MALONE O'REGAN
CONSULTING ENGINEERS

PROPOSED PART 8 RESIDENTIAL DEVELOPMENT

KISHOGE, LUCAN, CO. DUBLIN

TRAFFIC MOBILITY MANAGEMENT PLAN

SOUTH DUBLIN COUNTY COUNCIL

May 2024

Job: 23006

Contents Amendment Record

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Title: **NDFA – Social Housing Bundles**
Kishogue Traffic Mobility Management Plan

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1 INTRODUCTION

1.1 Introduction

This report is prepared in support of a planning application for the National Development Finance Agency on behalf of South Dublin County Council for a proposed residential development on a site at Kishoge, Lucan, Co. Dublin.

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

The TMMP provides an assessment of existing traffic and mobility issues relating to accessing the site. It outlines the process of development of the TMMP Strategy and finally it examines the scope available for sustainable modes of transport to and from the site.

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 development site is located in Kishoge, Lucan, County Dublin. The site is bound to west by the R136 Outer Ring Road and to the north by Thomas Omer Way, from which the primary access to the site will be taken.

There are residential developments to the north and south of the site. Lands to the east and west of the site are greenfield.

Kishoge Community College is located to the north of the site.

Adamstown Railway Station is located 3km west of the site and is a station on the Dublin to Kildare commuter service.

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

1.3 Proposed Development

The proposed development includes:

i. 118 no. residential units in a mix of two storey houses, 3 storey duplex units and apartment blocks of 4 – 6 storeys comprising 26 no. 1 bed apartments; 42 no. 2 bed apartments; 21 no. 3 bed apartments; 23 no. 3 bed houses; and 6 no. 4 bed houses, with renewable energy design measures (which may be provided externally) for each housing unit;

ii. Landscaping works including provision of (a) communal open space areas (b) outdoor sports and play areas; (c) new pedestrian and cycle connections; and (d) civic plaza;

iii. Associated site and infrastructural works including provision for (a) ESB substations and switchrooms; (b) energy centre to the rear of 6 storey block; (c) photovoltaic panels; (e) car and bicycle parking; (f) public lighting; (g) bin storage; (h) temporary construction signage; (i) estate signage; and (j) varied site boundary treatment comprising walls and fencing; and

iv. all associated site development works.

Figure 2 – Proposed Site Layout

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 lengths 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 les 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.

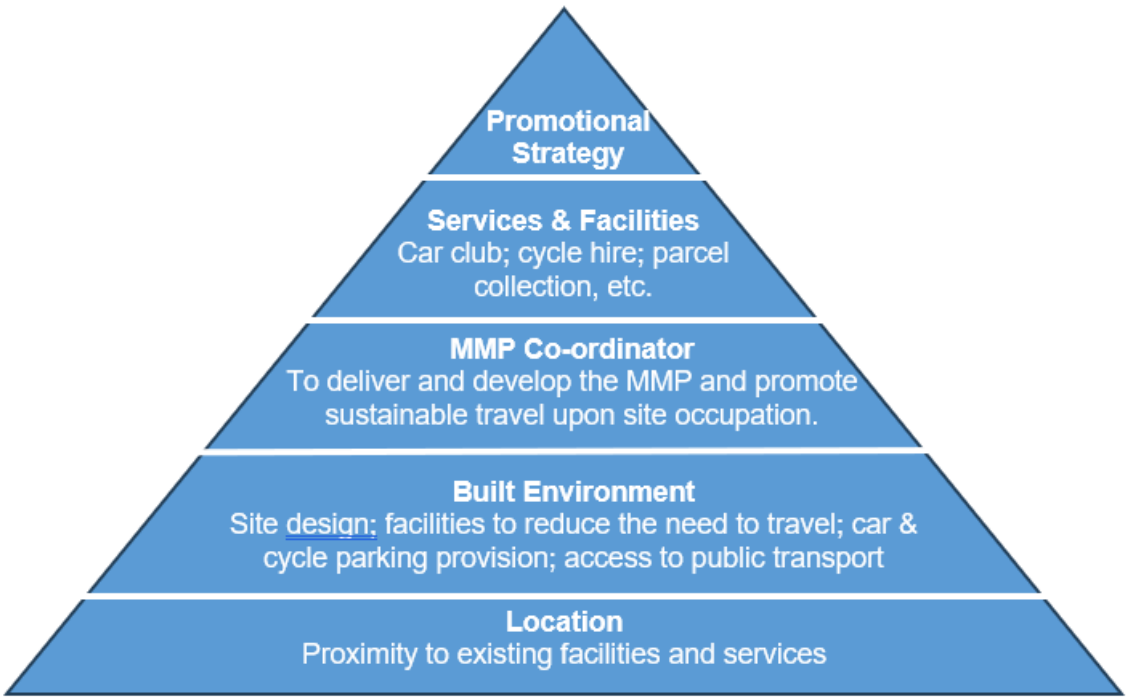


Figure 3 – The Travel Plan Pyramid

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 PLANNING POLICY 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 site in Kishoge, Lucan.

