. They will be associated with a specific vehicle rather than an apartment to prevent hoarding of car parking and also to prevent unauthorised sub-letting of car parking spaces.

It is envisaged that initially no more than one car parking permit per household would be issued prior to full occupation of the development. Should take-up be lower than the number of available car parking spaces, additional permits may be offered to the residents, however a limited number of permits will remain unassigned and thus available to new residents moving in after initial occupation of the development, should they wish to avail of a car parking space.

In the case of residents moving out, their car parking permits will return to the development's management company and may be offered first to subsequent new residents, and later to current residents (in line with the preceding rules).

3 no. of the residential car parking spaces are designed such that they wheelchair accessible (including the 2 no. dual use bays at surface level). Should residents with mobility impairments require them they will be assigned accordingly.

Commercial Management Car Parking

A minimum of 1 no. staff car parking space is allocated to serve the car parking needs of the management of the creche and each of the 5 no. small commercial units, equating to 6 no. car parking spaces in total. This measure has been taken to increase the viability of the commercial units. As per the residential car parking spaces, if a commercial unit were to be vacated, the associated car parking

permit will return to the development's management company and may be offered to subsequent occupants of that unit. All other commercial car parking bays shall be allocated for patient/ customer/ visitor uses – see subsequent Section 9.3 for further details.

Dual Use Car Parking Bays

2 no. accessible bays at surface level are assigned for shared use by both residential and commercial (GP/ medical centre) land uses, with use of these bays being consistent with the current *South Dublin Development Plan*. These bays, located at surface level adjacent to the GP/ medical unit would be assigned as follows:

- Weekdays 08:00-18:00hrs – GP/ medical uses; and
- All other times – residential uses, assigned to residents of the proposed development as indicated under the preceding 'Residential Car Parking' heading.

Signage and road markings shall be utilised to clearly communicate the above assignment procedures.

Car Share Bay

1 no. parking bay at surface level shall be assigned to enable potential use at all times by the assigned car share vehicle. Signage and road markings shall be utilised to clearly communicate the intended use of this bay.

9.3 Drop-Off, Pick-Up and Customer and Visitor Car Parking

Drop-off/ and pick-up activities for the creche will be located at surface level. It is proposed to provide 2 no. bays dedicated for drop-off at this location. It is envisaged that these spaces may also be used by other commercial customers/ management/ maintenance staff of the development outside of creche operating hours, with appropriate signage to communicate same.

Customer car parking for customers of the 5 no. small commercial units is also proposed at surface level. With 6 no. of the 13 no. surface level commercial bays to be used by staff, the remaining 7 no. bays (including the 2 no. dual use accessible bays) shall be available for customer use. It is envisaged, due to the nature of these businesses, that occupancy of these spaces will be of short duration and that a provision of 7 no. spaces is adequate. These spaces may also accommodate deliveries by small commercial vehicles from time to time. It should also be noted that 5 no. motorcycle parking spaces will also be provided within the basement car park.

While active travel (i.e. walking and cycling) and public transport are proposed to accommodate the majority of visitor trips to the development, for the small number of visitor trips that may potentially be required to be undertaken by car, customer car parking will double as visitor car parking for the proposed development, with residents being able to book a visitor space with the management

company outside of commercial business hours. It is noted that within the *South Dublin Development Plan 2022-2028* that the parking rates are subject to "*uses for which parking rates can be accumulated*", and that parking rates are subject to "*peak hours of demand and the ability to share spaces between different uses".* In light of these considerations, the above provision, allocation and management arrangements are deemed to be appropriate.

A set-down area is proposed at surface level to accommodate refuse collection activities within the development. This set-down area may also accommodate larger delivery vehicles within the site, should it be necessary.

9.4 Monitoring and Enforcement

The management company will manage the ongoing allocation of car parking and enforce unauthorised car parking activities within the development. Where necessary, unauthorised vehicles violating permit allocations or creating an obstruction will be clamped. Signage to this effect, in accordance with the Vehicle Clamping and Signage Regulations 2017, will be installed within the site.

10. Summary and Conclusion

10.1 Summary

Overview and Scope

Transport Insights has been commissioned by Bluemont Developments (Firhouse) Ltd to provide transport engineering advice and to prepare an updated Traffic and Transport Assessment (TTA) and Residential Travel Plan (RTP) Report for a proposed amendment (the provision of 5 no. additional units) to a previously granted 78 no. unit Large-Scale Residential Development (LRD) at No. 2 Firhouse Road and the former 'Morton's The Firhouse Inn', Firhouse Road, Dublin 24. The revised application is seeking permission for a total of 83 no. housing units (100 no. units applied for and 78 no. units granted by An Bord Pleanála), providing an increase of 5 no. units within the building footprint granted within Reg. Ref. LRD24A/0001 / ABP Ref. 319568-24.

The assessment approach underpinning this TTA is consistent with Transport Infrastructure Ireland's *Traffic and Transport Assessment Guidelines* (May 2014) and has been agreed in principle with South Dublin County Council's (SDCC's) Land Use Planning and Transportation Department.

Site Context

The proposed development site, measuring ca. 0.46 hectares, is located adjacent to Firhouse Road (R114), Firhouse, Dublin 24. The proposed development site is bounded to the north and west by lands adjacent to the Carmel of the Assumption Convent, to the east by the Mount Carmel Park residential area, and to the south by Firhouse Road (R114). In terms of prevailing land uses, the lands to north and northwest are predominantly recreational in nature, while the lands to the east and also to the south of Firhouse Road are predominantly low-density residential. The M50 runs in an approximate north-south alignment ca. 150-200 metres to the east of the proposed development site.

Development Proposals

The proposed amended development consists of:

- The provision of 5 no. additional residential units, resulting in a total of 4 no. duplex units (2 no. 1-bedroom units, 1 no. 2-bedroom 3-person unit, and 1 no. 2-bedroom 4-person unit); and 79 no. apartment units (1 no. studio units, 54 no. 1-bedroom units, 5 no. 2-bedroom 3-person units, and 19 no. 2-bedroom 4-person units.
- a ground floor creche (ca. 140 sqm);
- 5 no. commercial/medical units at ground floor (ca. 24-112 sqm);
- 63 no. car parking bays across 3 no. levels (28 no. at basement level B2, 20 no. at basement level B1, 15 no. at surface level 00 - 2 no. of which are dual parking bays);
- 196 no. cycle parking spaces to accommodate resident, visitor and staff needs; and

- 5 no. motorcycle parking spaces.

Vehicular access/ egress by residents at the application site will be via the existing primary site access/ egress point onto Firhouse Road, although this access will be subject to minor modifications. This junction shall also provide access to a newly constructed basement car park provided beneath the proposed development site, with this car park having a total of 52 no. car parking bays across two levels. A total of 15 no. car parking bays shall be provided at surface level, with 2 no. of these (accessible bays) acting as dual use bays for both commercial and residential use.

The quantum of residential car parking proposed is noted to be below *South Dublin County Council Development Plan 2022-2028* standards. However, due to the site's favourable accessibility characteristics, including high-frequency bus services (as detailed in Section 3.5 of this Report), and within a range of employment, retail and amenity opportunities within its walking catchment, the proposed car parking allocation is considered appropriate.

DMURS Compliance Statement

See DMURS Compliance statement in Section 6. The development layout accords with DMURS guidance in relation to carriageway widths, corner radii, pedestrian footpaths and crossings etc.

Traffic Impact Findings

The assessment of the proposed development's traffic impacts, which has been informed by the industry standards TRICS database and extensive traffic surveys of the local road network, has found that the percentage change in traffic through the assessed junctions due to traffic generated by the proposed development during both peak hours in the development's assumed year of opening is projected to result in:

- an increase of 4.4% and 4.3% through the 3-arm Site Access/ Firhouse Road junction in the AM and PM peak hours respectively in the Year of Opening; and
- an increase of 1.3% through the 4-arm Firhouse Road/ Ballycullen Road/ Mount Carmel Park signalised junction in both the AM and PM peak hours respectively in the Year of Opening.

Due to the low additional traffic generated at both junctions assessed, i.e. no more than 5% additional traffic in any assessment year, more detailed analysis in the form of traffic modelling has not been deemed necessary in support of the proposed development, in accordance with TII's *Traffic and Transport Assessment Guidelines* (May 2014). Furthermore, it has been demonstrated that the proposed development shall have **no material impact on the operation of the local road network in all future assessment years**.

Framework Residential Travel Plan (RTP)

A set of modal share targets have been established for the RTP, with an Action Plan subsequently developed for the proposed development with a view to meeting these targets and facilitating and incentivizing sustainable mobility choices among future residents. The Plan's implementation will be continually overseen and managed by an appointed Travel Plan Coordinator (TPC), with a range of proposed measures to support cycling, walking and public transport. The Framework RTP is complemented by a Car Parking Management Plan, setting out the proposed car parking allocation rules, monitoring and enforcement protocols.

10.2 Conclusion

The proposed amended residential development at No. 2 Firhouse Road and the former 'Morton's The Firhouse Inn', Firhouse Road, Dublin 24 has been subject to a comprehensive Traffic and Transport Assessment per guidance contained with Transport Infrastructure Ireland's TTA Guidelines. The assessment of the proposed development's traffic and transport impacts has been underpinned by comprehensive traffic survey data collection and trip generation analysis. The assessment has demonstrated that the proposed development will have a negligible impact on the performance of the road network.

Appendix A Transport Briefing Note

Former Firhouse Inn LRD: Transport Briefing Note

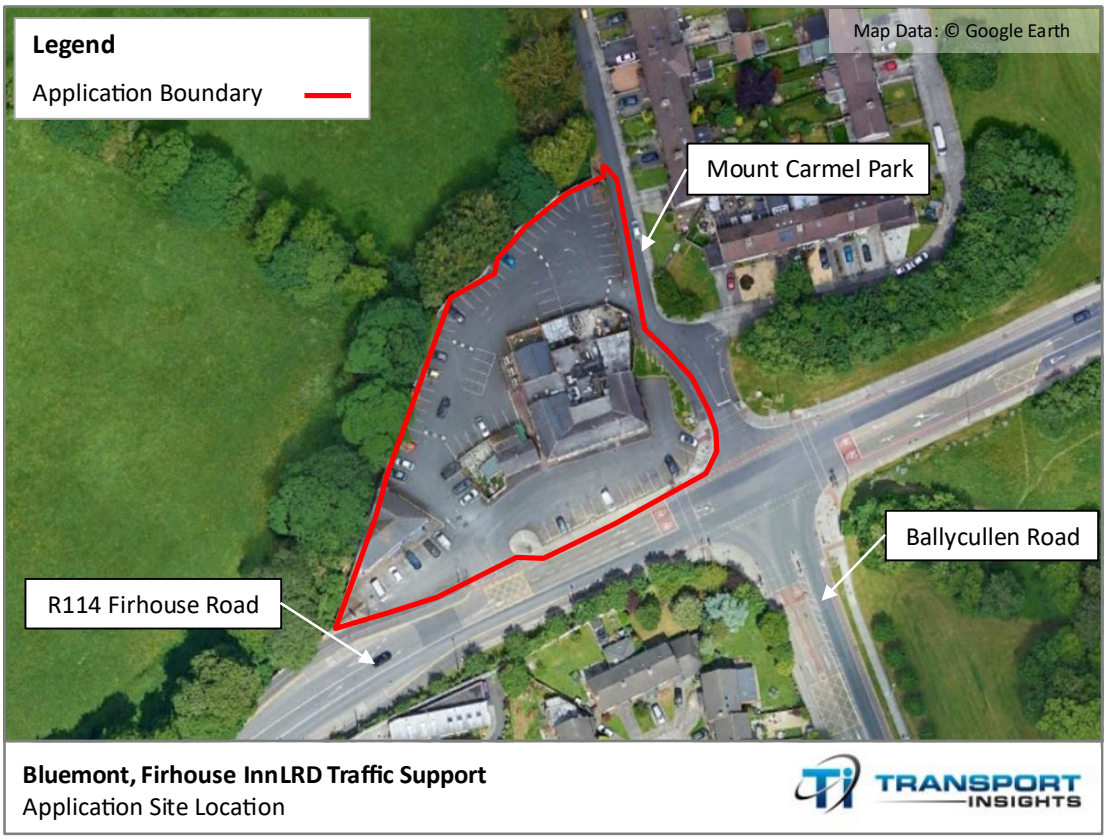
Contract Number	C623.1 2023
Topic	Former Firhouse Inn LRD Transport Briefing Note
Version Number	v1.1
Status	Final
Author(s)	Ciaran McKeon
Reviewer	Garret Murphy
Date	13 June 2025

1. Introduction

1.1 Overview

Transport Insights has been commissioned by Bluemont Developments (Firhouse) Ltd to provide transport consultancy support in relation to an amendment application for a proposed 83 no. unit Large-scale Residential Development (LRD) at the former site of The Firhouse Inn, Firhouse Road, Dublin 24. The application site's location is presented in Figure 1.1 (below).

Figure 1.1 Site Location



This note has been drafted to inform Section 32(B) engagement with South Dublin County Council (SDCC) in relation to the development proposal.

1.2 Site's Planning History

Following an initial grant of planning permission from South Dublin County Council (SDCC) in March 2024 in relation to a LRD application for 100 no. units (SDCC LRD24A/0001), a third-party appeal was submitted to An Bord Pleanála. Arising from that appeal (ABP-319568-24), the scale of the development was reduced by ABP in July 2024 to 78 no. units.

1.3 Current Proposed Development Overview

The current proposed development represents an amendment to that granted permission, with an additional 5 no. residential units now proposed, bringing the total to 83 no. units. Further details provided in Section 3 of this note.

2. Recent SDCC Feedback

2.1 Introduction

Recent pre-planning feedback from SDCC in relation to the current proposed development was provided at a Section 247 meeting which took place on 07 May 2025, and subsequent telephone engagement between Transport Insights and a representative from SDCC's Roads Department on 20 May 2025. An overview of feedback provided is set out below.

2.2 Section 247 Meeting Feedback

- There are a number of discrepancies across the documents about the total number of car parking spaces being proposed. These should be clarified.
- Adequate provision to be made for EV car parking.
- Bicycle parking – provide a detailed breakdown of the spaces.
- Bin storage – clarify the location of the staging area for refuse collection.
- Loading bay – clarify the location of the loading bay for the commercial units.
- Provide an updated Taking in Charge (TIC) plan.
- Include a CTMP and Mobility Management Plan – applicant to contact Tony Mangan at the SDCC Roads Department to clarify whether more up to date survey work is needed.
- Include AutoTRAK plan.

2.3 Subsequent SDCC Roads Department Feedback

- Car parking: Clarity to be provided re development car parking provision, with consistent information to be included within application documents.
- Bicycle parking: Bicycle parking provision needs to align with SDCC standards. Furthermore, parking for non-standard bicycles, i.e. cargo bikes, needs to be accommodated. Suitable parking area(s) for same will be required.
- Public Transport Capacity Assessment – agreed that an updated desktop capacity study, as included within the Traffic and Transport Assessment Report submitted as part of the granted application (SDCC LRD24A/0001/ ABP-319568-24) would suffice.

3. Current Proposed Development

3.1 Introduction

This section of the note sets out the current development schedule, and key transport characteristics.

3.2 Development Schedule

The revised proposed development comprises:

- 83 no. units comprising of 4 no. duplex units (2 no. 1-bedroom units, 1 no. 2-bedroom 3-person unit, and 1 no. 2-bedroom 4-person unit); and 79 no. apartment units (1 no. studio units, 37 no. 1-bedroom units, 8 no. 2-bedroom 3-person units, 31 no. 2-bedroom 4-person units, and 2 no. 3-bedroom units);
- a ground floor creche (ca. 114 sqm); and
- 5 no. commercial and medical units at ground floor (ca. 28-80 sqm).

3.3 Key Transport Characteristics

- Proposed development car and bicycle parking provision is set out in Table 3.1 (overleaf):
  - A total of 50 no. car parking spaces are proposed, of which 37 no. are allocated for residential uses, and 13 no. for commercial uses.
  - A total of 139 no. long-stay and 50 no. short-stay bicycle parking spaces are proposed.
  - A total of 6 no. motorcycle parking spaces are proposed.
- Proposed vehicular site access arrangements and the development site's interface with the adjoining road network (R114 Firhouse Road and Mount Carmel Park are the same as the granted scheme.

- Vehicular movement between basement level -1 and basement level -2 is proposed to be controlled via traffic signals.
- Proposed basement bicycle parking arrangements are as follows:
  - From Mount Carmel Park via a dedicated cycle connection to the 8 no. spaces at basement level -1.
  - From Firhouse Road via a bicycle lift from surface level to basement level -2 (with the vehicular access ramp utilised as a backup in instances where lift is out of service).
- Servicing (refuse collection/ deliveries) shall be accommodated at surface level with vehicles turning within the parking aisle/ vehicular ramp to the basement car park.

Table 3.1 Proposed Parking Provision

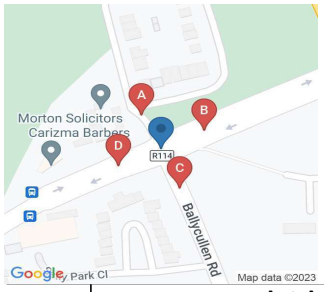
Item	Total	Surface Level	Base-ment - 1	Base-ment - 2	Of which are Accessible	Of which are EV Charging Enabled	Of which are Cargo Bike
Car Parking	50	8	15	27	5	8	-
Bicycle Parking	189[1]	50	8	131	-		TBC
Motorbike Parking	6	0	1	5	-		-

4. Application Deliverables

- Updated Traffic and Transport Assessment Report.
- Previous surveys to be utilised in assessing traffic impacts.
- As vehicular site access arrangements and the development site's interface with the adjoining road network remains unchanged from that granted, a new Stage 1 Road Safety Audit is deemed unnecessary.

[1] Surface bicycle parking not yet shown on layout drawings, to be provided at surface level, quantum subject to change.

