Proposed residential development, former Chadwicks site, Greenhills Road, Walkinstown, Dublin 12

Parking and Mobility Management Plan

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TABLE OF CONTENTS

APPENDICES

1.0 INTRODUCTION

Dr Martin Rogers has been commissioned to complete a Mobility Management Plan for a proposed 633-unit apartment development at the former Chadwicks site, Greenhils Road, Walkinstown, Dublin 12.

The development comprises the following:

- 633 No. apartments,
- 1330 m2 GFA commercial space, and
- 360 m2 GFA crèche (excluding external play area).

The apartment breakdown is as follows:

- 1-Bedroom units 292 No.
- 2-Bedroom units 280 No.
- 3-Bedroom units 61 No.

It is proposed to provide 439 No. car parking spaces, including 21 No. disabled, with 15 No allocated to the commercial component and 5 No. dedicated GoCar spaces.

It is assumed that the proposed development will open in 2024.

The purpose of the report is as follows:

- Propose a restricted car parking provision for the residential component of the development, arguing that the proposed provision is entirely sustainable given the current modal splits for the journey to work for existing residents living close to the subject site, and
- Given this restricted parking provision, demonstrate the sustainability in transportation terms of residents utilising non-car based forms of travel by demonstrating the high level of service that is provided by the transport infrastructure in place at the site with regards to, walking, cycling, public bus services, national rail, and other Services (taxis, Car-club)
- Identify both physical elements and strategies to be incorporated within the proposed new development which will facilitate and create incentives for both residents of and visitors to the development to use the available modes of public transport along with walking and cycling in preference over private car use.

Section 2 of this report will estimate the car and cycle parking requirement for the overall development. While the full cycle parking requirements will be achieved, a restricted car parking provision will be proposed. The sustainability of this level of car parking provision will be demonstrated using census and canal cordon survey data.

Section 3 details the policy documents at national and local level relating to mobility management.

Sections 4 to 9 contain the mobility management plan for the proposed development.

Section 10 makes some overall concluding comments.

The site is located on the south side of Greenhills Road, adjacent to its junction with Belgard Road, 350 metres south-west of the Walkinstown Roundabout.

A site location map in contained within Figure 1-1 below.

Figure 1-1: Site location map

2.0 SUSTAINABILITY OF CAR PARKING PROVISION AT THE PROPOSED DEVELOPMENT

2.1 INTRODUCTION

This section of the report will detail the car and cycle parking requirements for the proposed development based on the South Dublin Development Plan 2016-2022 and the Sustainable Urban Housing: Design Standards for New Apartments (Guidelines for Planning Authorities) was published by the Department of Housing, Planning and Local Government in December 2020.

The proposed car and cycle parking provision on site will then be detailed, highlighting in particular the intended lower level of provision in relation to car parking for the residential component of the proposed development.

It will be argued that the proposed residential parking provision is entirely sustainable given the current modal splits for the journey to work / college for existing residents living close to the subject site.

This lower level of provision is also seen as being completely consistent with the mobility targets for Dublin city as detailed within the Dublin City Transport Plan. It is also consistent both with minimising the traffic impact of nearby already congested junctions (as detailed within the accompanying traffic impact assessment) and with maximising patronage of the extensive public transport and soft mode options (as detailed within this mobility plan).

2.2 CAR AND CYCLE PARKING REQUIREMENTS AS PER SOUTH DUBLIN COUNTY DEVELOPMENT PLAN 2016 - 2022

2.2.1 PROVISION VERSUS MAXIMUM REQUIREMENTS

Tables 3-1 and 3-2 below detail the maximum car and bicycle parking standards for South Dublin County Council based on the rates contained within their 2016 - 2022 Development Plan Written Statement for the residential commercial and crèche components of the proposed development:

Development type	Area / units	Maximum car parking standards	Maximum parking required
Apartments 1-bed	292 No.	0.75 per unit	219
Apartments 2-bed	280 No.	1.00 per unit	280
Apartments 3-bed	61 No.	1.25 per unit	76
TOTAL			575
		Bike parking standards	Parking required
Apartments	633 No.	1 private secure bicycle space per 5 No. apartments + 1 visitor bicycle space per 10 No. apartments	127 + 63 = 190

Table 2-1: Parking required under South Dublin County Development Plan Standards for residential component

Development type	Area / units	Maximum car parking standards	Parking required
Commercial	1330 m^2	1 per 75 m^2	23
Crèche	360 m^2	0.5 per classroom (10 No. classrooms assumed)	5
TOTAL			32
		Bike parking standards	Parking required
Commercial	1330 m^2	1 per 200 m^2	7
Crèche	360 m^2	None specified	-
TOTAL			7

Table 2-2: Parking required under South Dublin County Development Plan Standards for commercial / crèche component (Zone 2 (non-residential) classification for commercial and crèche)

It is proposed to provide 398 No. car parking spaces plus 21 No. disabled spaces for the residential component, equating to 0.66 car spaces per residential unit.

This level of provision is 70% of the quantum required under the South Dublin County Development Plan maximum standards. However, this provision must also be viewed in relation to the New Apartment Guidelines, the level of compliance with which is detailed within section 2.3 of this report.

This provision must also be viewed in terms of the array of alternative modes potentially available to residents at the proposed development, with high-frequency public transport available via the 9 and 27 routes, and significant cycle parking available.

It is proposed to provide 15 No. car additional parking spaces for the commercial component, 65% of the requirement as detailed within the Development Plan.

In terms of cycle parking provision, it is intended to provide 1363 No. cycle parking spaces (1035 No. for residents and 316 No. for visitors, 7 No. cargo spaces and 5 No. accessible spaces), significantly in excess of the 197 No. spaces required under the Development Plan.

The National Cycle Manual, referred to within the 2020 New Apartment Guidelines, requires 1 space per bedroom plus 0.5 spaces per unit for visitors for the residential component. This would result in a requirement of 1352 No. spaces.

The proposed development will provide 100% of this very onerous requirement.

2.2.2 PROVISION OF DEDICATED CAR CLUB PARKING SPACES

Use of private car is seen within this report as relating to its use for the journey to and from work during the morning and evening peaks. However, in many cases, residents require access to a parking space in order to have a car available to make non-work related trips for shopping and leisure purposes. Such trips can be very infrequent, therefore, the provision of dedicated car parking spaces for such usage constitutes an inefficient use of such resources.

Therefore, an alternative approach is proposed in order to cater for the non-trip-to-work-related car demand of residents at the proposed development. It is proposed to provide 5 No. car club vehicle spaces within the basement car park, available exclusively for residents.

The demand will be monitored on an ongoing basis by those managing the development, and the number of spaces can be increased as required.

Car clubs typically operate with residents signing up to the service being able to reserve the use of the vehicle at certain times / days, paying a rental fee to do so, but saving the user the necessity of owning either a car or a parking space at the development.

It is the intention of the developer to discuss the potential for a car club base at the subject site with GoCar, and established car club operator in the Dublin area.

Results of surveys carried out by GoCar indicate that use is predominantly for private rather than business use, with just less than 60% using the service to replace a private car. The average car is rented out for 1 hour per day. Shopping and leisure related trips were listed as top uses for GoCar.

The provision of 5 No. car club spaces will result in a number of benefits for residents at the proposed development:

- Elimination of the necessity to own a car (and the associated expense) where use of it will be relatively infrequent
- Access to car transport for those using a car infrequently

The provision of car club spaces is also consistent with section 4.23 of the 2018 Design Standards for New Apartments which states that 'for all types of location, where it is sought to eliminate or reduce car parking provision, … 'provision is to be made for alternative mobility solutions including facilities for car sharing club vehicles.'

2.3 CAR PARKING REQUIREMENTS FOR THE RESIDENTIAL COMPONENT BASED ON NEW APPARTMENT GUIDELINES

The most recent version of Sustainable Urban Housing: Design Standards for New Apartments (Guidelines for Planning Authorities) was published by the Department of Housing, Planning and Local Government in December 2020.

Chapter 4 of this report refers specifically to revised car parking requirements for new apartment developments.

Its recommendations can be summarised as follows:
The quantum of car parking is dependent primarily on the location of the subject site. Three categories of location are defined:

Central and/or Accessible Urban Locations:
Apartments in central locations that are well served by public transport, in which situation car parking provision to be wholly eliminated or substantially reduced. These locations are most likely to be in cities, within 15 minutes walking distance of city centres or centrally located employment locations. These locations include sites within 10 minutes walking distance of DART, commuter rail or Luas stops or within 5 minutes walking distance of high frequency (min 10 minute peak hour frequency) bus services.

Intermediate Urban Locations
This applies to apartments in suburban/urban locations served by public transport or close to town centres or employment areas and particularly for housing schemes with more than 45 dwellings per hectare. For this category, planning authorities may consider a reduced overall car parking standard.

Peripheral and/or Less Accessible Urban Locations
It is reasonable to assume that the subject site comes within the first category – a central location, adjacent to a high frequency bus line (27 and 77A), the sites designation within the first classification is entirely appropriate.

Based on this classification, it was concluded that a provision of between 0 and 0.5 parking spaces in total would be appropriate for the proposed development.

The actual car parking provision, at 398 No. spaces plus 21 No. disabled spaces, equates to 0.66 No. car parking spaces per residential unit.

The section immediately below uses mobility information from the 2016 Census to justify this level of car parking provision at the proposed development.

