MALONE O'REGAN
CONSULTING ENGINEERS

PROPOSED PART 8 RESIDENTIAL DEVELOPMENT

OLDTOWN MILL, CELBRIDGE.

TRAFFIC MOBILITY MANAGEMENT PLAN

KILDARE COUNTY COUNCIL

December 2023

Date: September 2023
Job: 23006

Contents Amendment Record

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Title: **Proposed Part 8 Residential Development - Oldtown Mill, Celbridge Traffic Mobility Management Plan / Kildare County Council**

Job Number: **23006**

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Revision Record

Issue No.	Date	Description	Remark	Prepared	Checked	Approved
0	18/12/2023	Planning	P3	KA	DW	DW
1	12/03/2024	Planning	P3	KA	DW	PB

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1 INTRODUCTION

1.1 Introduction

This report is prepared in support of the planning application for National Development Finance Agency on behalf of Kildare County Council for a residential development on a site at Oldtown Mill Road, Celbridge, Co. Kildare

The proposed development includes:

i. 60 no. residential units including 40 no. houses and 20 no. apartments comprising 20 no. one bed units; 15 no. two bed units; 21 no. three bed units; and 4 no. four bed units; with renewable energy design measures (which may be provided externally) for each housing unit.
ii. Landscaping works including provision of (a) open space and kick about areas; (b) natural play features; and (c) new pedestrian and cycle connections.
iii. Associated site and infrastructural works including provision for (a) 2 no. ESB substations and switchrooms; (b) car and bicycle parking; (d) public lighting; (e) temporary construction signage; (f) estate signage; and (g) varied site boundary treatment comprising walls and fencing.
iv. All associated site development works, including removal of existing spoil from the site in advance of construction works.

The purpose of this document is to define a Traffic Mobility Management Plan (TMMP). The TMMP provides an assessment of existing traffic and mobility issues accessing the site. It outlines the process of development of the TMMP Strategy and finally it examines the scope available for sustainable modes of transport to and from the site.

1.2 Site Overview

Figure 1 – Site Layout

The proposed site is located on a greenfield site that has an approximate site area of 1.71 hectares. The site is located in Celbridge, Co. Kildare and is approximately 1.40km northeast of Celbridge Town Centre. The proposed site is bordered to the south and east by two existing residential developments known as The Orchard and The Paddock, to the north by a residential site currently under construction and to the west by agricultural land. The site is located approximately 5.50km west of Lucan, approximately 14.80km northwest of Citywest and 20km

from Dublin City Centre. Nearby towns include Leixlip which is located to the northeast approximately 5.20km away and Maynooth approximately 8km to the northwest.

The principal road infrastructure serving Celbridge includes the R405, the R403 and the M4 motorway. The R405 runs from Maynooth to Newcastle crossing the River Liffey in the centre of Celbridge and passes Hazelhatch and Celbridge train station. The R403 starts west at Leixlip Road R148 and crosses the M4 Motorway continuing past Weston Airport to Celbridge where it crosses the River Liffey with the R405 then heads southwest to Clane. The M4 motorway is approximately 5.10Km northeast of Celbridge town centre. Hazelhatch and Celbridge Train Station is located 2.3km to the southeast of the site. The county boundary between Dublin and Kildare runs directly through the station.

Figure 2 – Site Location showing the indicative Site Boundary and Adjacent Developments

The site is accessed from Oldtown Road connecting onto Shackleton Road. The Oldtown Road has a 2m wide footpath either side of the road with a grass verge. The Shackleton Road links the R403 to the R405 to the north of Celbridge town centre. There is a cycle track with a 2m wide footpath and grass verge on both sides of the main Shackleton Road for 0.25Km from the Oldtown Road junction heading towards the R405 junction. From this point onwards it reduces to cycle lanes on the road with a separate footpath and grass verge until the main junction with the R405. There is a cycle track with a 2m wide footpath and grass

verge on both sides of the main Shackleton Road from the Oldtown Road junction heading towards the R403 junction.

1.3 Mobility Management Plan Approach

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

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

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

1.4 Report Structure

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

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

2 MOBILITY MANAGEMENT CONTEXT

2.1 What is Mobility Management

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

2.2 The Benefits of Mobility Management

Implementing a TMMP has the following local benefits:

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

2.3 Mobility Management Plan Objectives

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

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

Residents

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

The Local Community

- Make local streets less dangerous while enhancing the viability of public transport.
- Reduce the traffic generated by the development for journeys both within the development and on the external road network.
- Promote equal opportunities by offering wider travel choices.

- Improve personal and wider community health.
- Reduce air and noise pollution.

2.4 Making Residential Mobility Management Plans Work

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

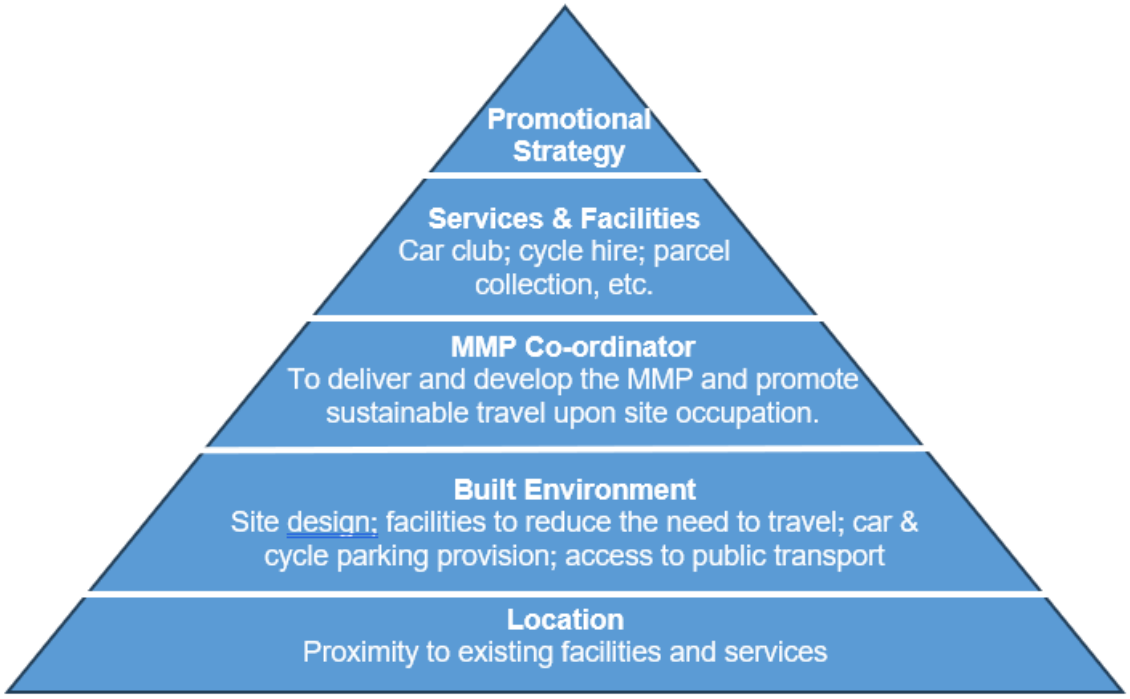

Figure 3 – The Travel Plan Pyramid

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

3 PLANNING POLICY CONTEXT

3.1 Planning Policy Overview

This section provides an overview of the national and regional policies and strategies that underpin the requirements and benefits of implementing a TMMP for the proposed residential development.

3.2 National Policy Context

Ireland 2040 Our Plan – National Planning Framework

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

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

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

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

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

3.3 Regional and Local Policy Context

Greater Dublin Area Transport Strategy, 2022 – 2042

The current Transport Strategy for the Greater Dublin Area provides a framework for the planning and delivery of transport infrastructure and services in the Greater Dublin Area (GDA) (Dublin, Meath, Wicklow, and Kildare).

The strategy set out high-level proposals for walking, cycling, public transport and road networks, as well as parking management measures and other supporting measures for the entire GDA. The strategy aims to “To provide a sustainable, accessible and effective transport

system for the GDA which meets the regions climate change requirements, serves the needs of urban and rural communities, and supports the regional economy".

The Transport Strategy seeks to address all aspects of land-based transport with the GDA and set outs a variety of actions covering:

- Planning for Sustainable Transport
- Integration and Inclusion
- Walking, Accessibility and Public Realm
- Cycling and Personal Mobility Vehicles
- Public Transport – Bus, Luas and Rail
- Road
- Traffic Management and Travel Options
- Freight, Delivery and Servicing
- Climate Action Management

The strategy also highlights how it is necessary for the expansion of attractive public transport alternatives to car travel, to reduce congestion and emissions and enable the transport sector to cater for the demands associated with longer term population and employment growth in a sustainable manner.

The National Transport Authority (NTA) has developed a strategic transport plan, known as BusConnects, which will transform and overhaul the current bus network to provide a more efficient network. The proposed network will deliver the 'next generation' of bus corridors on the busiest routes and redesign routes with the aim of offering fast, predictable and reliable bus journeys.

