AtkinsRéalis

Traffic Impact Assessment

Shankill Property Investments Limited

Q2 2025

0118265DG0009

SEA GARDENS PHASE1- BLOCK A

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1. Introduction

Shankill Property Investments limited (the Client) intend to apply to Dun Laoghaire Rathdown County Council (DLRCC) for a Large-Scale Residential Development (LRD) for Sea Gardens Phase 1 Block A (referred to hereafter as Block A).

The proposed development will consist of the provision of 159 no. residential units over/around a shared 2-level podium comprising of: 9 no. 4-bedroom, 3 and 4-storey terraced houses with associated private gardens / terraces; and 150 no. apartments in 2 no. blocks ranging in height from 5 to 10-storeys (Block A1) and 6 to 11-storeys (Block A2) and consisting of a total of 48 no. 1-bedroom units, 58 no. 2-bedroom units, 44 no. 3-bedroom units, all with private balconies or terraces. The blocks will also include communal lounge areas; a communal gym in Block A1; refuse storage areas; and associated plant. The shared 2-level podium will include car, motorcycle and bicycle parking, with additional car parking provided within the curtilage of 5 no. of the proposed townhouses. The proposed development will also include public open space including play areas; communal open space within the central podium courtyard; pedestrian / cycle linkages with adjoining existing and permitted developments; associated connections to the surrounding road network; all associated landscaping and public lighting; an ESB substation; drainage arrangements; utility connections; and all site development works.

The application site, Block A, is part of a larger development of the former Bray Golf Club lands known as Sea Gardens Masterplan, previously submitted under An Bord Pleanála (ABP) planning registration reference numbers 311181 and 314686. The location of the proposed development and broader masterplan layout is shown in Figure 1-1. Block A is situated at the boundary between DLRCC and Wicklow County Council, bordered by the Dublin-Rosslare Railway line along its eastern edge. Block A is part of the larger Sea Gardens masterplan

Many of the transport and traffic design principles, including road layouts, pedestrian and cycle facilities were established during the previous permitted Sea Gardens applications. It should be noted that in the permitted phase 1 application, to which this development formed part of an assessment of all the Sea Garden Masterplan Lands was considered as part of the cumulative assessment in the Phase1 EIAR planning application.

This Traffic Impact Assessment (TIA) report assesses the transport impacts of the development on the surrounding environment. This TIA will demonstrate that the proposed changes in transport and traffic terms are minor in nature and that overall, the proposals create a positive impact in terms of supporting active and sustainable travel and enhancing the urban realm and street network of the proposed development and wider masterplan lands.

There are excellent public transport facilities adjacent to the site including Bray railway station and bus services on Dublin Road Corridor, that will be augmented by the recent decision (Q1 2025) by ABP to grant permission for the Bray to Dublin City Centre Core Bus Corridor scheme. Added to this the development proposes integrated walking and cycling facilities that tie into the Sea Gardens masterplan strategy providing a comprehensive and safe environment for active travel.

In overall terms, the development will be fully consistent with the National Planning Framework and Compact Settlement Guidelines objectives of compact growth in a location that will optimise future users' opportunities to travel by active travel and public transport modes, fully consistent with the overall objectives of the NTA Greater Dublin Area Transport Strategy.

The development therefore presents as an exemplar of integrated land use and transportation planning that is fully consistent with the 'Avoid - Shift -Improve Model' as set out in the Dun Laoghaire Rathdown Development Plan which is based on avoiding or reducing the need to travel, shifting to more environmentally friendly modes and improving the efficiency of motorised transport modes.

In this context, and in the more general context of rapidly changing lifestyles and work patterns, it is anticipated that the impact of the proposed development on the existing road network will be modest and well within the carrying capacity of existing infrastructure.