2.4 PROJECTED CAR USAGE IN GENERAL PROXIMITY TO PROPOSED DEVELOPMENT

2.4.1 MODAL SPLIT FOR THE PRIVATE CAR – 2016 CENSUS RESULTS FOR ELECTORAL DISTRICTS IN THE VICINITY OF THE PROPOSED DEVELOPMENT

Modal split data from the 2016 Census for Electoral Districts close to the subject site can assist in providing a case for the sustainability in transportation terms of 64% of residents having access to a car space.

Such evidence can help demonstrate that potential overspill onto the local road network will not occur with the proposed level of car parking provision in place.

In order to demonstrate that the proposed quantum of car parking is sustainable and will not result in overspill, this report will assess existing demand for car travel within the general environs of the subject site using 2016 Census data.

This data enables the proportion of households in the general vicinity of the subject site who do not own a car to be established as well as the proportion of commuters presently living in the area using the private car for their journey to work.

Data from individual electoral districts, overall figures for Dublin City Canal Cordon Counts are also utilised to support the proposed level of car parking provision.

Data has been obtained for the following 5 No. Electoral Districts in the general vicinity of the subject site:

- Terenure-St James (ED containing proposed development)
- Tallaght-Kilmanagh
- Templeogue-Limekiln
- Terenure-Greentrees
- Terenure-Cherryfield

The outline of these 5 No. Electoral Districts are illustrated within Figure 2-1.

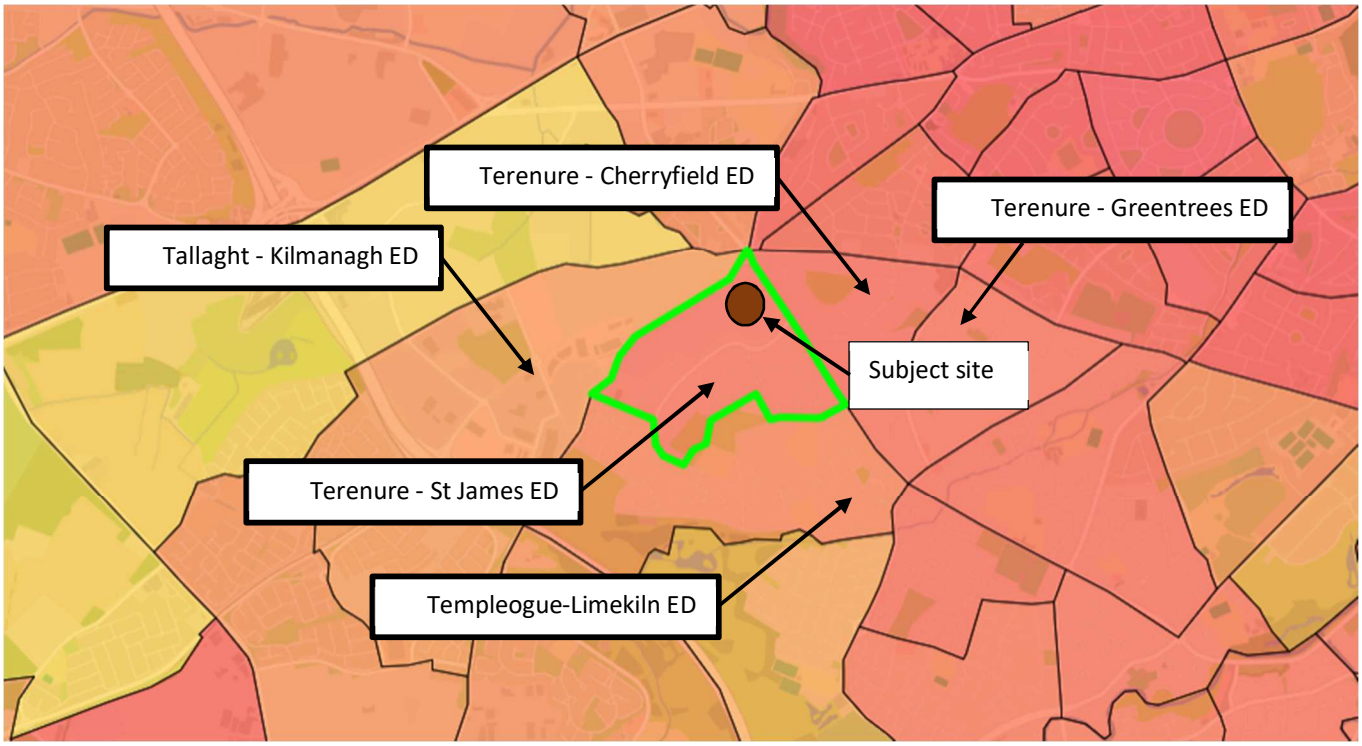

Figure 2-1: 5 No. Electoral Districts analysed

Table 2-3 contains the modal splits for car, bus and DART / Rail travel for the 5 No. Electoral Districts close to the subject site.

Mode	CAR DRIVER (%)	CAR PASSENGER (%)	BUS (%)	LUAS/TRAIN (%)	CYCLING (%)	WALKING (%)	NOT STATED / VAN / HOME (%)
Terenure-St James	56	2	16	1	7	6	12
Tallaght-Kilmanagh	59	3	6	10	4	6	12
Templeogue-Limekiln	58	3	14	1	7	3	14
Terenure-Greentrees	54	3	15	0	10	4	14
Terenure-Cherryfield	54	3	16	1	8	6	14
Weighted Average	56	3	13	3	7	5	13 (3/6/4)

Table 2-3: Modal splits for electoral districts in vicinity of subject site

Thus, for the existing inhabitants in 5 No. Electoral Districts close to the subject site, 56% commute by private car driver as detailed within the 2016 Census, with 16% commuting by bus, train or LUAS and 12% cycling or walking.

2.4.2 MODAL SPLITS FOR THE PRIVATE CAR - 2019 CANAL CORDON COUNTS DOCUMENT

The results within this document detail the volume of vehicles and people crossing the Canal Cordon into Dublin city centre in the morning peak between 7am and 10am. The purpose of collecting this data is to track trends in the modes of travel people are using to travel to the city centre. It indicates the degree of success of various transport management measures / policies in changing commuter travel behaviour.

A comprehensive picture of the modes of travel of commuters was compiled for the period 2006 to 2019.

Table 2-4 below details the modal splits compiled for the 10-year period from 2010 to 2019:

	Percentage for each mode									
Mode	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Private car users	39.8	38.0	37.0	35.4	33.3	32.6	31.8	29.2	28.3	26.7
Pedestrians	8.3	7.9	9.2	9.1	10.2	9.4	10.5	11.8	11.2	11.4
Cyclists	3.3	3.7	4.3	4.7	5.4	5.4	5.9	5.9	5.7	6.0
Public transport	45.9	47.5	46.4	47.9	48.4	49.8	49.1	50.7	52.6	53.5

Table 2-4: Modal share for commuters crossing canal cordon 2010 to 2019.

It can be seen that car usage has gradually reduced over the past 10 years, with the modal split for private car usage now below 27%, with public transport at just above 53%.

In the 2016 to 2019 period, there is thus a 16% drop in car driver usage, with a corresponding increase in sustainable modes.

2.4.3 COMBINING CANAL CORDON AND 2016 CENSUS MODAL SPLITS

If one takes the 2016 Census results and combines these with the reduction in car usage in the 2016 to 2019 period as detailed by the Dublin City Canal Cordon Counts, one will get a revised modal split for private car usage in the 5 No. Electoral Districts close to the proposed development.

The 16% drop in the car driver modal split will result in the modal split for the 5 No. Electoral Districts reducing from 56% to 46%.

Public Transport, cycling and pedestrian modes will all increase proportionally by 16%. Public transport is further increased to 21% given the greater usage of this mode that Bus Connects will promote, with higher frequencies and faster commute times. Cycling is further increased to 15% given the significant on-site parking availability and the improvements to the network planned under the GDA Cycle Framework.

The revised modal splits for the 5 No. Electoral Districts are as follows:

Transport Mode	**Adjusted modal splits based on 16% reduction in car driver usage 2016-2019**
Car driver	46
Car passenger	3
Public transport	21
Cycle	15
Walk	6
Home	5
Not Stated / Other	4

Table 2-5 - Target Modal Splits for proposed development

The adjusted modal splits will form the basis for the day of opening target modal splits at the proposed residential development.

2.5 CONCLUDING COMMENT

This section of the report demonstrates that, given existing travel patterns close to the subject site, and its designation within the New Apartment Guidelines as a 'central / accessible area' within close proximity to a high frequency bus line, a parking provision of 0.64 No. car parking spaces per dwelling unit is sustainable. The allocation of 5 No. dedicated car club spaces will further aid the sustainability of this parking provision.

This low provision will have the effect of minimising the traffic impact of the proposal, an effect referred to in detail within the accompanying traffic assessment. This is very significant given the levels of congestion at the major junctions in proximity to the proposed development.

However, providing a limited number of car parking spaces places an onus on the applicant to demonstrate that the site is configured in such a manner that enables all residents at the proposed development to commute to work by means of a sustainable mode of travel other than the private car.

The remaining sections of this document seek to demonstrate that such is the case for the proposal at the Greenhills Road site.

3.0 GUIDANCE DOCUMENTS ON MOBILITY MANAGEMENT PLANNING

3.1 INTRODUCTION

A Mobility Management Plan (MMP) is a long-term management strategy covering a selected location with the aim to promote and deliver sustainable transport objectives. A Mobility Management Plan consists of a package of measures put in place by an applicant in order to encourage and support more sustainable travel patterns among both residents and visitors at the proposed development.

The package usually includes measures to promote and improve attractiveness of using public transport, cycling, walking, car-sharing / car clubs. It should be considered a dynamic process where a package of measures are identified, piloted and monitored on an ongoing basis.