Phase 2 of the BusConnects Network redesign has been implemented since November 2021 and serves the communities of Maynooth, Celbridge, Leixlip, Lucan, Adamstown, Liffey Valley and Palmerstown to the City Centre. This saw the introduction of C4, L58, L59, X27, X28 routes and the C6 night service to serve Celbridge.

Figure 4 illustrates the BusConnects proposals in the local area.

Figure 4 – Proposed Bus Network (Source: BusConnects – Revised Network Map 2020)

The Dublin Area Rapid Transit (DART) programme aims to modernise and improve the existing rail network, which radiates from Dublin City Centre. It will provide a sustainable, electrified, faster, reliable and user-friendly rail system, which increases train frequencies and customer carrying capacity. It intends to increase the length of the DART network from the current 50km to a 150km railway corridor through the electrification and upgrade of existing lines transforming commuter train travel to the Greater Dublin Area.

The DART programme will deliver frequent, modern, electrified services within the GDA and improve connectivity to regional routes as part of the following projects:

- DART + West – Maynooth and M3 Parkway to the City Centre
- DART + South West – Hazelhatch & Celbridge to the City Centre
- DART + Coastal North – Drogheda to the City Centre
- DART + Coastal South – Greystones to the City Centre

This proposed DART + South West project will further increase the accessibility of Celbridge and its environs. The project aims to:

- Increase train capacity from the current 12 trains per hour per direction to 23 trains per hour per direction (i.e., maintain the existing 12 serviced, with an additional 11 train services provided by DART + South West). This will increase passenger capacity from

the current peak capacity of approximately 5,000 passengers per hour per direction to approximately 20,000 passengers per hour per direction.
- Reduce carbon emissions through the deployment of new electric trains.
- Support growing communities, businesses and future development by providing high quality integrated public transport services in line with Government policy including the National Planning Framework and Climate Action Plan.

The project aims to cover approximately 20km from Hazelhatch & Celbridge Station to Glasnevin via the Pheonix Park Tunnel Branch Line.

Figure 5 – DART + South West Route Map (Source: National Transport Authority and Irish Rail)

<u>Planning for Sustainable Transport</u>

The management of transport demand where it is created is a critical element of transport planning in the GDA. The pattern of where people live, work, attend school or college and socialise is therefore the key determinant in the type of transport system that is required. The Transport Strategy includes measures that are considered to be essential in meeting the high-level objectives of fostering sustainable development and fully integrating land use planning and transport planning, including the following:

- Consolidation of development – to ensure more people live close to services and public transport and to minimise urban sprawl and long-distance commuting.
- Filtered permeability – so that people can move about more easily by walking and cycling than by car.
- The prioritisation of walking, cycling and public transport in urban street networks.
- Integration and Inclusion

The Transport Strategy includes a range of measures that have been developed in support of the overarching objective of an integrated transport system, including the following areas:

- Integration of all modes in Transport Schemes
- Park and Ride provision
- Major Interchanges and Mobility Hubs
- Revised Fare Structure and Next Generation Ticketing
- Mobility as a service
- Smarter Travel Workplaces and Campuses
- Late Night Transport
- Walking and cycling at night
- Accessible infrastructure
- Travel information
- Equality and inclusivity

Walking, Accessibility and Public Realm

A high-quality walking network should be safe, coherent, direct, attractive and comfortable as outlined in the Design Manual for Urban Roads and Streets (DMURS). Eight measures are set out in the Strategy including the following:

i. Ensuring that all urban areas will be served by high quality pedestrian facilities through the implementation of footpath improvement schemes, the development of suitable maintenance programmes and the delivery of new footpaths where required.
ii. A programme of junction revisions including tighter turning radii to slow vehicles, the provision of additional pedestrian crossing points and changes to traffic signals.
iii. Support for wayfinding systems and their integration into journey planning apps.
iv. Ensuring that the needs of all pedestrians, including persons with disabilities, wheelchair users and people with children are met.

Greater Dublin Area Cycle Network Plan, 2013

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

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

Celbridge is located in the North Kildare Sector Town Cycle Network. The key routes proposed for this sector of relevance to Celbridge are:

Inter-urban:

- Route K2: Celbridge to Maynooth along the local road through Ballygoran south of the R405.

- Route K3: Celbridge to Clane via Straffan mostly avoiding the R403, but with a need for cycle tracks along 5km of the regional road approaching each town.

Primary Routes:

- Route C1: R405 Newcastle Road to Hazelhatch and Celbridge Railway Station and the Grand Canal Greenway.
- Route C2: Clane Road to Main Street
- Route C3: Oldtown (Ring) Road to Church Road
- Route C4: R403 Clane Road & Oldtown Road to Maynooth Road
- Route C5: Willowbrook Road
- Route C6: R405 Maynooth Road
- Route C7: R449 Celbridge to Leixlip Link Road
- Route C8/ C8a: Castletown Demesne Greenways to Barnhall Road, Leixlip and links to Route C6 & C7.
- Route LP1: R148 Main Street and Maynooth Road to Intel Plant.
- Route LP2: Barnhall Road to Celbridge via Castletown Demesne.

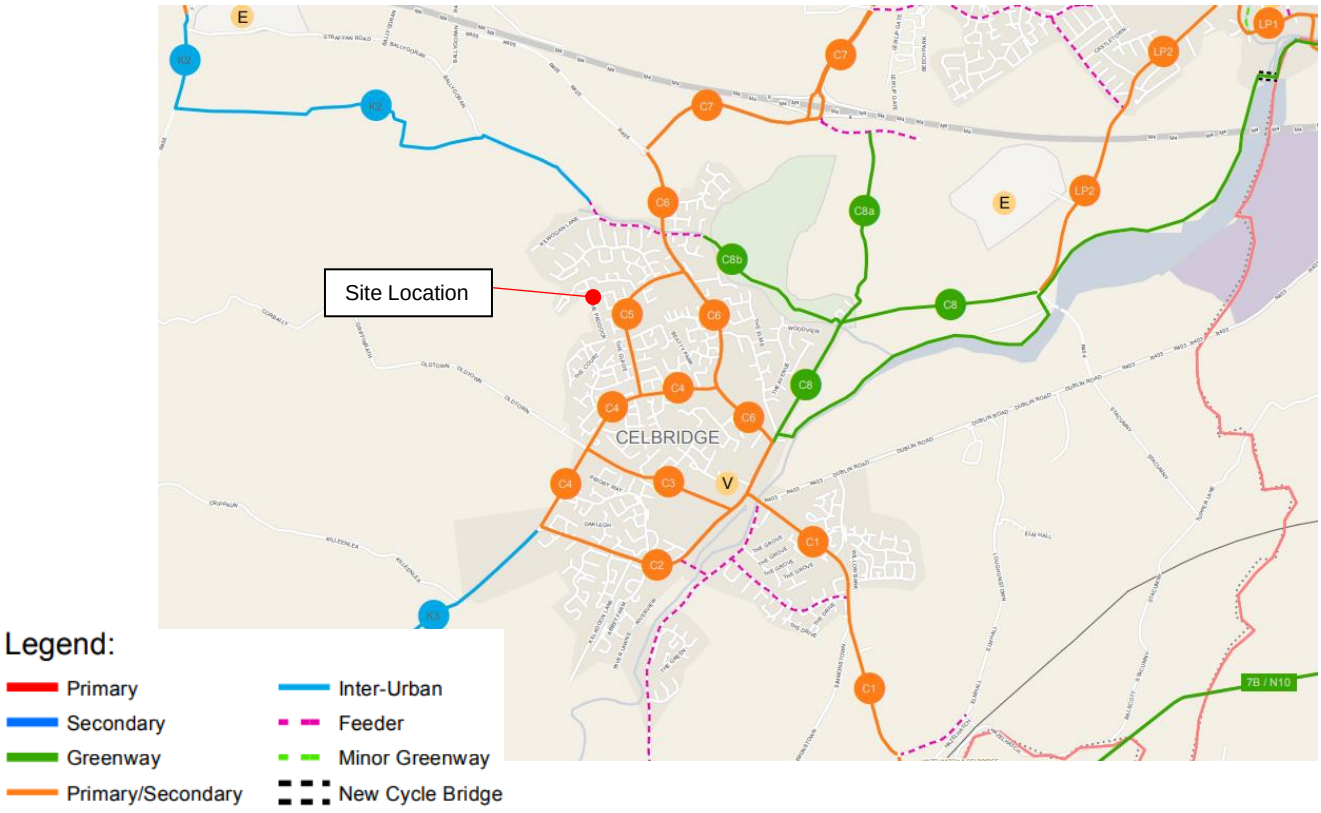

Figure 6 – Proposed Cycle Network Map

In recognition of the continued growth of residents within the GDA, the planned future expansion of the cycle network offers a 38% increase in the total length of cycle infrastructure above that proposed in 2013. In urban areas, the potential for increased cycling with higher

density has seen a concentration of routes. Furthermore, town centres across the GDA have been marked to include improvements to their local network for better access and connections to primary routes and greenway. Large population towns will see a densification to their cycle network with localised improvements.

Kildare County Development Plan 2023 – 2029

The Kildare County Development Plan (KCDP) sets out an overall vision for the county that includes strategies for planning and sustainable development over the period of 2023 – 2029. Chapter 5: Sustainable Mobility Transport of KCDP, the council sets out the Local Authority's overall policy in terms of "Avoid – Shift – Improve" as indicated in the Figure below.

