AtkinsRéalis

Traffic and Transport Assessment

Aeval Unlimited Company

Q2 2026
01190017DG0002

WOODBROOK DART GATEWAY RESIDENTIAL DEVELOPMENT

Notice

This document and its contents have been prepared and are intended solely as information for Aeval Unlimited Company and use in relation to Woodbrook Dart Gateway Residential Development

AtkinsRéalis Ireland Limited assumes no responsibility to any other party in respect of or arising out of or in connection with this document and/or its contents.

This document has 62 pages including the cover.

Document history

Document title: Traffic and Transport Assessment

Document reference: 0119017DG0002

Revision	Purpose description	Originated	Checked	Reviewed	Authorised	Date
0	Draft for review	MD	MD	PF	PF	19/12/2025
1	For information	MD	MD			06/05/2026
1	Issued	MD	MD	PF	PF	15/06/2026

Client signoff

Client	Aeval Unlimited Company
Project	WOODBROOK DART GATEWAY RESIDENTIAL DEVELOPMENT
Job number	0119017
Client signature/date	

Contents

Tables

Figures

1. Introduction

1.1 Background

AtkinsRéalis has been commissioned to develop a Traffic and Transport Assessment for the proposed development referred to as Woodbrook Dart Gateway. The proposed residential development is located on a site measuring approximately 2.5 hectares at lands south of the Shanganagh cemetery and east of the Woodbrook DART Station, within the Woodbrook Local Area Plan boundary in Shanganagh, Shankill, Cork Little, Dublin. The development consists of 359 No. dwelling units delivered in two blocks. Block P consists of 154 No. units and Block Q consists of 205 No. units taking part of the wider Woodbrook Masterplan lands as shown in Figure 1-1

The site falls within the planning jurisdiction of Dún Laoghaire Rathdown County Council between Shankill and Bray localities. The Dublin – Rosslare railway line is located on the eastern edge of the site and includes the Woodbrook DART station while R119 Dublin Road corridor provides the main vehicular connection from the Woodbrook masterplan lands and to the adjoining transport strategic road network via the M11. The Dublin Road is an important bus corridor providing bus services within the subregional area.

This Traffic and Transport Assessment (TTA) report assesses the transport impacts of the development on the surrounding environment to mitigate any adverse consequences.

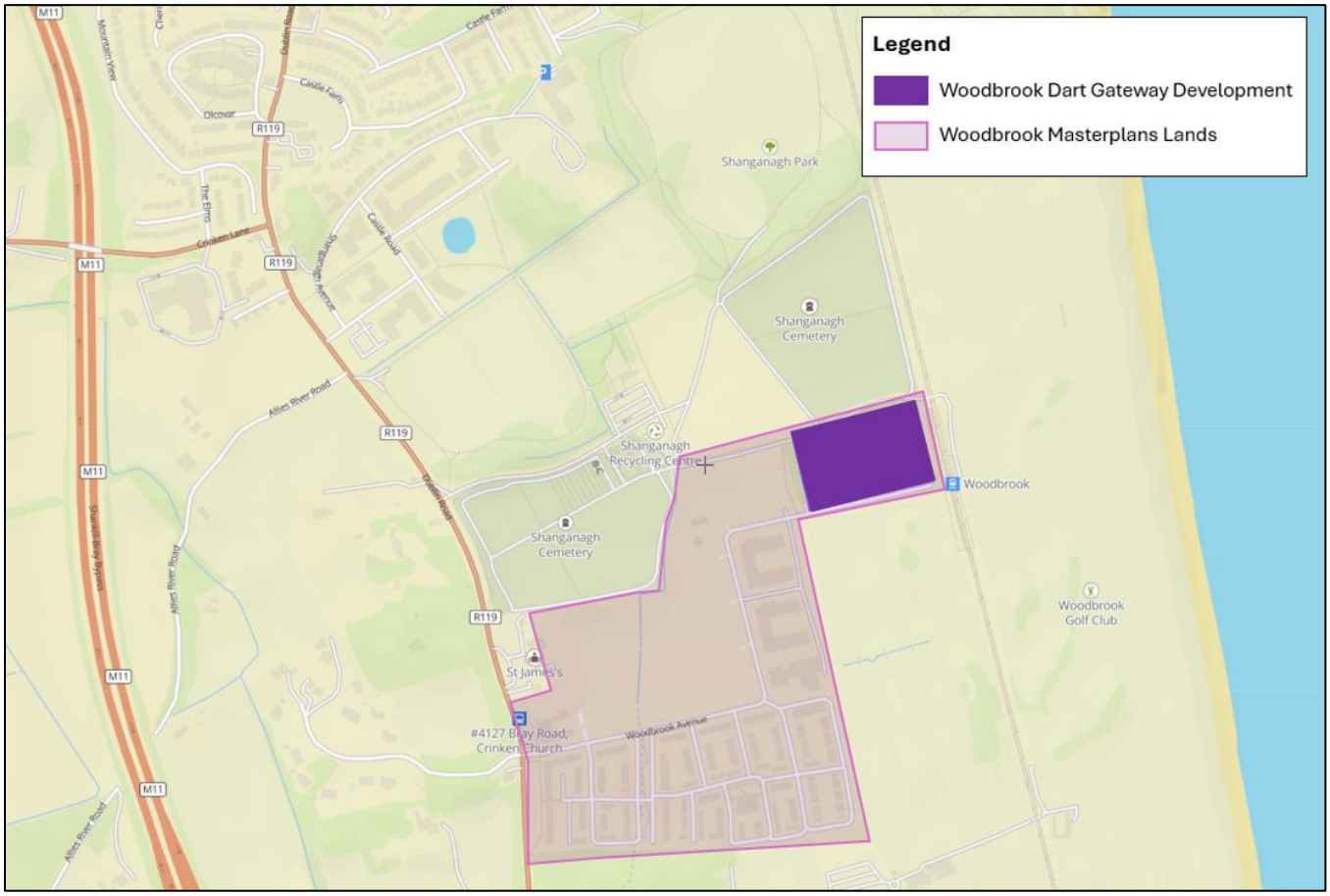

Figure 1-1 - Site Location

1.2 Description of the site

The subject site forms part of the Masterplan Woodbrook Lands adjacent to the Woodbrook DART Station and is referred to as the DART Gateway, outlined in red on the accompanying Figure 1-2

The western section of the site includes a permitted Public Open Space, approved under LRD24A/0382, which incorporates a biodiversity area. The layout and design of this space were established under LRD24A/0382, and the current proposals do not include any significant alterations.

To the west of this Public Open Space, the permitted development comprises houses and patio duplexes ranging from 1 to 3 storeys. Permitted Blocks A, B, and C are located in the south-west corner of the site and vary in height from 2 to 8 storeys.

The site is bounded to the north by Shanganagh Park and Cemetery, with a line of existing trees along the shared boundary. To the east, it adjoins the DART line and the Woodbrook DART Station. The eastern portion of the site accommodates an urban plaza, car parking, and a turning area, all permitted under SHD ABP-305844-19.

To the south, the site borders Woodbrook Golf Course. The site slopes gently, with a low point of approximately 22.8m OD in the south-west corner and a high point of approximately 24.5m OD in the north-east corner. Minor undulations remain from former golf holes and do not represent the natural topography.

The blue line indicates lands owned by DLRCC, while the remainder of the site is under Aeval's ownership.

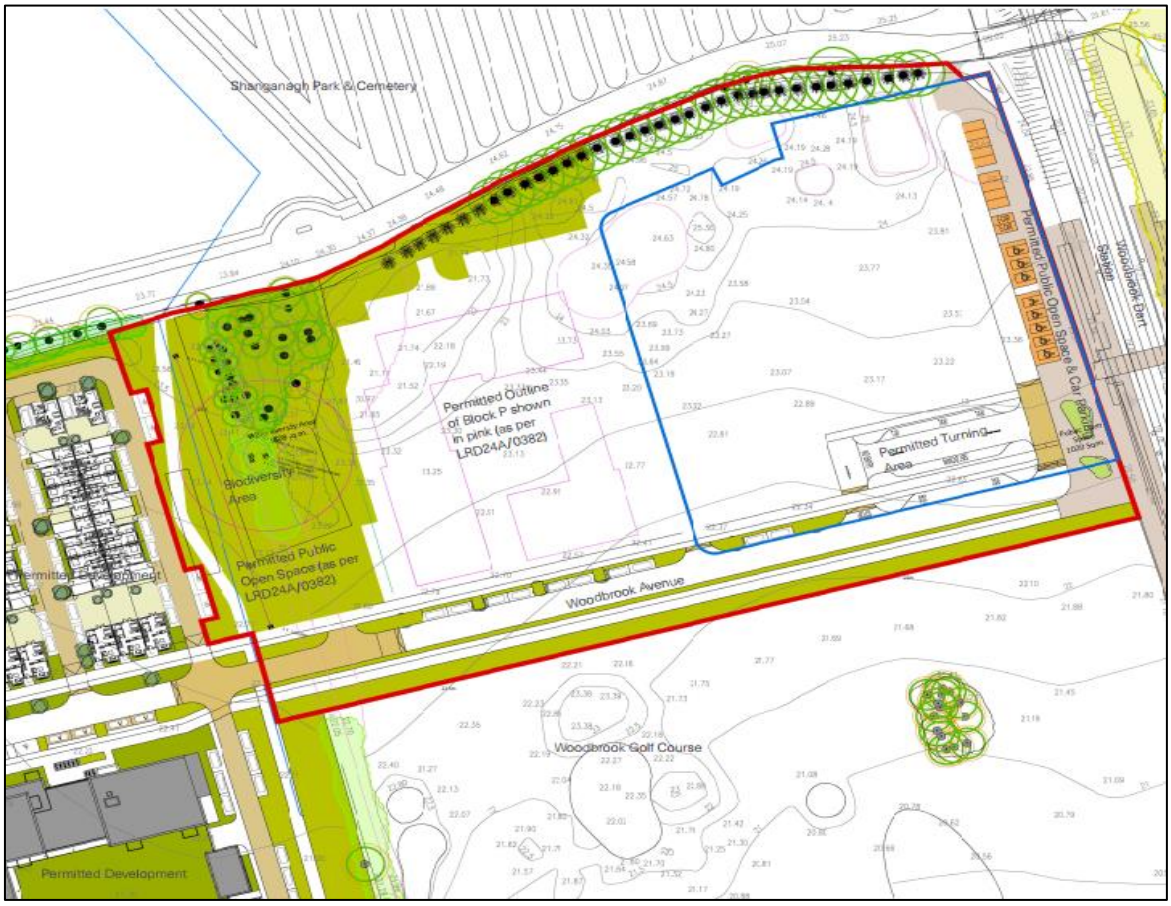

Figure 1-2 - Site boundary

1.2.1 Site layout

The site layout is illustrated in Figure 1-3 Woodbrook DART Gateway integrates with the existing and proposed street network approved under previous permission on the Woodbrook masterplan lands.

Many of the transport principles established as part of the Woodbrook Masterplan Planning applications (refer to section 2 of this note), including DMURS and the Cycle Desing Manual, will be built upon and continued Woodbrook DART Gateway development.

A. Key transport elements confirmed include:

- Road hierarchy
- Road geometries
- External connections and junctions
- Internal junction locations
- Masterplan cycle network
- Pedestrian desire lines and connections

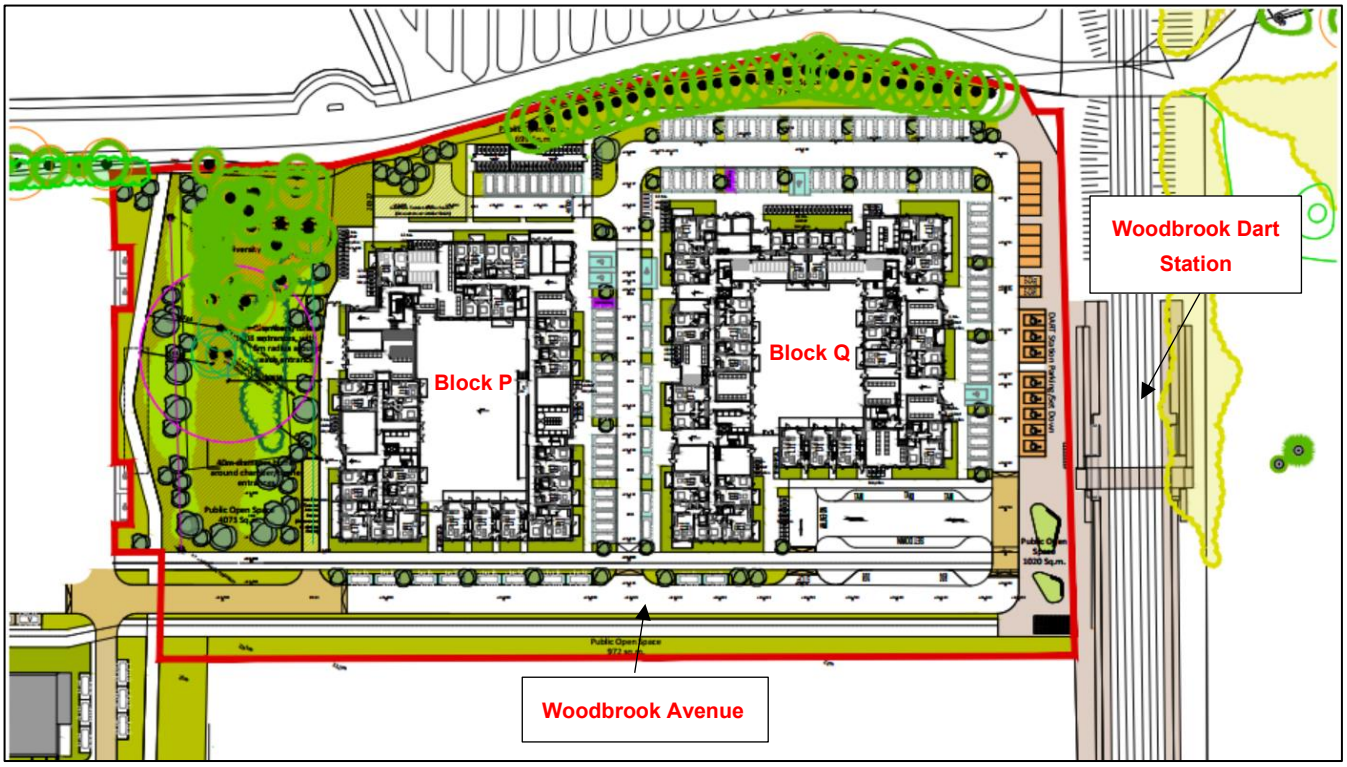

Figure 1-3 - Site Layout

This note outlines our intended approach for the forthcoming Part 8 application to DLRCC and provides current details regarding traffic impacts, car parking, cycle parking, quality audits and road safety audits.

1.3 Methodology

The methodology should be consistent with the Traffic and Transport Assessments Guidelines. The methodology is summarised as follows:

- **Baseline Transport Review:** Undertaking of a desktop review of current planning policies and objectives, existing public transport services, walking and cycling network and roads infrastructure.
- **Future Traffic Infrastructure Review:** Undertake review of current transport policies, plans and strategy to identify future short, medium, and long-term transport proposals which may have a material impact on the travel behaviour associated with the proposed development.
- **Development Proposals Review:** Reviewed the proposed development in terms of provision access by walking, cycling, public transport and car.
- **Identification of Local Road Network Proposals:** Identify proposed junction works on the local road network in terms of new junctions, improvements for pedestrians, cyclists, and traffic at existing junctions.

1.4 Reference Documentation

This Traffic and Transport Assessment (TTA) report should be read with reference to all other submitted planning application documentation including the Engineering Reports and Drawings, and the Architectural and Landscape Architectural Drawings.

The following documents, policies and guidelines were used in the production of this report:

- Revised National Planning Framework First Revision (2025)
- National Development Plan (2021-2030)
- National Sustainable Mobility Plan
- Transport Infrastructure Ireland: Traffic and Transport Assessments Guidelines
- Sustainable Residential Development and Compact Settlement Guidelines for Planning Authorities
- Sustainable Urban Housing; design Standards for new Apartments (July 2023)
- Department of Transport Tourism and Sport: Design Manual for Urban Roads and Streets (DMURS
- National Transport Authority: Cycle Design Manual (CDM).
- National Transport Authority: Permeability Best Practice Guidance
- Transport Strategy for the Greater Dublin Area 2022-2042
- Dun Laoghaire Rathdown County Development Plan (2022-2028)
- Woodbrook Shanganagh Local Area Plan (2017-2023)
- Bray & Environs Transport Study (2019)

1.5 Planning History

In February 2020, Aeval received a grant of permission for Phase1 of Woodbrook through the SHD (ABP-305844-19). The planning application (ABP-305844-19) set out a masterplan for the entire Woodbrook lands, that includes Woodbrook Dart Gateway development, indicating a capacity of circa 1400 units, with a Phase1 grant of planning including the following elements:

- 685no. residential units (207 houses, 430no. apartments and 48no. duplexes), ranging from 2 to 8 stories in height.
- Overall number of units later reduced to 682 through compliance due to enlargement of the crèche.
- Provision of a Crèche.

- Provision of the entirety of the Woodbrook Distributor Road (Woodbrook Avenue), which will ultimately connect to the future Woodbrook DART Station.
- Provision of vehicular access from the Old Dublin Road.
- Provision of public open spaces, including two linear parks which act as north/ south green links: connecting the proposed development to Shanganagh Public Park.
- Two new replacement golf holes on lands to the east of the rail line; and
- Temporary car park to serve the future Woodbrook DART Station.

The planning application (ABP-305844-19) was designed to take cognisance of both national and local planning policy documents, including the National Planning Framework, Sustainable Urban Housing: Design Standards for Apartments, Urban Development and Building Height Guidelines for Planning Authorities, the Design Manual for Urban Roads and Streets (DMURS), Woodbrook-Shanganagh Local Area Plan 2017-2023, DLRCC Development Plan 2022-2028, and National Transport Authority (NTA) Cycle Manual (amongst others). The masterplan layout for the Woodbrook Phase1 planning application is shown in Figure 1-4

Figure 1-4 - Woodbrook Phase1 Masterplan Layout planning ABP 305844-19

Many of the transport principles established as part of Masterplan and Phase1 Planning application (ABP-305844-19) including DMURS and Cycle Manual, will be built upon and continued in the proposed development.

Key transport elements confirmed include:

- Traffic and Transport impact for the entire masterplan lands.
- Road hierarchy.
- Road geometries.
- External connections and junctions.
- Internal junction locations.
- Masterplan Cycle Network; and
- Pedestrian desire lines and connections.

In May 2025, Aeval received a Notification of Decision to Grant Permission for Woodbrook Phase 2, also known as the Woodbrook Northern Housing Area, LRD24A/0382/WEB. The permitted development consists of 479 units, in a mix of terraced and semi-detached houses, duplexes and apartments, and a Neighbourhood Centre.

Subsequent applications for Woodbrook Phase 2 (Reg Ref LRD24A/0382/WEB[1]) consisting of 479no dwelling units and neighbourhood centre and (Reg ref LRD24A/0482/WEB[2]) amendments to the large courtyard apartment blocks (Blocks A, B & C) within the permitted Strategic Housing Development (under An Bord Pleanála Ref. ABP-305844-19) provides further guidance and precedents that have been taken on board in the development of this application.

This planning works with the above grants of permission and will complete development of the entire Woodbrook Masterplan.

[1] Online Planning Service

[2] Online Planning Service

2. Transport Policy

The following National, Regional and Local Transport Policies documents and guidance are relevant for the development of Woodbrook DART Gateway. These policies will be further elaborated on as part of the final TTA. They are:

- Revised National Planning Framework First Revision (2025)
- National Development Plan (2021-2030)
- National Sustainable Mobility Plan
- Transport Infrastructure Ireland: Traffic and Transport Assessments Guidelines
- Sustainable Residential Development and Compact Settlement Guidelines for Planning Authorities
- Sustainable Urban Housing; design Standards for new Apartments (July 2023)
- Department of Transport Tourism and Sport: Design Manual for Urban Roads and Streets (DMURS
- National Transport Authority: Cycle Design Manual (CDM).
- National Transport Authority: Permeability Best Practice Guidance
- Transport Strategy for the Greater Dublin Area 2022-2042
- Dun Laoghaire Rathdown County Development Plan (2022-2028)
- Woodbrook Shanganagh Local Area Plan (2017-2023)
- Bray & Environs Transport Study (2019)

2.1 Revised National Planning Framework First Revision (2025)

In April 2025, the Government of Ireland adopted the Revised National Planning Framework (NPF), replacing the previous NPF from 2018. The NPF is the Government's strategic plan for shaping the growth and development of Ireland up to the year 2040 The revised NPF continues to focus on balanced growth across Ireland's regions, with Census 2022 showing promising population growth in all regions. The plan aims to ensure equitable growth between the East, Midlands, and the rest of the country. The NPF continues to maintain a focus on promoting population and employment growth in Ireland's five cities (Dublin, Cork, Limerick, Galway, and Waterford), targeting 50% of future growth in these areas. This aims to strengthen urban structures and boost regional economic performance

The NPF prioritises ten National Strategic Outcomes (NSOs), which are outlined below. The three NSOs deemed particularly relevant to the potential development of the lands at Aderrig, in terms of transportation, are outlined in Table 2-1.