A MMP prepared at planning stage, before the development is built and occupied, can only highlight potential issues to be included in a subsequent MMP to be prepared once the development has obtained a grant of planning permission and is built and occupied.

The environmental and congestion impacts of car-based transport has resulted in policy changes where the priority of more sustainable forms of travel has increased. The MMP helps to encourage use of modes of travel other than the private car.

The proposed development is located adjacent to both the heavily loaded Walkinstown Roundabout intersection and the high frequency 27 and 77A bus routes.

MMP's are intended to bring the following benefits:

- Greater accessibility of the site.
- Encouraging of safe and viable alternatives for accessing the site.
- Pragmatic initiatives based on appraisal of residents' and visitors travel patterns.
- Reduced overall vehicle mileage and trip volumes.

3.2 GUIDANCE AND POLICY DOCUMENTS

This report was developed with guidance from the documents listed below;

3.2.1 NATIONAL POLICY

Smarter Travel A Sustainable Transport Future 2009 – 2020 (Department of Transport, 2009)
The governments transport policy for the future that targets transportation. It promotes greater integration between spatial planning and transport policy. The aim is to reduce car based commuting from 65% to 45% by 2020.

Regional Spatial and Economic Strategy (Eastern and Midland Regional Assembly, 2019)
This document notes the trends within the Region that indicate an overreliance on the private car for travel to work and education, stating that approximately 46% of Dublin's population commute by private car. Regional Planning Objective 8.7 within this document aims to promote the use of mobility management and travel plans to bring about behaviour change and more sustainable transport use.

National Cycle Policy Framework 2009 (Department of Transport, 2009)
The National Cycle Policy Framework NCPF sets out a national policy for cycling to create a stronger cycling culture and a friendlier environment for cyclists.

Making Residential Travel Plans Work (Department for Transport, UK, 2007)
UK document providing a framework for residential travel plans, detailing the content to be contained within the Travel Plan. This document incorporates the structure advocated by this document.

Sustainable Urban Housing: Design Standards for New Apartments - Guidelines for Planning Authorities (Department of Housing, Local Government and Heritage, December 2020)
This document details new levels of car and cycle parking provision for apartment developments in urban areas.

3.2.2 LOCAL POLICY

South Dublin Development Plan 2016-2022
Section 6.4.2 states that Traffic and Transport Assessments and/or Workforce Travel Plans (also known as Mobility Management Plans) will be required to support development proposals that have the potential to generate significant traffic movements, to demonstrate that there is public transport carrying capacity and road capacity to serve the development. The Council is also committed to the provision of a Traffic Management Centre for the Greater Dublin Area, in association with the NTA.

Transportation Strategy for the Greater Dublin Area 2016-2035 (NTA, 2016)
This document states that development within the existing urban footprint of the Metropolitan Area should be consolidated to achieve a more compact urban form. Policy should allow for the accommodation of a greater population than at present, with much-enhanced public transport system, with the expansion of the built up areas providing for well-designed urban environments linked to high quality public transport networks, enhancing the quality of life for both residents and workers.

Dublin City Centre Transport Study (NTA, 2016)
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 the one proposed at the proposed 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.

Cycling Policy
The National Cycle Manual, adopted in 2011, provides local guidelines on cycle parking provision.

4.0 THE TRAVEL PLAN PYRAMID

The UK document 'Making Residential Travel Plans Work' details the travel plan pyramid that 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 integrated 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.

An image of the pyramid is contained within Appendix 1.

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 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.

5.0 GREENHILLS ROAD RESIDENTIAL DEVELOPMENT MOBILITY STRATEGY

Section 6 of this report will summarise the existing public transport and cycling facilities at the subject site.

Section 7 takes the existing commuter travel patterns for the area and proposes year-of-opening modal splits for the proposed development. It also contains proposed future improvements public transport, cycling and walking facilities nearby which will assist in the attainment of the stated targets.

Section 8 details the objectives of the Travel Plan Strategy and lists a suite of measures planned to be implemented to facilitate the achievement of these objectives.

Section 9 details the central role of the Travel Plan Coordinator in the attainment of the objectives as set out within Section 8.

6.0 EXISTING PUBLIC TRANSPORT AND CYCLING FACILITIES

6.1 EXISTING BUS INFRASTRUCTURE

The Greenhills Road area is currently connected via the 27 and 77A bus routes, providing good links both to the city centre and the western suburbs.

The frequency of each bus can be seen in Table 6-1:

ROUTE	ORIGIN	DESTINATION	FREQUENCY AM PEAK
Route 27	JOBSTOWN	CLARE HALL VIA CITY CENTRE	6 per hour
Route 77A	CITYWEST	RINGSEND	2 per hour
Route 9	LIMEKILN AVE	CHARLESTOWN	6 per hour
TOTAL			11 PER HOUR

Table 6-1– Dublin Bus Route Frequencies close to proposed development

Figure 6-1 details the routes taken by the 9. 27 and 77A in close proximity to the site of the proposed development.

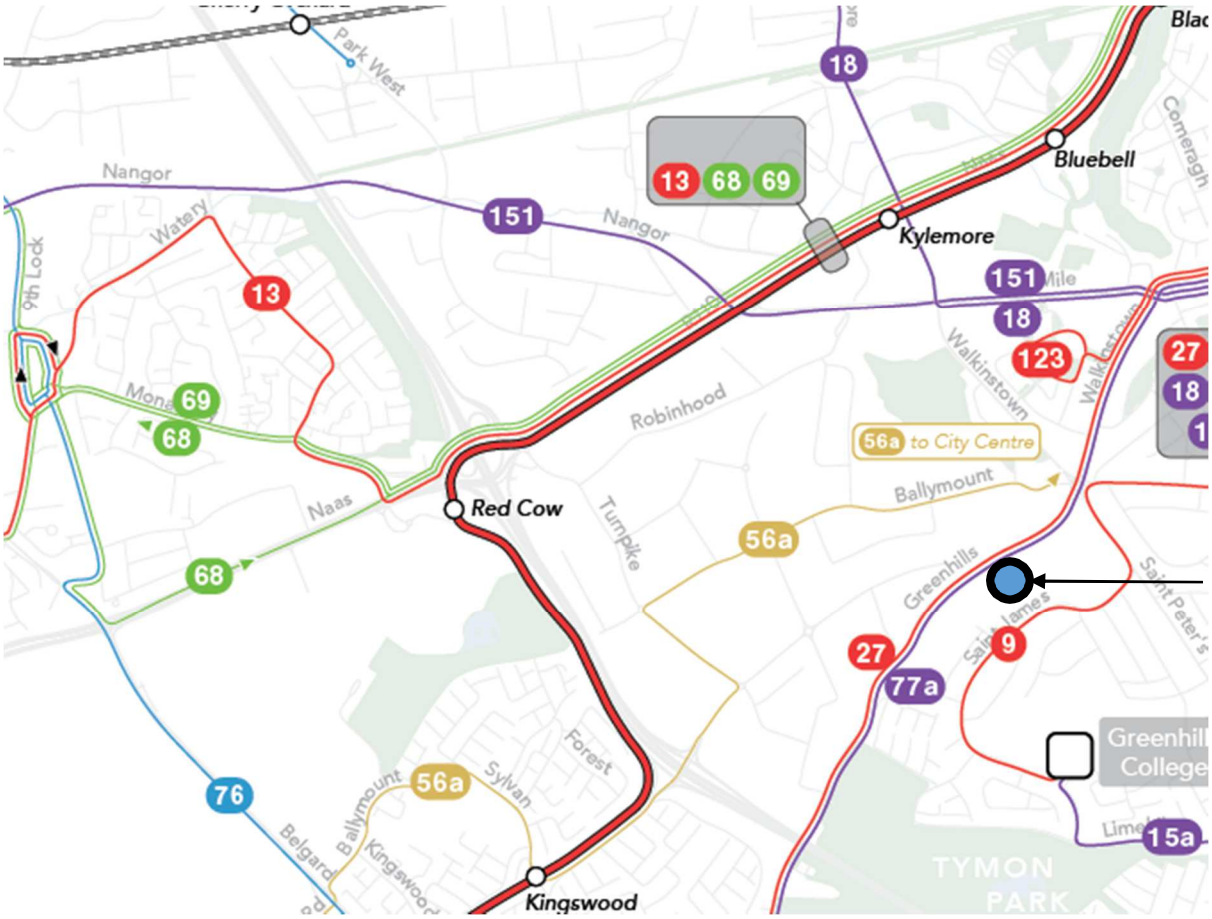

Figure 6-1: Existing bus routes 27, 77A and 123

In addition, the 123 route, with its terminus west of Walkinstown Road within 1km of the site, runs into the city centre 6 times per hour during the morning peak.

With the present bus system along Greenhills Road yielding 14 No. buses per hour during the morning peak, and assuming a maximum capacity of 80 No. passengers, an overall hourly capacity towards town of 1120 No. passengers is derived.

(Assuming the D spine on the Bus Connects route contains the D2, D4 and D5 routes, extending to Tallaght along the Walkinstown Road and Greenhills Road. In Tallaght, D2 would extend past The Square to Jobstown and Citywest, with some similarity to existing Route 27, D4 would extent past The Square to Killinarden Heights and Kiltipper Way, and D5 would split off at Castletymon Road to serve Tymon North and Seskin View on the way to The Square in Tallaght. In addition, the F spine will be accessible to commuters living at the proposed development, as the F3 route passes through Walkinstown Roundabout immediately east of the site. These proposed routes will provide capacity commensurate with the existing network, but with significantly reduced journey times, providing uplift to the desirability of the bus as a preferred modal choice for commuters. See section 7.2.1 below)

In order to estimate the level of demand the proposed development will place on the existing / proposed bus network, we can assume a figure of 2.7 persons per apartment unit of a suitable age to travel to school / college or work. This is a robust figure given the development has an average of 1.6 bedrooms per unit, and is based on 2016 Census figures derived for a standard household of 2.7 persons per household in total. It yields a population for the proposed residential component of the development at 1709.

