



# PROPOSED RESIDENTIAL DEVELOPMENT ON BOHERBOY ROAD.

**PIN-RP-00-C004-V2**

## RESIDENTIAL TRAVEL PLAN

- BUILDING INFORMATION MODELLING (BIM)
- CIVIL DESIGN & ENGINEERING
- DUE DILIGENCE
- OFFSHORE & ONSHORE ENGINEERING
- PRE-DEVELOPMENT
- STRUCTURAL ENGINEERING
- TRANSPORTATION & HIGHWAYS

## DOCUMENT CONTROL SHEET

Project Name	P230400423 - DUBLIN, Boherboy LRD				
Document Title	Residential Travel Plan				
Document Number	PIN-RP-00-C004-V1				
This Document Comprises	DCS	TOC	Text	List of Tables	List of Figures
	1	1	8	0	2

## CONTACT DETAILS

Name	Position	Email	Telephone	Mobile
Ronan Kearns	Associate Transportation Planner	<a href="mailto:ronan.k@iepinnacle.com">ronan.k@iepinnacle.com</a>	01-2311045	0876384042

## APPROVALS

	Name	Position	Date
Prepared by	Ronan Kearns	Associate Transportation Planner	02/01/25
Reviewed by	Ronan Kearns	Associate Transportation Planner	02/01/25
Approved by	James Mayer	Director	02/01/25

## REVISIONS

Revision By	Date	Context
V1	02/01/25	Draft
V1	08/12/25	Issued for Planning

*This document has been prepared by Pinnacle Engineering Consultants, for the titled project and should not be relied upon or used for any other project. Pinnacle Engineering Consultants accepts no responsibility or liability for the consequences of this document being used for any purpose other than the purpose for which it was commissioned. Any person using or relying on the document for such other purpose agrees and will by such use or reliance be taken to confirm his agreement to indemnify Pinnacle Engineering Consultants for all loss or resultant damage. Pinnacle Engineering Consultants accepts no responsibility or liability for this document to any party other than the person by whom it was commission*

Pinnacle Engineering Consultants

Residential Travel Plan

Version No – 2

## Table of Contents

---

### CONTENTS

1	INTRODUCTION.....	3
1.1	INTRODUCTION .....	3
2	GUIDANCE & POLICY DOCUMENTS.....	7
2.1	NATIONAL & INTERNATIONAL POLICY .....	7
2.2	LOCAL POLICY.....	10
2.3	BUSCONNECTS AND ACTIVE TRAVEL POLICY CONTEXT .....	11
2.4	THE TRAVEL PLAN PYRAMID.....	11
2.5	OBJECTIVES.....	13
3	PUBLIC TRANSPORT, WALKING AND CYCLING FACILITIES AND COMMUTER TRAVEL PATTERNS.....	14
2.6	PUBLIC TRANSPORT .....	15
2.6.1	BACKGROUND .....	15
2.6.2	BUS .....	16
2.6.3	LUAS .....	18
2.7	WALKING AND CYCLING .....	19
4	TRAVEL SURVEY.....	28
3.1	INTRODUCTION .....	28
3.2	EXISTING COMMUTER TRAVEL PATTERNS – WORK.....	29
3.3	EXISTING COMMUTER TRAVEL PATTERNS – SCHOOL/COLLEGE.....	30
3.4	EXISTING COMMUTER TRAVEL PATTERNS – OVERALL.....	31
5	PREDICTED POST-DEVELOPMENT TRAVEL PATTERNS.....	33
4.1	INTRODUCTION .....	33
6	OBJECTIVES OF TRAVEL PLAN STRATEGY.....	34
7	ROLE OF THE TRAVEL PLAN COORDINATOR FOR THE PROPOSED DEVELOPMENT.....	47
8	CONCLUSION & SUMMARY.....	52
	APPENDIX A SAMPLE TRAVEL SURVEY.....	53
1	INSTRUCTIONS .....	54
1.1	INSTRUCTIONS.....	54

2	TRAVEL SURVEY.....	55
	APPENDIX B CORRECTIVE ACTION .....	63

---

## 1 INTRODUCTION

### 1.1 Introduction

This Travel Plan has been prepared by Pinnacle Consulting Engineers in support of a Stage 2 Submission for a Large-scale Residential Developments planning application to South Dublin County Council.

Kelland Homes Ltd. and Evara Developments Ltd. wish to apply for permission for a Large-scale Residential Development (LRD) on a site located at Boherboy, Saggart, County Dublin. To the immediate north of the site is the Carrigmore residential estate, to the west are agricultural lands and a single dwelling, to the east is the Corbally residential estate and Carrigmore Park, while to the south is the Boherboy Road.

The proposed development consists of 611 no. dwellings, comprised of 306 no. 2, 3, 4 & 4-5 bed, 2 & 3 storey, detached, semi-detached & terraced houses, 133 no. 1, 2 & 3 bed duplex units in 12 no. 2-3 storey blocks, and 172 no. 1, 2 & 3 bed apartments in 5 no. buildings ranging in height from 4-5 & 5 storeys. The proposed development also includes a 2-storey crèche (c.630m<sup>2</sup>).

Access to the development will be via one no. new vehicular access point from the Boherboy Road, along with new vehicular connections to adjoining developments at Corbally Heath to the east and Carrigmore Green to the north. Ten no. houses in the south-east part of the site will be accessed from Corbally Glade to the east. The proposed development includes for pedestrian and cyclist connections throughout the proposed development and accesses into adjoining lands at Carrigmore Park, Corbally Heath and Corbally Glade to the east and Carrigmore Green to the north.

Private amenity space for the residential units is provided in the form of rear gardens for houses and ground floor terraces / upper floor balconies for apartments and duplex units. The proposed development provides for a total of c. 2.3Ha of public open space, and c. 4,750sq.m of communal open space associated with proposed development.

The proposed development provides for (i) all associated site development works above and below ground, including surface water attenuation & an underground foul sewerage pumping station at the northern end of the site, (ii) public open spaces (c. 2.3Ha), (iii) communal open spaces (c. 4,750sq.m), (iv) hard & soft landscaping and boundary treatments, (v) surface car parking (861 no. car parking spaces), (vi) bicycle parking (711 no. bicycle parking spaces), (vii) bin & bicycle storage, (viii) diversion of all existing overhead ESB lines underground, (ix) public lighting, and (x), plant / PV panels (M&E), utility services & 8 no. ESB sub-stations, all on an overall application site area of c.18.7Hha. In accordance with the South Dublin County Development Plan (2022-2028), an area of c.1.03Ha within the site is reserved as a future school site.

The site has an area of 18.7Ha

It is proposed to develop this site based on the following schedule of accommodation: -

Proposed Land Uses	
Houses	306
Duplex	133
Apartments	172
Total	611
Crèche	630 sq. m

Table 1 Proposed Land Uses

The purpose of the report is to outline the objectives of the Travel Plan (TP) applied to the residential aspect of the site.

Their purpose is to ultimately reduce the number of single occupancy car trips and promote the use of more sustainable modes of travel.

The aim being to minimise vehicle trip rates, the volume of which has been outlined in the Traffic and Transport Assessment (TTA) for the proposed development.

The measures as outlined within this document will be introduced in order to achieve the target of minimising vehicle trips to and from the residential component of the proposed project, along with a timeframe for the implementation of the various measures outlined.

A Travel Plan Co-ordinator (TPC) shall be appointed to provide ongoing management for the TP. The TPC will be appointed by the organisation managing the proposed 'build-to-rent' residential facility.

In conjunction with the on-site management team, the TPC will prepare a document detailing the progress of The Travel Plan and the strategy for its future development as stated with it.

This document is seen as particularly important document as it fosters a change in mindset as it will help residents choose more sustainable modes of transport.

A Residential Travel Plan (RTP) is thus a document which seeks to increase sustainable travel at a residential development by:

- reducing the need for travel
- reducing single-occupancy car travel
- providing and encouraging the use of more sustainable travel choices, such as walking, cycling, public transport, car sharing and car clubs

An RTP addresses all types of trips to, from and within a residential development, including trips made by residents and visitors. It sets out the implementation, marketing, monitoring and review of a variety of travel measures to meet pre-agreed targets.

An RTP is site-specific and takes into account the characteristics of the development such as its location, surrounding transport infrastructure and proximity to local facilities. It is not a static

document; it is flexible and should be adapted to suit changes in the site's characteristics over time.

The benefits to residents of the proposed development, and the wider community in the local area, will include:

- increased choice and quality of travel modes
- reduced traffic congestion and saving travel time on roads
- reduced harmful impacts on the environment due to fewer vehicles being on the roads and promoting less environmentally intrusive forms of travel, such as walking and cycling
- improved air quality and minimised greenhouse gas emissions due to a reduction in traffic growth and congestion and an increased choice of more sustainable modes of transport
- reduction in the harmful effects to the existing biodiversity and the built and historic environment as a result of reduced traffic growth
- improved health due to less pollution from vehicles and the take up of more active modes of travel, such as walking and cycling
- financial savings from free or discounted travel vouchers and the take up of less costly alternatives of travel, such as walking or car sharing
- safer communities through reduced number of accidents and other incidents, for example by reducing traffic on roads, restricting traffic speeds, creating road crossings or forming home zones
- improved sustainable access to local services, facilities and the natural environment such as open spaces and green corridors for non-motorised forms of transport
- reduced social isolation as a result of extended or new public transport services, resident walking/cycling groups, resident travel forums and building links with the wider community

### 1.1 Report Structure

Section 2 of this report will give a summary on the current thinking with regard to mobility management and best practice when preparing a Residential Travel Plan.

Section 3 of this report will summarise the existing public transport, walking and cycling facilities at the subject site, together with the existing commuter travel patterns for the local area (information extracted from the submitted parking and mobility study for the proposed development).

Section 4 takes the commuter travel patterns for the area and proposes year-of-opening modal splits for the proposed development, plus target modal splits for year-of-opening plus 5 years.

Section 4 details the objectives of the Travel Plan Strategy and what measures will be implemented to facilitate the achievement of these objectives.

Section 6 details the central role of the Travel Plan Coordinator in the attainment of the objectives as set out within this document.

Section 7 contains some concluding comments.

Construction access and operational access will both be via Boherboy Road (L2008), consistent with the EIAR Transport Chapter. Internal pedestrian and cycle permeability will link to Carrigmore Park and Corbally estates, integrating the development with existing residential communities.

## 2 GUIDANCE & POLICY DOCUMENTS

### 2.1 National & International Policy

#### Transport Strategy for the Greater Dublin Area 2016-2035

National Transport Authority Transport Strategy for the Greater Dublin Area 2016-2035 sets out the following modal share targets for commuter-based trips for 2035:

'Based on the modelling work carried out for the Strategy, commuting to work will be reduced to 45%, from a base year of 62%. The mode share for walking and cycling is estimated to increase upwards from 16% to 20%, with the numbers cycling increasing from 18,700 in 2011 to 44,340 in 2035. A significant increase in public transport mode share rising from 22% to 35% is also forecast, corresponding to a growth in passengers from 73,400 to 166,100. As such, the Strategy will achieve the primary aim of Smarter Travel – to reduce commuting by car to 45%. Figure 9.8 sets out the changes in mode share in work commuting trips in the 7am to 10 am peak period from the Base Year 2011 to 2035 'without Strategy' and 2035 'with Strategy'.

These targets are illustrated in the figure below.

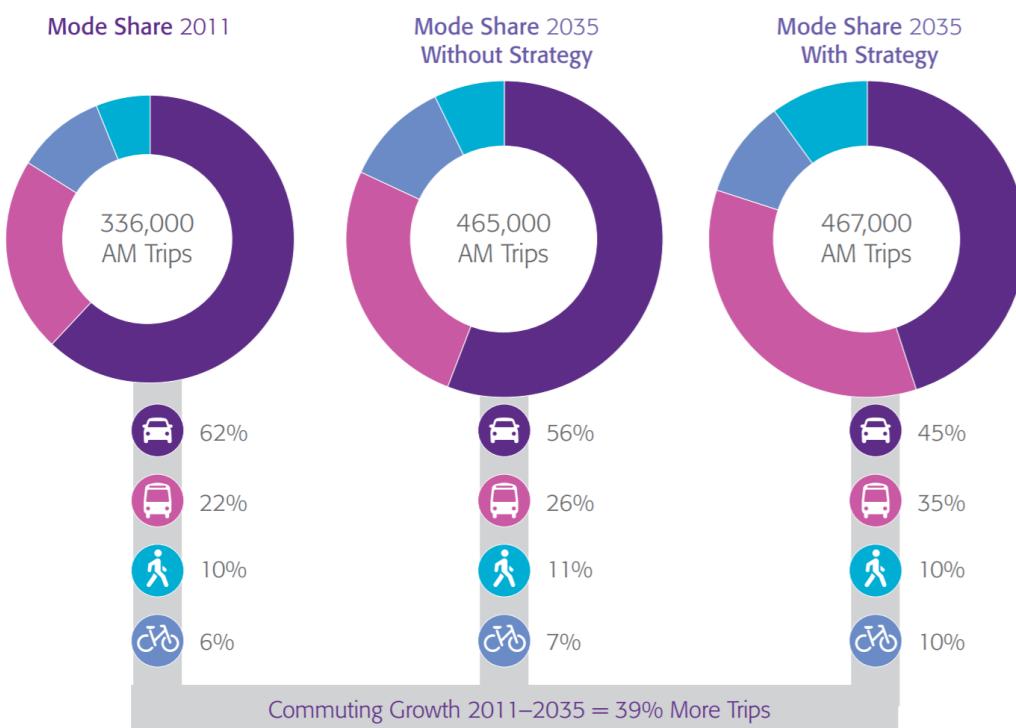


Figure 1 Target Mode Share for Commuting Trips (Source: Transport Strategy for the Greater Dublin Area 2016-2035)

## Sustainable Mobility Policy Action Plan 2022 – 2025

The plan calls for a significant cut in transport emissions by 2030 through measures including:

- 500,000 extra walking, cycling and public transport journeys per day by 2030.
- Increasing the proportion of kilometres driven by passenger electric cars to between 40 and 45% by 2030, in addition to a reduction of 10% in kilometres driven by the remaining internal combustion engine cars.
- All replacements for bus and commuter rail vehicles and carriages to be low or zero carbon by 2030
- Increased rollout of rural public transport through Connecting Ireland. [42-50% reduction in emissions by 2030]

## Making Residential Travel Plans Work (Department for Transport, UK, 2007)

UK document providing a framework for residential travel plans, detailing the content that should be provided within the Travel Plan. The structure advocated by this document is incorporated within this report.

## Dublin City Centre Transport Study 2015-2033

The Study seeks to address major transport issues facing the core city centre area, to facilitate the implementation of the Dublin City Council Development Plan, and to safeguard the future growth of the city, specifically in terms of new transport infrastructure. The construction and operation of Luas Cross City will require a significant reconfiguration of current transport arrangements. This study addresses these issues and proposes measures to counter long-standing constraints of the existing City Centre transport network. This will ensure that capacities are in place to meet the demands of future growth in the City, as well as optimising the use of the City Centre's limited road space to maximise the benefits for people living, working and visiting Dublin City Centre. The key objectives include increasing the capacity, reliability and use of public transport into and within the City Centre as well as improving the quality of service for cycling and walking, with particular emphasis on the 'core' City Centre.

The Study advocates significant reductions in the modal split for private cars for the journey to work over the short to medium term in the Greater Dublin Area.

The achievement of these targets requires developments such as subject development to advocate sustainable modes of transport for residents travelling to work and college. Achievement of the objectives and targets as outlined within this document. The residential travel plan framework will be entirely consistent with the aims of the Dublin City Centre Transport Study.

## Smarter Travel Initiative, A Sustainable Transport Future, Department of Transport, 2009.

Smarter Travel is the transport policy for Ireland for the period of 2009-2020. The policy recognises the vital importance of continued investment in transport to ensure an efficient economy and continued social development, but it also sets out the necessary steps to ensure that people choose more sustainable transport modes such as walking, cycling and public transport. The policy is a response to the fact that continued growth in demand for road transport is not sustainable from a number of aspects; it will lead to further congestion, further local air

pollution, contribute to global warming, and result in negative impacts to health through promoting increasingly sedentary lifestyles.

Transport Strategy 2011 – 2030, National Transport Authority, 2011.

Chapter 11 of the Draft Transport Strategy 2011 – 2030, discusses travel demand management in great detail. The chapter discusses the impact of congestion in the Greater Dublin Area and the subsequent need to meet the Smarter Travel targets. The NTA also provides a discussion on numerous demand management measures that could be implemented within the Greater Dublin Area, including a section on mobility management, car clubs, lift sharing and marketing.

'Achieving Effective Development Travel Plans Guidance for Local Authorities' by the National Transport Authority

This guidance document produced by the NTA is for use by Local Authorities and other groups that are preparing Development Travel Plans as part of the planning process with a view reducing the dependency on the car for residents commuting to/from work and other work-related journeys. The paper discusses the principles of Development Travel Plans and why an organisation would consider implementing a Development Travel Plans, including the benefits of a plan to employers and residents.

The paper outlines how to prepare, design and implement a Development Travel Plans. It discusses the measures that could be used for car use, public transport, walking and cycling in order to reduce singular car occupancy.