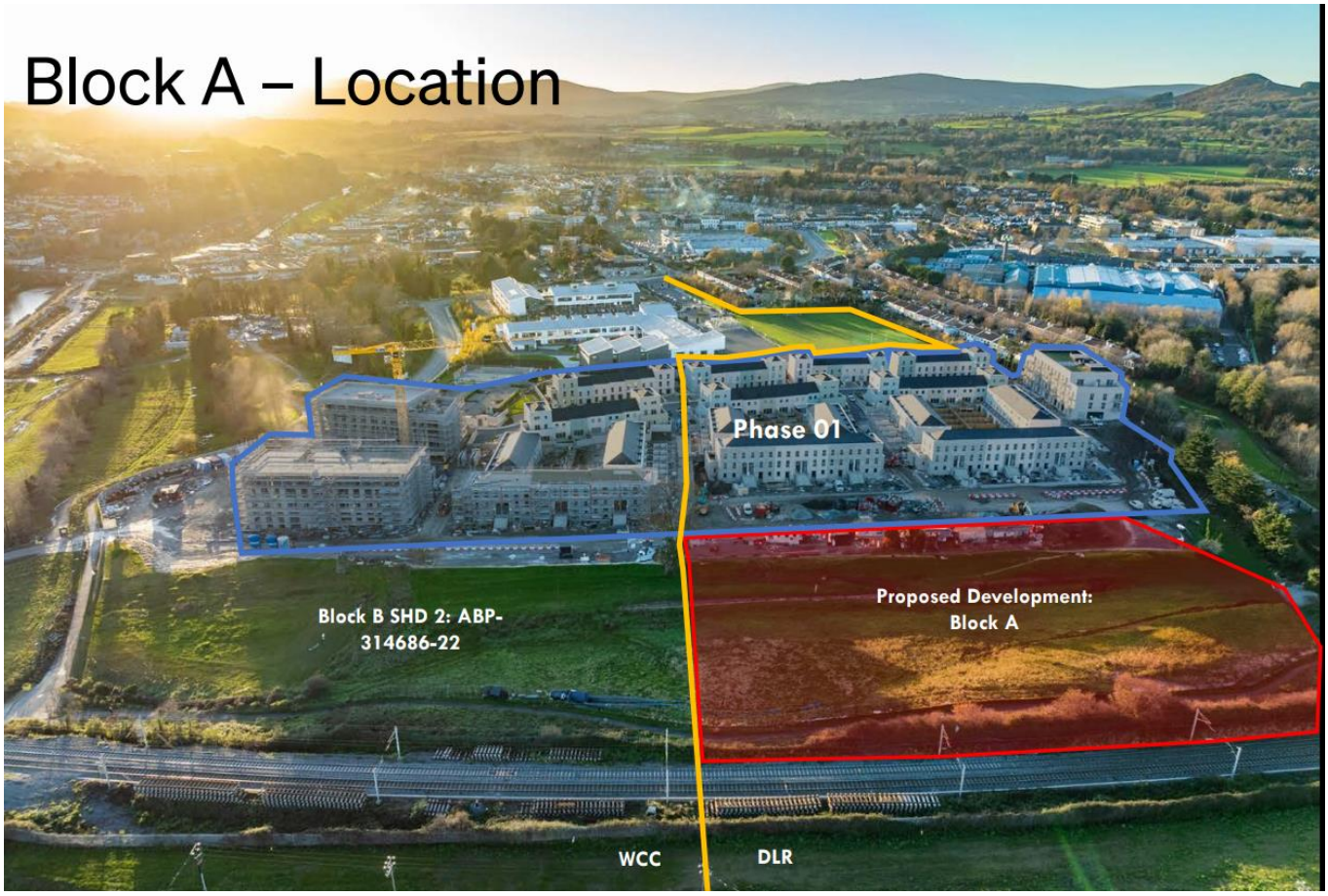

Figure 1-1 –Sea Gardens Phase1 Block A location and wider context

The site layout is illustrated in Figure 1-2. As shown, Block A integrates with the existing street and road network approved under previous permissions. There will be subtle modifications to the road along its western boundary to accommodate multi-modal access, including vehicular entry points to Block A and the podium where car parking is situated.