If we assumes 21% travelling by bus (as detailed within Mobility Management Plan document), this translates into 359 No. bus commuters. If one assumes these journeys are spread over 3 hours in the morning, this translates into an hourly demand on the bus network of 120 No. commuters per hour.
*This figure is only 11% of the computed maximum capacity of the existing bus network. Thus, based on=-frequency and capacity, it can be assumed that the bus network in place will cope more than adequately with the demand induced by the residential component of the proposed development.

6.2 EXISTING CYCLING INFRASTRUCTURE

Figure 6-2 details the existing cycle facilities close to the site:

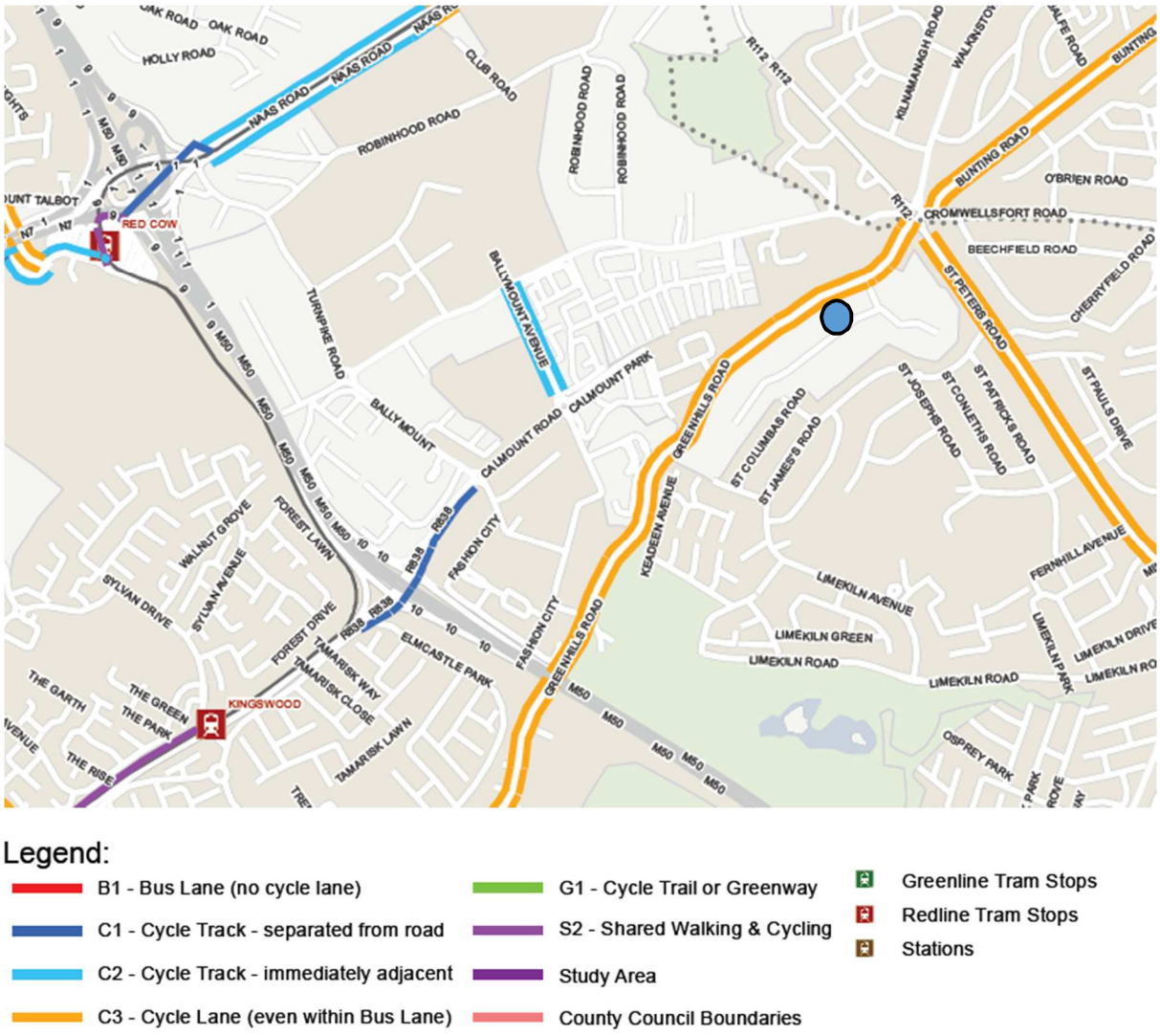

Figure 6-2: cycling facilities in proximity to Chadwicks site

One can see that, while there are relatively limited cycle lanes in the vicinity of the development, with the main link being along the Greenhills Road within the bus lane, the general connectivity to the south city area is good via Walkinstown Roundabout.

7.0 PREDICTED POST-DEVELOPMENT TRAVEL PATTERNS

7.1 INTRODUCTION

Based on the modal split information within section 2 of this report for the Electoral Districts in the general vicinity of the subject site, excluding not-stated modal preferences and stay-at-home workers, Table 7-1 below indicates a target profile for the future residents at the Greenhills Road SHD on the projected day of opening:

Transport Mode	Commuter Usage (%) (day-of-opening)
Car driver	40
Car passenger	3
Car Club User	10
Public transport	21
Cycle	15
Walk	6
Home	5

Table 7-1 - Future Target Modal Splits for Belgard Road / Airton Road SHD

The 10% modal split for car club users is based on the provision of 5 No. Car Club spaces, catering for approximately 63 No. apartment units (10% of 633 No. apartment units). This is in line with GoCar's assertion that 1 No. car club space has the potential to service up to 15 No. residential units.

The 40% plus 10% (50% total vehicle driver modal split) is very marginally above the car driver plus van modal split derived for 2019 within section 2 above (46%).

The section below details the improvements planned to the bus and cycle network that will help insure that the proposed day-of-opening modal splits for the development are maintained if not improved upon into future years.

7.2 FUTURE PLANNED PUBLIC TRANSPORT AND CYCLING NETWORK IMPROVEMENTS

7.2.1 BUS CONNECTS

Figure 7-1 details the Bus Connects proposals, indicating that the core Greenhills to City Centre route running along Greenhills Road.

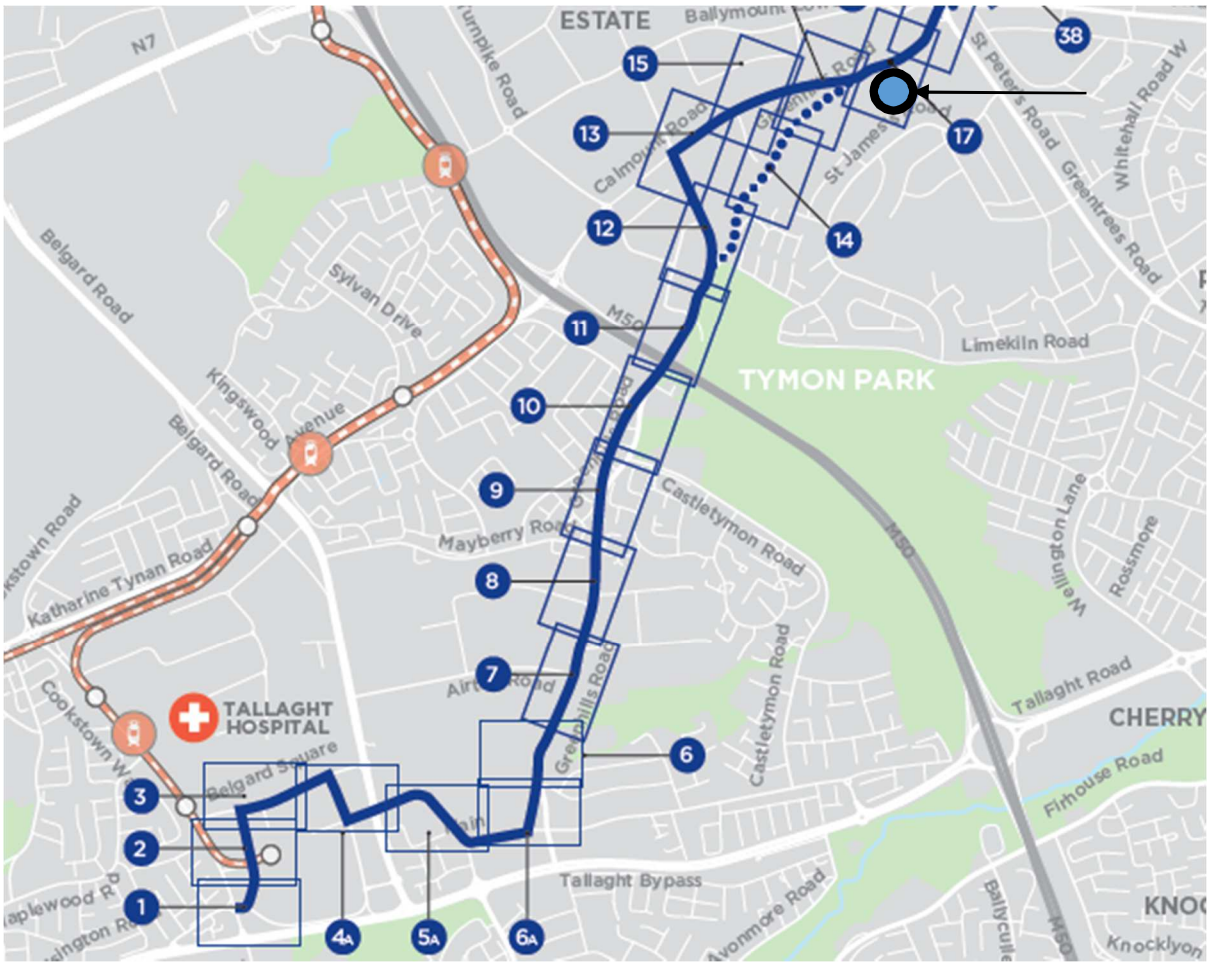

Figure 7-1: Proposed Greenhills to City Centre spine running along Greenhills Road

One can see that there are limited cycle lanes in the vicinity of the development, with the main link being along the Greenhills Road within the bus lane.

