



DUBLIN CITY COUNCIL

**TRAFFIC MOBILITY
MANAGEMENT PLAN**

**SOCIAL HOUSING BUNDLE 4,
DEVELOPMENT AT
CROKE VILLAS, SACKVILLE AVENUE.**

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CONTENTS

		Page No.
1	INTRODUCTION.....	1
	1.1 Background	1
	1.2 Site Overview	1
	1.3 Proposed Development	2
	1.4 Report Structure	3
2	MOBILITY MANAGEMENT: CONTEXT	4
	2.1 What is Mobility Management	4
	2.2 The Benefits of Mobility Management	4
	2.3 Mobility Management Plan Objectives	4
	2.4 Making Residential Mobility Management Plans Work	5
3	POLICY AND PLANNING CONTEXT	6
	3.1 Planning Policy Overview	6
	3.2 National Policy Context	6
	3.3 Regional and Local Policy Context	6
4	BASELINE REVIEW OF EXISTING TRANSPORT NETWORK.....	12
	4.1 Overview	12
	4.2 Existing Pedestrian/ Cyclist Environment	12
	4.3 Public Transport Infrastructure	18
	4.4 Other	19
5	TRAFFIC IMPACT	21
	5.1 Construction Traffic Impact	21
	5.2 Operational Stage	22
6	PRE – OCCUPATION BASELINE MODE SHARE	25
	6.1 Purpose of the Baseline	25
	6.2 Mode Share	25
7	AIMS AND OBJECTIVES OF THE TMMP	26
	7.1 Overview	26
	7.2 Aims and Objectives	26

7.3	Targets	26
8	MOBILITY MANAGEMENT MEASURES	27
8.1	Proposed TMMP Action Plan Measures	27
8.2	Mobility Manager	27
8.3	Welcome Travel Pack	27
8.4	Marketing and Travel Information	28
8.5	Walking	29
8.6	Cycling	29
8.7	Public Transport	29
8.8	Managing Car Use	30
8.9	Parking	30
9	MONITORING AND REVIEW	32
9.1	Monitoring and Review	32
9.2	Data Collection Analysis	32

1 INTRODUCTION

1.1 Background

This Traffic Mobility Management Plan has been prepared on behalf of the National Development Finance Agency (NDFA) and Dublin City Council, to accompany a Part 8 proposal for the development of 52no. residential units on a site of circa 0.88 hectares in area, located at Croke Villas, Sackville Avenue, Dublin 3. The development description is given in section 1.3.

The purpose of this document is to define a Traffic Mobility Management Plan (TMMP) for the proposed development.

This TMMP has been prepared to guide the delivery and management of a package of integrated initiatives which seek to encourage and embed sustainable travel choices by residents from the outset of the development's occupation.

A successfully implemented TMMP can provide reductions in car usage, particularly influencing levels of single-occupancy car travel, with increased trips made by car-sharing, public transport, walking and cycling, and can improve road safety and personal security for pedestrians and cyclists.

Mobility Management is about improving the development site's access from the outset – by designing for and enabling and promoting sustainable travel options (e.g., walking, car-sharing, cycling and public transport) to residents – and by reducing the need to travel by car from the development to access essential services and amenities. TMMPs can also improve the health and wellbeing of residents through the benefits of active travel and reduce the transport-related carbon impact of the development. A TMMP specifically focuses on journeys made from a single origin (home) to multiple destinations.

1.2 Site Overview

The 0.88 Ha development site is located Sackville Avenue, Dublin 3, adjacent to Croke Park and approximately 1.30km northeast of O'Connell Street, 1.50km east of Phibsborough and 1.40km northwest of the Dublin Docklands.

The site is bound to the north by Sackville Avenue, to the east of by R803 Regional (Ballybough) Road which connects Fairview to Parnell Street. To the south of the site is the Royal Canal and to the east is Croke Park.



Figure 1 – Site Location showing the Site Boundary and Adjacent Developments

1.3 Proposed Development

Below is the Development Description as included in the relevant notices;

Notice is hereby given of the construction of 52 no. apartments at a site c.0.88 ha at Croke Villas, Sackville Avenue, bounded by Ballybough Road, Sackville Gardens, Sackville Avenue, Ardilaun Square, Ardilaun Road and GAA National Handball Centre, Dublin 3, which will consist of the following:

- Clearance works at the site will comprise the removal of walls and perimeter fencing and an allotment garden at the Croke Villas site bounded by Ballybough Road, Sackville Gardens, Sackville Avenue, Ardilaun Square, Ardilaun Road and GAA National Handball Centre. A wall along the boundary of the site and Irish Rail lands and railway line (to the south) will also be removed and replaced with a new boundary wall.
- Demolition of 1 no. remaining Croke Villas flat block will be demolished in accordance with PA. Reg. Ref. 2946/16
- Construction of two apartment blocks between 4 to 5 storeys, consisting of a total of 52 no. residential units:
 - Block A consists of 35 no. residential units (1 no. 1 bed and 34 no. 2 bed apartments); and
 - Block B consists of 17 no. residential units (4 no. 1 bed and 13 no. 2 bed apartments) and 152 sqm of internal community, arts and cultural space at ground floor.
- 4 no. car parking spaces and 129 no. cycle spaces.

- Sackville Gardens street will be extended to join with Ardilaun Square to form a new perimeter street to the southern edge of Block A, which will function as a new pedestrian and cycle link and also serve as an emergency vehicle access.
- Removal of undesignated car parking spaces along Sackville Avenue and construction of a new Boulevard on Sackville Avenue from the Ballybough Road junction to Ardilaun Road, which will also facilitate vehicular access.
- Provision of c. 961 sqm public open space, c.500 sqm communal open space, c.367 sqm private open space and 68 sqm of outdoor community, arts and cultural space (55 sqm facing Sackville Avenue and 13 sqm in internal courtyard).
- Boundary treatments, public lighting, site drainage works, road surfacing and footpaths, ESB substation, ESB meter rooms, plant rooms, stores, bin and bicycle storage, landscaping; and
- All ancillary site services and development works above and below ground.

1.4 Report Structure

This report sets out the background, context, and objectives of the plan, and describes a package of measures to promote and provide for the use of sustainable modes as an alternative to single occupancy car use to the development. A strategy for implementation, target setting and monitoring is also discussed. The report is set out in the following structure:

- Chapter 1: Report introduction
- Chapter 2: An introduction to the Mobility Management
- Chapter 3: Planning Policy Context
- Chapter 4: Baseline site transport review
- Chapter 5: Traffic Impact
- Chapter 6: Pre-occupation baseline mode share
- Chapter 7: TMMP objectives and targets
- Chapter 8: MMP measures
- Chapter 9: Monitoring and review.

2 MOBILITY MANAGEMENT: CONTEXT

2.1 *What is Mobility Management*

Mobility Management is a concept to promote sustainable transport and manage the demand for car use by changing travellers' attitudes and behaviours. Mobility Management is about improving a site's access, by designing for and enabling and promoting sustainable travel options (e.g., walking, cycling and public transport) to residents. The use of Mobility Management is well established in Ireland through the Development Control process and policy documents set out in Chapter 3. The process involves key stakeholders such as the Local Authority, public transport operators, the developer, and future residents.

2.2 *The Benefits of Mobility Management*

Implementing a TMMP has the following local benefits:

- Promoting alternative uses to the car can result in less congestion and therefore improves safety on local roads by promoting alternatives to the car.
- Reduced highway capacity problems can enable more sustainable travel choices.
- The local environment will be improved from reduced congestion, carbon emissions, pollution, and noise.
- A range of travel options makes the development site attractive to potential residents.
- Increases opportunities for active healthy travel, such as walking and cycling.
- Reduces demand for parking spaces, enabling land to be put to more cost-effective or commercially beneficial use and freeing space for active travel initiatives.
- Improved travel choice, quality and affordable access to services for all users.

2.3 *Mobility Management Plan Objectives*

The overarching objectives of the TMMP are to reduce levels of private car use by encouraging people to walk, cycle, use public transport and car share. It can also reduce the number of lengthy trips undertaken/ required.

The specific objectives of an TMMP can vary depending upon the organisation, site characteristics and specific land uses which vary with each site. Nevertheless, in the context of a residential TMMP, objectives can include:

Residents

- Address residents need for sustainable access to a full range of facilities for work, education, health, leisure, recreation and shopping.
- Promote healthy lifestyles and sustainable, vibrant local communities by improving the environment and the routes available for cycling and walking.

The Local Community

- Make local streets less dangerous, less noisy and less polluted, and enhance the viability of public transport.

- Reduce the traffic generated by the development for journeys both within the development and on the external road network.
- Promote equal opportunities by offering wider travel choices.
- Improve personal and wider community health.
- Reduce air and noise pollution.

2.4 Making Residential Mobility Management Plans Work

A successful TMMP will address all aspects of a development that create a need for travel by site residents. The TMMP 'pyramid' below demonstrates how successful plans are built on the firm foundations of location and site design. A TMMP should combine hard measures (e.g., cycle parking, routes to bus stops) and soft measures. All measures should be integrated into the design, marketing and occupation of the site – with parking restraint often crucial to the success of the TMMP in reducing car use.