Appendix B Traffic Survey Data



IDASO

Survey Name: 164 23257 Firhouse Road (R114)/ Ballycullen Road/ Mount Carmel Park
Site: Site 1
Location: Firhouse Road (R114)/ Ballycullen Road/ Mount Carmel Park
Date: Tue 30-May-2023

	A => A									A => B								
TIME	**P/C**	**M/C**	**CAR**	**LGV**	**OGV1**	**OGV2**	**PSV**	**TOT**	**PCU**	**P/C**	**M/C**	**CAR**	**LGV**	**OGV1**	**OGV2**	**PSV**	**TOT**	**PCU**
07:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
07:30	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	2
07:45	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3	3
H/TOT	0	0	0	0	0	0	0	0	0	0	0	5	1	0	0	0	6	6
08:00	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3	3
08:15	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
08:30	0	0	0	0	0	0	0	0	0	1	0	3	0	0	0	0	4	3.2
08:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	1	0	7	0	0	0	0	8	7.2
09:00	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
09:15	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
09:30	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
09:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3	3
10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0.2
11:15	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
11:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
H/TOT	0	0	0	0	0	0	0	0	0	1	0	2	0	0	0	0	3	2.2
12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	2
12:30	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0.2
12:45	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
H/TOT	0	0	0	0	0	0	0	0	0	1	0	3	0	0	0	0	4	3.2
13:00	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	2	2.5
13:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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13:45	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	2
H/TOT	0	0	0	0	0	0	0	0	0	0	0	3	0	2	0	0	5	6
14:00	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	3	3.5
14:15	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
14:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:45	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	2
H/TOT	0	0	0	0	0	0	0	0	0	0	0	4	1	1	0	0	6	6.5
15:00	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0.2
15:15	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
15:30	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1.5
15:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	0	3	2.7
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16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
H/TOT	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	2
17:00	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	3	0.6
17:15	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
17:30	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3	3
17:45	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2	0.4
H/TOT	0	0	0	0	0	0	0	0	0	5	0	4	0	0	0	0	9	5
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18:30	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0.2
18:45	0	0	0	0	0	0	0	0	0	1	0	2	0	0	0	0	3	2.2
H/TOT	0	0	0	0	0	0	0	0	0	8	0	3	0	0	0	0	11	4.6
12 TOT	0	0	0	0	0	0	0	0	0	17	0	37	2	4	0	0	60	48.4

A => C									A => D								
P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	PCU
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3	0	2	0	0	0	0	5	2.6	0	0	0	0	0	0	0	0	0
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5	0	0	0	0	0	0	5	1	0	0	1	0	0	0	0	1	1
1	0	1	0	0	0	0	2	1.2	0	0	0	0	0	0	0	0	0
4	0	1	0	0	0	0	5	1.8	0	0	0	0	0	0	0	0	0
15	0	3	0	0	0	0	18	6	0	0	1	0	0	0	0	1	1
77	0	24	2	0	0	0	103	41.4	0	0	28	1	1	0	0	30	30.5

B => A									B => B								
P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	PCU
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	0	2	0	0	0	0	4	2.4	0	0	0	0	0	0	0	0	0
2	0	2	0	0	0	0	4	2.4	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0
2	0	1	0	0	0	0	3	1.4	0	0	0	0	0	0	0	0	0
0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0
2	0	3	0	0	0	0	5	3.4	0	0	0	0	0	0	0	0	0
0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0	1	0	0	0	0	2	1.2	0	0	0	0	0	0	0	0	0
1	0	1	0	0	0	0	2	1.2	0	0	0	0	0	0	0	0	0
1	0	3	0	0	0	0	4	3.2	0	0	0	0	0	0	0	0	0
0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0
0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0
0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0
1	0	6	0	0	0	0	7	6.2	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	2	1	1	0	0	4	4.5	0	0	0	0	0	0	0	0	0
0	0	2	1	1	0	0	4	4.5	0	0	0	0	0	0	0	0	0
0	0	2	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	1	0	1	0	0	2	2.5	0	0	0	0	0	0	0	0	0
0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0
0	0	4	0	1	0	0	5	5.5	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0	1	0	0	0	0	2	1.2	0	0	0	0	0	0	0	0	0
0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0
0	0	2	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0
1	0	4	0	0	0	0	5	4.2	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0
1	0	1	0	0	0	0	2	1.2	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0	2	0	0	0	0	3	2.2	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	3	0	0	0	0	3	3	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	3	0	0	0	0	3	3	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0	1	0	0	0	0	2	1.2	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0	1	0	0	0	0	2	1.2	0	0	0	0	0	0	0	0	0
0	0	2	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	2	0.4	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	1	0.2	0	0	0	0	0	0	0	0	0
3	0	2	0	0	0	0	5	2.6	0	0	0	0	0	0	0	0	0
12	0	31	1	2	0	0	46	37.4	0	0	0	0	0	0	0	0	0

B => C									B => D								
P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	PCU
0	0	11	0	0	0	1	12	13	0	0	8	0	0	0	1	9	10
0	1	11	1	0	0	3	16	18.4	1	0	20	3	1	0	0	25	24.7
1	0	19	1	0	0	3	24	26.2	0	0	20	2	0	0	0	22	22
2	0	22	4	1	0	0	29	27.9	1	0	18	7	1	0	1	28	28.7
3	1	63	6	1	0	7	81	85.5	2	0	66	12	2	0	2	84	85.4
1	0	30	1	1	0	0	33	32.7	2	0	50	2	0	0	2	56	56.4
2	0	32	2	0	0	1	37	36.4	0	0	57	1	0	0	1	59	60
0	0	41	3	1	0	0	45	45.5	1	1	73	2	0	0	2	79	79.6
2	0	94	4	1	0	1	102	101.9	0	0	62	2	0	0	0	64	64
5	0	197	10	3	0	2	217	216.5	3	1	242	7	0	0	5	258	260
0	0	52	4	0	0	1	57	58	4	0	60	3	4	0	1	72	71.8
1	0	38	0	0	0	1	40	40.2	6	0	40	1	1	0	0	48	43.7
0	0	18	2	0	0	0	20	20	0	0	48	2	1	0	1	52	53.5
1	1	24	3	1	0	1	31	31.1	1	0	36	3	0	0	0	40	39.2
2	1	132	9	1	0	3	148	149.3	11	0	184	9	6	0	2	212	208.2
0	0	21	2	1	0	0	24	24.5	1	0	43	4	0	0	1	49	49.2
1	0	19	2	0	0	1	23	23.2	1	0	35	6	0	0	1	43	43.2
0	0	25	2	0	0	1	28	29	1	0	40	4	2	0	1	48	49.2
2	0	33	2	1	0	1	39	38.9	0	0	54	4	2	0	1	61	63
3	0	98	8	2	0	3	114	115.6	3	0	172	18	4	0	4	201	204.6
0	0	23	1	0	0	0	24	24	2	1	47	8	2	0	1	61	60.8
0	0	37	1	0	0	1	39	40	2	0	52	4	1	0	0	59	57.9
1	0	42	4	1	0	1	49	49.7	2	0	48	5	1	0	2	58	58.9
0	0	38	4	0	0	1	43	44	0	0	34	10	0	0	0	44	44
1	0	140	10	1	0	3	155	157.7	6	1	181	27	4	0	3	222	221.6
0	0	36	1	0	0	0	37	37	2	2	37	10	0	0	2	53	52.2
2	0	29	5	0	0	1	37	36.4	1	0	55	3	0	0	0	59	58.2
2	0	40	2	0	0	1	45	44.4	5	0	57	3	0	0	1	66	63
1	0	46	2	0	0	0	49	48.2	1	0	67	2	1	0	0	71	70.7
5	0	151	10	0	0	2	168	166	9	2	216	18	1	0	3	249	244.1
1	0	43	5	0	0	0	49	48.2	1	0	62	4	1	0	2	70	71.7
2	0	39	6	0	0	1	48	47.4	0	0	68	9	0	1	1	79	81.3
1	1	62	1	1	0	1	67	67.1	2	0	67	2	3	0	3	77	79.9
0	2	55	3	0	0	1	61	60.8	2	0	52	3	1	0	0	58	56.9
4	3	199	15	1	0	3	225	223.5	5	0	249	18	5	1	6	284	289.8
1	0	47	4	0	0	0	52	51.2	1	0	46	6	0	0	1	54	54.2
1	1	45	0	0	0	1	48	47.6	1	0	58	5	3	0	0	67	67.7
1	0	73	3	2	0	0	79	79.2	1	2	81	8	1	0	0	93	91.5
1	1	81	5	1	0	2	91	92.1	0	0	73	4	2	0	2	81	84
4	2	246	12	3	0	3	270	270.1	3	2	258	23	6	0	3	295	297.4
0	0	54	4	0	0	0	58	58	3	0	69	14	1	0	0	87	85.1
2	0	49	6	0	0	0	57	55.4	2	1	68	12	0	0	1	84	82.8
2	0	70	7	0	0	0	79	77.4	0	1	73	11	1	0	0	86	85.9
1	1	65	7	1	0	1	76	76.1	3	0	76	7	0	0	2	88	87.6
5	1	238	24	1	0	1	270	266.9	8	2	286	44	2	0	3	345	341.4
0	2	61	5	1	0	1	70	70.3	2	1	90	15	2	0	0	110	108.8
1	0	67	4	1	0	1	74	74.7	5	0	85	17	1	1	1	110	108.8
1	1	75	10	0	0	0	87	85.6	6	1	100	22	1	0	1	131	127.1
2	1	80	5	0	0	2	90	89.8	3	0	124	19	0	0	1	147	145.6
4	4	283	24	2	0	4	321	320.4	16	2	399	73	4	1	3	498	490.3
6	0	76	7	0	0	1	90	86.2	0	4	97	16	2	0	1	120	119.6
3	0	61	3	0	0	1	68	66.6	6	2	115	13	1	0	1	138	133.5
5	1	82	1	2	0	2	93	91.4	6	1	129	14	2	0	0	152	147.6
7	1	77	4	0	0	1	90	84.8	5	0	100	6	0	0	2	113	111
21	2	296	15	2	0	5	341	329	17	7	441	49	5	0	4	523	511.7
7	2	95	5	0	0	3	112	108.2	3	3	93	5	1	0	3	108	107.3
5	1	61	8	0	0	0	75	70.4	3	1	85	7	0	0	1	97	95
7	0	58	3	0	0	1	69	64.4	8	0	78	4	1	0	0	91	85.1
4	1	65	4	0	0	1	75	72.2	3	1	57	2	0	0	2	65	64
23	4	279	20	0	0	5	331	315.2	17	5	313	18	2	0	6	361	351.4
80	18	2322	163	17	0	41	2641	2615.7	100	22	3007	316	41	2	44	3532	3505.9

C => A									C => B								
P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	PCU
1	0	1	0	0	0	0	2	1.2	2	0	37	3	1	0	1	44	43.9
1	0	0	0	0	0	0	1	0.2	6	0	54	7	0	0	2	69	66.2
4	0	0	0	0	0	0	4	0.8	11	2	52	6	0	0	1	72	63
5	0	0	0	0	0	0	5	1	8	0	88	5	0	0	1	102	96.6
11	0	1	0	0	0	0	12	3.2	27	2	231	21	1	0	5	287	269.7
6	0	0	0	0	0	0	6	1.2	5	1	111	3	0	0	2	122	119.4
6	0	0	0	0	0	0	6	1.2	11	3	98	2	0	0	2	116	107.4
7	0	1	0	0	0	0	8	2.4	5	1	131	5	0	0	2	144	141.4
4	0	0	0	0	0	0	4	0.8	7	1	86	7	0	0	1	102	96.8
23	0	1	0	0	0	0	24	5.6	28	6	426	17	0	0	7	484	465
6	0	1	0	0	0	0	7	2.2	1	0	53	2	0	0	0	56	55.2
4	0	0	0	0	0	0	4	0.8	1	2	55	3	3	0	1	65	65.5
0	0	0	0	0	0	0	0	0	2	0	39	1	2	0	0	44	43.4
0	0	1	0	0	0	0	1	1	2	1	40	2	0	0	1	46	44.8
10	0	2	0	0	0	0	12	4	6	3	187	8	5	0	2	211	208.9
1	0	0	0	0	0	0	1	0.2	2	0	27	0	1	0	1	31	30.9
3	0	0	0	0	0	0	3	0.6	0	1	45	4	0	1	1	52	53.7
0	0	1	0	0	0	0	1	1	0	0	41	2	0	0	0	43	43
1	0	0	0	0	0	0	1	0.2	0	0	43	2	1	0	2	48	50.5
5	0	1	0	0	0	0	6	2	2	1	156	8	2	1	4	174	178.1
0	0	2	0	1	0	0	3	3.5	2	0	50	3	0	0	1	56	55.4
1	0	0	0	0	0	0	1	0.2	0	0	40	7	0	0	1	48	49
1	0	0	0	0	0	0	1	0.2	0	1	25	1	0	0	0	27	26.4
1	0	0	0	0	0	0	1	0.2	1	0	52	2	1	0	2	58	59.7
3	0	2	0	1	0	0	6	4.1	3	1	167	13	1	0	4	189	190.5
1	0	0	0	0	0	0	1	0.2	2	0	28	4	0	0	0	34	32.4
0	0	1	0	1	0	0	2	2.5	2	0	36	4	0	0	1	43	42.4
3	0	1	0	0	0	0	4	1.6	0	0	38	5	0	0	0	43	43
0	0	1	0	0	0	0	1	1	1	0	38	3	0	0	3	45	47.2
4	0	3	0	1	0	0	8	5.3	5	0	140	16	0	0	4	165	165
0	0	0	0	0	0	0	0	0	0	1	59	4	0	0	1	65	65.4
1	0	0	1	0	0	0	2	1.2	1	0	52	3	0	0	1	57	57.2
1	0	2	0	0	0	0	3	2.2	2	2	34	3	0	0	0	41	38.2
0	0	1	1	1	0	0	3	3.5	0	0	35	2	0	0	0	37	37
2	0	3	2	1	0	0	8	6.9	3	3	180	12	0	0	2	200	197.8
0	0	0	0	0	0	0	0	0	1	0	70	3	0	0	2	76	77.2
1	0	1	0	0	0	0	2	1.2	0	0	68	1	0	0	1	70	71
2	0	0	0	0	0	0	2	0.4	1	0	41	4	0	0	0	46	45.2
4	0	0	0	0	0	0	4	0.8	0	1	43	1	0	0	1	46	46.4
7	0	1	0	0	0	0	8	2.4	2	1	222	9	0	0	4	238	239.8
1	0	0	0	0	0	0	1	0.2	0	1	38	3	2	0	1	45	46.4
1	0	0	0	0	0	0	1	0.2	0	0	60	3	0	0	2	65	67
0	0	0	0	1	0	0	1	1.5	1	1	39	2	1	0	0	44	43.1
3	0	1	0	0	0	0	4	1.6	2	0	41	4	1	1	1	50	51.2
5	0	1	0	1	0	0	7	3.5	3	2	178	12	4	1	4	204	207.7
0	0	1	0	0	0	0	1	1	0	0	33	7	1	0	1	42	43.5
2	0	1	0	0	0	0	3	1.4	0	0	55	3	0	0	0	58	58
0	0	1	0	0	0	0	1	1	0	0	29	3	0	0	1	33	34
1	0	0	0	0	0	0	1	0.2	1	1	43	1	0	0	1	47	46.6
3	0	3	0	0	0	0	6	3.6	1	1	160	14	1	0	3	180	182.1
4	0	0	1	0	0	0	5	1.8	1	1	39	4	0	0	1	46	45.6
6	0	0	0	0	0	0	6	1.2	0	0	41	3	1	0	1	46	47.5
1	0	2	0	0	0	0	3	2.2	0	0	50	3	0	0	0	53	53
3	0	0	0	0	0	0	3	0.6	1	0	58	1	0	0	0	60	59.2
14	0	2	1	0	0	0	17	5.8	2	1	188	11	1	0	2	205	205.3
0	0	1	0	0	0	0	1	1	3	0	57	1	0	0	1	62	60.6
1	0	1	0	0	0	0	2	1.2	0	0	53	4	0	0	1	58	59
4	0	0	0	0	0	0	4	0.8	2	1	48	3	0	0	1	55	53.8
4	0	0	0	0	0	0	4	0.8	1	0	69	3	2	0	0	75	75.2
9	0	2	0	0	0	0	11	3.8	6	1	227	11	2	0	3	250	248.6
96	0	22	3	4	0	0	125	50.2	88	22	2462	152	17	2	44	2787	2758.5