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

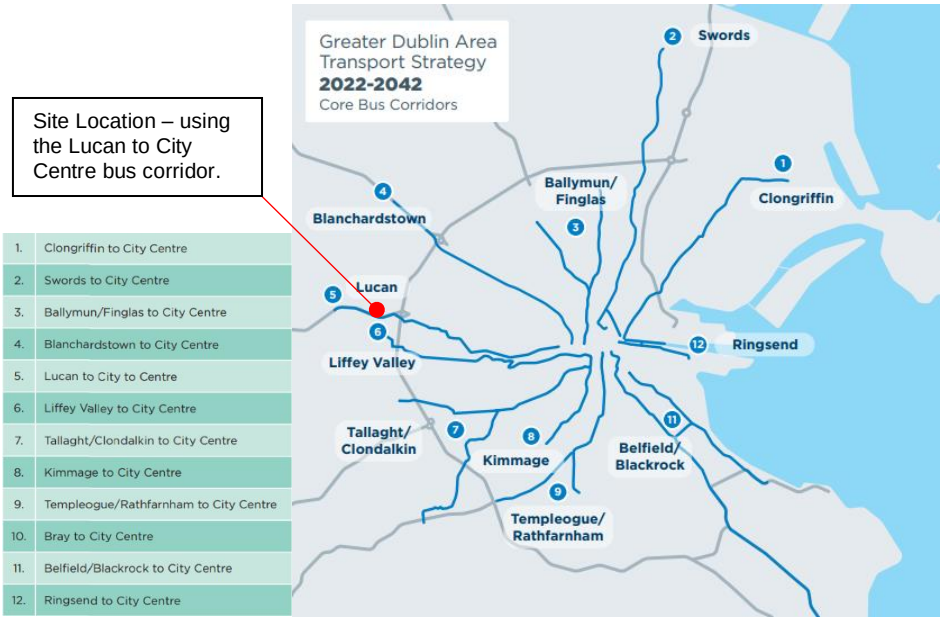
The Greater Dublin Area Transport Strategy aims to contribute to the economic, social, and cultural progresses of the Greater Dublin Area by providing for the efficient, effective, and sustainable movement of people and goods – helping to reduce modal share of car-based communities to a maximum of 45%. 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.

BusConnects is part of the overall GDA Transport Strategy and aims to overhaul the current bus systems in the Dublin Region through a number of 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” core bus corridors (CBC) on the busiest bus routes to make bus journeys faster, predictable, and dependable.
- Introducing Bus Rapid Transit, a higher quality of bus systems, 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 debits 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 systems.
- Transitioning to a new bus fleet using low-emission vehicle technologies.

Site Location – using the Lucan to City Centre bus corridor.



As part of the strategy, indicative radial, and orbital Core Bus Corridors (CBC) were identified. The National Transport Authority (NTA) has refined and altered the proposals across these corridors and have endeavoured to design a new bus system that is efficient and effective. Part of this scheme includes the corridor of Lucan to City Centre which commence in 2022.

Figure 4 – BusConnects Dublin Core Bus Corridors
(Source: GDA Transport Strategy 2022 – 2042)

The Lucan to City Centre CBC commences on at Junction 3 on the N4 and it is routed via the N4 as far as Junction 7 (M50), and via the R148 along the Chapelizod Bypass, Con Colbert Road, St. John's Road West and Frank Sherwin Bridge, where it will join the existing traffic route on the North Quays. Dedicated bus lanes in each direction will be provided along the entire route, with alternative measures proposed at constrained locations.

As illustrated below, the site is located close an Orbital Route W4 to the west of the site. Phase 5a of the BusConnects Network Redesign involves the introduction of new W orbital routes including W4. Operated by Go-Ahead Ireland, the W4 route connects The Square at Tallaght, Grange Castle Business Park, Liffey Valley Shopping Centre, and Blanchardstown Shopping Centre.

The site would also be served by Spine D which is defined as a very high frequency spine with proposed frequencies of 2 – 3 mins based on the latest proposed network.

Figure 5 – Proposed BusConnects Service Redesign Dublin City Centre

The NTA strategy provides for the extension of the Luas to Lucan, which will deliver a high-capacity radial service from this area to the City Centre, sufficient to cater for the high transport demand along this corridor. The Luas will extend, subject to final route selection, into the centre of Lucan's large residential areas to the south of the N4 and will connect to the city centre serving Lucan Village, Liffey Valley, and Ballyfermot along its route.

A feasibility study conducted by AECOM outlines some key benefits of the extension:

- The area to be served by Luas Lucan is forecast to experience a 20% growth in population over the coming 20 years, a 15% growth in jobs and a 45% increase in the people living in the area who are employed.
- With Luas Lucan in place around 75% of people in the catchment will be able to travel to their place of work using the Luas network and a short walk (<1km) at either end.
- An assessment suggests that by 2043 there will be up to 10,000 AM trips eastbound towards the city centre from western suburbs on either public or private transport, and around 130,000 two-way movements across a 12-ourhr period by 2043. It is predicted that 35% of these trips will be on public transport, but wider demand management and climate action policies, improvements to the public transport network and changing perceptions around sustainability and carbon footprint will likely push this demand for public transport higher.

Figure 6 – Proposed 2042 Light Rail Network
(Source: GDA Transport Strategy 2022 – 2042)

Greater Dublin Area Cycle Network Plan, 2013

The Greater Dublin Area (GDA) Cycle Network Plan sets out a 10-year strategy plan to expand the urban cycle network from 500km to 2,840km. The overarching ambition of the scheme is to increase the number of commuters who commute by bike to the same amount of those 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.

There are four orbital routes in the Dublin West Sector that provide cross-links between the radial routes and in the adjoining Northwest and Southwest sectors: The orbital routes surrounding the development are as follows:

- Route SO5: From Liffey Valley Shopping Centre southward Fonthill Road and Ninth Lock Road to Clondalkin Village and Tallaght. A northward link will extend across the River Liffey to Blanchardstown.
- Route SO6: Lucan (Esker) – Grange Castle – Kingswood – Jobstown along the R136.
- Route SO7: Lucan – Newcastle Road to Grange Castle and Nangor Road.

The Grand Canal Greenway route, along the further southern boundary of the site is the main greenway in Dublin West that extends from Kilmainham to Adamstown.