Table 2-1 - Summary of Relevant National Strategic Outcomes (NSOs)

NSO	Description
Compact Growth	Carefully managing the sustainable growth of compact cities, towns and villages will add value and create more attractive places in which people can live and work. All our urban settlements contain many potential development areas, centrally located and frequently publicly owned, that are suitable and capable of re-use to provide housing, jobs, amenities and services, but which need a streamlined and co-ordinated approach to their development, with investment in enabling infrastructure and supporting amenities, to realise their potential. Activating these strategic areas and achieving effective density and consolidation, rather than more sprawl of urban development, is a top priority.
Enhanced Regional Accessibility	A co-priority is to enhance accessibility between key urban centres of population and their regions. This means ensuring that all regions and urban areas in the country have a high degree of accessibility to Dublin, as well as to each other. Not every route has to look east and so accessibility and connectivity between places like Cork and Limerick, to give one example, and through the Atlantic Economic Corridor to Galway as well as access to the North-West is essential.
Sustainable Mobility	In line with Ireland's Climate Action Plan 2024 and National Sustainable Mobility Policy, we need to progressively change the way we travel, by reducing our car usage to the extent possible, and increasing the number of journeys taken by sustainable modes of transport, namely walking, cycling and public shared transport. As well as significantly increasing the modal share of sustainable transport, we need to ensure that where car transport is required, this travel is increasingly taken by electric vehicle. Therefore, there is a need to complement these measures by increasing the proportion of electric vehicles (EVs) in our car fleet to 30% by 2030 which will improve the efficiency of the national car fleet, and to electrify our mobility systems for public transport fleets. By doing this, our cities and towns will enjoy a cleaner, quieter environment free of engine driven transport systems by 2040. Zero Emission Vehicles Ireland, an office of the Department of Transport, has developed an EV Infrastructure strategy and associated infrastructure plans. ZEVI is working with TII and Local Authorities to facilitate and coordinate the roll out of a national EV charging infrastructure to support the transition to electric vehicles. Similarly, for freight transport, the transition to zero emission vehicle technologies is a key policy priority but for heavier vehicles the full transition of the fleet is expected to take somewhat longer to achieve than for other vehicle types. As a result, other measures which may reduce the environmental impact of freight movements should be progressed e.g. digital and operational efficiencies, load consolidation, last mile green delivery etc. The growth in population, housing and other development planned for in this framework mean that strategic planning for freight and for freight intensive developments will also be required. ZEVI is working with TII and Local Authorities to facilitate and coordinate the roll out of a national EV charging infrastructure to support the transition to electric vehicles.

The revised NDP also outlines 10 no. Strategic Investment Priorities. As illustrated below, Housing and Sustainable Urban Development is the number one priority of the Plan.

Figure 2-1 - Strategic Investment Priorities (Extract from Section 1.2 of Revised NDP)

2.2 National Development Plan (2021-2030)

As part of Project Ireland 2040 the National Development Plan (NDP) was published by the Department of Public Expenditure and Reform in February 2018 and updated in 2021. It sets out the Government's over-arching investment strategy and budget for the period 2021-2030 for achieving the NSO's outlined within the NPF.

With an investment of €165 billion, the NDP outlines several major projects aimed at enhancing national connectivity and transportation systems to accommodate projected population growth and economic expansion. The following are considered relevant to the key NSOs outlined above:

Table 2-2 - Summary of Key Projects / Investment under each Relevant NSO

NSO	Key Projects / Investment
Compact Growth	Investment in transportation infrastructure is closely tied to the goal of promoting compact growth in cities, ensuring higher density development close to existing public transport systems. By prioritising brownfield developments in urban centres, it will reduce urban sprawl and make public transportation more accessible and efficient. Integration of transportation and land-use planning is essential for compact growth, allowing for more effective service delivery (i.e., better accessibility to services and jobs via public transport).
Enhanced Regional Accessibility	The NDP highlights enhancing regional accessibility through improved transportation links between Ireland's urban centres, facilitating better connectivity across the country. Key projects include the Dublin-Belfast Enterprise train fleet replacement, and the Connecting Ireland Rural Mobility Plan will further boost inter-regional accessibility. Enhanced connectivity will support balanced growth and reduce reliance on private car usage, particularly in underdeveloped or rural regions. Active Travel Investment: Significant investment (around €360 million annually) is allocated for active travel infrastructure, such as cycling and pedestrian paths. This supports sustainable mobility while promoting health and well-being through enhanced active travel infrastructure, including greenways, blueways, and cycle networks. These investments emphasise the role of active transport in reducing the carbon footprint of Ireland's mobility networks and promoting more compact, liveable urban environments.
Sustainable Mobility	Key projects include: BusConnects: Major investment in improving bus networks in Ireland's cities, aiming to enhance bus routes, frequencies, infrastructure, and low emission/electric bus fleets. Rail enhancements, such as the expansion of DART+ and projects like MetroLink, which are essential for improving access, reducing congestion, and shifting demand toward public transportation. Transition to greener bus fleets, which will reduce emissions and improve air quality in urban areas.

It is noted that the development of Woodbrook lands would support the achievement of these NSOs. In terms of transportation, it is important to note that the expansion of DART services as part of the permitted DART+ Coastal South project, represents a significant investment in enabling infrastructure. This impacts the activation of adjacent lands such as Woodbrook Dart Gateway development and allows to achieve effective and high-density and consolidation with the wider South Dublin and Greater Dublin areas.

Regarding regional accessibility, the location of the lands on the existing national rail network, which already benefits from commuter rail services and will benefit from DART+ services, results in these lands having excellent accessibility to the Greater Dublin Area, Dublin City, and areas on the national rail network via interchange.

In relation to the Sustainable Mobility NSO, due to the presence of Woodbrook Dart Station, the development of these lands would enable people working and living in the area to benefit from sustainable mobility systems, specifically electrified DART+ services. The lands would also be developed in line with current local standards for electric vehicles, requiring futureproofing for electric vehicle infrastructure. Furthermore, the development would include high-quality active travel infrastructure, particularly cycling infrastructure, in line with prevailing standards (NTA's Cycle Design Manual, 2023). This would necessitate the provision of segregated and connected high-quality cycling infrastructure. Given that the lands are currently undeveloped and offer very few constraints, any active travel network within the site could be developed to the highest standards, designed to maximise accessibility and connectivity to Woodbrook Dart Station and District Centre.

2.3 National Sustainable Mobility Policy

The National Sustainable Mobility Policy, Figure 2-2, sets out the strategic framework to 2030 for active travel, including walking and cycling, and public transport journeys. It seeks to assist Ireland meet its climate obligations to achieve a 51% reduction in greenhouse gas emissions by 2030. Transport is responsible for approximately 17.7% of Ireland's greenhouse gas emissions, therefore it is vital the infrastructure, services, and measures that enable and encourage more people to choose sustainable modes of travel are available and provided. The policy aims to deliver at least 500,000 additional daily active travel and public transport journeys by 2030 and a reduction of 10% in the kilometres driven by fossil fuelled cars. Ultimately making it more attractive and easier for people to choose walking, cycling and public transport daily instead of the use of a fossil fuelled vehicle. The policy seeks to support safe and green mobility by:

- Continuing to protect and maintain the safety of existing public transport networks and ensuring that new sustainable mobility infrastructure meets the highest safety standards;
- Rebalancing transport movement in metropolitan areas and other urban centres away from the private car and towards active travel and public transport; and
- Identifying a pathway for the implementation of suitable demand management measures at national and local level to reduce reliance on the private car.

Figure 2-2 - National Sustainable Mobility Policy

2.4 Transport Infrastructure Ireland: Traffic and Transport Assessments Guidelines

The Traffic and Transport Assessment Guidelines by Transport Infrastructure Ireland (TII) provide a framework for evaluating the transport impacts of proposed developments, promoting sustainable transport solutions.

The guidelines are designed to ensure that all new developments consider their impact on the transport network. These guidelines emphasize the need for a comprehensive assessment that includes not only road traffic but also public transport, walking, and cycling networks. This integrated approach aims to promote sustainable travel and reduce reliance on car travel, aligning with broader environmental and planning objectives.

Key Objectives

- Integrated Approach: The guidelines encourage an integrated approach to development planning, ensuring that transport assessments are part of the overall planning process. This helps in making informed decisions that enhance transport infrastructure and promote sustainable development.
- Assessment Requirements: A Traffic and Transport Assessment (TTA) is required for developments that are likely to generate significant traffic. This includes evaluating the potential impacts on the existing transport network and proposing measures to mitigate any adverse effects.
- Sustainable Transport: The guidelines advocate for the promotion of sustainable transport modes, such as public transport, cycling, and walking, rather than focusing solely on road traffic. This is crucial for reducing environmental impacts and improving accessibility.

2.5 Sustainable Residential Development & Compact Settlement Guidelines for Planning Authorities

The Sustainable Residential Development and Compact Settlements Guidelines were published by the Irish Government in January 2024. They replace the previous guidelines from 2009 and aim to set national planning policy and guidance for urban and rural settlements. The guidelines emphasize sustainable residential development and the creation of compact, liveable communities.

Key Objectives

- Promote Compact Settlements: The guidelines encourage the development of compact settlements to minimize urban sprawl and utilize existing infrastructure effectively. This includes creating "15-minute cities" where residents can access essential services within a short walk.
- Diversity in Housing Options: They aim to provide a broader range of housing types and designs, supporting innovation in residential design and allowing for greater flexibility in housing standards.
- Density and Design Standards: The guidelines introduce specific planning policy requirements (SPPRs) that planning authorities must apply when assessing development applications. These include adjusted density ranges based on settlement size and context, as well as updated design standards for housing.
- Environmental Considerations: The guidelines emphasize the importance of environmental sustainability, encouraging the integration of green spaces and biodiversity considerations into urban planning.

2.6 Sustainable Urban Housing; design Standards for new Apartments (July 2023)

These Guidelines have been prepared, taking account of up-to-date evidence of projected future housing demand, the overall policy context of Housing for All and the National Planning Framework, as well as circumstances prevailing in the housing market.

Apartments continue to be an increasingly common form of housing in Ireland's urban areas. Between 2002 and 2016, the number of occupied apartments increased by 85%, nationally. Apartments comprise 12% of all occupied households in Ireland and 35% of occupied households in Dublin City (Census 2016). However, Ireland is a long way behind European averages in the numbers of households living in apartments, especially in our cities and larger towns. In many European countries like the UK, France, Germany, Italy etc., it is normal to see 40-60% of households living in apartments.

The Apartment design parameters addressed in these guidelines include:

- General locational consideration;
- Apartment mix within apartment schemes;
- Internal space standards for different types of apartments;
- Dual aspect ratios;
- Floor to ceiling height;
- Apartments to stair/lift core ratios;
- Storage spaces;
- Amenity spaces including balconies/patios;
- Car parking; and
- Room dimensions for certain rooms.

The focus of this Guidance is on the location and planning specific aspects to apartment developments generally. In addition, the Building Regulations set performance requirements for our built environment, including apartments. Technical Guidance Documents (TGDs) provide guidance on how to meet these requirements. Where necessary in this Document, reference is made to relevant aspects of the Building Regulations. The Building Regulations and associated TGDs can be downloaded from the Department's website (www.housing.gov.ie)

Bicycle Parking and Storage

- An important context for these guidelines is a likely significant population increase in our cities and urban areas. These guidelines aim to secure wider Government policy to achieve more sustainable urban development that will enable more households to live closer to their places of work without the need for long commuter journeys and disruption of personal and family time. Enabling citizens to more easily get around our cities and urban areas is a fundamental planning concern and maximising accessibility of apartment residents to public transport and other sustainable transport modes is a central theme of these guidelines.
- Cycling provides a flexible, efficient and attractive transport option for urban living and these guidelines require that this transport mode is fully integrated into the design and operation of all new apartment development schemes. In particular, planning authorities must ensure that new development proposals in central urban and public transport accessible locations and which otherwise feature appropriate reductions in car parking provision are at the same time comprehensively equipped with high quality cycle parking and storage facilities for residents and visitors.
- The accessibility to, and secure storage of, bicycles is a key concern for apartment residents and apartment proposals must respond accordingly to the requirements below in their design and provision of cycle storage facilities. Requirements of these guidelines include:

- **Location** – cycle storage facilities should be directly accessible from the public road or from a shared private area that gives direct access to the public road avoiding unnecessarily long access routes with poor passive security or, slopes that can become hazardous in winter weather.
- **Quantity** – a general minimum standard of 1 cycle storage space per bedroom shall be applied. For studio units, at least 1 cycle storage space shall be provided. Visitor cycle parking shall also be provided at a standard of 1 space per 2 residential units. Any deviation from these standards shall be at the discretion of the planning authority and shall be justified with respect to factors such as location, quality of facilities proposed, flexibility for future enhancement/enlargement, etc.
- **Design** – cycle storage facilities shall be provide in a dedicated facility of permanent construction, preferably within the building footprint or, where not feasible, within an adjacent or adjoining purpose built structure of permanent construction. Cycle parking areas shall also be designed so that cyclists feel personally safe - secure cage/compound facilities, with electronic access for cyclists and CCTV, afford an increased level of security for residents. Effective security for cycle storage is also maximised by the provision of individual cycle lockers and it is best practice that planning authorities ensure that either secure cycle cage/compound or preferably locker facilities are provided.
- **Management** - an acceptable quality of cycle storage requires a management plan that ensures the effective operation and maintenance of cycle parking, in particular, avoiding arrangements that lead to a significant number of lockers being left locked whilst empty for instance. Cycle parking shall be the subject of a funded maintenance regime that ensures that facilities are kept clean, free of graffiti, well-lit and the parking equipment will be properly maintained. It is essential, therefore, that as far as possible cycle parking is low maintenance, easy to use and easy and attractive to use by residents.

- Planning authorities should ensure that development proposals incorporate details on the provision of and access to cycle storage facilities at planning application stage by the development proposer. Appropriate conditions in relation to the operation and maintenance of the cycle storage facilities should be attached to any grant of permission for apartment developments.
- Further information in relation to the design and provision of cycle storage for apartment developments can be found in the National Cycle Manual (National Transport Authority, 2011) and Bike Parking Infrastructure Guidance (Dublin Cycling Campaign, 2017).

Car Parking

The quantum of car parking or the requirement for any such provision for apartment developments will vary, having regard to the types of location in cities and towns that may be suitable for apartment development, broadly based on proximity and accessibility criteria.

1) Central and/or Accessible Urban Locations

- In larger scale and higher density developments, comprising wholly of apartments in more central locations that are well served by public transport, the default policy is for car parking provision to be minimised, substantially reduced or wholly eliminated in certain circumstances. The policies above would be particularly applicable in highly accessible areas such as in or adjoining city cores or at a confluence of public transport systems such rail and bus stations located in close proximity.
- These locations are most likely to be in cities, especially in or adjacent to (i.e. within 15 minutes walking distance of) city centres or centrally located employment locations. This includes 10 minutes walking distance of DART, commuter rail or Luas stops or within 5 minutes walking distance of high frequency (min 10 minute peak hour frequency) bus services.

2) Intermediate Urban Locations

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

3) Peripheral and/or Less Accessible Urban Locations

- 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 for every 3-4 apartments, should generally be required.
- For all types of location, where it is sought to eliminate or reduce car parking provision, it is necessary to ensure, where possible, the provision of an appropriate number of drop off, service, visitor parking spaces and parking for the mobility impaired. Provision is also to be 25 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.
- As well as showing that a site is sufficiently well located in relation to employment, amenities and services, 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. 'Car free' development is permissible and if developed, must be fully communicated as part of subsequent apartment sales and marketing processes.
- Where any underground car parking is proposed, such facilities must be well lit and adequately ventilated. Where surface parking is provided, it should be clearly accessible to the entrance to, and where appropriate, overlooked by, the units it serves. Car parking may be provided on-street at the edge(s) of a development site in some locations.
- Decked or multi-storey car parking may also be considered but should not be compromise the quality of amenity space, building design or streetscape. At least one principal façade of multi-storey car parks should be fronted by development, for example a south-facing elevation and such structures may also provide an opportunity for rooftop amenity space. In all cases, designated parking spaces for disabled drivers should be provided.
- For building refurbishment schemes on sites of any size or urban infill schemes on sites of up to 0.25ha, car parking provision may be relaxed in part or whole, on a case-by-case basis, subject to overall design quality and location.

2.7 Desing Manual Urban Road and Streets

The Design Manual for Urban Roads and Streets (DMURS), published by the Department for Transport, Tourism and Sport and the Department of Environment, Community and Local Government, updated in 2019, provides guidance on the design of urban roads and streets. DMURS has been the overarching framework for the design of this development, informing the layout of carriageways, footways, junctions, crossing points, car parking, and loading bays to create a balanced environment that accommodates all user types. The design prioritises the road user hierarchy, placing pedestrians first and vehicles last, in line with best practice principles. The submitted Street Design Statement also includes a Statement of Compliance with DMURS.

2.8 Cycle Design Manual

The Cycle Design Manual (CDM) has been prepared by the National Transport Authority (NTA) and overseen by the Department of Transport. Published in September of 2023, this manual replaces the previous National Cycle Manual which is now withdrawn. The CDM is the standard for the design of all new or improved on-road and off-road cycle facilities in both urban and rural locations in Ireland. It is not proposed to provide new or enhanced cycle infrastructure

to accommodate the proposed development, however, the CDM has guided the cycle parking proposals as part of the development.

An important consideration for active travel proposals is that the National Cycle Manual (NCM, 2011) has now been superseded by the Cycle Design Manual (CDM, 2023). While integrating updated CDM guidelines, the cycling infrastructure prioritizes coherence across the network and strategic design at junctions.

2.9 Transport Strategy for the Greater Dublin Area 2022-2042

The Transport Strategy for the Greater Dublin Area (GDA) 2022-2042 established the framework for transport provision for the city region. This Strategy, which is underpinned by the capital investment program set out in the National Development Plan 2021-2030, is based on the following over-riding objective:

"To contribute to the economic, social and cultural progress of the Greater Dublin Area by providing for the efficient, effective and sustainable movement of people and goods."

The Transport Strategy has developed four objectives to support the delivery of the overall aim

These are set out below:

1. **An Enhanced Natural and Built Environment**: To create a better environment and meet our environmental obligations by transitioning to a clean, low emission transport system, increasing walking, cycling and public transport use, and reducing car dependency.
2. **Connected Communities and Better Quality of Life**: To enhance the health and quality of life of our society by improving connectivity between people and places, delivering safe and integrated transport options, and increasing opportunities for walking and cycling.
3. **A Strong Sustainable**: Economy To support sustainable economic activity and growth by improving the opportunity for people to travel for work or business where and when they need to and facilitating the efficient movement of goods.
4. **An Inclusive Transport System**: To deliver a high quality, equitable and accessible transport system, which caters for the needs of all members of society.

These objectives directly support the strategy's overarching aim: "To provide a sustainable, accessible and effective transport system for the Greater Dublin Area which meets the region's climate change requirements, serves the needs of urban and rural communities, and supports economic growth.

In particular, the Strategy aims to achieve a work commuting modal share target of 55% for sustainable travel modes, reducing the single occupancy private car modal share to a maximum 45%, as set out in Smarter Travel Policy.

The Strategy presents infrastructure proposals by mode of transport. Those that will particularly benefit the proposed development are shown in Table 2-3:

Table 2-3 - GDA Transport Strategy relevant infrastructure

Transport Strategy Objective	Proposed Site Context
New Rail Stations	Woodbrook DART Station is located on the eastern boundary of the Woodbrook lands.
Dublin Core Bus Network	Existing bus corridor on Dublin Road to be upgraded as Core Bus Corridor Scheme of Bus Connects. Bray to City Centre
Greater Dublin Area Cycle Network Plan	Primary Route 13 is located on Dublin Road. This route will be upgraded as part of Bus Connect Corridor Scheme Route N5, The East Coast Trail, is located adjacent the eastern site boundary which is from the Dublin City to Bray.
Pedestrian Infrastructure	Improved footpaths and crossings along Dublin Road and within the site to integrate with upgraded bus and cycle routes.
Next Generation Ticketing	Site will benefit from integrated ticketing across DART, bus, and cycle hire systems, improving accessibility for residents.
Luas Extension (Future)	Future Luas extension to Bray will enhance regional connectivity for the site.
DART+ Programme	Electrification and service improvements on the DART line serving Woodbrook will increase frequency and reliability.

2.10 Dun Laoghaire Rathdown County Development Plan 2022-2028

The Dun Laoghaire Rathdown County Development Plan 2022-2028 contains specific policies in terms of sustainable travel and transportation. The proposed development, by virtue of its location, scale and typology is consistent with both the strategic sustainable transportation policies of the Plan and the specific transportation objectives. In terms of overall policy, The Council:

"…recognises that the current trends in transportation, in particular the domination of the private car as the preferred mode choice, are unsustainable……. In response, the emphasis must be on developing an efficient transport network where an increased proportion of residents of the County are within reasonable walking/cycling distance of local services and quality public transport infrastructure. There must also be a focus on promoting and facilitating the optimum use of existing (and proposed) transport services."

Listed in Table 2-4 are the key relevant sustainable transport policies of the County Development Plan together with a summary of the corresponding characteristics of the proposed development that facilitate the delivery of these policies. It is to be noted that the Transport Strategy for the Greater Dublin Area was in draft format when the County Development Plan was adopted.