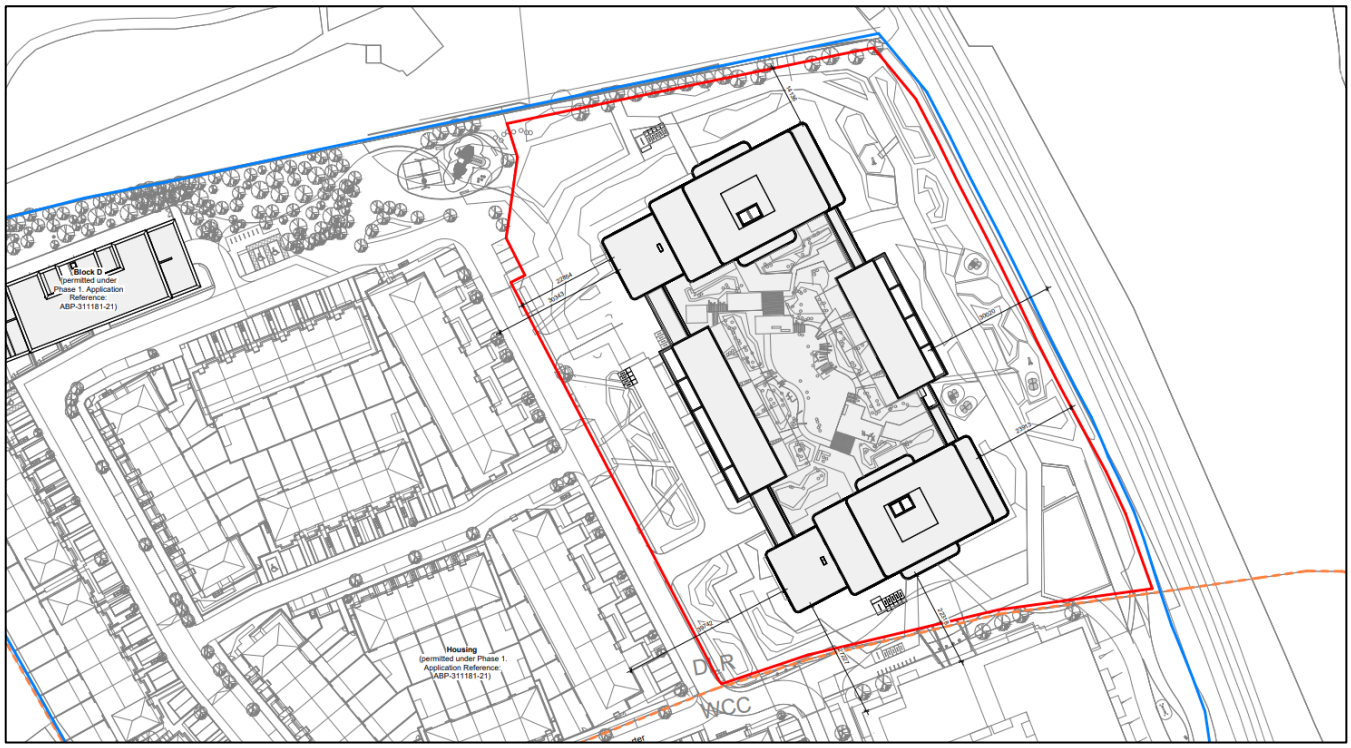

Figure 1-2 –Sea Gardens Phase1 Block A Site Layout Plan

1.1 Consultation

Sea Gardens Phase1 Block A was subject to a formal pre-application with DLRCC as part of the LRD process. A S247 meeting took place on the 13th of January 2025 (DLRCC Ref: PAC/LRD1/032/24) and an LRD Stage 2 meeting occurred on the 14th of April (DLRCC Ref PAC/LRD2/003/25 - Lands within former Bray Golf Course, Bray). DLRCC issued a formal opinion to the LRD on Wednesday 7th of May. Section 2 Transportation (page 12) contains specific comments from DLRCC Transport officers. These comments have been taken on board and addressed in this TIA and accompany RPS documentation.

2. Planning History

An application was submitted for Phase 1 (ABP Reg ref 311181), adjacent to the subject site, in August 2021 for 591 residential units and approximately 1,336 sqm of other units, including a retail unit, two commercial units, a childcare facility, and a café. The residential units comprised 76 houses, 52 duplexes, and 463 apartments across four blocks (A-D). Permission was subsequently granted in December 2021 for 234 units, including 76 houses, 52 duplexes, and 106 apartments (Blocks C and D), along with the childcare facility, café, and retail unit. Permission was refused for Blocks A and B.

Following the refusal of Blocks A and B, another application (ABP-314686-22) was submitted in November 2022, seeking permission for 586 units, a childcare facility, café, retail unit, and one commercial unit incorporating a gym and a juice bar. This application (ABP-314686-22) was approved in August 2024, subject to the following conditions: (a) The height of the proposed 12-storey element of Block B shall be reduced by three storeys through the removal of floors 7 to 9. (b) Units DO1/0204 and DO1/0205 shall be merged to become a two-bedroom unit. (c) External storage facilities shall be provided for the apartments within Block D. (d) The floor plans for Block D shall be amended to demonstrate that balconies are included in accordance with the elevation drawing.

Figure 2-1 –Sea Gardens Masterplan Permitted Development

Many of the transport principles established as part of the Sea Gardens Masterplan and Phase 1 Planning applications (ABP-311181-21 and ABP-31486-22), including DMURS and the Cycle Manual, will be built upon and continued in Sea Gardens Block A. Key transport elements confirmed include:

- Road hierarchy
- Road geometries

- External connections and junctions
- Internal junction locations
- Masterplan cycle network
- Pedestrian desire lines and connections

Block A will largely integrate into the permitted network of streets, places, and connections as shown in the wider context of Figure 2-2.

Figure 2-2 –Sea Gardens Phase 1 Block A located within wider context of permitted streets

3. Transport Policy

The following National, Regional and Local Transport Policies documents and guidance are relevant for the development of Block A and will be set out further in the TIA.

3.1 National Sustainable Mobility Plan

The Department of Transport published the National Sustainable Mobility Policy in April 2022. The Policy sets out a strategic framework for active and sustainable travel for the period up to 2030 to help Ireland meet its international and national climate obligations to achieve a 51% reduction in carbon emissions by end of this decade.

The overall target is to “deliver at least 500,000 additional daily active travel and public transport journeys by 2030 and a 10% reduction in the number of kilometres driven by fossil fuelled cars. It will make it easier for people to choose walking, cycling and use public transport daily instead of having to use a petrol or diesel car.

To achieve this target there are a number of initiatives including:

- Integration of land use and planning.
- Improvement to walking and cycle infrastructure.
- Improved public transport capacity.
- Identifying and implementation of suitable demand management measures.
- Behavioural change programmes and measure; and
- Improved safe, accessible, comfortable, safe, and affordable journey for all people and all trips.

The policy document is supported by Action Plan 2022-2025 to measure performance of the aims, targets or objective identified in the Policy.

The proposed development incorporates the appropriate measures to enable the vision of both the Policy and Action Plan by ensuring the development is fully accessible for all modes, providing excellent connections to the existing and planned pedestrian, cycling and public transport links, both within the Sea Gardens Masterplan lands and on the external transport network.