Figure 7 – Proposed Cycle Network Map

South Dublin County Development Plan, 2022 – 2028

The South Dublin County Development Plan (SDCDP) provides a coherent, integrated framework to ensure that South County Dublin 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 county 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 three 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 SDCDP 2022 – 2028 Policies	
Policy No.	**Details**
SM1	**Transport and Movement** To promote ease of movement within, and access to South Dublin County, by integrating sustainable land-use planning with a high-quality sustainable transport and movement network for people and goods.
SM2	**Walking and Cycling** Re-balance movement priorities towards sustainable modes of travel by prioritising the development of walking and cycling facilities and encouraging a shift to active travel for people of all ages and abilities, in line with the County targets.
SM3	**Public Transport** Promote a significant shift from car-based travel to public transport in line with County targets and facilitate the sustainable development of the County by supporting and guiding national agencies in delivering major improvements to the public transport network.
SM4	**Strategic Road Network** Improve and, where necessary, expand the County-wide strategic road network to support economic development and provide access to new communities and new development areas.
SM5	**Street and Road Design** Ensure that streets and roads within the County are designed to balance the needs of all road users and promote place making, sustainable movement and road safety providing a street environment that prioritises active travel and public transport.
SM6	**Traffic and Transport Management** Effectively manage and minimise the impacts of traffic within the County having regard to the need to provide shared road space for different users.
SM7	**Car Parking and EV Charging** Implement a balanced approach to the provision of car parking with the aim of using parking as a demand management measure to promote a transition towards more sustainable forms of transportation, while meeting the needs of businesses and communities

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

There are many local schools within walking distance to the area. Kishogue Community College is within a less than 10-minute walk from the site, Lucan East Educate Together National School is within a 15-minute walk and Lucan Community National School is within a 20-minute walk from the site. Adamstown Railway Station is located within a few minutes' walk. Giraffe Childcare is within a 20-minute walk. Further north from the site, approximately 30-minutes' walk, there is is commercial / retail centre which accommodates Finnstown Medical Centre, Giraffe Childcare, Ballyowen Medical Centre, Lidl Supermarket, Pub, Pharmacy, fast food outlets and restaurants.

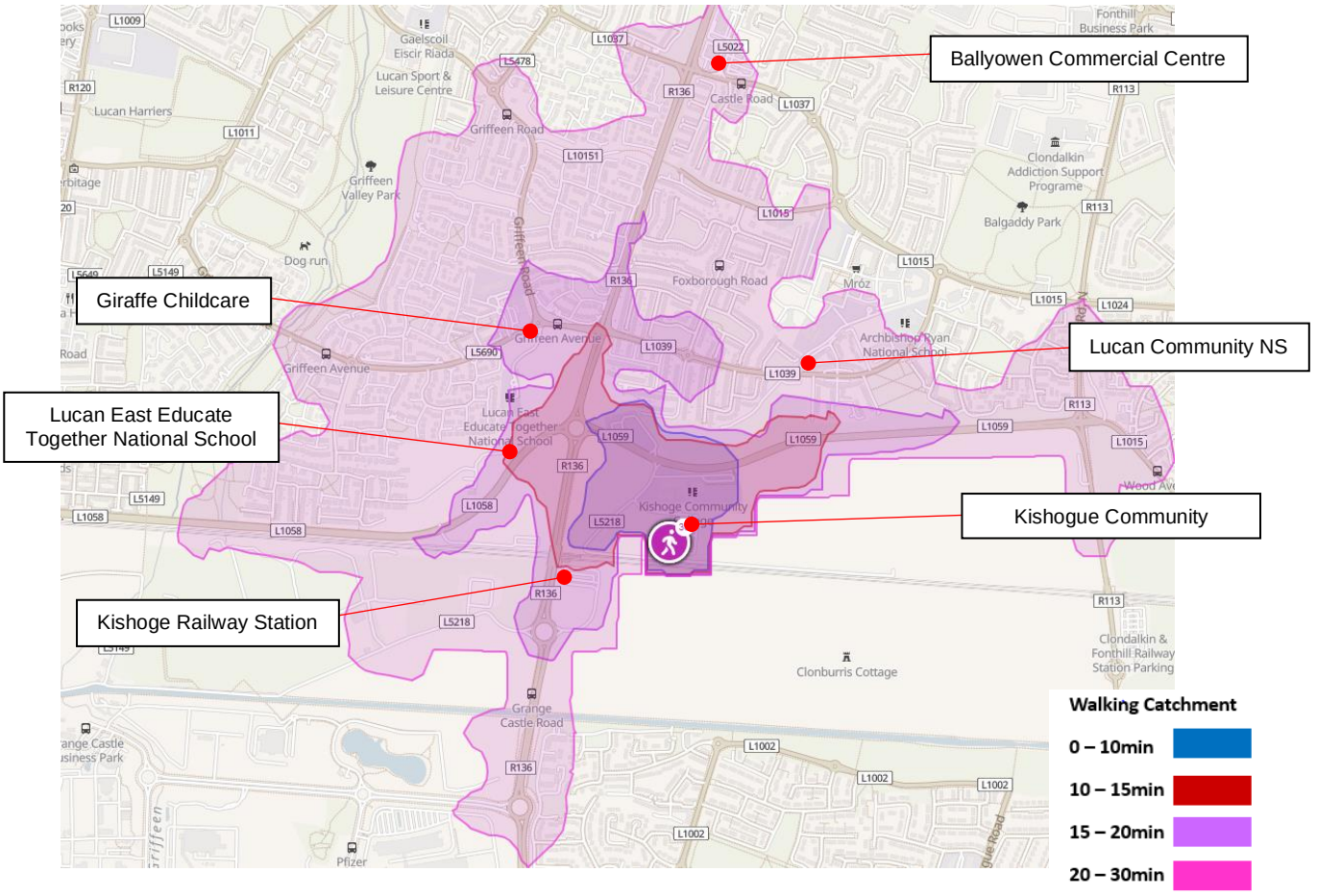


Figure 8 – Walking Catchment

The R136 Regional Road is a dual carriageway on the western boundary of the site. There are wide footpaths on both sides of the road which are separated from the carriageway by green verges. There is adequate street lighting along the road. The dual carriageway is separated by a refuge island, where pedestrians can stop before finishing crossing the road. There is a pedestrian crossing with traffic signals for both pedestrians and vehicular traffic forming a pelican crossing. Kerbs are dished and tactile paving is provided at the pedestrian crossing.