'The Route to Sustainable Commuting – An employer's guide to mobility management plans' by NTA (formerly Dublin Transportation Office), March 2001.

This guidance document produced by the NTA is for use by organisations that are considering, or already implementing measures to reduce dependency on the car for residents commuting and other work-related journeys. The paper discusses the principles of mobility management plans and why an organisation would consider implementing a mobility management plan, including the benefits of a plan to employers and residents.

The paper outlines how to prepare, design and implement a mobility management plan. It discusses the measures that could be used for car use, public transport, walking and cycling in order to reduce singular car occupancy. It then outlines how to market a Residential Travel Plan and how to measure the success of one.

'DTO Advice Note – Mobility Management Plans' by NTA (formerly Dublin Transportation Office), July 2002.

This Advice Note is intended as guidance for Local Authorities in the Greater Dublin Area. The Advice Notes set out what the DTO considers to be current best practice in relation to the development of mobility management plans.

The advice note outlines the principles of mobility management, when a Development Travel Plan is required, the planning process in relation to mobility management, the motivations for implementing a plan and the staged approach to the preparation of mobility management plans.

'The Essential Guide to Travel Planning' by Department of Transport, UK, March 2008.

This document provides a guide on developing and implementing travel plans in the UK. A travel plan is the UK equivalent of a Residential Travel Plan in Ireland. The document draws together

extensive experience from travel plans already in operation and offers an overview of what is required to prepare a travel plan and ensure it is successful. The guide provides the following:

- An explanation of the benefits of travel plans,
- The essential measures required to ensure the success of the travel plan,
- Identification of potential savings that could form the basis of a business case for the implementation of a travel plan,
- An indication of what data is required from travel surveys in order to measure the success of travel plans.

'Making travel plans work – Lessons of U.K. case studies' by Department of Transport (U.K.), 2002.

This report is based on the experience and findings of a number of large employers e.g., hospitals, councils, large companies and third level educational facilities in the U.K. The guide was published for employers who want to reduce congestion around their respective sites, improve travel options for their residents and reduce costs using a travel plan. The main findings of the report are as follows:

- It found that parking restrictions through a parking permit scheme can reduce resident's car use.
- Financial incentives such as subsidies on public transport tickets have been found to work better in combination with parking restrictions.
- The initiatives would need the full support of the management of the company and also a resident's member would need to be appointed to form a travel plan. Local recruitment is found to be useful when reducing travel distances.

## 2.2 Local Policy

The South Dublin County Development Plan 2022-2028 contains the following commitments for modal shift away from signal car occupancy trips.

Section 7.9 of the Development Plan states

*Traffic and Transport Assessments and / or Workforce Travel Plans (also known as Mobility Management Plans) will be required to support development proposals that Sustainable Movement (SM) have the potential to generate significant traffic movements, to demonstrate that there is public transport carrying capacity and road capacity to serve the development (refer also to Chapter 12: Implementation and Monitoring).*

Section 12.7.3 of the South Dublin County Development Plan 2022-2028 states the following:

*A Workplace Travel Plan or Mobility Management Plan outlines a series of measures to encourage sustainable travel modes and reduce car borne traffic within a development. Initiatives might include proposals to encourage cycling and walking, car sharing (including car clubs), car-pooling, flexible working hours, cycling and public transport use. The National Transport Authority (NTA) guidelines on Achieving Effective Workplace Travel Plans - Guidance for Local Authorities note that: 'International experience has shown that a methodical and planned approach to targeting commuting and visitor patterns at an organisational level, can pay major dividends in terms of promoting sustainable travel'. Workplace Travel Plans are required for larger sized developments as defined in Table 12.26. All Workplace Travel Plans are required to be prepared in accordance with the NTAs Achieving Effective Workplace Travel Plans. Mobility Management Plans are required for all new schools or for existing schools where 25% or greater expansion in classrooms is proposed.*

### 2.3 BusConnects and Active Travel Policy Context

The proposed development at Boherboy Road benefits from its proximity to key elements of the emerging BusConnects Dublin Network Redesign, which will enhance sustainable transport options within the area. The revised network introduces the W8 orbital route (Citywest – Tallaght) along with S6 and S7 orbital routes, providing more frequent and direct connections between west Dublin suburbs and key employment and education centres. These improvements will strengthen links between Boherboy, Saggart, Citywest, and Tallaght, supporting a shift towards public transport use.

In parallel, the Cycle Design Manual (2023) and National Cycle Network Plan (2023) published by the National Transport Authority (NTA) set out updated design standards and a connected hierarchy of routes across the Greater Dublin Area. These frameworks reinforce the importance of providing safe and direct cycle links between residential developments, schools, and employment areas. The proposed permeability routes through Carrigmore Park and along Boherboy Road align with these objectives by improving local connectivity for pedestrians and cyclists and encouraging active travel as a viable alternative to private car use.

### 2.4 The Travel Plan Pyramid

A Residential Travel Plan outlines a set of measures and operating procedures that are tailored to meet the demands of individual circumstances of different locations, but with the common goal of minimising the impacts of travel and transport activity. A variety of companies, organisations and institutions adopt MMPs to manage the transport needs of commuters by raising awareness, promoting alternatives, facilitating change and implementing a system of continuous management and review.

In its publication 'The Route to Sustainable Commuting' the Dublin Transport Office (now the National Transport Authority) states that a MMP outlines a package of measures and initiatives put in place by an organisation to encourage more sustainable modes of transport amongst its residents, residents and visitors.

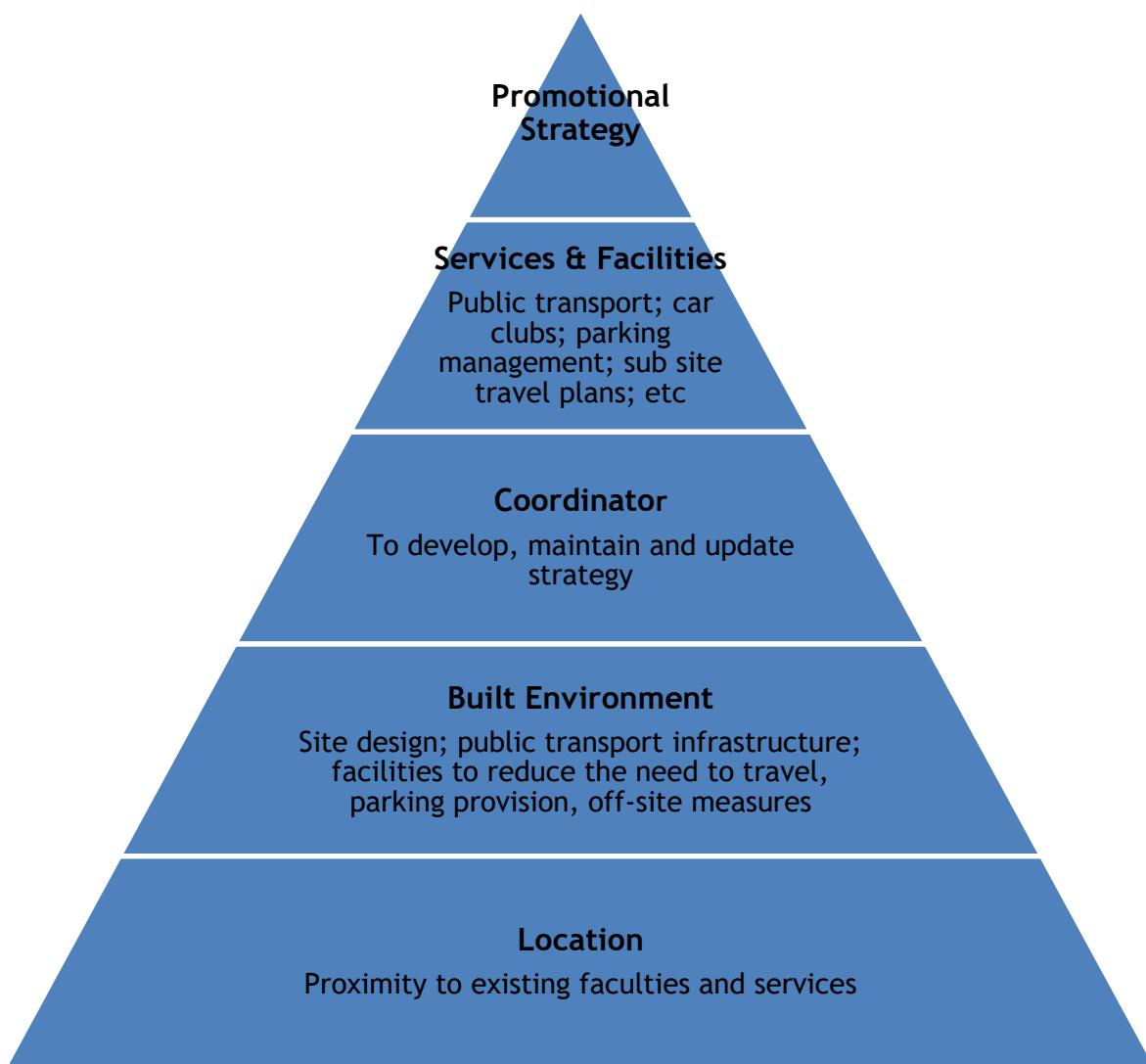


Figure 2 The Travel Plan Pyramid (Source: 'Making Residential Travel Plans Work' Dept of Transport UK (2007)

The Travel Plan Pyramid "helps demonstrate how successful plans are built on the firm foundations of a good location and site design. A Plan should also combine hard measures – such as new bus stops and cycle ways and soft measures – such as discounts on season tickets and help with individual journey planning. All measures should be intergrated into the design, marketing and occupation of the site. In addition, parking restraint is often crucial to the success of the plan in reducing car use."

In order to minimise the impacts of the development and to encourage sustainable modes of transport a Mobility Management Plan sets out the following actions in order to achieve this:

- Introduction of appropriate parking management
- Optimise links with public transport.
- Provide and enhance cyclist and pedestrian facilities.
- Encourage modes of transport other single car trips

- For the development, the primary purpose of the Residential Travel Plan is to review current levels of transport accessibility and suggest measures that reduce the potential of continued reliance on private car use as the main mode of transport to and from the site.
- The travel pyramid, as detailed within 'Making Residential Travel Plans Work', contains the following five key concepts that are central to a good RTP:
  - Location - Residents need to be within easy reach of shops and services – so that walking or cycling becomes the natural choice.
  - Built Environment - Low density developments are hard work to get round by bike and foot. Encouraging compact development that is walking and cycling friendly, with low parking allowances, is crucial in encouraging sustainable travel choices.
  - Travel Plan Coordinator - Successful travel plans need people. The coordinator plays a crucial role in developing the plan and working with residents and management to ensure the plan meets their needs for access and evolves over time.
  - Services and facilities - Good public transport and a car club can help reduce the need for on-site parking. Other measures, such as broadband internet access and home deliveries can reduce the need to travel off site.
  - Promotional strategy - Welcome packs, public transport discounts and cycling incentives can all help introduce the travel plan to residents and build enthusiasm.
- In terms of location and built environment, one can see the significant advantages of the subject site, within easy access of bus and rail facilities, with the layout of the proposed development making cycling and walking safer and more efficient.
- This report will demonstrate the central role that will be undertaken by the Travel Plan Coordinator in setting targets, updating the Travel Plan, monitoring use of car club spaces and maximising the circulation of promotional material among residents.

## 2.5 Objectives

The following modal targets, based on targets set out in Transport Strategy for the Greater Dublin Area 2016-2035, have been adopted as part of this Travel Plan:

- Car – 45%
- Public Transport (Bus, light rail, train, etc) – 35%
- Walking – 10%
- Cycling – 10%

This Travel Plan will set out measures to achieve the minimal modal targets between now and 2035.

### 3 PUBLIC TRANSPORT, WALKING AND CYCLING FACILITIES AND COMMUTER TRAVEL PATTERNS

#### 3.1 Introduction

The subject site forms the southern parts of two separate and contiguous landholdings at Boherboy, Co. Dublin and is currently an undeveloped site.

The development site abuts Citywest/Carrigmore to the north, the Corbally Estates to the east, Boherboy Road to the south and farmland to the west. Boherboy Road links Saggart Village to the N81.

The location of the site is shown on the map extract at Figure 3 below.

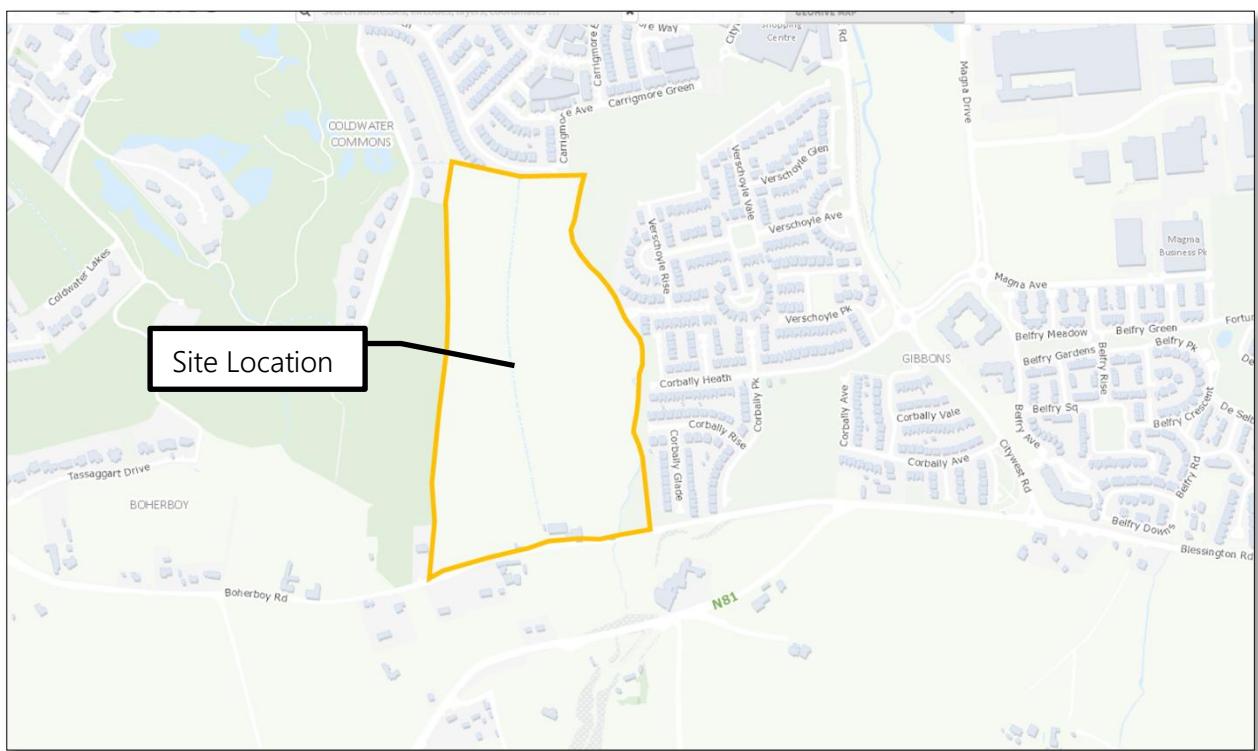


Figure 3 Site Location and Local Road Network (Source: GeoHive)

#### 3.2 Existing Road Network

A summary of the existing road network is provided below:

The road network surrounding the site provides a variety of movement functions. Boherboy Road links Tallaght in the east with Saggart in the West. The N82 provides access to Dublin via the M7/N7 and to other inter-urban motorways via the M50.

Boherboy Road, Corbally Estate and Carrigmore Estate will be the primary access points into the proposed development.

These routes provide for pedestrians, cyclists and motorists alike and a general commentary on these facilities is presented below:

Boherboy Road

Boherboy Road is a local country road forming a priority-controlled junction with the N81 to the east and a signal-controlled junction with Church Street/Castle Street to the west.

The carriageway width is approximately 6.0m along the site frontage with no footpaths along the site frontage.

Boherboy Road has a country road character providing access to Saggart from the N81.

A speed limit of 60km/h was noted on Boherboy Road along the site frontage.

No cycle facilities were noted along Boherboy Road.

#### N81

The N81 road is a national secondary road starting at the M50 motorway and ending Tullow, County Carlow.

The carriageway width is approximately 11.0m at the junction with the Boherboy Road.

As the N81 leaves Tallaght the speed limit increases to 80km/h.

There is limited pedestrian infrastructure adjacent to the junction with the Boherboy Road. No cycle facilities were noted along the N81 in the vicinity of its junction with the Boherboy Road.

#### Carrigmore/Corbally Estates

The proposed development will be accessed via the Carrigmore/Corbally Estates. The location where the proposed development connects into these estates is fully taken in charge by South Dublin County Council.

The proposed development will connect into Corbally Heath, Corbally Glade, Carrigmore Avenue and Carrigmore Green.

These estate roads are typical of estates-built c. 30 years ago. Roads typically measure c. 8.0m wide, with grass verges and footpaths up to 2.5m wide.

Speed limits are typically 30km/h.

### 2.6 Public Transport

#### 2.6.1 Background

Local public transport infrastructure is illustrated in Figure 4 below.



Figure 4 Local Public Transport Infrastructure

## 2.6.2 Bus

There are numerous bus operators providing a bus service locally and within walking distance to the site, with further details shown in the tables below.