3.2 Transport Strategy for the Greater Dublin Area 2022-2042

The Transport Strategy for the Greater Dublin Area (GDA) 2022-2042 established the framework for transport provision for the city region. This Strategy, which is underpinned by the capital investment program set out in the National Development Plan 2021-2030, is based on the following over-riding objective:

“*To contribute to the economic, social and cultural progress of the Greater Dublin Area by providing for the efficient, effective and sustainable movement of people and goods*.”

In particular, the GDA Strategy aims to achieve a work commuting modal share target of 55% for sustainable travel modes, reducing the single occupancy private car modal share to a maximum 45%, as set out in Smarter Travel Policy.

The Strategy presents infrastructure proposals by mode of transport. Those that will particularly benefit the proposed development are shown Table 3-1

Table 3-1 – GDA Transport Strategy relevant infrastructure

Transport Strategy Objective	Proposed Site Context
Dart+	The proposed development is located circa. 800 from the Bray Train Station. Dart+ will increase the frequency, capacity and reliability of the existing DART service. See section 5.2 for further details.
Core Radial Bus Network	On the 28th of January 2025 the National Transport Authority received notification of planning approval by An Bord Pleanála (Reg Ref HA27.317742)[1] for the Bray to City Centre BusConnects Scheme. See section 5.1 for further details.
Greater Dublin Area Cycle Network Plan	Primary Route 12 is located on Dublin Road. This route will be upgraded as part of Bus Connect Corridor 13. Route 14 /N5, The East Coast Trail, is located adjacent the eastern site boundary which is from the Dublin City to Bray. Please refer to section 5.5 for further details.
Luas Extension to Bray	Green line Luas is to be extended to Bray, with a proposed stop nearby the proposed development offering a reliable rail connection from the development through Central South Dublin. Please refer to section 5.3 for further details.

3.3 Bray & Environs Transport Study (2019)

The Bray and Environs Transport Strategy included a preferred approach for 2035 as illustrated in Figure 3-1, the following proposals relevant to the proposed development are as follows:

- Luas extension to Bray with multiple stops nearby the proposed development.
- Multiple high frequency bus services.
- Upgrades to the N11 and service roads.

The completion of these transport proposals will improve the public transport network in Bray significantly, this will greatly assist in encouraging public transport usage for the future residents and visitors of Sea Gardens Masterplan. The upgrades to the N11 are projected to increase the efficiency and safety of the N11 and reduce congestion, this will result in the N11 becoming much more reliable for the future residents and visitors of Sea Gardens Masterplan.