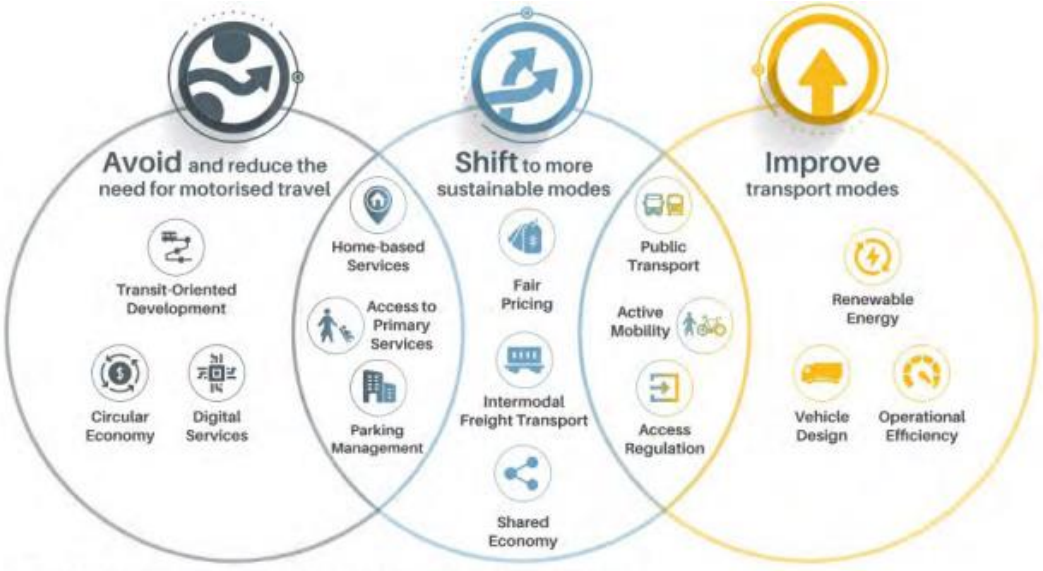

Figure 7 – Avoid – Shift – Improve (Source Figure 5.1, chapter 5 Kildare County Development Plan)

The KCDP sets out a number of objectives to facilitate the ultimate target of reducing the car-based trips for work and education, across the country, by 24% and 10% respectively. The plan also sets out targets for increasing the number of journeys made by bicycle and on foot over the course of the Plan period, with an increase of 9% and 14% respectively. Also journeys to educational facilities are projected to increase by 22% on foot and 13% by bicycle. And finally, the Plan sets out objectives and actions to increase public transport mode share by up to 8% by bus and 9% by train for journeys to work.

The Plan also sets out clear hierarchy for road users which has been incorporated into the design of the proposed development with vulnerable road users being designed for from first concept through to final presented designs.

The remainder of Chapter 5 applicable to this development covers traffic impact and parking. Greater detail is set out within section 5 of this report and has been considered against the Development Plan Chapter 5 details.

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

Table 1 – Extracts from most relevant KCDP 2023 – 2029 Policies	
Policy No.	**Details**
TM P1	**Towards a Sustainable Economy** To promote sustainable development through facilitating movement to and from, through and within the County that is accessible to all and prioritises walking, cycling and public transport.
TM P2	**Walking, Cycling and Active Travel** To prioritise and promote the development of safe and sustainable walking and cycling facilities, both inter-county and intra-county. To prioritise a shift for active travel that is accessible for all ages and abilities.
TM P3	**Public Transport** To promote the sustainable development of the County by supporting and guiding national agencies in delivering major improvements to the public transport network and to encourage a shift from car-based travel to public transport that is accessible for all ages and abilities.
TM P4	**Street and Road Design** Improvement and expansion of the road and street network within the county to promote sustainable and efficient movement of people and goods. To support economic development, provide access to new/existing communities and employment areas while providing a street environment that prioritises active travel and public transport.
TM P8	**Road and Street Design** Ensure that streets and roads within the county are designed to balance placemaking and movement to prioritise sustainable modes of transport and to provide a safe traffic calmed street environment in accordance with DMURS while meeting the needs of all ages and abilities.
TM P9	**Traffic and Transportation Management** Effectively manage and minimise the impacts of traffic in urban areas and prioritise the movement of pedestrians, cyclists, and public transport particularly at key junctions.

Previously zoned as Objective C “New Residential” in the Celbridge Local Area Plan 2017 – 2023. Objective CS 09 in the KCDP seeks to “review and prepare on an ongoing basis a portfolio of Local Area Plans (LAPs) for the mandatory LAP settlements, including Celbridge”. The subject site is essentially an infill site within an established residential area and it is reasonable to anticipate that the subject land shall continue to be zoned in any forthcoming LAP.

Table 2 below outlines several road objectives and improvements from the LAP for the town area which will ultimately benefit the subject KDA3 Oldtown lands.

Table 2 – Extracts from most relevant Celbridge Local Area Plan Policies	
Policy No.	**Details**
MT1	**Pedestrian and Cycle Movement** To provide an enhanced pedestrian and cycle network in Celbridge including the provision of an additional crossing of the River Liffey, to ensure ease of access to public transport, the town centre, heritage sites and other recreational facilities.
MT2	**Public Transport** To support improvements to the public transport network serving Celbridge.
MT3	**Roads** To support improvements to the road and street network in Celbridge in order to provide connectivity and permeability throughout the town, enable access to and from new communities and to reduce through-traffic in the town centre.

In terms of public transport, the objectives aim to create an integrated network to facilitate interchange between modes with emphasis on cycling facilities at public transport stations and expansion of the current routing of the Hazelhatch and Celbridge Station feeder bus to serve a wider catchment.

The Plan notes that in terms of road infrastructure the absence of crossings of the River Liffey for all modes and of a western link to the north are serious constraints to the future development of the town and will be required to accommodate the level of growth proposed within the plan. The road objective outline plans to construct a number of new links as shown below in Figure 8.

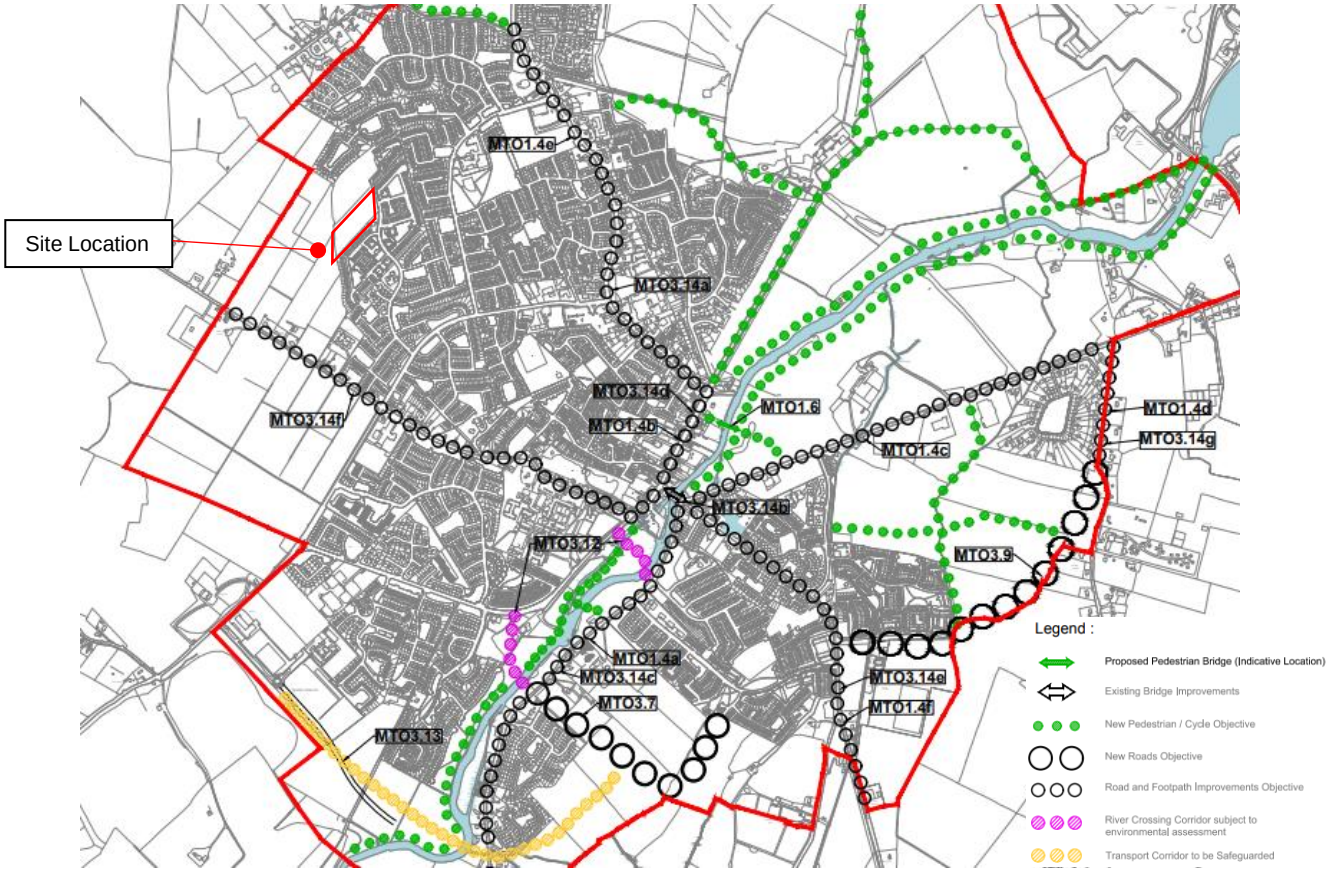

Figure 8 – Transport & Movement Objectives Map (Source: Celbridge LAP Guidelines)

4 BASELINE REVIEW: EXISTING TRANSPORT NETWORK

4.1 Overview

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

4.2 Existing Pedestrian Environment

Primary access will be provided into the residential area to the north of the town, along Oldtown Mill Road. The immediate area is a 15Kph zone with traffic calming signs to reduce speed for residents safety.