Table 2-4 - County Development Plan relevant transport Policies

Reference	Policies/Objectives	Development Context
Policy T1: Integration of Land Use and Transportation Policies	"It is Council policy to actively support sustainable modes of transport and ensure that land use and zoning are fully integrated with the provision and development of high quality public transportation systems."	Woodbrook DART Station is located on the eastern boundary of the Woodbrook lands. The adjacent park and ride car park contains bus stop facilities to facilitate bus to rail interchange. The site is located adjacent the Dublin Road bus corridor that will be upgraded as Bray to City Centre Core Bus Corridor Scheme The entire site is within 800m walking distance of the DART Station and Dublin Road bus corridor.
Policy T4: Development of Sustainable Travel and Transportation Policies	"It is Council policy to promote, facilitate and cooperate with other transport agencies in securing the implementation of the transportation strategy for the County and the wider Dublin Region as set out in Department of Transport's 'Smarter Travel, A Sustainable Transport Future 2009 –2020' and the NTA's 'Greater Dublin Area Draft Transport Strategy 2016-2035'.	The masterplan specifically facilitates the development of Woodbrook DART Station through the provision of Woodbrook Avenue, the main access route, together with the temporary park and ride car park. The masterplan site facilitates the upgrade of the Dublin Road bus corridor per the NTA plans for Bray to City Centre Core Bus Corridor Scheme.
Policy T5: Public Transport Improvements	"It is a Policy Objective to expand attractive public transport alternatives to car transport as set out in 'Smarter Travel, A Sustainable Transport Future' and subsequent updates; the NTA's 'Transport Strategy for the Greater Dublin Area 2016-2035' and the NTAs 'Integrated Implementation Plan 2019-2024' and subsequent updates by optimising existing or proposed transport corridors, interchanges, developing new park and rides, taxi ranks and cycling network facilities at appropriate locations."	The masterplan specifically facilitates the development of Woodbrook DART Station through the provision of Woodbrook Avenue, the main access route, together with the temporary park and ride car park. The construction of Woodbrook Avenue and temporary car park was permitted and completed under Phase 1A of the Woodbrook Masterplan Development. The masterplan facilitates the upgrade of the Dublin Road bus corridor per the NTA plans Bray to City Centre Core Bus Corridor Scheme The development is adjacent and accessible to Routes 12A and 14 /N5 Greater Dublin Area Cycle Network Plan.

Policy T6: Quality Bus Network/BusConnects	"It is a Policy Objective to co-operate with the NTA and other relevant agencies to facilitate the implementation of the bus network measures as set out in the NTA's 'Greater Dublin Area Transport 2016-2035' and 'Integrated Implementation Plan 2019-2024' and the BusConnects Programme, and to extend the bus network to other areas where appropriate subject to design, environmental assessment, public consultation, approval, finance, and resources."	The masterplan facilitates the upgrade of the Dublin Road bus corridor per the NTA plans for Bray to City Centre Core Bus Corridor Scheme
Policy T11: Walking and Cycling	"It is Council Policy to secure the development of a high-quality walking and cycling network across the County in accordance with relevant Council and National policy and guidelines."	The masterplan is adjacent and accessible to Routes 12A and 14 /N5 Greater Dublin Area Cycle Network Plan. The masterplan incorporates extensive pedestrian and cycle routes that link the site to the Dublin Road on the western boundary, Shanganagh Park on the northern boundary, Woodbrook DART Station on the eastern boundary and facilitation for future connections across the southern site boundary.
Policy T17: Travel Demand Management	"It is Council policy, in conjunction and co-operation with other agencies, to implement Travel Demand Management measures aimed at reducing the demand for travel and increasing the efficiency of the transport network with due consideration given to the effect of parking controls on nearby residential roads."	The masterplan site is planned in the context of a Mobility Management Plan based on the physical infrastructure provisions of walking and cycling links and access to public transport bus and DART rail services. Demand Management is also underpinned by the co-location of residential, education, local retail and leisure and amenity facilities. The propensity for car ownership and car use is managed through measures that include reduced residential parking provision and increased cycle parking provision in line the 'Design Standards for New Apartments'. The provision of car club parking spaces will facilitate a lower level of car ownership.
Policy T19: Carparking Standards	"It is a Policy Objective to manage carparking as part of the overall strategic transport needs of the County in accordance with the parking standards set out in Section 12.4.5."	The masterplan will require to provide sufficient residential and retail parking.

Policy CA 17: Electric Vehicles	"It is Council policy to support the Government's Electric Transport Programme by facilitating the rollout of Electric Powered Vehicle Recharging Parking Bays for electric vehicles across the County through the planning system and on public roads."	The masterplan contains the required infrastructure to provide electric charging to car parking spaces.

2.11 Woodbrook- Shanganagh Local Area Plan 2017-2023

The Woodbrook Shanganagh Local Area Plan (LAP) contains specific objectives relating to sustainable movement and transport. In overall terms Policy WS4 of the LAP sets out the Councils policy in relation to sustainable transport provision as follows:

"To promote sustainable transport forms such as walking, cycling and public transport as set out in the Government's 'Smarter Travel – A Sustainable Transport Future 2009-2020' and to support planned infrastructure that prioritises public transport, as well as new cycling and pedestrian interconnections to key public transport nodes, school and amenity destinations in the Woodbrook-Shanganagh LAP Area and wider environs."

The LAP sets out sixteen objectives relating to sustainable travel which are summarised in Table 2-5. Based on the development proposals set out in the Transport Statement and shown in further detail on the architectural, landscape architectural and engineering drawings and report, it is concluded that the development, where relevant, facilitates the delivery of all these objectives:

Table 2-5 - Woodbrook - Shanganagh LAP Transport Objectives

Objective	Summary
T1	To promote sustainable transport forms such as walking, cycling and public transport as set out in Smarter Travel
T2	To promote the provision of a DART Station at Woodbrook as set out in the National Transport Authority's (NTA) 'Transport Strategy for the Greater Dublin Area 2016-2035'
T3	To seek early delivery of the planned DART Station
T4	To provide for a public transport interchange between Suburban Rail (DART) and the Quality Bus Network (QBN) at the planned Woodbrook DART Station
T5	To provide for a temporary car park to accommodate up to 150-200 Car Parking Spaces in the immediate vicinity of the planned DART Station at Woodbrook
T6	To support the delivery of a Strategic Park and Ride facility within the Plan Area in accordance with the objectives of the NTA's Transport Strategy for the Greater Dublin Area 2016-2035
T7	To co-operate with the National Transport Authority, Transport Infrastructure Ireland and Wicklow County Council in relation to the Dublin Road Core Bus Corridor
T8	To seek to retain the sylvan character of the Dublin Road in any road improvement schemes
T9	To provide for a high-quality pedestrian and cycle network within the LAP Area with high levels of permeability, passive surveillance and supervision that will provide attractive, legible and direct links to the Neighbourhood Centre, the DART Station, Bus Stops, Shanganagh Park and the wider area outside the Plan Boundary.

T10	To ensure that all proposals for new roads, streets and residential layouts comply with the 'Design Manual for Urban Roads and Streets' (DMURS, 2013) which focuses on the needs of pedestrians, cyclists and public transport users.
T11	To provide for safe and secure cycle parking at appropriate locations within the LAP Area and in particular close to recreational or community facilities, residential units, transport nodes, shops and services
T12	To provide pedestrian / cycle access across the M11 Corridor at Allies River Road
T13	To promote the development of the National East Coast Trail Cycle Route
T14	To adopt a proactive mobility management approach and to encourage a culture of sustainable travel in the new residential neighbourhoods at Woodbrook-Shanganagh
T15	To support the set-up of Car Club Schemes in accordance with Policy ST23 of the County Development Plan 2016- 2022
T16	To promote and provide for any future Luas Extension (Luas Line B2)

These objectives are encapsulated in "Map 11: Movement Strategy" which is reproduced in Figure 2-3

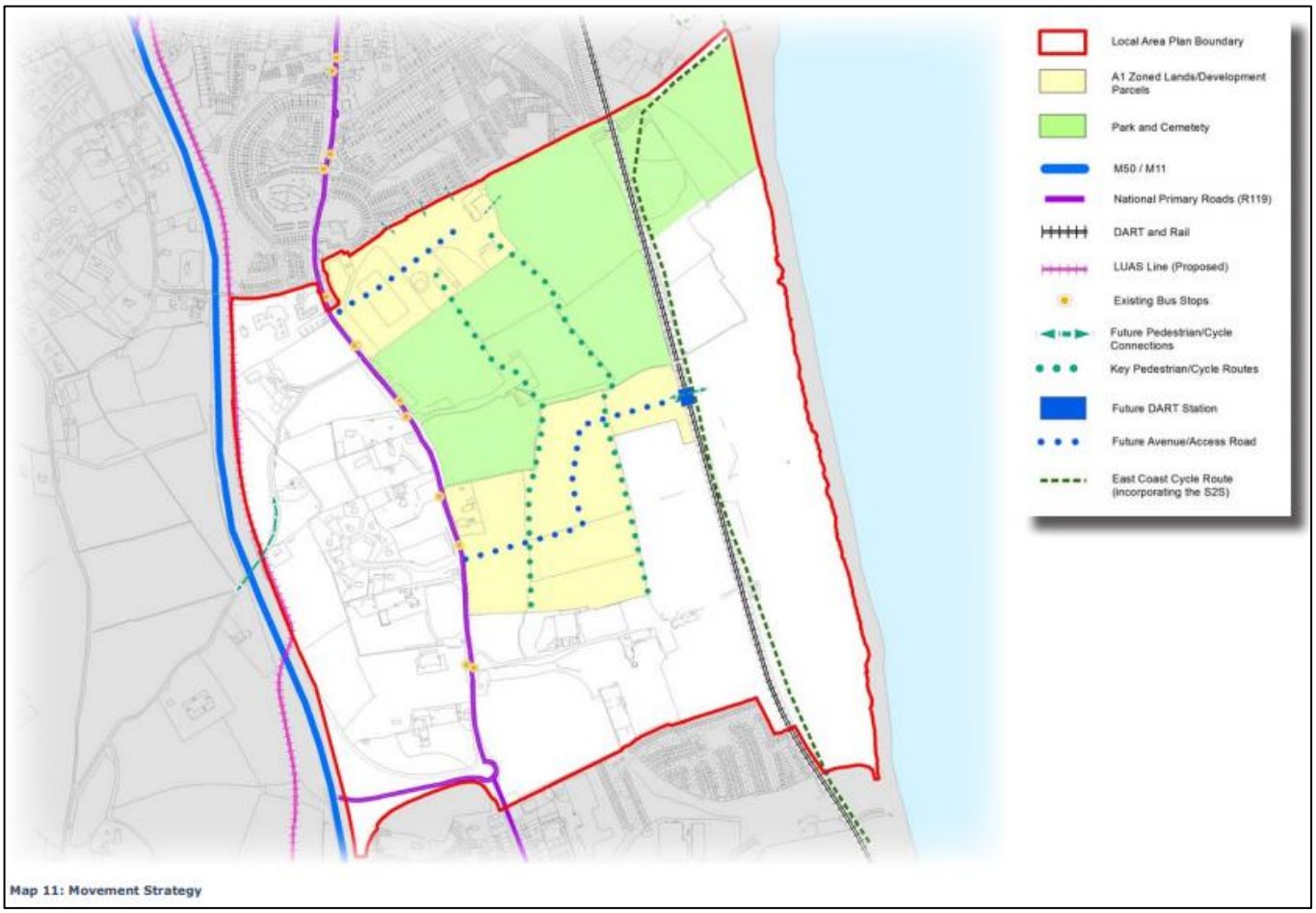

Figure 2-3 - LAP Movement Strategy

This figure illustrates the key transport infrastructure provisions and links within and adjacent to the LAP lands. They include:

- Woodbrook DART Station;
- Proximity to the R119 Dublin Road bus corridor and cycle route;
- Woodbrook Avenue, facilitating walking, cycling and vehicular access through the site from the R119 Dublin Road to the DART Station and park and ride car park;
- Pedestrian and cycle links linking the development to Shanganagh Park to the north and potential linkages to the south; and
- Proximity and access to the East Coast Cycle Trail.

As outlined previously some of the above infrastructure has been delivered as part of the granted Phase1 SHD application while others are being delivered by NTA (BusConnects) and Irish Rail (DART Station).

2.12 Bray and Environs Transport Study (BETS)

In April 2019 the National Transport Authority (NTA), in consultation with Transport Infrastructure Ireland (TII), Wicklow County Council (WCC) and Dun Laoghaire Rathdown County Council (DLRCC), published the Bray and Environs Transport Study. The overarching purpose in undertaking this study was to facilitate the land use objectives of Wicklow County Council and Dun Laoghaire-Rathdown County Council as provided for in statutory regional, county, and local plans.

The Study is set in the context of the overarching transport objectives set out in the Transport Strategy for the Greater Dublin Area and sets out more detailed transport requirements to facilitate planned development sites in the south of Dun Laoghaire Rathdown and the Bray area. These development sites include Woodbrook, and the Study specifically sets out the following requirements to serve the full build out of lands in Woodbrook / Shanganagh:

- Woodbrook DART Station; and
- Commitment to the phased introduction of bus and enhanced rail services in line with increased demand.

The masterplan for the development, including the temporary DART Station car park, fundamentally facilitates the delivery of the DART Station. Upon delivery of the DART Station the development will avail of any increases in rail services that will be implemented by the NTA and Irish Rail.

In terms of bus services, the development will have direct access to existing substantive bus services on Dublin Road immediately adjacent the site. The NTA are planning the implementation of enhanced bus services on the entire bus network including enhancements to the capacity and efficiency of services such as Bray DART Station on spine route E1 to the city centre along Dublin Road as well as L11, L11 and 7n local links to Dublin City and Bray. The Woodbrook lands will directly benefit from these transport network improvements. The Woodbrook development will also facilitate (through works on the R119 facilitated under ABP Ref. ABP-305844-19) and directly benefit from the proposed Bus Corridor 13 which will serve to optimise the efficient operation of bus services along this route.

3. Existing and Future Context

From a transport perspective, the Woodbrook Dart Gateway excellently situated on the south-eastern commuter belt. The DART suburban rail line is located to the east of the development adjacent to the new station at Woodbrook locality improving the accessibility of the development. The suburban rail service offering is also anticipated to be significantly enhanced in terms of capacity and frequency in the coming years with the introduction of DART+ Coastal services between Dublin City to County Wicklow.

As shown in Figure 3-1 the site is located within the Woodbrook Masterplan lands adjacent to Woodbrook DART station. Shankill is located 1.5km to the north and Bray Town Centre 2km to the south. Both offer a wide range of services, amenities and facilities that complement the mixed-use nature of the masterplan lands (commercial retail and future school), and adjoining services located immediate adjacent to the development (for e.g. Woodbrook College, Shanganagh Park) for future residents and visitors to the development.

The proposed development will integrate with the permitted internal street network, providing onward connections to the local and strategic road networks. Similarly, the development will link into the proposed permitted internal active travel network, including footpaths and cycle links, which provide connections to key internal destinations (neighbourhood centre, school site) as well as external connections via the R119 to the north to Shankill and Dublin City Centre and the south towards Bray, offering sustainable travel choices to future residents.

Figure 3-1 - Site Location & Context

There are excellent pedestrian and cycle connections both within the masterplan lands and the external network providing active travel users with opportunities to access amenities and services. As outlined above this is the final phase of the Woodbrook Masterplan. An extensive network of streets and spaces has been granted permission and has largely already been constructed, including the main access route Woodbrook Avenue as demonstrated in Figure 3-2.

Figure 3-2 - As built Woodbrook Avenue

Walking and cycling isochrones from Woodbrook are shown in Figure 3-3 and Figure 3-4 showing areas within a 10 and 15 minute walk and cycle of the site.

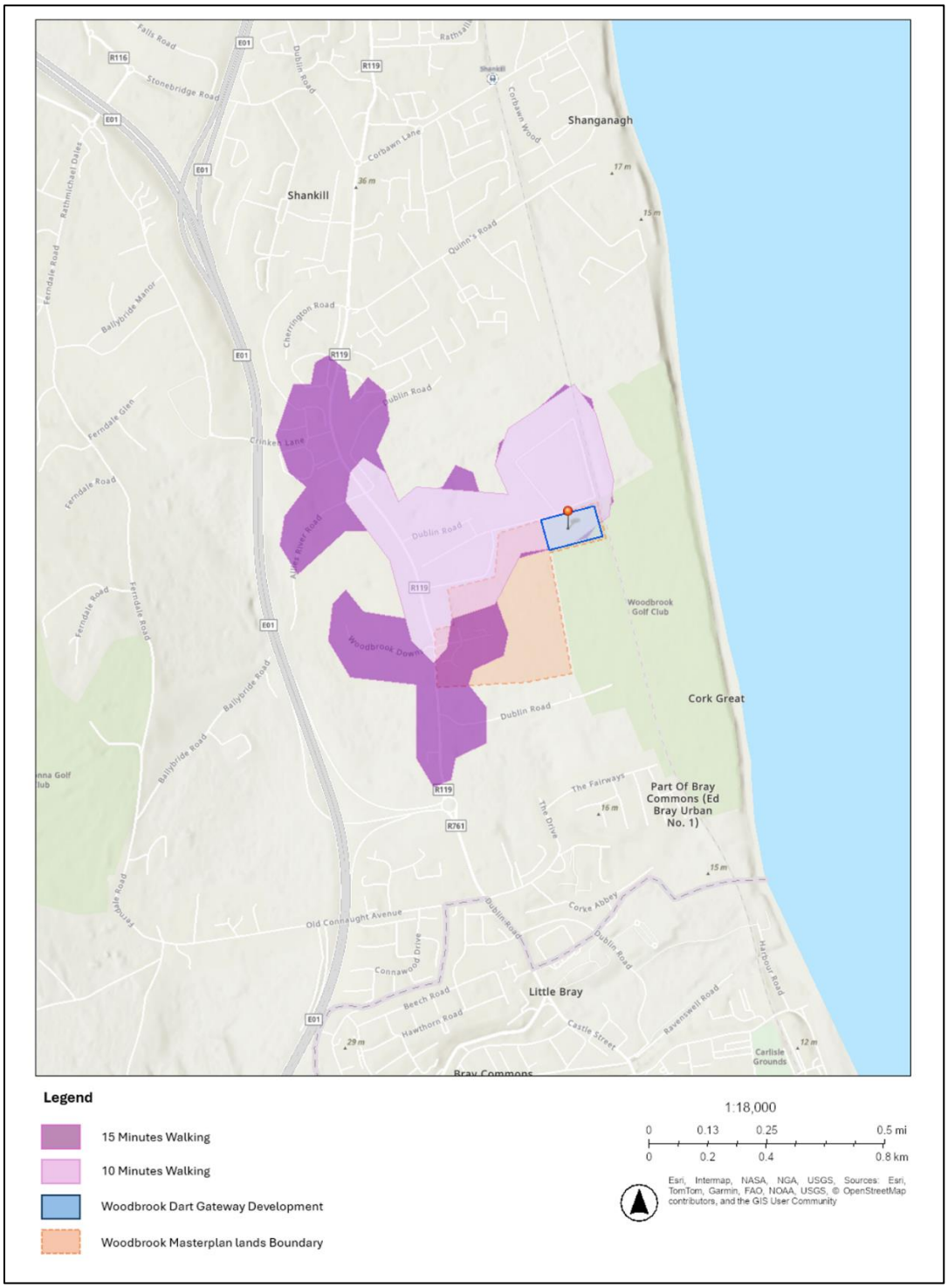

Figure 3-3 - Walking Isochrones

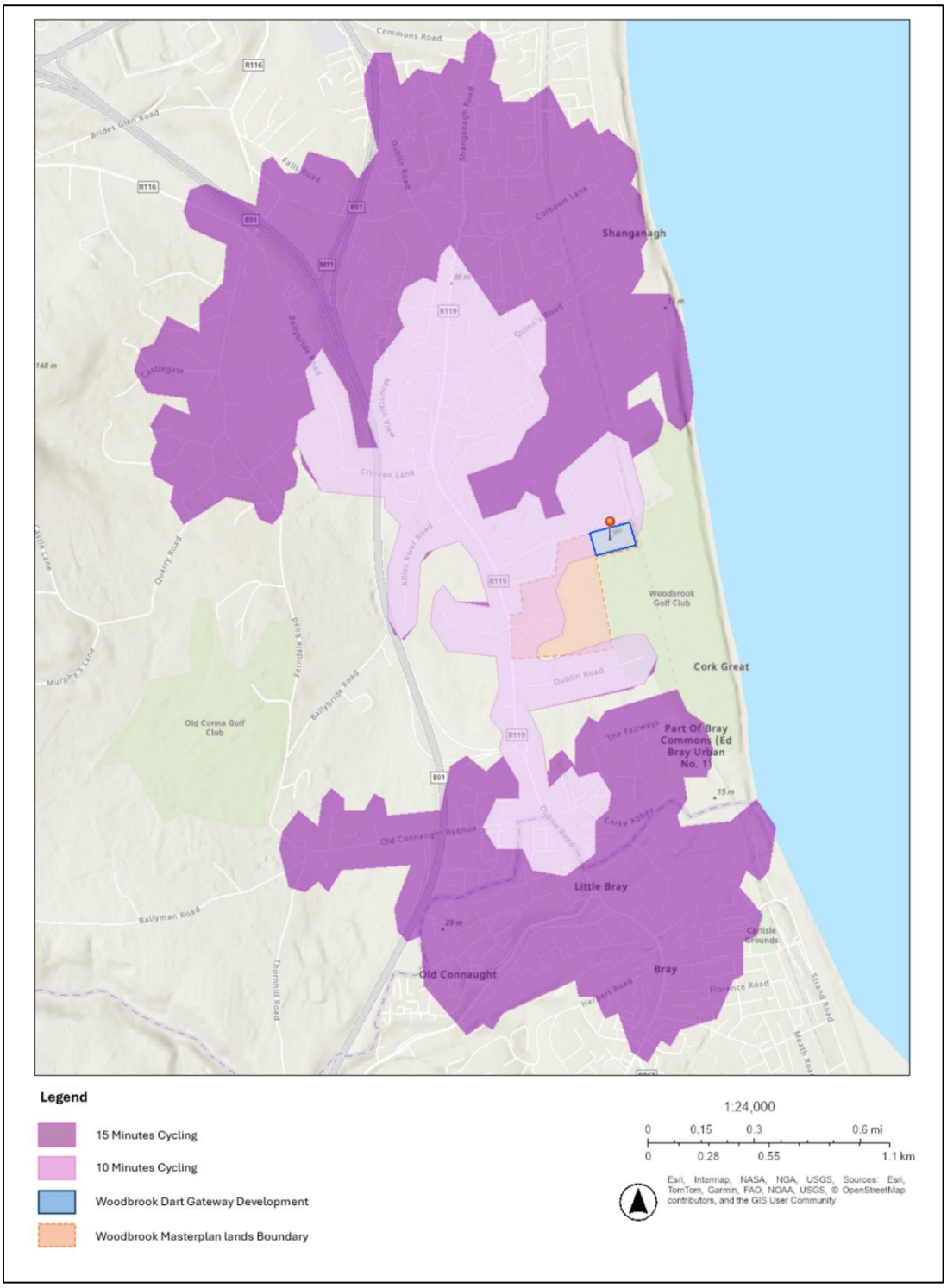

Figure 3-4 - Cycling Isochrones

3.1 Existing Network

Bus Network

This section provides detail of current transport proposal, infrastructure and polices that will impact on how future residents and visitors to the development will be able to access to site by a range of multi-modal options.