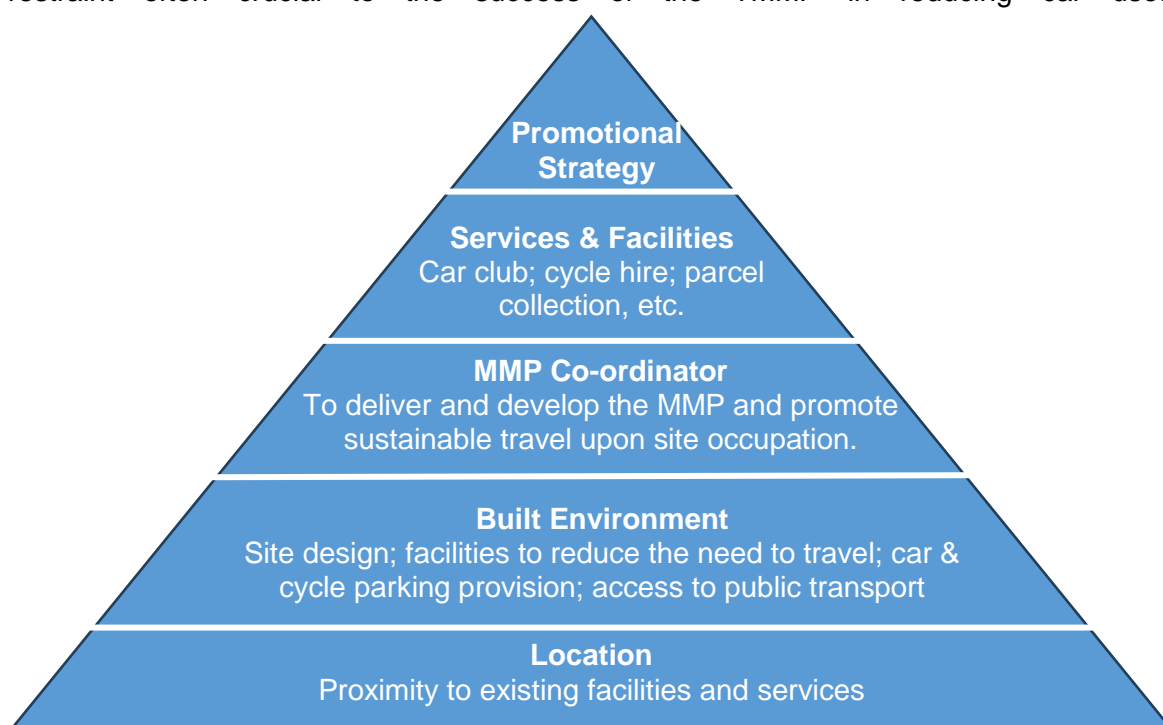


Figure 2 – The Travel Plan Pyramid

TMMPs are evolutionary documents that should be regularly updated. In this way, TMMP targets and Action Plans can be reviewed and tailored to take account of ongoing changes in travel patterns. It is therefore intended that this TMMP is the starting point of a live process and will be updated when required by circumstances.

3 POLICY AND PLANNING CONTEXT

3.1 Planning Policy Overview

This section provides an overview of the national, regional and local transport and other policy drivers and strategies that underpin the requirements and benefits of implementing a TMMP for the proposed residential development.

3.2 National Policy Context

This section provides an overview of the main national policy drivers and strategies that underpin the requirements and benefits of implementing a TMMP for a residential development at the Croke Villas site.

Ireland 2040 Our Plan – National Planning Framework

The Project Ireland 2040 - National Planning Framework (NPF) recognises that improvements in connectivity are achievable and are necessary to boost competitiveness and quality of life. The Ireland 2040 vision include the following key elements which direct relevance to mobility management.

- i. More sustainable choices and options for people, businesses and communities that can positively influence sustainable patterns of living and working.
- ii. The highest possible quality of life for our people and communities, underpinned by high quality, well managed built and natural environments.
- iii. Significant improvement in local and international connectivity that underpins that competitiveness and quality of life of our people, businesses, communities, and regions.

The NPF has been developed to deliver the following National Strategic Outcomes which are pertinent to this report. These are to:

- i. Improve accessibility to and between centres of mass and scale and provide better integration with their surrounding areas.
- ii. Ensure transition to more sustainable modes of travel (walking, cycling, public transport) and energy consumption (efficiency, renewables) within an urban context.

The NPF seeks to enable people to live closer to where they work, moving away from unsustainable trends of reduced community. It supports more energy efficient development through the location of housing and employment along public transport corridors, where people can choose to use less energy intensive public transport, rather than being dependent on the car.

3.3 Regional and Local Policy Context

This section provides an overview of the main regional and local policy drivers and strategies that underpin the context, requirements and benefits of a TMMP for the proposed residential development.

Greater Dublin Area Transport Strategy, 2022 – 2042

This strategy aims to contribute to the economic, social and cultural progresses of the Greater Dublin Area (GDA) by providing for the efficient, effective and sustainable movement of people and goods – helping to reduce modal share of car-based communities to a maximum of 45%. To achieve these principles, future developments must:

- i. Have transport as a key consideration in land use planning – integration of land use and transport to reduce the need to travel, reduce the distance travelled, reduce the time taken to travel, promote walking and cycling especially within development plans.
- ii. Protect the capacity of the strategic road network.
- iii. Ensure a significant reduction in share of trips taken by car, especially those trips which are shorter or commuter trips.
- iv. Consider all day travel demand from all groups.
- v. Provide alternate transport modes to reduce the strain on the M50 as current increase in traffic is unsustainable.

The site is within walking distance of improved public transport provisions such as BusConnects Core Bus Corridor(s), which will enhance the overall public transport provision across urban Dublin. This will improve public transport options for residents including for those commuting to destinations across the wider Dublin area.

Greater Dublin Area Cycle Network Plan, 2013

The Greater Dublin Area (GDA) Cycle Network Plan sets out a 10-year strategy to expand the urban cycle network. The overarching ambition of the scheme is to increase the number of commuters who commute by bike to the same amount of those who commute by bus.

The network will consist of a series of primary, secondary, feeder and greenway routes. These routes will comprise of a mix of cycle tracks and lanes, cycleways and infrastructure-free cycle routes in low traffic environment.

The proposed cycle network surrounding the development is shown below, with the closest Primary Route:

- Primary Route 2A: Route 2A is a branch from Primary Route 2 that starts at Drumcondra Road. Route 2A connects from Dorset Street – Bolton Street/Henrietta Street Junction.
- Primary Route 1: From Fairview – North Strand – Amiens Street – Beresford Place – Matt Talbot Bridge.

The closest secondary routes are:

- Secondary Route 1D: Route 1D provides an alternative link to the northern part of the city centre from Fairview via Ballybough and Summerhill to Parnell Square.
- Secondary Route 2B: Route 2B is also a branch from Route 2 that starts at Clonliffe Road to Beaumont Hospital via a new bridge over the River Tolka to Richmond Road, Grace Park Road and Beaumont Road.

There are four orbital routes in Dublin North Central that provide cross-links between the radial routes and give access to destinations within this sector. Route NO2, also known as Tolka Valley Route, is an orbital route benefitting from the site. The route starts at Ballybough to Drumcondra, Glasnevin and Finglas South.

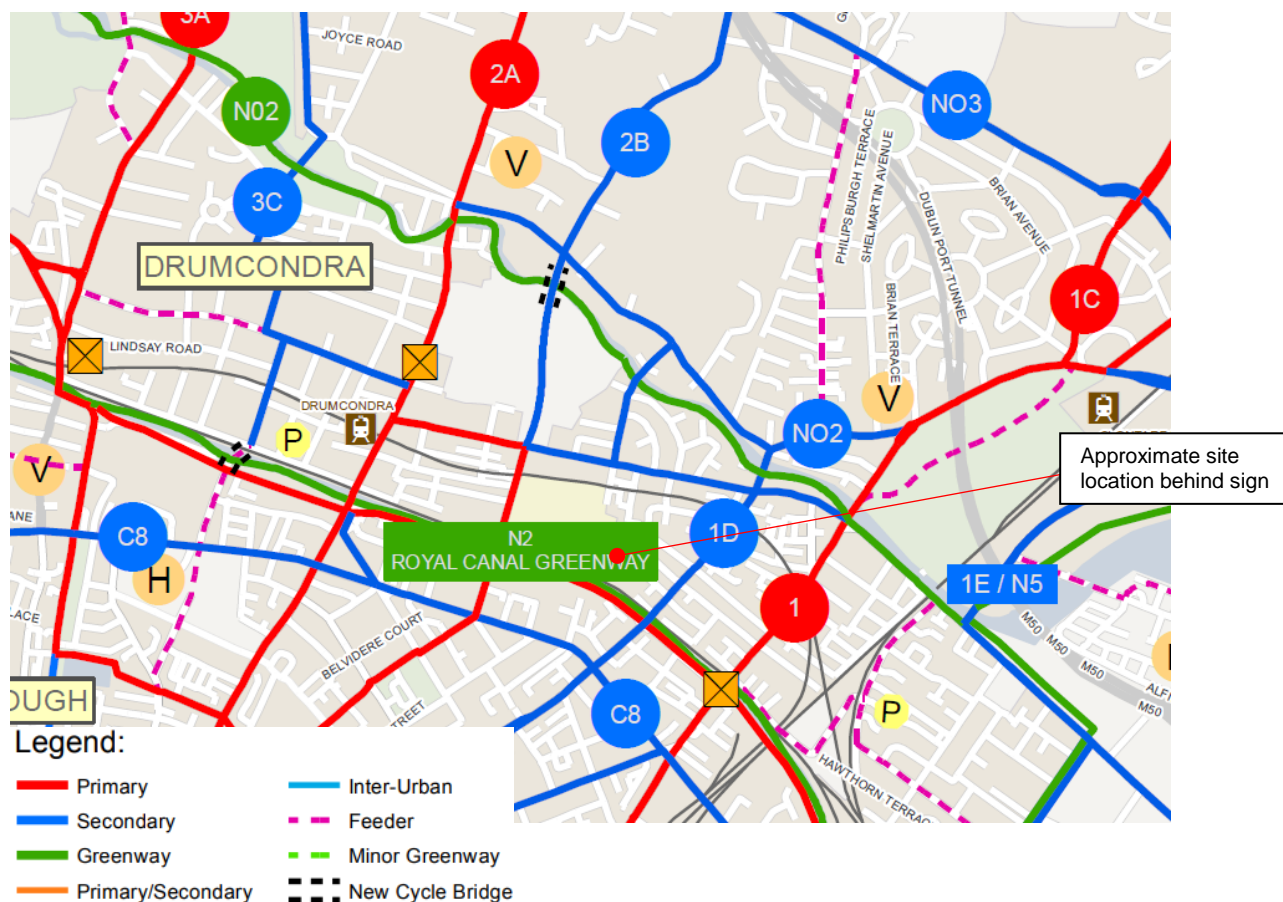


Figure 3 – Proposed Cycle Network Map

BusConnects

BusConnects is part of the overall GDA Transport Strategy and aims to overhaul the current bus system in the Dublin region through several measures as outlined below. The measures will improve public transport access and reliability for future residents of the proposed development. The BusConnects programme includes:

- Building a network of “next generation” bus corridors on the busiest bus routes to make bus journeys faster, predictable, and reliable.
- Introducing Bus Rapid Transit, a higher quality of bus system, on three of the busiest corridors.
- Completely redesigning the network of bus routes to provide a more efficient network, connecting more places and carrying more passengers.
- Developing a state-of-the-art ticketing system using credit and debit cards or mobile phones to link with payment accounts and making payment much more convenient.
- Implementing a cashless payment system to vastly speed up passenger boarding times.