C => C									C => D								
P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	PCU
0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	2
0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3	3
0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3	3
0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	5	5
0	0	0	0	0	0	0	0	0	0	0	13	0	0	0	0	13	13
0	0	0	0	0	0	0	0	0	0	0	4	3	1	0	0	8	8.5
0	0	0	0	0	0	0	0	0	0	0	9	1	0	0	0	10	10
0	0	0	0	0	0	0	0	0	0	0	12	0	4	0	0	16	18
0	0	0	0	0	0	0	0	0	3	0	55	1	0	0	0	59	56.6
0	0	0	0	0	0	0	0	0	3	0	80	5	5	0	0	93	93.1
0	0	0	0	0	0	0	0	0	0	0	13	2	0	0	1	16	17
0	0	0	0	0	0	0	0	0	0	0	14	1	3	0	0	18	19.5
0	0	0	0	0	0	0	0	0	0	0	9	0	0	0	0	9	9
0	0	0	0	0	0	0	0	0	0	0	9	0	0	0	0	9	9
0	0	0	0	0	0	0	0	0	0	0	45	3	3	0	1	52	54.5
0	0	0	0	0	0	0	0	0	0	0	10	0	0	0	0	10	10
0	0	0	0	0	0	0	0	0	1	0	7	2	0	0	0	10	9.2
0	0	0	0	0	0	0	0	0	1	0	12	1	0	0	0	14	13.2
0	0	0	0	0	0	0	0	0	0	0	16	2	0	0	0	18	18
0	0	0	0	0	0	0	0	0	2	0	45	5	0	0	0	52	50.4
0	0	0	0	0	0	0	0	0	0	0	11	3	0	0	0	14	14
0	0	0	0	0	0	0	0	0	0	0	12	0	0	0	0	12	12
0	0	0	0	0	0	0	0	0	0	0	11	1	1	0	0	13	13.5
0	0	0	0	0	0	0	0	0	0	0	8	1	0	0	0	9	9
0	0	0	0	0	0	0	0	0	0	0	42	5	1	0	0	48	48.5
0	0	0	0	0	0	0	0	0	0	0	15	0	1	0	0	16	16.5
0	0	0	0	0	0	0	0	0	0	0	15	1	0	0	0	16	16
0	0	0	0	0	0	0	0	0	0	0	3	1	2	0	2	8	11
0	0	0	0	0	0	0	0	0	0	0	16	4	0	0	0	20	20
0	0	0	0	0	0	0	0	0	0	0	49	6	3	0	2	60	63.5
0	0	0	0	0	0	0	0	0	0	0	18	0	0	0	0	18	18
0	0	0	0	0	0	0	0	0	0	0	25	0	1	0	1	27	28.5
0	0	0	0	0	0	0	0	0	0	0	21	0	0	1	2	24	27.3
0	0	0	0	0	0	0	0	0	0	0	8	1	1	0	0	10	10.5
0	0	0	0	0	0	0	0	0	0	0	72	1	2	1	3	79	84.3
0	0	0	0	0	0	0	0	0	0	0	8	0	0	0	0	8	8
0	0	0	0	0	0	0	0	0	0	0	28	2	2	0	0	32	33
0	0	0	0	0	0	0	0	0	0	0	20	1	0	0	0	21	21
0	0	0	0	0	0	0	0	0	0	1	9	2	0	0	0	12	11.4
0	0	0	0	0	0	0	0	0	0	1	65	5	2	0	0	73	73.4
0	0	0	0	0	0	0	0	0	0	0	12	1	1	0	0	14	14.5
0	0	0	0	0	0	0	0	0	0	0	14	1	0	0	0	15	15
0	0	0	0	0	0	0	0	0	1	0	14	0	0	0	0	15	14.2
0	0	0	0	0	0	0	0	0	1	0	18	3	0	0	1	23	23.2
0	0	0	0	0	0	0	0	0	2	0	58	5	1	0	1	67	66.9
0	0	0	0	0	0	0	0	0	3	0	18	1	0	0	0	22	19.6
0	0	0	0	0	0	0	0	0	2	0	13	0	1	0	0	16	14.9
0	0	0	0	0	0	0	0	0	2	0	12	1	0	0	0	15	13.4
0	0	0	0	0	0	0	0	0	0	0	13	2	0	0	0	15	15
0	0	0	0	0	0	0	0	0	7	0	56	4	1	0	0	68	62.9
0	0	0	0	0	0	0	0	0	0	0	15	2	0	0	0	17	17
0	0	0	0	0	0	0	0	0	0	0	11	2	0	0	0	13	13
0	0	0	0	0	0	0	0	0	0	0	16	0	1	0	0	17	17.5
0	0	0	0	0	0	0	0	0	0	0	17	1	0	0	0	18	18
0	0	0	0	0	0	0	0	0	0	0	59	5	1	0	0	65	65.5
0	0	0	0	0	0	0	0	0	0	0	18	0	0	0	0	18	18
0	0	0	0	0	0	0	0	0	0	0	21	0	0	0	0	21	21
0	0	0	0	0	0	0	0	0	0	0	17	0	0	0	0	17	17
0	0	0	0	0	0	0	0	0	0	0	11	1	0	0	0	12	12
0	0	0	0	0	0	0	0	0	0	0	67	1	0	0	0	68	68
0	0	0	0	0	0	0	0	0	14	1	651	45	19	1	7	738	744

D => A									D => B								
P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	PCU
0	0	0	0	0	0	0	0	0	3	1	60	15	0	0	1	80	78
1	0	0	0	0	0	0	1	0.2	4	1	68	15	0	0	1	89	86.2
0	0	0	0	0	0	0	0	0	6	2	116	9	1	0	1	135	130.5
0	0	0	0	0	0	0	0	0	5	0	117	13	0	0	0	135	131
1	0	0	0	0	0	0	1	0.2	18	4	361	52	1	0	3	439	425.7
0	0	0	0	0	0	0	0	0	3	2	134	5	0	0	3	147	146.4
1	0	1	0	0	0	0	2	1.2	9	0	143	12	0	0	1	165	158.8
0	0	0	0	0	0	0	0	0	8	0	96	11	1	1	0	117	112.4
0	0	0	0	0	0	0	0	0	7	0	64	13	0	0	1	85	80.4
1	0	1	0	0	0	0	2	1.2	27	2	437	41	1	1	5	514	498
0	0	0	0	0	0	0	0	0	6	0	84	14	1	0	0	105	100.7
0	0	0	0	0	0	0	0	0	6	1	51	9	0	0	0	67	61.6
0	0	1	0	0	0	0	1	1	1	0	65	6	2	0	3	77	80.2
0	0	0	0	0	0	0	0	0	2	0	49	3	3	0	0	57	56.9
0	0	1	0	0	0	0	1	1	15	1	249	32	6	0	3	306	299.4
0	0	0	0	0	0	0	0	0	0	0	47	1	0	0	0	48	48
1	0	0	0	0	0	0	1	0.2	0	0	52	1	1	0	3	57	60.5
0	0	0	0	0	0	0	0	0	0	1	50	7	1	0	1	60	60.9
0	0	0	1	0	0	0	1	1	0	1	39	3	2	0	0	45	45.4
1	0	0	1	0	0	0	2	1.2	0	2	188	12	4	0	4	210	214.8
1	0	0	0	0	0	0	1	0.2	1	1	41	2	2	0	0	47	46.6
0	0	0	0	0	0	0	0	0	2	0	46	6	1	0	2	57	57.9
1	0	0	0	0	0	0	1	0.2	4	1	60	7	3	0	2	77	76.7
1	0	0	0	0	0	0	1	0.2	2	0	50	5	1	0	0	58	56.9
3	0	0	0	0	0	0	3	0.6	9	2	197	20	7	0	4	239	238.1
1	0	0	0	0	0	0	1	0.2	3	1	47	1	1	0	1	54	52.5
0	0	2	0	0	0	0	2	2	1	1	54	4	1	0	0	61	60.1
0	0	1	0	0	0	0	1	1	13	0	60	4	0	0	1	78	68.6
1	0	2	0	0	0	0	3	2.2	2	1	50	6	1	1	1	62	62.6
2	0	5	0	0	0	0	7	5.4	19	3	211	15	3	1	3	255	243.8
0	0	0	0	0	0	0	0	0	2	0	53	4	1	0	1	61	60.9
0	0	0	0	0	0	0	0	0	2	1	55	4	1	0	1	64	63.3
0	0	0	0	0	0	0	0	0	0	0	48	9	0	0	2	59	61
0	0	0	0	0	0	0	0	0	0	0	66	9	0	0	0	75	75
0	0	0	0	0	0	0	0	0	4	1	222	26	2	0	4	259	260.2
0	0	2	0	0	0	0	2	2	0	0	56	4	0	0	1	61	62
0	0	0	0	0	0	0	0	0	0	0	48	4	2	1	0	55	57.3
0	0	0	0	0	0	0	0	0	4	0	36	3	1	0	0	44	41.3
0	0	2	0	0	0	0	2	2	2	0	56	4	0	0	1	63	62.4
0	0	4	0	0	0	0	4	4	6	0	196	15	3	1	2	223	223
0	0	0	0	0	0	0	0	0	0	1	60	3	2	1	1	68	70.7
2	0	0	0	0	0	0	2	0.4	0	0	49	3	0	0	0	52	52
2	0	0	0	0	0	0	2	0.4	1	0	60	7	0	0	1	69	69.2
2	0	0	0	0	0	0	2	0.4	0	1	60	4	0	0	1	66	66.4
6	0	0	0	0	0	0	6	1.2	1	2	229	17	2	1	3	255	258.3
0	0	0	0	0	0	0	0	0	0	0	58	4	0	0	2	64	66
0	0	0	0	0	0	0	0	0	3	0	48	4	0	0	0	55	52.6
0	0	0	0	0	0	0	0	0	2	1	48	2	0	0	1	54	52.8
0	0	0	0	0	0	0	0	0	2	0	55	5	0	0	1	63	62.4
0	0	0	0	0	0	0	0	0	7	1	209	15	0	0	4	236	233.8
1	0	0	0	0	0	0	1	0.2	1	0	47	4	0	0	0	52	51.2
0	0	1	0	0	0	0	1	1	0	0	54	0	1	0	0	55	55.5
0	0	2	0	0	0	0	2	2	2	0	54	4	0	0	1	61	60.4
2	0	0	0	0	0	0	2	0.4	1	0	49	1	0	0	0	51	50.2
3	0	3	0	0	0	0	6	3.6	4	0	204	9	1	0	1	219	217.3
0	0	0	0	0	0	0	0	0	0	0	56	5	0	0	1	62	63
0	0	2	0	0	0	0	2	2	1	0	46	2	1	0	0	50	49.7
0	0	0	0	0	0	0	0	0	1	1	35	2	0	0	1	40	39.6
0	0	0	0	0	0	0	0	0	3	1	53	2	0	0	0	59	56
0	0	2	0	0	0	0	2	2	5	2	190	11	1	0	2	211	208.3
17	0	16	1	0	0	0	34	20.4	115	20	2893	265	31	4	38	3366	3320.7

D => C									D => D								
P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	PCU
0	0	4	1	0	0	0	5	5	0	0	0	0	0	0	0	0	0
0	0	7	2	0	0	0	9	9	0	0	0	0	0	0	0	0	0
0	0	12	3	0	0	0	15	15	0	0	0	0	0	0	0	0	0
1	0	13	3	0	0	0	17	16.2	0	0	0	0	0	0	0	0	0
1	0	36	9	0	0	0	46	45.2	0	0	0	0	0	0	0	0	0
0	0	19	0	0	0	0	19	19	0	0	0	0	0	0	0	0	0
0	0	15	1	0	0	0	16	16	0	0	0	0	0	0	0	0	0
0	0	12	4	0	0	0	16	16	0	0	0	0	0	0	0	0	0
0	0	24	0	0	0	0	24	24	0	0	0	0	0	0	0	0	0
0	0	70	5	0	0	0	75	75	0	0	0	0	0	0	0	0	0
0	0	44	0	0	0	0	44	44	0	0	0	0	0	0	0	0	0
0	0	26	1	1	0	2	30	32.5	0	0	0	0	0	0	0	0	0
0	0	9	0	0	0	0	9	9	0	0	0	0	0	0	0	0	0
0	0	16	1	0	0	0	17	17	0	0	0	0	0	0	0	0	0
0	0	95	2	1	0	2	100	102.5	0	0	0	0	0	0	0	0	0
0	0	9	0	0	0	0	9	9	0	0	0	0	0	0	0	0	0
0	0	13	2	0	0	0	15	15	0	0	0	0	0	0	0	0	0
0	0	5	2	1	0	0	8	8.5	0	0	0	0	0	0	0	0	0
0	0	15	1	0	0	0	16	16	0	0	0	0	1	0	0	1	1.5
0	0	42	5	1	0	0	48	48.5	0	0	0	0	1	0	0	1	1.5
0	0	18	2	0	0	0	20	20	0	0	0	0	0	0	0	0	0
0	0	13	2	1	0	0	16	16.5	0	0	0	0	0	0	0	0	0
0	0	15	1	0	0	0	16	16	0	0	0	0	0	0	0	0	0
0	0	12	1	0	0	0	13	13	0	0	0	0	0	0	0	0	0
0	0	58	6	1	0	0	65	65.5	0	0	0	0	0	0	0	0	0
0	0	16	4	0	0	0	20	20	0	0	0	0	0	0	0	0	0
0	0	12	3	0	0	0	15	15	0	0	0	0	0	0	0	0	0
0	0	10	0	1	0	0	11	11.5	0	0	0	0	0	0	0	0	0
1	0	13	0	0	0	0	14	13.2	0	0	0	0	0	0	0	0	0
1	0	51	7	1	0	0	60	59.7	0	0	0	0	0	0	0	0	0
0	0	19	2	0	0	0	21	21	0	0	0	0	0	0	0	0	0
0	0	7	0	0	1	0	8	9.3	0	0	0	0	0	0	0	0	0
0	0	6	0	0	0	0	6	6	0	0	0	0	0	0	0	0	0
0	0	28	0	0	0	1	29	30	0	0	0	0	0	0	0	0	0
0	0	60	2	0	1	1	64	66.3	0	0	0	0	0	0	0	0	0
0	0	11	4	0	0	1	16	17	0	0	0	0	0	0	0	0	0
0	0	11	1	0	0	0	12	12	0	0	0	0	0	0	0	0	0
0	1	17	5	0	0	0	23	22.4	0	0	0	0	0	0	0	0	0
0	0	33	0	3	0	1	37	39.5	0	0	0	0	0	0	0	0	0
0	1	72	10	3	0	2	88	90.9	0	0	0	0	0	0	0	0	0
0	0	15	1	0	0	0	16	16	0	0	0	0	0	0	0	0	0
0	0	14	2	0	0	0	16	16	0	0	0	0	0	0	0	0	0
0	0	13	2	1	0	0	16	16.5	0	0	0	0	0	0	0	0	0
0	0	17	1	0	0	0	18	18	0	0	0	0	0	0	0	0	0
0	0	59	6	1	0	0	66	66.5	0	0	0	0	0	0	0	0	0
0	0	8	2	0	0	0	10	10	0	0	0	0	0	0	0	0	0
0	0	18	1	0	0	0	19	19	0	0	0	0	0	0	0	0	0
0	0	12	2	0	0	0	14	14	0	0	0	0	0	0	0	0	0
0	0	10	1	1	0	0	12	12.5	0	0	0	0	0	0	0	0	0
0	0	48	6	1	0	0	55	55.5	0	0	0	0	0	0	0	0	0
0	0	9	1	0	0	0	10	10	0	0	0	0	0	0	0	0	0
1	0	22	0	0	0	0	23	22.2	0	0	0	0	0	0	0	0	0
1	0	13	1	0	0	0	15	14.2	0	0	0	0	0	0	0	0	0
0	0	12	1	0	0	0	13	13	0	0	0	0	0	0	0	0	0
2	0	56	3	0	0	0	61	59.4	0	0	0	0	0	0	0	0	0
1	0	16	0	1	0	0	18	17.7	0	0	0	0	0	0	0	0	0
0	0	15	0	0	0	0	15	15	0	0	0	0	0	0	0	0	0
0	0	12	0	0	0	0	12	12	0	0	0	0	0	0	0	0	0
1	0	12	0	2	0	0	15	15.2	0	0	0	0	0	0	0	0	0
2	0	55	0	3	0	0	60	59.9	0	0	0	0	0	0	0	0	0
6	1	702	61	12	1	5	788	794.9	0	0	0	0	1	0	0	1	1.5

Appendix C Visibility Splay Drawing

NOTES:

1. Do not scale from this drawing.
2. This drawing to be read & printed in colour.
3. This drawing is for illustrative purposes only, and not for construction.

Firhouse 39
A2G
2 Bed (3p)
B02.G201
66.1 m²

POS
6.5 m²

Office
28.3 m²

Barber
24.4 m²

Bookmaker
66.6 m²

STOP

2.4m X 49m VISIBILITY

2.4m X 49m VISIBILITY

FIRHOUSE ROAD

BUS

BUS

BUS

8

9

10

0 2.5 5 7.5 10 12.5m
1:250

REVISIONS				
REV	DESCRIPTION	DRWN	CHKD	DATE
...	...	...	...	...

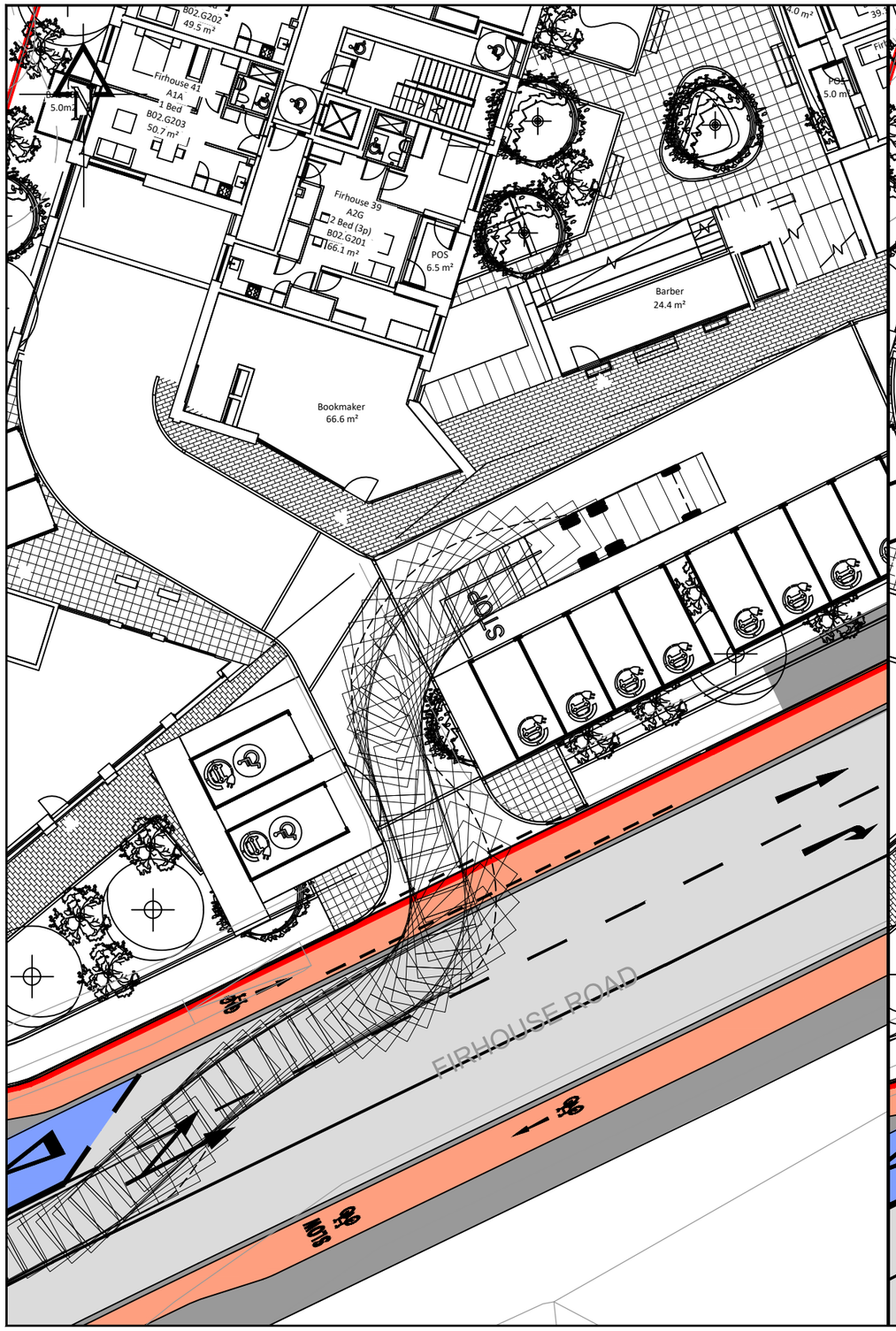
Drawn :	DW	**Drawing No :**	C623.3 VS	**Project :**	Bluemont Firhouse Inn LRD
Checked :	GM	**Sheet :**	1 of 1	**Scale :**	1:250 @ A3
Date :	21.10.2025	**Status :**	Preliminary	**Title :**	Access Visibility
Rev :	v1	**Client :**	Bluemont Developments (Firhouse) Ltd.		