Measured from the centre of the site, the nearest stop, located on the N82 Citywest Road, is located approximately 670m (Walking Route in Figure 5). Refer to Pinnacle Drawing No. P230400423-PIN-XX-DR-D-150-S1-P01- 'Site Permeability' for further details.

No.	Route	Service		Mon-Fri	Sat	Sun
65	Poolbeg Street - Valleymount Road	Poolbeg Street	First	05:30	05:40	08:00
			Last	23:0	23:15	23:15
		Valleymount Road	First	06:30	07:10	09:30
			Last	00:15	00:20	00:20
Frequency			Up to 15/day	Up to 12/day	Up to 10/day	

Table 2 Route 65

No.	Route	Service		Mon-Fri	Sat	Sun
65b	Poolbeg Street - Citywest	Poolbeg Street	First	05:50	05:50	09:00
			Last	23:30	23:30	23:30
		Citywest	First	06:50	07:00	08:30
			Last	23:30	23:30	23:30
		Frequency		Up to 18/day	Up to 17/day	Up to 15/day

Table 3 Route 65b

No.	Route	Service		Mon-Fri	Sat	Sun
69	Hawkins St. - Rathcoole	Hawkins St.	First	06:15	06:20	10:00
			Last	23:15	23:15	23:15
		Rathcoole	First	06:00	06:15	11:15
			Last	00:05	00:05	00:10
		Frequency		Up to 20/day	Up to 21/day	Up to 12/day

Table 4 Route 69

No.	Route	Service		Mon-Fri	Sat	Sun
77a	Ringsend Rd. - Citywest	Ringsend Rd	First	05:40	05:55	07:00
			Last	23:25	23:25	23:30
		Citywest	First	06:00	06:20	08:00
			Last	23:30	23:20	23:30
		Frequency		Up to 14/day	Up to 17/day	Up to 3/day

Table 5 Route 77a

No.	Route	Service		Mon-Fri	Sat	Sun
W62	The Square - Newcastle	Tallaght	First	05:35	05:35	07:35
			Last	23:35	23:35	23:35
		St Finian's NS	First	05:45	05:35	07:45
			Last	23:45	23:35	23:45
		Frequency		Up to 36/day	Up to 34/day	Up to 30/day

Table 6 Route W62

No.	Route	Service		Mon-Fri	Sat	Sun
S8	Kingswood Avenue - Dun Laoghaire Stn	Kingswood Avenue	First	05:00	05:00	07:00
			Last	23:30	23:30	23:30
		Dun Laoghaire Stn	First	05:00	05:00	07:00
			Last	23:30	23:30	23:30
		Frequency		Up to 60/day	Up to 38/day	Up to 34/day

### 2.6.3 Luas

Measured from the centre of the site, the Luas Red Line (Saggart/Tallaght to Conolly/The Point) calls at the Fortunestown Luas Stop which is located approximately 950m north of the subject site. Refer to Figure 6 for the walking route. Refer to Pinnacle Drawing No. P230400423-PIN-XX-DR-D-150-S1-P01- 'Site Permeability' for further details.

Luas Red Line					
Monday – Friday (05:30-00:00)		Saturday (06:30-00:00)		Sunday (07:00-23:00)	
Peak	Off Peak	Peak	Off Peak	Peak	Off Peak
3-6	6-15	7-8	10-15	11-12	-

Table 7 Luas Green Line Frequency (minutes) – (source [www.luas.ie](http://www.luas.ie))

The Luas has a major terminus at the Square, Tallaght which is also a major terminus for Dublin Bus. The Square is served by Dublin Bus with several local routes. Currently timetabled bus services adjacent to the site include the 27 (which has approximately 80 services per day in each direction from Clarehall to Jobstown), the 49 (which has approximately 37 services per day in each direction from Pearse Street to Tallaght), the 54a (which has approximately 30 services per day in each direction from Pearse St. towards Ellensborough / Kiltipper Way), the 65 (which has approximately 14 services per day in each direction from Hawkins Street to Blessington/Ballymore), the 75 (which has approximately 38 services per day in each direction from the Square to Dun Laoghaire), the 76 (which has approximately 40 services per day in each direction from Tallaght to Chapelizod), the 76a (which has approximately 3 services per day in each direction from Tallaght to Blanchardstown Centre) and 77a (which has approximately 56 services per day in each direction from Ringsend to Citywest).

Measured from the centre of the site, the nearest stop is located approximately 950m (c. 10 mins walk time) from the site. This is illustrated in Figure 6.

## 2.7 Walking and Cycling

There is no footpath located along the site frontage. The public footpath terminates at the junction between the N81/Boherboy Road. A footpath is located c. 450m west of the development which provides access to Saggart.

There is no cycle network located along the site frontage. Existing cycle routes identified by the National Transport Authority (NTA) in the vicinity of the site are indicated in Figure 6 below.

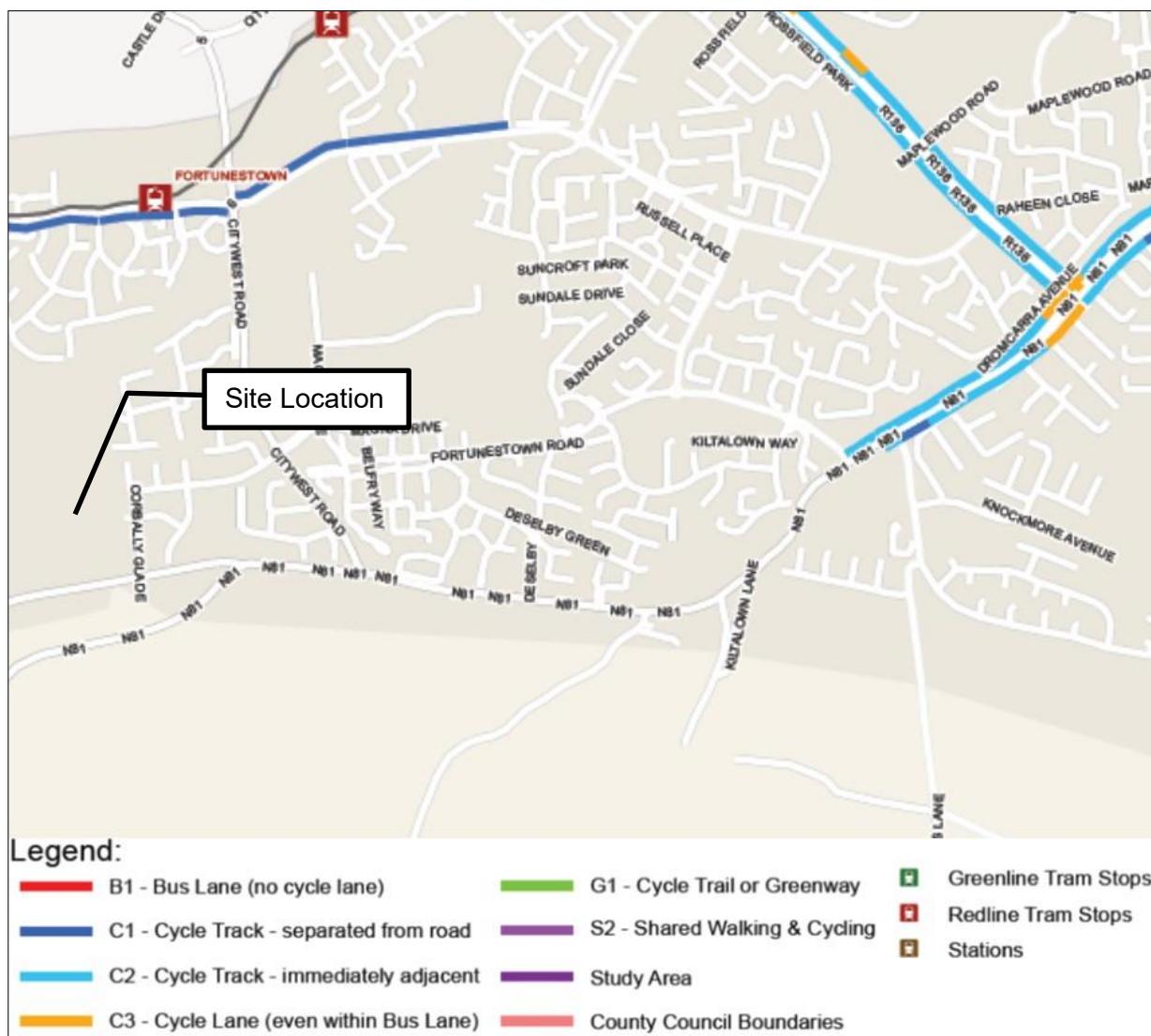


Figure 5 Existing Cycle Routes (Source: NTA)

### 3.2.1 Local Amenities

As illustrated in Figure 7, the proposed development site is well placed in terms of the availability of and access to local amenities. There are several primary and post primary schools within 5km of the subject site. The subject site benefits from good access to local retail and leisure facilities. Furthermore, the subject development site is well placed to benefit from local employment opportunities at Citywest Business Campus to the north and Magna Business Park to the east.

As part of the development, it is proposed to improve pedestrian and cyclist permeability to local public transport services and amenities. Prior to first occupation it is intended to construct a pedestrian and cycle route through Carrigmore District Park to the north and a footpath linking the proposed development to the N81 in the east via the Boherboy Road.

Future connectivity has been allowed for via the Corbally estate but is subject delivery by South Dublin County Council, as the local authority.

The connectivity through Carrigmore District Park and Boherboy Road to local public transport services will reduce car dependency and will reduce the concerns regarding access and connectivity.

A summary of the proposed pedestrian/cycle connectivity is provided below:

#### Fortunestown Lane

The route to the Fortunestown Lane measures approximately 1.2km to the Luas stop, another 250m to the bus stops (into town) and 350m to the next bus stop (out of town). This equates to approximately 10/15-minute walk time.

#### N82

The route to the N82 measures approximately 650m to the bus stops located on the N82 via Corbally Estate. This equates to approximately 7/8-minute walk time.

#### N81

The route to the N81 measures approximately 1.15km to the nearest bus stop (into town) and another 200m to the next stop (out of town). This equates to approximately 10/15-minute walk time.

All pedestrian routes service the same bus routes. The blue route has a higher amenity value as it provides access to local shops, schools, Luas etc.

### 3.3 Permeability

Permeability for residents and visitors to the proposed development is a key factor in determining the long-term sustainability when considering modal choice.

To encourage a shift away from car dependency, residents and visitors to the development must have viable alternative choices such as walking routes and cycle routes public transport links.

#### 3.3.1 Walking

Figure 8 outlines the walking distance covered by the average person in a 15-minute period. It illustrates the local amenities that are available to the proposed development. Local amenities within 15-minutes' walk of the proposed development include:

- Citywest Shopping Centre
- Fortunestown Luas Stop
- Access to bus network
- School
- Carrigmore District Park

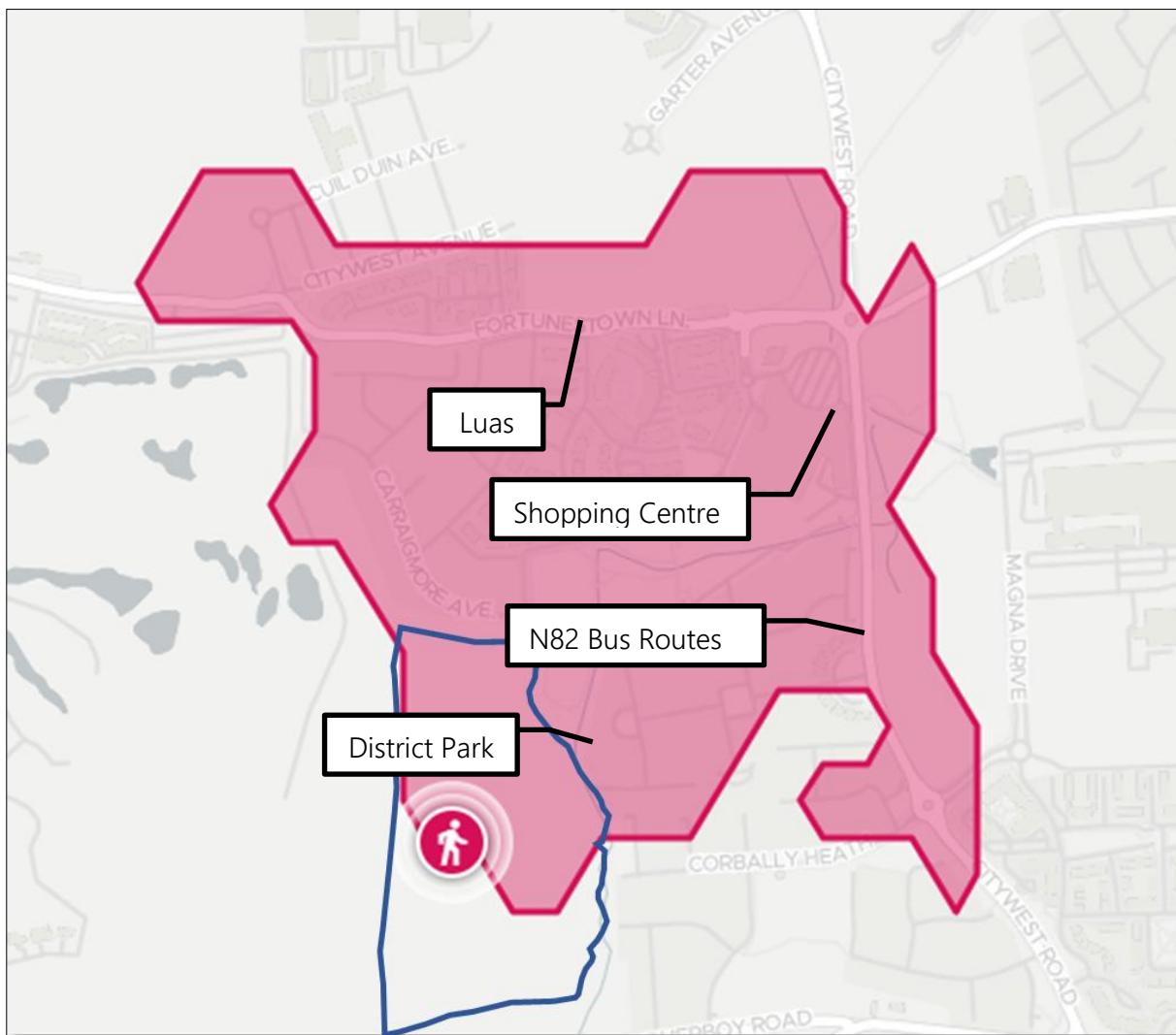


Figure 6 Walking Distance (15 Min Travel Time)

### 3.3.2 Cycling

Figure 9 outlines the cycling distance covered by the average person in a 30-minute period. It illustrates the local amenities that are available to the proposed development. Local amenities within 30-minutes cycle of the proposed development include:

- Citywest Shopping Centre
- Fortunestown Luas Stop
- Access to bus network
- School
- Carrigmore District Park
- Access to areas of employment (Citywest Business Campus, Tallaght Village)
- Allows access to/from surrounding areas including:

- Tallaght
- Clondalkin
- Firhouse
- Rathchoole
- Newcastle

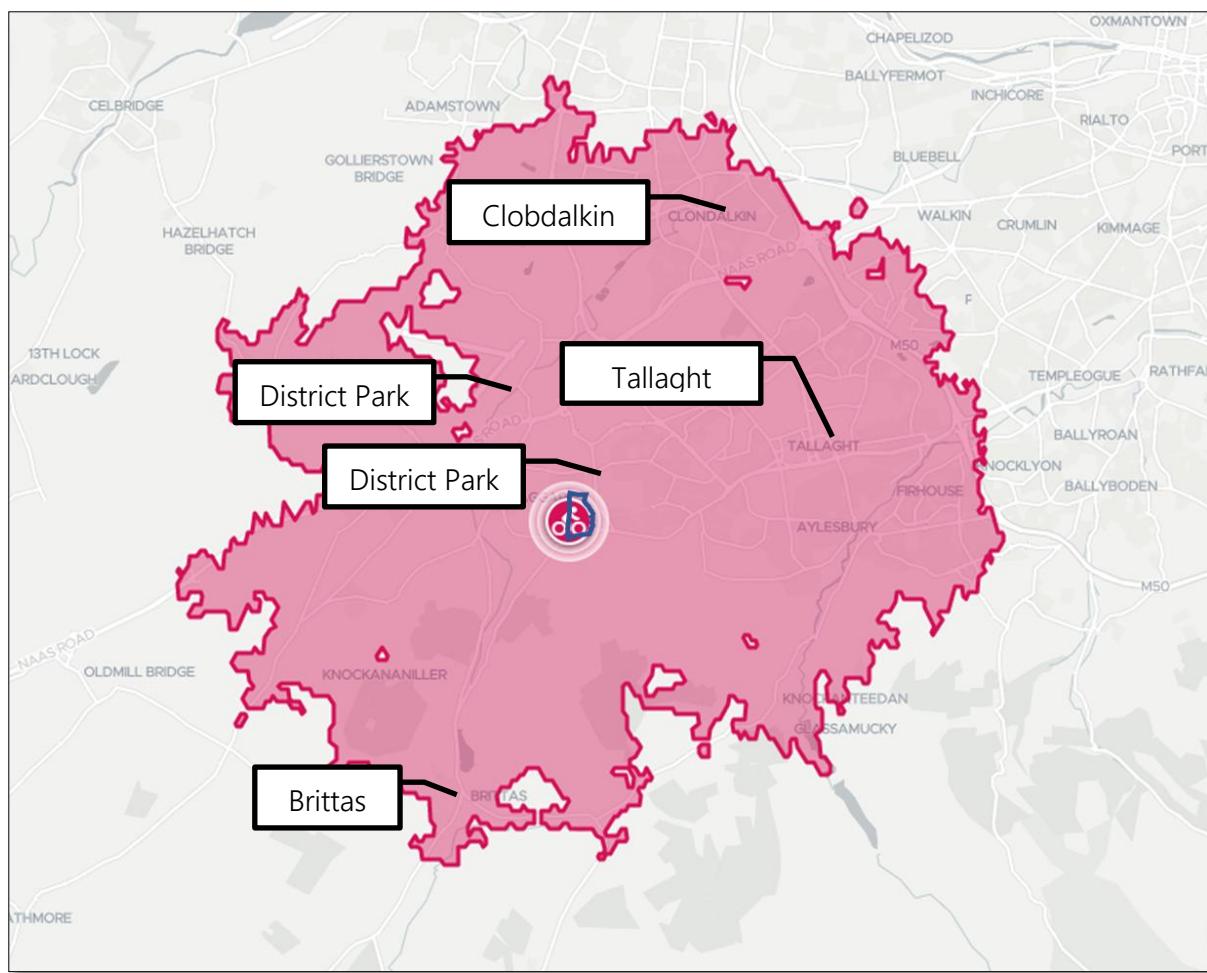


Figure 7 Cycle Distance (30 Min Travel Time)

There is no cycle network located along the site frontage. Existing cycle routes identified by the National Transport Authority (NTA) in the vicinity of the site are indicated in Figure 10 below.