- Revamping the fare system to provide a simpler fare structure, allowing seamless movement between the different transport services without financial penalty.
- Implementing a new bus livery providing a modern look and feel to the new bus system.
- Rolling out new bus stops with better signage and information and increasing the provision of additional bus shelters.
- Transitioning to a new bus fleet using low-emission vehicle technologies.

The BusConnects programme will improve access to bus services close to the proposed development. As illustrated below, the subject site is located close to Spine D and Spine A which are defined as very high frequency spines with proposed frequencies of 5-10mins. Line O also runs behind the site providing an orbital route around the city a frequency of 5-10mins.

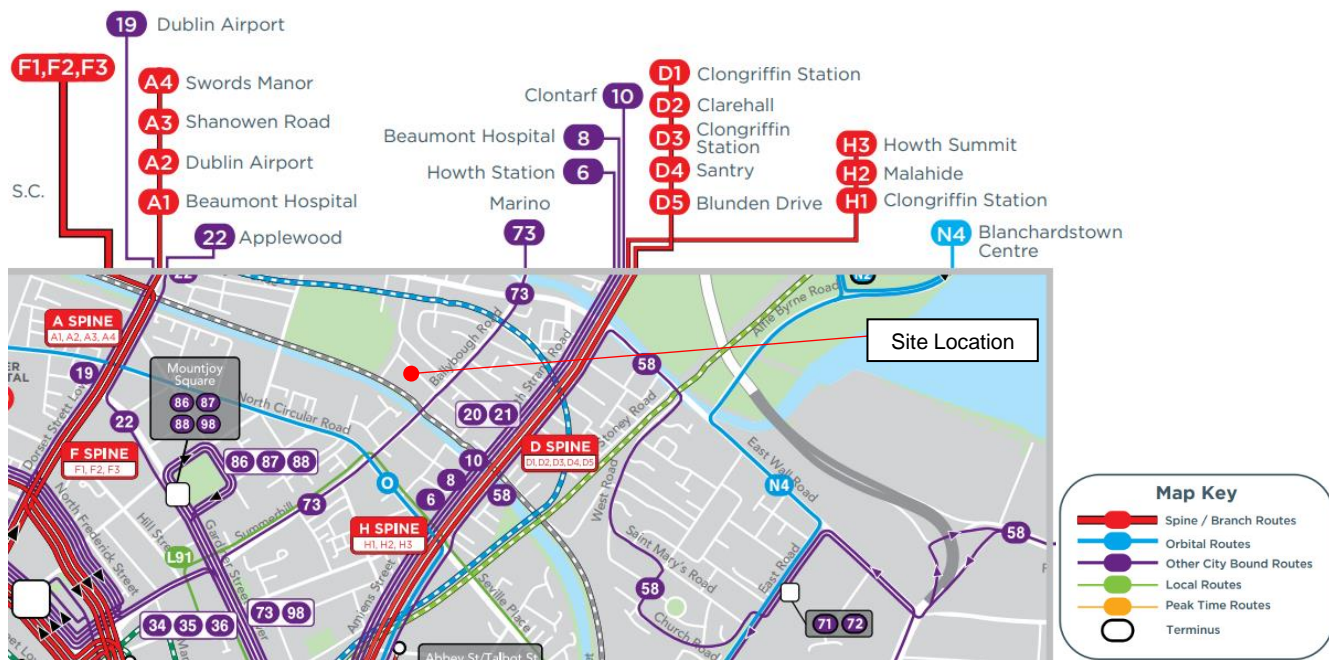


Figure 4 – Proposed BusConnects Service Redesign Dublin City Centre

Several high frequency Core Bus Corridors (CBCs) are proposed as part of BusConnects. The aim of the CBCs is to provide segregated bus lane priority to reduce congestion, improve bus capacity, reliability and punctuality while reducing bus journey times along the busiest bus corridors in Dublin. The Swords CBC will run adjacent to the development site.

In addition, the CBCs will include dedicated cycle tracks on each side of the road, providing safe cycling facilities, segregated from other vehicular traffic, with adequate footpaths for pedestrians and supporting elements such as pedestrian crossings at all key road crossing points and bus shelter for waiting passengers.

Dublin City Development Plan, 2022 – 2028

The Dublin City Development Plan (DCDP) provides a coherent, integrated framework to ensure the city develops in an inclusive and sustainable manner which is resilient on social,

economic and environmental fronts in the short and longer term. The plan emphasises the need for Dublin to become a low-carbon city and the role of compact, self-sustaining communities and neighbourhoods, urban form and movement must play in achieving this goal.

The plan details a Core Strategy which includes housing, settlement, employment, retail and public transport strategies. The strategy translates into 3 broad strands which form the basis for the policies and objectives outline in the plan. These are:

- Compact, quality, green, connected city,
- A prosperous, enterprising, creative city,
- Creating sustainable neighbourhoods and communities.

Table 1 below provides a summary of the policies and objectives most relevant to this TMMP.

Table 1 – Extracts from most relevant DCDP 2022 – 2028 Policies	
Policy No.	Details
CEE13	Towards a Green and Circular Economy To support the growth of the 'green economy' including renewable energy, retrofitting, and electric vehicles and charging infrastructure and to support the transition towards a circular economy in line with national policy and legislation.
SMT6	Mobility Management and Travel Planning To promote best practice mobility management and travel planning through the requirement for proactive mobility strategies for new developments focussed on promoting and providing for active travel and public transport use while managing vehicular traffic and servicing activity.
SMT16	Walking, Cycling and Active Travel To prioritise the development of safe and connected walking and cycling facilities and prioritise a shift to active travel for people of all ages and abilities, in line with the city's mode share targets.
SMT18	The Pedestrian Environment To continue to maintain and improve the pedestrian environment and strengthen permeability by promoting the development of a network of pedestrian routes including laneway connections which link residential areas with recreational, educational and employment destinations to create a pedestrian environment that is safe, accessible to all in accordance with best accessibility practice.

Policy No.	Details
SMT27	<p>Car Parking in Residential and Mixed Used Developments</p> <ul style="list-style-type: none"> i. To provide for sustainable levels of car parking and car storage in residential schemes in accordance with development plan car parking standards to promote city centre living and reduce the requirement for car parking. ii. To encourage new ways of addressing the transport needs of residents (such as car clubs and mobility hubs) to reduce the requirement for car parking.
SMT33	<p>Design Manual for Urban Roads and Streets</p> <p>To design new streets and roads within urban areas in accordance with the principles, approaches and standards contained within the Design Manual for Urban Roads and Streets (DMURS) and to carry out upgrade works to existing road and street networks in accordance with these standards where feasible.</p>
SMT34	<p>Street and Road Design</p> <p>To ensure that streets and roads within the city are designed to balance the needs and protect the safety of all road users and promote place making, sustainable movement and road safety providing a street environment that prioritises active travel and public transport whilst ensuring the needs of commercial servicing is accommodated.</p>
SMT35	<p>Traffic Calming and Self-Regulation Street Environments</p> <p>To ensure that all streets and street networks are designed to passively calm traffic through the creation of a self-regulating street environment that are suited to all users, including pedestrians and cyclists.</p>
SMT034	<p>Speed Limits and Traffic Calmed Areas</p> <p>To expand the 30kph speed limits and traffic calmed areas at appropriate locations throughout the city and subject to stakeholder consultation.</p>

Volume 2, Section 4 of the DCDP sets out the car and cycle parking standards for proposed new development.

The Development Plan notes that reduced car parking provision may be acceptable where the Council is satisfied that good public transport links are already available or planned and/or a Mobility Management Plan for the development demonstrates that a high percentage of modal shift in favour of the sustainable modes will be achieved through the development.

4 BASELINE REVIEW OF EXISTING TRANSPORT NETWORK

4.1 Overview

This chapter discusses the existing transport network surrounding the site. A detailed commentary is provided on the existing walking, cycling and public transport facilities near the site.

4.2 Existing Pedestrian/ Cyclist Environment

The site is within a convenient walking distance of the city centre and number of large employment centres as well as leisure and retail facilities.

- Mater Hospital is located within a 20-minute walk from the site.
- Connolly and Drumcondra train stations are within a 15-minute walk from the site.
- O'Connell Street is within a 19-minute walk from the site.
- Dublin College University is within a 30-minute walk from the site.