Bus Connects

Bus Connects is the further development of the bus services as set out in the GDA Transport Strategy. This project is currently being progressed by the NTA to implement both network and bus corridor improvements to overhaul the current bus system in Dublin. The BusConnects network for Bray-Enniskerry-Shankhill can be seen in Figure 3-5

The proposed routes will service Woodbrook:

- Route E1- Northwood - City Centre - Bray Main St. – Ballywaltrim

This commuter route, operated by Dublin Bus, runs Northwood to Ballywaltrim via the city centre. Key stops include Bray Main Street, Woodbrook, Shankill, Cherrywood, Loughlinstown, Cabinteely, Mount Merrion, UCD, Donnybrook, St. Stephens Green, O'Connell Street, Broadstone, DCU, Ballymun, Ikea. This route will be serviced every 10 minutes on weekdays, with Saturday's frequency expected to be 13 minutes and Sunday's frequency expected to be 15 minutes.

- Route L11 - Kilmacanogue - Bray - Dún Laoghaire

This commuter route, operated by Dublin Bus, runs from Kilmacanogue to Dún Laoghaire via Bray. Key stops include Bray Main Street, Woodbrook, Shankhill, Sallynoggin and Dun Laoghaire. The route will have a service frequency of 20-30 mins on the weekdays and 30-minute frequency on both Saturday and Sunday.

- Route L14 - Southern Cross Rd - Bray - Palermo - Cherrywood

This commuter route, operated by Dublin Bus, runs from Carrickmines to Dún Laoghaire via Bray. Key stops include Bray main street, Palermo -, Shankhill Cherrywood, Woodbrook The route will have a service frequency of 30 mins on the weekdays and 30-60 minute frequency on both Saturday and Sunday.#

- Route 7n - Dublin City – Ballbridge – Blackrock- Dún Laoghaire – Woodbrook

This commuter route, operated by Nitelink, Dublin Bus, runs from Dublin City South, D'Olier Street - Dún Laoghaire-Rathdown, Woodbrook Golf Club. Key stops include Merrion Square North, Lansdown Road, Amerrican Embassy, British embassy, St Vincent's Hospital Dalkey Village, Shanganagh Castle Woodbrook College. The route will have a service frequency is 3 times a night (00:00, 02:00 and 04:00 only Saturday and Sunday.

Table 3-1 - Bus Services and Frequencies of BusConnects in Vicinity of Site Routes & Frequencies

Route No.	Route	Peak
E1	Northwood - City Centre - Bray Main St. – Ballywaltrim	4-8 minutes
L14	Southern Cross Rd - Bray - Palermo - Cherrywood	30 minutes
L11	Kilmacanogue - Bray - Dún Laoghaire	20-30 minutes
7n	Dublin City – Ballbridge – Blackrock- Dún Laoghaire – Woodbrook	Night service running from Saturday and Sunday (3 times)

Figure 3-5 - Existing Bus Network in the Vicinity of proposed Site (Source: busconnects.ie)

Rail Network

The new DART station at Workbook has been recently added as part of the existing transport network as shown in Figure 3-6 . Delivered by the NTA and Irish Rail this year, the station is completed in tandem with Phase 1 of the development. Fully integrated into the masterplan, it sits right on the doorstep of the site, ensuring seamless connectivity and offering a safe, reliable transport service for the local community. The station connects directly to the DART network, which stretches from Malahide and Howth to Greystones. It also forms part of the South-Eastern Commuter Rail line, providing links to Wexford and Rosslare Europort.

Figure 3-6 - Woodbrook DART Station

Road Network

The proposed development site is strategically located adjacent to a well-established and comprehensive road network comprising national roads, motorways, regional roads, and local roads. Key elements of this network are outlined below:

- **Primary Access – R119 Dublin Road:**

  The development will be accessed via the R119 Dublin Road, a single carriageway regional road. In the vicinity of the proposed access junction, the R119 features dedicated cycle lanes on both sides. Certain sections of the route also include bus lanes, enhancing public transport connectivity.

- **Southern Connectivity:**

  To the south, the R119 provides direct access to Bray town centre via the R761. It also connects to the M11 motorway at the Wilford Interchange, facilitating onward travel to the M50 (northbound) and the M11 (southbound), offering efficient regional and national connectivity.

- **Northern Connectivity:**

  Northbound, the R119 passes through Shankill Village and links to the R837, which provides access to the N11. This corridor serves key destinations including Cabinteely, Stillorgan, University College Dublin (UCD), and Donnybrook. Additionally, the R119 continues northward via Shanganagh Road, offering access to Killiney, Dalkey, Sandycove, and Dún Laoghaire.

3.2 Future Context

The site is proposed to be developed in alignment with several future public transport initiatives and projects. The major projects include:

- BusConnects – Core Bus Corridor: Corridor 13 Bray to UCD
- Dart+ South
- Greater Dublin Area Cycle Network

The NTA BusConnects Scheme, Corridor 13 Bray to UCD and City Centre, was recently granted permission on the 28th of January by ABP (App Ref: HA27.317742[3]). As part of the proposed plans, a full upgrade of the carriageway and associated junctions will be provided along the Dublin Road, with improved bus and active travel provisions for users.

As set out on the BusConnects web page[4] *subject to completion of various processes, the NTA will now further develop the construction sequencing to include the Bray to City Centre Core Bus Corridor Scheme taking account of approvals received, along with documentation to allow procurement to commence for the construction stage of the Scheme.*

The redesigned bus network will provide an overall better and more sustainable bus system for Dublin and the surrounding areas. The Bus Network Redesign of BusConnects Dublin includes the following:

- Overall increase of 23% in bus services
- Increased peak hour capacity
- Increased evening and weekend services
- 24-hour services on some routes
- New and improved connections to essential services
- New spine routes
- Enhanced orbital routes
- New local and express services
- New Peak-only routes
- New Dublin City bound routes
- Over 230km of bus lanes and 200km of cycle tracks/lanes.

The Dublin to Bray CBC Route 13 is one of the BusConnects CBC. The Proposed Scheme has an overall length of approximately 18.5km and runs and runs along the R119 to the front of Woodbrook masterplan lands. The plans include the provision of active travel improvements including improved cycle facilities along the entire network that will largely fulfil the GDA cycle network requirements for the R119 corridor.

[3] 317742 | An Bord Pleanála

[4] Planning approval received for Bray to City Centre Core Bus Corridor Scheme | Busconnects

3.3 Existing and Future Context Summary

The existing and proposed public transport options offer realistic sustainable travel choices for future residents of proposed development.

Additionally, the development proposes integrated walking and cycling facilities that connect to the Woodbrook Dart Gateway Development strategy providing a comprehensive and safe environment for active travel.

The proposed development as part of the Masterplan lands aims to facilitate a lifestyle for residents that is predominantly based on active travel and public transport, minimizing dependency on car travel. This opportunity is supported by the multifaceted characteristics of the site location and the travel choices available, reducing the need for car travel due to the proximity to existing and future services.

In this context, and considering the rapidly changing lifestyles and work patterns, it is anticipated that the impact of the proposed development on the existing road network will be modest and well within the carrying capacity of the existing infrastructure.

4. Proposed Development

The proposed residential development is on a site measuring c.2.5 Ha at lands south of the Shanganagh cemetery and east of the Woodbrook Dart Station, within the Woodbrook Local Area Plan boundary, Shanganagh, Shankill, Cork Little, Dublin as shown in Figure 4-1.

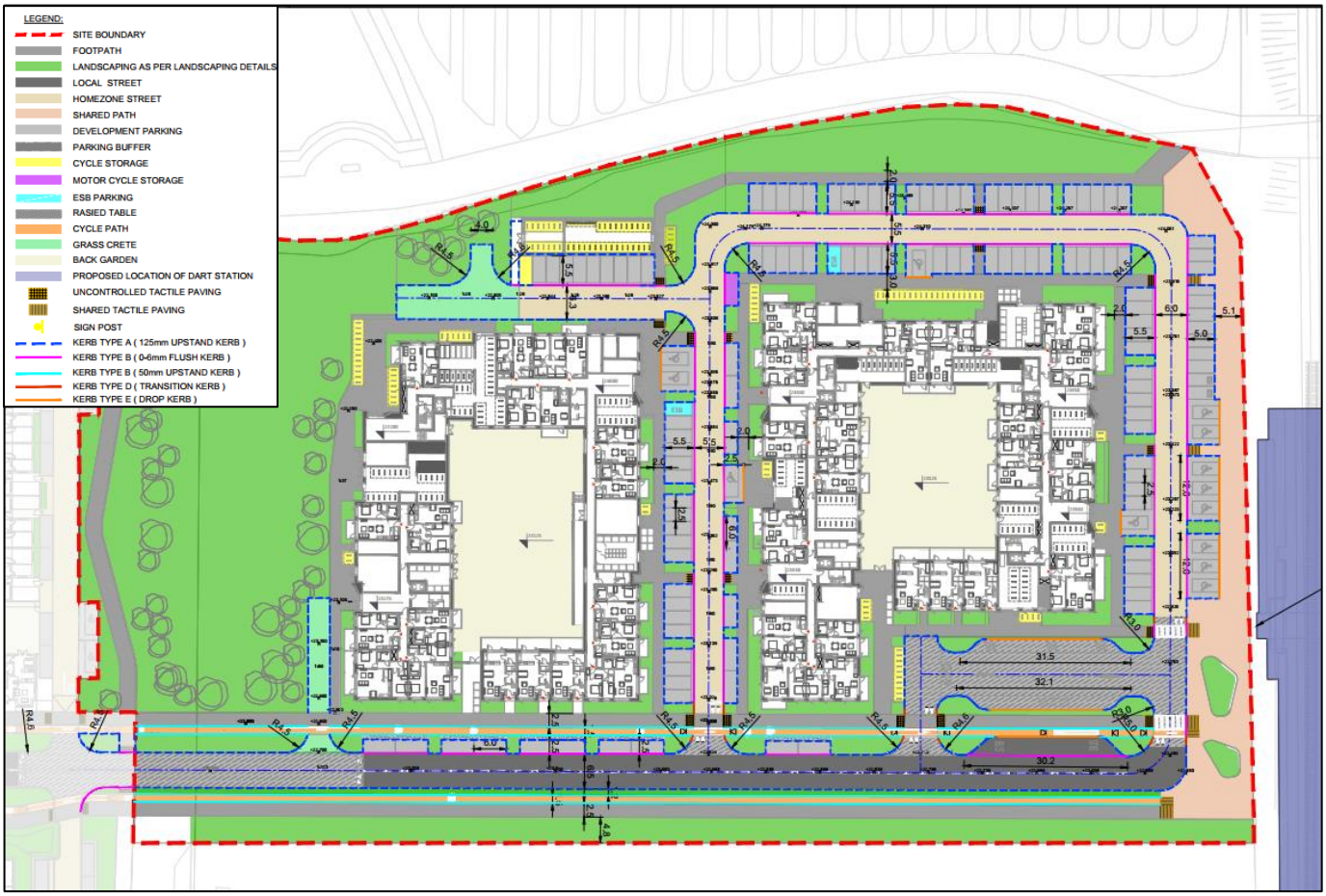

Figure 4-1 - Proposed Roads Layout

The proposed residential development comprises of 359no. units as detailed in Table 4-1, consisting of 353no. apartment units and 6no. duplex units proposed in a mix of 1, 2 and 3-bedroom units (160 x 1 bed, 189 x 2 bed and 10 x 3 bed) accommodated within 2no. apartment blocks, ranging in height of 2-7 storeys, including balconies and terraces.

Table 4-1 - Schedule of Accommodation

Name	1 bed units	2 bed units	3-bed units	Total
Block P	83	64	7	154
Block Q	77	125	3	205
Total	160	189	10	359

The development also includes public open space, communal open space serving the blocks; internal road networks; pedestrian and cycle facilities; car and bicycle parking spaces; ESB substations and all associated and ancillary site development and infrastructural works, hard and soft landscaping and boundary.

4.1 Access, Movement & Quality Environment

Vehicular, cyclist, and pedestrian access to the proposed Woodbrook Gateway development will continue to be provided from the R119 (Old Dublin Road) via Woodbrook Avenue, as permitted under ABP Ref. ABP-305841-19 (Woodbrook Phase 1) as shown in Figure 4-2.

Figure 4-2 - Woodbrook Avenue access from Dublin Road Junction

The internal street network includes Woodbrook Avenue, which was constructed as part of Phase 1 of the Woodbrook Masterplan and is now operational as shown in Figure 4-3.

Figure 4-3 - Active Travel Infrastructure in the vicinity of the proposed development

The street hierarchy within the development has been designed to ensure safe and efficient movement for all users. Local streets provide access within communities and connect to arterial and link streets, forming the backbone of the neighbourhood and facilitating movement between residential areas and key destinations. Home Zone streets are shared-surface streets that prioritize pedestrians and cyclists over vehicles, encouraging low-speed traffic and creating a safer, more inclusive environment for all users as shown in Figure 4-4

Traffic management measures have been incorporated to enhance safety and efficiency. The junction at R119 and Woodbrook Avenue will include traffic signals to manage peak-hour flows and improve safety for all road users. Controlled pedestrian crossings with tactile paving and dropped kerbs will be provided at key junctions, including the Dublin Road junction and near the DART station access.

The provision of high-quality pedestrian and cyclist facilities within the development is central to the design principles adopted in relation to the development proposals. Woodbrook Dart Gateway development it shared the wide shared pedestrian and cycle facilities have been proposed to ensure cyclist of all abilities can access the range of services and facilities as part of Woodbrook Masterplan lands. The range of facilities proposed ties into the wider masterplan lands provision in a seamless manner to create a coherent network of pedestrian streets and a comprehensive and safe cycle network.

Pedestrian linkages through and around the proposed development have been considered in the context of desire lines and onwards towards existing and proposed amenities. Woodbrook Dart Gateway development layout has been developed to accommodate these desire lines and linkages. Woodbrook Avenue is the primary route for pedestrians, cyclists and motorised vehicles to travel to Woodbrook DART Station as shown in Dedicated cycle and pedestrian paths are provided on both sides of Woodbrook Avenue. The construction of the avenue is largely complete.

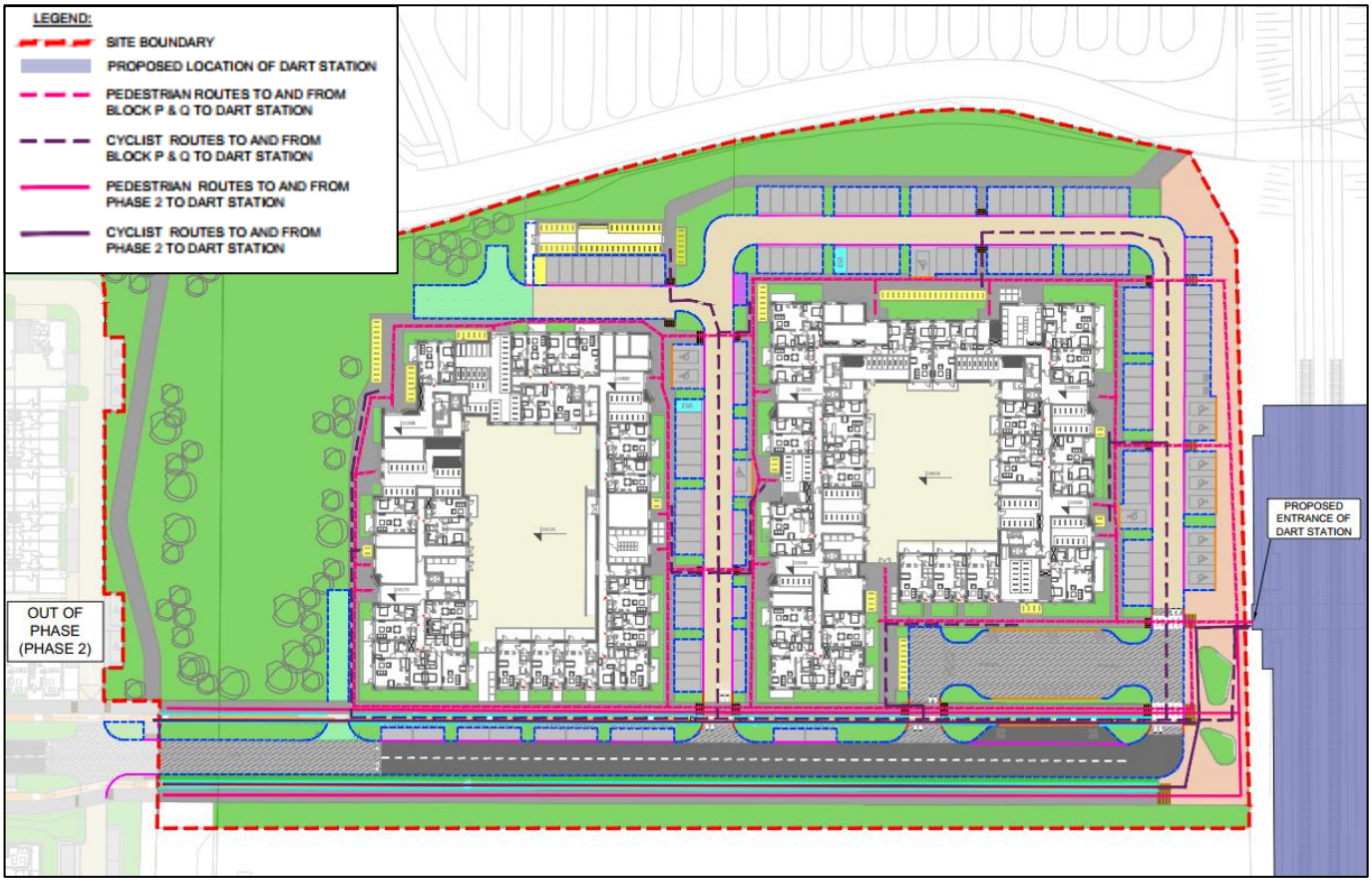

Figure 4-4 - Walking and Cycling Network

The masterplan lands include extensive active travel provisions as shown in Figure 4-5 including fully segregated cycle infrastructure and urban greenways and pedestrian only paths. The proposed will enhance and complete the active travel network within the masterplan lands.

Cycling infrastructure has been integrated throughout the development. Dedicated cycle lanes will run along Woodbrook Avenue, connecting to the R119 and extending towards the DART station. In addition, shared multi-use paths for pedestrians and cyclists will run parallel to key streets, ensuring safe and convenient movement throughout the development. Secure cycle parking facilities will be located in each of the residential blocks and at the DART station entrance to encourage sustainable travel.