7.2.2 GDA CYCLE NETWORK PLAN

Figure 7-2 details the facilities planned within the GDA Cycle Network Plan.

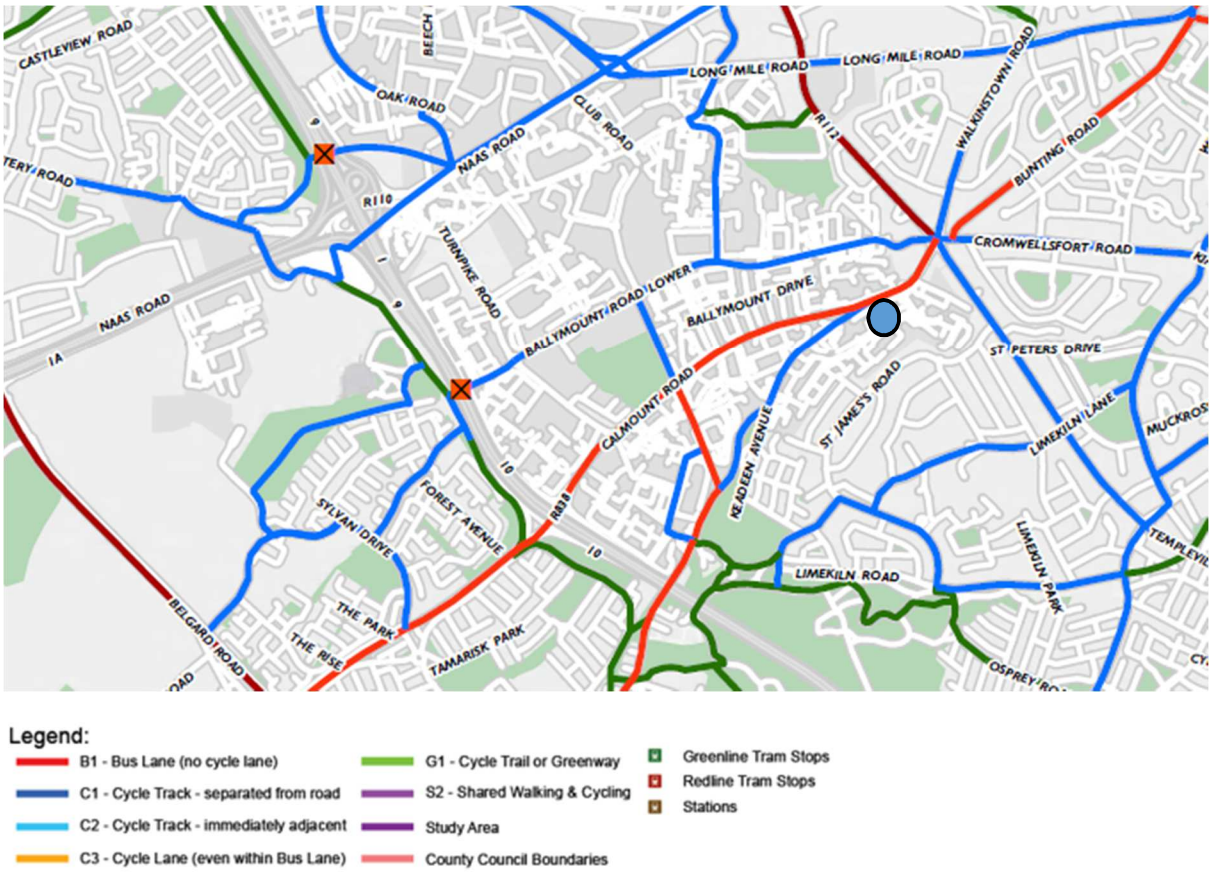

Figure 7-2: Cycle lane improvements detailed within Draft 2021 GDA Cycle Plan

The primary route along Greenhills Road mirrors the proposed Greenhills to City Centre Core bus corridor route detailed above.

8.0 OBJECTIVES OF TRAVEL PLAN STRATEGY

8.1 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.

As the proposal includes relative limited on-site car parking, this strategy aims to provide sustainable transport choices for residents and visitors at the site, thus continuing to minimise 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 are met and maintained thereafter.

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 availability of the private car for residents (non-work purposes) (Objective No. 1);
- To encourage residents to use public transport by providing information on the services available as well 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 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).

A number of the proposals listed to achieve and maintain the modal splits detailed within Table 7-1 above are easy and inexpensive to implement. Other measures require initial co-operation and co-ordination both within and between organisations.

The general morale of residents will be, to an extent, dependent on their general state of health and fitness, particularly where, for some, long periods are spent behind a desk working with computers when they get to their workplace. The profile of their journey to work can be a significantly beneficial factor in regard to increased fitness and wellbeing.

8.2 OBJECTIVE NO. 1 - MANAGE PRIVATE CAR AVAILABILITY FOR RESIDENTS (WORK AND NON-WORK PURPOSES)

The promotion of car sharing among residents using the development website can help decrease the car driver modal share and increase the car passenger percentage for work-related purposes.

Rather than all residents requiring access to a parking space in order to have a car available to make non-work related trips for shopping and leisure purposes, an alternative and more sustainable approach is proposed involving the provision of information on car clubs to residents in order to cater for the non-trip-to-work-related car demand.

It is proposed that the Travel Plan Co-ordinator will provide information on the availability of car club vehicles for residents within the development, with 5 No. spaces being provided initially.

Such actions will have the effect of reducing the modal split for car drivers to 40%, with 10% of commuters using the car club facilities.

8.3 OBJECTIVE NO. 2 - ENCOURAGING GREATER USE OF PUBLIC TRANSPORT FOR THE JOURNEY TO WORK

8.3.1 GENERAL

Public transport will be a favoured transport option for a predicted 21% of residents at the proposed development on its day of opening.

The Bus Connects development, in the longer term, will significantly improve public transport services at the subject site.

8.3.2 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 and 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.

8.4 OBJECTIVE NO. 3 - ENCOURAGING MORE RESIDENTS TO CYCLE TO WORK

Cycling will be a favoured transport option for a predicted 15% of residents at the proposed development on its day-of-opening. There is thus significant scope to increase this modal share further once the GDA cycle plan is implemented.

The provision of 1352 No. cycle parking spaces on site will also help both maintain and strengthen this modal split, providing the possibility of cycle ownership for all residents.

8.5 OBJECTIVE NO. 4 - ENCOURAGING MORE RESIDENTS TO WALK TO WORK

Walking will be a favoured transport option for a predicted 6% of residents at the proposed development on its day of opening.

Maintenance of this modal share will be facilitated by noticeboard and website information on quickest routes to town, nearby districts and closest bus stops / LUAS stop.

9.0 ROLE OF THE TRAVEL PLAN COORDINATOR FOR THE PROPOSED RESIDENTIAL DEVELOPMENT

9.1 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 residential component of the proposed 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.

9.2 DUTIES OF THE TRAVEL PLAN COORDINATOR

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

The co-ordinator will have a vital role in encouraging and enabling residents at the subject site to adopt the measures listed within the document to achieve the objectives listed above within section 8. The duties of the co-ordinator are detailed below under the following headings:

- Promoting the environmental and health benefits of their travel choices
- Promoting bike use
- Promoting walking to work
- Promoting rail and bus based travel
- Monitoring the modal splits for residents' journey to work

9.2.1 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, and providing information on issues such as available public transport services, where to buy a bike, and the health benefits of cycling / walking.

9.2.2 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 timesavings involved. In addition, 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.

In addition, management might subsidise the cycling mode by purchasing an initial stock of bicycles to loan to residents at preferential rates. Such a scheme would not be expensive and would have the added benefit of raising awareness of it as a mode of travel and generally encouraging cycle use.

9.2.3 Promoting walking to 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 work. The coordinator can also liaise with the local authority on work being done near the candidate site to make the local road network more pedestrian friendly.

9.2.4 Promoting rail and bus based travel

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, fares, bus and / LUAS stop location and route planning, together with information on annual and monthly public transport tickets, carrying potential tax benefits for commuters.

9.2.5 Monitoring the modal splits for the residents' journey to work

In order to maximise the effectiveness of the Travel Plan, 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 of all on-site residents.

10.0 CONCLUDING COMMENT

This Travel Plan is required to insure the sustainability of the limited provision of car parking at the subject site, consistent with the New Apartment Guidelines but below the maximum provision as detailed by the planning authority.