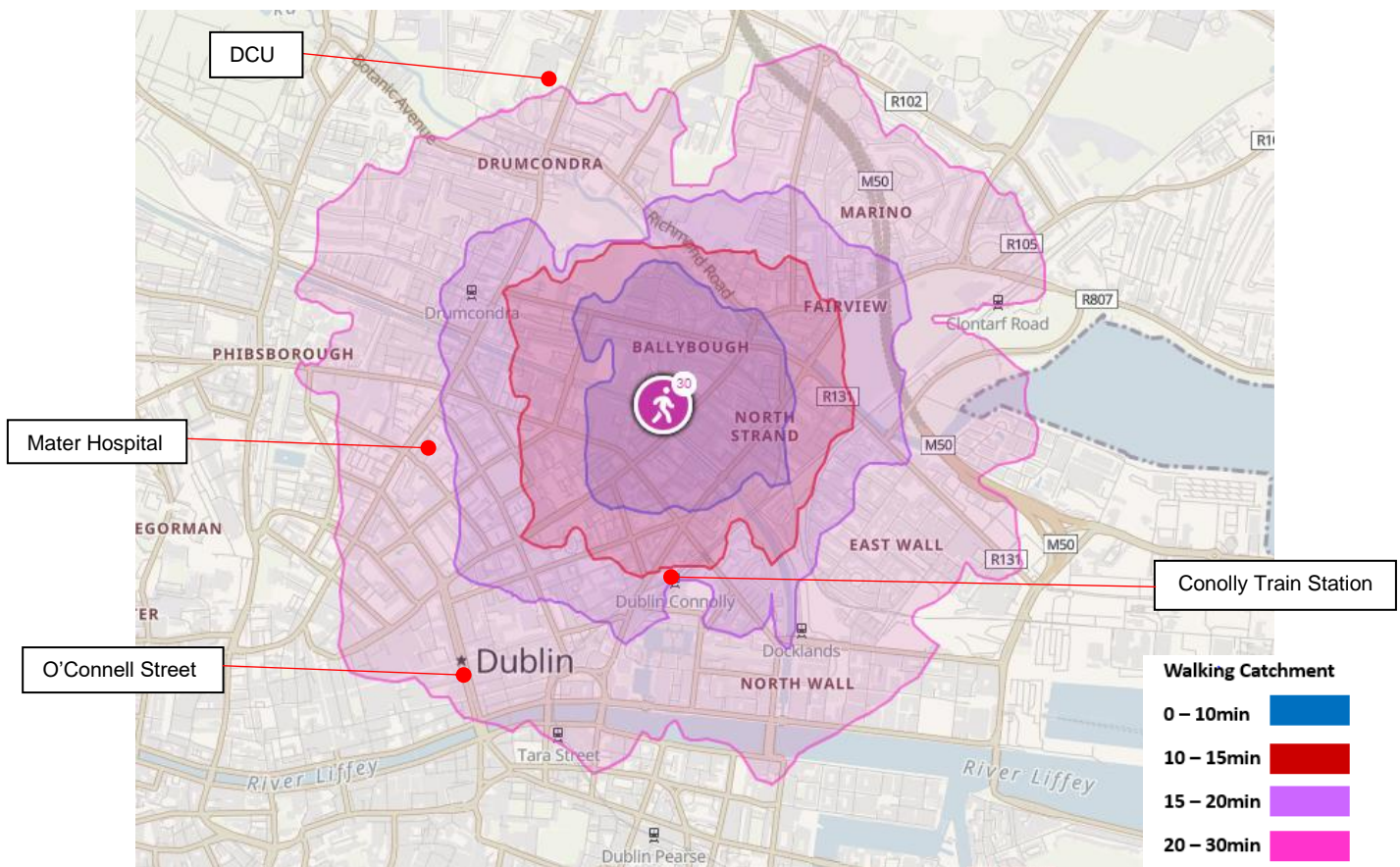
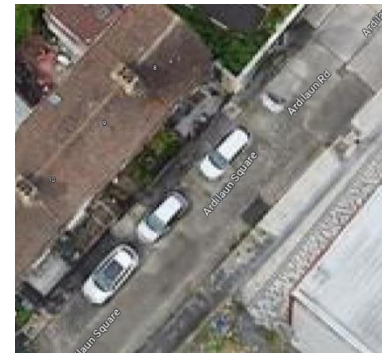


Figure 5 – Walking Catchment

In the immediate vicinity of the site there are good quality pedestrian routes along Sackville Avenue and the R803 with footpaths widths varying between 2.5m – 5m and good quality lighting. There are no formal zebra crossing or signalised crossing points along Sackville Avenue.

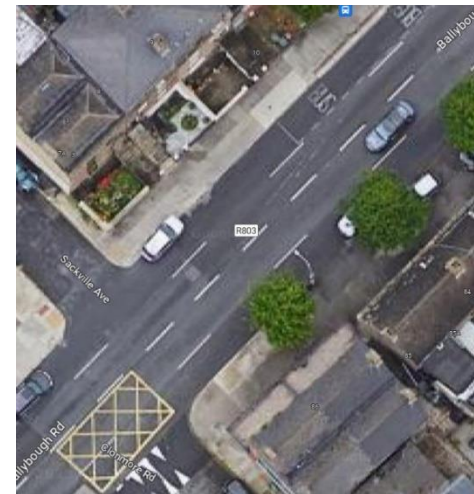
The footpaths along the R803 are much wider and are separated from the carriageway by kerbs and planters. There are traffic signal-controlled pedestrian crossings on Ballybough Road. Dished kerbs and tactile paving are provided at the crossings.



Ardilaun Road is a cul-de-sac on the western boundary of the site. There are footpaths on both sides of the road. Albeit that the road is narrow, on-street parking is permitted.



Sackville Ave is a local street on the northern boundary of the site. There are footpaths on both sides of the road. Ramps are used to promote traffic calming.



R803 Regional (Ballybough) Road comprises a 12m wide carriageway with 3m wide bus lanes and 2.5m wide footpaths on both sides of the road. Speed tables are positioned at junctions to promote traffic calming.

Figure 6 – Existing Road Network

The site is also highly accessible by cycling.

- Phibsborough, Drumcondra, North Strand, North Wall and East Wall are within a 0 – 10min cycle from the site.
- Ringsend, Stoneybatter, Cabra, Glasnevin, Beaumont and Clontarf are within a 10 – 15min cycle from the site.
- Donnybrook, Ranelagh, Kilmainham, Islandbridge, Santry, Raheny and Coolock are within a 15 – 20 min cycle from the site.
- Booterstown, Clonskeagh, Ballyfermot, Chapelizod, Ballymun, Donaghmede and Kilbarrack are within a 20 – 30 min cycle from the site.

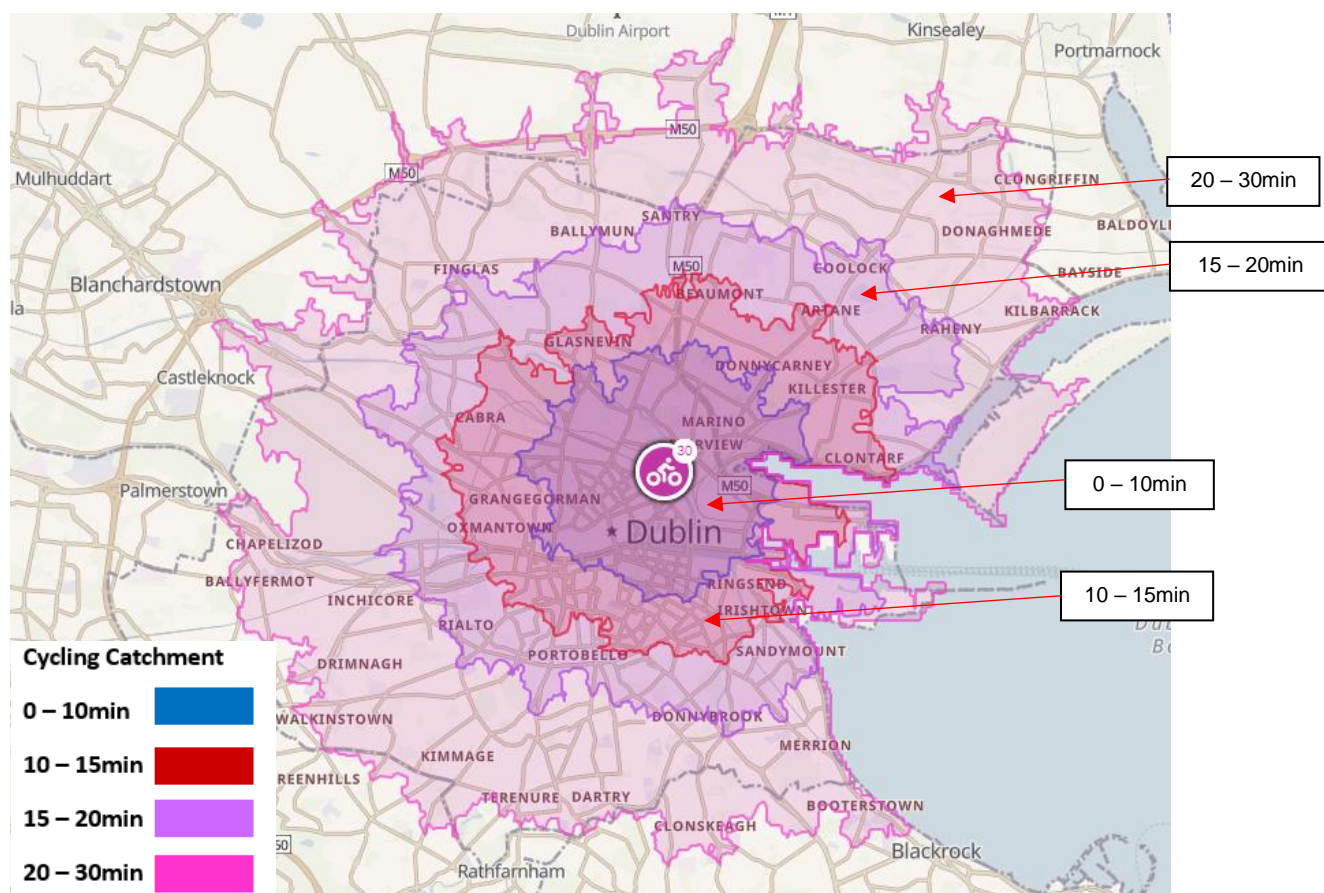


Figure 7 – Cycling Catchment

There are cycle lanes provided to most of the R803 Regional (Ballybough) Road, from its junction with the R101 Regional Road as shown from the existing facilities map taken from the Greater Dublin Area Cycle Strategy as illustrated in Figure 8 below. There are currently no cycle lanes on the N1 National Road but there are bus lanes.