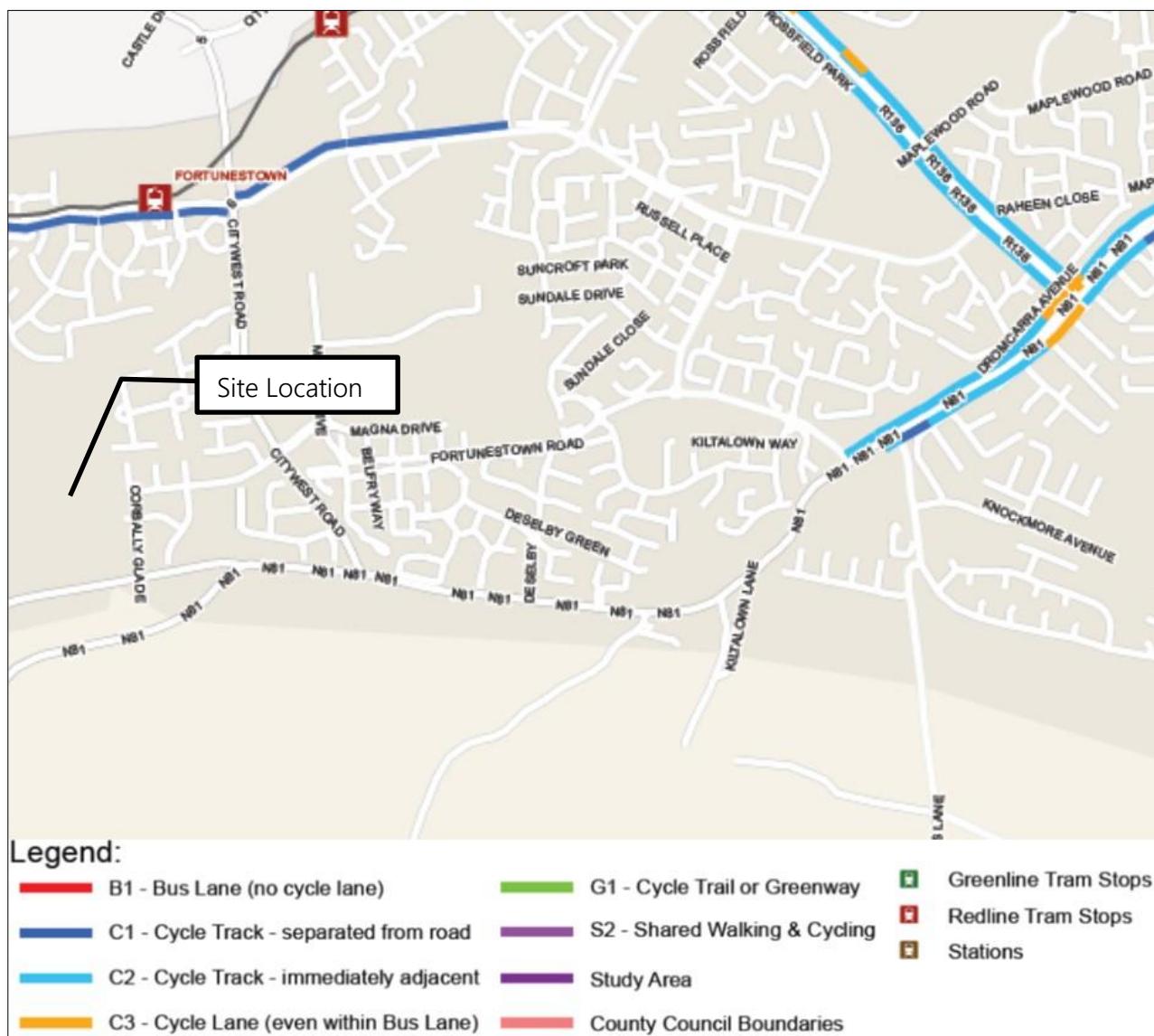


Figure 8 Existing Cycle Routes (Source: NTA)

### 3.3.3 Public Transport

Figure 11 outlines the distance that maybe covered on a 90minute public transport journey.

A 90-minute public transport journey allows access to areas of employment such as:

- Citywest Business Campus
- Tallaght
- Dublin City Centre
- IFCS

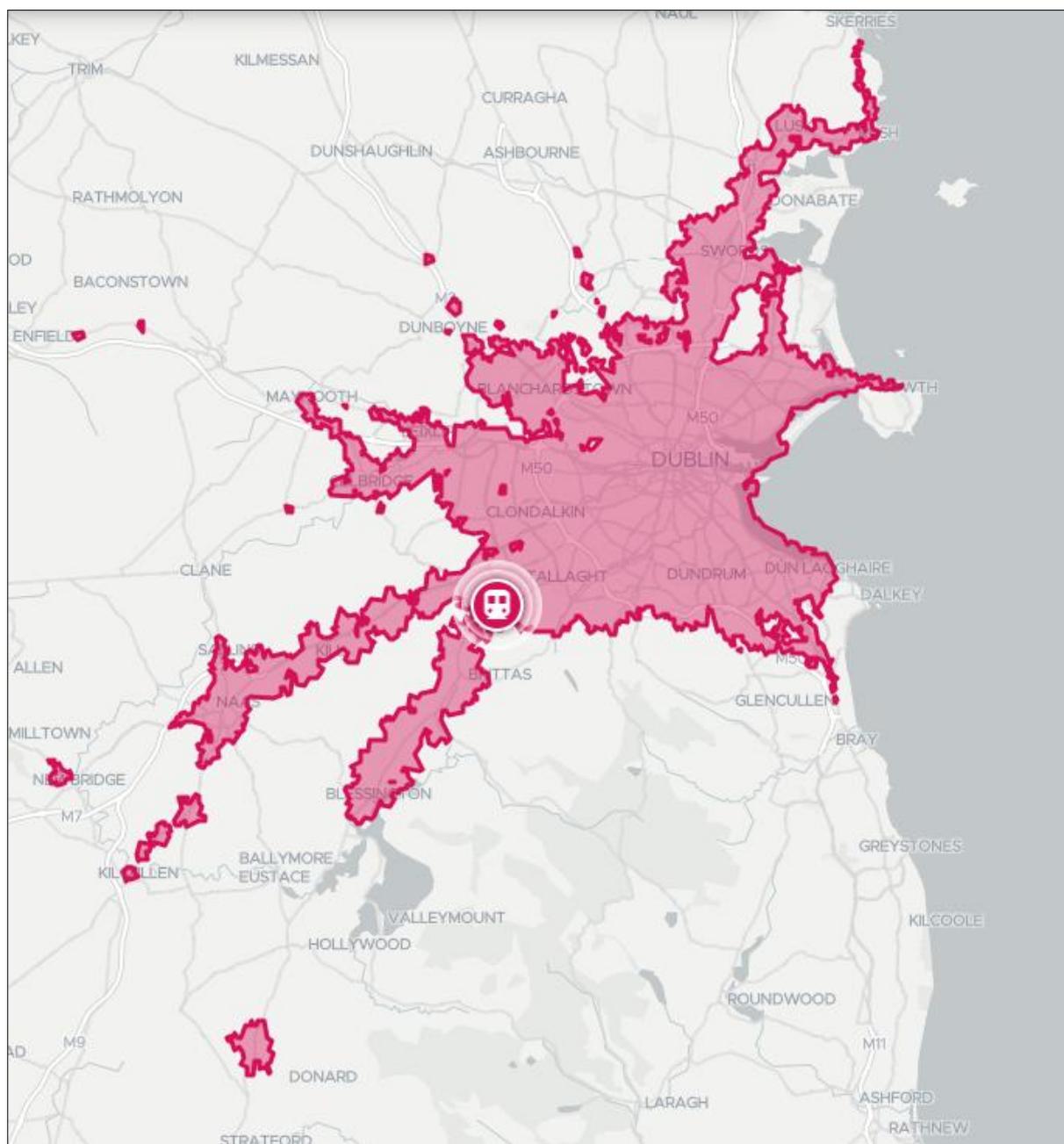


Figure 9 Public Transport (90min Travel Time)

A 90-minute public transport journey allows access from areas such as:

- Lusk (North County Dublin)
- Donard (North Wicklow)
- Dun Laoghaire (West Dublin)
- Maynooth (North Kildare)

This permeability opens up the site to all Third Level Institutions located within Dublin and Kildare (NUIM). It also offers permeability to the major amenities located within Dublin City Centre

(shopping, entertainment) and the gateway towns into Dublin where the likes of major retail parks are located such as Liffey Valley, Nutgrove Shopping Centre, Carrickmines retail, etc..

The proposed site is located within 90-minute public transport link to all major Dublin sporting and event venues.

### 3.3.4 Driving

The site has strong permeability to local amenities via walking, cycling and public transport. This will help reduce, but not eliminate, car trips.

Where car-based trips are required, the proposed development has good access to the M50, M7/N7 and the N81.

For car heading north and east via the M50, the direct route is via Carrigmore and the N7. For car heading south and east via the M50, the direct route is via the N81. For car heading west via the M7, the direct route is via Carrigmore and the N7.

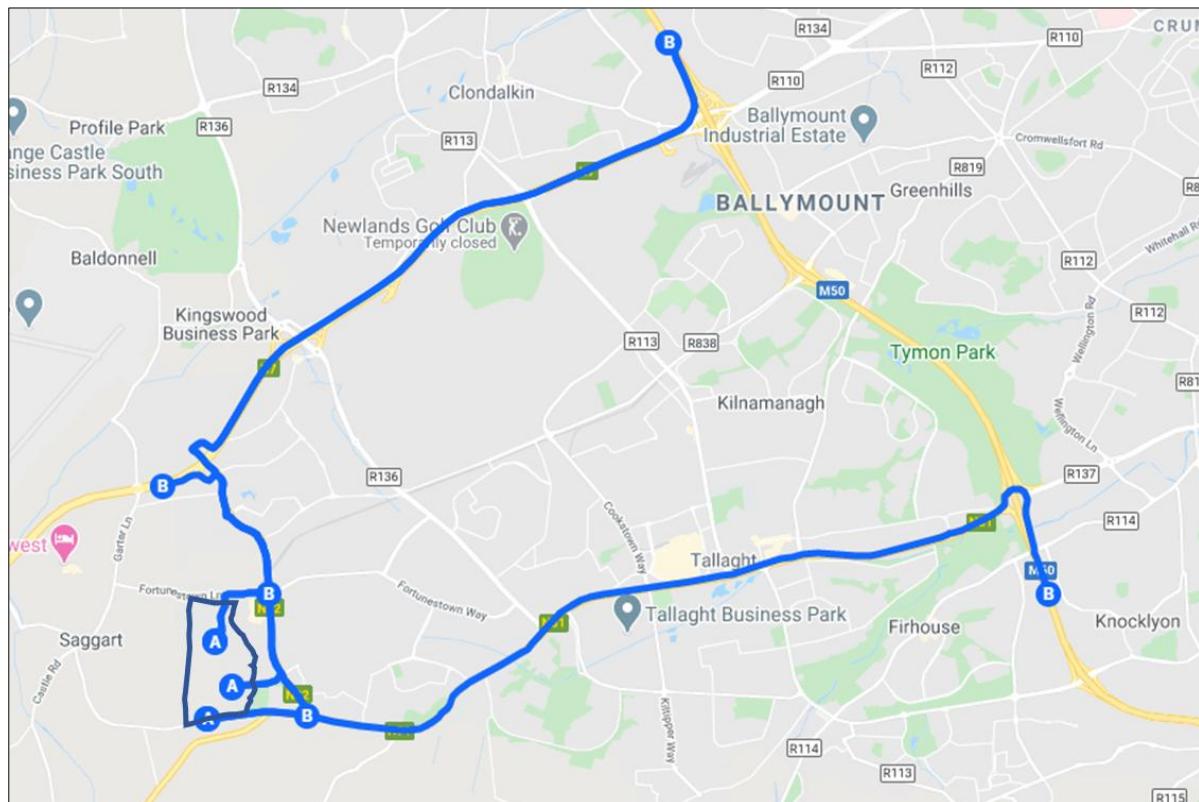


Figure 10 Road Accessibility

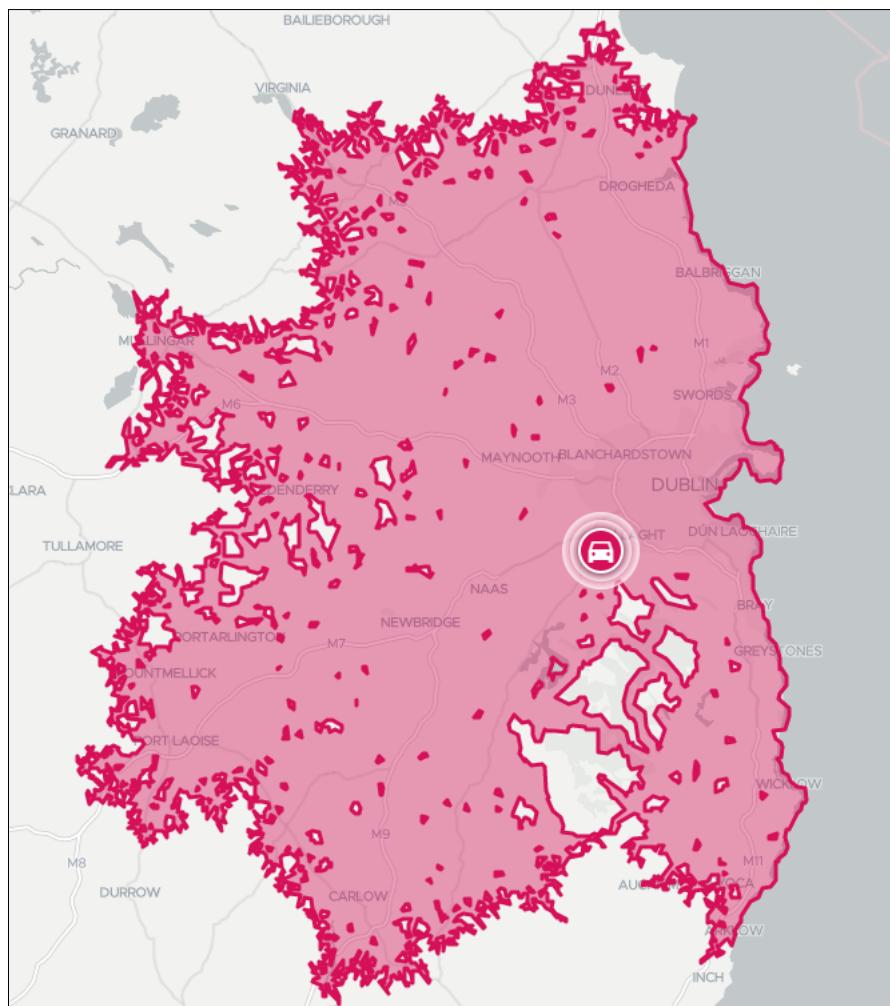


Figure 11 Road Travel Distance (60 min Travel Time)

Figure 13 outlines the travel distance by car for a 60 min travel time.

### 3.3.5 Summary

As part of the proposed development, connectivity will be provided via Carrigmore Estate, Corbally Estate and Boherboy Road.

These links will provide a significant level of pedestrian, cyclist and public transport permeability to the site to established local amenities such as Citywest Shopping Centre, Citywest Business Campus and local Schools.