Figure 9 – Existing Road Network

Thomas Omer Way is a dual carriageway on the northern boundary of the site. There are footpaths on both sides of the road which are separated from the carriageway by green verges. There are cycle lanes on both sides of the road. There is adequate street lighting along the road. The dual carriageway is separated by a refuge island. There is a pedestrian crossing with traffic signals for both pedestrians and vehicular traffic forming a pelican crossing. Kerbs are dished and tactile paving is provided at the pedestrian crossing.

The site is also highly accessible by cycling:

- Adamstown is within a 15-minute cycle from the site.
- Lucan, Clondalkin are within a 20-minute cycle.
- Leixlip, Palmerstown, Ballyfermot, Bluebell are within a 30-minute cycle.

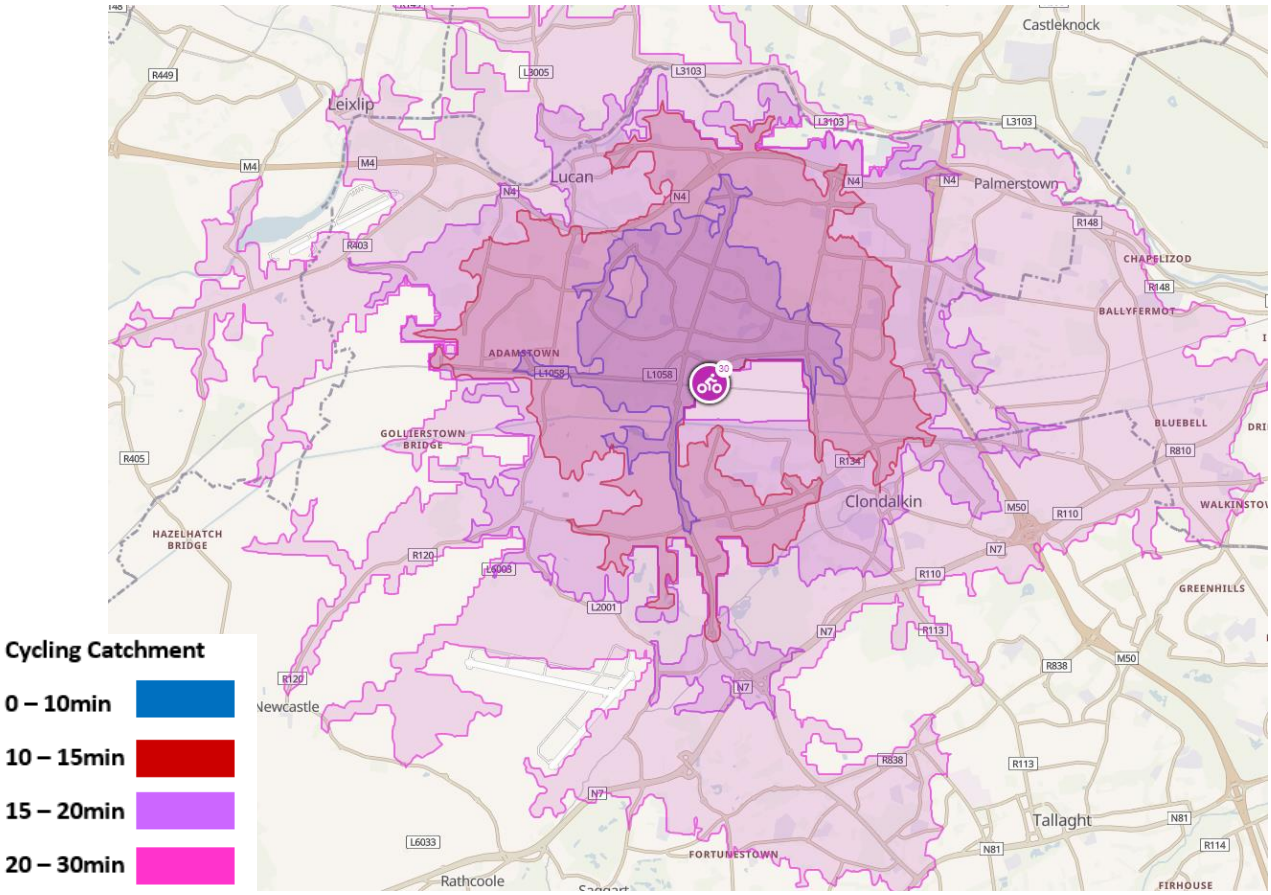
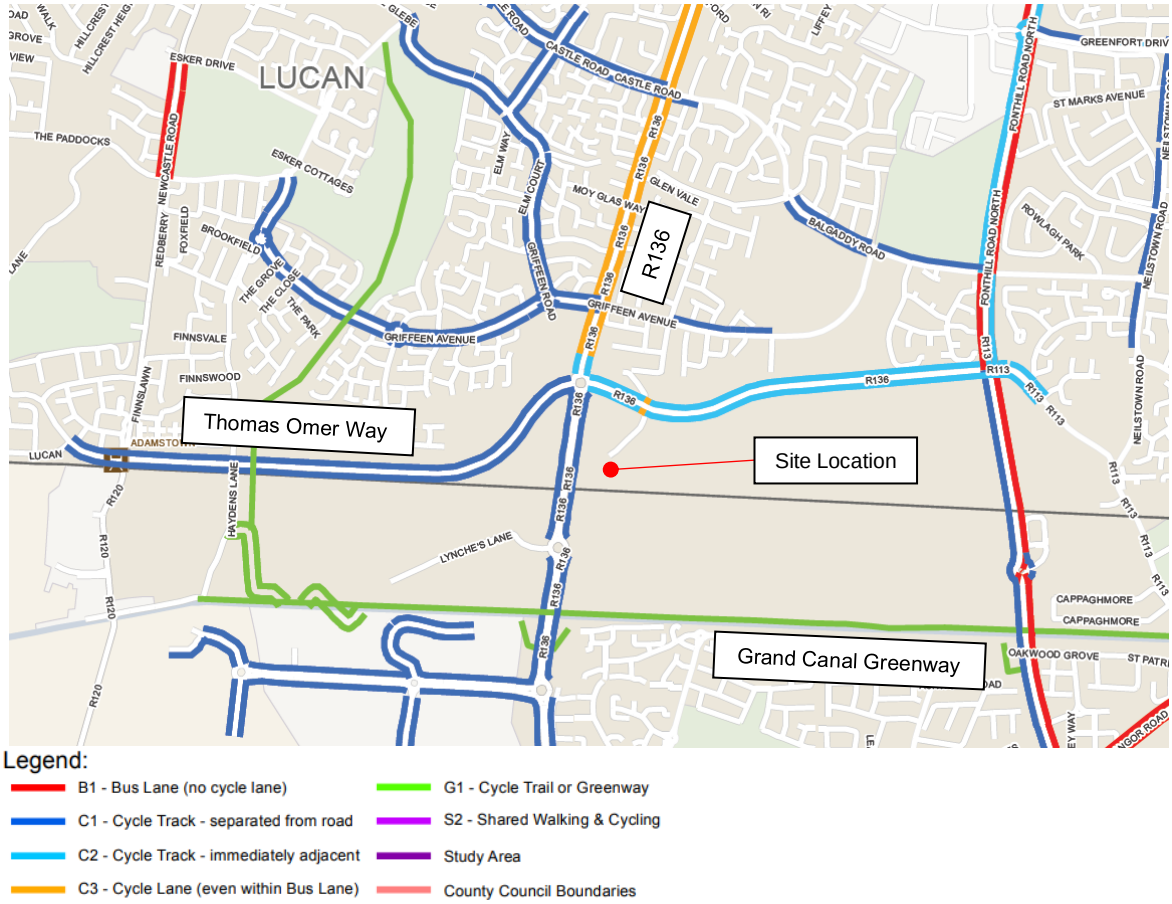