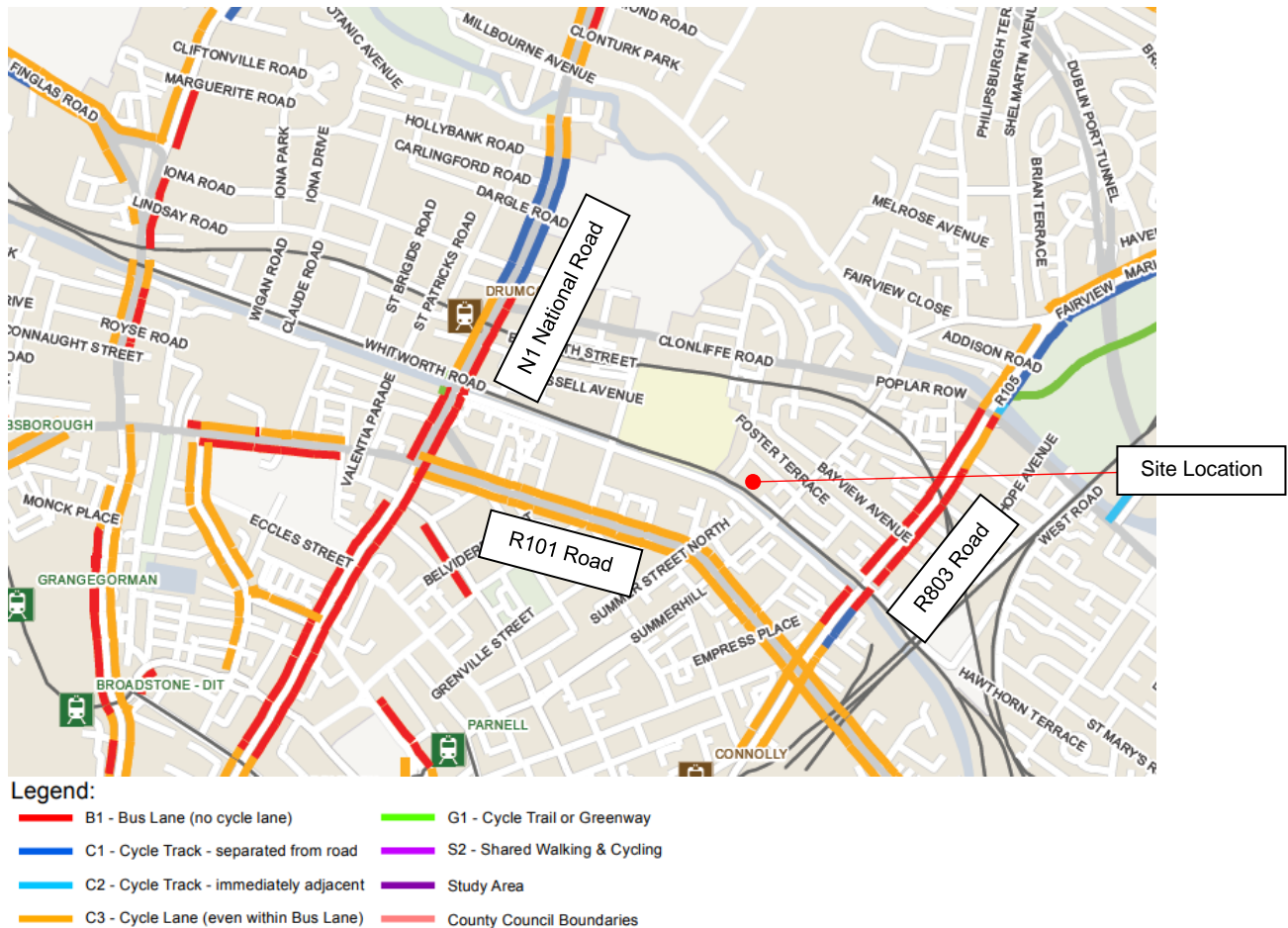


Figure 8 – Existing Cycle Network Map

In terms of bike sharing infrastructure there are two main bike sharing schemes within Dublin, NOW Dublin Bikes and BleeperBikes. NOW Dublin Bikes is a public bike rental scheme facilitated by numerous stations around Dublin City primarily within the Canal Cordon. BleeperBikes is a station-less bike sharing scheme where user park the bike at designated parking spaces throughout the city with the scheme of extending well beyond the canals into the north and south of the city.

There are several NOW Dublin Bike Stations within walking distance of the site with the nearest site approximately 5 mins away at North Circular Road, as illustrated in Figure 9 below. Currently there are no plans to expand the Dublin Bikes Scheme with any future stations' dependent on the availability of additional funding for capital and operational costs.

Similarly, there are several designated BleeperBike parking spaces close to the proposed development with the nearest parking space approximately a 10-minute walk away at Russell Street, as illustrated in Figure 10 below.

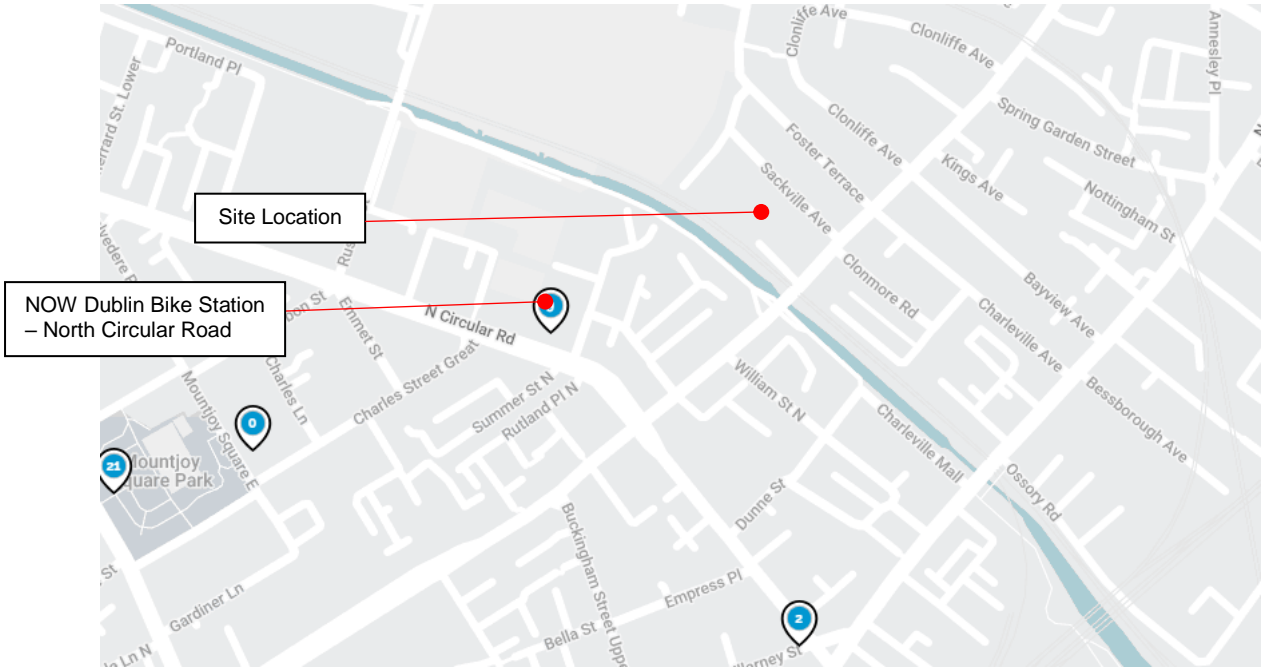


Figure 9 – NOW Dublin Bike Stations

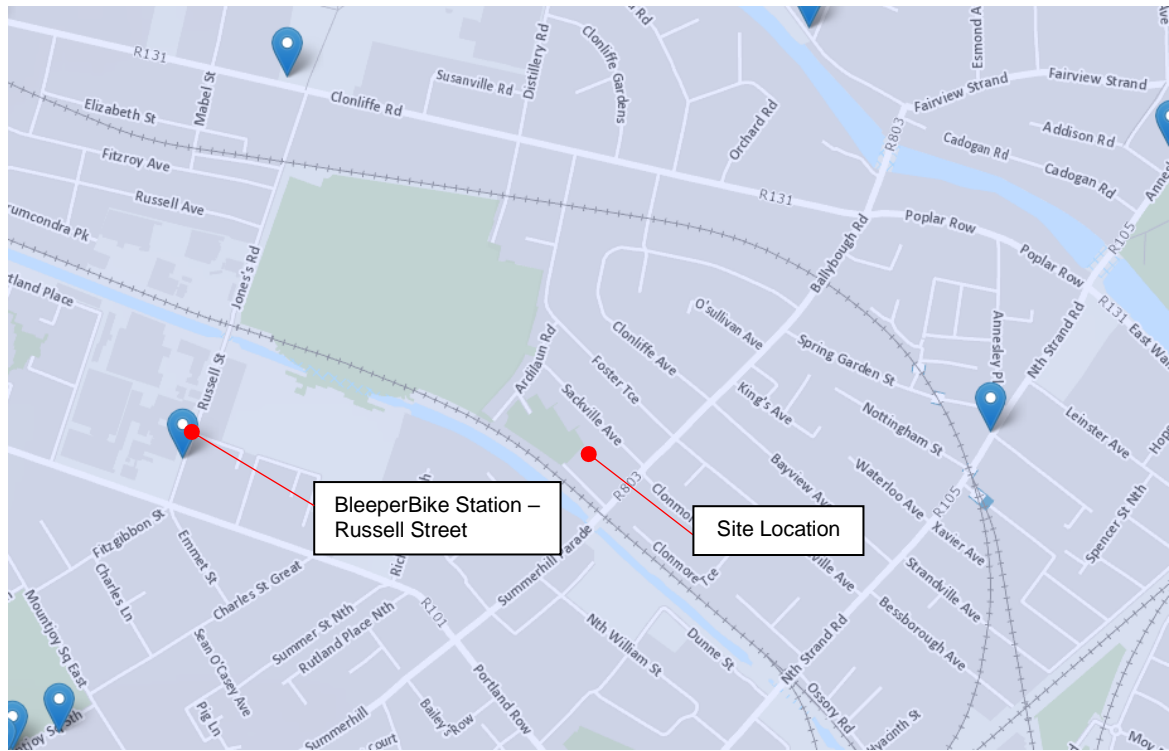


Figure 10 – BleeperBike Stations

4.3 Public Transport Infrastructure

4.3.1 Public Bus

The site is located within a 1-minute walk of a high frequency Dublin Bus service along the R803 Ballybough Road. Table 2 details the number of services per day.