This report has demonstrated that the proposed reduced car parking provision for the residential development is entirely sustainable based on current car ownership and modal splits for the journey to work for existing residents living within Electoral Districts close to the subject site. It is also entirely in line with recommendations on parking provision set out in the *'Sustainable Urban Housing: Design Standards for New Apartments (Guidelines for Planning Authorities): December 2020'*

A parking provision of 0.64 spaces per apartment unit is sustainable, given that private car usage for the journey to work is projected to be in the region of 40% on the proposed day of opening of the development, with public transport / soft mode usage for the journey to work in the region of 42%. The balance comprises 10% projected to be car club users, 5% staying at home, and 3% travelling as car passengers.

The Residential Travel Plan / Mobility Management Plan within this report aims to achieve a sustainable travel culture for residents at the residential development by outlining a travel strategy, by listing measures to achieve its objectives and by committing to appoint a travel plan coordinator to oversee and monitor progress towards the target modal splits predicted for the site on its day of opening.

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APPENDIX 1 TRAVEL PLAN PYRAMID


The travel plan pyramid
Promotional Strategy
Services & Facilities
public transport; car clubs; parking management; sub-site travel plans etc.
Coordinator
To develop further measures and oversee the plan on an ongoing basis
Built Environment
Site design; public transport infrastructure; facilities to reduce the need to travel; parking provision; off-site measures
Location
Proximity to existing facilities and services

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APPENDIX 2

BUS CONNECTS - GREENHILLS TO CITY CENTRE CONSULTATION REPORT

4. Preferred Route Description

4.1 Overview

The Greenhills to City Centre Core Bus Corridor (CBC) commences on Belgard Square West at the junction with Cookstown Way. A bus interchange will be located in this area and will be a focus for all of the bus routes in the Tallaght area, providing seamless interchange between bus services, Luas and the Town Centre. From here, the CBC is routed along Belgard Square West and Belgard Square North as far as the junction with Belgard Square East.

The CBC route is proposed south along Belgard Square East towards Old Blessington Road and Main Street via the existing signalised Bus Gate at the Technological University Dublin (TUD) entrance. It continues along Main Street to Greenhills Road, continuing along Ballymount Avenue, Calmount Road, and Walkinstown Road as far as the junction with the Long Mile Road. It is proposed to realign the existing Greenhills Road along an existing road reservation area between Parkview and Treepark Road, and through Ballymount Industrial Estate by way of extending both Ballymount Avenue and Calmount Avenue to connect to Greenhills Road at new signalised junctions.

From the junction of the Long Mile Road and Walkinstown Road the CBC is routed along Drimnagh Road, Crumlin Road, Dolphin's Barn, Cork Street, St. Luke's Avenue, The Coombe, and Dean Street to the junction with Patrick Street. The CBC is then routed along Patrick Street and Nicholas Street to the junction with Christchurch Place where it will join the existing traffic management regime in the City Centre.

Priority for buses is provided along the entire route, consisting primarily of dedicated bus lanes in each direction, with alternative measures proposed at particularly constrained locations. Cycle facilities are provided along the length of the corridor where practicable to do so. Where this could not be achieved a parallel alternative cycle route is provided offline to the CBC route. Offline cycle facilities are proposed along Bunting Road, Kildare Road and Clogher Road to link into the Grand Canal cycle route at Parnell Road.

Opportunities for new soft landscaping and Urban Realm improvements will be reviewed with design development throughout the length of the CBC.

The following paragraphs will describe each section of the CBC in more detail, identifying the key design revisions which have been incorporated into the design since the publication of the Preferred Route Option in March 2020.

4.2 Belgard Square South to Greenhills Road – Belgard Square West, Belgard Square North, Belgard Square East, Old Blessington Road, Main Street

The Greenhills to City Centre CBC commences at the existing roundabout junction on Belgard Square South. It is proposed to change the roundabout to a fully signalised junction with improved pedestrian facilities. Belgard Square West is intended to be a bus only route not accessible to general traffic. The revised proposal now indicates an interchange that will act as the focus for all bus routes in the area.

Between Belgard Square South and Tallaght Cross West/Broadfield Hall access to and from these buildings and neighbouring developments will still be permitted from Belgard Square West.

Bus traffic across Old Blessington Road will be controlled by Signal Controlled Priority. Access to and from the Old Blessington Road to Belgard Square West will be permitted.

It is proposed to change the roundabout junction on Belgard Square North at the Tallaght Hospital Entrance and Cookstown Way to a fully signalised junction to accommodate new bus lane and pedestrian facilities. The roundabout junctions at Belgard Square East will also be replaced with new signalised junction arrangements. It is proposed to upgrade the existing cycle facilities and associated junctions on Belgard Square North to provide segregated cycle tracks to and from Tallaght Hospital. This proposed amendment may impact on the existing trees and shrubs along Belgard Square North and require localised land acquisition on a currently undeveloped site.

From Belgard Square East the route largely aligns with the existing bus route for the area and minimises impacts on the existing TUD campus infrastructure and operational procedures. It is proposed to create a new junction with Signal Controlled Priority on Old Greenhills Road at the location of the existing cul de sac, to facilitate bus only turn movements to the Greenhills Road.

4.3 Greenhills Road to Walkinstown Roundabout – Greenhills Road, Ballymount Avenue, Calmount Road, back to re-join Greenhills Road

Between the Old Greenhills Road and the junction with Mayberry Road along the Greenhills Road, it is intended to provide one bus lane, one traffic lane and a cycle track in both directions. To accommodate the road cross section, it is proposed to utilise land take along this section on both the west and east side of the existing Greenhills Road. At the Airton Road junction the road alignment has been altered to improve facilities for cyclists and to make use of space that has already been setback for future road widening.

To improve the operation of the existing junction and minimise land take, it is proposed to introduce a right turn ban from Greenhills Road to the entrance to Harvey Norman and a right turn ban from the Greenhills Road to the Hibernian Industrial Estate. Access from Harvey Norman to Greenhills Road will be maintained at the junction. Right turning vehicles for Harvey Norman will be directed to the Airton Road junction. At this junction, vehicles will be able to turn right and access the Harvey Norman store from this road. Right turning vehicles for the Hibernian Industrial estate will be directed to the next junction (at Agnelli Motor Park) where full access will be maintained.

Between Mayberry Road and Tymon Lane it is proposed to undertake major changes to the local road network. South Dublin County Council has identified this section of Greenhills Road for upgrade under their current County Development Plan. It is intended to implement some of these road construction works as part of this scheme.

A new Greenhills Road will be constructed on the green space south of Birchview Avenue and Treepark Road. A bus only arrangement is proposed on the southbound bus route that will allow busses to use the existing Greenhills Road alignment and reduce the width of a proposed new link road. Tallaght bound through traffic and Castletymon Road traffic will be routed through this new link road. The previously proposed Castletymon Road extension and junction will also be maintained.

The existing M50 bridge crossing will be retained, however it will present a width restriction. Having reviewed the expected operation of the corridor, it has been concluded that an additional new bridge is required to maintain priority for buses and to provide high quality cycle facilities over the M50 in both directions. Additional land take on both sides of the M50 will be required to facilitate the construction of this bridge.

The existing Ballymount Road Upper/Greenhills Road junction adjacent to the existing petrol station is proposed to be closed in line with the South Dublin County Council development plan proposals for the area. Traffic heading for the M50 will be able to do so via the new junction and link road at Keadeen Park.

At Keadeen Park traffic will be directed on to a new road link connecting to Ballymount Avenue. A priority T-junction will be introduced at the new road link to maintain direct access onto Greenhills Road from the south. The junction between Ballymount Avenue and Calmount Road will be upgraded from a roundabout to a signalised junction with improved pedestrian facilities. The bus route will

be directed down Calmount Road. The existing road is intended to be widened to incorporate bus and cycle lanes. It is proposed to connect Calmount Road to Greenhills Road with a new link road. It also is proposed to connect the existing Greenhills Road to Calmount Road with a new link road through Calmount Avenue. Some limited land take will be required to construct a new roundabout at this proposed junction.

Between the Calmount Road and Walkinstown Roundabout, it is proposed to maintain one bus lane, one traffic lane and a cycle track in both directions, which will require some land take primarily along the southside of Greenhills Road. The Walkinstown Roundabout was reviewed to improve cycle and pedestrian accessibility. A two-way segregated cycle track has been proposed to provide connectivity from Greenhills Road to the proposed cycle route on Bunting Road. Parallel signal-controlled pedestrian/cycle crossings are proposed on all arms of the roundabout.

4.4 Walkinstown Roundabout to Dolphin Road – Walkinstown Road, Drimnagh Road, Crumlin Road

On Walkinstown Road between Walkinstown Roundabout and the Long Mile Road, it is proposed to provide one bus lane and one general traffic lane in both directions. There is insufficient space to accommodate dedicated cycle lanes on this section of road. To accommodate this cross section, it is proposed to utilise land take to west of the Walkinstown Road between Walkinstown Avenue and Kilnamanagh Road. Land take to the east of Walkinstown Road may be required between Kilnamanagh Road and Long Mile Road.

It is proposed to introduce a right turn ban from Walkinstown Road to Kilnamanagh Road. Kilnamanagh Road will remain accessible from Walkinstown Road through Walkinstown Drive. It is also intended to introduce a right turn ban for traffic from Walkinstown Road to the southern entrance of the SuperValu supermarket.

To accommodate cyclists on this section of the route, an alternative cycle route is proposed along Bunting Road and St. Marys Road providing a quiet route linking Walkinstown Roundabout with Kildare Road.