Figure 10 – Cycling Catchment

The NTA has surveyed the cycle facilities for the GDA as part of the Greater Dublin Area Cycle Network Plan. An extract from this plan showing the existing facilities in the vicinity of the proposed development is shown below.

Between Lucan and its junction with R136, there are cycle tracks on Thomas Omer Way Road features cycle tracks which are separated from the carriageway. From its junction with the R136, the cycle tracks on Thomas Omer Way are immediately adjacent to the carriageway.

Along the R136 Regional Road towards Lucan, the cycle tracks are in part separated from the road and elsewhere are shared with the bus lanes.



Legend:

- B1 - Bus Lane (no cycle lane)
- C1 - Cycle Track - separated from road
- C2 - Cycle Track - immediately adjacent
- C3 - Cycle Lane (even within Bus Lane)
- G1 - Cycle Trail or Greenway
- S2 - Shared Walking & Cycling
- Study Area
- County Council Boundaries

Figure 11 – Existing Cycle Network Map (Source: National Transport Authority)

4.3 Public Transport Infrastructure

4.3.1 Public Bus

As graphically illustrated in Figure 12 below, the site is well situated to benefit from public bus connections, with Table 2 detailing the number of services per day.

The closest bus stops to the site are located along the R136 road which are within a few minutes walking catchment of the site. These bus stops are operated by Dublin Bus.

Figure 12 – 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
Transport for Ireland	C1	Adamstown Station – Foxborough – Liffey Valley – Heuston Station – Bachelor's Walk – Ringsend – Sandymount	From 12:46 – 23:43 service every 6 mins	From 12:45 – 23:44 service every 29 mins	From12:44 – 23:44 service every 28 mins
	C2	Adamstown Station – Foxborough – Liffey Valley – Heuston Station – Bachelor's Walk – Ringsend – Sandymount	From 12:12 – 23:12 service every 7 mins	From 12:12 – 23:11 service every 28 mins	From 12:14 – 23:14 service every 28 mins
	L53	Adamstown – Finnstown Abbey – Fonthill Road – Liffey Valley Shopping Centre	From 5:28 – 23:32 service every 25 mins	From 6:10 – 23:27 service every 29 mins	From 7:39 – 23:32 service every 26 mins
	L54	River Forest – Lucan Village – Clondalkin Fonthill – Red Cow Luas	From 6:07 – 23:37 service every 30 mins	From 6:07 – 23:37 service every 30 mins	From 8:07 – 23:37 service every 30 mins
	W4	The Square, Tallaght – Grange Castle Business Park – Liffey Valley Shopping Centre –	From 5:37 – 23:37 service every 30 mins	From 5:37 – 23:37 service every 30 mins	From 7:37 – 23:37 service every 30 mins

		Blanchardstown Shopping Centre			
Dublin Bus	151	Foxborough – Park West – Drimnagh Road – Dolphins Barn – Dame Street/ Ormond Quay - Docklands	From 6:00 – 23:00 service every 15 mins	From 6:30 – 23:00 service every 20 mins	From 7:30 – 23:00 service every 25 mins

4.3.2 Public Transport – Train

Adamstown Railway Station is located 3km to the west of the site, approximately a 37-minute walk or 11-minute cycle. The railway station is located on the Dublin – Kildare rail line. The routes serviced are :

- Dublin Heuston – Cork.
- Grand Canal Dock and Dublin Heuston – Portlaoise.