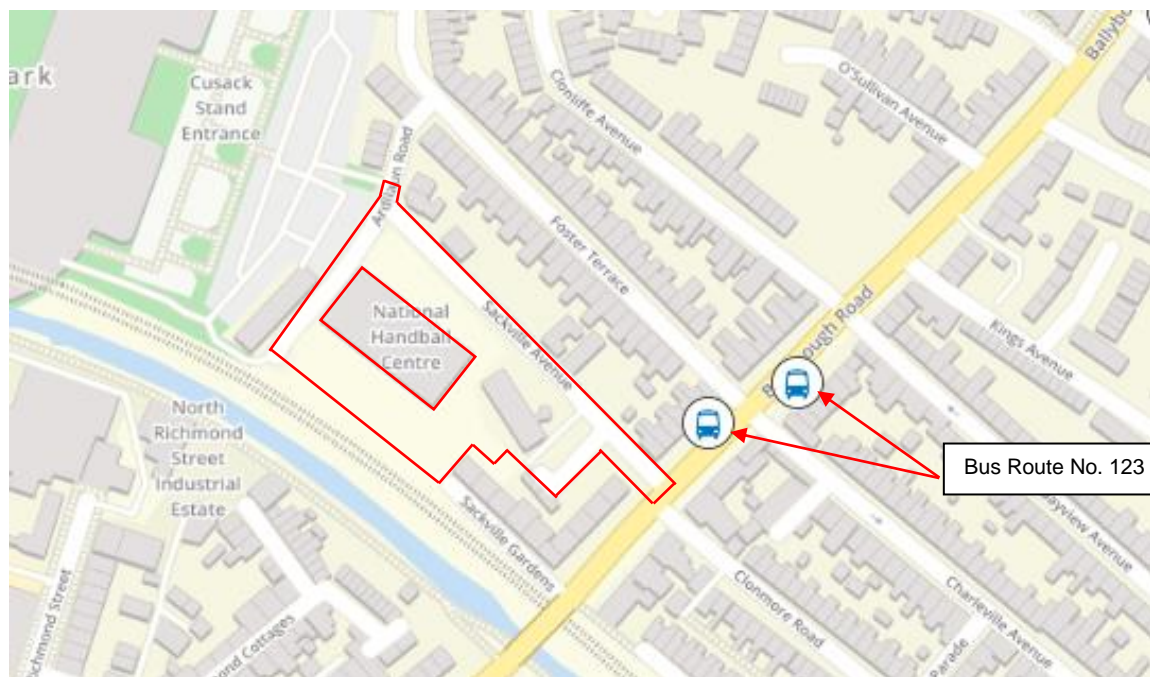


Figure 11 – Bus Stops in the Vicinity of the Site
(Source: www.journeyplanner.transportforireland.ie)

Table 2 – Bus Timetable					
Operator	Route No.	Route	No. of services		
			Monday to Friday	Saturday	Sunday
Dublin Bus	123	Walkinstown – St. James Hospital – O'Connell St. – Ballybough Road – Marino	Starts 6:10 service every 10 mins From 8:28 – 20:00 service every 12- 15 mins From 20:00 – 23:00 service every 20 mins	Starts 7:00 – 19:00 service every 15 mins From 19:00 – 23:00 service every 20 mins.	Starts 9:10 – 20:00 service every 20 mins From 20:00 – 23:00 service every 30 mins.

4.3.2 Commuter Rail

Connolly Station is a 14-minute walk from the site, approximately 850m to the south. Connolly is one of the busiest railway stations in Dublin. On the north side of the River Liffey, it provides commuter services to the north, north-west, south-east and south-west. The north-south Dublin Area Rapid Transit (DART) and Luas Red Line also pass through the station.

While Connolly mainly connects Dublin to the east coast of Ireland and to Sligo, Dublin Heuston serves the south and west of the country. Connolly Station is linked to Heuston via the Luas tram. Rail links connect the two stations passing through a tunnel under Pheonix Park.

4.3.3 Luas (Light Rail)

The Luas is a frequent and reliable rail system that currently offers two lines, the Red and the Green. The Luas Red Line runs from Tallaght and City West to Connolly Station and The Point. The closest stop at Connolly Station is approximately 14-minute walk from the site. During the peak morning and evening periods, the Luas service is frequent, with trams operating every 5 minutes while the service frequency is between 10-15 minutes during the off-peak period.

In addition to the Red line, the Green line provides connection between Cherrywood and Brorombridge, serving the City Centre and the major suburbs of Sandyford, Dundrum, Rathmines, Ranelagh, Grangregorman, Phibsborough and Cabra. The closest Green Line stop to the site is at Parnell, Rotunda approximately 16 minutes' walk.

4.4 Other

4.4.1 Car Sharing

On-site car parking is considered to be an inefficient use of space, particularly at a constrained location in a highly developed urban area such as the development site.

Taking this into consideration, the provision of car club spaces is considered a more sustainable alternative which both reduces the need for car ownership and provision of dedicated car parking while also maintaining access to a vehicle for infrequent use.

There are 4 GoCar hire stations located within a 1km walk of the site. The locations of the GoCar bases are illustrated in Figure 12 with Table 3 providing additional details in relation to walking distance from the site and the type of GoCar vehicle available.

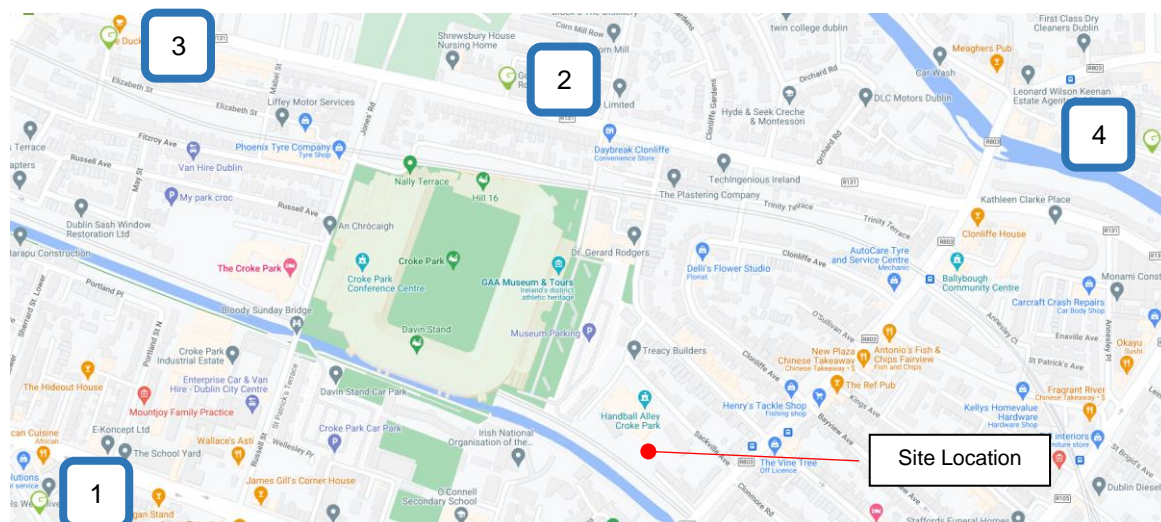






Figure 12 – GoBase locations in the Vicinity of the site

GoCar members can book cars online or via the app for durations of as little as an hour. They then unlock the car with their phone or a GoCard; the keys are in the car; with fuel, insurance and city parking all included. The benefits of such car sharing services include:

- The reduction of cars on the road and therefore traffic congestion, noise and air pollution.
- Frees up land traditionally used for private parking spaces.
- Encourages and potentially increases use of public transport, walking and cycling as the need for car ownership is reduced.
- Car share replaces approximately 20 private car parking spaces.

Table 3 – GoBase Details			
Reference No.	GoBase Locations	Vehicle Class/ Cars Available	Approximate Distance from the Development
1	Belvedere Place	GoCity 	610m to the south-west
2	Susanville Road (By the junction with Clonliffe Road)	GoCity 	350m to the north
3	St. George's Avenue, Drumcondra	GoExplore Auto 	800m to north-west
4.	Cadogan Road	GoCity 	600m to the north-east

5 TRAFFIC IMPACT

5.1 Construction Traffic Impact

Relative to the operation stage, the construction period will be temporary in nature. Construction traffic is only expected to consist of materials delivery and removal vehicles.

It is difficult to assess the exact quantum of traffic that will be generated during the construction period as it will vary throughout the construction process as different activities have different associated transportation needs. However, due to the nature of this development it can be assumed that there will be approximately 100 construction site staff at peak time and it is expected that the site would generate approximately 40 vehicles during the morning and evening peak hours.

The number of HGVs generated during the construction phase will be evenly spread out throughout the day and in general will not coincide with peak commuter periods.

The following points are noted with regard to construction traffic:

- In general, the construction day will begin and end outside of peak travel hours. As a result, the majority of workers travelling to and from the site will arrive before the a.m. peak hour and depart after the p.m. peak hour.
- On site parking will not be prohibited due to the site constraints and to encourage staff to travel by numerous public options serving the area.
- Material delivery vehicles travelling to and from the site will be spread across the course of the working day meaning the number of HGVs travelling during the peak hours will be relatively low.