It is proposed to upgrade the junction at Long Mile Road and Walkinstown Road to enhance pedestrian and cycling facilities. To enhance cycle facilities and reduce vehicle speeds the proposed left turn slip lane to Walkinstown Road has been removed to improve pedestrian/ footpath frontage and minimise cycling conflicts with general traffic. Parking impacts adjacent to shop frontage on Long Mile Road have been reviewed and the proposed arrangement will cater for safer parallel parking and a segregated cycle track.

On Drimnagh Road it is proposed to maintain one bus lane, one general traffic lane and one cycle track in each direction. To allow this revised cross section some limited land take from property between Balfe Road and Kildare Road will be required. The junction at Kildare Road, Saint Mary's Road and Drimnagh Road has been revised to provide improved cycle facilities. This will provide improved cycle

connectivity between Drimnagh Road and the proposed alternative cycle route via Kildare Road.

On Crumlin Road it is proposed to install Signal Controlled Priority to maintain priority for buses through this constrained section. This is required due to the size of the front gardens and limitations as a result of the gradients from the road to the front doors of some of the houses. As a result, significantly less land take is required on this section of the corridor. The proposed arrangement requires the closure of Clonard Road and Bangor Drive to facilitate traffic management within this portion of Crumlin Road so that bus priority can be maintained. Access to Bangor Drive and Clonard Road can be achieved via Windmill Road and Old Country Road. Due to width restrictions in the area of Crumlin Road there is insufficient space to provide dedicated cycle lanes. Therefore, it is proposed to redirect cyclists through Kildare Road.

In order to improve local road safety on Kildare Road it is intended to introduce a no entry sign at the junction of Kildare Road and Clonard Road for traffic in both directions. This would prevent general through traffic; however, buses, taxis and cyclists movements will remain unrestricted along Kildare Road. Eastbound traffic would be directed along Clonard Road, through Downpatrick Road on to Bangor Road. Westbound traffic would also be directed up Clonard Road onto the Old County Road. The route will continue along Clogher Road, rather than returning to Crumlin Road. This will provide improved connectivity to the proposed Grand Canal cycle route at Parnell Road.

At the junction between Crumlin Road and Herberton Road, it is proposed to modify the existing layout to improve the kerb alignments and provide improved pedestrian crossing facilities. On the Crumlin Road between Herberton Road and Dolphin Road, it is proposed to maintain one bus lane and one general traffic lane in both directions. There is insufficient road width on this section to provide dedicated cycle tracks.

4.5 Dolphin Road to Christchurch Place – Dolphins Barn, Cork Street, St. Luke's Avenue, Dean Street, Patrick Street, Nicholas Street, Christchurch Place

Between Dolphin Road and South Circular Road it is intended to provide one bus lane, one general traffic lane and one cycle track in each direction. At the South Circular Road junction staggered crossings are proposed to improve pedestrian facilities and reduce traffic impacts for a single crossing with increased green time. A soft landscaping area is proposed on the south eastern corner of the junction to improve the urban realm aspects of the junction area whilst also improving safety.

Between South Circular Road and Ardee Street it is proposed to have one bus lane, one general traffic lane and one cycle track in each direction. It is also intended to upgrade the Ardee Street junction with improved pedestrian facilities. It is proposed to modify the Kevin Street/Dean Street junction to facilitate improved cycle way facilities. There is currently insufficient road width on Dean

Street to facilitate bus lanes so bus priority from St. Luke's Avenue will be maintained through Signal Controlled Priority. Between Dean Street Junction and Christchurch Place it is proposed to have one bus lane, one general traffic lane and one cycle track in each direction. The cross section will maintain the central median and retain the existing trees. Some on-street loading bays will be maintained between Bride Road and Bull Alley Street.

The junction at Christchurch Place/Winetavern Street/High Street is proposed to be realigned to improve pedestrian accessibility and frontage at the Peace Park to the south, and Christchurch Cathedral to the north. The intention of the proposed realignment is to deflect traffic away from the City Centre towards High Street.

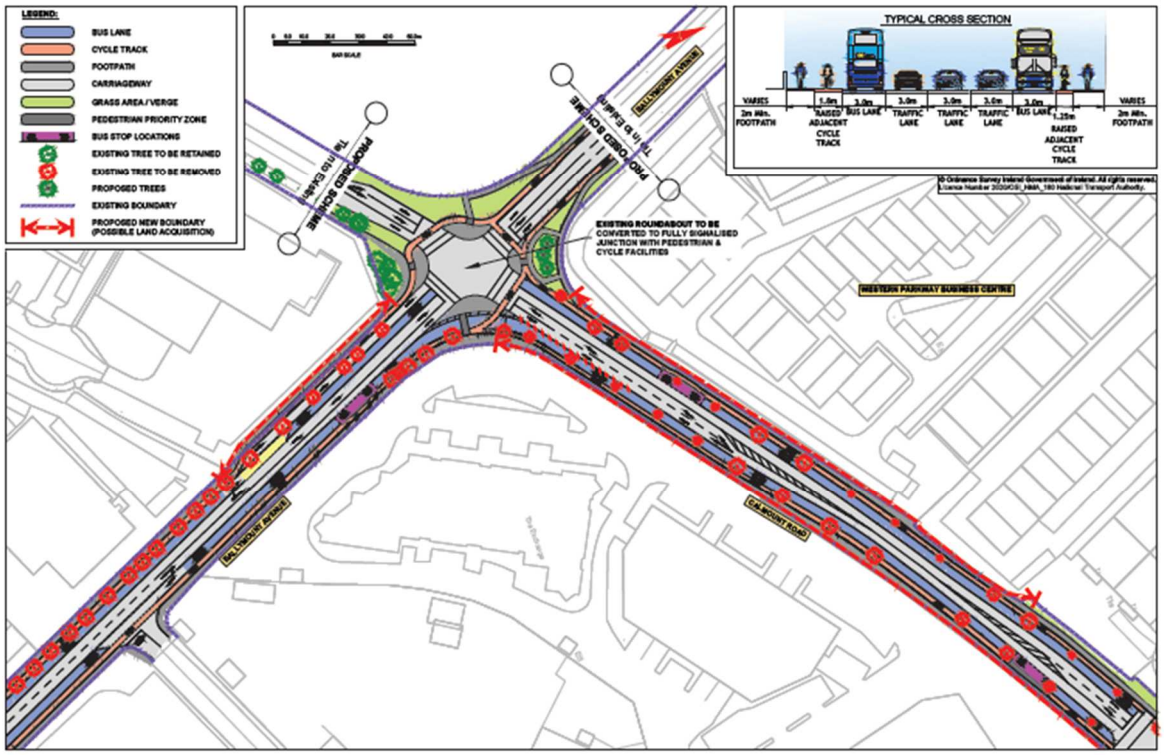
4.6 Key Changes from the Preferred Route Published in March 2020

- The layout of bus stops along the route have been enhanced;
- New priority junction proposed for Greenhills Road at the new Ballymount Avenue link road;
- Calmount Road extension tie-in to Greenhills Road, alignment adjusted northward.

4.7 Key Facts

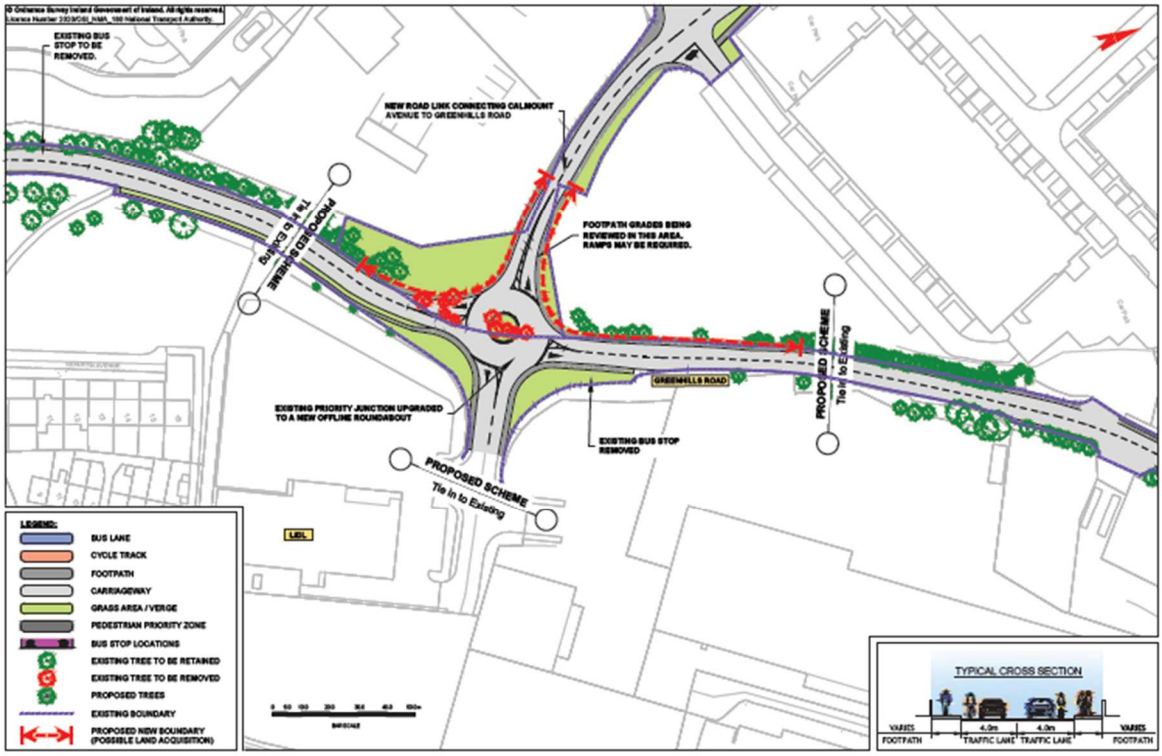
- Approximate number of properties that may be impacted: **120**
- Approximate number of designated on-street parking spaces that may be removed: **25**
- Approximate number of roadside trees that may be removed: **242**
- Approximate route length: **12kms**
- Approximate cycle route length: **11kms**
- Current bus journey time: **up to 80 mins**
- BusConnects journey time: **30-40 mins**
- Future Bus journey time without BusConnects: **100 mins +**