Kishoge Railway Station is located immediately to the southwest of the site. The Kishoge Railway Station, which was constructed along Grange Castle Road as part of the Kildare Route project, is not currently operating and is the subject of the Phasing Strategy outlined in the Clonburris Strategic Development Zone (SDZ) Planning Scheme.

4.4 Other

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 is 1 GoCar hire station located approximately 750m to the northwest of the site at Griffeen Glen Avenue. The location of the GoCar base is illustrated in Figure 13 with Table 3 providing additional details in relation to walking distance from the site and the type of GoCar vehicle available.

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.

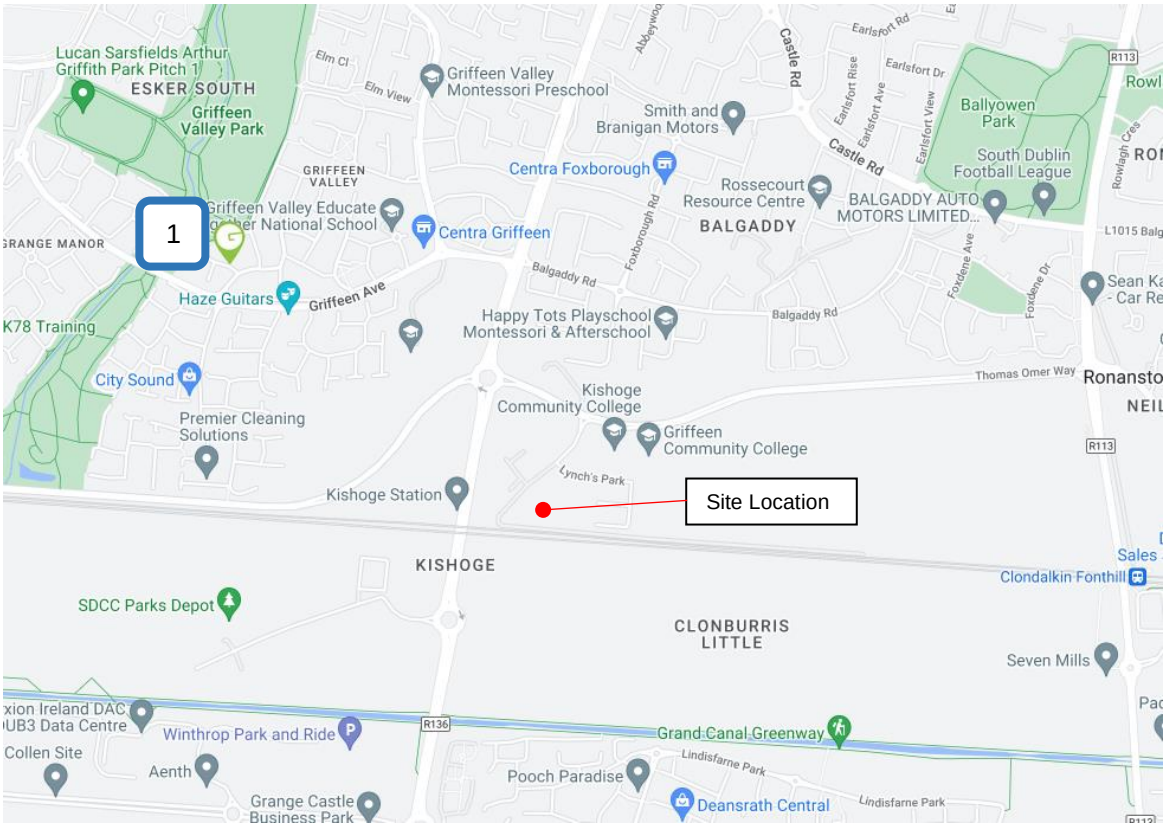


Figure 13 – GoBase locations in the Vicinity of the site
(Source: www.gocar.ie/locations/)

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Table 3 – GoBase Details			
Reference No.	**GoBase Locations**	**Vehicle Class/ Cars Available**	**Approximate Distance from the Development**
1	Northwood Court	GoExplore GoTripper 	400m to the north-east

5 TRAFFIC IMPACT

5.1 Construction Traffic Impact

Relative to the operational 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 regarding construction traffic:

- In general, the construction day will begin and end outside of peak travel hours. As a results, most workers travelling to and from the site will arrive before the a.m. peak hour and depart after the p.m. peak hour.
- Adequate on-site parking will be provided to prevent any potential overflow onto the local transport network.
- 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 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, concrete, roofing materials, and prefabricated element 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.

5.2 Operational Stage

5.2.1 Car Parking

Current proposed for car parking are guided by and fulfil the requirement of the South Dublin County Council Parking Standards as described in the Development Plan 2022 –

2028. Car Parking standards are set out in Chapter 12: Implementation and Monitoring, Table 12.26 of the Development Plan as shown.