## 4 TRAVEL SURVEY

### 3.1 Introduction

This document has been prepared in advance of construction of the proposed development. Therefore, no representative data is available to form a baseline for future interventions.

Instead, Census 2022 data was used as representative data which will be assumed for the opening year.

The site located to the south east of the proposed development would represent similar conditions under which future residents of the development would experience accessibility to walking, cycle and access to public transport. It is assumed that similar modal choices would be experienced by future residents as current residents of Corbally Glade, Corbally Rise and Corbally Park experience.

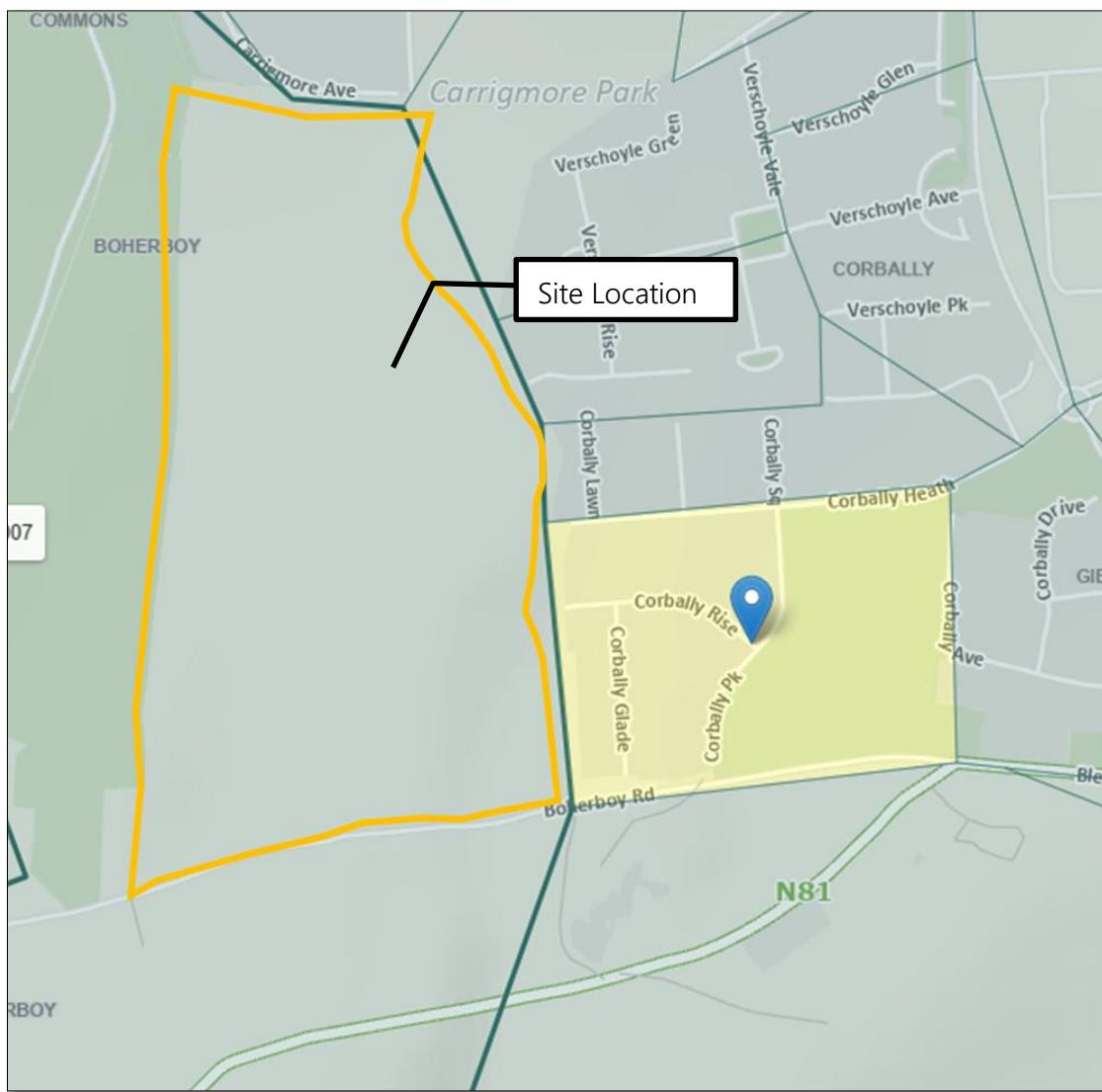


Figure 12 Study Area (Source: Census2016\_Theme11Table1\_Regions)

A summary of the commuting patterns is illustrated in the figure below.

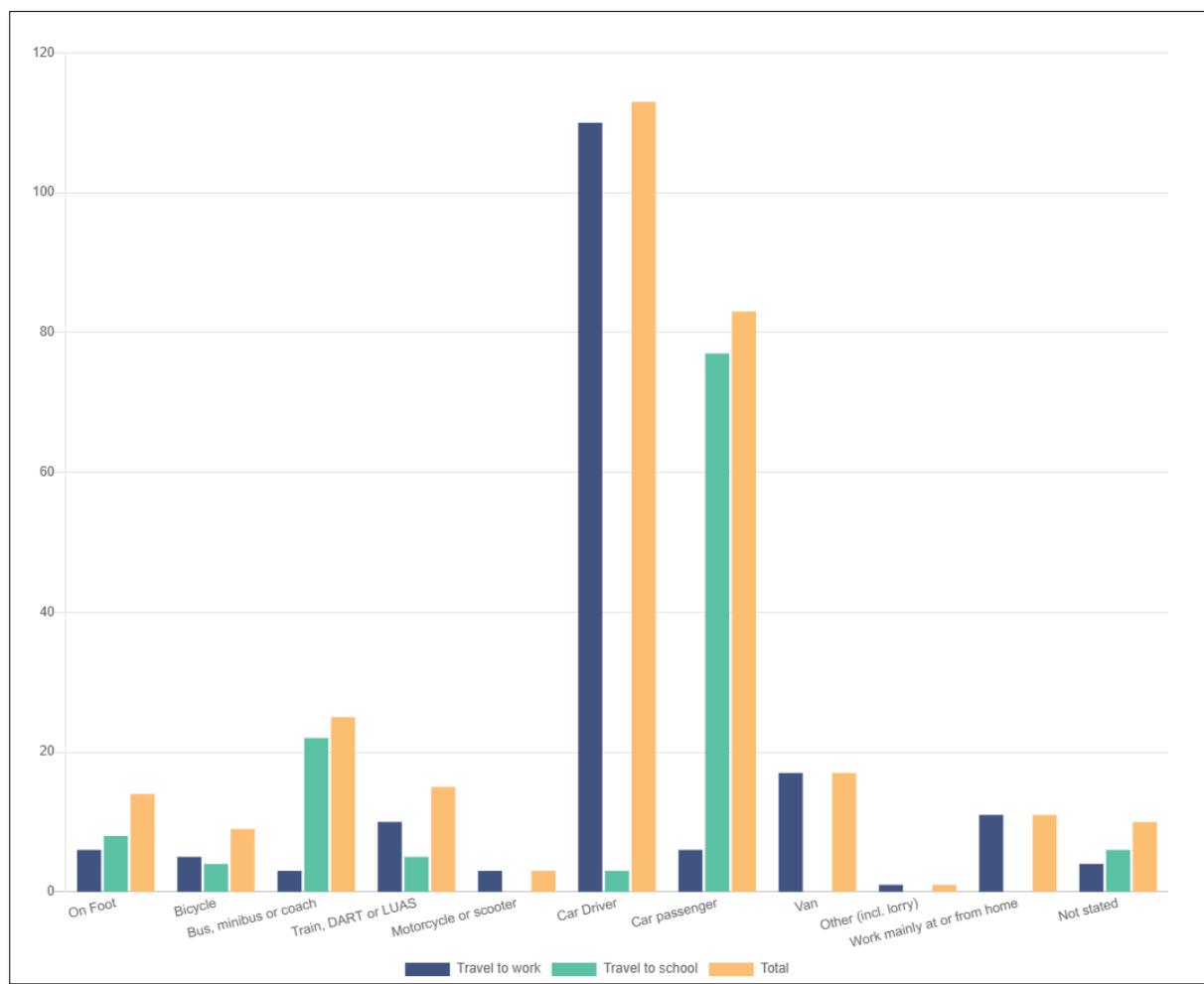


Figure 13 Population aged 5 years and over by means of travel to work, school or college

### 3.2 Existing Commuter Travel Patterns – Work

Table 6 and Figure 18 illustrate the current modal choice for persons commuting for work purposes.

Work		
On foot - Work	6	3.41%
Bicycle - Work	5	2.84%
Bus, minibus or coach - Work	3	1.70%
Train, DART or LUAS - Work	10	5.68%
Motorcycle or scooter - Work	3	1.70%
Car driver - Work	110	62.50%
Car passenger - Work	6	3.41%
Van - Work	17	9.66%
Other (incl. lorry) - Work	1	0.57%
Work mainly at or from home - Work	11	6.25%
Not stated - Work	4	2.27%
<b>Total - Work</b>	<b>176</b>	<b>100.00%</b>

Table 8 Commuting to Work

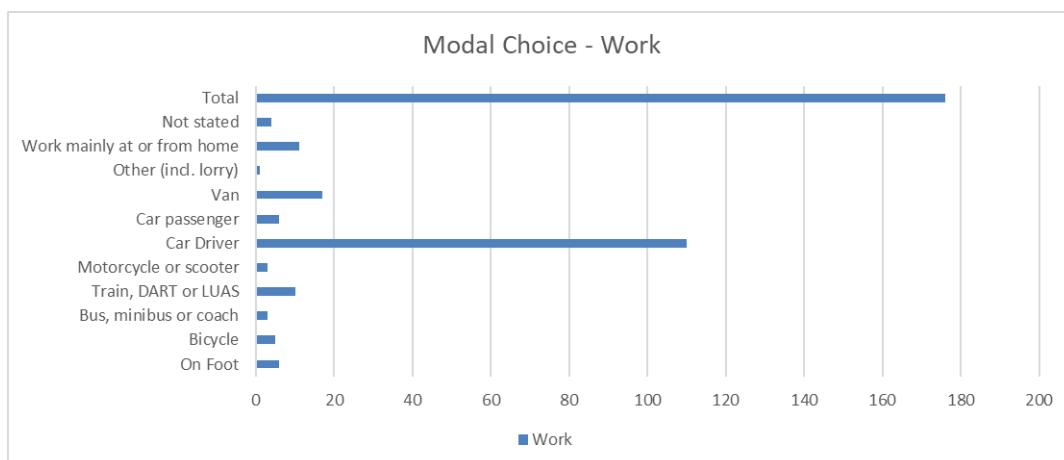


Figure 14 Commuting to Work

### 3.3 Existing Commuter Travel Patterns – School/College

Table 7 and Figure 19 illustrate the current modal choice for persons commuting for school purposes.

School/College		
On foot - School or college	8	6.40%
Bicycle - School or college	4	3.20%
Bus, minibus or coach - School or college	22	17.60%
Train, DART or LUAS - School or college	5	4.00%
Motorcycle or scooter - School or college	0	0.00%
Car driver - School or college	3	2.40%
Car passenger - School or college	77	61.60%
Van - School or college	0	0.00%
Other (incl. lorry) - School or college	0	0.00%
Work mainly at or from home - School or college	0	0.00%
Not stated - School or college	6	4.80%
Total - School or college	125	100.00%

Table 9 Commuting to School/College

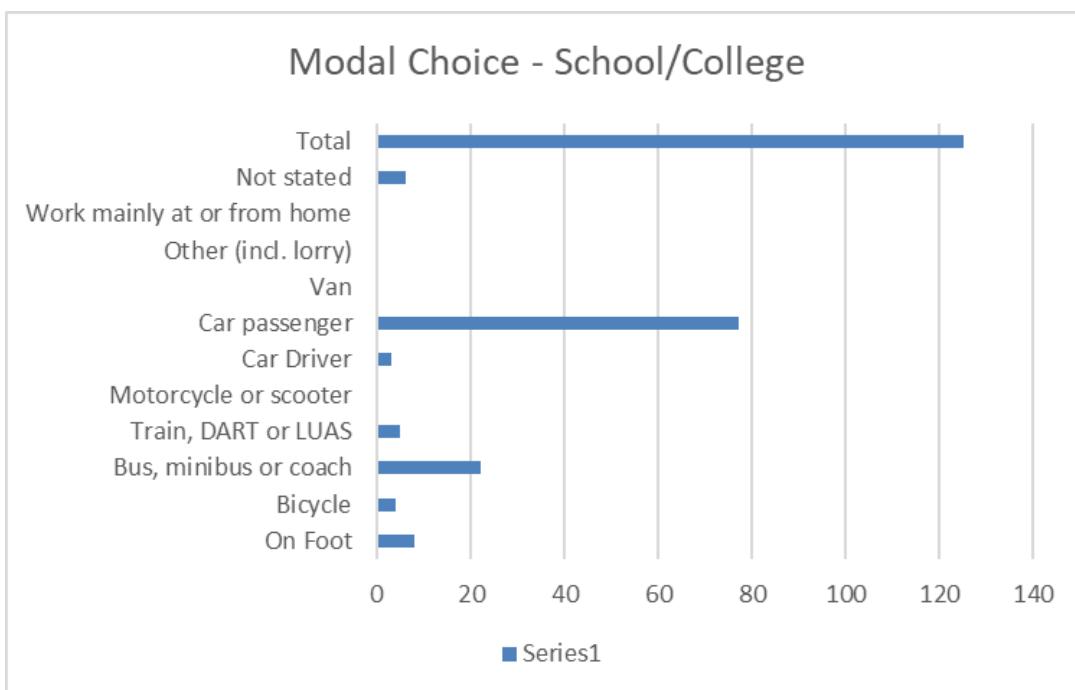


Figure 15 Commuting to School/College

### 3.4 Existing Commuter Travel Patterns – Overall

Table 8 and Figure 20 illustrate the overall modal choice for people commuting.

Modal Choice - Overall		
On foot - Total	14	4.65%
Bicycle - Total	9	2.99%
Bus, minibus or coach - Total	25	8.31%
Train, DART or LUAS - Total	15	4.98%
Motorcycle or scooter - Total	3	1.00%
Car driver - Total	113	37.54%
Car passenger - Total	83	27.57%
Van - Total	17	5.65%
Other (incl. lorry) - Total	1	0.33%
Work mainly at or from home - Total	11	3.65%
Not stated - Total	10	3.32%
Total	301	100.00%

Table 10 Commuting - Overall

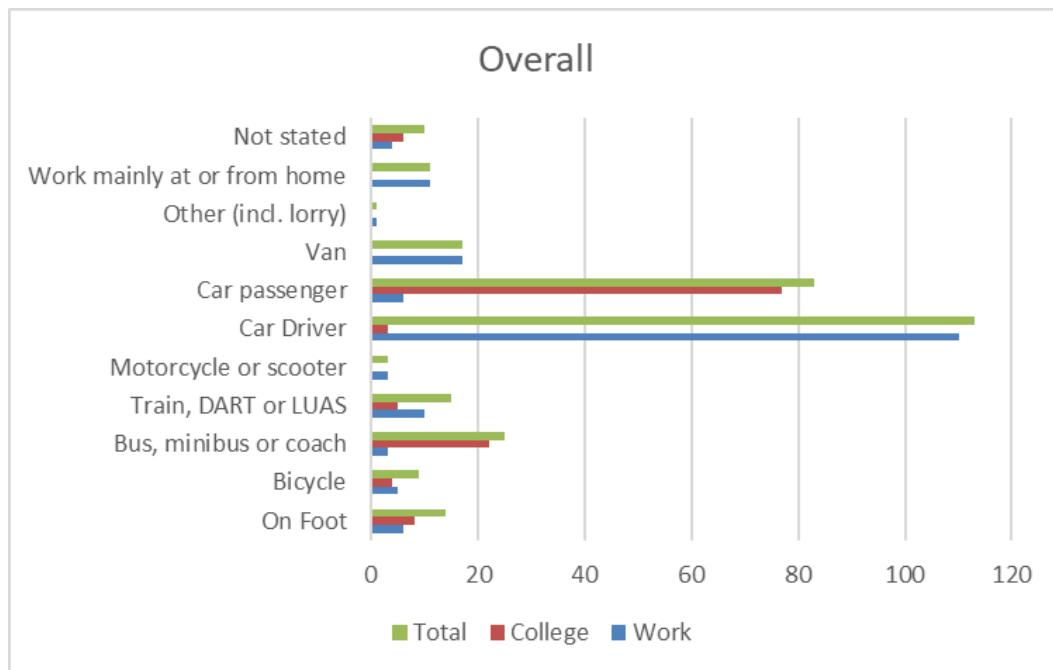


Figure 16 Commuting – Overall

## 5 PREDICTED POST-DEVELOPMENT TRAVEL PATTERNS

### 4.1 Introduction

The current modal splits and the modal splits for the +5 years are illustrated in Table 10.