[1] 317742 | An Bord Pleanála

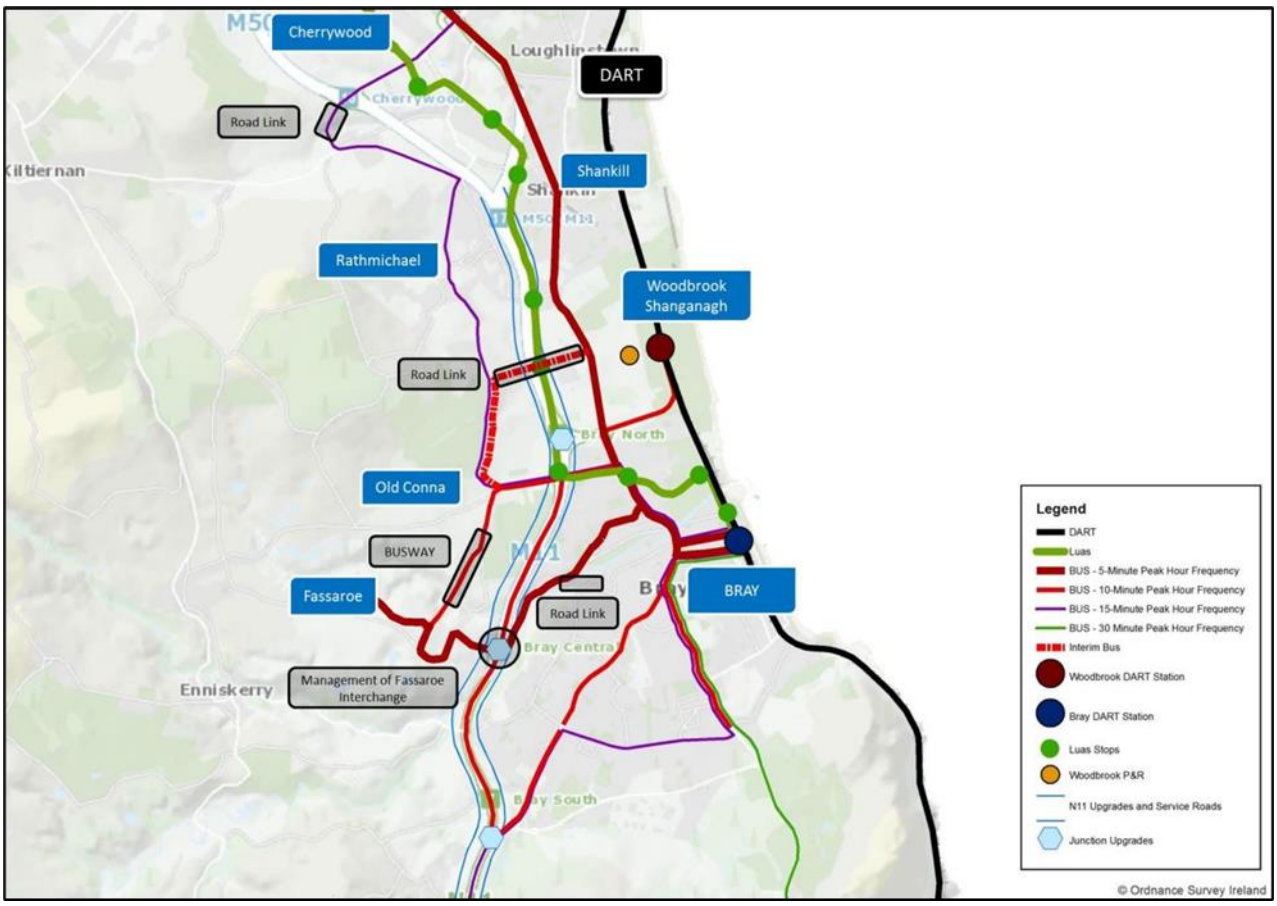

Figure 3-1 –Extract from 2019 Bray and Environs Transport Strategy

3.4 Dun Laoghaire Rathdown County Development Plan (2022-2028)

The Dun Laoghaire Rathdown County Development Plan 2022-2028 contains specific policies in terms of sustainable travel and transportation. The proposed development, by virtue of its location, scale and typology is consistent with both the strategic sustainable transportation policies of the Plan and the specific transportation objectives. In terms of overall policy, The Council:

"…recognises that the current trends in transportation, in particular the domination of the private car as the preferred mode choice, are unsustainable……. In response, the emphasis must be on developing an efficient transport network where an increased proportion of residents of the County are within reasonable walking/cycling distance of local services and quality public transport infrastructure. There must also be a focus on promoting and facilitating the optimum use of existing (and proposed) transport services."

Listed in are the key relevant sustainable transport policies of the County Development Plan together with a summary of the corresponding characteristics of the proposed development that facilitate the delivery of these policies. It is to be noted that the Transport Strategy for the Greater Dublin Area was in draft format when the County Development Plan was adopted. As noted in the table the proposed development is in general compliance with the key DLRCC transport policies.

Reference	Policy / Objective	Response
Policy T1: Integration of Land Use and Transportation Policies	"It is Council policy to actively support sustainable modes of transport and ensure that land use and zoning are fully integrated with the provision and development of high-quality public transportation systems."	Block A is developed in line with 10-minute neighbourhood principles with access to a range of local services and amenities provide by the mixed-use nature of the Sea Gardens Masterplan and supplemented by the wider provision of services located within Bray Town Centre that sits adjacent to the development. The entire site is within 1.5kms walking distance of the Bray Rail Station and Dublin Road bus corridor.
Policy T5: Public Transport Improvements	"It is a Policy Objective to expand attractive public transport alternatives to car transport as set out in 'Smarter Travel, A Sustainable Transport Future' and subsequent updates; the NTA's 'Transport Strategy for the Greater Dublin Area 2016-2035' and the NTAs 'Integrated Implementation Plan 2019-2024' and subsequent updates by optimising existing or proposed transport corridors, interchanges, developing new park and rides, taxi ranks and cycling network facilities at appropriate locations."	As set out in Section 5 the Bray Sea Gardens Masterplan lands of which Block A forms a part, facilitates the delivery of BusConnects, and possible extension Luas to Bray.
Policy T6: Quality Bus Network/BusConnects	"It is a Policy Objective to co-operate with the NTA and other relevant agencies to facilitate the implementation of the bus network measures as set out in the NTA's 'Greater Dublin Area Transport 2016-2035' and 'Integrated Implementation Plan 2019-2024' and the BusConnects Programme, and to extend the bus network to other areas where appropriate subject to design, environmental assessment, public consultation, approval, finance, and resources."	The BusConnects Bray to Dublin City Centre located on Dublin Road was recently approved in Q1 2025. This will provide future suers of Block A with improved bus connectivity.
Policy T11: Walking and Cycling	"It is Council Policy to secure the development of a high-quality walking and cycling network across the County in accordance with relevant Council and National policy and guidelines."	The development proposed and ties into wider Sea Gardens Masterplan extensive pedestrian and cycle routes that link the site to the wider area including onward connections to Bray Town Centre and Dublin City Centre via the Dublin Road Corridor.
Policy T17: Travel Demand Management	"It is Council policy, in conjunction and co-operation with other agencies, to implement Travel Demand Management measures aimed at reducing the demand for travel and increasing the efficiency of the transport network with due consideration given to the	The masterplan site is planned in the context of a Mobility Management Plan based on the physical infrastructure provisions of walking and cycling links and access to public transport bus and DART rail services.

	effect of parking controls on nearby residential roads."	The propensity for car ownership and car use is managed through measures that include reduced residential parking provision and increased cycle parking provision.
Policy T19: Carparking Standards	"It is a Policy Objective to manage carparking as part of the overall strategic transport needs of the County in accordance with the parking standards set out in Section 12.4.5."	As set out in section 8 car parking numbers have been carefully considered and appropriately set based on the location and development characteristics. A detailed justification of car parking numbers is provided.
Policy CA 17: Electric Vehicles	"It is Council policy to support the Government's Electric Transport Programme by facilitating the rollout of Electric Powered Vehicle Recharging Parking Bays for electric vehicles across the County through the planning system and on public roads."	The development contains the required infrastructure to provide electric charging to car parking spaces.