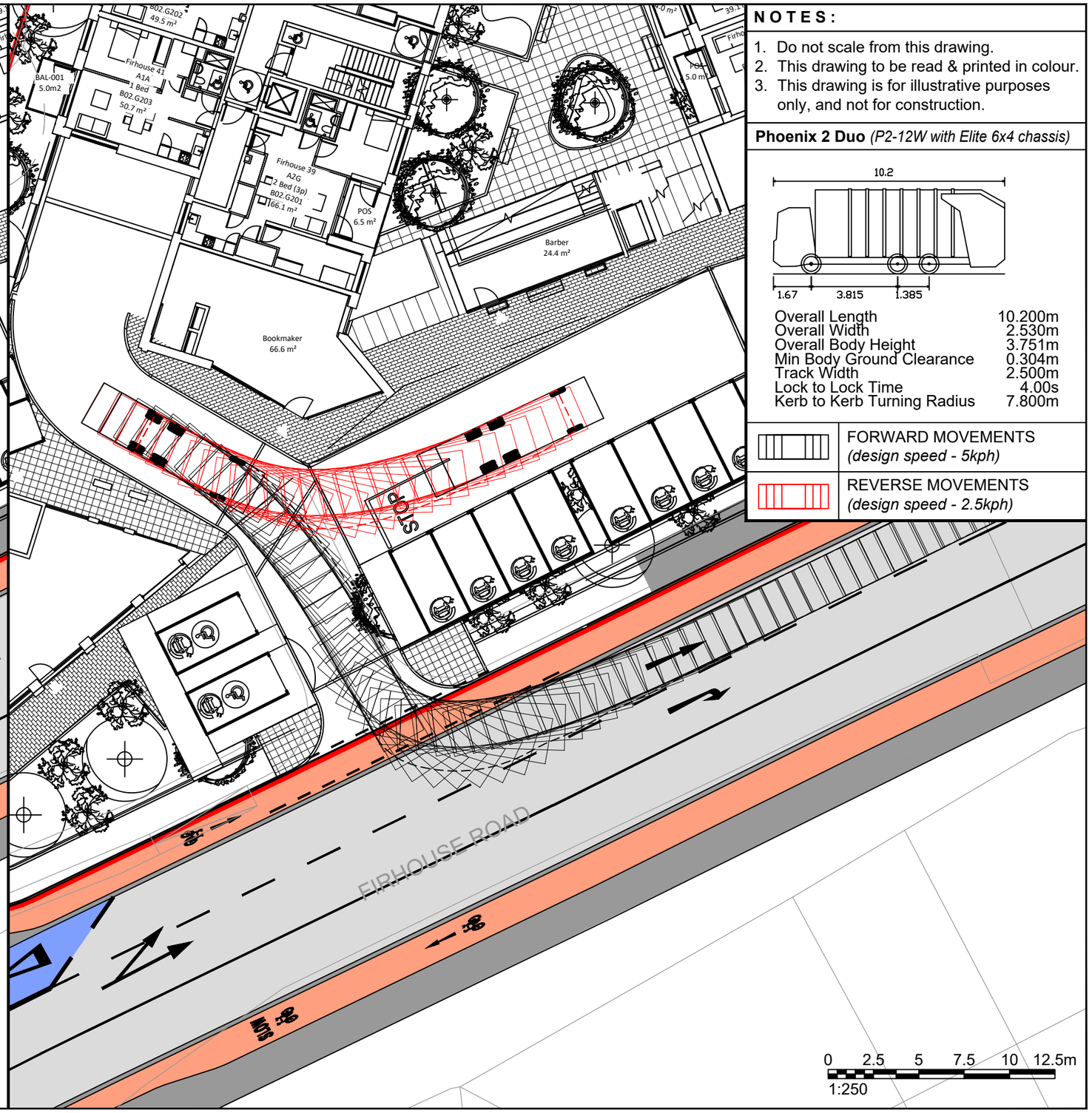
TRANSPORT INSIGHTS

Appendix D Swept Path Analysis

Please see overleaf for to-scale swept path drawings of:

- a 10.2 metre long refuse vehicle; and
- a DB32 fire tender





NOTES:

1. Do not scale from this drawing.
2. This drawing to be read & printed in colour.
3. This drawing is for illustrative purposes only, and not for construction.

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

Overall Length	10.200m
Overall Width	2.530m
Overall Body Height	3.751m
Min Body Ground Clearance	0.304m
Track Width	2.500m
Lock to Lock Time	4.00s
Kerb to Kerb Turning Radius	7.800m

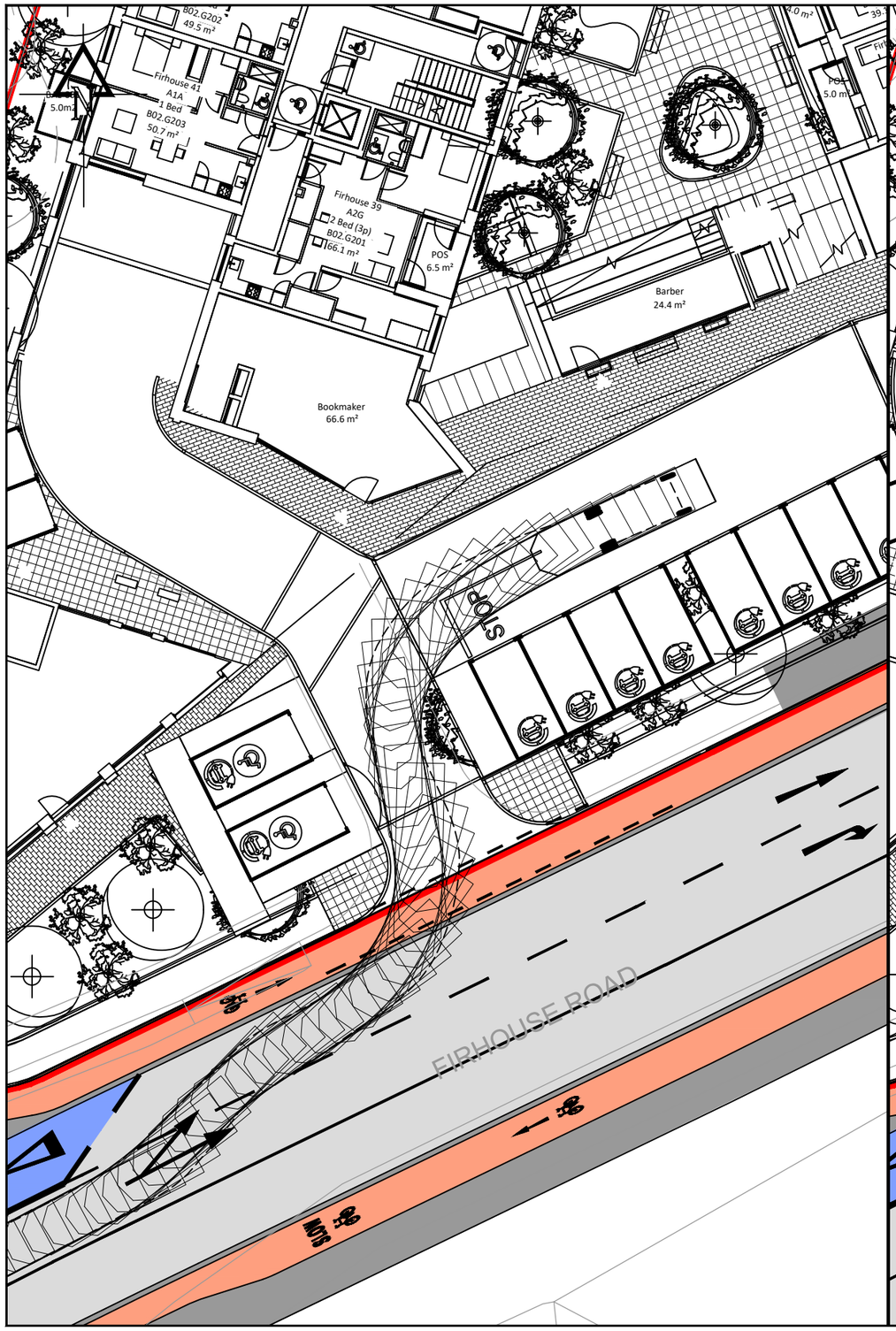
FORWARD MOVEMENTS *(design speed - 5kph)*

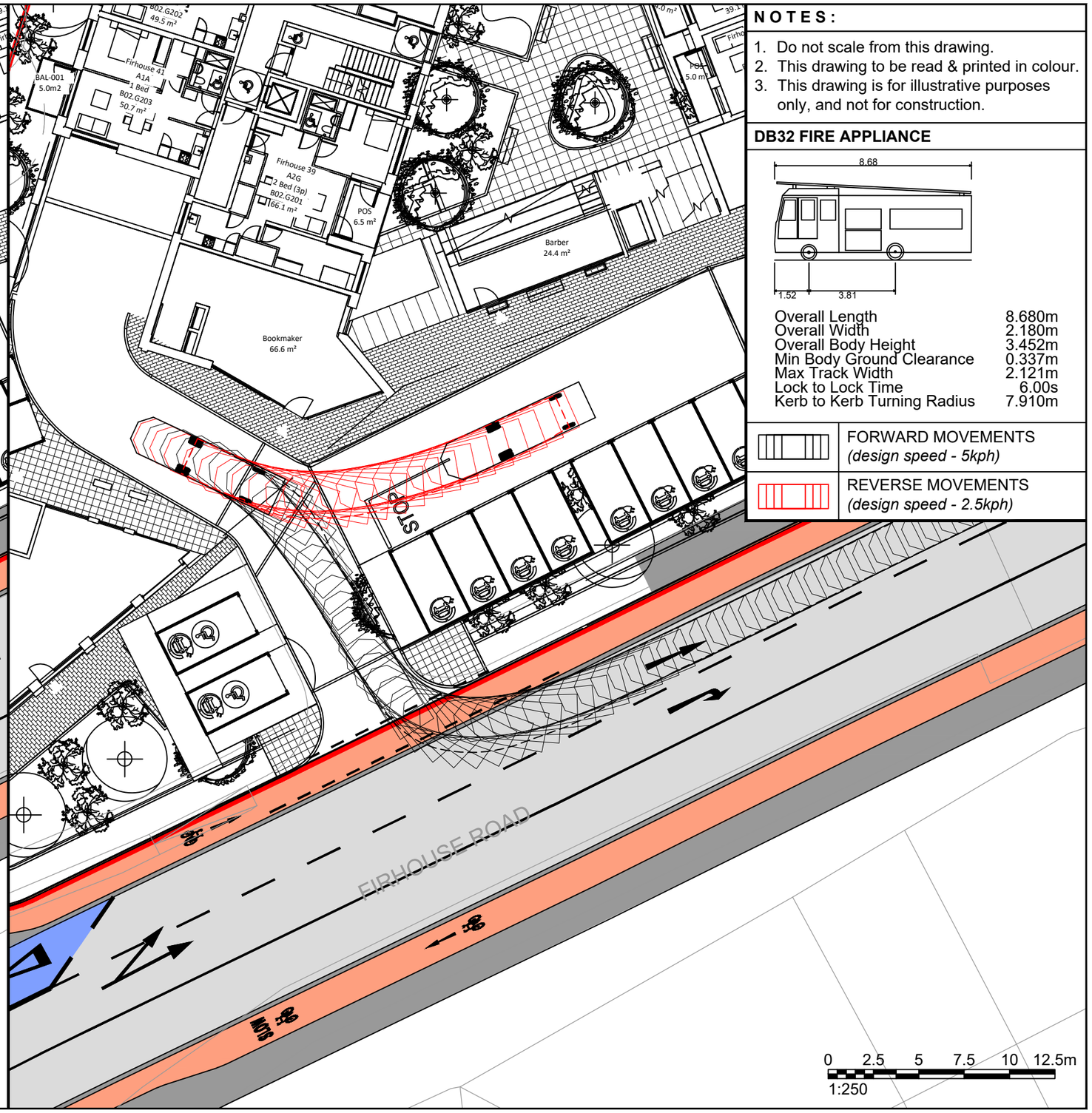
REVERSE MOVEMENTS *(design speed - 2.5kph)*

REVISIONS				
REV	DESCRIPTION	DRWN	CHKD	DATE
...	...	...	...	...

Drawn :	DW	**Drawing No :**	C623.3 TR01	**Project :**	Bluemont Firhouse Inn LRD
Checked :	GM	**Sheet :**	1 of 1	**Scale :**	1:250 @ A3
Date :	21.10.2025	**Status :**	Preliminary	**Title :**	Vehicular Swept Paths Analysis using 10.2m Refuse Vehicle
Rev :	v1	**Client :**	Bluemont Developments (Firhouse) Ltd.		

TRANSPORT INSIGHTS





NOTES:

1. Do not scale from this drawing.
2. This drawing to be read & printed in colour.
3. This drawing is for illustrative purposes only, and not for construction.

DB32 FIRE APPLIANCE

Overall Length	8.680m
Overall Width	2.180m
Overall Body Height	3.452m
Min Body Ground Clearance	0.337m
Max Track Width	2.121m
Lock to Lock Time	6.00s
Kerb to Kerb Turning Radius	7.910m

FORWARD MOVEMENTS *(design speed - 5kph)*

REVERSE MOVEMENTS *(design speed - 2.5kph)*

REVISIONS				
REV	DESCRIPTION	DRWN	CHKD	DATE
...	...	...	...	...

Drawn :	DW	**Drawing No :**	C623.3 TR02	**Project :**	Bluemont Firhouse Inn LRD
Checked :	GM	**Sheet :**	1 of 1	**Scale :**	1:250 @ A3
Date :	21.10.2025	**Status :**	Preliminary	**Title :**	Vehicular Swept Paths Analysis using DB32 Fire Appliance
Rev :	v1	**Client :**	Bluemont Developments (Firhouse) Ltd.		

TRANSPORT INSIGHTS

Appendix E TRICS Trip Generation Data

Calculation Reference: AUDIT-710101-210513-0521

TRIP RATE CALCULATION SELECTION PARAMETERS:

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

TOTAL VEHICLES

Selected regions and areas:

02	**SOUTH EAST**		
	ES	EAST SUSSEX	1 days
03	**SOUTH WEST**		
	DC	DORSET	1 days
04	**EAST ANGLIA**		
	CA	CAMBRIDGESHIRE	1 days
	NF	NORFOLK	1 days
	SF	SUFFOLK	2 days
05	**EAST MIDLANDS**		
	DS	DERBYSHIRE	1 days
	LE	LEICESTERSHIRE	1 days
	NT	NOTTINGHAMSHIRE	2 days
07	**YORKSHIRE & NORTH LINCOLNSHIRE**		
	RI	EAST RIDING OF YORKSHIRE	1 days
08	**NORTH WEST**		
	MS	MERSEYSIDE	2 days
09	**NORTH**		
	CB	CUMBRIA	2 days
11	**SCOTLAND**		
	EB	CITY OF EDINBURGH	1 days
	SR	STIRLING	1 days
12	**CONNAUGHT**		
	GA	GALWAY	1 days
13	**MUNSTER**		
	WA	WATERFORD	1 days
15	**GREATER DUBLIN**		
	DL	DUBLIN	7 days
17	**ULSTER (NORTHERN IRELAND)**		
	AN	ANTRIM	1 days

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

Primary Filtering selection:

This data displays the chosen trip rate parameter and its selected range. Only sites that fall within the parameter range are included in the trip rate calculation.

Parameter: No of Dwellings
Actual Range: 9 to 332 (units:)
Range Selected by User: 6 to 372 (units:)

Parking Spaces Range: All Surveys Included

Parking Spaces per Dwelling Range: All Surveys Included

Bedrooms per Dwelling Range: All Surveys Included

Percentage of dwellings privately owned: All Surveys Included

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/13 to 23/10/20

This data displays the range of survey dates selected. Only surveys that were conducted within this date range are included in the trip rate calculation.

Selected survey days:

Monday	3 days
Tuesday	13 days
Wednesday	6 days
Thursday	1 days
Friday	4 days

This data displays the number of selected surveys by day of the week.

Selected survey types:

Manual count	27 days
Directional ATC Count	0 days

This data displays the number of manual classified surveys and the number of unclassified ATC surveys, the total adding up to the overall number of surveys in the selected set. Manual surveys are undertaken using staff, whilst ATC surveys are undertaking using machines.

This data displays the number of surveys per main location category within the selected set. The main location categories consist of Free Standing, Edge of Town, Suburban Area, Neighbourhood Centre, Edge of Town Centre, Town Centre and Not Known.

Selected Location Sub Categories:

Development Zone	2
Residential Zone	19
Built-Up Zone	1
No Sub Category	5

This data displays the number of surveys per location sub-category within the selected set. The location sub-categories consist of Commercial Zone, Industrial Zone, Development Zone, Residential Zone, Retail Zone, Built-Up Zone, Village, Out of Town, High Street and No Sub Category.

Secondary Filtering selection:

Use Class:

C3	27 days

This data displays the number of surveys per Use Class classification within the selected set. The Use Classes Order 2005 has been used for this purpose, which can be found within the Library module of TRICS®.

Population within 500m Range:
All Surveys Included

Population within 1 mile:

1,001 to 5,000	3 days
5,001 to 10,000	1 days
10,001 to 15,000	4 days
15,001 to 20,000	1 days
20,001 to 25,000	7 days
25,001 to 50,000	10 days
50,001 to 100,000	1 days

This data displays the number of selected surveys within stated 1-mile radii of population.

Population within 5 miles:

5,001 to 25,000	1 days
25,001 to 50,000	1 days
50,001 to 75,000	6 days
125,001 to 250,000	4 days
250,001 to 500,000	7 days
500,001 or More	8 days

This data displays the number of selected surveys within stated 5-mile radii of population.