Construction traffic associated with the construction of the proposed development will vary during the course of the construction phase. The proposed sequencing of the construction of the proposed development is as follows:

- Initial set-up of the site, including security and construction compound;
- Identifying and locating above and below ground utilities and services at the site;
- Development of the proposed substructure and superstructure. This will include deliveries of machinery, steel rebar, brick and concrete deliveries on HGVs
- Internal finishing, including the mechanical and electrical fit out; and
- External landscaping

Overall, it is expected that the level of traffic generated by the construction works will be negligible during the peak traffic hours, and as a result, it is expected to have negligible impact on the surrounding road network with respect to capacity.

5.1.1 Waste Management

Waste soil and material intended for off-site disposal, recycling or recovery shall not be removed from site prior to appropriate waste classification and receiving written confirmation of acceptance from a selected waste receiving facility.

All waste generated must go through Indaver, a licensed waste disposal facility in Co. Meath.

5.2 Operational Stage

5.2.1 Car parking

Long stay car parking will be provided at a rate of 0.08 space per unit, 4no. spaces in total, with the priority being the promotion of alternative modes of transport. The provision of car parking to meet the standards set out in the DCC Plan of 0.50 space per unit for development in Parking Zone 1 is not feasible due to the constrained nature of this brownfield urban regeneration site.

5.2.2 Bicycle Parking

The quantity cycle parking is 99 long-term spaces and will be secured in indoor bicycle rooms accessible by residents only. In addition to the long stay parking, there will be 30 short-term spaces for visitor parking provided at locations throughout the development, as indicated on the relevant site layout drawings.

5.2.3 Traffic Impact

A review of trip generation factors contained within the TRICS database was carried out. TRICS data is primarily UK based, although a number of Irish sites have recently been included and the number of Irish sites continues to expand. Nevertheless, we consider that TRICS will provide a reasonable indication of traffic generation from the proposed development.

Notwithstanding the above, internal research undertaken by TRICS has shown that there is no direct evidence of trip rate variation by country or region. The use of English, Scottish or Welsh data can be equally applicable to Ireland if users take into account important site selection filtering factors such as levels of population, location type, local public transport provision, and development size and car ownership level, amongst others.

Data supplied for inclusion in TRICS undergoes a procedure of validation testing, and there is no evidence from this procedure suggesting that data from Ireland bears any significant fundamental differences to that from the other countries included. Consequently, we consider that TRICS will provide a reasonable indication of traffic generation from the proposed development.

TABLE 4: TRICS Trip Rates
TRIP RATE FOR LANDUSE 03 – RESIDENTIAL /D – AFFORDABLE / LOCAL
AUTHORITY FLATS
TOTAL VEHICLES
 Calculation factor: 1 DWELLS
 BOLD print indicates peak (busiest) period.

Time Range	Arrivals			Departures			Totals		
	No. of Days	Ave DWELLS	Trip Rate	No. of Days	Ave DWELLS	Trip Rate	No. of Days	Ave DWELLS	Trip Rate
00:00-01:00									
01:00-02:00									
02:00-03:00									
03:00-04:00									
04:00-05:00									
05:00-06:00									
06:00-07:00									
07:00-08:00	2	131	0.019	2	131	0.042	2	131	0.061
08:00-09:00	2	131	0.031	2	131	0.053	2	131	0.084
09:00-10:00	2	131	0.023	2	131	0.027	2	131	0.050
10:00-11:00	2	131	0.019	2	131	0.027	2	131	0.046
11:00-12:00	2	131	0.034	2	131	0.046	2	131	0.080
12:00-13:00	2	131	0.038	2	131	0.042	2	131	0.080
13:00-14:00	2	131	0.015	2	131	0.027	2	131	0.042
14:00-15:00	2	131	0.015	2	131	0.015	2	131	0.030
15:00-16:00	2	131	0.027	2	131	0.027	2	131	0.054
16:00-17:00	2	131	0.046	2	131	0.038	2	131	0.084
17:00-18:00	2	131	0.053	2	131	0.042	2	131	0.095
18:00-19:00	2	131	0.073	2	131	0.031	2	131	0.104
19:00-20:00	1	247	0.077	1	247	0.053	1	247	0.130
20:00-21:00	1	247	0.040	1	247	0.020	1	247	0.060
21:00-22:00									
22:00-23:00									
23:00-24:00									

Table 5 - Total Number of Estimated Trips for the Development

AM Peak Hour (07:30-08:30)			PM Peak Hour (17:15-18:15)		
Arrivals	Departures	Total	Arrivals	Departures	Total
2	3	5	4	3	7

Table 2.1 in the Transport Infrastructure Ireland (TII) Traffic and Transport Assessment Guidelines, 2014 sets a number of thresholds, above which a Traffic Impact Assessment must be completed.

Table 6 – Traffic Management Guidelines Thresholds for Transport Assessments

Residential development more than 200 dwellings.

Traffic to and from the development exceeds 10% of the traffic flow on the adjoining road.

Traffic to and from the development exceeds 5% of the traffic flow on the adjoining road where congestion exists, or the location is sensitive.

Table 2.3 in the TII Traffic and Transport Assessment Guidelines, 2014 sets out a series of further threshold which include:

Table 7 – Traffic Management Guidelines Thresholds for Transport Assessments	
Vehicle Movements	The character and total number of trips in/ out combined per day are such that as to cause concern.
Location	The site is not consistent with the National Guidance or Local Plan Policy, or accessibility criteria combined in the Development Plan
Other Considerations	The development is part of the incremental development that will have significant transport implications.
	The development may generate traffic at peak times in a heavily trafficked/ congested area or near a junction with a main traffic route.
	The development may generate traffic, particularly heavy vehicles in a residential area.
	There are concerns over the developments potentials effects on road safety.
	The development is in a tourist area with potential to cause congestion.
	The planning authority considers that the proposal will result in a material change in trips patterns or raises other significant transport implications.

The development will provide 52 dwelling units with just 5 vehicle movements in the AM peak hour, and 7 vehicle movements in the PM peak hour, so the impact of the development on the surrounding road network is expected to be negligible.

6 PRE – OCCUPATION BASELINE MODE SHARE

6.1 Purpose of the Baseline

This section provides information on the travel behaviour of the existing population of the locality and similar development types. This is necessary to predict the likely travel patterns of future residents at the development sites and identifying existing constraints which may impact upon the sustainability of future development.

The subject site is located within a city suburban area with predominantly residential land uses though there are other land uses nearby within walking distances such as employment, commercial, schools and leisure.

6.2 Mode Share

The NTA's Canal Cordon Report (2017) data has also been investigated to determine the travel trends for the Greater Dublin Area. The analysis highlighted the trend in modes used by the network users when travelling to work or school/ college through various canal cordon points. The summary of the data is for the selected site within the canal cordon points have been summarised and illustrated in the figure below:

Current Mode Share (2019)	Target Mode Share 2028
Walking 11%	Walking 13%
Cycling 6%	Cycling/Micro Mobility 13%
Public Transport (bus, rail, LUAS) 54%	Public Transport (bus, rail, LUAS) 57%*
Private Vehicles (car, taxi, goods, motorcycles) 29%	Private Vehicles (car, taxi, goods, motorcycles) 17%

*Figure 13 – Current and Target Mode Share
(Source: Dublin City Development Plan 2022 – 2028:
Chapter 8 Sustainable Movement and Transport)*

The cordon counts indicate a significant increase in active travel as well as a reduction in the use of private car in the area enclosed by the two canals. Currently 71% of people travel into the city by sustainable modes (walking, cycling and public transport). The current mode share is 11% for walking and 6% for cycling providing a total mode share for active travel of 17%. It is acknowledged that some of the major transport infrastructure will progress through planning and construction phases. The plan therefore seeks to significantly grow the mode share for active travel to 26% and public transport to 57%.

Whilst the Canal Cordon data is not specific to social housing developments, it provides indicative travel trends for residential developments.

7 AIMS AND OBJECTIVES OF THE TMMP

7.1 Overview

To measure the ongoing success of the TMMP and its various measures, it is important that a series of targets and objectives are set at the outset.

As this is pre-occupation residential TMMP, it is expected that the final targets of the TMMP will be taken forward upon site occupation. As such, the pre-occupation baseline targets should be at this time considered as guidance until post- occupation baseline residential surveys are undertaken.

7.2 Aims and Objectives

The overall aim of the TMMP for the proposed development is to minimise the proportion of single occupancy vehicle trips and address the forecast transport impacts of the end-users of the site. The objectives can be summarised as follows:

- Consider the needs of residents in relation accessing facilities for employment, education, health, leisure, recreation and shopping purposes, including identifying local amenities available that reduce the need to travel longer distances.
- Reduce the vehicular traffic generated by the development – including developing measures to reduce the need to travel, such as the provision of ancillary facilities (gym, food/ beverage facilities, business area co – working spaces, convenience retail and parcel delivery/ collection services).
- Develop good urban design by ensuring permeability of the development to neighbouring areas and provisions of cycle facilities.

7.3 Targets

Targets are the specific quantitative goals based on the objectives described above. Targets are important as they give the TMMP direction from its inception, providing measurable goals.

Since the overall aim of the TMMP is to reduce reliance upon the private car, it is appropriate to set a target which relates to this objective. The primary outcome indicator used will be mode share of the resident of the proposed development.

It will therefore be necessary to collect data to identify and understand the post-occupation baseline and ongoing travel habits, against which the TMMPs progress can be measured. It is recommended that resident's travel surveys will establish the post-occupation baseline travel data for the Forbes Lane site and inform the final TMMPs targets.

8 MOBILITY MANAGEMENT MEASURES

8.1 Proposed TMMP Action Plan Measures

TMMPs have a wide range of possible “hard” and “soft” measures from which to choose from with the objective of influencing travel choices. The following section introduces proposed TMMP measures that can be implemented once the site is occupied. The finalised measures within the TMMP will be informed by the insight gained by the Post-Occupation Baseline Travel Survey results.