There are many local creches, schools, convenience shops, supermarkets and medical centres within walking distance to the site. The local amenities and walking catchment are shown in Figures 9 and 10 below.

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

- Purple Penguin Creche is within a 2-minute walk from the site.
- Celbridge Town Centre is within a 30-minute walk.
- Celbridge Health Centre is within a 16-minute walk and Celbridge Medical Centre is within a 21-minute walk.
- St. Raphael's Hospital is within a 30-minute walk.
- Superstores are within the following walking distances; Aldi 29-minute walk, Lidl 21-minute walk and Tesco 16-minute walk.
- Saint Wolstan's Community School is within a 25-minute walk.

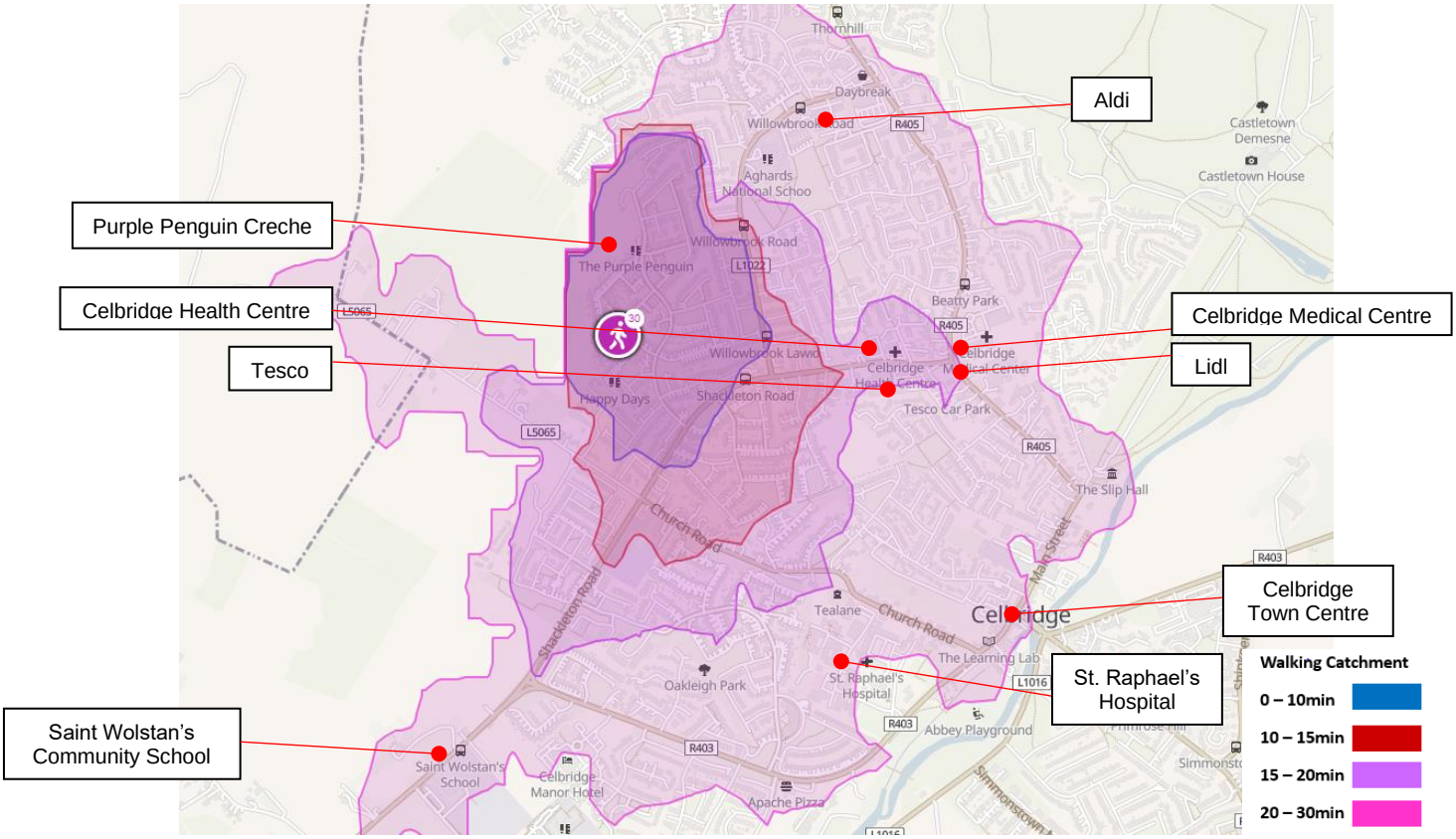

Figure 9 – Walking Catchment (Source: https://commutetimemap.com/map)

Note 1:
Oldtown Mill Road is a residential road along the eastern boundary of the site and will provide the future main access for the development. The road includes 2.5m wide footpaths on both sides of the road with a landscaped verge separation strip. Adequate street lighting is required for safety of footpath users at all times and is provided on the eastern side of the road. Dropped kerbs are provided at desirable crossing points. Refer to figure 12 for details.

Note 2:
The Orchard is a residential road along the southern boundary of the site. Footpaths along the dwellings are separated from the carriageway by a landscaped verge. There is adequate street lighting on one side of the road. Dropped kerbs are provided at desirable crossing points. Refer to figure 12 for details.

Figure 10 – Existing Road Network

4.3 Existing Cyclist Environment

Primary access will be provided into the residential area to the north of the town, along Oldtown Mill Road. Throughout the immediate site boundary area there are no cycle lanes or segregated facilities, and cyclists are required to utilise the main carriageway. The immediate area is a 15Kph zone with traffic calming signs to reduce speed. The Oldtown Mill Road connects on to the Shackleton Road which has a cycle track on both sides of the road for 75% of the road length with cycle lanes provided otherwise.

The cycling catchment based on the current road and cycle track infrastructure is indicated in Figure 11 below. Within a short cycle from the proposed site, it is possible to access a number of key amenities including the town centre, schools, employment centres and the Hazelhatch and Celbridge train station.

- Celbridge Town Centre is within a 10-minute cycle from the site.
- Hazelhatch Train Station is within a 15-minute cycle.
- Straffan, Ardclough, Newcastle, Leixlip and Maynooth are within a 30-minute cycle from the site.