Car ownership within 5 miles:

0.5 or Less	1 days
0.6 to 1.0	11 days
1.1 to 1.5	15 days

This data displays the number of selected surveys within stated ranges of average cars owned per residential dwelling, within a radius of 5-miles of selected survey sites.

Travel Plan:

No	27 days

This data displays the number of surveys within the selected set that were undertaken at sites with Travel Plans in place, and the number of surveys that were undertaken at sites without Travel Plans.

PTAL Rating:

No PTAL Present	27 days

This data displays the number of selected surveys with PTAL Ratings.

Covid-19 Restrictions	Yes	At least one survey within the selected data set was undertaken at a time of Covid-19 restrictions

LIST OF SITES relevant to selection parameters

1 **AN-03-C-02** **BLOCK OF FLATS** **ANTRIM**
SUMMERHILL AVENUE
BELFAST
KNOCK
Edge of Town
Residential Zone
Total No of Dwellings: 22
Survey date: FRIDAY *28/11/14* *Survey Type: MANUAL*

2 **CA-03-C-03** **BLOCKS OF FLATS** **CAMBRIDGESHIRE**
CROMWELL ROAD
CAMBRIDGE

Suburban Area (PPS6 Out of Centre)
No Sub Category
Total No of Dwellings: 82
Survey date: MONDAY *18/09/17* *Survey Type: MANUAL*

3 **CB-03-C-02** **BLOCK OF FLATS** **CUMBRIA**
BRIDGE LANE
PENRITH

Edge of Town
No Sub Category
Total No of Dwellings: 35
Survey date: WEDNESDAY *11/06/14* *Survey Type: MANUAL*

4 **CB-03-C-03** **FLATS & BUNGALOWS** **CUMBRIA**
LOUND STREET
KENDAL

Suburban Area (PPS6 Out of Centre)
Residential Zone
Total No of Dwellings: 33
Survey date: MONDAY *09/06/14* *Survey Type: MANUAL*

5 **DC-03-C-02** **FLATS IN BLOCKS** **DORSET**
PALM COURT
WEYMOUTH
SPA ROAD
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total No of Dwellings: 14
Survey date: FRIDAY *28/03/14* *Survey Type: MANUAL*

6 **DL-03-C-11** **BLOCK OF FLATS** **DUBLIN**
WYCKHAM WAY
DUBLIN
DUNDRUM
Neighbourhood Centre (PPS6 Local Centre)
Residential Zone
Total No of Dwellings: 96
Survey date: TUESDAY *10/09/13* *Survey Type: MANUAL*

7 **DL-03-C-12** **BLOCK OF FLATS** **DUBLIN**
BOOTERSTOWN AVENUE
DUBLIN

Suburban Area (PPS6 Out of Centre)
Residential Zone
Total No of Dwellings: 47
Survey date: TUESDAY *10/09/13* *Survey Type: MANUAL*

8 **DL-03-C-13** **BLOCK OF FLATS** **DUBLIN**
SANDYFORD ROAD
DUBLIN

Neighbourhood Centre (PPS6 Local Centre)
Built-Up Zone
Total No of Dwellings: 52
Survey date: TUESDAY *10/09/13* *Survey Type: MANUAL*

LIST OF SITES relevant to selection parameters (Cont.)

9 **DL-03-C-14** **BLOCKS OF FLATS** **DUBLIN**
BALLINTEER ROAD
DUBLIN
DUNDRUM
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total No of Dwellings: 140
Survey date: TUESDAY *10/09/13* *Survey Type: MANUAL*

10 **DL-03-C-15** **BLOCKS OF FLATS** **DUBLIN**
MONKSTOWN ROAD
DUBLIN
MONKSTOWN
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total No of Dwellings: 20
Survey date: WEDNESDAY *01/10/14* *Survey Type: MANUAL*

11 **DL-03-C-16** **BLOCKS OF FLATS** **DUBLIN**
BOTANIC AVENUE
DUBLIN
DRUMCONDRA
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total No of Dwellings: 31
Survey date: TUESDAY *22/11/16* *Survey Type: MANUAL*

12 **DL-03-C-17** **BLOCKS OF FLATS** **DUBLIN**
FINGLAS ROAD
DUBLIN
FINGLAS
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total No of Dwellings: 332
Survey date: FRIDAY *23/10/20* *Survey Type: MANUAL*

13 **DS-03-C-03** **BLOCKS OF FLATS** **DERBYSHIRE**
CAESAR STREET
DERBY

Suburban Area (PPS6 Out of Centre)
Residential Zone
Total No of Dwellings: 30
Survey date: WEDNESDAY *25/09/19* *Survey Type: MANUAL*

14 **EB-03-C-01** **BLOCKS OF FLATS** **CITY OF EDINBURGH**
MYRESIDE ROAD
EDINBURGH
CRAIGLOCKHART
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total No of Dwellings: 32
Survey date: TUESDAY *26/05/15* *Survey Type: MANUAL*

15 **ES-03-C-01** **BLOCK OF FLATS** **EAST SUSSEX**
OLD SHOREHAM RD
BRIGHTON
HOVE
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total No of Dwellings: 71
Survey date: TUESDAY *26/09/17* *Survey Type: MANUAL*

16 **GA-03-C-01** **FLATS** **GALWAY**
BALLYLOUGHANE ROAD
GALWAY

Suburban Area (PPS6 Out of Centre)
No Sub Category
Total No of Dwellings: 34
Survey date: THURSDAY *31/10/13* *Survey Type: MANUAL*

17 **LE-03-C-01** **BLOCK OF FLATS** **LEICESTERSHIRE**
NEW STREET
LEICESTER
OADBY
Neighbourhood Centre (PPS6 Local Centre)
Residential Zone
Total No of Dwellings: 19
Survey date: FRIDAY *16/10/20* *Survey Type: MANUAL*

LIST OF SITES relevant to selection parameters (Cont.)

18 **MS-03-C-02** **BLOCKS OF FLATS** **MERSEYSIDE**
SOUTH FERRY QUAY
LIVERPOOL
BRUNSWICK DOCK
Suburban Area (PPS6 Out of Centre)
Development Zone
Total No of Dwellings: 184
Survey date: TUESDAY *13/11/18* *Survey Type: MANUAL*

19 **MS-03-C-03** **BLOCK OF FLATS** **MERSEYSIDE**
MARINERS WHARF
LIVERPOOL
QUEENS DOCK
Suburban Area (PPS6 Out of Centre)
Development Zone
Total No of Dwellings: 9
Survey date: TUESDAY *13/11/18* *Survey Type: MANUAL*

20 **NF-03-C-02** **MIXED FLATS & HOUSES** **NORFOLK**
HALL ROAD
NORWICH
LAKENHAM
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total No of Dwellings: 82
Survey date: MONDAY *18/11/19* *Survey Type: MANUAL*

21 **NT-03-C-01** **HOUSES (SPLIT INTO FLATS)** **NOTTINGHAMSHIRE**
LAWRENCE WAY
NOTTINGHAM

Suburban Area (PPS6 Out of Centre)
No Sub Category
Total No of Dwellings: 56
Survey date: TUESDAY *08/11/16* *Survey Type: MANUAL*

22 **NT-03-C-02** **HOUSES (SPLIT INTO FLATS)** **NOTTINGHAMSHIRE**
CASTLE MARINA ROAD
NOTTINGHAM

Suburban Area (PPS6 Out of Centre)
No Sub Category
Total No of Dwellings: 135
Survey date: WEDNESDAY *09/11/16* *Survey Type: MANUAL*

23 **RI-03-C-01** **FLATS** **EAST RIDING OF YORKSHIRE**
465 PRIORY ROAD
HULL

Edge of Town
Residential Zone
Total No of Dwellings: 20
Survey date: TUESDAY *13/05/14* *Survey Type: MANUAL*

24 **SF-03-C-03** **BLOCKS OF FLATS** **SUFFOLK**
TOLLGATE LANE
BURY ST EDMUNDS

Suburban Area (PPS6 Out of Centre)
Residential Zone
Total No of Dwellings: 30
Survey date: WEDNESDAY *03/12/14* *Survey Type: MANUAL*

25 **SF-03-C-04** **BLOCKS OF FLATS** **SUFFOLK**
SAINT MARY'S ROAD
IPSWICH

Suburban Area (PPS6 Out of Centre)
Residential Zone
Total No of Dwellings: 56
Survey date: WEDNESDAY *16/09/20* *Survey Type: MANUAL*

26 **SR-03-C-03** **BLOCK OF FLATS & TERRACED** **STIRLING**
KERSEBONNY ROAD
STIRLING
CAMBUSBARRON
Edge of Town
Residential Zone
Total No of Dwellings: 82
Survey date: TUESDAY *01/09/20* *Survey Type: MANUAL*

LIST OF SITES relevant to selection parameters (Cont.)

27 WA-03-C-01 BLOCKS OF FLATS WATERFORD
UPPER YELLOW ROAD
WATERFORD

Suburban Area (PPS6 Out of Centre)
Residential Zone
Total No of Dwellings: 51
Survey date: TUESDAY *12/05/15* *Survey Type: MANUAL*

This section provides a list of all survey sites and days in the selected set. For each individual survey site, it displays a unique site reference code and site address, the selected trip rate calculation parameter and its value, the day of the week and date of each survey, and whether the survey was a manual classified count or an ATC count.

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	27	66	0.049	27	66	0.175	27	66	0.224
08:00 - 09:00	27	66	0.068	**27**	**66**	**0.223**	**27**	**66**	**0.291**
09:00 - 10:00	27	66	0.079	27	66	0.096	27	66	0.175
10:00 - 11:00	27	66	0.055	27	66	0.074	27	66	0.129
11:00 - 12:00	27	66	0.060	27	66	0.074	27	66	0.134
12:00 - 13:00	27	66	0.077	27	66	0.085	27	66	0.162
13:00 - 14:00	27	66	0.081	27	66	0.089	27	66	0.170
14:00 - 15:00	27	66	0.099	27	66	0.086	27	66	0.185
15:00 - 16:00	27	66	0.111	27	66	0.075	27	66	0.186
16:00 - 17:00	27	66	0.124	27	66	0.080	27	66	0.204
17:00 - 18:00	**27**	**66**	**0.184**	27	66	0.085	27	66	0.269
18:00 - 19:00	27	66	0.162	27	66	0.102	27	66	0.264
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			1.149			1.244			2.393

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

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

Parameter summary

Trip rate parameter range selected:	9 - 332 (units:)
Survey date date range:	01/01/13 - 23/10/20
Number of weekdays (Monday-Friday):	27
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

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

Calculation Reference: AUDIT-710101-210513-0527

TRIP RATE CALCULATION SELECTION PARAMETERS:

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

Selected regions and areas:

02	**SOUTH EAST**		
	ES	EAST SUSSEX	1 days
03	**SOUTH WEST**		
	WL	WILTSHIRE	1 days
04	**EAST ANGLIA**		
	CA	CAMBRIDGESHIRE	1 days
05	**EAST MIDLANDS**		
	DS	DERBYSHIRE	1 days
	LE	LEICESTERSHIRE	1 days
	LN	LINCOLNSHIRE	1 days
06	**WEST MIDLANDS**		
	WK	WARWICKSHIRE	1 days
09	**NORTH**		
	TV	TEES VALLEY	1 days
	TW	TYNE & WEAR	1 days
10	**WALES**		
	BG	BRIDGEND	1 days
	MM	MONMOUTHSHIRE	1 days
11	**SCOTLAND**		
	DU	DUNDEE CITY	1 days
	SR	STIRLING	1 days
12	**CONNAUGHT**		
	RO	ROSCOMMON	1 days

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

Primary Filtering selection:

This data displays the chosen trip rate parameter and its selected range. Only sites that fall within the parameter range are included in the trip rate calculation.

Parameter: Gross floor area
Actual Range: 150 to 860 (units: sqm)
Range Selected by User: 120 to 2350 (units: sqm)

Parking Spaces Range: All Surveys Included

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/13 to 27/09/19

This data displays the range of survey dates selected. Only surveys that were conducted within this date range are included in the trip rate calculation.

Selected survey days:

Monday	3 days
Tuesday	3 days
Thursday	3 days
Friday	5 days

This data displays the number of selected surveys by day of the week.

Selected survey types:

Manual count	14 days
Directional ATC Count	0 days

This data displays the number of manual classified surveys and the number of unclassified ATC surveys, the total adding up to the overall number of surveys in the selected set. Manual surveys are undertaken using staff, whilst ATC surveys are undertaking using machines.

Selected Locations:

Suburban Area (PPS6 Out of Centre)	5
Edge of Town	8
Neighbourhood Centre (PPS6 Local Centre)	1

This data displays the number of surveys per main location category within the selected set. The main location categories consist of Free Standing, Edge of Town, Suburban Area, Neighbourhood Centre, Edge of Town Centre, Town Centre and Not Known.

Selected Location Sub Categories:

Industrial Zone	1
Commercial Zone	1

This data displays the number of surveys per location sub-category within the selected set. The location sub-categories consist of Commercial Zone, Industrial Zone, Development Zone, Residential Zone, Retail Zone, Built-Up Zone, Village, Out of Town, High Street and No Sub Category.

Secondary Filtering selection:

Use Class:

E(f)	14 days

This data displays the number of surveys per Use Class classification within the selected set. The Use Classes Order 2005 has been used for this purpose, which can be found within the Library module of TRICS®.

Population within 500m Range:
All Surveys Included

Population within 1 mile:

1,001 to 5,000	2 days
5,001 to 10,000	2 days
10,001 to 15,000	1 days
15,001 to 20,000	3 days
20,001 to 25,000	1 days
25,001 to 50,000	4 days
50,001 to 100,000	1 days

This data displays the number of selected surveys within stated 1-mile radii of population.

Population within 5 miles:

5,001 to 25,000	1 days
50,001 to 75,000	1 days
75,001 to 100,000	3 days
125,001 to 250,000	5 days
250,001 to 500,000	4 days

This data displays the number of selected surveys within stated 5-mile radii of population.

Car ownership within 5 miles:

0.5 or Less	1 days
0.6 to 1.0	3 days
1.1 to 1.5	9 days
2.1 to 2.5	1 days

This data displays the number of selected surveys within stated ranges of average cars owned per residential dwelling, within a radius of 5-miles of selected survey sites.

Travel Plan:

No	14 days

This data displays the number of surveys within the selected set that were undertaken at sites with Travel Plans in place, and the number of surveys that were undertaken at sites without Travel Plans.

PTAL Rating:

No PTAL Present	14 days

This data displays the number of selected surveys with PTAL Ratings.

LIST OF SITES relevant to selection parameters

1 **BG-04-D-01** **NURSERY** **BRIDGEND**
GEORGE STREET
BRIDGEND
BRIDGEND IND. ESTATE
Edge of Town
Industrial Zone
Total Gross floor area: 210 sqm
Survey date: MONDAY *13/10/14* *Survey Type: MANUAL*

2 **CA-04-D-02** **NURSERY** **CAMBRIDGESHIRE**
EASTFIELD ROAD
PETERBOROUGH

Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Gross floor area: 400 sqm
Survey date: TUESDAY *18/10/16* *Survey Type: MANUAL*

3 **DS-04-D-02** **NURSERY** **DERBYSHIRE**
MAXWELL AVENUE
DERBY
DARLEY ABBEY
Edge of Town
Residential Zone
Total Gross floor area: 415 sqm
Survey date: THURSDAY *12/07/18* *Survey Type: MANUAL*

4 **DU-04-D-01** **NURSERY** **DUNDEE CITY**
LONGTOWN TERRACE
DUNDEE

Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Gross floor area: 325 sqm
Survey date: MONDAY *24/04/17* *Survey Type: MANUAL*

5 **ES-04-D-01** **NURSERY** **EAST SUSSEX**
CONNAUGHT ROAD
BRIGHTON
HOVE
Neighbourhood Centre (PPS6 Local Centre)
Residential Zone
Total Gross floor area: 185 sqm
Survey date: FRIDAY *22/09/17* *Survey Type: MANUAL*

6 **LE-04-D-01** **NURSERY** **LEICESTERSHIRE**
WIGSTON ROAD
LEICESTER
OADBY
Edge of Town
Residential Zone
Total Gross floor area: 375 sqm
Survey date: THURSDAY *30/10/14* *Survey Type: MANUAL*

7 **LN-04-D-01** **NURSERY** **LINCOLNSHIRE**
NEWARK ROAD
LINCOLN
SWALLOW BECK
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Gross floor area: 600 sqm
Survey date: TUESDAY *31/10/17* *Survey Type: MANUAL*

8 **MM-04-D-01** **NURSERY** **MONMOUTHSHIRE**
SPOONER CLOSE
NEWPORT
COEDKERNEW
Edge of Town
Commercial Zone
Total Gross floor area: 860 sqm
Survey date: FRIDAY *27/09/19* *Survey Type: MANUAL*

9 **RO-04-D-01** **NURSERY** **ROSCOMMON**
PARK VIEW
ROSCOMMON
CRUBY HILL
Edge of Town
Residential Zone
Total Gross floor area: 500 sqm
Survey date: FRIDAY *26/09/14* *Survey Type: MANUAL*

LIST OF SITES relevant to selection parameters (Cont.)

10 **SR-04-D-01** **NURSERY** **STIRLING**
HENDERSON STREET
STIRLING
BRIDGE OF ALLAN
Edge of Town
No Sub Category
Total Gross floor area: 250 sqm
Survey date: MONDAY *16/06/14* *Survey Type: MANUAL*

11 **TV-04-D-01** **NURSERY** **TEES VALLEY**
COTSWOLD DRIVE
REDCAR

Edge of Town
Residential Zone
Total Gross floor area: 150 sqm
Survey date: FRIDAY *19/05/17* *Survey Type: MANUAL*

12 **TW-04-D-03** **NURSERY** **TYNE & WEAR**
JUBILEE ROAD
NEWCASTLE UPON TYNE
GOSFORTH
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Gross floor area: 725 sqm
Survey date: TUESDAY *21/05/19* *Survey Type: MANUAL*

13 **WK-04-D-01** **NURSERY** **WARWICKSHIRE**
THE RIDGEWAY
STRATFORD UPON AVON

Edge of Town
Residential Zone
Total Gross floor area: 340 sqm
Survey date: FRIDAY *29/06/18* *Survey Type: MANUAL*

14 **WL-04-D-01** **NURSERY** **WILTSHIRE**
SHREWSBURY ROAD
SWINDON
WALCOT
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Gross floor area: 500 sqm
Survey date: THURSDAY *22/09/16* *Survey Type: MANUAL*

This section provides a list of all survey sites and days in the selected set. For each individual survey site, it displays a unique site reference code and site address, the selected trip rate calculation parameter and its value, the day of the week and date of each survey, and whether the survey was a manual classified count or an ATC count.