3.5 Sustainable Residential Development & Compact Settlement Guidelines for Planning Authorities

In January 2024, the government published the Sustainable and Compact Settlements Guidelines for Planning Authorities, which introduces the category of Low-Rise Medium Density Housing (LRMD), which is intended to enable affordable, compact growth, in line with the National Planning Framework (2018).

The guidance recommends that more compact growth occurs and that in areas with good transport access and services densities should be maximised. Low-rise medium density housing models that are common in the UK and Europe offer significant potential to contribute to compact urban growth when applied at the right locations. Key design principles include reduced plot sizes and a tighter arrangement of houses, narrower streets, reduced car parking and the distribution of private open space in the form of patios and / or upper-level terraces and balconies. There is generally a strong emphasis on the creation of attractive streets and open spaces, which is important in creating a strong sense of place and community. The guidance notes that the availability of parking plays an important role in travel choice and looks for development to promote and maximise active and sustainable travel. SPPR3 – Car parking provides specific planning policy guidance that categories car parking into three locations:

- City Centre and urban neighbourhoods of the five cities - car parking should be minimised, substantially reduced or wholly eliminated.
- In accessible locations - car parking should be substantially reduced. At these locations the maximum rate of car parking for residential development is set at 1.5no. spaces per dwelling.
- Intermediate and peripheral locations a maximum car parking rate of 2no. spaces per residential dwelling.

As defined by the guidance, Bray Sea Gardens Block A is in an accessible location where the maximum rate of car parking for residential development is set at 1.5no. spaces per dwelling.

SPPR 4- Cycle Parking and Storage of the guidance sets that all new development must include safe secure cycle storage facilities for residents and visitors. The guidance recommends that a minimum of 1 space per bedroom is

applied and appropriate levels of visitors parking is provided. The guidance notes it is important to provide a range of cycle parking facilities, and that the location of cycle parking is appropriate located, safe and easy to use.

3.6 Sustainable Urban Housing; design Standards for new Apartments (July 2023)

These guidelines have been issued under Section 28 of the Planning and Development Act, 2000 and were prepared to ensure apartment living is attractive and desirable to enable the housing growth expected for Ireland by 2040, based on evidence from the Housing for All and the National Planning Framework. The document has been consulted during the design of the Sea Gardens Phase1 Block A to ensure the development is in line with all current guidelines.

The location is crucial for an apartment development, and developers should prioritise locations with good public transport and near town centres and employment areas, to increase mobility and reduce private car usage. The car parking requirements in Intermediate Urban Locations, such as the Sea Gardens Phase1 Block A is to provide reduced numbers to allow residents to avail of the public transport in the area and walk where possible to key locations.

Other alternative mobility solutions, such as car-sharing and cycle parking, should also be made available in the development to incentivise sustainable transport modes within future residents. High-quality cycle parking must be provided and ensured they are at an accessible location and at a minimum of 1 stand per bedroom.

3.7 Best Practice & Planning Guidance Documents

The following best practice and planning guidance documents have fundamentally informed the development of the site layout and the compilation of this TIA:

- Transport Infrastructure Ireland: Traffic and Transport Assessments Guidelines.
- Department of Transport Tourism and Sport: Design Manual for Urban Roads and Streets (DMURS).
- National Transport Authority: Cycle Design Manual (CDM).
- National Transport Authority: Permeability Best Practice Guidance.

Of particular importance is the Design Manual for Urban Roads and Streets (DMURS), published in 2013. This document is based on an integrated design approach that prioritizes safety, sustainable communities, heritage protection, and creating a sense of place. DMURS emphasizes the higher priority of pedestrians and cyclists in the urban environment, with a fundamental design objective to create self-regulating streets that are inherently convenient and safe for all vulnerable road users. The road design for the development is consistent with DMURS.

Overall, the Sea Gardens Phase1 Block A development will align fully with the National Planning Framework and the Sustainable Residential Development and Compact Settlements Guidelines for Planning Authorities. These guidelines aim for compact growth in a location that optimizes future users' opportunities to travel by active travel and public transport modes, in line with the overall objectives of the NTA Greater Dublin Area Transport Strategy.

4. Existing & Future Context

This section provides detail of the existing and future transport proposals, infrastructure and polices that will impact on how future residents and visitors to the development will be able to access to site by a range of multi-modal options.

4.1 Site Location

The site is located adjacent to Bray Metropolitan Town Centre, which offers a wide range of services, amenities, and facilities to future residents and visitors of Sea Gardens Phase1 Block A. The wider transport context is shown in Figure 4-1 –Wider Transport .