Modal Splits	Work		School	
	Commuter Usage (%) - 2032	Commuter Usage (%) (+ 5 years)	Commuter Usage (%) - 2032	Commuter Usage (%) (+ 5 years)
On foot	3.41%	10.00%	6.40%	10.00%
Bicycle	2.84%	10.00%	3.20%	10.00%
Bus, minibus or coach	1.70%	25.00%	17.60%	25.00%
Train, DART or LUAS	5.68%	6.00%	4.00%	6.00%
Motorcycle or scooter	1.70%	2.00%	0.00%	2.00%
Car driver	62.50%	35.00%	2.40%	35.00%
Car passenger	3.41%	5.00%	61.60%	5.00%
Van	9.66%	1.00%	0.00%	1.00%
Other (incl. lorry)	0.57%	1.00%	0.00%	1.00%
Work mainly at or from home	6.25%	5.00%	0.00%	5.00%
Not stated	2.27%	0.00%	4.80%	0.00%
Total	100.00%	100.00%	100.00%	100.00%

Table 11 Future Modal Targets

Section 2.4 of this report outlined the following modal targets which is based on national targets:

- Car – 45%
- Public Transport (Bus, light rail, train, etc) – 35%
- Walking – 10%
- Cycling – 10%

Section 7 of the report will demonstrate how the setting of appropriate objectives and the appointment of a Travel Plan Coordinator to oversee their implementation will ensure that these targets are achieved.

## 6 OBJECTIVES OF TRAVEL PLAN STRATEGY

### 6.1 Introduction

A Travel Plan Framework is a tool that brings together site management issues relating to transport in a coordinated manner. This document puts in place the objectives of the mobility management strategy for the subject site and the specific measures designed to achieve these objectives.

While recognising that not all car trips can be eliminated, this strategy aims to provide sustainable transport choices for residents and visitors at the site, thus leading to a reduction in private car use for the trip to and from the workplace. Specific measures for achieving effective modal shift away from the private car will be detailed.

The aim of this strategy is thus to introduce measures which will maximise the chances that the modal split targets for year of opening and 5 years thereafter are met if not exceeded.

The objectives of the Travel Plan Strategy for the proposed development in order to meet the stated targets for the subject site are as follows:

- To manage the car parking resources in such a manner that generally discourages use of the private car for the journey to work and maximises the efficient use of the limited on-site spaces available (Objective No. 1);
- To encourage residents to use public transport by providing information on the services available as well as financial incentives to use public transport. New public transport schemes coming on stream will further aid the achievement of this objective (Objective No. 2);
- To encourage residents to cycle to work, if appropriate, by providing safe parking, appropriate showering facilities, financial subsidies and general information on the health benefits of cycling (Objective No. 3);
- To encourage to walk to work if appropriate, by providing all necessary information on this mode of travel (Objective No. 4).

Table 4, Section 4.2 assumes that objectives outlined above will be taken within five years of opening to reduce the modal split for car travel down to 40%, to increase public transport to 30%, and to increase the Green Mode to 30%

A number of the proposals listed to achieve these modal splits are easy and inexpensive to implement. Other measures require initial co-operation and co-ordination both within and between organisations or require an initial investment where this outlay is greatly outweighed by the subsequent benefits both to commuters and the environment. Residents' performance and general morale are both dependent to a great extent on their general state of health and fitness, particularly where long periods are spent behind a desk working with computers. The profile of their journey to work can be a significantly beneficial factor in this regard.

### 6.2 Objective No. 1 - Maximising the Efficient Use Of Car Parking Facilities

#### 6.2.1 Introduction

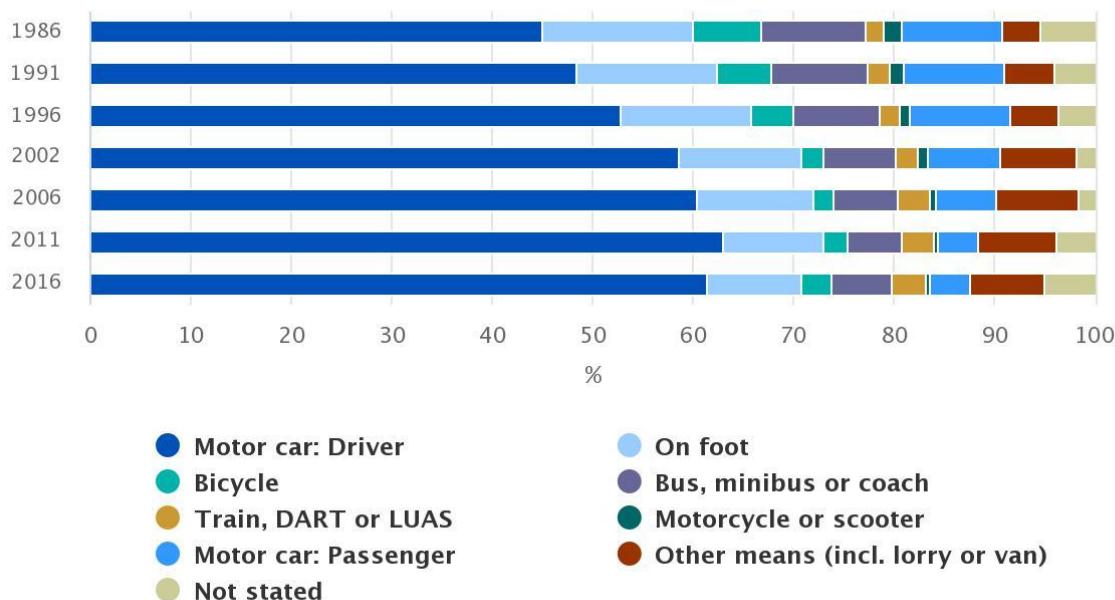
Given the reduced availability of on-site car parking at the subject site (861 No. spaces required under the development plan versus the 867 No. spaces provided) will help both to generally discourage use of the private car due to the availability of car parking.

### 6.2.2 Increasing Car Occupancy Rates

The day-of-opening modal splits, based on CSO data, the average car and van occupancy in Ireland mounted to c1.1 in 2018.

For the purpose of this Travel Plan, it is assumed that in the opening year, the development will have similar car occupancy rates to the national average.

Figure 2.1 Means of travel of working commuters, 1986 – 2016



Source: CSO Ireland

Figure 17 Average Car/Van Occupancy Rates

With no Irish targets available, a 'Review of The UK Passenger Road Transport Network' published by Government Office For Science (UK, 2019) was undertaken with the following findings:

*'Car occupancy varies significantly for car trips of different purposes; average rates are around 2 people for school and holiday trips, between 1.6-1.7 for shopping and leisure trips and only 1.2 for commuting and business trips. The data indicate that people are more likely to share trips for leisure. These figures are indicative of barriers and other practical factors that limit sharing for commuting car trips.'*

Therefore, for the purpose of this report, the 5-year modal split targets are to increase the occupancy rates from 1.1. to 1.6.

In order to achieve the necessary modal split for residents and visitors to the site and reduced car ownership levels, it is important to discourage the number of single occupant car trips and to promote the use of public transport or multi person car trips.

A Car Club will be set up by the Travel Plan Coordinator to promote two specific methods of reducing car vehicle usage by the development.

The following information in relation to Car Club has been supplied by Mobility Services for Urban Sustainability (MOSES). MOSES is a European partnership project charted with developing innovative mobility services based on 'car-clubs' to target a sizeable marketing breakthrough on a European scale.

#### 6.2.3 Car Parking

The applicant proposes a car parking provision which will ensure that the proposed development operates efficiently, effectively and safely whilst at the same time ensures against the over provision of car parking and hence an over reliance on the private car. This parking provision has been generated with a detailed knowledge of anticipated site users and relevant Local Authority standards.

A reduced parking provision was highlighted as being the most effective demand management measure in the 'Greater Dublin Area Travel Demand Management Study' published by the NTA (formerly the DTO). However the applicant is also conscious of providing for the needs of residents and visitors to the development without an overflow on parked vehicles onto adjacent roads and developments. Details of the parking provision can be found in the Transport Assessment submitted with this application.

#### 6.2.4 Car Pooling

The Travel Plan Coordinator will establish a car-pooling database possibly via an intranet site to co-ordinate residents and visitors of the proposed development willing to share journeys and associated costs. A central information/communication point will be set up to ensure that an up-to-date list of participating residents is kept.

Car sharing software and apps are available which can facilitate such arrangements. An Irish Company, Carma, is one such app. Carma is a real-time transportation technology company headquartered in Cork, Ireland. Its flagship product, Carma Carpooling, matches users with nearby commuters and enables them to share the cost of driving.

Carma produces real-time information and management systems that use GPS, GSM, Geographic Information Systems, Internet and mobile phone technologies to facilitate a shift from single-occupancy vehicles to sustainable transport.

Carma's flagship product is a real-time ridesharing app that matches drivers and riders, enabling people to make car transportation more efficient and more affordable. The company states on its website that Carma's mission is "to enable people around the world to break free from the tyranny of the modern commute".

According to the Carma Terms of service proceeds of the rider(s) payment (consisting of fixed charge per trip and a variable per mile fee) is split between the driver (85%) and the company (15%).

Carma has an app for various mobile platforms. It enables on-demand real-time ridesharing. It works by automatically matching a driver's spare seat capacity with a passenger's desire to travel the same route at the same time. Drivers are provided with a price incentive in the form of electronic micropayments from riders at the end of each journey.

The Travel Plan Coordinator may use Carma as a means to manage the database of scheme members.

#### 6.2.5 Car Club Usage

'As well as showing that a site is sufficiently well located in relation to employment, amenities and services, it is important that access to a car sharing club or other non-car-based modes of transport are available and/or can be provided to meet the needs of residents, whether as part of the proposed development, or otherwise. 'Car free' development is permissible and if developed, must be fully communicated as part of subsequent apartment sales and marketing processes.'

Car Clubs gives you a 'car on call', whenever you need it. Car clubs have developed as a modern service in many European cities and are a good alternative to high levels of private car use and 'driver only' occupancy rates. The principal of a car club is to ensure that the optimal use of a small number of vehicles to meet the needs of a wide group of people.

International experience to date shows that healthy car clubs, such as those run by GoCar, operate at a provision of 30 clients per car and every car can replace up to 4 private vehicles thereby significantly reducing the number of traffic movements.

In addition, restricting car parking provision is a recognised method of reducing car dependence of a development.



Figure 18 GoCar Location

City Council commuter data was compared to GoCar Member Data as illustrated below. This data shows how the modal choice can change if an alternative option is available. The availability of car clubs leads to a more sustainable choice for individuals.

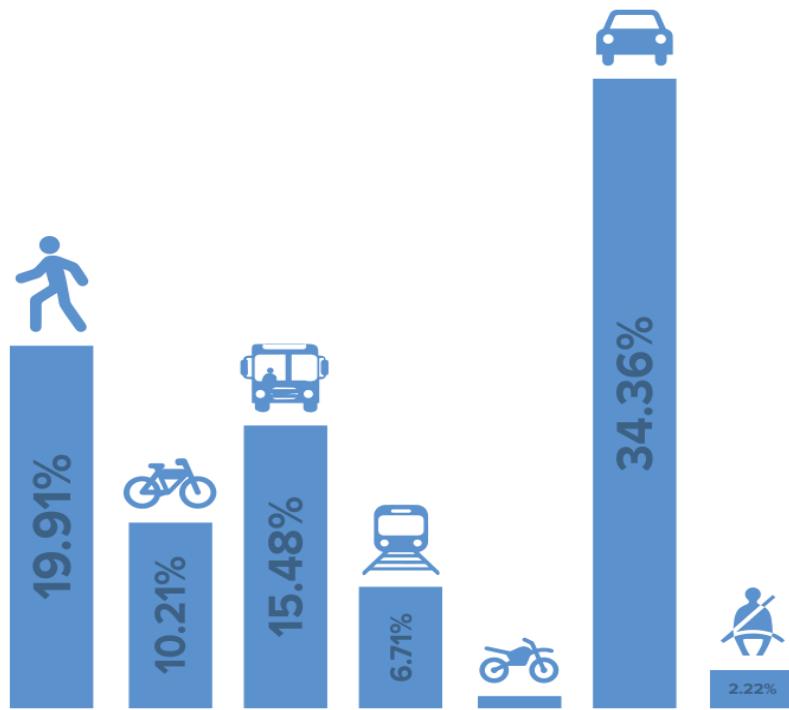


Figure 19 DCC Commuter Census Data

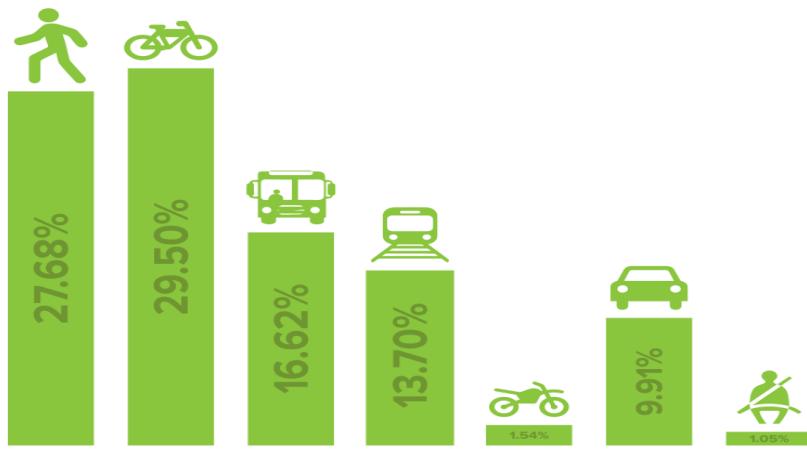


Figure 20 GoCar Member Survey Commuter Data

GoCar has carried out research on GoCar Members and Smart Travel Users. The findings of the GoCar survey are summarised below:

- 80% of users do not own a car;
- Over 60% use public transport at least once a week
- Over 50% cycle at least one a week;

- Over 40% said that if GoCar did not exist, they would buy a car; and
- Over 50% cycle at least one a week.

Cars can be booked in advance through their app and/or website.

It is the experience of GoCar that the demand for spaces become self-regulating. Members will book in advance for planned trips. Should spaces on site not be available at short notice, members will try other locations.

Should members not find a car that is convenient the trip is either postponed to a later date or alternative modes of transport are sought as per the GoCar Member Survey Commuter Data.

The above will help reinforce the multimodality mind set and ensure that people take the best decision depending on the transportation needs.

In addition, restricting car parking provision is a recognised method of reducing car dependence of a development.

### 6.3 Objective No. 2 - Encouraging Greater Use of Public Transport For The Journey To Work

#### 6.3.1 Introduction

The modest increase from 18% to 30% public transport modal split is based on expected local improvements to the public transport access that will come on stream over the coming years, together with upgrades and increased efficiencies within the existing infrastructure – DART frequencies have increased in 2019 to every 10 minutes all day between Howth and Bray (accessed directly from the LUAS Red Line) and maximising public transport information to residents.

While the Bus Connects may have no impact on the 5-year targets, in the longer term, its implementation will significantly improve public transport services at the subject site.

The emerging Bus Connects Dublin plan (Ref: Core Bus Corridors Project Report June 2018) proposes revisions to Dublin's bus system through: -

- building a network of new bus corridors on the busiest bus routes to make bus journeys faster, predictable and reliable;
- 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 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; and
- transitioning - starting now - to a new bus fleet using low emission vehicle technologies.

The Dublin Area Bus Network Redesign (which is currently under review following the public consultation stage) aims “to provide a network designed around the needs of Dublin today and tomorrow, rather than based on the past”.

Figure 21 below presents the proposed public transport provision in the vicinity of the subject site compared to the existing provision. The main difference between the existing and proposed is the inclusion of a new bus interchange within the Citywest Shopping Centre located in the immediate vicinity of the subject development site.

As part of the Dublin Area Bus Network Redesign Dublin Bus routes 65B and 77a will be replaced by a new Route W8 between Citywest and Tallaght which is also proposed to provide a direct service to Maynooth / Celbridge. Improved service frequencies are proposed to destinations to the east via several proposed new routes.

The existing 77x bus route will be replaced by new orbital routes (S6 / S7) which will provide direct Dublin Bus route 69 is proposed to be replaced by a new route 63 which does not result in a change to the existing service between Citywest and the City Centre.

Go-Ahead Bus route 175 is not proposed to be subject to change as part of the Bus Connects scheme.