TRIP RATE for Land Use 04 - EDUCATION/D - NURSERY

TOTAL VEHICLES

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00	1	400	0.000	1	400	0.000	1	400	0.000
07:00 - 08:00	14	417	2.296	14	417	0.908	14	417	3.204
08:00 - 09:00	**14**	**417**	**3.907**	14	417	3.119	**14**	**417**	**7.026**
09:00 - 10:00	14	417	1.731	14	417	1.560	14	417	3.291
10:00 - 11:00	14	417	0.634	14	417	0.411	14	417	1.045
11:00 - 12:00	14	417	0.703	14	417	0.548	14	417	1.251
12:00 - 13:00	14	417	1.662	14	417	1.714	14	417	3.376
13:00 - 14:00	14	417	1.063	14	417	1.731	14	417	2.794
14:00 - 15:00	14	417	0.823	14	417	0.805	14	417	1.628
15:00 - 16:00	14	417	0.788	14	417	1.097	14	417	1.885
16:00 - 17:00	14	417	1.748	14	417	1.919	14	417	3.667
17:00 - 18:00	14	417	2.468	**14**	**417**	**3.239**	14	417	5.707
18:00 - 19:00	13	437	0.158	13	437	0.897	13	437	1.055
19:00 - 20:00	1	400	0.000	1	400	0.000	1	400	0.000
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			17.981			17.948			35.929

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

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

Parameter summary

Trip rate parameter range selected:	150 - 860 (units: sqm)
Survey date date range:	01/01/13 - 27/09/19
Number of weekdays (Monday-Friday):	14
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

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

Calculation Reference: AUDIT-710101-210513-0552

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 06 - HOTEL, FOOD & DRINK
Category : K - CAFE

TOTAL VEHICLES

Selected regions and areas:

01 GREATER LONDON
LB LAMBETH 1 days

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

Primary Filtering selection:

This data displays the chosen trip rate parameter and its selected range. Only sites that fall within the parameter range are included in the trip rate calculation.

Parameter:	No of Employees
Actual Range:	27 to 27 (units:)
Range Selected by User:	27 to 27 (units:)

Parking Spaces Range: All Surveys Included

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/13 to 27/11/18

This data displays the range of survey dates selected. Only surveys that were conducted within this date range are included in the trip rate calculation.

Selected survey days:
Tuesday 1 days

This data displays the number of selected surveys by day of the week.

Selected survey types:
Manual count 1 days
Directional ATC Count 0 days

This data displays the number of manual classified surveys and the number of unclassified ATC surveys, the total adding up to the overall number of surveys in the selected set. Manual surveys are undertaken using staff, whilst ATC surveys are undertaking using machines.

Selected Locations:
Town Centre 1

This data displays the number of surveys per main location category within the selected set. The main location categories consist of Free Standing, Edge of Town, Suburban Area, Neighbourhood Centre, Edge of Town Centre, Town Centre and Not Known.

Selected Location Sub Categories:
Built-Up Zone 1

This data displays the number of surveys per location sub-category within the selected set. The location sub-categories consist of Commercial Zone, Industrial Zone, Development Zone, Residential Zone, Retail Zone, Built-Up Zone, Village, Out of Town, High Street and No Sub Category.

Secondary Filtering selection:

Use Class:
Not Known 1 days

This data displays the number of surveys per Use Class classification within the selected set. The Use Classes Order 2005 has been used for this purpose, which can be found within the Library module of TRICS®.

Population within 500m Range:
All Surveys Included

Secondary Filtering selection (Cont.):

Population within 1 mile:
100,001 or More 1 days

This data displays the number of selected surveys within stated 1-mile radii of population.

Population within 5 miles:
500,001 or More 1 days

This data displays the number of selected surveys within stated 5-mile radii of population.

Car ownership within 5 miles:
0.5 or Less 1 days

This data displays the number of selected surveys within stated ranges of average cars owned per residential dwelling, within a radius of 5-miles of selected survey sites.

Travel Plan:
No 1 days

This data displays the number of surveys within the selected set that were undertaken at sites with Travel Plans in place, and the number of surveys that were undertaken at sites without Travel Plans.

PTAL Rating:
6b (High) Excellent 1 days

This data displays the number of selected surveys with PTAL Ratings.

LIST OF SITES relevant to selection parameters

1 LB-06-K-01 PRÊT À MANGER LAMBETH
WATERLOO ROAD
WATERLOO

Town Centre
Built-Up Zone
Total No of Employees: 27
Survey date: TUESDAY *27/11/18* *Survey Type: MANUAL*

This section provides a list of all survey sites and days in the selected set. For each individual survey site, it displays a unique site reference code and site address, the selected trip rate calculation parameter and its value, the day of the week and date of each survey, and whether the survey was a manual classified count or an ATC count.

TRIP RATE for Land Use 06 - HOTEL, FOOD & DRINK/K - CAFE

TOTAL VEHICLES

Calculation factor: 1 EMPLOY

BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. EMPLOY	Trip Rate	No. Days	Ave. EMPLOY	Trip Rate	No. Days	Ave. EMPLOY	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00	1	27	0.037	1	27	0.000	1	27	0.037
07:00 - 08:00	1	27	0.111	1	27	0.074	1	27	0.185
08:00 - 09:00	**1**	**27**	**0.148**	1	27	0.074	**1**	**27**	**0.222**
09:00 - 10:00	1	27	0.037	1	27	0.000	1	27	0.037
10:00 - 11:00	1	27	0.037	1	27	0.037	1	27	0.074
11:00 - 12:00	1	27	0.037	1	27	0.037	1	27	0.074
12:00 - 13:00	1	27	0.000	1	27	0.037	1	27	0.037
13:00 - 14:00	1	27	0.074	1	27	0.000	1	27	0.074
14:00 - 15:00	1	27	0.037	1	27	0.074	1	27	0.111
15:00 - 16:00	1	27	0.074	**1**	**27**	**0.111**	1	27	0.185
16:00 - 17:00	1	27	0.074	1	27	0.000	1	27	0.074
17:00 - 18:00	1	27	0.037	1	27	0.037	1	27	0.074
18:00 - 19:00	1	27	0.000	1	27	0.037	1	27	0.037
19:00 - 20:00	1	27	0.074	1	27	0.074	1	27	0.148
20:00 - 21:00	1	27	0.074	1	27	0.074	1	27	0.148
21:00 - 22:00	1	27	0.000	1	27	0.037	1	27	0.037
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.851			0.703			1.554

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:	27 - 27 (units:)
Survey date date range:	01/01/13 - 27/11/18
Number of weekdays (Monday-Friday):	1
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

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

Calculation Reference: AUDIT-710101-210513-0529

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 06 - HOTEL, FOOD & DRINK
Category : I - PUBLIC HOUSE (WITHOUT RESTAURANT)
TOTAL VEHICLES

Selected regions and areas:

07	**YORKSHIRE & NORTH LINCOLNSHIRE**		
	WY	WEST YORKSHIRE	1 days
08	**NORTH WEST**		
	GM	GREATER MANCHESTER	1 days

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

Primary Filtering selection:

This data displays the chosen trip rate parameter and its selected range. Only sites that fall within the parameter range are included in the trip rate calculation.

Parameter:	Gross floor area
Actual Range:	175 to 600 (units: sqm)
Range Selected by User:	120 to 750 (units: sqm)

Parking Spaces Range: All Surveys Included

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/13 to 10/07/16

This data displays the range of survey dates selected. Only surveys that were conducted within this date range are included in the trip rate calculation.

Selected survey days:

Tuesday	1 days
Friday	1 days

This data displays the number of selected surveys by day of the week.

Selected survey types:

Manual count	2 days
Directional ATC Count	0 days

This data displays the number of manual classified surveys and the number of unclassified ATC surveys, the total adding up to the overall number of surveys in the selected set. Manual surveys are undertaken using staff, whilst ATC surveys are undertaking using machines.

Selected Locations:

Edge of Town Centre	1
Edge of Town	1

This data displays the number of surveys per main location category within the selected set. The main location categories consist of Free Standing, Edge of Town, Suburban Area, Neighbourhood Centre, Edge of Town Centre, Town Centre and Not Known.

Selected Location Sub Categories:

Residential Zone	1
No Sub Category	1

This data displays the number of surveys per location sub-category within the selected set. The location sub-categories consist of Commercial Zone, Industrial Zone, Development Zone, Residential Zone, Retail Zone, Built-Up Zone, Village, Out of Town, High Street and No Sub Category.

Secondary Filtering selection:

Use Class:

Sui Generis	2 days

This data displays the number of surveys per Use Class classification within the selected set. The Use Classes Order 2005 has been used for this purpose, which can be found within the Library module of TRICS®.

Population within 500m Range:
All Surveys Included

Secondary Filtering selection (Cont.):

Population within 1 mile:

1,001 to 5,000	1 days
25,001 to 50,000	1 days

This data displays the number of selected surveys within stated 1-mile radii of population.

Population within 5 miles:

5,001 to 25,000	1 days
125,001 to 250,000	1 days

This data displays the number of selected surveys within stated 5-mile radii of population.

Car ownership within 5 miles:

0.6 to 1.0	1 days
1.1 to 1.5	1 days

This data displays the number of selected surveys within stated ranges of average cars owned per residential dwelling, within a radius of 5-miles of selected survey sites.

Travel Plan:

No	2 days

This data displays the number of surveys within the selected set that were undertaken at sites with Travel Plans in place, and the number of surveys that were undertaken at sites without Travel Plans.

PTAL Rating:

No PTAL Present	2 days

This data displays the number of selected surveys with PTAL Ratings.

LIST OF SITES relevant to selection parameters

1	**GM-06-I-01**	**PUBLIC HOUSE**		**GREATER MANCHESTER**
	SYKE ROAD			
	ROCHDALE			
	Edge of Town			
	Residential Zone			
	Total Gross floor area:		175 sqm	
	Survey date: TUESDAY		*25/11/14*	*Survey Type: MANUAL*
2	**WY-06-I-01**	**PUBLIC HOUSE**		**WEST YORKSHIRE**
	HALIFAX ROAD			
	LIVERSEDGE			
	Edge of Town Centre			
	No Sub Category			
	Total Gross floor area:		600 sqm	
	Survey date: FRIDAY		*25/04/14*	*Survey Type: MANUAL*

This section provides a list of all survey sites and days in the selected set. For each individual survey site, it displays a unique site reference code and site address, the selected trip rate calculation parameter and its value, the day of the week and date of each survey, and whether the survey was a manual classified count or an ATC count.

TRIP RATE for Land Use 06 - HOTEL, FOOD & DRINK/I - PUBLIC HOUSE (WITHOUT RESTAURANT)

TOTAL VEHICLES

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00									
08:00 - 09:00									
09:00 - 10:00									
10:00 - 11:00									
11:00 - 12:00	1	175	0.000	1	175	0.000	1	175	0.000
12:00 - 13:00	2	388	0.258	2	388	0.258	2	388	0.516
13:00 - 14:00	2	388	0.774	2	388	0.645	2	388	1.419
14:00 - 15:00	2	388	0.645	2	388	0.387	2	388	1.032
15:00 - 16:00	2	388	1.806	2	388	0.774	2	388	2.580
16:00 - 17:00	2	388	2.194	2	388	1.419	2	388	3.613
17:00 - 18:00	**2**	**388**	**2.710**	2	388	2.065	2	388	4.775
18:00 - 19:00	2	388	1.161	2	388	1.806	2	388	2.967
19:00 - 20:00	2	388	1.677	2	388	2.194	2	388	3.871
20:00 - 21:00	2	388	2.323	2	388	2.065	2	388	4.388
21:00 - 22:00	2	388	1.419	2	388	2.194	2	388	3.613
22:00 - 23:00	2	388	2.194	2	388	2.194	2	388	4.388
23:00 - 24:00	1	175	1.143	**1**	**175**	**4.571**	**1**	**175**	**5.714**
Total Rates:			18.304			20.572			38.876

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:	175 - 600 (units: sqm)
Survey date date range:	01/01/13 - 10/07/16
Number of weekdays (Monday-Friday):	2
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

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

Calculation Reference: AUDIT-710101-220311-0302

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 05 - HEALTH
Category : J - DENTAL SURGERY

TOTAL VEHICLES

Selected regions and areas:

02	**SOUTH EAST**		
	RE	READING	1 days
04	**EAST ANGLIA**		
	NF	NORFOLK	1 days
07	**YORKSHIRE & NORTH LINCOLNSHIRE**		
	WY	WEST YORKSHIRE	1 days
08	**NORTH WEST**		
	GM	GREATER MANCHESTER	1 days
10	**WALES**		
	BG	BRIDGEND	1 days
17	**ULSTER (NORTHERN IRELAND)**		
	AN	ANTRIM	1 days

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

Primary Filtering selection:

This data displays the chosen trip rate parameter and its selected range. Only sites that fall within the parameter range are included in the trip rate calculation.

Parameter: Gross floor area
Actual Range: 60 to 600 (units: sqm)
Range Selected by User: 60 to 600 (units: sqm)

Parking Spaces Range: All Surveys Included

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/13 to 02/06/21

This data displays the range of survey dates selected. Only surveys that were conducted within this date range are included in the trip rate calculation.

Selected survey days:

Monday	2 days
Tuesday	1 days
Thursday	2 days
Friday	1 days

This data displays the number of selected surveys by day of the week.

Selected survey types:

Manual count	6 days
Directional ATC Count	0 days

This data displays the number of manual classified surveys and the number of unclassified ATC surveys, the total adding up to the overall number of surveys in the selected set. Manual surveys are undertaken using staff, whilst ATC surveys are undertaking using machines.

Selected Locations:

Suburban Area (PPS6 Out of Centre)	2
Neighbourhood Centre (PPS6 Local Centre)	4

This data displays the number of surveys per main location category within the selected set. The main location categories consist of Free Standing, Edge of Town, Suburban Area, Neighbourhood Centre, Edge of Town Centre, Town Centre and Not Known.

Selected Location Sub Categories:

Residential Zone	6

This data displays the number of surveys per location sub-category within the selected set. The location sub-categories consist of Commercial Zone, Industrial Zone, Development Zone, Residential Zone, Retail Zone, Built-Up Zone, Village, Out of Town, High Street and No Sub Category.

Secondary Filtering selection:

Use Class:

E(e)	6 days

This data displays the number of surveys per Use Class classification within the selected set. The Use Classes Order 2005 has been used for this purpose, which can be found within the Library module of TRICS®.

Population within 500m Range:

All Surveys Included

Population within 1 mile:

15,001 to 20,000	2 days
20,001 to 25,000	1 days
25,001 to 50,000	2 days
50,001 to 100,000	1 days

This data displays the number of selected surveys within stated 1-mile radii of population.

Population within 5 miles:

50,001 to 75,000	1 days
75,001 to 100,000	1 days
250,001 to 500,000	3 days
500,001 or More	1 days

This data displays the number of selected surveys within stated 5-mile radii of population.

Car ownership within 5 miles:

0.6 to 1.0	3 days
1.1 to 1.5	3 days

This data displays the number of selected surveys within stated ranges of average cars owned per residential dwelling, within a radius of 5-miles of selected survey sites.

Travel Plan:

No	6 days

This data displays the number of surveys within the selected set that were undertaken at sites with Travel Plans in place, and the number of surveys that were undertaken at sites without Travel Plans.

PTAL Rating:

No PTAL Present	6 days

This data displays the number of selected surveys with PTAL Ratings.

LIST OF SITES relevant to selection parameters

1 **AN-05-J-04** **DENTAL SURGERY** **ANTRIM**
MALONE ROAD
BELFAST

Neighbourhood Centre (PPS6 Local Centre)
Residential Zone
Total Gross floor area: 600 sqm
Survey date: THURSDAY *27/11/14* *Survey Type: MANUAL*

2 **BG-05-J-01** **DENTAL SURGERY** **BRIDGEND**
WHITETHORN DRIVE
BRIDGEND
BRACKLA
Neighbourhood Centre (PPS6 Local Centre)
Residential Zone
Total Gross floor area: 300 sqm
Survey date: MONDAY *13/10/14* *Survey Type: MANUAL*

3 **GM-05-J-01** **DENTAL SURGERY** **GREATER MANCHESTER**
ROCH VALLEY WAY
ROCHDALE

Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Gross floor area: 225 sqm
Survey date: TUESDAY *20/10/15* *Survey Type: MANUAL*

4 **NF-05-J-01** **DENTAL SURGERY** **NORFOLK**
WOOTON ROAD
KINGS LYNN
GAYWOOD
Neighbourhood Centre (PPS6 Local Centre)
Residential Zone
Total Gross floor area: 289 sqm
Survey date: THURSDAY *11/12/14* *Survey Type: MANUAL*

5 **RE-05-J-01** **DENTAL SURGERY** **READING**
WOKINGHAM ROAD
READING
EARLEY
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Gross floor area: 60 sqm
Survey date: FRIDAY *20/11/15* *Survey Type: MANUAL*

6 **WY-05-J-01** **DENTAL SURGERY** **WEST YORKSHIRE**
BURLEY ROAD
LEEDS

Neighbourhood Centre (PPS6 Local Centre)
Residential Zone
Total Gross floor area: 120 sqm
Survey date: MONDAY *19/10/15* *Survey Type: MANUAL*

This section provides a list of all survey sites and days in the selected set. For each individual survey site, it displays a unique site reference code and site address, the selected trip rate calculation parameter and its value, the day of the week and date of each survey, and whether the survey was a manual classified count or an ATC count.