There are excellent public transport facilities nearby, including:

- Bray Train Station, approximately 800m south of the masterplan lands.
- Multiple bus routes accessible on the Dublin Road.

The proposed development will integrate with the Phase 1 road network, providing connections to the local and strategic road networks. Similarly, the development will link into the proposed Sea Gardens active travel network, including footpaths and cycle links, which provide connections to key destinations such as the seafront, Bray Town Centre, and the Dublin Road transport corridor, thereby encouraging sustainable travel choices.

Figure 4-1 –Wider Transport Context

4.2 Existing Walking and Cycling facilities

The proposed site is well served with cycling and pedestrian facilities. The existing Sea Gardens Masterplan lands have a local road network including wide footpaths and fully segregated cycling facilities on both sides of the carriageway, as shown in Figure 4-2. This will offer safe active travel links to future residents and visitors of the Sea Gardens Phase1 Block A travelling to the wider Sea Gardens Masterplan development and to the multiple schools within the local road network.

Figure 4-2 – Existing Active Travel Facilities on the Northern Access Road

Adjacent to the site the R761 Dublin Road has wide footpaths and cycle lanes on both sides of the carriageway, as shown in Figure 4-3 This will offer active travel connections to future residents and visitors of Sea Gardens Phase1 Block A travelling to Bray Town Centre.

Figure 4-3 – Existing Active Travel Facilities on the N761 Dublin Road

BOLT operates within Bray Town which provides pedal and electric bike share facilities, the facility costs €0.18 per minute or €30 for a weekly pass, providing convenient cycling opportunities within Bray.

4.3 Public Transport (Bus and Rail)

There are extensive existing public transport facilities available in the vicinity of the Sea Gardens Masterplan site ranging from bus services to rail services as detailed in the sections below.

4.3.1 Bus Routes and Services

It is considered that the proposed development is well located, granting opportunity to access both services and employment opportunities in the local and wider environs via public transport. The available bus services are as shown in Table 4-1.

Table 4-1 – Bus Services

Bus Service	Route	Frequency (Mon-Friday)
45a	Dún Laoghaire Rail Station to Kilmacanogue	15-20min
45b	Kilmacanogue - Dun Laoghaire Rail Station	15-20min
84	Blackrock to Newcastle	Once an hour
84a	Blackrock to Bray	6 services
84x	Hawkins Street to Newcastle/Kilcoole	8 services
143	Southern Cross Road to Sandyford Luas	6 services
145	Heuston Rail Station to Ballywaltrim	10mins
155	IKEA (Ballymun) Towards Bray Rail Station	20mins
184	Newcastle Hospital to Bray Rail Station	30mins

4.3.2 Bray Train Station

In terms of heavy rail, the closest train station is in Bray, which is circa. 800m to the south of the proposed development site. The station serves both DART and Commuter Rail services. The station facilitates services that allow for good connection to other onward destination both north and south. The available rail services are shown in Table 4-2.

Table 4-2 – Existing Rail Services

Rail Service	Route	Frequency (Mon-Friday)
Dart	Malahide to Greystones / Howth to Greystones	5-10mins
Commuter / Intercity Services	Dublin to Rosslare	6 services

4.4 Local Road Network

The proposed development site is located adjacent to a comprehensive road network consisting of national roads, motorways, regional roads, and local roads. The key roads within this road network are summarised below:

- The proposed development will have two accesses onto the Dublin Road. The Dublin Road is a single carriageway regional road with cycle lanes and bus lane provision provided along some sections of the route. In the vicinity of the development access junctions the Dublin Road is a single carriageway regional road with cycle lanes on both sides.
- To the south the Dublin Road provides access to the town centre of Bray and the M11 Junction 6 via R918 Upper Dargle Road.
- To the north the Dublin Road connects to the M11 Junction 5 and the R119 which offers connectivity to Shankill Village.

5. Future Transport Proposals

This section provides detail of future transport proposals, infrastructure and polices that will impact on how future residents and visitors to the development will be able to access to site by a range of multi-modal options.

5.1 BusConnects

BusConnects is the NTA's programme to greatly enhance bus services in the GDA. It consists of both the implementation of the Core Bus Corridors (CBCs) and the Network Redesign. A planning application has been permitted (App Ref: 317742) for the proposed Dublin to Bray CBC Route 13 which forms one part of the 16 radial routes as shown in Figure 4-1 below.

On the 28th of January 2025 the National Transport Authority received notification of planning approval by An Bord Pleanála (Reg Ref HA27.317742)[2] for the Bray to City Centre BusConnects Scheme.

As set out on the BusConnects web page[3] subject to completion of various processes, the NTA will now further develop the construction sequencing to include the Bray to City Centre Core Bus Corridor Scheme taking account of approvals received, along with documentation to allow procurement to commence for the construction stage of the Scheme.

It is expected that all twelve corridors will be completed in 2030 with the first construction contracts to be awarded in mid-2025 with on-site construction to commence in the second half of the year. The construction of the corridors will be delivered on a phased basis in order to reduce the traffic impacts that could arise should all twelve be constructed concurrently. In relation to the Bray to City Centre Core Bus Corridor, it is likely that the Scheme will be implemented in the second half of the overall Core Bus Corridor construction programme.