MAP 13: Preferred Route



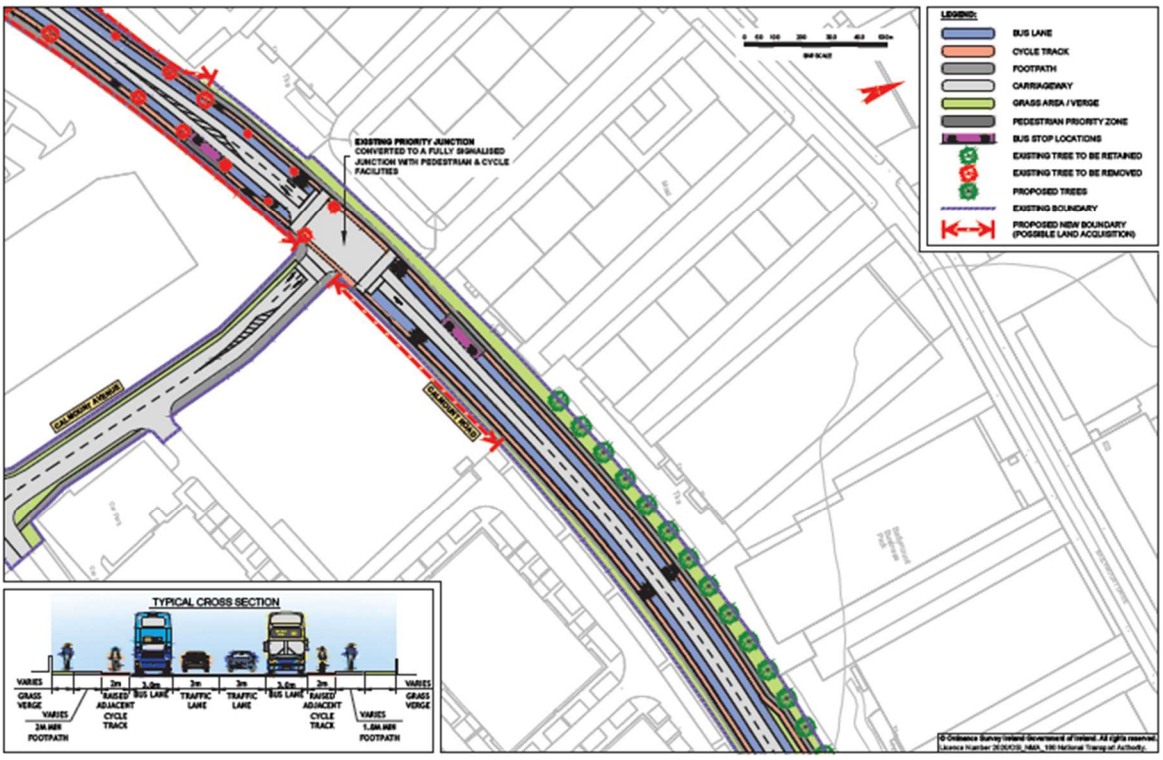
MAP 14: Preferred Route

BusConnects Core Bus Corridors / 9: Greenhills > City Centre



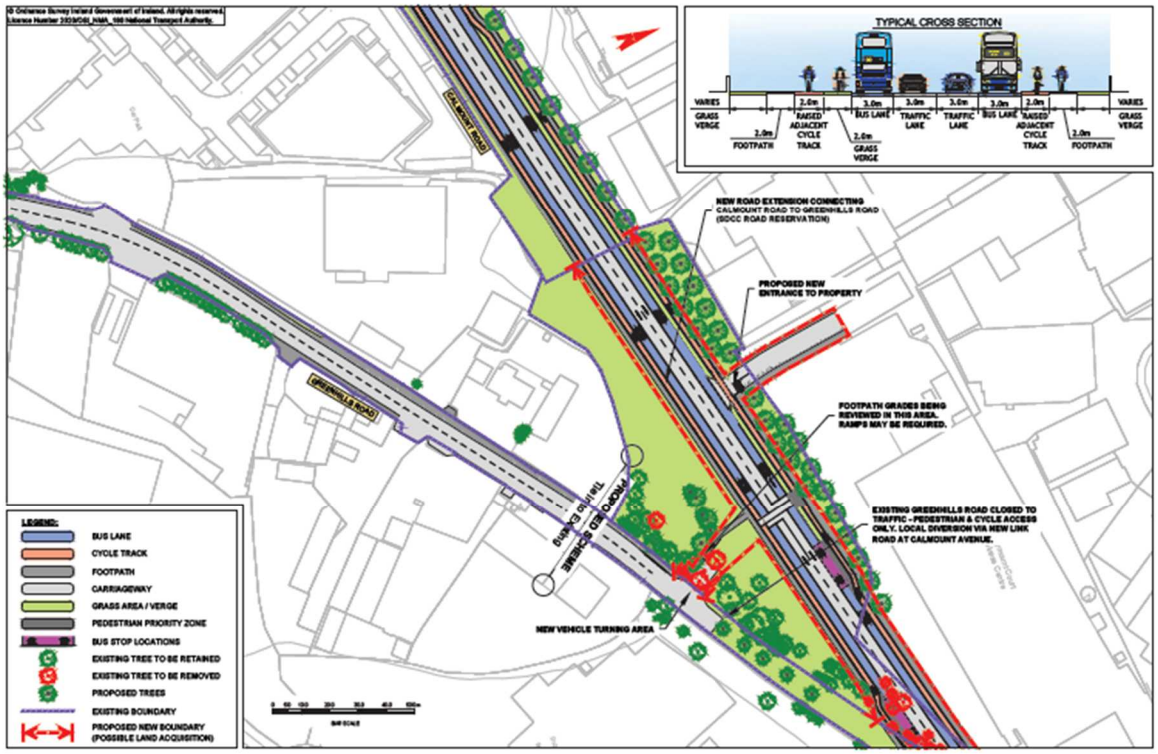
BusConnects Core Bus Corridors / 9: Greenhills > City Centre

MAP 15: Preferred Route



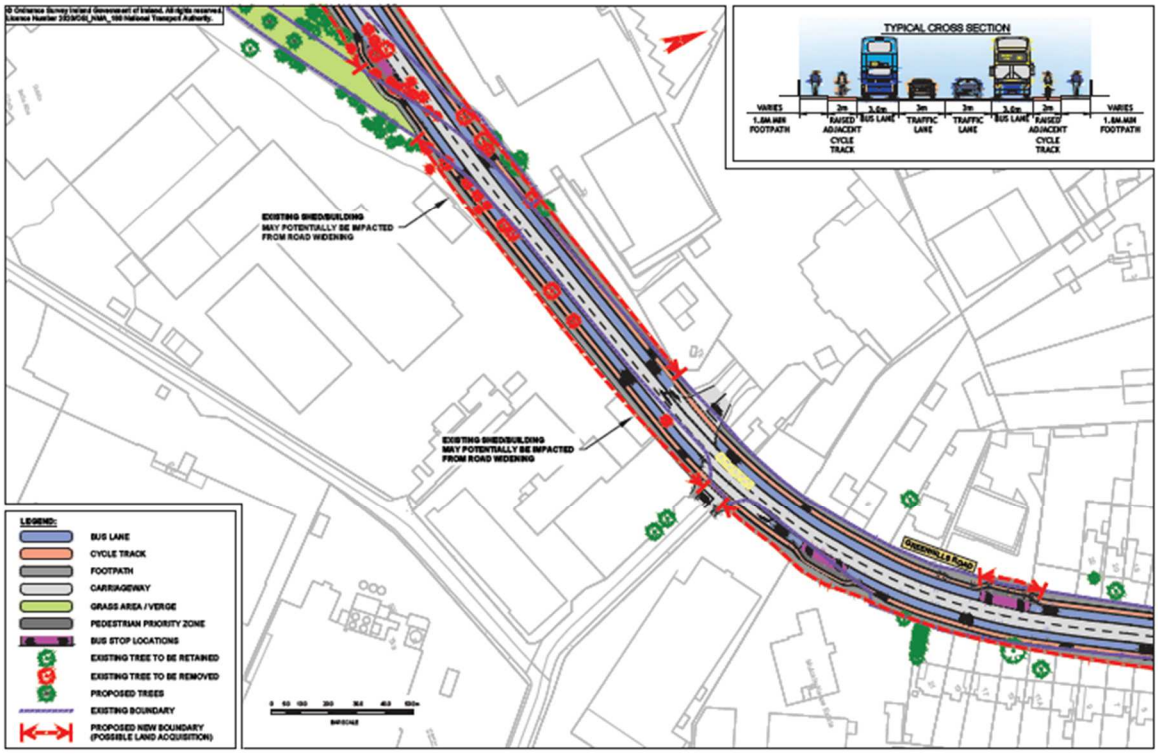
MAP 16: Preferred Route

BusConnects Core Bus Corridors / 9: Greenhills > City Centre



BusConnects Core Bus Corridors / 9: Greenhills > City Centre

MAP 17: Preferred Route



MAP 18: Preferred Route

BusConnects Core Bus Corridors / 9: Greenhills > City Centre