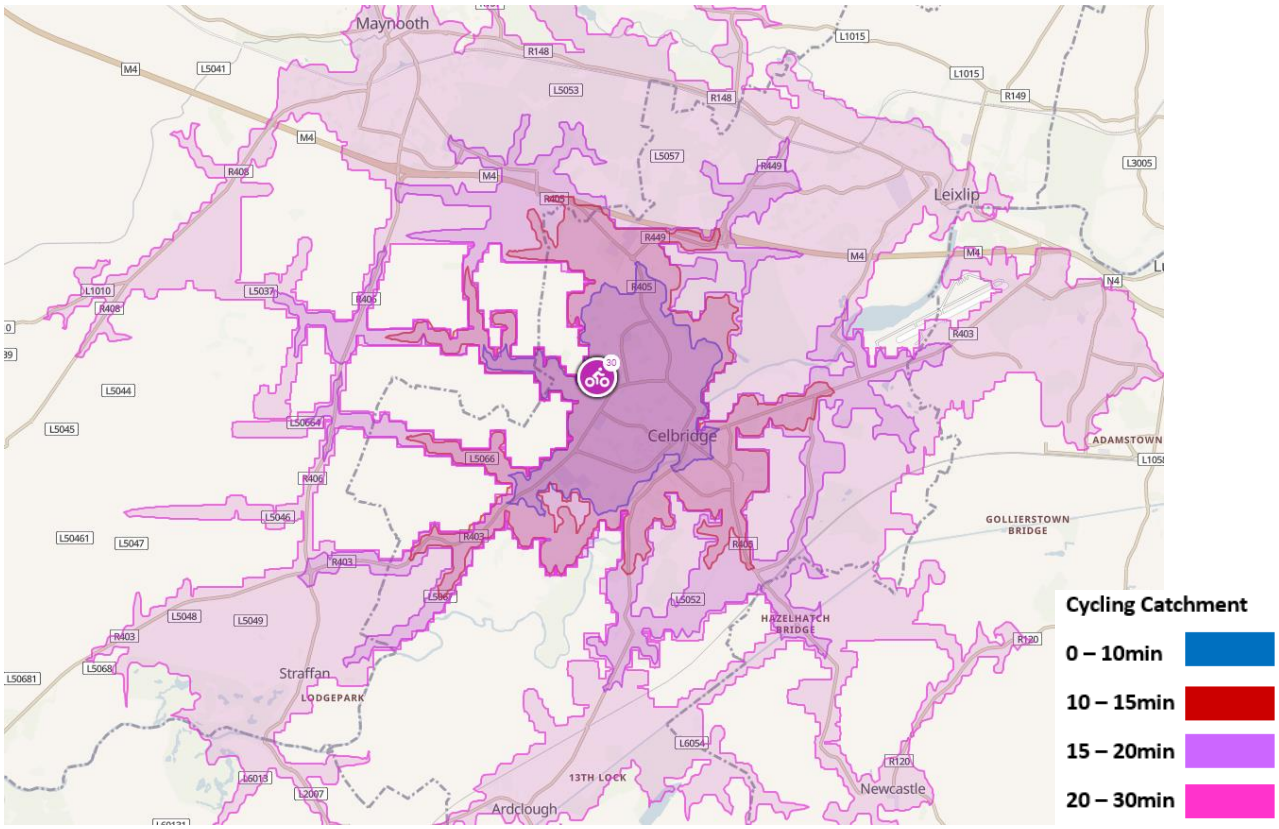

Figure 11 – Cycling Catchment (Source: https://commutetimemap.com/map)

4.4 Public Transport Infrastructure

4.4.1 Public Bus

Phase 2 of the BusConnects Network redesign has been implemented and includes C4, C6, X27, L58 and L59 which operate within Celbridge. These new routes have replaced the previous Dublin Bus Services 67, 67X and 67N. There are two additional 'Local' Routes L58 and L59 which provide convenient bus connections to rail services available at the Hazelhatch and Celbridge Train Station. Phase 5 of the BusConnects Network redesign has implemented an orbital route W61 which operate from Hazelhatch Station to Celbridge and on to Maynooth Community College.

There are two bus stops in each direction located along Aghardas Road, approximately 13-minute walk or 3-minute cycle from the site. The stops are served by the Dublin Bus route L59 that connects Celbridge to the Hazelhatch and Celbridge Train Station. Along the Main Street, Dublin bus C4 and W61 are served which is a 22-minute walk or 6-minute cycle from the site.

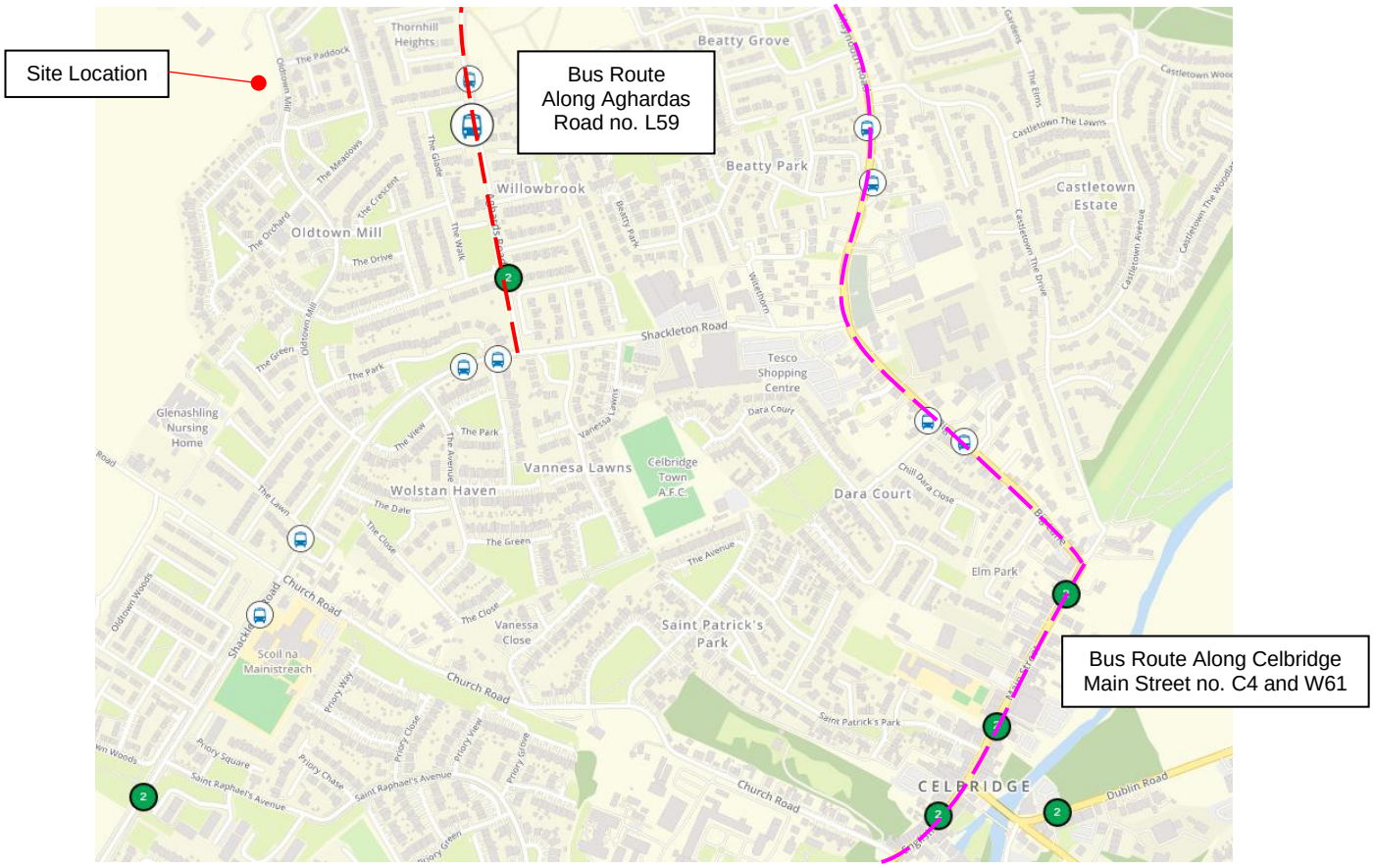

Figure 12 – Bus Stops in the Vicinity of the Site
(Source: www.journeyplanner.transportforireland.ie)

Table 3 – Bus Timetable					
Operator	**Route No.**	**Route**	**No. of services**		
			Monday to Friday	**Saturday**	**Sunday**
Transport for Ireland	L59	River Forest – Green Lane – Thornholl – English Row – Celbridge – Hazelhatch Station	From 5:45 – 23:15 service every half hour	From 6:30 – 8:30 service every hour From 8:30 – 23:30 service every half hour	From 8:30 – 23:30 service every half hour
	W61	Community College – Maynooth Station – Salesian College – Maynooth Road – Celbridge Main Street – Hazelhatch Station	From 5:35 – 23:35 service every half hour	From 5:35 – 23:35 service every half hour	From 7:35 – 23:35 service every half hour
Operator	**Route No.**	**Route**	**No. of services**		
			Monday to Friday	**Saturday**	**Sunday**
Dublin Coach	C4	Ringsend – Bachelors Walk – Heuston Station – Liffey Valley – Lucan Village – Celbridge – Maynooth Station	From 5:05 – 23: 05 service every half hour	From 5:05 – 23:05 service every half hour	From 5:06 – 23:06 service every half hour

4.4.2 Train Service

The Hazelhatch and Celbridge Train Station is located approximately 4.10km from the site, a 15-minute cycle or 25-minutes by public transport on the newly implemented Bus Connect 'Local' Route L59. The established rail infrastructure operated by Iarnrod Eireann provides linkages to key destinations such as Dublin Heuston and Connolly Station, Galway, Cork, Waterford, Limerick and Ennis via a number of regional locations.

4.5 Other

On-site car parking is considered to be an inefficient use of space, particularly at a constrained location in an urban area such as the development site. Taking this into consideration, the provision of car club spaces is considered a more sustainable alternative which both reduces the need for car ownership and provision of dedicated car parking while also maintaining access to a vehicle for infrequent use. There is one GoCar hire station (noted as 1 on Figure 15) located at Tesco Extra, 850m to the southeast of the site, approximately a 15-minute walk or 4-minute cycle. The vehicles available are classed as GoCargo and GoVan. The location of the GoCar station is illustrated in Figure 13.