Dwelling Type	No. of Bedrooms	Zone 1	Zone 2
Apartment Duplex	1 Bed	1 space	0.75 space
	2 Bed	1.25 spaces	1 space
	3 Bed+	1.5 spaces	1.25 spaces
House	1 Bed	1 space	1 space
	2 Bed	1.5 spaces	1.25 spaces
	3 Bed+	2 spaces	1.5 spaces

Figure 14 – Car Parking Zones and Standards (Source: South Dublin County Development Plan 2022 – 2028)

Further guidance in relation to car parking standards is given within the Clonburris Strategic Development Zone (SDZ) Planning Scheme May 2019 which states as follows:

*"Further to the Accessibility Assessment carried out as part of the accompanying Transport Assessment and Strategy, **Zone 2** parking standards prescribed under the South Dublin County Council Development Plan 2016 – 2022 shall be applied to all areas that have been identified with an accessibility level of 1, 2 or 3 (see Fig. 2.2.8). Zone 1 parking standards shall be applied to all other areas of the SDZ lands."*

The proposed site has been identified as having an accessibility level of 1 so Zone 2 parking standards apply.

Table 4 – Car Parking

Unit Type	No. of Units	SDCC Development Plan Maximum Permitted Number of Spaces	Proposed Number of Spaces
Apartment-1-bed	26	20	**95**
Apartment-2-bed	42	42	
Apartment -3-bed	21	26	
House-3-bed	23	35	
House-4-bed	6	8	
Total	**118**	**131**	

Figure 2.2.8 | Accessibility Levels for Identification of Car Parking Zones

Source: Clonburris Strategic Development Zone Transport Assessment and Strategy (2017)

Figure 15 – Site Accessibility Level
Extract from Clonburris SDZ Figure 2.2.8

The Clonburris SDZ further states that:

"The development of car free housing may be considered in the higher density areas of the SDZ lands adjacent to Public Transport interchanges and within the urban centres planned around the Clondalkin-Fonthill and Kishoge rail stations only. Reduced parking provision (including near zero or zero parking provision) for individual developments may be acceptable subject to the degree of compliance with the following:

- *The proximity of the site to the Kishoge and Clondalkin-Fonthill Railway Stations;*
- *The proximity of the development to services that fulfil occasional and day to day needs;*
- *Demonstration that car parking can be shared between complementary land uses including Park and Ride Facilities;*
- *The existence of a robust and achievable Workforce Management or Mobility Management Plan for the development;*
- *The ability of people to fulfil multiple needs in a single journey;*
- *The levels of car dependency generated by particular uses within the development;*
- *The ability of residents to live in close proximity to the workplace;*
- *Peak hours of demand and the ability to share spaces between different uses; and*
- *Uses for which parking rates can be accumulated."*

The site has been assigned an accessibility level of 1 given its close proximity to Kishoge Railway Station. The proposed car parking provision of 95 spaces is a reduction below the maximum quantity of 131 which would be permitted under the Development Plan. This is considered appropriate given the site's proximity to both Kishoge Railway Station and the existing bus services which operate at high frequency along the R136, approximately 1km to the north of the site (refer to Section 4.3.1).

5.2.2 Bicycle Parking

Long-stay and short-stay bicycle parking has been provided in accordance with the requirements of South Dublin County Council Development Plan 2022-2028 and The Sustainable Residential Development and Compact Settlements Guidelines for Local Authorities. Long-stay parking will be secured in indoor bike rooms accessible by residents only. In addition to the long stay parking there will be on-street visitor parking provided at locations throughout the development.

TABLE 5 - BICYCLE PARKING PROVISION TO APARTMENTS

LONG-STAY PARKING					
Basis- Min. 1 long stay space per bedroom- In accordance with SPRR 4 - Cycle and Storage, Sustainable Residential Development and Compact Settlements Guidelines for Local Authorities 2024					
Location of Spaces-					
Apartment Block A Secure Bicycle Storage Area		(46 bedrooms= Min. 46 Required)			**47**
Apartment Block B Secure Bicycle Storage Area		(43 bedrooms= Min. 43 Required)			**57**
Own Door Duplexes-	No. of Bikes/ unit	3	x	21	**63**
Own Door Apartments	No. of Bikes/ unit	1	x	21	**21**
Total Number Long-Stay Bicycle Parking Spaces Provided					**188**

SHORT-STAY PARKING		
Basis - Min. 1 short stay space per 2 apartments- In accordance with Table 12.23: Minimum Bicycle Parking / Storage Rates SDCC County Development Plan 2022-2028		
Requirements and Provision Description by Typology	Required	Provision
Apartment Block A- 23 apartments; Bicycle Rack Spaces in Civic Space	11.5	14
Apartment Block B- 24 apartments; 57 spaces in secure store (43 long stay plus 14)	12	14
Duplexes- 21 duplex units; 21 no. short stay in rear gardens or terraced areas	10.5	21
Own-Door Apartments over duplexes- 21 no. units; accommodated in secure area under communal stair enclosures	10.5	12
Total Number Short-Stay Bicycle Parking Spaces Provided		**61**

5.2.3 Traffic Impact

Trip Generation

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 6 - Proposed Residential Development Trip Rates

Land Use	Unit	AM Peak Hour (07:30-08:30)		PM Peak Hour (17:15-18:15)	
		Arrival	Departures	Arrivals	Departures
Houses	Per unit	0.120	0.348	0.415	0.274

Table 6 summarises the TRICS generated trip rates for site, whilst Table 7 summarises total number of anticipated trips for the development during the weekday morning and evening peak hour periods.

Table 7 - Total Number of Estimated Trips for the Development

Land Use	Unit	AM Peak Hour (07:30-08:30)		PM Peak Hour (17:15-18:15)	
		Arrivals	Departures	Arrivals	Departures
Houses	Total Trips	14	41	49	32

The above-estimated number of trips for the proposed development is considered conservative given the low level of car parking proposed which will considerably reduce car-based trips to and from the development, particularly during peak hours.