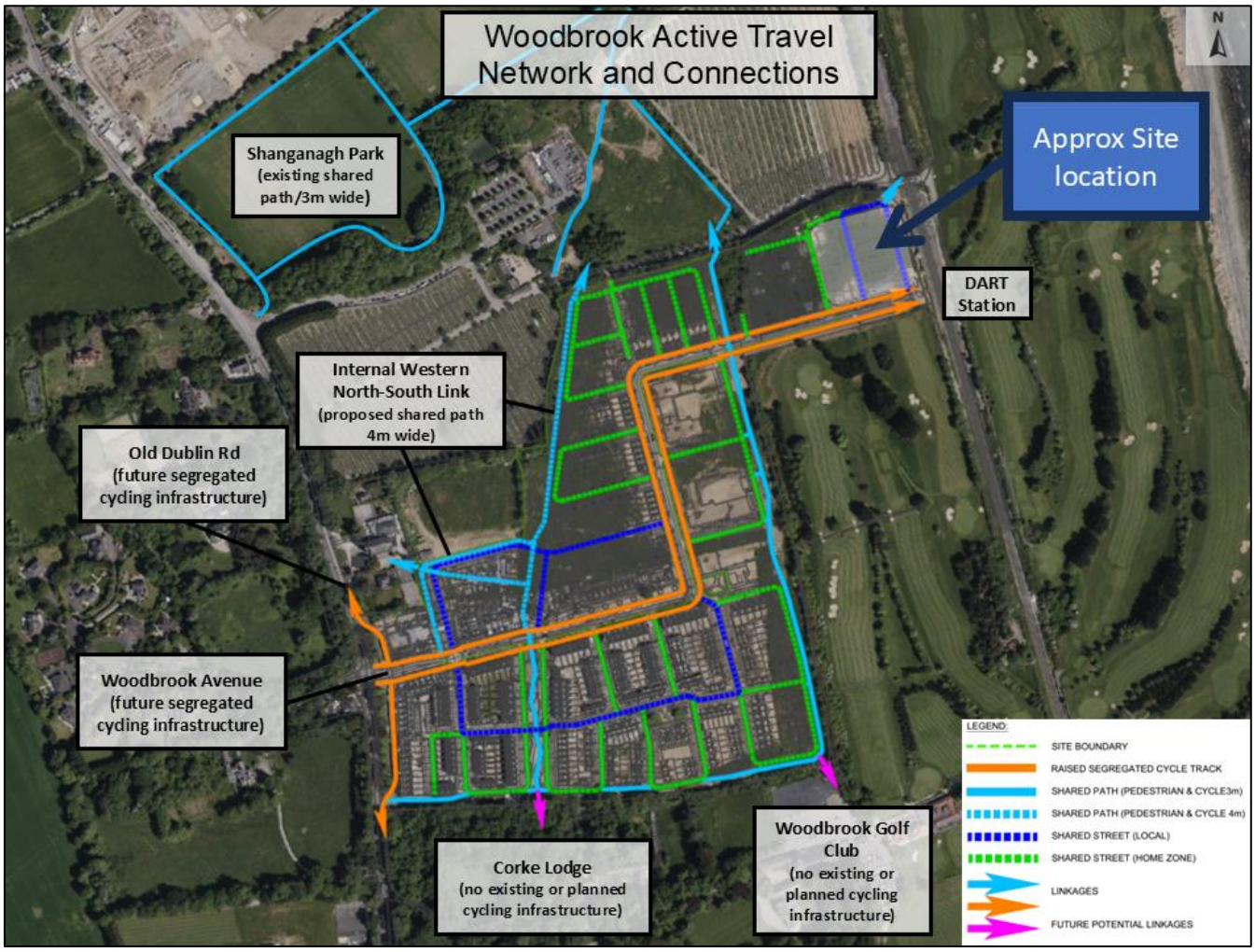

Figure 4-5 - Woodbrook Masterplan Active Travel Network

4.2 DMURS

DMURS is the appropriate design guidance to be applied to urban environments such as cities, towns villages and urban developments such as residential estates.

“The principles, approaches and standards set out in the Manual apply to the design of all urban roads and streets (that is streets and roads with a speed limit of 60km/h or less).”

The Masterplan Lands have been designed in compliance with DMURS and the proposed development builds upon the permitted development approach to ensure tie in and a consistent design approach.

The street layouts have been developed to deliver a high place function wherein the streets and public spaces form part of the social fabric of the Woodbrook Dart Gateway development. Achievement of this function can be greatly facilitated by developing a self-regulating street environment wherein vehicular movement function should be limited to, as much as is practicable and a desirable, a maximum design speed of 20kph-30kph. The DMURS statement will show how key elements of the development have been developed to create a safe environment that reduces vehicular impacts and encourages walking and cycling. This includes:

- Horizontal and vertical alignment to achieve a 20km/h - 30km/h design speed.
- Carriageway widths in line with DMURS requirement for street type.
- Constrained junction radii in line with DMURS requirement.
- Raised table entry treatments at access junctions; and
- Provision of raised tables at internal Junctions.

4.3 Promotion of active and travel 10 -Minute Neighbourhood Principles

The 10 Minute Neighbourhood concept seeks to have all community facilities and services accessible within a 10-minute walk or cycle from homes or are accessible by public transport services connecting people to larger scaled settlements.

The proposed development offers to create a vibrant, interconnected community that fosters sustainability, accessibility, and well-being for all residents. The proposed development has been designed in accordance with the 10-minute neighbourhood concept and as per the DLRCC Development Plan which supports the 10-minute neighbourhood concept states the following:

> *'A '10-minute' neighbourhood concept incorporates the principles of a sustainable urban village in terms of being able to walk or cycle to neighbourhood support facilities within a 10-minute timeframe. It is recognised however that not every house will have all such facilities located within this timeframe. In this regard the 10-minute neighbourhood includes access to high quality public transport within a short walk from homes which in turn can provide sustainable access to neighbourhood support facilities and employment opportunities that may not be available within the local community.'*

The mixed-use nature of the development in line with the LAP helps to ensure that there is a range of facilities within easy walking distance of the entire masterplan land, provided for within the Neighbourhood Centre. The Neighbourhood Centre provides a range of services including retail, commercial and community facilities that is designed to cater for the day-to-day needs of residents helping to reduce trips or that those trips can be undertaken by active means.

The provision of a DART station within the masterplan lands, and availability of bus services on Dublin Road (R119), including future BusConnects infrastructure provides future residents with opportunities to travel by more sustainable means. Adjacent the site both to the north and south are the developed area of Shankill and Bray, both easily accessible by sustainable means that offer a wider range of facilities and services that further enhances the 10-Minute Neighbourhood Principles of the development.

Dedicated cycle facilities are provided along Woodbrook Avenue, linking the Old Dublin Road with the new DART station. Shared cycle and pedestrian paths run through the Linear Park and the Green Axis, linking the settlement to Shanganagh Park, and providing potential for future links to the lands to the south should that become appropriate at a future date. A shared cycle and pedestrian path provide circulation between the site entrance, the local centre and the primary school.

Active travel provision provides highly permeable pathways and thoroughfares, encouraging seamless movement within and beyond the development. Provision of dedicated lanes, shared paths, raised crossings, horizontal deflections, signage and other infrastructure to slow vehicle speeds offers active travel priority within the road hierarchy and helps in creating a pedestrian friendly environment.

Soft landscaping creates attractive, safe routes throughout the community, promoting leisurely strolls and enhancing the overall aesthetic appeal. With close proximity access to the Woodbrook DART station and Dublin Road Bus Corridor, residents will enjoy convenient public transport options, reducing reliance on private vehicles and

contributing to sustainable mobility goals. The proposed development offers reduced car parking and electrical charging facilities which embraces the shift towards electric vehicles.

The proposed development aligns with the Climate Action Plan and National Sustainable Mobility guidelines embodying "Avoid-Shift-Improve" model:

- Avoid: Discouraging remote working by providing essential facilities within walking or cycling distance.
- Shift: Promoting active travel provision and enhancing public transport accessibility to encourage modal shift away from private cars.
- Improve: Prioritizing the installation of EV charging infrastructure to facilitate the transition to electric vehicles.

Figure 4-6 illustrates the range of facilities both internally and externally within the general catchment of the site demonstrating that the development aligns with the 10-minute neighbourhood concepts.

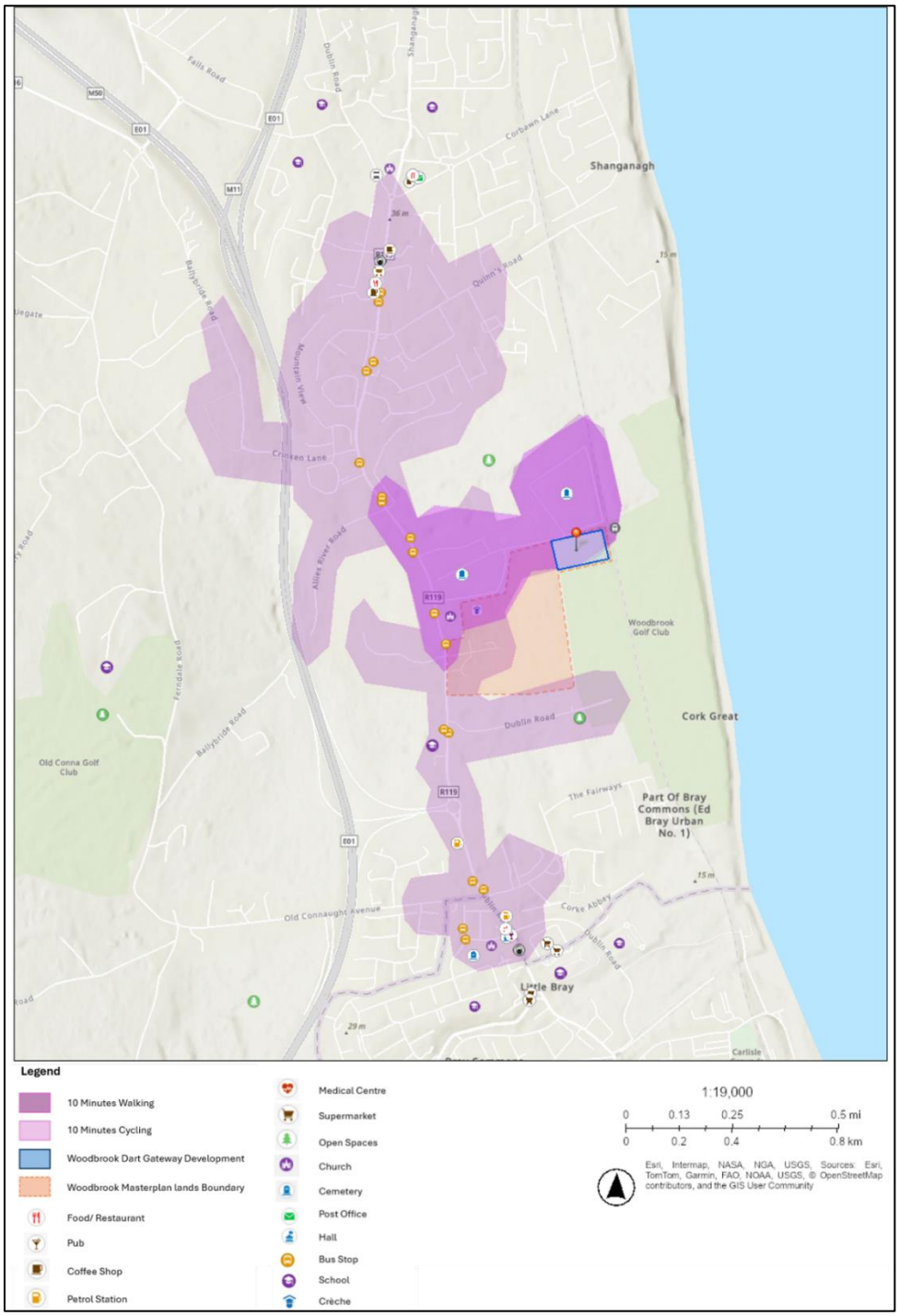

Figure 4-6 - Shows the proposed walking and cycling facilities

4.4 Road Hierarchy

The proposed road hierarchy is shown in Figure 4-7 It consists of:

- Avenue – Woodbrook Avenue - provides the main movement route for vehicles within the site and connects Dublin Road with DART station. Junctions off the Avenue provide connections to lower order streets, including local and Homezones streets that provide connectivity to residential neighbourhoods. These streets are design for lower vehicle volumes and speeds in a self-regulation environment in accordance with DMURS with vertical, horizontal alignment and tight junction road and materiality and landscaping reinforcing the lower order nature of these streets. The design parameters are:

    - Carriageway Width – 6m
    - Design Speeds – 30kph
    - Pedestrian facilities – fully segregated footpaths (minimum width 2m)
    - Cycle facilities – fully segregated cycle facilities
    - Limited on-street car parking – where provided parallel spaces (2.5m x 6m)

- Local streets connect higher movement order areas such as the housing cells to Woodbrook Avenue. The design parameters reflect anticipated slightly high traffic volumes than homezones streets, but lower volumes than the avenue. Design parameters are:

    - Carriageway Width – Varies 5m to 6m.
    - Design Speeds – 30kph • Pedestrian facilities – fully segregated footpaths (minimum width 2m)
    - Cycle facilities –shared on street provision in quieter streets cycle facilities.
    - Car parking – where provided consists of both perpendicular (2.5m x 5.5m) and parallel spaces (2.5m x 6m) interspersed with landscaping.
    - Entrance to street defined by change on texture and or material via raised entry treatment.

- Home zone are the quiets streets within the phase 2 and masterplan lands. Low vehicle volumes and speeds allows for shared street provision with pedestrians and cyclists where the street form part of the social and community fabric. Their design parameters are:

    - Carriageway Width – Varies - 4.8m with 1.2m pedestrian comfort strip.
    - Landscaping builds provided that narrows the carriageway to reinforce low speed environment where pedestrian and cyclist have priority.
    - Design Speeds – 20-30kph • Pedestrian facilities – shared on-street provision.
    - Cycle facilities –– shared on-street provision.
    - Car parking – where provided consists of both perpendicular (2.5m x 5.5m) and parallel spaces (2.5m x 6m) interspersed with landscaping. •
    - Entrance to street defined by change on texture and or material via raised entry treatment.

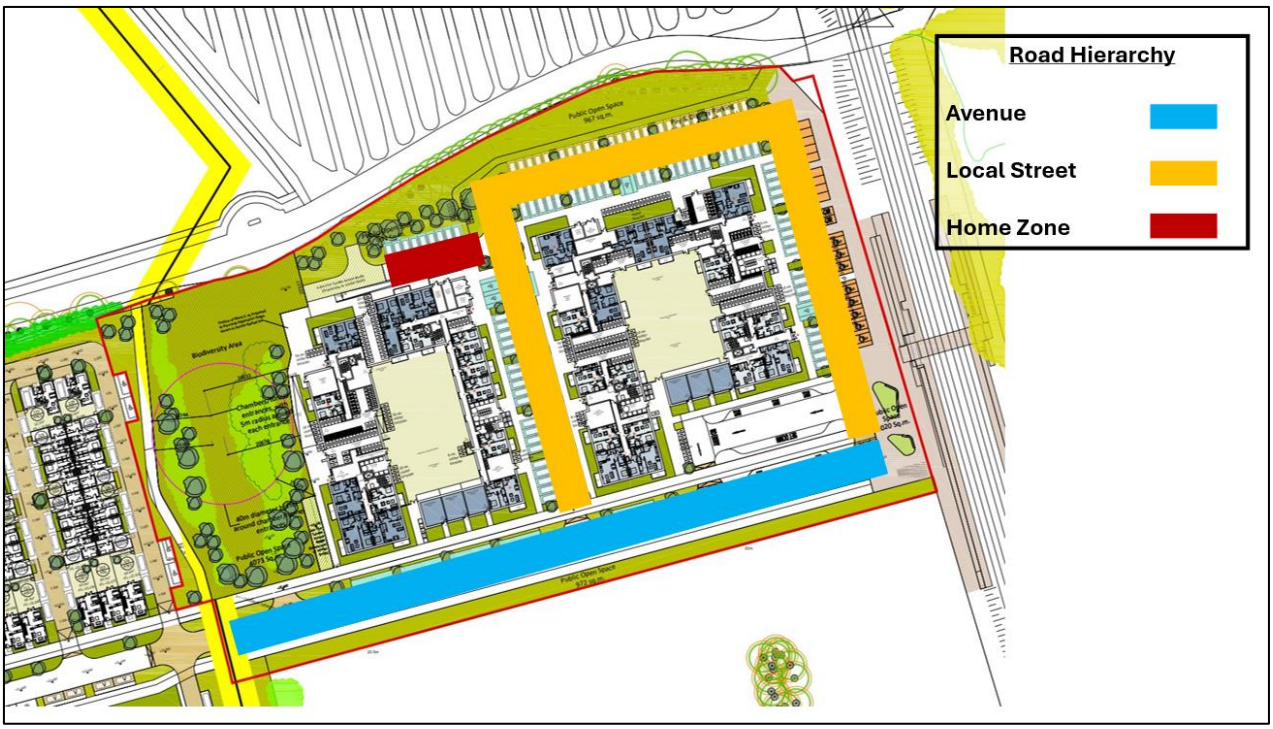

Figure 4-7 - Road Hierarchy

4.5 Cycle Parking

High-quality cycle parking is an integral part of the proposed development and has been designed accordingly. The following guidance documents have been used to inform cycle parking numbers and quality:

- SPPR 4 – Cycle Parking and Storage section of the Sustainable Residential Development
- Sustainable Urban Housing: Design Standards for New Apartments (July 2023)
- DLR Cycle Parking Guidance (2019)

Cycle parking facilities have been designed and located in accordance with Section 6.2, Design Principles of the Cycle Design Manual published in September 2023. The five core principles for designing cycle infrastructure mentioned within the Cycle Design Manual are as follows:

1. **Safe**– Cycle parking should be secure for the cycle, and users should feel safe from the risk of personal crime.
2. **Direct**– Cycle parking should be near the cycle route and/or as close as possible to the final destination.
3. **Coherent**– Cycle parking should be well-connected to routes and buildings, well-signed, and easy to find.
4. **Attractive**– Cycle parking areas should be of good quality design and well-maintained.
5. **Comfortable**– Cycle parking should be easy to use and accessible to all.

The design and location of both long-stay and short-stay cycle parking for the proposed development are based on the following considerations, which are also in accordance with the above-stated design principles and the SPPR 4 – Cycle Parking and Storage section of the Sustainable Residential Development and Compact Settlements Guidelines for Planning Authorities. The number of spaces is also cognizant of DLR Cycle Parking Guidance (2019):

- All long-stay cycle parking will be in accessible, safe, secure, well-lit, and sheltered locations.
- Short-stay cycle parking is located in highly visible areas with good passive surveillance, easy access, and proximity to their destination entry points.
- Where required, end-of-trip facilities, including shower and change facilities, are provided.
- A range of cycle parking solutions are provided, including Sheffield stand type facilities and stacked cycle solutions.
- The cycle parking layouts cater for oversized cycles, including cargo bikes and accessible bike formats.

The cycle parking facilities provided for the residential units consist of a range of facilities in accordance with Section 6.5 (Types of Equipment and Layout) of the Cycle Design Manual published in September 2023. They include:

- Stands or hoops – where the cycle is leaned against a metal structure and locked (this may include hi/low arrangements where alternate sides are ramped to avoid handlebars clashing).
- Cycle lockers – where individual cycles are secured in a metal box.
- Cycle hangers – where several cycles are secured in a metal box.
- Semi-vertical or vertical racks – where cycles are lifted into a vertical position.

Cycle parking is proposed to be in accordance with Compact Housing Guidelines SPPR 4, which requires one cycle storage space per bedroom. Visitor cycle parking is also required and provided at rates of 1 space per 5 residential unit. The location of cycle parking for Woodbrook Dart Gateway Phase 2 is shown in Figure 4-8.

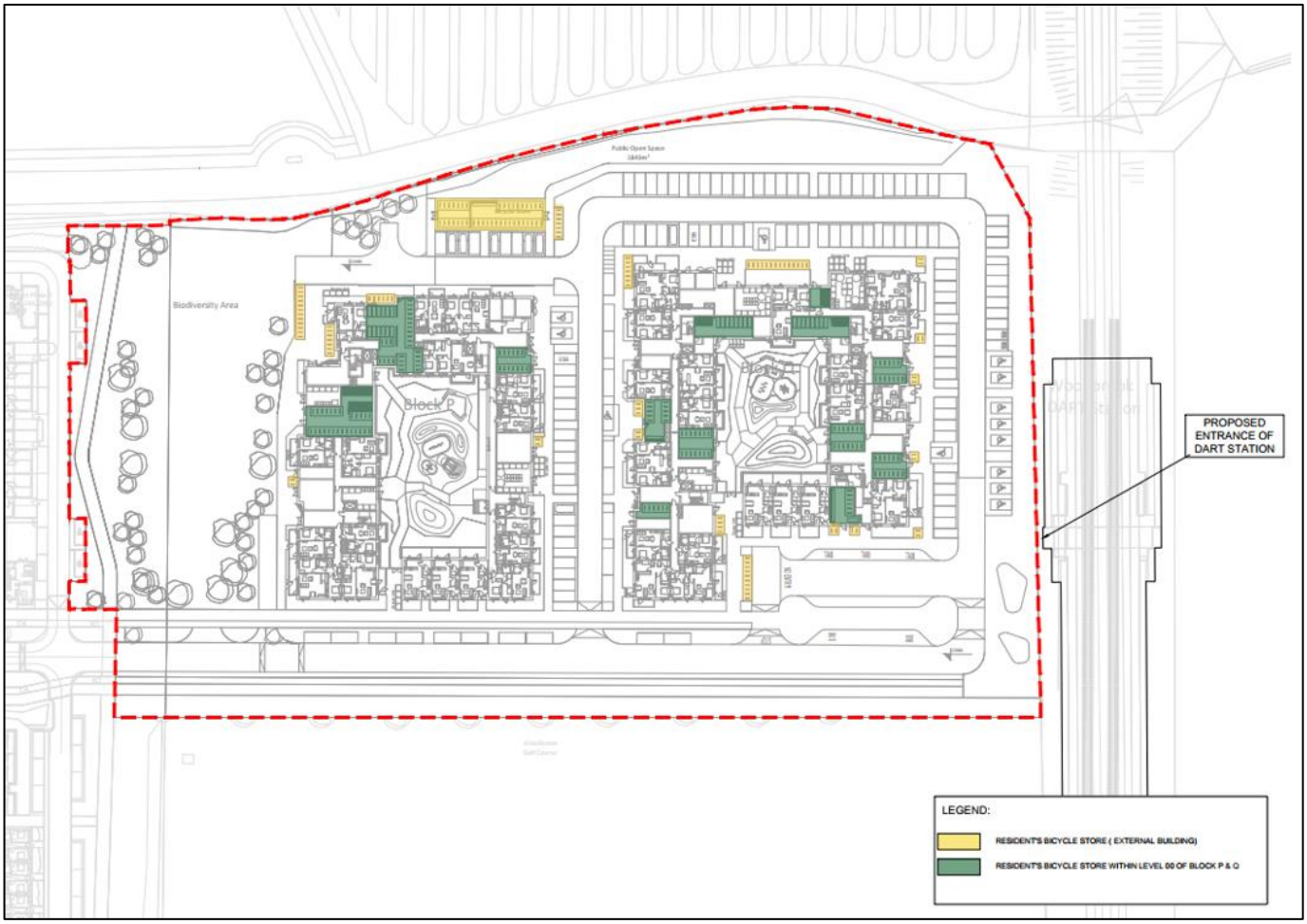

Figure 4-8 - Cycle Parking Locations

The bicycle parking strategy for Blocks P and Q provides 1 no. residential Sheffield stand space for each apartment/ duplex, in line with the DLRCC Development Plan. The overall provision of residential bicycle parking is as per the 2023 Apartment Guidelines, i.e. 1 no. space per bedroom, with the difference in quantum between the DRLCC standard and the 2023 Apartment Guidelines being made up by a combination of stacked bicycle stands and semi vertical bicycle stands. Please see the detailed table in the schedule of accommodation for further detail.