The benefits of such car sharing services include:

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

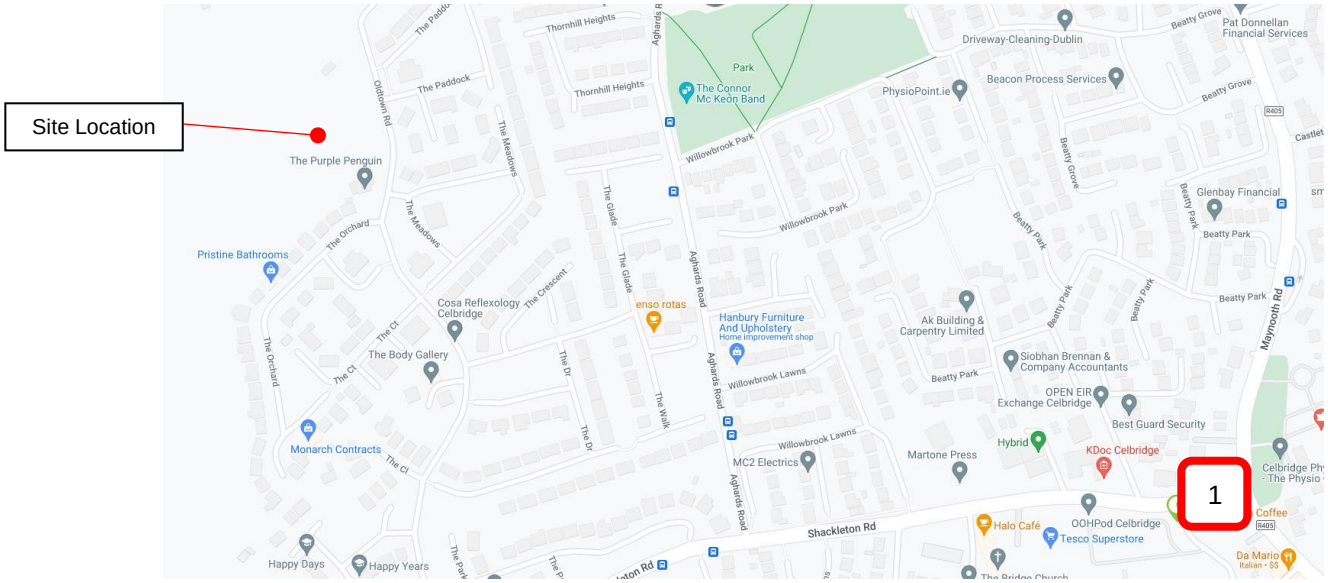

Figure 13 – GoBase locations in the Vicinity of the site (Source: www.gocar.ie/locations/)

5 TRAFFIC IMPACT

5.1 Construction Traffic Impact

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

The exact quantum of traffic that will be generated during the construction period will vary throughout the construction process as different activities have different associated transportation needs.

The number of HGVs generated during the construction phase will be evenly spread out throughout the day and will be timed so as not to coincide with peak commuter periods. Typical site working hours will be 07:00 to 18:00 Monday to Friday and 08:00 to 14:00 on Saturdays.

The following points are noted with regard to construction traffic:

- In general, the construction day will begin and end outside of peak travel hours. As a result, the majority of workers travelling to and from the site will arrive before the a.m. peak hour and depart after the p.m. peak hour.
- On site parking will be prohibited due to the site constraints and to encourage staff to travel by numerous public options serving the area.
- Material delivery vehicles travelling to and from the site will be spread across the course of the working day meaning the number of HGVs travelling during the peak hours will be relatively low.

Construction traffic associated with the construction of the proposed development will vary during the course of the construction phase. The construction traffic proposed routes avoid travelling through Celbridge town and are outlined in section 6 of the Construction Environmental Management Plan. The proposed sequencing of the construction of the proposed development is as follows:

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

5.1.1 Waste Management

In relation to the removal of existing fill on the Oldtown Mill site, it is estimated the volume to be in the region of 35,000m3 or 56000 tonnes.

Based on this assumed volume, the site will require between 1875 and 2800 disposal loads dependant on the type of vehicle used and capacity rating. The capacity of these vehicles (Lorries/Arctics) can range from say 20 to 30T per load.

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

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

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

5.2 Operational Stage

5.2.1 Vehicle Travel

Current proposals for car parking are guided by and fulfil the requirement of the Kildare County Council Parking Standard as described in the Development Plan 2023 – 2029. Car parking standards are set out in Chapter 15, Table 15.8 of the Development Plan and are summarised as follows:

- For Dwelling House – 1 space each for units up to and including 3 bed units and 1 space + 0.50 visitor spaces for units of 4 bedrooms or greater.
- For Apartments – 1.50 space per unit + 1 visitor space per 4 apartments

Section 15.7.8 of the Development Plan states the following:

“Parking standards are maximum standards. Residential development in areas within walking distances of town centres (800 metres i.e., a 10-minute walk) and high-capacity public transport services (including but not limited to Dart+ services, Bus Connects routes and any designated bus only or bus priority route) should be designed to provide for fewer parking spaces, having regard to the need to balance demand for parking against the need to promote more sustainable forms of transport, to limit traffic congestion and to protect the quality of the public realm from the physical impact of parking. Therefore, the number of spaces provided should not exceed the maximum provision set out below.”

It is proposed to provide 75 no. spaces within the residential development for the 60 housing units. This equates to 36 no. 2 and 3-bedroom houses and 4no. 4-bedroom houses yielding a maximum of 42 spaces. The 20no. 1-bedroom apartments yield a maximum of 35 spaces. Thus, the total maximum is 77 spaces for the development.

The traffic impact of the proposed development is expected to be negligible primarily given the low level of car parking levels proposed which will considerably reduce car-based trips to and from the development, particularly during peak hours.

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

Table 4 – Traffic Management Guidelines Thresholds for Transport Assessments
Residential development in excess of 200 dwellings.
Traffic to and from the development exceeds 10% of the traffic flow on the adjoining road.
Traffic to and from the development exceeds 5% of the traffic flow on the adjoining road where congestion exists, or the location is sensitive.

The proposed development does not exceed any of the above criteria on the basis that a worst-case scenario would see just 27no. vehicles arriving/departing in the a.m. peak hour and 34no. arriving/departing in the p.m. peak hour. Refer to table 7 below for the above information. This is considered to be clearly well below the thresholds for the existing traffic flow on the Oldtown Mill Road.

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

Table 5 – Traffic Management Guidelines Thresholds for Transport Assessments	
Vehicle Movements	The character and total number of trips in/ out combined per day are such that as to cause concern.
Location	The site is not consistent with the National Guidance or Local Plan Policy, or accessibility criteria combined in the Development Plan
Other Considerations	The development is part of the incremental development that will have significant transport implications.
	The development may generate traffic at peak times in a heavily trafficked/ congested area or near a junction with a main traffic route.
	The development may generate traffic, particularly heavy vehicles in a residential area.
	There are concerns over the developments potentials effects on road safety.
	The development is in a tourist area with potential to cause congestion.
	The planning authority considers that the proposal will result in a material change in trips patterns or raises other significant transport implications.

Once again, the proposed development is not considered to exceed any of the above sub-thresholds. Taking the above into consideration, the vehicle traffic impact potential proposed by the development is considered to be negligible.

5.2.2 Traffic Surveys

No site-specific traffic surveys were undertaken for the proposed new development. Previous surveys done in the vicinity of the development were reviewed in relation to the proposed site. KCC planning submission number 191282 for development of the site north of the proposed development for 75 dwelling units. The submission issued a Traffic and Transport Assessment report for Old Mill Celbridge on behalf of John Fitzgerald and Noel Browne in partnership with Aterna Developments. Under this submission traffic count surveys were undertaken for three main junctions on the Shackleton Road on 30th November 2017 – see outline below in Figure 14.

Junction 1 – Oldtown Mill Road / Shackleton Road (Priority controlled junction)

Junction 2 – Shackleton Road / Maynooth Road (Signalised junction)

Junction 3 – Shackleton Road / Tesco entrance (Signalised junction)

Figure 14 – Traffic Survey Junctions Shackleton Road in the vicinity of the site

The survey results established that weekday peak hours are 08:15 to 09:15 and 17:00 to 18:00 respectively. Using a similar tool to estimate the vehicle trips for the proposed development based on TRICS output is outlined in Table 6 and related to the specific site in Table 7. The trip generation exercise proposes that the residential development could potentially generate 27 and 34 two-way trips during AM and PM peak hours respectively.

Table 6 – Proposed Residential Development Vehicle Trip Rates from TRICS							
Type	Units	AM Peak Hour			PM Peak Hour		
		In	Out	Two Way	In	Out	Two Way
Apartments		0.062	0.143	0.205	0.219	0.130	0.349
Houses		0.120	0.348	0.468	0.415	0.274	0.689

Table 7 – Proposed Development Vehicle Trip Rate Estimates							
Type	Units	AM Peak Hour			PM Peak Hour		
		In	Out	Two Way	In	Out	Two Way
Apartments	20	2	3	5	5	3	8
Houses	40	5	14	19	17	11	28
Total Trips		7	17	24	22	14	36

The above estimates are based on data contained within the TRICS database which is primarily UK based but applicable to the UK and Ireland. The annual growth factors applied to the estimates for +5 and +15 years respectively from a baseline completion of 2025 are indicated for central growth rates taken from TII Table 5.5.1: National Traffic Growth Forecasts: Annual Growth Factors for County Kildare. Refer to Figure 15 below. The LV light vehicle factors were used to proof test the worst case; +5 year growth factor is 1.1025 and +15 year growth factor is 1.1727. Thus, am and pm peak hour traffic is summarised in table 8 below.