TRIP RATE for Land Use 05 - HEALTH/J - DENTAL SURGERY

TOTAL VEHICLES

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	5	261	0.383	5	261	0.000	5	261	0.383
08:00 - 09:00	**6**	**266**	**2.447**	6	266	0.502	6	266	2.949
09:00 - 10:00	6	266	2.008	6	266	1.694	6	266	3.702
10:00 - 11:00	6	266	2.196	**6**	**266**	**2.258**	**6**	**266**	**4.454**
11:00 - 12:00	6	266	1.694	6	266	1.882	6	266	3.576
12:00 - 13:00	6	266	1.506	6	266	2.070	6	266	3.576
13:00 - 14:00	6	266	1.380	6	266	1.004	6	266	2.384
14:00 - 15:00	6	266	1.694	6	266	1.631	6	266	3.325
15:00 - 16:00	6	266	2.258	6	266	2.196	6	266	4.454
16:00 - 17:00	6	266	1.192	6	266	1.631	6	266	2.823
17:00 - 18:00	6	266	0.502	6	266	1.882	6	266	2.384
18:00 - 19:00	6	266	0.000	6	266	0.439	6	266	0.439
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			17.260			17.189			34.449

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:	60 - 600 (units: sqm)
Survey date date range:	01/01/13 - 02/06/21
Number of weekdays (Monday-Friday):	6
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

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

Calculation Reference: AUDIT-710101-220311-0323

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 05 - HEALTH
Category : G - GP SURGERIES

TOTAL VEHICLES

Selected regions and areas:

02	**SOUTH EAST**		
	ES	EAST SUSSEX	1 days
	HF	HERTFORDSHIRE	1 days
03	**SOUTH WEST**		
	DV	DEVON	1 days
	WL	WILTSHIRE	1 days
04	**EAST ANGLIA**		
	NF	NORFOLK	1 days
05	**EAST MIDLANDS**		
	DS	DERBYSHIRE	1 days
	LE	LEICESTERSHIRE	1 days
	NT	NOTTINGHAMSHIRE	1 days
06	**WEST MIDLANDS**		
	WM	WEST MIDLANDS	2 days
08	**NORTH WEST**		
	CH	CHESHIRE	1 days
	GM	GREATER MANCHESTER	1 days
09	**NORTH**		
	TW	TYNE & WEAR	3 days
10	**WALES**		
	CF	CARDIFF	1 days
11	**SCOTLAND**		
	FI	FIFE	2 days
	GC	GLASGOW CITY	1 days
15	**GREATER DUBLIN**		
	DL	DUBLIN	2 days
17	**ULSTER (NORTHERN IRELAND)**		
	AN	ANTRIM	2 days

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

Primary Filtering selection:

This data displays the chosen trip rate parameter and its selected range. Only sites that fall within the parameter range are included in the trip rate calculation.

Parameter: Gross floor area
Actual Range: 215 to 1400 (units: sqm)
Range Selected by User: 40 to 2900 (units: sqm)

Parking Spaces Range: All Surveys Included

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/13 to 22/06/21

This data displays the range of survey dates selected. Only surveys that were conducted within this date range are included in the trip rate calculation.

Selected survey days:

Monday	2 days
Tuesday	5 days
Wednesday	6 days
Thursday	1 days
Friday	9 days

This data displays the number of selected surveys by day of the week.

Selected survey types:

Manual count	23 days
Directional ATC Count	0 days

This data displays the number of manual classified surveys and the number of unclassified ATC surveys, the total adding up to the overall number of surveys in the selected set. Manual surveys are undertaken using staff, whilst ATC surveys are undertaking using machines.

Selected Locations:

Suburban Area (PPS6 Out of Centre)	8
Neighbourhood Centre (PPS6 Local Centre)	15

This data displays the number of surveys per main location category within the selected set. The main location categories consist of Free Standing, Edge of Town, Suburban Area, Neighbourhood Centre, Edge of Town Centre, Town Centre and Not Known.

Selected Location Sub Categories:

Residential Zone	18
Village	3
High Street	1
No Sub Category	1

This data displays the number of surveys per location sub-category within the selected set. The location sub-categories consist of Commercial Zone, Industrial Zone, Development Zone, Residential Zone, Retail Zone, Built-Up Zone, Village, Out of Town, High Street and No Sub Category.

Secondary Filtering selection:

Use Class:

E(e)	23 days

This data displays the number of surveys per Use Class classification within the selected set. The Use Classes Order 2005 has been used for this purpose, which can be found within the Library module of TRICS®.

Population within 500m Range:
All Surveys Included

Secondary Filtering selection (Cont.):

Population within 1 mile:

1,000 or Less	1 days
1,001 to 5,000	3 days
10,001 to 15,000	2 days
15,001 to 20,000	2 days
20,001 to 25,000	2 days
25,001 to 50,000	13 days

This data displays the number of selected surveys within stated 1-mile radii of population.

Population within 5 miles:

5,001 to 25,000	1 days
25,001 to 50,000	2 days
50,001 to 75,000	1 days
75,001 to 100,000	1 days
100,001 to 125,000	2 days
125,001 to 250,000	4 days
250,001 to 500,000	7 days
500,001 or More	5 days

This data displays the number of selected surveys within stated 5-mile radii of population.

Car ownership within 5 miles:

0.6 to 1.0	9 days
1.1 to 1.5	12 days
1.6 to 2.0	1 days
2.1 to 2.5	1 days

This data displays the number of selected surveys within stated ranges of average cars owned per residential dwelling, within a radius of 5-miles of selected survey sites.

Travel Plan:

No	23 days

This data displays the number of surveys within the selected set that were undertaken at sites with Travel Plans in place, and the number of surveys that were undertaken at sites without Travel Plans.

PTAL Rating:

No PTAL Present	23 days

This data displays the number of selected surveys with PTAL Ratings.

Covid-19 Restrictions	Yes	At least one survey within the selected data set was undertaken at a time of Covid-19 restrictions

LIST OF SITES relevant to selection parameters

1 **AN-05-G-04** **GP SURGERY** **ANTRIM**
GROSVENOR ROAD
BELFAST

Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Gross floor area: 1186 sqm
Survey date: FRIDAY *25/09/15* *Survey Type: MANUAL*

2 **AN-05-G-05** **GP SURGERY** **ANTRIM**
DOURY ROAD
BALLYMENA

Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Gross floor area: 1110 sqm
Survey date: TUESDAY *22/06/21* *Survey Type: MANUAL*

3 **CF-05-G-01** **GP SURGERY** **CARDIFF**
CAMBRIDGE STREET
CARDIFF

Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Gross floor area: 1200 sqm
Survey date: FRIDAY *05/05/17* *Survey Type: MANUAL*

4 **CH-05-G-05** **GP SURGERY** **CHESHIRE**
KINGSMEAD SQUARE
NORTHWICH
KINGSMEAD
Neighbourhood Centre (PPS6 Local Centre)
Residential Zone
Total Gross floor area: 650 sqm
Survey date: FRIDAY *07/06/19* *Survey Type: MANUAL*

5 **DL-05-G-02** **GP SURGERY** **DUBLIN**
SAINT BRIGID'S ROAD LOWER
DUBLIN
DRUMCONDRA
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Gross floor area: 308 sqm
Survey date: WEDNESDAY *23/11/16* *Survey Type: MANUAL*

6 **DL-05-G-03** **GP SURGERY** **DUBLIN**
THE DUNES
PORTMARNOCK
BURROW
Neighbourhood Centre (PPS6 Local Centre)
Residential Zone
Total Gross floor area: 230 sqm
Survey date: WEDNESDAY *20/06/18* *Survey Type: MANUAL*

7 **DS-05-G-01** **GP SURGERY** **DERBYSHIRE**
OSMASTON ROAD
DERBY

Suburban Area (PPS6 Out of Centre)
No Sub Category
Total Gross floor area: 676 sqm
Survey date: WEDNESDAY *25/09/19* *Survey Type: MANUAL*

LIST OF SITES relevant to selection parameters (Cont.)

8 **DV-05-G-01** **GP SURGERY** **DEVON**
MOUNT PLEASANT ROAD
EXETER

Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Gross floor area: 1319 sqm
Survey date: WEDNESDAY *03/04/19* *Survey Type: MANUAL*

9 **ES-05-G-02** **MEDICAL CENTRE** **EAST SUSSEX**
JUZIERS DRIVE
EAST HOATHLY

Neighbourhood Centre (PPS6 Local Centre)
Village
Total Gross floor area: 215 sqm
Survey date: WEDNESDAY *13/07/16* *Survey Type: MANUAL*

10 **FI-05-G-02** **GP SURGERY** **FIFE**
MAIN ROAD
NEAR DUNFERMLINE
CHARLESTOWN
Neighbourhood Centre (PPS6 Local Centre)
Village
Total Gross floor area: 325 sqm
Survey date: FRIDAY *29/05/15* *Survey Type: MANUAL*

11 **FI-05-G-03** **GP SURGERY** **FIFE**
IZATT AVENUE
DUNFERMLINE
HOSPITAL HILL
Neighbourhood Centre (PPS6 Local Centre)
Residential Zone
Total Gross floor area: 425 sqm
Survey date: MONDAY *21/03/16* *Survey Type: MANUAL*

12 **GC-05-G-01** **GP SURGERY** **GLASGOW CITY**
POLLOKSHAWS ROAD
GLASGOW
SHAWLANDS
Neighbourhood Centre (PPS6 Local Centre)
Residential Zone
Total Gross floor area: 480 sqm
Survey date: TUESDAY *26/11/19* *Survey Type: MANUAL*

13 **GM-05-G-02** **GP SURGERY** **GREATER MANCHESTER**
MOORSIDE ROAD
SALFORD
SWINTON
Neighbourhood Centre (PPS6 Local Centre)
Residential Zone
Total Gross floor area: 1160 sqm
Survey date: FRIDAY *21/06/19* *Survey Type: MANUAL*

14 **HF-05-G-01** **GP SURGERY** **HERTFORDSHIRE**
CHELLS WAY
STEVENAGE

Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Gross floor area: 830 sqm
Survey date: FRIDAY *28/06/19* *Survey Type: MANUAL*

15 **LE-05-G-02** **GP SURGERY** **LEICESTERSHIRE**
THE SANDS
NEAR MELTON MOWBRAY
LONG CLAWSON
Neighbourhood Centre (PPS6 Local Centre)
Village
Total Gross floor area: 363 sqm
Survey date: TUESDAY *29/11/16* *Survey Type: MANUAL*

LIST OF SITES relevant to selection parameters (Cont.)

16 **NF-05-G-03** **GP SURGERY** **NORFOLK**
MILE END ROAD
NORWICH
MOUNT PLEASANT
Neighbourhood Centre (PPS6 Local Centre)
Residential Zone
Total Gross floor area: 600 sqm
Survey date: FRIDAY *08/11/19* *Survey Type: MANUAL*

17 **NT-05-G-01** **GP SURGERY** **NOTTINGHAMSHIRE**
MANSFIELD ROAD
NOTTINGHAM

Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Gross floor area: 460 sqm
Survey date: WEDNESDAY *24/06/15* *Survey Type: MANUAL*

18 **TW-05-G-02** **GP SURGERY** **TYNE & WEAR**
BIDDLESTONE ROAD
NEWCASTLE
HEATON
Neighbourhood Centre (PPS6 Local Centre)
Residential Zone
Total Gross floor area: 878 sqm
Survey date: FRIDAY *13/11/15* *Survey Type: MANUAL*

19 **TW-05-G-03** **GP SURGERY** **TYNE & WEAR**
CHURCH ROAD
NEWCASTLE
GOSFORTH
Neighbourhood Centre (PPS6 Local Centre)
High Street
Total Gross floor area: 678 sqm
Survey date: MONDAY *29/04/19* *Survey Type: MANUAL*

20 **TW-05-G-04** **GP SURGERY** **TYNE & WEAR**
MANOR WALK
NEWCASTLE UPON TYNE
BENTON
Neighbourhood Centre (PPS6 Local Centre)
Residential Zone
Total Gross floor area: 1400 sqm
Survey date: THURSDAY *18/10/18* *Survey Type: MANUAL*

21 **WL-05-G-01** **GP SURGERY** **WILTSHIRE**
CRICKDALE ROAD
SWINDON BOROUGH C.

Neighbourhood Centre (PPS6 Local Centre)
Residential Zone
Total Gross floor area: 300 sqm
Survey date: FRIDAY *23/09/16* *Survey Type: MANUAL*

22 **WM-05-G-01** **GP SURGERY** **WEST MIDLANDS**
LEACH HEATH LANE
BIRMINGHAM
RUBERY
Neighbourhood Centre (PPS6 Local Centre)
Residential Zone
Total Gross floor area: 250 sqm
Survey date: TUESDAY *10/11/15* *Survey Type: MANUAL*

23 **WM-05-G-04** **GP SURGERY** **WEST MIDLANDS**
STOURBRIDGE ROAD
DUDLEY

Neighbourhood Centre (PPS6 Local Centre)
Residential Zone
Total Gross floor area: 600 sqm
Survey date: TUESDAY *21/11/17* *Survey Type: MANUAL*

This section provides a list of all survey sites and days in the selected set. For each individual survey site, it displays a unique site reference code and site address, the selected trip rate calculation parameter and its value, the day of the week and date of each survey, and whether the survey was a manual classified count or an ATC count.

TRIP RATE for Land Use 05 - HEALTH/G - GP SURGERIES

TOTAL VEHICLES

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00	2	1115	0.538	2	1115	0.000	2	1115	0.538
07:00 - 08:00	22	690	0.817	22	690	0.211	22	690	1.028
08:00 - 09:00	23	680	2.352	23	680	1.163	23	680	3.515
09:00 - 10:00	**23**	**680**	**2.902**	23	680	2.359	23	680	5.261
10:00 - 11:00	23	680	2.781	**23**	**680**	**2.742**	**23**	**680**	**5.523**
11:00 - 12:00	23	680	2.180	23	680	2.480	23	680	4.660
12:00 - 13:00	23	680	1.592	23	680	2.167	23	680	3.759
13:00 - 14:00	23	680	1.585	23	680	1.752	23	680	3.337
14:00 - 15:00	23	680	2.148	23	680	1.969	23	680	4.117
15:00 - 16:00	23	680	2.090	23	680	2.186	23	680	4.276
16:00 - 17:00	23	680	1.969	23	680	2.020	23	680	3.989
17:00 - 18:00	23	680	1.042	23	680	1.656	23	680	2.698
18:00 - 19:00	22	682	0.400	22	682	0.954	22	682	1.354
19:00 - 20:00	2	1039	0.096	2	1039	0.337	2	1039	0.433
20:00 - 21:00	1	1400	0.000	1	1400	0.000	1	1400	0.000
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			22.492			21.996			44.488

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.*

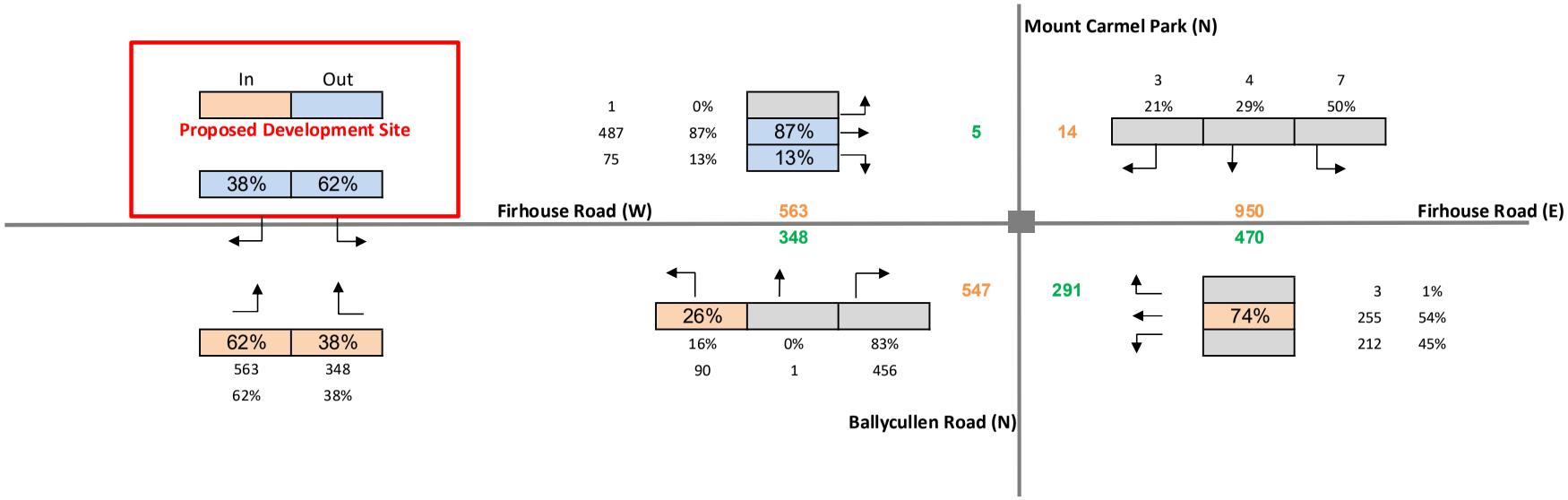
Parameter summary

Trip rate parameter range selected:	215 - 1400 (units: sqm)
Survey date date range:	01/01/13 - 22/06/21
Number of weekdays (Monday-Friday):	23
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

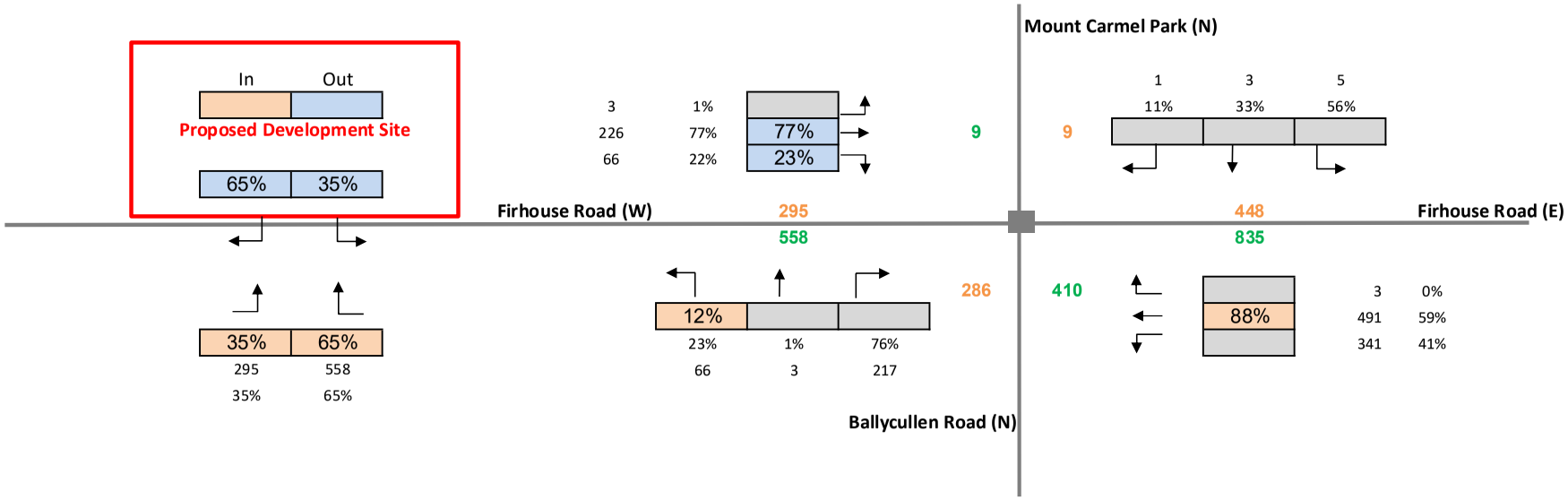
This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected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

Appendix F Traffic Distribution Diagrams

AM (08:15-09:14Hrs) Trip Distribution



PM (17:45-18:44hrs) Trip Distribution



Appendix G Stage 1 and 2 Road Safety Audit

Title: **STAGE 1&2 ROAD SAFETY AUDIT**

For;

Proposed Large Scale Residential Development, No. 2 Firhouse Road and former 'Morton's The Firhouse Inn', Firhouse Road, Dublin 24.