A total of 591no. residential bicycle spaces are provided for Blocks P and Q as details in **Table 4-2** . The majority of these spaces are provided in internal bicycle stores within the building footprints, with 99 spaces being provided in an external, covered bicycle store that is located to the north of Blocks P and Q.

This includes 282No. Sheffield stand spaces, 29 No.semi vertical spaces 142No. Stacked Spaces in Internal Bicycle Stores and 29No cargo bike spaces, 80 No. External Bicycle Store Spaces (Sheffield Stand) and 19No. External Bicycle Store Spaces (Vertical). The proposed cycle parking is detailed in Table 4-2.

Table 4-2 - Proposed Cycle Parking

Residential bicycle parking type Apartments & duplexes	No. Sheffield Stand Spaces in Internal Bicycle Stores	No. Semi-Vertical Spaces in Internal Bicycle Stores	No. Stacked Spaces in Internal Bicycle Stores	No. Cargo Spaces in Internal Bicycle Stores	No. External Bicycle Lockers (Vertical)	No. External Bicycle Store Spaces (Sheffield Stand)	No. External Bicycle Store Spaces (Stacked)	No. External Bicycle Store Spaces (Vertical)	Total
Block P	118	-	60	12	-	28	-	-	**218**
Block Q	164	29	82	17	-	52	-	19	**363**
Totals	282	29	142	29	-	80	-	19	**591**
	48.5%	5.0%	24.4%	5.0%	-	13.8%	-	3.3%	100%

All visitor bicycle parking is provided in the form of Sheffield stands, and these spaces are separate to the residents spaces referred to the preceding paragraphs. Most visitor bicycle parking is provided on-street, at convenient locations, such as adjacent to entrances. A small amount of visitor bicycle parking is provided within the courtyards

4.5.1 Cycle Audit

As required under Section 12.4.6.1 of the DLRCC Development Plan for new development of 5 residential units or more or non-residential development of 400sqm or over a Cycle Audit is required.

Table 4-3 outlines the criteria and questions from section 12.4.6.2 Cycle Parking Assessment Criteria of the DLRCC Development Plan. This will be submitted within the TTA as part of the full planning application to DLRCC.

Table 4-3 - Cycle Audit Response

DLR Cycle Parking Assessment Criteria	Response
Is the number of cycle parking spaces and footprint adequate and is there suitable provision for parking of outsized formats (cargo bikes etc)?	Yes. Cycle parking numbers, both long stay and short stay for residential and visitors accords with Compact Housing Guidelines SPPR4 of 1no. space per bedroom plus visitor parking as shown in Table 6-4 The development proposes a mix of bicycle stand types including a high percentage of Sheffield stands, individual lockers, stacked and oversized spaces catering for all ages and abilities.
Is the location of cycle parking convenient, appropriate, and secure with adequate provision for covered parking?	Yes. The residential cycle parking is located on the ground floor level with legible routes to and from cores and entrances to storage areas making it easy to use. Visitor cycle storage is provided across the development, some located within the public realm close to building entrances.

Is the cycle parking area accessible in terms of dedicated access routes with ramps and/or kerb dishing where required?	Yes. Cycle parking is located on ground floor with general level access provided. Cycle parking areas are accessible with gradients within tolerances
Do the internal cycle access routes connect well with off-site cycle facilities – existing and proposed?	Yes. The masterplan cycle network is shown in .A significant internal network of cycle is proposed both on street , segregated and off -street through parks and linkages. Woodbrook Avenue provides a fully segregated cycle path that connects to facilities on Dublin Road and the DART station. There are cycle links linking the development to Shanganagh Park to the north and potential linkages to the south. The development is also in close proximity and access to the East Coast Cycle Trail.
Is there adequate and appropriately designed and integrated provision for ancillary cycling and pedestrian facilities including showers, locker / changing rooms and drying areas?	Yes. Residential users have access to changing and showering facilities.
For short-term cycle parking (e.g., for customers or visitors), cycle parking is required at ground level. This should be located within 25 metres of the destination in an area of good passive surveillance. Weather protected covered facilities should be considered where appropriate. Consideration should be given to using green roofs in the design of standalone cycle parking shelters. Appropriate cycle parking signage may also be required to direct cyclists to the end destination.	Yes, residential visitor cycle parking is located in the public realm adjacent to building entrances. The locations are overlooked by active and passive surveillance. Street lighting illuminates the visitor cycle parking.
For long-term cycle parking (e.g., for more than 3 hours for residents, staff, students), secure covered cycle parking is a requirement. This should be conveniently located within 50 metres of the destination and located near building access points where possible.	Yes, long term cycle parking is covered and located within 50m of destination.
In all cases it is a requirement to provide showers, changing facilities, lockers and clothes drying facilities, for use by staff that walk or cycle to work. CCTV cameras or passive surveillance of car parks and cycle parks may be required for personal safety and security considerations.	Yes. Contained with residential units. Cycle storage is located so that active and passive surveillance occurs.
All cycle facilities in multi-storey car parks shall be at ground floor level and completely segregated from vehicular traffic. Cyclists should also have designated entry and exit routes at the car park and with minimum	There is no multi-storey car park for this development, so this criterion is not applicable.

headroom of 2.4 metres to facilitate access by cyclists.	
Within larger new developments cycle routes shall link to the existing cycle network where possible and maintain a high degree of permeability through developments. Cycle Audits may be required in such developments.	Cycle permeability is provided across the masterplan lands. Cycle provision links to existing and proposed external cycle infrastructure. Design of cycle network accords with NTA Cycle Manual. DMURS Quality Audit including Cycle Audit has been undertaken as part of the development. Cycle measures identified will be included in the scheme.

4.6 Car Parking

Car parking for the proposed development has been carefully considered, taking into account the site characteristics, including:

- The site is located in DLRCC Parking Zone 2 (Section 12.4.5.1 Parking Zones), which is considered to have good access to existing or planned public transport and active travel provisions.
- The site is in an accessible location as defined by the Compact Settlement Guidelines (Table 3.8), which state that “car parking provision should be substantially reduced.”
- The mixed-use nature of the overall Woodbrook masterplan, which aligns with 10-minute neighbourhood principles, providing future residents with good access to services and facilities by active and sustainable means.
- The provision of high-quality cycle infrastructure and cycle parking.
- Recent advice from DLRCC officers on car parking levels for Woodbrook Phase2 and Park Edge developments.
- National, regional, and local policy directions to minimize car parking in locations with good access to public transport.

The relevant car parking policy standards for the proposed development are:

- Compact Housing Guidelines SPPR3 – maximum of 1.5 spaces per unit **(max = 539No. spaces)**

- Dún Laoghaire-Rathdown County Development Plan 2022-28 (Table 12.8) (**1 per1- 2bed = 359No. spaces**)

The proposed car parking is shown in **Table 4-4**. This includes residential car parking as well as car parking associated with DART usage and ESB parking bays.

Table 4-4 - Proposed Car Parking

Residential Units	Total Parking
359	137

Car parking is provided at surface, on the streets surrounding the buildings. No basement or podium parking is provided, so as to avoid the high costs associated with these types of parking.

- 5% of parking is provided as designed as accessible in accordance with Part M regulations.
- ESB parking spaces are also provided at locations to service their infrastructure

The location of car parking spaces is shown in Figure 4-9.

Figure 4-9 - Car Parking location & allocation

5. Servicing Strategy

AWN Consulting has prepared an operational Waste Management strategy to incorporate into the design proposals.

All apartment buildings are provided with a residential bin store at Level 00 (ground floor), and an external waste management area is provided on the street near the bin store, where bins can be left before and after collections. Each bin store and external waste management area is sized in line with recommendations by AWN. All residents in each apartment block will have access to the bin store, and at bin collection times the management company will arrange for the bins to be moved to the external waste management areas for collection.

Both Blocks P and Q are provided with two residential bin stores at Level 00 (ground floor), and external waste management areas are provided on the street near the bin stores, where bins can be left before and after collection as shown in Figure .All residents in each apartment block will have convenient access to the bin stores, and at bin collection times the management company will arrange for the bins to be moved to the external waste management areas for collection. The location of bins stores is shown in Figure 5-1.

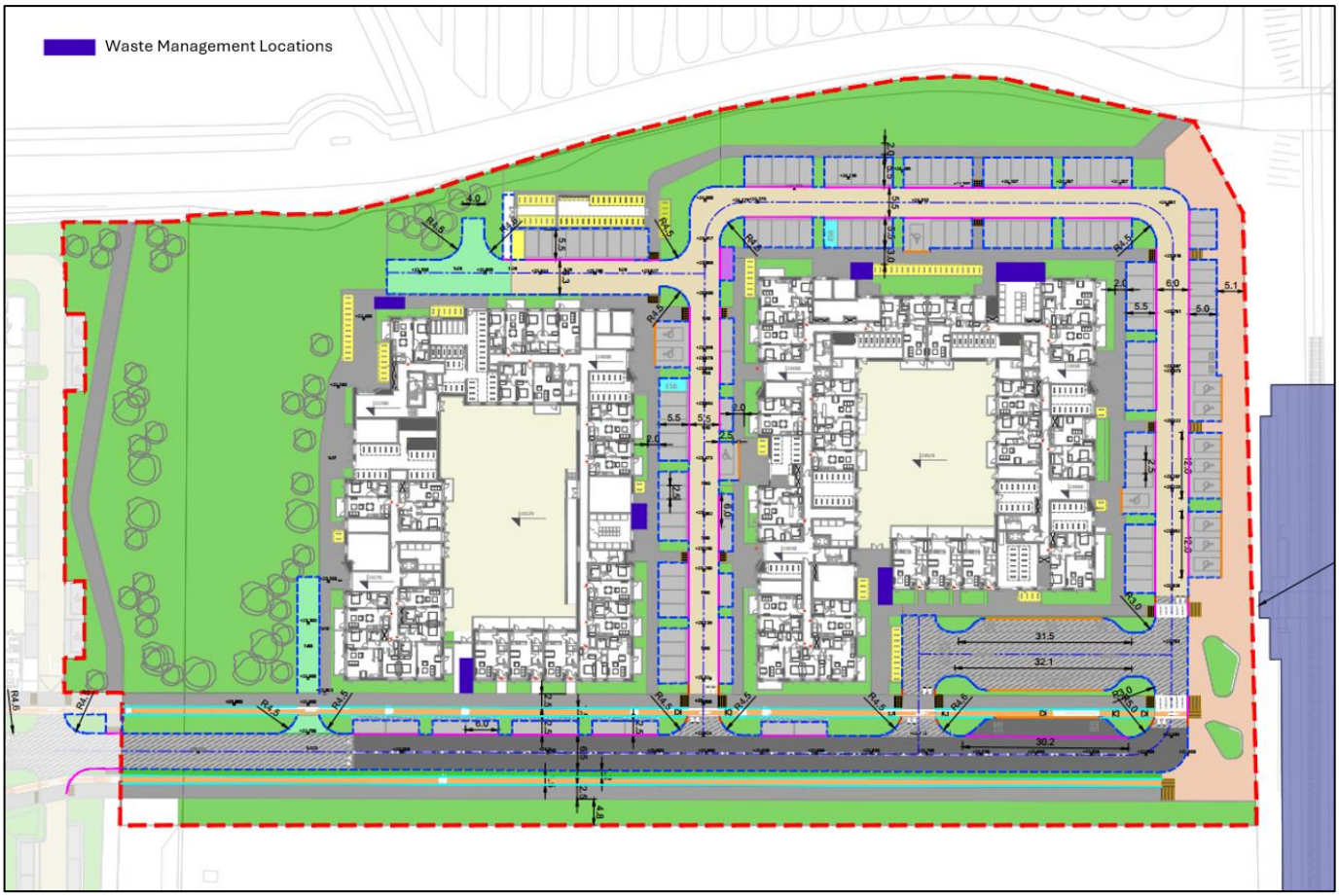

Figure 5-1 - Waste Management Diagram

AtkinsRéalis have undertaken swept path analysis that shows that refuse vehicles can safely navigate around the proposed road network to access the bins stores. An extract of the refuse vehicle movements is shown in Figure 5-2.

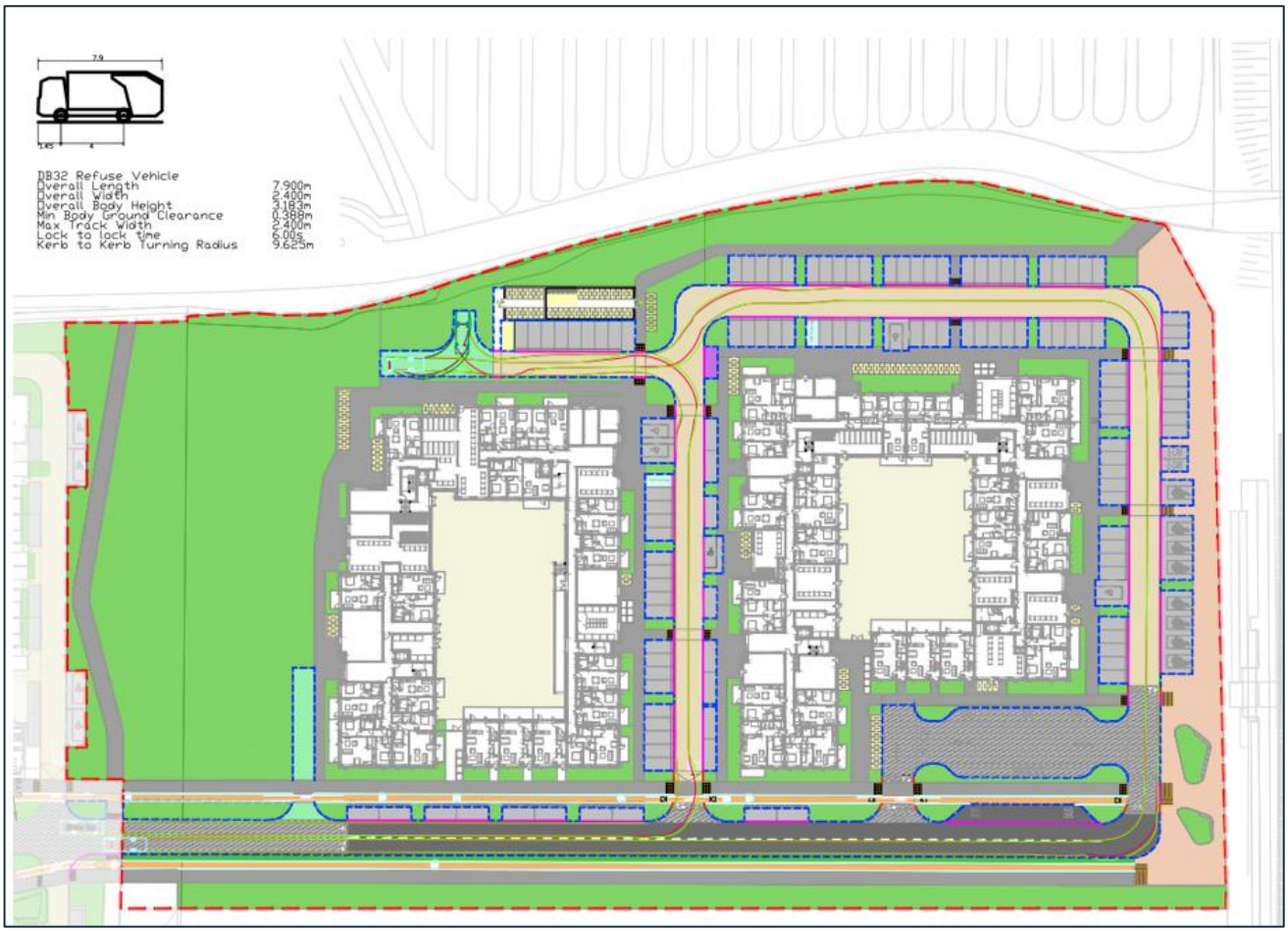

Figure 5-2 - Refuse Vehicle Tracking

6. Transport Impact

6.1 Vehicular Traffic Impact

The phase 1 permitted development took account of the entire masterplan lands including blocks P& Q as demonstrated in the submitted Traffic and Transport Assessment (Ref: 5154251DG0056). This included an assessment of a number of key junctions, including the junction from the development onto the R119 Dublin Road as well as key junctions along this corridor such as the Wilford junction. The full masterplan lands impact was assessed for opening year and future year scenarios (+5 and +15) in accordance with TII Traffic and Transport Assessment Guidance with and without development. This showed that the development, including vehicle trips, could be accommodated within the transport network. This was acknowledged through the grant of permission by An Bord Pleanála (ABP-305844-19).

In addition to the above, given that the proposed development proposes car parking at a much lower ratio (0.25 per unit) than envisioned by the Phase1 granted assessment This acts as a transport demand measure further reducing the vehicle trips from the development and its likely impacts. Therefore, in real terms car mode share for the prosed development will be reduced and vehicular impacts lower than the assessment set out in parent permission Traffic and Transport Assessment (Ref: 5154251DG0056)

Given the above we therefore conclude that the proposed changes to blocks P and Q from a vehicular impact perspective is less than the permitted Phase1 application and is acceptable as acknowledged through the grant of permission by An Bord Pleanála (ABP-305844-19).

A comparison between the total trips estimated as part of Masterplan application ((TTA (Ref: 5154251DG0056)) versus the phase 1, phase2 and phase3 permitted development have been detailed in the Table 6-1 below to illustrate that the development trips are in line with the granted scheme and therefore no further assessment for Woodbrook Gateway Dart Development will be required.

Table 6-1 - Trip Comparison between Permitted Phase 1 and Phase 2 Developments and Phase 3 proposed development against Master plan trip generation

Development	Arrival		Departure		2-Way	
	AM	PM	AM	PM	AM	PM
Total Trips Phase 2 Proposed Development (P1+P2)	116	146	192	78	308	224
Total Trips Phase 3 Proposed Development (Woodbrook Gateway)	13	27	28	22	41	49
Masterplan Trips Permitted Development (P1+P2) (ABP-305844-19) (Ref: 5154251DG0056)	146	164	222	91	368	255
Difference	**-17**	**9**	**-2**	**9**	**-19**	**18**

Based on the above table it is noted that the estimated trips for the Woodbrook Gateway Dart Development and the Phase 1 and Phase 2 proposed Developments falls within the overall estimated trips determined as part of the permitted masterplan lands. Therefore, no additional traffic modelling for the forthcoming Phase 3 application will be required and represents **long term not significant slight impact.**

6.2 Non Vehicular impact

6.2.1 Active Travel

The Woodbrook Gateway Dart Development benefits from high quality pedestrian and cyclist internal infrastructure integrated into the wider Woodbrook Masterplan layout. The development includes landscaped pedestrian streets, raised table crossings designed in accordance with DMURS, secure long-stay cycle parking for residents, and short-stay parking for visitors. Its proximity to services and the new DART station supports sustainable mode choices creating a coherent network for the residents.

Pedestrian linkages through and around the Woodbrook Gateway Dart development have been considered in the context of desire lines and onwards towards existing and proposed amenities. The layout has been developed to accommodate these desire lines and linkages.

The use of raised pedestrian table crossing points will have the benefit of providing both a convenient crossing point and a traffic calming effect. The raised table pedestrian crossing design is based on the recommendations in DMURS and the Traffic Management Guidelines. Raised pedestrian crossing are provided at junctions and along desire lines to reinforce pedestrian priority and slow vehicle speeds.