Table 6.2: Link-Based Growth Rates: County Annual Growth Rates (excluding Metropolitan Area)

County	Low Sensitivity Growth Rates						Central Growth Rates						High Sensitivity Growth Rates					
	2016-2030		2030-2040		2040-2050		2016-2030		2030-2040		2040-2050		2016-2030		2030-2040		2040-2050	
	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV
Dublin	1.0163	1.0303	1.0046	1.0123	1.0036	1.0143	1.0180	1.0317	1.0062	1.0139	1.0050	1.0158	1.0211	1.0348	1.0100	1.0170	1.0099	1.0250
Kildare	1.0180	1.0363	1.0044	1.0135	1.0035	1.0169	1.0197	1.0378	1.0062	1.0155	1.0053	1.0187	1.0229	1.0413	1.0098	1.0191	1.0107	1.0283
Laois	1.0130	1.0265	1.003	1.0105	1.0018	1.0136	1.0147	1.0280	1.0047	1.0125	1.0036	1.0155	1.0179	1.0314	1.0082	1.0160	1.0090	1.0248
Longford	1.0119	1.0298	1.0019	1.0104	1.0000	1.0138	1.0134	1.0313	1.0038	1.0124	1.0027	1.0157	1.0167	1.0347	1.0072	1.0161	1.0073	1.0256
Louth	1.0134	1.0347	1.0054	1.0153	1.0048	1.0180	1.0148	1.0363	1.0070	1.0174	1.0063	1.0198	1.0177	1.0397	1.0100	1.0211	1.0103	1.0295
Meath	1.0156	1.0349	1.0052	1.0164	1.0043	1.0189	1.0173	1.0365	1.0070	1.0186	1.0059	1.0207	1.0205	1.0400	1.0108	1.0226	1.0116	1.0304
Offlay	1.0103	1.0307	1.0021	1.0119	1.0014	1.0158	1.0118	1.0323	1.0042	1.0139	1.0033	1.0176	1.0152	1.0357	1.0081	1.0176	1.0100	1.0272
Westmeath	1.0145	1.0300	1.0042	1.0126	1.0033	1.0156	1.0161	1.0316	1.0062	1.0147	1.0053	1.0176	1.0194	1.0352	1.0101	1.0185	1.0100	1.0279
Wicklow	1.0140	1.0361	1.0033	1.0153	1.0029	1.0185	1.0157	1.0377	1.0051	1.0173	1.0047	1.0204	1.0189	1.0412	1.0091	1.0211	1.0110	1.0305
Cavan	1.0098	1.0295	1.0024	1.0108	1.0010	1.0140	1.0112	1.0311	1.0041	1.0127	1.0028	1.0158	1.0141	1.0345	1.0076	1.0164	1.0084	1.0256
Donegal	1.0097	1.0270	1.0024	1.0123	1.0017	1.0142	1.0111	1.0286	1.0039	1.0141	1.0035	1.0161	1.0139	1.0320	1.0072	1.0178	1.0094	1.0258
Galway	1.0243	1.0430	1.0087	1.0177	1.0088	1.0218	1.0259	1.0446	1.0109	1.0198	1.0105	1.0236	1.0294	1.0480	1.0148	1.0236	1.0181	1.0336
Leitrim	1.0044	1.0299	0.9973	1.0105	0.9927	1.0140	1.0060	1.0313	0.9990	1.0124	0.9971	1.0157	1.0090	1.0348	1.0025	1.0161	1.0029	1.0257
Mayo	1.0111	1.0314	1.0009	1.0128	1.0005	1.0173	1.0127	1.0330	1.0028	1.0148	1.0026	1.0192	1.0161	1.0364	1.0063	1.0186	1.0097	1.0290
Monaghan	1.0103	1.0236	1.0032	1.0093	1.0021	1.0119	1.0115	1.0252	1.0047	1.0112	1.0041	1.0138	1.0141	1.0285	1.0079	1.0147	1.0080	1.0234
Roscommon	1.0092	1.0267	1.0012	1.0115	1.0001	1.0152	1.0107	1.0284	1.0031	1.0135	1.0022	1.0172	1.0142	1.0318	1.0069	1.0174	1.0075	1.0270
Sligo	1.0133	1.0307	1.0028	1.0118	1.0018	1.0154	1.0147	1.0323	1.0045	1.0136	1.0041	1.0171	1.0178	1.0357	1.0082	1.0173	1.0107	1.0268
Carlow	1.0116	1.0309	1.0027	1.0124	1.0016	1.0161	1.0133	1.0324	1.0047	1.0144	1.0034	1.0178	1.0165	1.0359	1.0085	1.0180	1.0093	1.0275
Clare	1.0139	1.0402	1.0019	1.0138	1.0011	1.0179	1.0156	1.0417	1.0038	1.0157	1.0029	1.0197	1.0191	1.0451	1.0075	1.0193	1.0105	1.0292
Cork	1.0173	1.0361	1.0067	1.0141	1.0059	1.0181	1.0189	1.0377	1.0087	1.0160	1.0078	1.0200	1.0223	1.0411	1.0124	1.0197	1.0154	1.0297
Kerry	1.0094	1.0269	0.9990	1.0094	0.9983	1.0129	1.0111	1.0285	1.0011	1.0113	1.0000	1.0146	1.0144	1.0319	1.0048	1.0150	1.0079	1.0245
Kilkenny	1.0108	1.0253	1.0016	1.0109	1.0006	1.0147	1.0124	1.0268	1.0037	1.0129	1.0027	1.0166	1.0157	1.0302	1.0075	1.0166	1.0087	1.0261
Limerick	1.0199	1.0307	1.0071	1.0110	1.0069	1.0158	1.0215	1.0323	1.0092	1.0130	1.0088	1.0177	1.0249	1.0357	1.0129	1.0167	1.0163	1.0274
Tipperary	1.0102	1.0290	1.0019	1.0096	1.0008	1.0136	1.0119	1.0306	1.0037	1.0116	1.0027	1.0155	1.0152	1.0340	1.0073	1.0152	1.0084	1.0250
Waterford	1.0154	1.0342	1.0059	1.0157	1.0053	1.0203	1.0171	1.0358	1.0079	1.0179	1.0073	1.0220	1.0205	1.0393	1.0119	1.0218	1.0143	1.0319
Wexford	1.0051	1.0196	0.9999	1.0096	0.9989	1.0122	1.0068	1.0211	1.0022	1.0116	1.0006	1.0140	1.0100	1.0245	1.0060	1.0152	1.0077	1.0232

Figure 15 – National Traffic Growth Forecasts: Annual Growth Factors (Source: TII Project Appraisal Guidelines Unit 5.3)

Table 8 – Proposed Development Vehicle Trip Rate Estimates Summary							
Type	Units	AM Peak Hour			PM Peak Hour		
		In	Out	Two Way	In	Out	Two Way
Total Trips 2025 baseline		7	17	24	22	14	36
Total Trips + 5 years		8	19	27	24	15	39
Total Trips + 15 years		9	20	29	26	17	43

The Traffic and Transport Assessment report issued for Old Mill Celbridge planning submission 191282 outlines the summary of trips and an excerpt of same is shown below in Figure 16. Note that Wolstan Haven Road is what we now call the Shackleton Road.

Junction	Location	Year	Do Nothing	
			AM	PM
1	Oldtown Mill Rd/ Wolstan Haven Rd	2021	1392	1348
		2026	1513	1464
		2036	1675	1621
2	Wolstan Haven Rd/ Maynooth Rd	2021	1264	1508
		2026	1393	1663
		2036	1543	1841
3	Wolstan Haven Rd/ Tesco access	2021	953	1176
		2026	1050	1297
		2036	1163	1436

Figure 16 – Proposed Development's Network Impact (2021) (Source: Traffic and Transport Assessment Report for Old Mill Celbridge on behalf of John Fitzgerald and Noel Browne in partnership with Aterna Developments Ltd. Table 6.2)

Based on the survey findings for year 2036-2040 with no improvements applied - see summary details below.

Junction 1: AM estimate 1675 + 29 new trips, a 1.7% increase

PM estimate 1621 + 43 new trips, a 2.7% increase

Junction 2: AM estimate 1543 + 29 new trips, a 1.9% increase

PM estimate 1841 + 43 new trips, a 2.3% increase

Junction 3: AM estimate 1163 + 29 new trips, a 2.5% increase

PM estimate 1436 + 43 new trips, a 3.0% increase

The above estimates outline a sub-threshold impact for the development on the local junctions and no further analysis of these junctions is required.

5.2.3 Cycle Travel

The quantity of long stay cycle parking is provided as per the Development Plan guidelines. Minimum bicycle parking standards are set out in Chapter 15, Table 15.4 of the Development Plan and are summarised as follows:

- For Apartments – 1.0 space per bedroom + 1 visitor space per 2 apartments

All two-to-four-bedroom housing units are own door entry with private gardens to the front and rear which permits ample bicycle storage for the residents. The one-bedroom apartment units have own door entry at ground and first floor levels. The ground floor apartment units have front and rear private gardens with ample space for bicycle storage. The first-floor units will have a secured shed at ground floor level for indoor bike storage accessible by residents only. All visitor bicycle parking will be provided within the main residents' provisions.