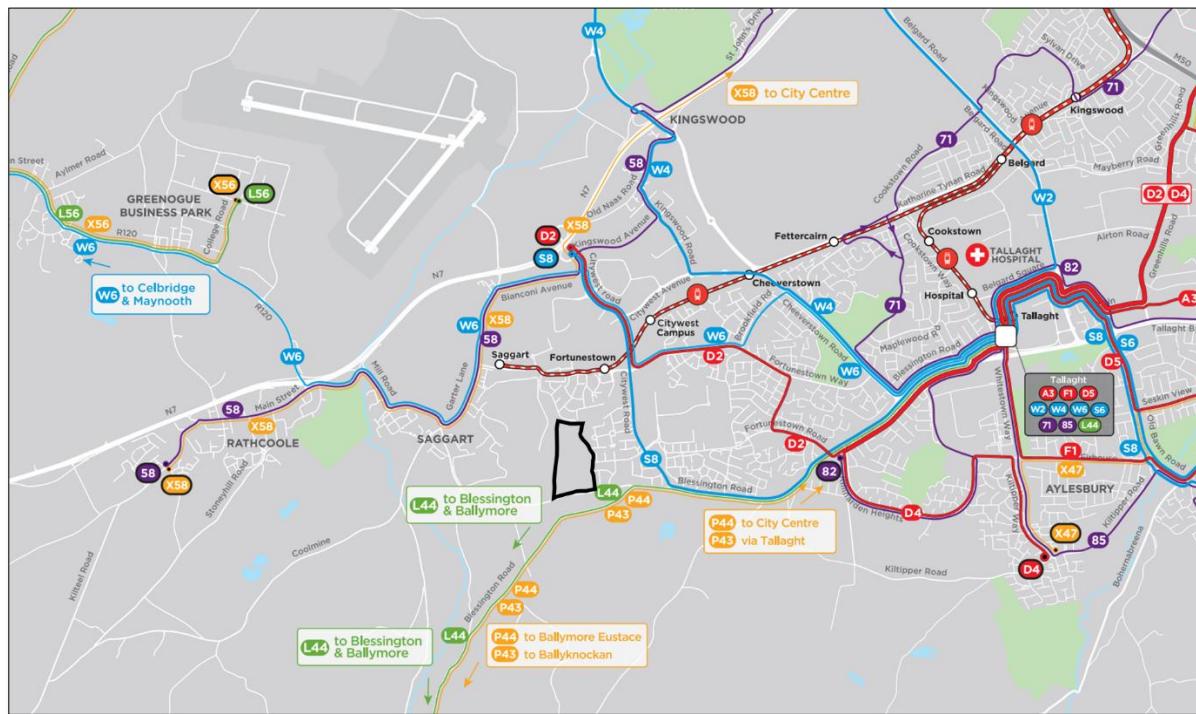


Figure 21 Bus Connects (Source: Map 2 of Bus Connects)

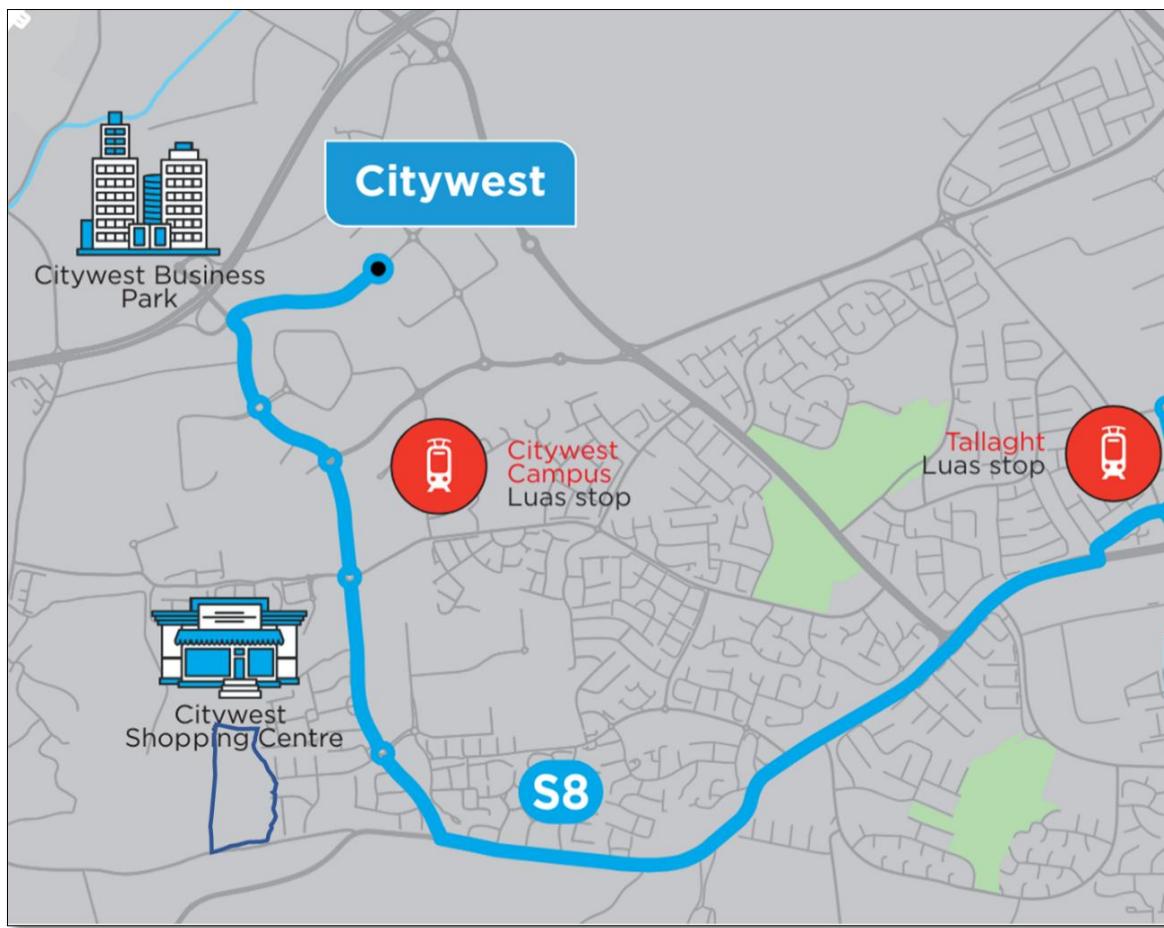


Figure 22 SB Bus Route

### 6.3.2 Public Transport Information

It is vital that timetable information is available to residents in order to encourage maximum usage of the public transport system. Dublin Bus, DART and ultimately LUAS timetables should be posted on the notice board within the apartment complex and / or the web site to be set up by on-site management.

### 6.4 Objective No. 3 - Encouraging More Residents to Walk/Cycle To Third Level Institutions

Cycling will be a favoured transport option for a predicted 20% of residents at the proposed development on its day of opening, increasing to 30% five years thereafter.

It is reasonable to assume a slight increase in this modal share over values pertaining in the locality, within the first 5 years after the opening of the residential component of the facility given the provision of 546 No. parking spaces for bikes throughout the subject site.

This level of cycle parking provision will cater for local trips by customers/students/residents and will mitigate the reduced level of car parking supply. The Applicant's will review the uptake in cycle parking and monitor the demand should additional spaces be required in the future.

Bike parking will not be provided within individual apartments. Secure, communal parking will be provided at basement level adjacent to the main entrances.

A total of 711 cycle spaces will be provided which is in excess of South Dublin County Council's Development Plan 2016-2022.

## 6.5 Measures

### 6.5.1 Introduction

The below measures are suggested only, and future changes may be made over the course of the Travel Plan in conjunction with the local authority, to ensure that appropriate measures are in place.

### 6.5.2 Travel Awareness

Good accurate information on the range of services and travel initiatives available at the site will be a critical element of a successful Travel Plan.

The Travel Plan Coordinator will make new residents aware of the existence of the Travel Plan by producing an information leaflet summarising the travel plan. The leaflet will be provided to new residents as part of a welcome pack, prior to moving in, to ensure that sustainable travel patterns are created from the outset.

The welcome pack will include, though not exclusively, the following:

- Introductory leaflet providing a summary of the travel plan, listing any key measures along with the contact details for the Travel Plan Coordinator.
- A map showing the location of the development in relation to the local area, highlighting the nearby bus and rail stops and key local facilities within easy walking distance of the site.
- Public transport information, including:
  - A map showing the location of the development in relation to the local area, highlighting nearby bus and rail stops.
  - Bus and rail timetables of existing local services from nearby bus and rail stops.
- Active travel information, including:
  - A map showing local cycle and walking routes, which would also indicate the locations of cycle parking and cycle shops in the area.
  - Details of local bike repair shops/retailers and available discounts/promotions, along with available training and maintenance sessions.
  - Health information and details of local walk buddy and bike buddy groups.
- Information about car sharing.
- Details of local taxi firms.

The Travel Plan Coordinator will ensure that any changes to the Travel Plan or any relevant information such as timetable seasonal changes are passed on to members of residents on a biannual basis in leaflet form or via noticeboards.

The Travel Plan Coordinator will promote and encourage residents to participate in national and local events, organised by local groups or the local authority, aimed at promoting awareness of sustainable transport.

The range of events that will be promoted will be agreed and co-ordinated with Westmeath County Council.

### 6.5.3 Walking

The Travel Plan Coordinator will encourage walking as a mode of travel to work. The following initiatives will be implemented:

- Provide a map showing walking routes as part of the welcome pack, indicating distances and times to key local facilities near to the site.
- Raise awareness of the health benefits of walking through promotional material in the welcome pack and on noticeboards.
- Audit the local footway and footpath network on an annual basis and report any defects and/or maintenance issues to the highway authority; and
- Liaise with a local taxi firm to provide competitive rates for residents in case of emergency to replace the work walk journey.

### 6.5.4 Cycling

The Travel Plan Coordinator will encourage cycling as an alternative mode of travel to work:

- Initially, 550 No. cycle spaces will be provided for residents and visitors of the development. The demand for cycle parking spaces will be reviewed annually with the possibility to increase bike parking from the original 550No. spaces.
- Provide and promote personal storage areas for residents' cycle kit.
- Arrange and promote discounts for residents for purchase of cycles and accessories at a local development i.e., Bike to work scheme.
- Promote the availability of cycling information, including route maps and useful tips and guidance,
- Provide information to residents and visitors on any local cycle proficiency 'Bikeability' courses.
- Promote Bike to Work Week
- Set up a Bicycle User Group (BUG).
- Audit the local cycleway network on an annual basis and report any defects and / or maintenance issues to the highway authority.
- Liaise regularly with the cycling officer at the local authority to ensure that up-to-date information is available regarding cycle routes, proficiency classes and other facilities for cyclists in the vicinity of the site; and,
- Liaise with a local taxi firm to provide competitive rates for residents in case of emergency to replace the work cycle journey.

### 6.5.5 Public Transport

The Travel Plan Coordinator will actively promote public transport with the following specific measures to be implemented:

- Provide up-to-date public transport information, including route maps and timetables, within welcome packs and on-site noticeboards.

- Provide details of season tickets and any discounts that can be secured for residents with the local public transport operators via their employer.
- Details of local taxi firms will be provided within the welcome pack.
- The Travel Plan Coordinator will provide details of websites and telephone advice services to enable residents to obtain details on their individual journey requirements; and,
- Liaise regularly with public transport operators to ensure that information remains valid.

#### 6.5.6 Personalised Journey Planning

Targeting individual journeys can be the most effective way of reducing car travel and encouraging use of sustainable modes. This initiative is most effective for those who currently travel by car and have no constraints to travel by sustainable modes.

The Travel Plan Coordinator will assist residents in the development of a personalised journey plan for resident's regular commute journeys. The journey plan could include (dependent on which modes of transport are identified as being of most interest):

- Maps showing the location of the bus and rail stops to use at either end of the journey, along with the accompanying walk route to their origin and destination.
- Details of how and where to buy tickets, including the current cost for travel.
- Suggestions of how to incorporate elements of the journey to sustainable modes; and
- Timetable information for public transport services used on their journey.
- Offer information relating to tax saver commuter tickets.

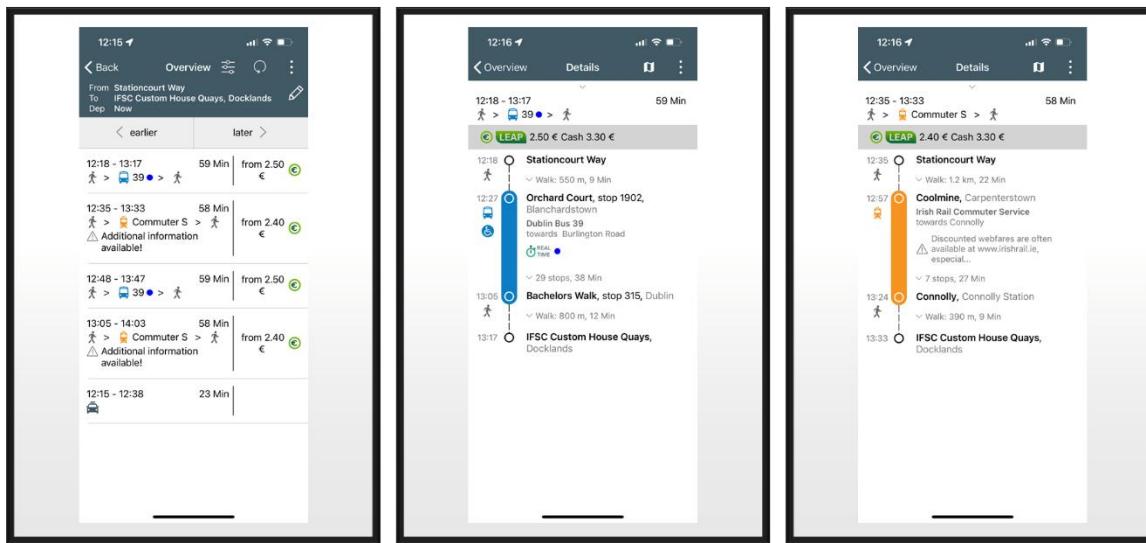


Figure 23 Example of Personal Journey Plan (Source: NTA Journey Planner)

#### 6.5.7 Visitors

The degree to which visitors can be encouraged to use sustainable modes of transport will depend on a number of factors, including the accessibility of the site by public transport or other modes from the visitor's origin, as well as the purpose of the visit.

The Travel Plan Coordinator will encourage travel via sustainable modes for visitors by displaying information on a noticeboard within the grounds of the development, including, but not exclusive to, the following:

- the available public transport services passing the site.
- public transport timetables and stop locations.
- walking and cycling routes to the site, along with cycle parking; and nearest taxi ranks and contact details.

## 6.6 Marketing Summary

The Travel Plan Coordinator will be responsible for providing residents with an overview of the travel plan in order to promote a range of modes of transport and increase awareness of the alternative modes. As noted above, the following marketing tasks will be undertaken as part of the travel plan implementation:

- Development of an introductory document for the travel plan, providing a summary of the contents and key measures for implementation, to be disseminated to residents within their welcome packs.
- Welcome packs will be distributed to all residents upon moving in.
- Residents and visitors travel information noticeboards will be set up within the site, to promote new and ongoing measures along with events, for example, linked to Walk to Work Week and European Mobility Week. Noticeboards will be maintained by the Travel Plan Coordinator on a biannual basis, or as required.
- Updated information will be communicated to residents and visitors, to identify any changes in bus timetabling, local area facilities, cycle training and maintenance courses etc.; and,
- A cycling group will be formed and meet on a regular basis, to encourage residents to start cycling and maintain existing cycling modal split.

## 7 ROLE OF THE TRAVEL PLAN COORDINATOR FOR THE PROPOSED DEVELOPMENT

### 7.1 Appointment Of Travel Plan Coordinator

It will be the intention of on-site management at the proposed development' that a Travel Plan Coordinator be appointed to administer, implement, monitor and review travel plan management issues within the development.

The Travel Plan Coordinator maybe an existing member of the on-site management team that would take on additional responsibilities or a volunteer from the development supported by the management team.

The coordinator will also liaise with the local authority, public transport companies and facility managers on issues relevant to the maximisation by commuters of non-car-based journeys to work.

### 7.2 Duties Of the Travel Plan Coordinator

This development is founded on minimal use of the private car by all residents and the maximization of travel by soft modes and public transport.

It will be the intention of the on-site management team that a Travel Plan Framework Coordinator be appointed to administer, implement, monitor and review mobility management issues within the development. The coordinator will also liaise with the local authority, public transport companies and facility managers on issues relevant to the maximisation by commuters of non-car-based journeys to work.

There are a range of measures that will be undertaken by local facility managers in order to aid in the reduction of car-based journeys to work.

The co-ordinator will have a vital role in encouraging and enabling organisations on the subject site to adopt the measures listed within the document to achieve the objectives listed within Section 6. The duties of the co-ordinator are detailed below under the following headings:

- Promoting the environmental and health benefits of individual travel choices
- Promoting bike use
- Promoting walking
- Promoting rail and bus-based travel

### 7.3 Promoting The Environmental and Health Benefits of Their Travel Choices

It will be the duty of the coordinator to make residents aware of the environmental and health consequences of their travel choices. Various media should be employed in order to communicate this message. These could include a newsletter and a mobility website, providing information on

issues such as available public transport services, where to buy a bike, the health benefits of cycling / walking, and a list of co-residents who might potentially car-share.

#### 7.4 Promoting Bike Use

The coordinator can promote the use of this mode of travel using other measures such as the setting-up of a cycle users' group so that experienced cyclists within the development can help encourage newcomers to the mode of travel. The coordinator can also help by keeping tool kits and spare parts on site for cyclists to avail of. The web site and newsletter could also be an aid to encouraging the mode of travel by encouraging the potential time savings involved. Also, the coordinator can keep in contact with the local authority to monitor the progress in implementation of the proposed cycle track network in the locality.

It would also be possible for management at the proposed residential development to agree a group bicycle insurance scheme for residents at preferential rates in order to maximise its use as a mode of travel to work.

#### 7.5 Promoting Walking to School, College and Work

As with cycling, the coordinator should promote the health and fitness benefits of walking and its general viability as a method of getting to school, college or work. The coordinator can also liaise with the local authority on work being done in the vicinity of the candidate site to make the local road network more pedestrian friendly.