The Woodbrook Gateway Dart development also incorporates a mix of cycling parking facilities to encourage and promote that use. Long stay secure sheltered and accessible cycle parking will be provided within the development site for residents. Short stay cycle parking will be provided at various locations within and around the development to facilitate visitor cycle parking.

Using a mix of TRICS data cross referenced with Census 2022 an estimate of active travel trips (utilising mode share of 27%) to and from the proposed development Phase 3 has been detailed in the Table 6-2 below.

Table 6-2 - Active Travel Trips for Woodbrook Gateway Dart Development Phase 3

Land use	Units/GFA	Arrival		Departure		2-Way	
		AM	PM	AM	PM	AM	PM
Residential/ affordable/local authority flats	359 units	15	30	31	25	46	55

The total two-way active travel trips recorded for the proposed development (Phase 3) site is 46 in the AM Peak and 55 in the PM Peak. The promotion of active travel is in line with National Guidance (Climate Action Plan 2024, National Sustainability Mobility Policy) and can avail of extensive investment at a National, Regional and local level that provides an extensive linked network of facilities in the Greater Dublin Area. External trips will benefit from substantial investment in active travel provision including improvements to Dublin Road corridor that proposes fully segregated cycle facilities along the route that will connect the site to Dublin City, and other cycle networks.

Based on the above factors and analysis the Proposed Development will deliver **significant permanent beneficial impacts to pedestrians and cyclists**

6.2.2 Public Transport

The aim of this section is to quantify the current and future capacity of the public transport (PT) services available to accommodate the trips generated by the Woodbrook Gateway DART Development. This includes services provided by the new opened Woodbrook DART Station, as well as BusConnects Dublin services operating along the R119 Dublin Road corridor.

The results of this analysis will inform the overall assessment of the transport impacts associated with land development within the wider Woodbrook area.

A trip rate estimation exercise was undertaken using the TRICS (Trip Rate Information Computer System) v8.25.12 online database to determine the total person trip rates for Residential Affordable Houses and Flats within the Proposed Development. The projected public transport trip rates were calculated by applying the multimodal trip rates derived from TRICS and adjusting them using the modal split proportions identified through CSO Census 2022 data for the relevant area. Using a mix of TRICS data cross referenced with Census 2022 an estimate of active travel trips (utilising mode share of 27%) to and from the proposed development Phase 3.

The estimated public transport trips generated by the Woodbrook Gateway Dart Development are summarised in the following sections.

Table 6-3 - Public Transport Total Trips for Woodbrook Gateway Dart Development

Land use	Units	Arrival		Departure		2-Way	
		AM	PM	AM	PM	AM	PM
Residential/ affordable/local authority flats	359	16	32	34	26	50	58

The analysis presented in theTable 6-4 below demonstrates that the public transport demand generated by Phase 1, Phase 2, and the Phase 3 Woodbrook Gateway DART Development remains within the overall capacity envelope established for the wider Woodbrook Masterplan. Phase 3 contributes a relatively modest level of public transport trips, 50 two-way trips in the AM peak and 58 in the PM peak. This reflects both its residential composition and its strong proximity to high quality public transport services.

When combined, the total public transport demand from all three phases equates to **152 AM arrivals, 199 PM arrivals, 239 AM departures, and 283 PM departures**, resulting in **177 AM and 482 PM two-way trips**. These combined totals are consistent with the demand forecasts assessed in the masterplan documentation and remain well within the service capacity of the newly opened Woodbrook DART Station and planned BusConnects enhancements along the R119 Dublin Road.

Overall, the results confirm that the Woodbrook Gateway DART Development can be accommodated on the existing and planned public transport network without giving rise to any significant adverse impacts. The development supports a sustainable modal shift toward public transport and aligns with strategic national, regional, and local transport planning objectives.

Table 6-4 - Total Public Transport Trips for Phase 1 + Phase 2 and Woodbrook Gateway Dart Development (Phase 3)

Land use	Units/GFA	Arrival		Departure		2-Way	
		AM	PM	AM	PM	AM	PM
Houses Privately Owned	207 units	13	36	42	22	55	58
Apartment Privately Owned	430 units	9	48	63	16	73	64
Duplex	48 units	1	5	7	2	8	7
Total Trips Phase 1	**685 Units**	**23**	**89**	**113**	**40**	**136**	**129**
Houses Privately Owned	105 units	6	18	21	11	28	29
Apartment Privately Owned	320 units	7	35	47	12	54	48
Duplex	54 units	1	6	8	2	9	8
Neighbourhood Centre	1200 m2	41	45	41	50	82	95
School (External Pupils)	270 pupils	89	11	26	12	115	23
Total Trips Phase 2	**479 Units**	**144**	**116**	**144**	**87**	**288**	**203**
Residential/ affordable/local authority flats	359 Units	16	32	34	26	50	58
Total Trips Phase 3	**359 Units**	**16**	**32**	**34**	**26**	**50**	**58**
Combined Trip (P1+P2+P3)		**152**	**199**	**239**	**283**	**177**	**482**

7. Summary and Conclusion

Below is a summary and conclusion to this TTA.

7.1 Summary

The Traffic and Transport Assessment (TTA) for **Woodbrook DART Gateway** evaluates the transport implications of a proposed residential development comprising **359 units** (Blocks P and Q) within the wider Woodbrook Masterplan. The site benefits from exceptional sustainable transport connectivity, including the newly delivered **Woodbrook DART Station**, proximity to the **R119 Dublin Road bus corridor**, and integration with the **Greater Dublin Area Cycle Network**.

The assessment aligns with national, regional, and local policy frameworks such as the **National Planning Framework (2025)**, **National Development Plan (2021–2030)**, and **National Sustainable Mobility Policy**, promoting compact growth and sustainable mobility. Design principles follow **DMURS**, the **Cycle Design Manual (2023)**, and the **10-Minute Neighbourhood concept**, ensuring high-quality active travel infrastructure and reduced car dependency.

Key features include:

- **Active Travel Infrastructure**: Segregated cycle lanes, shared pedestrian paths, and greenways integrated with the masterplan.
- **Cycle Parking**: 591 spaces (1 per bedroom + visitor spaces), including provision for cargo bikes.
- **Car Parking**: 91 residential spaces (ratio 0.25 per unit), plus spaces for DART users, visitors, and EV charging.
- **Servicing Strategy**: Waste management and access for refuse vehicles designed for operational efficiency.
- **Transport Impact**: Previous Phase 1 assessment confirmed network capacity; current proposal further reduces vehicular impact through lower parking ratios.

7.2 Conclusion

The proposed development:

- **Supports sustainable transport objectives** by prioritizing walking, cycling, and public transport.
- **Minimizes car dependency** through reduced parking provision and enhanced active travel facilities.
- **Integrates seamlessly with existing and future transport infrastructure**, including DART+ and BusConnects upgrades.
- **Complies with all relevant planning and transport guidelines**, ensuring a safe, accessible, and environmentally responsible design.

Overall, the TTA concludes that the development will have a **modest and acceptable impact on the road network**, while significantly advancing sustainable mobility goals for the Greater Dublin Area.

APPENDICES

Appendix A. TRICS Data

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use: 03 - RESIDENTIAL

Category: D - AFFORDABLE/LOCAL AUTHORITY FLATS

Selected Vehicle Type: Total People

Selected regions and areas:

02	**SOUTH EAST**		
	HC	HAMPSHIRE	1 day
04	**EAST ANGLIA**		
	NF	NORFOLK	1 day
05	**EAST MIDLANDS**		
	LN	LINCOLNSHIRE	1 day
09	**NORTH**		
	DH	DURHAM	1 day
12	**CONNAUGHT**		
	GA	GALWAY	1 day
	RO	ROSCOMMON	1 day
17	**ULSTER (NORTHERN IRELAND)**		
	AN	ANTRIM	1 day
	DO	DOWN	1 day

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:	DWELLS
Actual Range:	6 to 467 (units:DWELLS)
Range Selected by User:	6 to 467 (units:DWELLS)
Parking Spaces Range:	0 - 399

Public Transport Provision:

Selection by:	All Surveys Included
Date Range:	09/07/91 to 22/05/25

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:

Thursday	3 days
Tuesday	2 days
Wednesday	3 days

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

Selected survey types:

Manual count	8
Direction ATC Count	0

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	3 days
Edge of Town Centre	2 days
Suburban Area	3 days

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:

No Sub Category	1 days
Residential Zone	7 days

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.

Inclusion of Servicing Vehicle Counts:

Servicing vehicles Included	1 days
Servicing vehicles Unknown	7 days

Secondary Filtering Selection:

Use Class:

C3	8 surveys

This data displays the number of surveys per Use Class classification within the selected set. The Use Classes Order (England) 2020 has been used for this purpose, which can be found within the Library module of TRICS®.

Population within 500m Range:

215 - 14600

Population within 1 mile:

1,001 to 5,000	3 surveys
10,001 to 15,000	1 surveys
20,001 to 25,000	1 surveys
5,001 to 10,000	3 surveys

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

Population within 5 miles:

100,001 to 125,000	1 surveys
25,001 to 50,000	2 surveys
5,000 or Less	1 surveys
50,001 to 75,000	1 surveys
75,001 to 100,000	3 surveys

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 surveys
1.1 to 1.5	4 surveys
1.6 to 2.0	1 surveys

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.

Petrol filling station:

This data displays the number of surveys within the selected set that include petrol filling station activity, and the number of surveys that do not.

Travel Plan:

No	8 surveys

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	8 surveys

This data displays the number of surveys within the selected set that include petrol filling station activity, and the number of surveys that do not.

COVID-19 Restrictions:

No

1	**AN-03-D-03**	**FLATS & BUNGALOWS**	**ANTRIM**

BELFAST ROAD
CARRICKFERGUS
WEST DIVISION
Suburban Area
Residential Zone
Site area: 0.9300000071525574 hect
Survey date: Wednesday 07/12/2011 Survey Type: Manual

2	**DH-03-D-01**	**BLOCKS OF FLATS**	**DURHAM**

DRYBURN ROAD
DURHAM
FRAMWELLGATE MOOR
Edge of Town
No Sub Category
Site area: 0.30000001192092896 hect
Survey date: Thursday 20/06/2002 Survey Type: Manual

3	**DO-03-D-01**	**BLOCK OF FLATS**	**DOWN**

CHURCH STREET
NEWTOWNARDS
Edge of Town Centre
Residential Zone
Site area: 0.15000000596046448 hect
Survey date: Thursday 17/11/2011 Survey Type: Manual

4	**GA-03-D-01**	**BLOCK OF FLATS**	**GALWAY**

DOUGHISKA ROAD
GALWAY
DOUGHISKA
Edge of Town
Residential Zone
Site area: 0.29 hect
Survey date: Wednesday 10/04/2024 Survey Type: Manual

5	**HC-03-D-04**	**BLOCK OF FLATS**	**HAMPSHIRE**

ROMSEY ROAD
WINCHESTER
Edge of Town Centre
Residential Zone
Site area: 0.12999999523162842 hect
Survey date: Wednesday 02/12/2009 Survey Type: Manual

6	**LN-03-D-01**	**BLOCKS OF FLATS**	**LINCOLNSHIRE**

WOODFIELD AVENUE
LINCOLN
BIRCHWOOD
Edge of Town
Residential Zone
Site area: 0.30000001192092896 hect
Survey date: Tuesday 10/09/2002 Survey Type: Manual

7	**NF-03-D-01**	**BLOCK OF FLATS**	**NORFOLK**

DICKENS AVENUE
GREAT YARMOUTH
Suburban Area
Residential Zone
Site area: 0.11999999731779099 hect
Survey date: Tuesday 20/09/2005 Survey Type: Manual

8	**RO-03-D-01**	**FLATS**	**ROSCOMMON**

CIRCULAR ROAD
BALLAGHADEREEN

Suburban Area
Residential Zone
Site area: 0.10000000149011612 hect
Survey date: Thursday 14/07/2011

Survey Type: Manual

TRIP RATE for Land Use 03 - RESIDENTIAL/D - AFFORDABLE/LOCAL AUTHORITY FLATS

Total Vehicles

Calculation factor: 1 DWELLS

**BOLD print indicates peak (busiest) period*

Time Range	No. Days	Ave. DWELLS	Arrivals	Departures	Totals
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	8	22	0.029	0.109	0.138
08:00-09:00	8	22	0.103	0.103	0.206
09:00-10:00	8	22	0.109	0.109	0.218
10:00-11:00	8	22	0.080	0.149	0.229
11:00-12:00	8	22	0.126	0.103	0.229
12:00-13:00	8	22	0.138	0.126	0.264
13:00-14:00	8	22	0.115	0.086	0.201
14:00-15:00	8	22	0.161	0.167	0.328
15:00-16:00	8	22	0.115	0.103	0.218
16:00-17:00	8	22	0.115	0.069	0.184
17:00-18:00	8	22	0.167	0.155	0.322
18:00-19:00	8	22	0.155	0.155	0.310
19:00-20:00					
20:00-21:00					
21:00-22:00					
22:00-23:00					
23:00-00:00					
Total Rates:			1.413	1.434	2.847

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

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

Parameter Summary:

Trip rate parameter range selected:	6 - 467 (units: DWELLS)
Survey date date range:	20/06/2002 - 10/04/2024
Number of weekdays (Monday-Friday):	8
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	1
Surveys manually removed from selection:	0

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

TRIP RATE for Land Use 03 - RESIDENTIAL/D - AFFORDABLE/LOCAL AUTHORITY FLATS

Total People

Calculation factor: 1 DWELLS

**BOLD print indicates peak (busiest) period*

Time Range	No. Days	Ave. DWELLS	Arrivals	Departures	Totals
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	**8**	**22**	**0.052**	**0.184**	**0.236**
08:00-09:00	**8**	**22**	**0.155**	**0.322**	**0.477**
09:00-10:00	**8**	**22**	**0.213**	**0.305**	**0.518**
10:00-11:00	**8**	**22**	**0.167**	**0.287**	**0.454**
11:00-12:00	**8**	**22**	**0.299**	**0.305**	**0.604**
12:00-13:00	**8**	**22**	**0.270**	**0.241**	**0.511**
13:00-14:00	**8**	**22**	**0.253**	**0.264**	**0.517**
14:00-15:00	**8**	**22**	**0.448**	**0.379**	**0.827**
15:00-16:00	**8**	**22**	**0.270**	**0.259**	**0.529**
16:00-17:00	**8**	**22**	**0.305**	**0.132**	**0.437**
17:00-18:00	**8**	**22**	**0.310**	**0.253**	**0.563**
18:00-19:00	**8**	**22**	**0.305**	**0.345**	**0.650**
19:00-20:00					
20:00-21:00					
21:00-22:00					
22:00-23:00					
23:00-00:00					
Total Rates:			**3.047**	**3.276**	**6.323**

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

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

Parameter Summary:

Trip rate parameter range selected:	6 - 467 (units: DWELLS)
Survey date date range:	20/06/2002 - 10/04/2024
Number of weekdays (Monday-Friday):	8
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	1
Surveys manually removed from selection:	0

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

TRIP RATE for Land Use 03 - RESIDENTIAL/D - AFFORDABLE/LOCAL AUTHORITY FLATS

Cyclists

Calculation factor: 1 DWELLS

**BOLD print indicates peak (busiest) period*

Time Range	No. Days	Ave. DWELLS	Arrivals	Departures	Totals
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	**8**	**22**	**0.000**	**0.000**	**0.000**
08:00-09:00	**8**	**22**	**0.000**	**0.006**	**0.006**
09:00-10:00	**8**	**22**	**0.006**	**0.011**	**0.017**
10:00-11:00	**8**	**22**	**0.006**	**0.006**	**0.012**
11:00-12:00	**8**	**22**	**0.006**	**0.006**	**0.012**
12:00-13:00	**8**	**22**	**0.000**	**0.000**	**0.000**
13:00-14:00	**8**	**22**	**0.000**	**0.000**	**0.000**
14:00-15:00	**8**	**22**	**0.000**	**0.000**	**0.000**
15:00-16:00	**8**	**22**	**0.000**	**0.000**	**0.000**
16:00-17:00	**8**	**22**	**0.000**	**0.000**	**0.000**
17:00-18:00	**8**	**22**	**0.000**	**0.011**	**0.011**
18:00-19:00	**8**	**22**	**0.011**	**0.006**	**0.017**
19:00-20:00					
20:00-21:00					
21:00-22:00					
22:00-23:00					
23:00-00:00					
Total Rates:			**0.029**	**0.046**	**0.075**

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

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

Parameter Summary:

Trip rate parameter range selected:	6 - 467 (units: DWELLS)
Survey date date range:	20/06/2002 - 10/04/2024
Number of weekdays (Monday-Friday):	5
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	1
Surveys manually removed from selection:	0

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

TRIP RATE for Land Use 03 - RESIDENTIAL/D - AFFORDABLE/LOCAL AUTHORITY FLATS

PSVs

Calculation factor: 1 DWELLS

**BOLD print indicates peak (busiest) period*

Time Range	No. Days	Ave. DWELLS	Arrivals	Departures	Totals
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	**8**	**22**	**0.000**	**0.000**	**0.000**
08:00-09:00	**8**	**22**	**0.000**	**0.000**	**0.000**
09:00-10:00	**8**	**22**	**0.000**	**0.000**	**0.000**
10:00-11:00	**8**	**22**	**0.000**	**0.000**	**0.000**
11:00-12:00	**8**	**22**	**0.000**	**0.000**	**0.000**
12:00-13:00	**8**	**22**	**0.000**	**0.000**	**0.000**
13:00-14:00	**8**	**22**	**0.000**	**0.000**	**0.000**
14:00-15:00	**8**	**22**	**0.000**	**0.000**	**0.000**
15:00-16:00	**8**	**22**	**0.000**	**0.000**	**0.000**
16:00-17:00	**8**	**22**	**0.000**	**0.000**	**0.000**
17:00-18:00	**8**	**22**	**0.000**	**0.000**	**0.000**
18:00-19:00	**8**	**22**	**0.000**	**0.000**	**0.000**
19:00-20:00					
20:00-21:00					
21:00-22:00					
22:00-23:00					
23:00-00:00					
Total Rates:			**0.000**	**0.000**	**0.000**

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

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

Parameter Summary:

Trip rate parameter range selected:	6 - 467 (units: DWELLS)
Survey date date range:	N/A - N/A
Number of weekdays (Monday-Friday):	0
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	1
Surveys manually removed from selection:	0

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

TRIP RATE for Land Use 03 - RESIDENTIAL/D - AFFORDABLE/LOCAL AUTHORITY FLATS

OGVs

Calculation factor: 1 DWELLS

**BOLD print indicates peak (busiest) period*

Time Range	No. Days	Ave. DWELLS	Arrivals	Departures	Totals
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	**8**	**22**	**0.000**	**0.000**	**0.000**
08:00-09:00	**8**	**22**	**0.000**	**0.000**	**0.000**
09:00-10:00	**8**	**22**	**0.011**	**0.011**	**0.022**
10:00-11:00	**8**	**22**	**0.000**	**0.000**	**0.000**
11:00-12:00	**8**	**22**	**0.006**	**0.006**	**0.012**
12:00-13:00	**8**	**22**	**0.000**	**0.000**	**0.000**
13:00-14:00	**8**	**22**	**0.000**	**0.000**	**0.000**
14:00-15:00	**8**	**22**	**0.000**	**0.000**	**0.000**
15:00-16:00	**8**	**22**	**0.000**	**0.000**	**0.000**
16:00-17:00	**8**	**22**	**0.000**	**0.000**	**0.000**
17:00-18:00	**8**	**22**	**0.000**	**0.000**	**0.000**
18:00-19:00	**8**	**22**	**0.000**	**0.000**	**0.000**
19:00-20:00					
20:00-21:00					
21:00-22:00					
22:00-23:00					
23:00-00:00					
Total Rates:			**0.017**	**0.017**	**0.034**

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

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

Parameter Summary:

Trip rate parameter range selected:	6 - 467 (units: DWELLS)
Survey date date range:	20/06/2002 - 07/12/2011
Number of weekdays (Monday-Friday):	2
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	1
Surveys manually removed from selection:	0

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

TRIP RATE for Land Use 03 - RESIDENTIAL/D - AFFORDABLE/LOCAL AUTHORITY FLATS

Vehicle Occupants

Calculation factor: 1 DWELLS

**BOLD print indicates peak (busiest) period*

Time Range	No. Days	Ave. DWELLS	Arrivals	Departures	Totals
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	8	22	0.040	0.144	0.184
08:00-09:00	8	22	0.126	0.138	0.264
09:00-10:00	8	22	0.121	0.155	0.276
10:00-11:00	8	22	0.092	0.167	0.259
11:00-12:00	8	22	0.172	0.144	0.316
12:00-13:00	8	22	0.213	0.167	0.380
13:00-14:00	8	22	0.155	0.155	0.310
14:00-15:00	8	22	0.299	0.236	0.535
15:00-16:00	8	22	0.161	0.167	0.328
16:00-17:00	8	22	0.149	0.069	0.218
17:00-18:00	8	22	0.207	0.201	0.408
18:00-19:00	8	22	0.178	0.201	0.379
19:00-20:00					
20:00-21:00					
21:00-22:00					
22:00-23:00					
23:00-00:00					
Total Rates:			1.913	1.944	3.857

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

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

Parameter Summary:

Trip rate parameter range selected:	6 - 467 (units: DWELLS)
Survey date date range:	20/06/2002 - 10/04/2024
Number of weekdays (Monday-Friday):	8
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	1
Surveys manually removed from selection:	0

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

TRIP RATE for Land Use 03 - RESIDENTIAL/D - AFFORDABLE/LOCAL AUTHORITY FLATS

Pedestrians

Calculation factor: 1 DWELLS

**BOLD print indicates peak (busiest) period*

Time Range	No. Days	Ave. DWELLS	Arrivals	Departures	Totals
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	**8**	**22**	**0.011**	**0.029**	**0.040**
08:00-09:00	**8**	**22**	**0.029**	**0.126**	**0.155**
09:00-10:00	**8**	**22**	**0.086**	**0.098**	**0.184**
10:00-11:00	**8**	**22**	**0.069**	**0.103**	**0.172**
11:00-12:00	**8**	**22**	**0.121**	**0.149**	**0.270**
12:00-13:00	**8**	**22**	**0.057**	**0.069**	**0.126**
13:00-14:00	**8**	**22**	**0.075**	**0.103**	**0.178**
14:00-15:00	**8**	**22**	**0.126**	**0.138**	**0.264**
15:00-16:00	**8**	**22**	**0.098**	**0.092**	**0.190**
16:00-17:00	**8**	**22**	**0.132**	**0.063**	**0.195**
17:00-18:00	**8**	**22**	**0.092**	**0.040**	**0.132**
18:00-19:00	**8**	**22**	**0.092**	**0.126**	**0.218**
19:00-20:00					
20:00-21:00					
21:00-22:00					
22:00-23:00					
23:00-00:00					
Total Rates:			**0.988**	**1.136**	**2.124**

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

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

Parameter Summary:

Trip rate parameter range selected:	6 - 467 (units: DWELLS)
Survey date date range:	20/06/2002 - 10/04/2024
Number of weekdays (Monday-Friday):	8
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	1
Surveys manually removed from selection:	0

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

TRIP RATE for Land Use 03 - RESIDENTIAL/D - AFFORDABLE/LOCAL AUTHORITY FLATS

Public Transport Users

Calculation factor: 1 DWELLS

**BOLD print indicates peak (busiest) period*

Time Range	No. Days	Ave. DWELLS	Arrivals	Departures	Totals
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	**8**	**22**	**0.000**	**0.011**	**0.011**
08:00-09:00	**8**	**22**	**0.000**	**0.052**	**0.052**
09:00-10:00	**8**	**22**	**0.000**	**0.040**	**0.040**
10:00-11:00	**8**	**22**	**0.000**	**0.011**	**0.011**
11:00-12:00	**8**	**22**	**0.000**	**0.006**	**0.006**
12:00-13:00	**8**	**22**	**0.000**	**0.006**	**0.006**
13:00-14:00	**8**	**22**	**0.023**	**0.006**	**0.029**
14:00-15:00	**8**	**22**	**0.023**	**0.006**	**0.029**
15:00-16:00	**8**	**22**	**0.011**	**0.000**	**0.011**
16:00-17:00	**8**	**22**	**0.023**	**0.000**	**0.023**
17:00-18:00	**8**	**22**	**0.011**	**0.000**	**0.011**
18:00-19:00	**8**	**22**	**0.023**	**0.011**	**0.034**
19:00-20:00					
20:00-21:00					
21:00-22:00					
22:00-23:00					
23:00-00:00					
Total Rates:			**0.114**	**0.149**	**0.263**

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

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

Parameter Summary:

Trip rate parameter range selected:	6 - 467 (units: DWELLS)
Survey date date range:	20/06/2002 - 10/04/2024
Number of weekdays (Monday-Friday):	6
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	1
Surveys manually removed from selection:	0

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

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use: 03 - RESIDENTIAL

Category: L - MIXED AFFORD HOUS (FLATS AND HOUSES)

Selected Vehicle Type: Total People

Selected regions and areas:

02	**SOUTH EAST**		
	ES	EAST SUSSEX	1 day
	HC	HAMPSHIRE	1 day
08	**NORTH WEST**		
	EC	CHESHIRE EAST	1 day
10	**WALES**		
	SW	SWANSEA	2 days
17	**ULSTER (NORTHERN IRELAND)**		
	TY	TYRONE	1 day

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:	DWELLS
Actual Range:	21 to 59 (units:DWELLS)
Range Selected by User:	19 to 176 (units:DWELLS)
Parking Spaces Range:	19 - 524

Public Transport Provision:

Selection by:	All Surveys Included
Date Range:	24/05/88 to 25/03/24

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:

Friday	1 days
Thursday	1 days
Tuesday	3 days
Wednesday	1 days

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

Selected survey types:

Manual count	6
Direction ATC Count	0

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	3 days
Edge of Town Centre	2 days
Suburban Area	1 days

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:

No Sub Category	4 days
Residential Zone	2 days

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.

Inclusion of Servicing Vehicle Counts:

Servicing vehicles Included	3 days
Servicing vehicles Unknown	3 days

Secondary Filtering Selection:

Use Class:

C3	6 surveys

This data displays the number of surveys per Use Class classification within the selected set. The Use Classes Order (England) 2020 has been used for this purpose, which can be found within the Library module of TRICS®.

Population within 500m Range:

300 - 5052

Population within 1 mile:

1,001 to 5,000	1 surveys
10,001 to 15,000	1 surveys
15,001 to 20,000	1 surveys
20,001 to 25,000	1 surveys
25,001 to 50,000	1 surveys
5,001 to 10,000	1 surveys

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

Population within 5 miles:

100,001 to 125,000	2 surveys
125,001 to 250,000	2 surveys
25,001 to 50,000	1 surveys
50,001 to 75,000	1 surveys

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 surveys
1.1 to 1.5	2 surveys
1.6 to 2.0	1 surveys

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.

Petrol filling station:

This data displays the number of surveys within the selected set that include petrol filling station activity, and the number of surveys that do not.

Travel Plan:

No	5 surveys
Yes	1 surveys

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 surveys

This data displays the number of surveys within the selected set that include petrol filling station activity, and the number of surveys that do not.

COVID-19 Restrictions:

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

1	**EC-03-L-01**	**MIXED HOUSING**	**CHESHIRE EAST**

PERCYVALE STREET
MACCLESFIELD
HURDSFIELD
Edge of Town Centre
No Sub Category
Site area: 0.699999988079071 hect
Survey date: Tuesday 26/06/2007 Survey Type: Manual

2	**ES-03-L-03**	**HOUSES & FLATS**	**EAST SUSSEX**

HUGHENDEN ROAD
HASTINGS
ORE VALLEY
Suburban Area
Residential Zone
Site area: 0.9399999976158142 hect
Survey date: Tuesday 26/06/2018 Survey Type: Manual

3	**HC-03-L-02**	**HOUSES/FLATS**	**HAMPSHIRE**

HUNTS POND ROAD
NEAR FAREHAM
TITCHFIELD
Edge of Town
Residential Zone
Site area: 1.0499999523162842 hect
Survey date: Tuesday 09/11/2010 Survey Type: Manual

4	**SW-03-L-01**	**MIXED HOUSING**	**SWANSEA**

NEATH ROAD
SWANSEA
HAFOD
Edge of Town
No Sub Category
Site area: 1.2999999523162842 hect
Survey date: Wednesday 04/06/2003 Survey Type: Manual

5	**SW-03-L-03**	**TERRACED HOUSES AND FLATS**	**SWANSEA**

CROWN STREET
SWANSEA
MORRISTON
Edge of Town
No Sub Category
Site area: 0.27000001072883606 hect
Survey date: Friday 14/05/2021 Survey Type: Manual

6	**TY-03-L-01**	**MIXED HOUSES & FLATS**	**TYRONE**

BURN ROAD
COOKSTOWN
Edge of Town Centre
No Sub Category
Site area: 1.2999999523162842 hect
Survey date: Thursday 14/03/2019 Survey Type: Manual

TRIP RATE for Land Use 03 - RESIDENTIAL/L - MIXED AFFORD HOUS (FLATS AND HOUSES)

Total Vehicles

Calculation factor: 1 DWELLS

**BOLD print indicates peak (busiest) period*

Time Range	No. Days	Ave. DWELLS	Arrivals	Departures	Totals
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	**6**	**40**	**0.076**	**0.248**	**0.324**
08:00-09:00	**6**	**40**	**0.151**	**0.307**	**0.458**
09:00-10:00	**6**	**40**	**0.239**	**0.235**	**0.474**
10:00-11:00	**6**	**40**	**0.172**	**0.193**	**0.365**
11:00-12:00	**6**	**40**	**0.273**	**0.248**	**0.521**
12:00-13:00	**6**	**40**	**0.239**	**0.176**	**0.415**
13:00-14:00	**6**	**40**	**0.197**	**0.202**	**0.399**
14:00-15:00	**6**	**40**	**0.248**	**0.307**	**0.555**
15:00-16:00	**6**	**40**	**0.336**	**0.261**	**0.597**
16:00-17:00	**6**	**40**	**0.349**	**0.252**	**0.601**
17:00-18:00	**6**	**40**	**0.370**	**0.269**	**0.639**
18:00-19:00	**6**	**40**	**0.315**	**0.176**	**0.491**
19:00-20:00	**1**	**40**	**0.050**	**0.000**	**0.050**
20:00-21:00					
21:00-22:00					
22:00-23:00					
23:00-00:00					
Total Rates:			**3.015**	**2.874**	**5.889**

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:	19 - 176 (units: DWELLS)
Survey date date range:	04/06/2003 - 14/05/2021
Number of weekdays (Monday-Friday):	6
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	3
Surveys manually removed from selection:	0

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

TRIP RATE for Land Use 03 - RESIDENTIAL/L - MIXED AFFORD HOUS (FLATS AND HOUSES)

Total People

Calculation factor: 1 DWELLS

**BOLD print indicates peak (busiest) period*

Time Range	No. Days	Ave. DWELLS	Arrivals	Departures	Totals
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	**6**	**40**	**0.101**	**0.445**	**0.546**
08:00-09:00	**6**	**40**	**0.298**	**0.924**	**1.222**
09:00-10:00	**6**	**40**	**0.412**	**0.424**	**0.836**
10:00-11:00	**6**	**40**	**0.286**	**0.353**	**0.639**
11:00-12:00	**6**	**40**	**0.454**	**0.450**	**0.904**
12:00-13:00	**6**	**40**	**0.382**	**0.332**	**0.714**
13:00-14:00	**6**	**40**	**0.412**	**0.286**	**0.698**
14:00-15:00	**6**	**40**	**0.408**	**0.500**	**0.908**
15:00-16:00	**6**	**40**	**0.891**	**0.466**	**1.357**
16:00-17:00	**6**	**40**	**0.697**	**0.479**	**1.176**
17:00-18:00	**6**	**40**	**0.672**	**0.471**	**1.143**
18:00-19:00	**6**	**40**	**0.672**	**0.437**	**1.109**
19:00-20:00	**1**	**40**	**0.150**	**0.025**	**0.175**
20:00-21:00					
21:00-22:00					
22:00-23:00					
23:00-00:00					
Total Rates:			**5.835**	**5.592**	**11.427**

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:	19 - 176 (units: DWELLS)
Survey date date range:	04/06/2003 - 14/05/2021
Number of weekdays (Monday-Friday):	6
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	3
Surveys manually removed from selection:	0

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

TRIP RATE for Land Use 03 - RESIDENTIAL/L - MIXED AFFORD HOUS (FLATS AND HOUSES)

Cyclists

Calculation factor: 1 DWELLS

**BOLD print indicates peak (busiest) period*

Time Range	No. Days	Ave. DWELLS	Arrivals	Departures	Totals
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	**6**	**40**	**0.000**	**0.008**	**0.008**
08:00-09:00	**6**	**40**	**0.004**	**0.021**	**0.025**
09:00-10:00	**6**	**40**	**0.000**	**0.021**	**0.021**
10:00-11:00	**6**	**40**	**0.000**	**0.013**	**0.013**
11:00-12:00	**6**	**40**	**0.004**	**0.000**	**0.004**
12:00-13:00	**6**	**40**	**0.000**	**0.000**	**0.000**
13:00-14:00	**6**	**40**	**0.000**	**0.000**	**0.000**
14:00-15:00	**6**	**40**	**0.000**	**0.000**	**0.000**
15:00-16:00	**6**	**40**	**0.013**	**0.004**	**0.017**
16:00-17:00	**6**	**40**	**0.017**	**0.013**	**0.030**
17:00-18:00	**6**	**40**	**0.021**	**0.004**	**0.025**
18:00-19:00	**6**	**40**	**0.021**	**0.004**	**0.025**
19:00-20:00	**1**	**40**	**0.000**	**0.025**	**0.025**
20:00-21:00					
21:00-22:00					
22:00-23:00					
23:00-00:00					
Total Rates:			**0.080**	**0.113**	**0.193**

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:	19 - 176 (units: DWELLS)
Survey date date range:	26/06/2007 - 14/05/2021
Number of weekdays (Monday-Friday):	4
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	3
Surveys manually removed from selection:	0

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

TRIP RATE for Land Use 03 - RESIDENTIAL/L - MIXED AFFORD HOUS (FLATS AND HOUSES)

PSVs

Calculation factor: 1 DWELLS

**BOLD print indicates peak (busiest) period*

Time Range	No. Days	Ave. DWELLS	Arrivals	Departures	Totals
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	**6**	**40**	**0.000**	**0.000**	**0.000**
08:00-09:00	**6**	**40**	**0.000**	**0.000**	**0.000**
09:00-10:00	**6**	**40**	**0.000**	**0.000**	**0.000**
10:00-11:00	**6**	**40**	**0.000**	**0.000**	**0.000**
11:00-12:00	**6**	**40**	**0.000**	**0.000**	**0.000**
12:00-13:00	**6**	**40**	**0.000**	**0.000**	**0.000**
13:00-14:00	**6**	**40**	**0.000**	**0.000**	**0.000**
14:00-15:00	**6**	**40**	**0.000**	**0.000**	**0.000**
15:00-16:00	**6**	**40**	**0.000**	**0.000**	**0.000**
16:00-17:00	**6**	**40**	**0.000**	**0.000**	**0.000**
17:00-18:00	**6**	**40**	**0.000**	**0.000**	**0.000**
18:00-19:00	**6**	**40**	**0.000**	**0.000**	**0.000**
19:00-20:00	**1**	**40**	**0.000**	**0.000**	**0.000**
20:00-21:00					
21:00-22:00					
22:00-23:00					
23:00-00:00					
Total Rates:			**0.000**	**0.000**	**0.000**

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:	19 - 176 (units: DWELLS)
Survey date date range:	N/A - N/A
Number of weekdays (Monday-Friday):	0
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	3
Surveys manually removed from selection:	0

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

TRIP RATE for Land Use 03 - RESIDENTIAL/L - MIXED AFFORD HOUS (FLATS AND HOUSES)

OGVs

Calculation factor: 1 DWELLS

**BOLD print indicates peak (busiest) period*

Time Range	No. Days	Ave. DWELLS	Arrivals	Departures	Totals
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	6	40	0.004	0.004	0.008
08:00-09:00	6	40	0.000	0.000	0.000
09:00-10:00	6	40	0.000	0.000	0.000
10:00-11:00	6	40	0.004	0.004	0.008
11:00-12:00	6	40	0.008	0.004	0.012
12:00-13:00	6	40	0.000	0.000	0.000
13:00-14:00	6	40	0.000	0.004	0.004
14:00-15:00	6	40	0.000	0.000	0.000
15:00-16:00	6	40	0.000	0.000	0.000
16:00-17:00	6	40	0.008	0.004	0.012
17:00-18:00	6	40	0.004	0.004	0.008
18:00-19:00	6	40	0.000	0.000	0.000
19:00-20:00	1	40	0.000	0.000	0.000
20:00-21:00					
21:00-22:00					
22:00-23:00					
23:00-00:00					
Total Rates:			0.028	0.024	0.052

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:	19 - 176 (units: DWELLS)
Survey date date range:	04/06/2003 - 14/03/2019
Number of weekdays (Monday-Friday):	4
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	3
Surveys manually removed from selection:	0

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

TRIP RATE for Land Use 03 - RESIDENTIAL/L - MIXED AFFORD HOUS (FLATS AND HOUSES)

Vehicle Occupants

Calculation factor: 1 DWELLS

**BOLD print indicates peak (busiest) period*

Time Range	No. Days	Ave. DWELLS	Arrivals	Departures	Totals
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	**6**	**40**	**0.088**	**0.357**	**0.445**
08:00-09:00	**6**	**40**	**0.185**	**0.479**	**0.664**
09:00-10:00	**6**	**40**	**0.303**	**0.298**	**0.601**
10:00-11:00	**6**	**40**	**0.210**	**0.252**	**0.462**
11:00-12:00	**6**	**40**	**0.374**	**0.332**	**0.706**
12:00-13:00	**6**	**40**	**0.277**	**0.231**	**0.508**
13:00-14:00	**6**	**40**	**0.277**	**0.235**	**0.512**
14:00-15:00	**6**	**40**	**0.303**	**0.382**	**0.685**
15:00-16:00	**6**	**40**	**0.462**	**0.319**	**0.781**
16:00-17:00	**6**	**40**	**0.483**	**0.307**	**0.790**
17:00-18:00	**6**	**40**	**0.483**	**0.374**	**0.857**
18:00-19:00	**6**	**40**	**0.412**	**0.298**	**0.710**
19:00-20:00	**1**	**40**	**0.125**	**0.000**	**0.125**
20:00-21:00					
21:00-22:00					
22:00-23:00					
23:00-00:00					
Total Rates:			**3.982**	**3.864**	**7.846**

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:	19 - 176 (units: DWELLS)
Survey date date range:	04/06/2003 - 14/05/2021
Number of weekdays (Monday-Friday):	6
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	3
Surveys manually removed from selection:	0

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

TRIP RATE for Land Use 03 - RESIDENTIAL/L - MIXED AFFORD HOUS (FLATS AND HOUSES)

Pedestrians

Calculation factor: 1 DWELLS

**BOLD print indicates peak (busiest) period*

Time Range	No. Days	Ave. DWELLS	Arrivals	Departures	Totals
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	**6**	**40**	**0.013**	**0.050**	**0.063**
08:00-09:00	**6**	**40**	**0.105**	**0.374**	**0.479**
09:00-10:00	**6**	**40**	**0.101**	**0.080**	**0.181**
10:00-11:00	**6**	**40**	**0.071**	**0.084**	**0.155**
11:00-12:00	**6**	**40**	**0.067**	**0.113**	**0.180**
12:00-13:00	**6**	**40**	**0.092**	**0.084**	**0.176**
13:00-14:00	**6**	**40**	**0.126**	**0.046**	**0.172**
14:00-15:00	**6**	**40**	**0.101**	**0.118**	**0.219**
15:00-16:00	**6**	**40**	**0.395**	**0.143**	**0.538**
16:00-17:00	**6**	**40**	**0.176**	**0.160**	**0.336**
17:00-18:00	**6**	**40**	**0.143**	**0.092**	**0.235**
18:00-19:00	**6**	**40**	**0.202**	**0.134**	**0.336**
19:00-20:00	**1**	**40**	**0.025**	**0.000**	**0.025**
20:00-21:00					
21:00-22:00					
22:00-23:00					
23:00-00:00					
Total Rates:			**1.617**	**1.478**	**3.095**

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:	19 - 176 (units: DWELLS)
Survey date date range:	04/06/2003 - 14/05/2021
Number of weekdays (Monday-Friday):	6
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	3
Surveys manually removed from selection:	0

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

TRIP RATE for Land Use 03 - RESIDENTIAL/L - MIXED AFFORD HOUS (FLATS AND HOUSES)

Public Transport Users

Calculation factor: 1 DWELLS

**BOLD print indicates peak (busiest) period*

Time Range	No. Days	Ave. DWELLS	Arrivals	Departures	Totals
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	**6**	**40**	**0.000**	**0.029**	**0.029**
08:00-09:00	**6**	**40**	**0.004**	**0.050**	**0.054**
09:00-10:00	**6**	**40**	**0.008**	**0.025**	**0.033**
10:00-11:00	**6**	**40**	**0.004**	**0.004**	**0.008**
11:00-12:00	**6**	**40**	**0.008**	**0.004**	**0.012**
12:00-13:00	**6**	**40**	**0.013**	**0.017**	**0.030**
13:00-14:00	**6**	**40**	**0.008**	**0.004**	**0.012**
14:00-15:00	**6**	**40**	**0.004**	**0.000**	**0.004**
15:00-16:00	**6**	**40**	**0.021**	**0.000**	**0.021**
16:00-17:00	**6**	**40**	**0.021**	**0.000**	**0.021**
17:00-18:00	**6**	**40**	**0.025**	**0.000**	**0.025**
18:00-19:00	**6**	**40**	**0.038**	**0.000**	**0.038**
19:00-20:00	**1**	**40**	**0.000**	**0.000**	**0.000**
20:00-21:00					
21:00-22:00					
22:00-23:00					
23:00-00:00					
Total Rates:			**0.154**	**0.133**	**0.287**

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:	19 - 176 (units: DWELLS)
Survey date date range:	04/06/2003 - 26/06/2018
Number of weekdays (Monday-Friday):	3
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	3
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.

Malu Durán
AtkinsRéalis Ireland Limited
150-155 Airside Business Park
Swords
Co. Dublin
K67 K5W4

<contact info>