Client: **Bluemont Developments (Firhouse) Ltd.**

Date: **December 2023**

Report reference: **2105R01**

VERSION: **FINAL**

Prepared By:

Bruton Consulting Engineers Ltd

Glaspistol
Clogherhead
Drogheda
Co. Louth.

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CONTENTS SHEET

Contents

1.0 Introduction

This report was prepared in response to a request from Mr. Garret Murphy, Transport Insights, for a Combined Stage 1&2 Road Safety Audit of the proposed large scale residential development (LRD) at no. 2 Firhouse Road and 'Morton's The Firhouse Inn', Firhouse Road, Dublin 24.

The Road Safety Audit Team comprised of;

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

TII Auditor Approval no. NB 168446

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

TII Auditor Approval no. OO1291756

The Road Safety Audit comprised an examination of the drawings and other material provided and a site visit by the Audit Team, on the 29th of March 2022 and again on the 15th of July 2023.

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

This Stage 1&2 Road Safety Audit has been carried out in accordance with the requirements of TII Publication Number GE-STY-01024, dated December 2017.

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

The problems identified in this report are considered to require action in order to improve the safety of the scheme for road users.

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

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 to be completed by the Design Team Leader is provided in **Appendix C.**

A previous Road safety audit was carried out on a similar Strategic Housing Development (SHD) proposal on this site by the same Audit Team in March to May 2022 (Report ref 1440R01). Issus raised in that audit that have been addressed in the updated scheme are not repeated in this report.

2.0 Background

It is proposed to construct a 100 unit LRD at the site of no. 2 Firhouse Road and 'Morton's The Firhouse Inn', Firhouse Road, Dublin 24. The proposed scheme is comprised of;

- 100 no units of various bed numbers and unit type.
- A ground floor creche
- 5no. commercial and medical units at ground floor
- 80 no car parking spaces within 2 no. basement car park levels including 4no. accessible parking bays
- 270 no. cycle parking spaces
- 8 no. motorcycle parking spaces.

Firhouse Road is a single carriageway road with footpaths and cycle lanes on both sides. The junction of Firhouse Road and Ballycullen Road/Mount Carmel Park is signalised with pedestrian crossings on each arm.

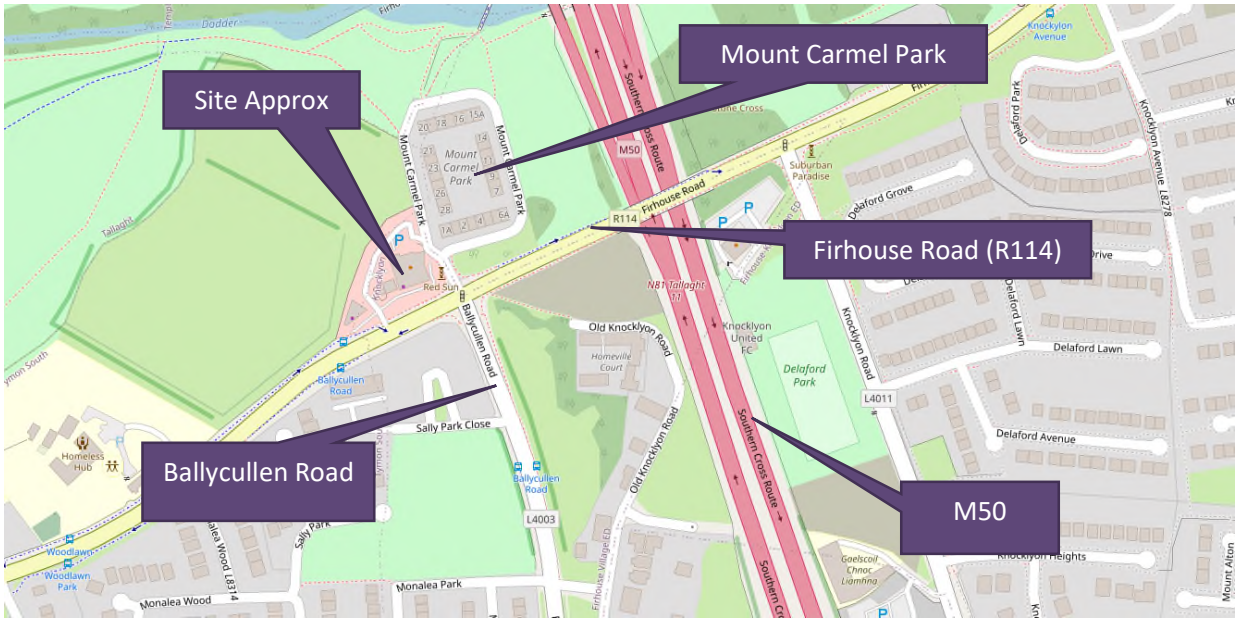
It is not proposed to change the location of the vehicular access from the exiting access. Some improvements will be carried out however to provide a DMURS compliant layout. The off-road cycle lane will be ramped down to on-road across the access.

A 2m footpath will be provided along the site extents which will be lit.

Mount Carmel Park is effectively a shared use road (pedestrians, cyclists, vehicular) connecting to the Dodder Greenway scheme. It has a speed limit of 30km/hr. No vehicular traffic from the development will be brought onto Mount Carmel Park. Some on-street parking occurs by local residents and an informal shuttle system is operated however this leads to a calmed traffic environment.

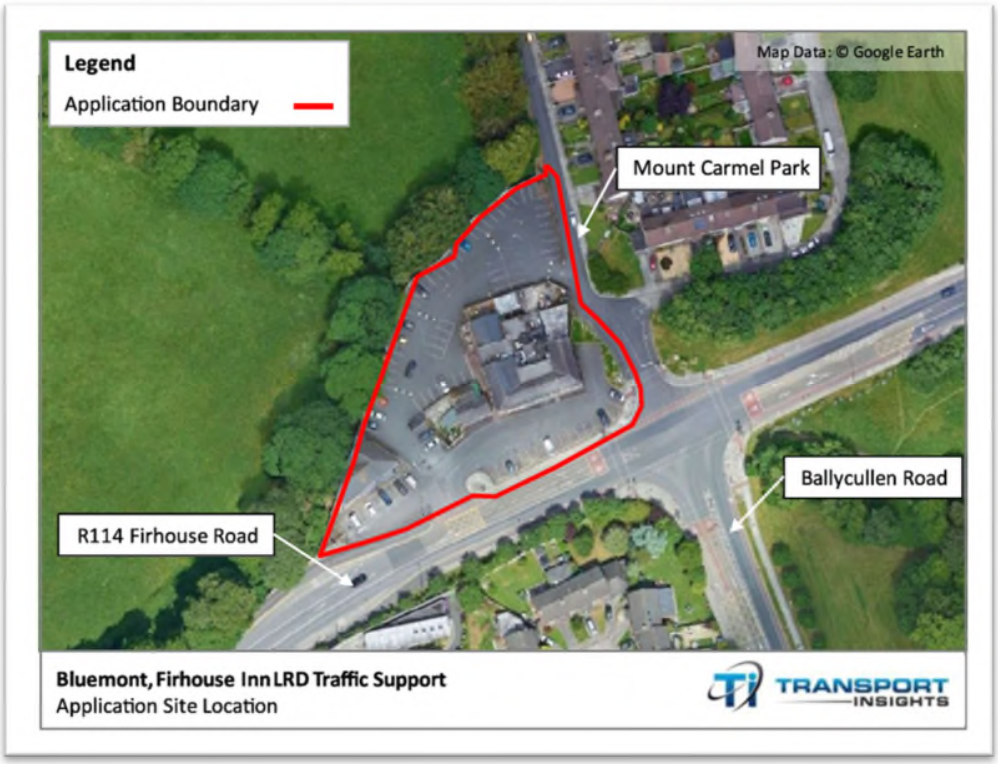
The design proposals also take into account the Old Bawn to Ballyboden Active Travel Scheme. Phase 1 of which is due to commence 2024. The audit is based on that scheme being in place when construction begins on the proposed development.

The site location is shown below.

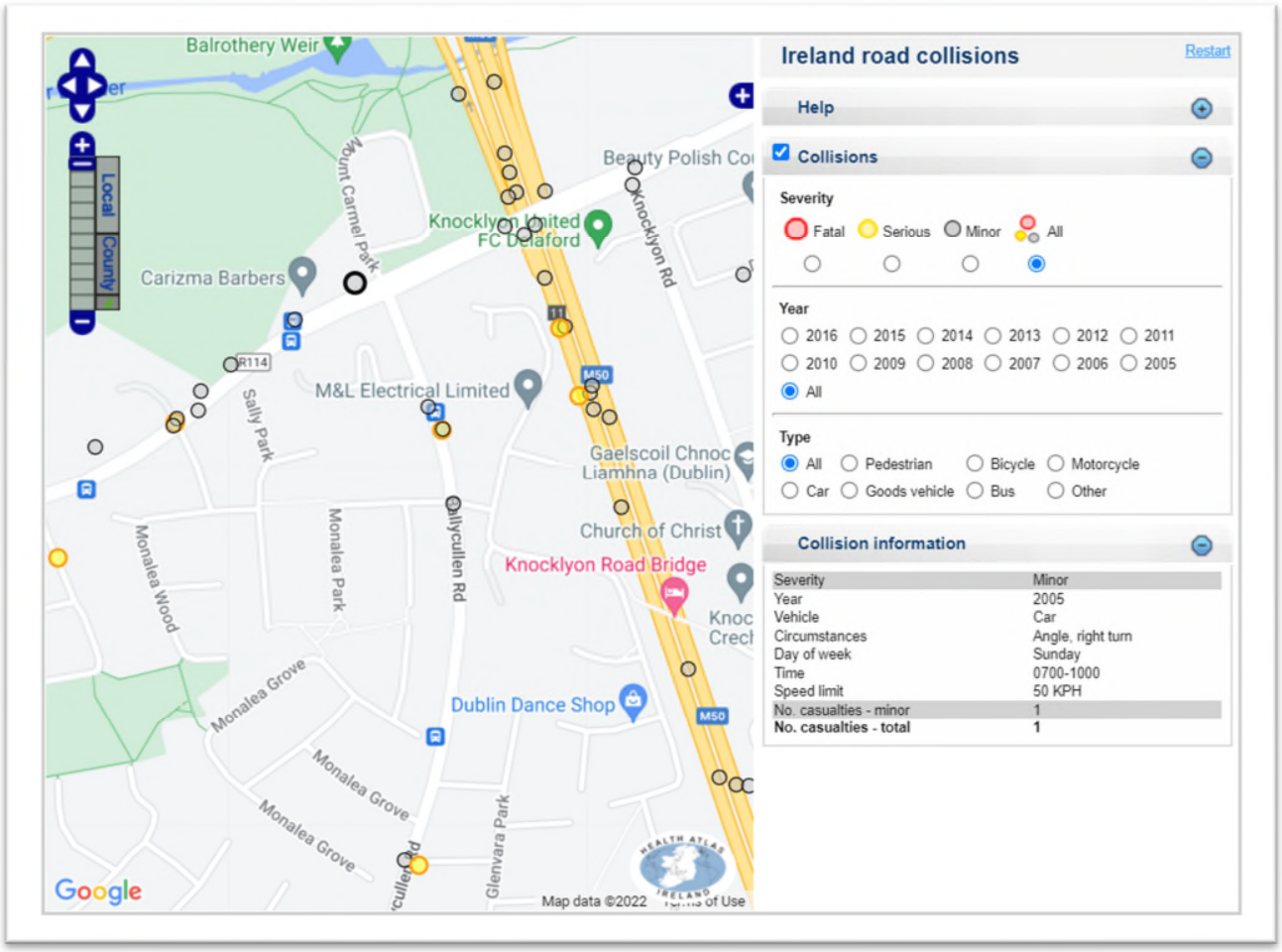


Imagery courtesy of Openstreetmap.org

The actual site boundary is shown in the graphic below courtesy of Transport Insights.



The Road Safety Authority's website www.rsa.ie shows that there was one minor injury collision recorded in the 12-year period 2005 to 2016 to the west of Mount Carmel Park. There is no evidence of trends or clusters of collisions.



3.0 Issues Identified in This Road Safety Audit.

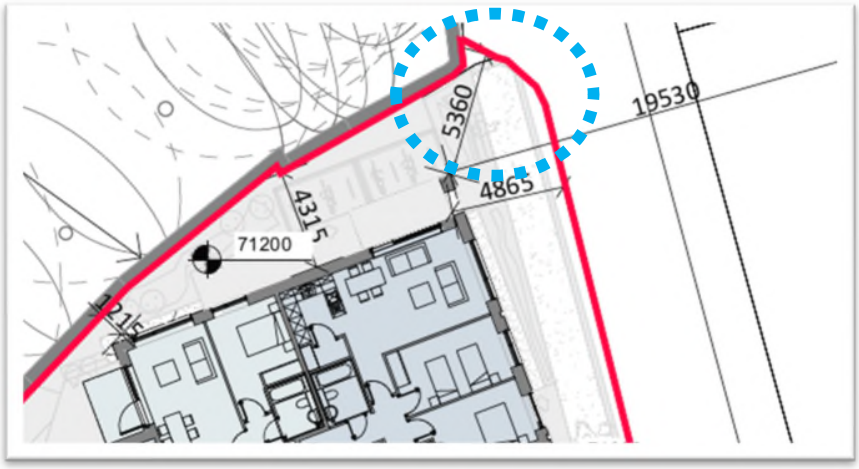
3.1 Problem

LOCATION

Mount Carmel Park

PROBLEM

It is unclear if a dropped kerb is propose at the end of the footpath of Mount Carmel Park. Without a dropped kerb mobility impaired pedestrians may trip and fall on the high kerbs and accessibility for all may not be provided to the greenway.



RECOMMENDATION

It is recommended that a dropped kerb be provided along with suitable tactile paving.

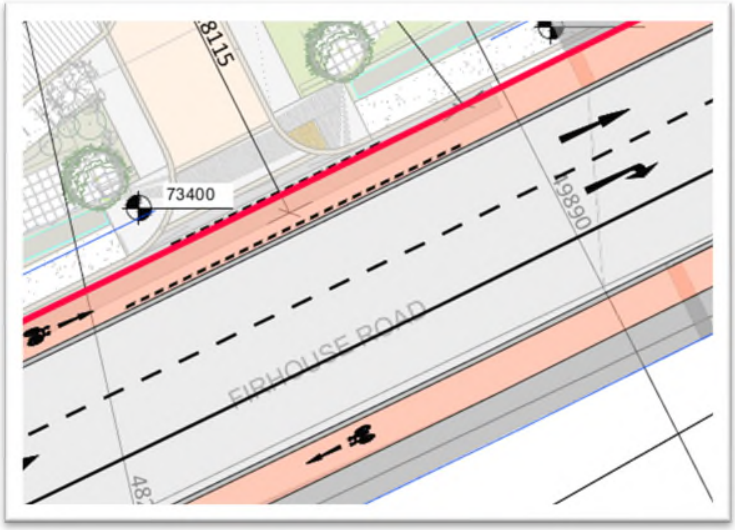
3.2 Problem

LOCATION

Firhouse Road.

PROBLEM

The yellow box on Firhouse road is not shown in the Active Travel scheme drawings. A lack of reserved space for vehicles turning into and out of the proposed development could lead to drivers trying to accept too small of gaps in traffic leading to vehicle damage.



RECOMMENDATION

It is recommended that the yellow box be retained.

4.0 Observations

4.1 Observation

Kerb height details and use of tactile paving were not provided to the Audit Team.

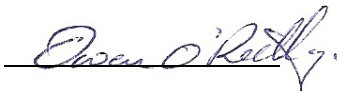
5.0 Audit Statement

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

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

Norman Bruton **Signed:** 

(Audit Team Leader) **Dated: 14-12-2023**

Owen O'Reilly **Signed:** 

(Audit Team Member) **Dated: 14-12-2023**

BRUTON CONSULTING ENGINEERS

Appendix A – Problem Location Map

Appendix B

Information Supplied to the Audit Team

- Site Lighting L:ayout and Report
- Architectural drawings and reports
- Arborist drawings and reports
- Civil Engineering reports
- Daylight and Sunlight Report
- Ecology Reports
- Landscape Architecture drawings and reports
- Archaeology and Environmental reports
- Planning Reports
- Traffic & Transport Assessment.

Appendix C

Feedback Form

SAFETY AUDIT FORM – FEEDBACK ON AUDIT REPORT

Scheme: Firhouse Road LRD
Stage: 1&2 Road Safety Audit
Date Audit (Site Visit) Completed: 15-7-2023

Paragraph No. in Safety Audit Report	Problem accepted (yes/no)	Recommended measure accepted (yes/no)	Alternative measures (describe)	Alternative measures accepted by Auditors (Yes/No)
3.1	Yes	Yes		
3.2	Yes	Yes		

Signed G Murphy **[Garret Murphy]** **Date** 14/12/2023
Design Team Leader

Signed.....Norman Boarton..... **Date**...14-12-2023.....
Audit Team Leader

Signed.....Ken Sweeney..... **Date**.....14/12/23.....
Developer/ Employer