6 PRE – OCCUPATION BASELINE MODE SHARE

6.1 Purpose of the Baseline

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

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

6.2 Mode Share

The Kildare County Development Plan (KCDP) illustrates modal share for the county based on Census 2016 using Powscar data. According to the census the commuting patterns for employment and educational purposes rely heavily on motorised private transport. Active travel and public transport accounts for a very small proportion of journeys to work as can be seen in Figure 17 below.

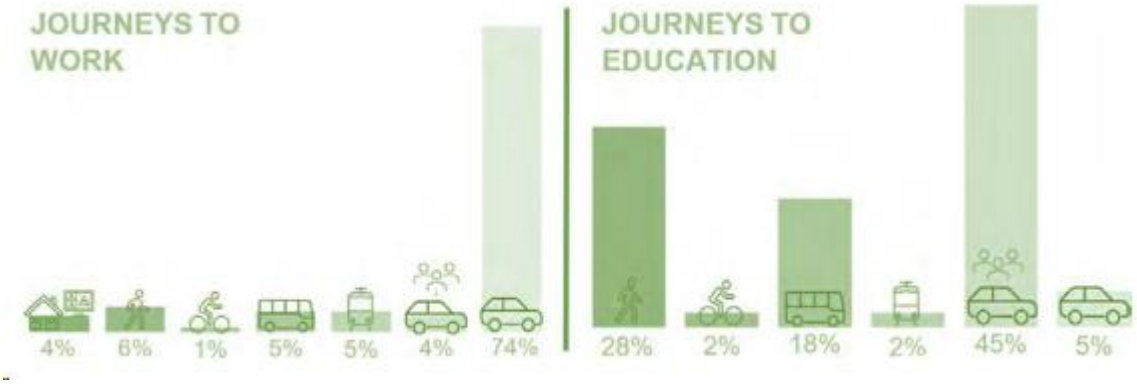

Figure 17 County Kildare Mode Share (Source: Kildare County Development Plan figure 5.4 chapter 5)

The aim is to achieve a significant modal shift for Kildare County and the recent Government approval of the Dart+West project to enter into the planning system is a crucial milestone for the county. This project aims to transform the rail network and provide a reliable alternative to the private car. Bus Connects have also increased the public bus network in the county with further upgrades in the pipeline. KCC are also providing cycling infrastructure to assist the modal shift into the active travel mode.

The aim within the lifetime of the KCDP is to reduce private car travel from 74% to 50% for journeys to work and 50% to 40% for journeys to education. The targets aim to increase walking from 6% to 20% for journeys to work and 28% to 50% for journeys to education. The targets aim to increase walking from 6% to 20% for journeys to work and 28% to 50% for journeys to education. The targets aim to increase travel by cycling from 1% to 10% for journeys to work and 2% to 15% for journeys to education. The targets aim to increase travel

by public transport modes such as bus and train from 10% to 27% for journeys to work and 20% to 25% for journeys to education; refer to Figure 18.

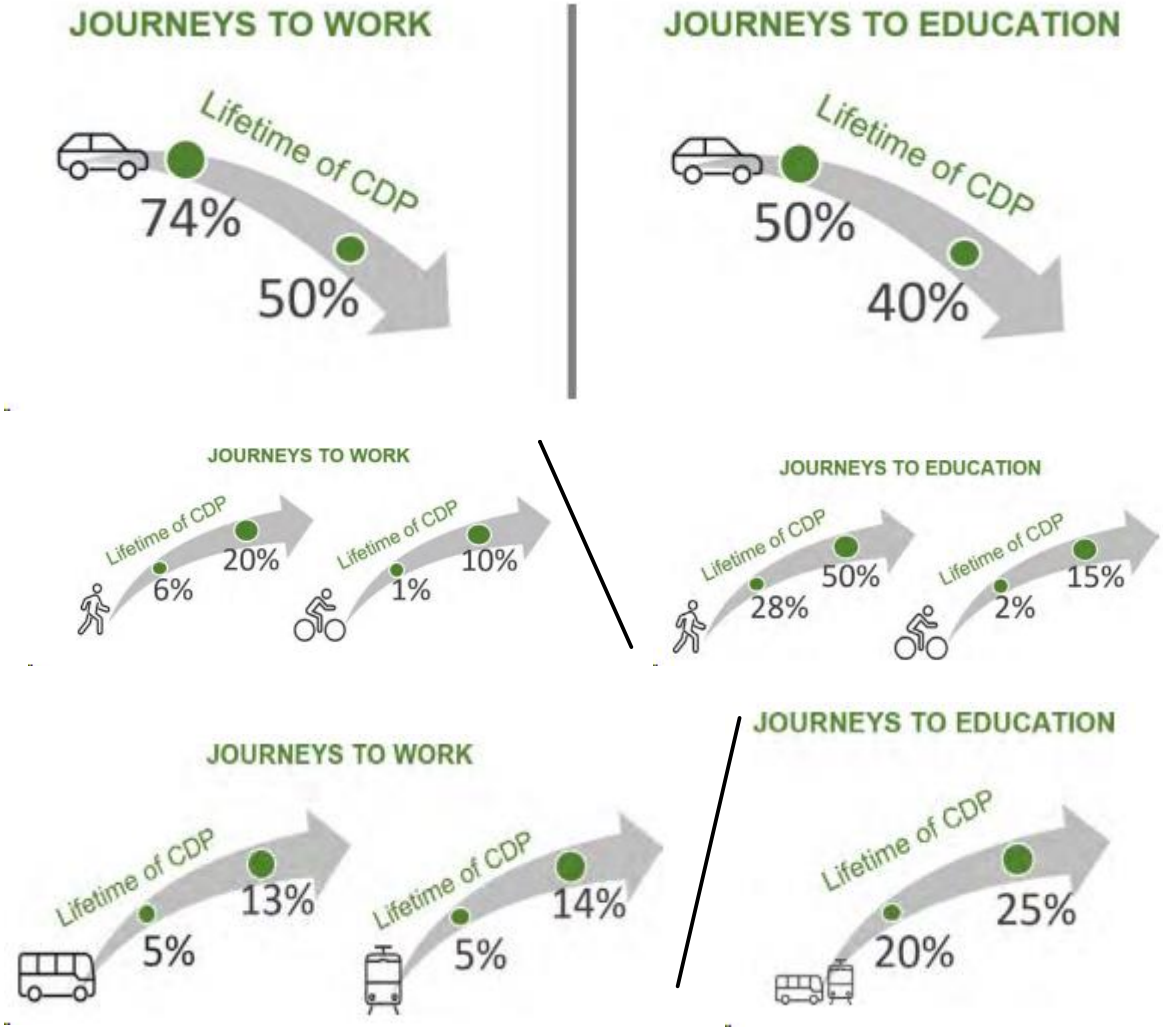

Figure 18 County Kildare Mode Share Shift Targets (Source: Kildare County Development Plan chapter 5)

Thus, the positive trend towards public transport usage for travel into Dublin City Centre and the expansion of public transport modes will benefit the residential development in Celbridge town by reducing dependency on private car travel.

7 AIMS AND OBJECTIVES OF THE TMMP

7.1 Overview

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

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

7.2 Aims and Objectives

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

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

7.3 Targets

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

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

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

8 MOBILITY MANAGEMENT MEASURES

8.1 Proposed TMMP Action Plan Measures

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

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

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

8.2 Mobility Manager

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

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

8.3 Reducing the need to travel

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

8.4 Welcome Travel Pack

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

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

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

8.5 Marketing and Travel Information

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

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

- Production and distribution of the Welcome Travel Pack as described above.
- Producing dedicated printed Travel Option Leaflets (in addition to the Welcome Travel Pack) and online information which can be personalised to suit the individual needs of the site.
- Once travel surveys have been undertaken, additional leaflets can be provided which are tailored to encourage travel by a specific mode of transport.
- Organising events and activities to coincide with Bike Week, European Mobility Week and any other national/ local sustainable travel or community events.
- Displaying regular updates on TMMP targets and activities in communal areas of the residential development.
- Promotion of sustainable travel options to residents, focusing marketing initiatives on areas where there is a willingness to change and promoting positive messages e.g., reducing congestion and CO2 emissions, getting fit and active.

8.6 Walking

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

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

8.7 Cycling

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

- Adequate, secure bicycle parking at convenient locations within the site.
- Information on the local cycle network routes on communal notice boards.
- Promotion of Bike Week events taking place in the surrounding area.
- Promotion of cycle security and bike marking schemes to reduce bike theft.
- Promotion of cycle safety.
- Setting up of a Bicycle User Group (BUG).

8.8 Public Transport

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

- Provide up to date bus details including timetables/ contact information in the welcome packs and on community notice boards.
- Provide wayfinding towards key transport modes.
- Liaise with local bus companies regarding future improvements and/or extension to local services.

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

8.9 Managing Car Use

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

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

9 MONITORING AND REVIEW

9.1 Monitoring and Review

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

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

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

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

9.2 Data Collection Analysis

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

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

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

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