The proposed residential TMMP Action Plan is summarised into the following sections:

- Mobility Manager
- Reducing the need to travel
- Welcome Travel Pack
- Marketing and Travel Information
- Personalised Travel Planning
- Walking
- Cycling
- Public Transport
- Managing Car Use

8.2 Mobility Manager

A Mobility Manager will be appointed, and their role is to manage the implementation of the Residential TMMP for the Croke Villas site. The role involves being the main point of contact for travel information, promotion and improvements. This may also be organised in the form of a residents group once the development is fully occupied and operational. The remit of the Mobility Manager includes the following:

- To develop and oversee the implementation of the initiatives outlined in the TMMP Action Plan below.
- To monitor the progress of the plan, including carrying out annual Residential Travel Surveys.
- To actively market and promote the social, economic and environmental benefits of sustainable travel to residents.
- To communicate the Car Parking Management Plan discussed in section 8.9.
- To provide sustainable travel information, support and advice to residents including: available bus service timetables, walking and cycling maps, car-sharing, cycle hire services, local cycling and walking schemes and events.

8.3 Welcome Travel Pack

A ‘Welcome Travel Pack’ can be provided to all new residents with the intention that each resident is made fully aware of the travel choices available to them. This will also give the best possible opportunity to the new residents to consider more sustainable modes of travel.

The Welcome Travel Pack will include a variety of sustainable travel information and incentives about the development and the wider local area. It can include measures such as:

- Information on the sites available sustainable travel services (including cycle parking and cycle hire).
- Incentives to trail sustainable travel such as:
 - Public transport 'taster tickets' via a Leap 'pay as you go' card for each resident.
 - Discounts at a local bike shop to subsidise a bike purchase; first month's free membership of the sites cycle hire scheme; free branded accessories; free or subsidised skills training or cycle maintenance training.

This can be offered to residents on a 'pick-and-mix' basis up to a certain value (e.g., €100), with residents selecting the incentive package that best meet their own individual travel needs.

- Information on services and amenities provided locally (both on-site and nearby), particularly those within walking and cycling distance.
- Maps showing the pedestrian and cycle routes in proximity to the site, including site cycle parking and cycle hire locations; advised routes (with journey times) into the city centre and also to public transport interchanges (e.g., Connolly Station).
- Information about local public transport services and tickets including a plan showing the location of bus stops, luas stops, and bus routes.
- Information on the health benefits of walking and cycling.
- Details of online car-sharing services along with the benefits of car sharing, such as reduced congestion, better air quality, reduction in traffic noise and cost savings to the individuals taking part.
- Provide information on the financial and environmental costs associated with driving and support regarding tips for green driving techniques.

8.4 Marketing and Travel Information

Marketing and raising awareness will involve directly engaging with individuals and raising awareness of travel options as well the benefits of sustainable and active travel.

The Mobility Manager can market and promote the TMMP to residents of the site in the following ways:

- Production and distribution of the Welcome Travel Pack as described above
- Producing dedicated printed Travel Options Leaflets (in addition to the Welcome Travel Pack) and online information which can be personalised to suit the individual needs of the site.
- Once travel surveys have been undertaken, additional leaflets can be provided which are tailored to encourage travel by a specific mode of transport.
- Organising events and activities to coincide with Bike Week, European Mobility Week and any other national/ local sustainable travel or community events.
- Displaying regular updates on TMMP targets and activities in communal areas of the residential development.

- Promotion of sustainable travel options to residents, focusing marketing initiatives on area where there is willingness to change and promoting positive messages e.g., reducing congestion and CO2 emissions, getting fit and active.

8.5 Walking

Walking is the most sustainable and accessible mode of travel. Any individual in fair health can incorporate walking into part of their journey. Furthermore, 30 minutes of moderate activity 5 or more times per week is likely to enhance the health and fitness of the individual. In order to encourage walking, a number of measures will be considered:

- Promotion of National Walking Month;
- Provide maps of local walking routes to key destinations in the vicinity of the site;
- Make information on local pedestrian routes and facilities available; and
- Raise awareness of the health benefits of walking.

8.6 Cycling

To encourage residents to cycle, the following measures will be implemented or considered:

- Adequate, secure bicycle parking at convenient locations within the site;
- Information on the local cycle network routes on communal notice boards;
- Provision of vouchers for all residents at a local bike shop;
- Promotion of Bike Week events in Ballybough areas;
- Promotion of cycle security and bike marking schemes to reduce bike theft;
- Promotion of cycle safety;
- Provision of cycle toolkit in a communal area such as the bike store;
- Explore the potential for local bike shops to set up a monthly bike maintenance drop in;
- Setting up of a Bicycle User Group (BUG); AND

8.7 Public Transport

The following measures will be considered in order to encourage residents and visitors to travel by public transport:

- Consider providing vouchers towards sustainable travel to encourage modal shift;
- Provide up to date bus details including timetables/ contact information in the welcome packs on resident notice boards.
- Provide wayfinding towards key transport modes; and
- Liaise with local bus companies regarding future improvements and/ or extension to local services.

Cost awareness can be a contributing factor in the decision to travel by car or public transport. Residents can be made aware of the savings that can be made by purchasing season and other ticket types.

8.8 Managing Car Use

To encourage lower levels of car use and private car ownership i.e. promote a car free lifestyle, the following measures can be considered;

- Provide free car club membership for a period for each dwelling and car club credit vouchers;
- Consider designating car parking spaces for priority use for those that car share and/or low emission vehicles; and
- Provide details for the proposed car club and current car club operators within the vicinity of the site.

8.9 Parking

The Mobility Manager will be responsible for implementing and controlling the operation of a comprehensive Car Parking Management Plan. This plan will provide a structured framework to ensure efficient and effective management of the limited parking at the site. The primary objectives of the plan include allocating parking spaces as required, reducing parking-related conflicts, and promoting sustainable transportation practices.

The key responsibilities of the Mobility Manager in relation to the Car Parking Management Plan will be as follows:

1. Implementation of the Car Parking Management Plan

- **Development of Procedures:** The Mobility Manager will develop detailed procedures for the management of parking for residents and visitors. These procedures will determine how parking spaces are allocated, the enforcement of parking rules, and the resolution of parking disputes. This plan should ensure that the area indicated for the servicing of the GAA facility is kept free of obstruction, and that emergency vehicle access routes are maintained at all times.
- **Communication and Education:** The Mobility Manager will primarily ensure that limited parking at the site is communicated effectively to all residents and visitors. The promotion of sustainable modes of transport will be critical to this. The Mobility Manager will also ensure that residents and visitors are informed about the parking regulations, permit application process, and any updates to the Parking Plan. This may involve creating information materials and conducting community meetings.

2. Permit-Based Parking System

- **Permit Allocation:** The Mobility Manager will implement a permit-based parking system specifically for residents. Permits will be assigned based on demonstrated needs, ensuring that those who require parking the most are given priority.
- **Application Process:** Residents will be required to apply for parking permits, providing necessary documentation to demonstrate their need. The Mobility Manager will oversee the application process, ensuring it is fair, transparent, and efficient.

- **Permit Distribution and Monitoring:** Once permits are allocated, the Mobility Manager will be responsible for distributing them to approved residents. The manager will also monitor the use of permits to prevent misuse and ensure compliance with parking regulations.

3. Visitor Parking Management

- **Visitor Parking Allocation:** The Mobility Manager will outline procedures for the allocation of visitor parking spaces. This may include designated visitor parking areas, time-limited parking zones, or a reservation system for visitor parking permits.
- **Enforcement and Compliance:** The Mobility Manager will coordinate with enforcement personnel to ensure that parking regulations are upheld. This includes regular monitoring of parking areas, issuing warnings or fines for violations, and addressing any issues that arise.

4. Monitoring and Evaluation

- **Regular Reviews:** The Mobility Manager will conduct regular reviews of the Car Parking Management Plan to assess its effectiveness. This will involve collecting data on parking usage, receiving feedback from residents and visitors, and analysing trends to identify areas for improvement.
- **Reporting:** The Mobility Manager will prepare reports on the performance of the parking management system, highlighting successes, challenges, and recommendations for future improvements. These reports will be shared with relevant stakeholders to ensure ongoing transparency and accountability.

By effectively implementing and controlling the Car Parking Management Plan, the Mobility Manager will play a crucial role in ensuring that parking resources are used efficiently, resident and visitor needs are met, and the overall quality of life in the community is enhanced. The Mobility Manager should engage with potential residents at an early stage to communicate the proposed parking plan.

9 MONITORING AND REVIEW

9.1 Monitoring and Review

The monitoring of travel behaviour is vital to measure progress towards targets. Monitoring may be undertaken by the resident's association after occupation. Thus, the Mobility Manager (MM) will be a volunteer representative of the committee. The Local Authority could also assist in this regard.

The MM will consult with the occupiers to promote the concept of the TMMP, as well as identifying objectives for encouraging active travel.

Monitoring surveys will be conducted at intervals following occupations of the development. The MMC will organise surveys aimed at obtaining updated information on the travel patterns of the residents. The TMMP will be updated on the receipt of survey results.

The MM will be responsible for monitoring on-site and off-site facilities for sustainable modes. It will be the duty of the MMC to report any significant issues observed or any useful comments received from residents on either on-site or off-site facilities.

9.2 Data Collection Analysis

As the development, has not yet be constructed, it is not possible to undertake any travels surveys.

To understand travel habits, travel surveys will be distributed to all residents after occupation. Recipients will be encouraged to participate, and the surveys would extract the following key information:

- Place of work/study.
- Usual mode of travel and reason for modal choice.
- Attractiveness of various sustainable modes.
- Any barriers of sustainable modes.
- Initiatives that would encourage residents to travel more sustainably.

The information obtained will be used to undertake travel performance indicator and modal split analysis.