#### 7.6 Promoting Rail and Bus Based Travel to School, College and Work

The coordinator will promote a public transport culture among residents. The coordinator can use the newsletter and website to provide information on public transport, in particular timetable information, local public transport stops and route planning, together with information on annual and monthly public transport tickets, carrying potential tax benefits for commuters.

#### 7.7 Monitoring The Modal Splits for The Residents' Journey to School, College and Work

##### 7.7.1 Introduction

In order to maximise the effectiveness of the Travel Plan Framework, the coordinator should be responsible for the ongoing monitoring of the modal splits within the plan, including the carrying out on a regular basis of travel surveys for residents.

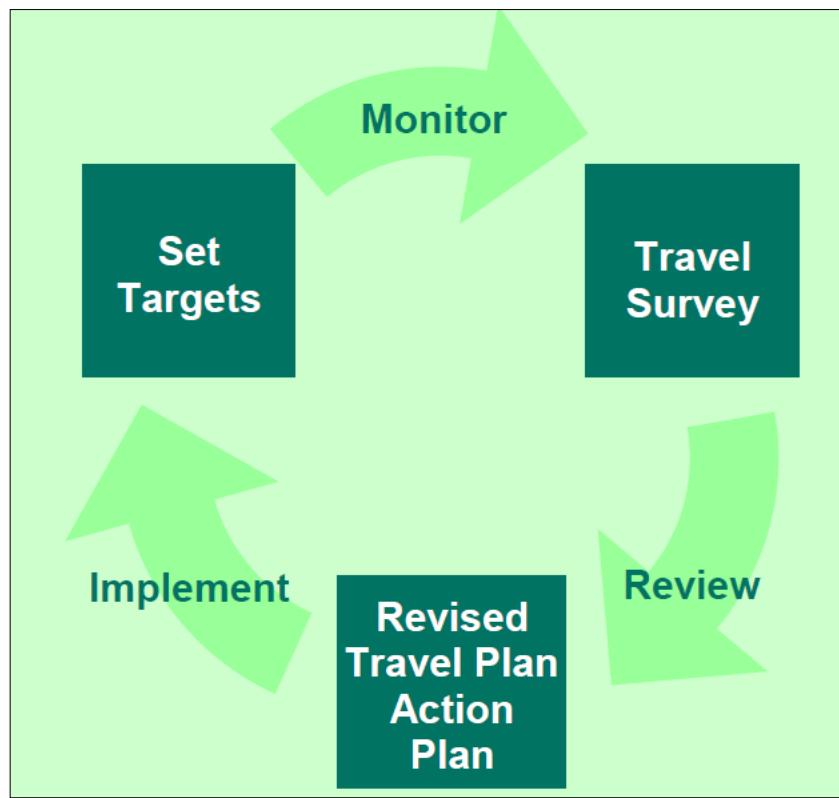


Figure 24 Monitoring Process

Monitoring this Travel Plan is an essential part of the whole process. Monitoring means regularly checking the progress towards the targets with activities such as residents travel surveys or vehicle counts. It enables the Travel Plan Coordinator to see whether or not the Travel Plan initiatives are having the desired effect on people's travel behaviour.

The following will be the key cornerstones of how the Travel Plan will be monitored:

- Baseline travel figures need to be established very early on so that there is something to benchmark your progress against.
- Travel Plan monitoring needs to take place at regular, agreed intervals (1,3,5 & 10 years). Monitoring enables you to test whether the Travel Plan initiatives have been a success or whether interventions are required.
- Monitoring allows the Travel Plan Coordinator to review your progress towards the targets and objectives.
- Regular monitoring is a requirement for Travel Plans secured through the planning process and the frequency of reports needs to be agreed with the Local Authority.
- Travel Plan objectives and targets should form the basis of the monitoring strategy as it is these that you are monitoring your progress against.
- Different types of monitoring tools can be used to collect the travel data required.

### 7.7.2 Responsibility

Monitoring is generally the responsibility of the Travel Plan Coordinator, which will be supplemented by external parties to undertake traffic counts, surveys or questionnaires on your behalf if and when required.

### 7.7.3 Baseline

For the purpose of this application, general modal data has been used to assess the opening year modal split. In order to monitor a Travel Plan's success, it's important to get accurate baseline modal figures in Year 1.

A resident's travel survey will be carried out within 12 months of full occupancy of the development in order to establish an accurate baseline figure on how residents get to work, so future success can be compared with these results.

Baseline travel numbers are also essential for setting Travel Plan targets, therefore, the targets referenced in Table 6 will be reassessed.

Monitoring needs to take place at regular, agreed intervals. It is advised that monitoring is carried out annually for the first few years so you can see if the Travel Plan measures are working.

Monitoring should be carried out at the same time each year. It is recommended that surveys are carried out during the spring and autumn, and that school holiday periods are avoided.

It's a good idea to keep the format of questionnaires and surveys similar year on year in order to ensure that the results are comparable to your previous findings.

### 7.7.4 Tool Kits

There are several different methods of gathering the data that the Travel Plan Coordinator will need to monitor your travel plan:

- Travel questionnaires aimed at residents or visitors. An example survey is located in Appendices.
- On site vehicle counts.
- Travel audits that look at mileage claims, requests for public transport tickets, cycle mileage claims, and distances travelled.
- Accessibility assessment – how accessible is your site for all different modes of transport?

At the intervals set out in Table 6, the Occupier will submit a monitoring report which will contain:

- Details of progress made since the submission of the previous annual report and any other changes which have occurred over the year which are significant to the Plan.
- An assessment of travel survey results and any other monitoring such as vehicle counts.
- An assessment of whether targets have been met or are on track to be met.

- Any revisions to be made to the Travel Plan.
- Whether or not remedial measures are to be implemented at this stage.
- Actions for the forthcoming year which should be set out in a Travel Plan Action Plan.

#### 7.7.5 Corrective Actions

It is important to establish a remedial strategy within the Travel Plan document so that all interested parties are clear what you will do if targets are not achieved, or if it looks unlikely that they will be achieved.

By including a remedial strategy in the Travel Plan, it also helps to demonstrate the Applicant's commitment to achieving these targets.

The remedial strategy will include specific ideas for actions, access controls or the addition of extra measures. The aim of any remedial strategy should be to ensure that the organisation can work to meet the objectives of their Travel Plan.

In the event that the Travel Plan is failing to meet the agreed targets, the remedial strategy should be put into practice in order to help get the Travel Plan 'back on track' as soon as possible.

#### 7.8 Monitoring Framework and Reporting Schedule

In accordance with South Dublin County Council's requirements for Large-scale Residential Developments, the Travel Plan will be monitored on a structured and recurring basis to ensure its effectiveness and continued relevance to local transport conditions. A baseline survey will be undertaken within 12 months of substantial occupation of the development to establish initial modal splits and travel behaviour patterns. Subsequent monitoring surveys will be carried out at Years 1, 3, 5 and 10 post-occupation to assess progress against modal share targets and to identify where corrective actions or additional measures are necessary.

Each monitoring round will comprise a combination of resident travel surveys, on-site counts (car, bicycle and pedestrian), and a qualitative review of infrastructure performance (cycle parking usage, car club uptake, etc.). The Travel Plan Coordinator will prepare and submit a Monitoring Report to South Dublin County Council following each interval, summarising findings, progress towards agreed targets, and any proposed remedial actions or revisions to the Travel Plan. This structured reporting will ensure continuous alignment with the Council's mobility management objectives and the NTA's Achieving Effective Development Travel Plans guidance.

## 8 CONCLUSION & SUMMARY

### 8.1 Introduction

This Travel Plan framework is proposed to ensure the sustainability travel patterns to/from the development.

This Travel Plan Framework will actively manage the parking provision and further reduce car usage at the subject site by detailing objectives for the achievement of a sustainable travel culture for residents at the development, by listing measures to achieve these objectives and by committing to appoint a travel plan coordinator to oversee and monitor progress towards the improved modal splits predicted for the site five years after opening and in the longer term into the future.

This Travel Plan supports the sustainable development objectives for the Boherboy LRD by promoting active and public transport connectivity to Saggart, Citywest and Tallaght, consistent with SDCC's vision for compact growth and reduced car dependency.

## APPENDIX A SAMPLE TRAVEL SURVEY

## 1 INSTRUCTIONS

### 1.1 Instructions

To be completed by residents and visitors

No personal or identifiable information is to be included.

## 2 TRAVEL SURVEY

EVERYONE TO COMPLETE:

About your travel:

Do you nearly always travel to work using the same mode of transport?

- Yes
- No

How do you currently get to work?

Please tick the modes of transport that you use to come to work in the correct columns to show how often you use each mode.

	Everyday	More than once week	About once per week	Few times per month	Less than once per month
Bus					
Car					
Car Share					
Cycle					
Motorcycle					
Park and Ride					
Taxi					
Train					
Walk					
Combination (e.g., train <i>and</i> cycle)					

How far do you live from your normal place of work?

- Less than 1 KM
- Between 1 and 2 KMs

- Between 2 and 5 KMs
- Between 5 and 10 KMs
- Between 10 and 25 KMs
- More than 25 KMs

How long does it currently take you to travel to work on an average day?

- Less than 15 minutes
- Between 15 and 30 minutes
- Between 30 and 45 minutes
- Between 45 and 60 minutes
- Over an hour

Do you consider that you could walk to work?

- Yes
- No

Do you consider that you could cycle to work?

- Yes
- No

What time do you leave your home for work each morning? (Please tick)

	Mon	Tues	Wed	Thurs	Fri
Before 7am					
Between 7am and 7.30am					
Between 7.30am and 8am					
Between 8am and 8.30am					
Between 8.30am and 9am					
Between 9am and 10am					
After 10am					
It varies	Comments				

What time do you arrive home from work each day? (Please tick)

	Mon	Tues	Wed	Thurs	Fri
Before 3pm					
Between 3pm and 4pm					
Between 4pm and 4.30pm					
Between 4.30pm and 5pm					
Between 5pm and 5.30pm					
Between 5.30pm and 6pm					
After 6pm					
It varies	Comments				

Is the area you live in served by a regular bus service?

- Yes
- No
- Don't Know

If there is a bus, approximately how often does this service run?

- Every 10 Minutes
- Every 20 Minutes
- Every 30 Minutes
- Every 60 Minutes
- Less than hourly
- I don't know/Not applicable as there is no bus.

How close do you live to your nearest railway station?

- Less than 2 KM
- Between 2KM and 5KM
- Between 5 & 10 KM
- More than 10KM
- Don't know.

Does your nearest railway station have a direct line to the site?

- Yes
- No
- Don't Know

ONLY CAR COMMUTERS TO COMPLETE:

Car users:

If you currently drive to work, what are your main reasons for doing so?

- Drop off/collect children on the way to/from work.
- I use the car for other personal business on the way to/from work.
- I use my vehicle during the day for work purposes.
- I car share/give a lift/get a lift.
- It's quicker than other modes.
- It's cheaper than other modes.
- I have a lot to carry.
- I have no alternative.
- Personal security
- General convenience
- I have a disability that affects my travel choice Other.

Where do you normally park your car when you come to work?

- Onsite parking
- Park and Ride site
- Nearby pay and display car park.
- Nearby free public car park
- Nearby on street parking

Do you ever have difficulty finding a parking space?

- Yes – frequently.
- Yes – Occasionally
- No

On your journey to work do you ever get stuck in a level of traffic that you feel is unacceptable?

- Yes – frequently.
- Yes – Occasionally
- No

On your journey home from work do you ever get stuck in a level of traffic that you feel is unacceptable?

- Yes – frequently.
- Yes – Occasionally
- No

If you bring your car for work purposes, would having access to company vehicles make it possible for you to leave your car at home?

- Yes
- No
- Not Applicable, that's not why I bring my car.

EVERYONE TO COMPLETE:

Cycling Measures:

Would you consider cycling to work?

- Yes
- No

If you would consider cycling, which of the following possible measures would give you enough motivation to try it?

- More readily available information on cycle routes
- Safer cycle routes near to where I live.
- Safer cycle routes around work
- More cycle storage facilities
- Safer cycle storage facilities
- Modern showering/changing facilities.
- Lockers for cycling gear and clothes.

- A scheme that allows me to buy a bike and pay through my salary over instalments.
- Employer discounts at cycle shops
- Not applicable as I live too far away to cycle to work.
- Even though I live close enough, nothing would encourage me to cycle to work.

If you would never consider cycling to work, which of the following statements do you think most sum up the reasons for this?

- I live too far away.
- It would not fit in with my lifestyle.
- I don't like the idea of walking around on my own.
- It would take too long.
- The weather is too unpredictable.
- The city air is too polluted.
- I have too much to carry.
- Don't feel safe (road safety)
- Other commitments

EVERYONE TO COMPLETE:

Walking Measures:

Would you consider walking to work?

- Yes
- No

If you would consider walking, which of the following possible measures would give you enough motivation to try it?

- More readily available information on walking routes
- Improvements to the quality of footpaths
- More lighting in pedestrian areas
- More CCTV covering pedestrian areas.
- Modern showering/changing facilities.
- Lockers for walking gear and clothes
- Free issue of pedometers
- Free issue of personal safety alarms
- Interest free salary loans payable over 12 months for purchase of walking/outdoor gear

- Employer discounts at outdoor gear shops
- Not applicable as I live too far away to walk to work.
- Nothing would encourage me to walk to work.

If you would never consider walking to work, which of the following statements do you think most sum up the reasons for this?

- I live too far away.
- It would not fit in with my lifestyle.
- I don't like the idea of walking around on my own.
- It would take too long.
- The weather is too unpredictable.
- The city air is too polluted.
- I have too much to carry.
- Don't feel safe (road safety)
- Commitments outside of work

## APPENDIX B CORRECTIVE ACTION

Objective	Target	Measure	Timescale	Responsibility	Monitoring Towards Progress	Cost
Objective 1 - Maximizing the Efficient Use of Car Parking Facilities	Increasing Car Occupancy Rates	Increase car occupancy from 1.05 per car to 1.6/1.7 per car.	10 Years	Mobility Manager	Annual survey/Uptake in Car Sharing	Admin cost of carrying out surveys
	Promote Car Club	Use of 'Car Club'	1 Year	Mobility Manager	Demand for car sharing spaces	Cost of lining 'Car Club' space
	Establish Car Sharing Data Base	Number of volunteers	1 Year	Mobility Manager	Number of people offering car sharing / Uptake in car share offer	Cost of lining 'Car Share' space
Objective 2 - Encouraging Greater Use of Public Transport for The Journey to Work	Provide public transport information to all residents	Day 1 user survey or assume locally demographics are representative / Repeat survey at 12 months	Prior to full site occupation	Mobility Manager	Compare Day 1 survey to 12 Month Survey	Admin cost of design of information/printing of information
	Tax Saver /Season Ticket Scheme	Uptake in Scheme	Administered as per the rules of the Bike to Work Scheme	Mobility Manager/ Pay Roll	Number of users	Admin costs running scheme

Objective 3 - Encouraging More Residents to Cycle to Work	Provide public cycle information to all residents /Offer general biking information	Day 1 user survey or assume locally demographics are representative / Repeat survey at 12 months	Prior to full site occupation	Mobility Manager	Compare Day 1 survey to 12 Month Survey	Admin cost of design of information/printing of information
	Provide cycle parking/Lockers	Demand of use	Initially up to 5 spaces. Within 12 months full allocation of spaces	Mobility Manager	Number of users	Cost of providing bike stands, lockers etc
	Bike User Group	Demand of use	Within 12 months of full site occupation	Mobility Manager	Number of users	Admin costs of setting up/managing group
	Cycle Network Audit	Ensure that up-to-date information is available regarding cycle routes, proficiency classes and other facilities for cyclists in the vicinity of the site	Every 12 months	Mobility Manager	Overall number of cyclists to/from work	Admin cost of carrying out survey

	Bike to Work Scheme	Uptake in Scheme	Administered as per the rules of the Bike to Work Scheme	Mobility Manager/ Pay Roll	Number of users	Admin costs running scheme
Objective 4 - Encouraging More Residents to Walk to Work	Provide walking information to all residents indicating distances and times to key local facilities near to the site;	Day 1 user survey or assume locally demographics are representative / Repeat survey at 12 months	Prior to full site occupation	Mobility Manager	Compare Day 1 survey to 12 Month Survey	Admin cost of design of information/printing of information
	Footpath Network Audit	Ensure that up-to-date information is available regarding walking routes, proficiency classes and other facilities for cyclists in the vicinity of the site	Every 12 months	Mobility Manager	Overall number of walkers to/from work	Admin cost of carrying out survey





# PINNACLE

CONSULTING ENGINEERS

## NORWICH

Pinnacle House  
3 Meridian Way  
Norwich  
NR7 0TA

T: +44 (0)1603 327170

## DUBLIN

Grosvenor Court  
67A Patrick Street  
Dun Laoghaire  
County Dublin, Ireland

T: +353 1 231 1041

## LONDON

The Harley Building  
77-79 New Cavendish Street  
London  
W1W 6XB

T: 01707 527630

## FRANKURT

Nieder-Ramstädtner Str.  
25 Ober-Ramstadt  
D-64372  
Frankfurt

T: +49 (0) 6154 / 63 410

## WELWYN GARDEN CITY

Alchemy House  
Bessemer Road  
Welwyn Garden City  
AL7 1HE

T: +44 (0)1707 527630