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

Table 8 – Traffic Management Guidelines Thresholds for Transport Assessments
Residential development of 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 9 – 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 118 dwelling units and, with just 55 vehicle movements in the AM peak hour and 81 vehicle movements in the PM peak hour, the impact of the development on the surrounding road network is considered negligible given the capacity of R136.

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 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

Chapter 7: Sustainable Movement of the South Dublin County Development Plan 2022 – 2028 (SDCDP) provides data to determine the travel trends in South County Dublin (SCD). The data indicates that a significant majority of trips at 62% originating in SCD are car-based. Cycling accounts for a very small portion of journeys at 5% while walking comprises 13% of trips. Approximately 20% of trips are taken by public transport which breaks down as 17% by bus and 3% by rail.

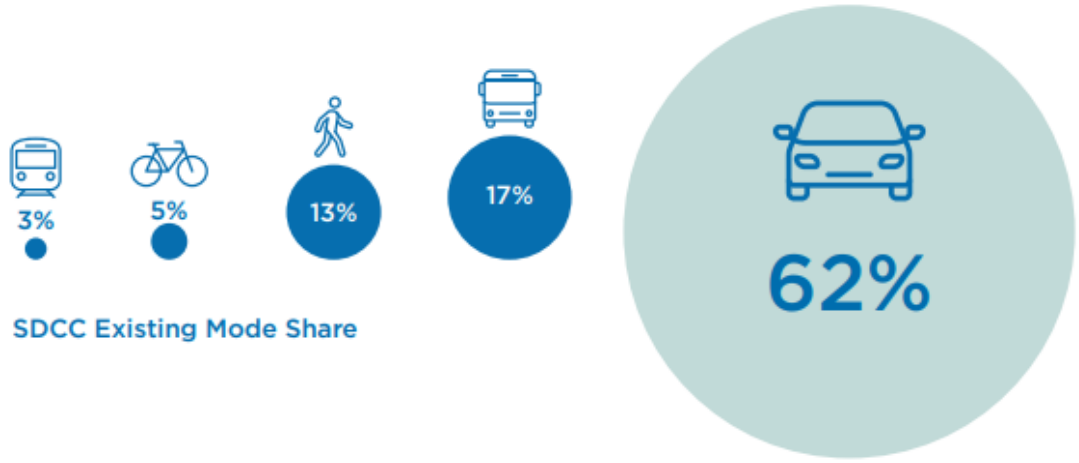

Figure 16 – SDCC Travel to Work Means, Census 2016
(Source: SDCDP 2022 – 2028)

The council has set mode share targets for the County which aim to increase the amount of people walking, cycling, and using public transport and decrease the number of journeys in private vehicles. There are several strategic development areas within the County where higher density more compact development is planned which will facilitate sustainable travel in growth areas. These areas include Kishoge. South Dublin's target will see walking increase from 13% to 15% and cycling double a low 5% to 10%. Bus mode share would increase from 17% to 20% while rail mode share would increase from a low level of 3% to 5%. These incremental increase in mode share would result in the decrease in private car use from the current high level of 62% down to 50% during the period of 2022 – 2028.

Whilst not specific to social housing, the SDCC data outlined above provides indicative resident travel trends for a development of this nature.

Mode	SDCC Existing Mode Share (%)	SDCC Target Mode Share (%)
Walk	13	15
Cycle	5	10
Bus	17	20
Train	3	5
Private (Car, Van, HGV, Motorcycle)	62	50

Figure 16 – Existing and Target Mode Share
(Source: SDCDP 2022 – 2028)

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 to 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 Kishoge 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 (MM).
- 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 will be to manage the implementation of the Residential TMMP for the 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 outlines 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 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 Reducing the need to travel

The provision of on-site services or within reasonable walking distance to reduce the need of residents to utilise a vehicle to travel will be crucial to embedding a sustainable travel culture within the site from the outset.

8.4 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:

- Provision of 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 to public transport interchanges (e.g., Heuston Station).
- Provision of information about local public transport services and tickets including a plan showing the location of bus stops and bus routes, train stations.
- Provision of information on the health benefits of walking and cycling.
- Provision of 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.
- Provision of information on the financial and environmental costs associated with driving and support regarding tips for green driving techniques.

8.5 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 development in the following ways:

- Production and distribution of the Welcome Travel Pack as described above.
- Production of 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 an area where there is willingness to change and promoting positive messages e.g., reducing congestion and CO_2 emissions, getting fit and active.

8.6 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. To encourage walking, a number of measures will be considered:

- Promotion of National Walking Month.
- Provision of maps of local walking routes to key destinations in the vicinity of the site.
- Making information on local pedestrian routes and facilities available.
- Raising awareness of the health benefits of walking.

8.7 Cycling

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

- Provision of adequate, secure bicycle parking at convenient locations within the development.
- Posting of information on the local cycle network routes on communal notice boards and social media.
- Provision of information on the Bike to Work scheme.
- Provision of vouchers local bike shops to all residents.
- Promotion of Bike Week events in the local area.
- Promotion of cycle security and bike marking schemes to reduce bike theft.
- Promotion of cycle safety.
- Setting up of a Bicycle User Group (BUG.

8.8 Public Transport

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

- Provision of up to date bus details including timetables/ contact information in the welcome packs.
- Provision of wayfinding information to access key transport modes.
- Liaison 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 discounted ticket types.

8.9 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:

- Designation of a section of car parking within the car parking area for priority use for those that car share and/ or low emission vehicles.
- Provision of details for the proposed car club and current car club operators within the vicinity of the site.

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 issued 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.