The NTA is redesigning the bus network as part of the BusConnects Dublin program. The redesigned bus network will provide an overall better and more sustainable bus system for Dublin and the surrounding areas. The Bus Network Redesign of BusConnects Dublin includes the following:

- Overall increase of 23% in bus services
- Increased peak hour capacity
- Increased evening and weekend services
- 24-hour services on some routes
- New and improved connections to essential services
- New spine routes
- Enhanced orbital routes
- New local and express services
- New Peak-only routes
- New Dublin City bound routes
- Over 230km of bus lanes and 200km of cycle tracks/lanes.

[2] 317742 | An Bord Pleanála

[3] Planning approval received for Bray to City Centre Core Bus Corridor Scheme | Busconnects

Phase 6a of the BusConnects Dublin will be launched in December 2024. Phase 6a will include the new E1 route, a new 24-hour spine route connecting Bray to North Dublin via Dublin City Centre. Upon completion the bus network improvements, services and frequencies set out in Table 5-1 will be provided in the Bray area.

Table 5-1 – BusConnects - Bus Services in the Bray Area

Route No.	Route	Frequency of Service
E1	Northwood – City Centre – Bray Main Street – Ballywaltrim	Peak hour 8-minute frequency All other times 10 minute
88	Enniskerry – Belarmine – Dundrum – Mountjoy Square	1 per hour
L1	Newtownmountkennedy – Greystones – Bray	30-minute frequency
L2	Newcastle – Kilcoole – Greystones – Bray	30-minute frequency
L12	Ballywaltrim – Bray Station	20-minute frequency
L14	Southern Cross Road – Bray Station – Palermo	30-minute frequency
L15	Shop River – Enniskerry – Bray	60-minute frequency
X1	Kilcoole – Southern Cross – City Centre	6:00 a.m. to 7:00 a.m. - 2 services 7:00 a.m. to 8:00 a.m. - 4 services 4:00 p.m. to 5:00 p.m. - 1 service 5:00 p.m. to 6:00 p.m. - 5 services
X2	Newcastle – Kilcoole – Southern Cross – City Centre	6:00 a.m. to 7:00 a.m. - 1 service 7:00 a.m. to 8:00 a.m. - 2 services 4:00 p.m. to 5:00 p.m. - 1 service 5:00 p.m. to 6:00 p.m. - 2 services

The delivery of BusConnects network redesign will result in an enhanced service provision in the Bray area. The L1 and the L2 combine to offer a 15-minute frequency between Bray and Greystones. Near Bray, the peak frequency of express services operating on the N11 towards Dublin City, the X1 and X2, will replace the existing No.84X express service and will increase from the current level of four services per hour to six services per hour. The current No.185 service will be retained as the L15 service. The L1 and L2 are set to be introduced near the end of 2024.

5.2 DART +

The DART+ programme aims to provide a series of upgrades to the existing DART line linking Drogheda to Greystones, via Bray. The overarching goal of the programme is to increase capacity along the line by 50%. DART+ will provide a range of improvements including:

- Upgrading of existing infrastructure to enable an increase in frequency of train services.
- Upgrade of junctions and station turn-back facilities.
- Assessment and potential removal of level crossings.
- Upgrade of signalling, telecoms and power supplies.
- Track modifications and additions to improve capacity.

The DART+ Coastal Projects are still at an early stage, with indicative public consultation dates set to be announced in the future.

5.3 Bray DART Public Interchange

WCC in partnership with the NTA are currently delivering significant improvements to the public realm in the immediate vicinity of the Bray Train Station that will facilitate and improve the interchange for commuters between bus and rail services as well as creating a safer environment that prioritises walking and cycling. Works commenced on the project in February 2024, and it is estimated construction will be completed in 2025.

5.4 Extension of Luas

The extension of the Luas line to Bray is deemed a priority of the planning authority as outlined in the DLRCC Development Plan **Policy ST27**–supports the extension of the Luas Green Line from Cherrywood to Bray, in line with national transport strategies. It emphasizes the importance of sustainable transport and the integration of land use and transport planning. **Specific Local Objective (SLO) 130**– This SLO relates to the safeguarding of the Luas extension corridor and ensuring that development does not compromise its delivery.

The Greater Dublin Area Transport Strategy 2022-2042 highlights Bray as a potential destination for an expanded Luas line. An indicative alignment of the proposed extensions can be seen in Figure 5-1. The purpose of the expansion of light rail is to help existing bus networks cope with increases in demand up to and beyond 2042. Measure LRT5 of the Strategy states "*It is intended to extend the Luas Green Line southwards in order to serve the Bray and Environs area*". Based on analyses, the NTA has deemed that there is sufficient demand for an expansion of the existing Luas towards Bray.

This line is not proposed to be developed until after 2035, but it is anticipated that the alignment will be adjacent the Dublin Road, into the development lands and into Bray Train Station via the proposed Public Transport Bridge. The Sea Gardens masterplan for the development lands takes cognisance of the provision of the Luas extension and its interface with the development and locations of LUAS stops.

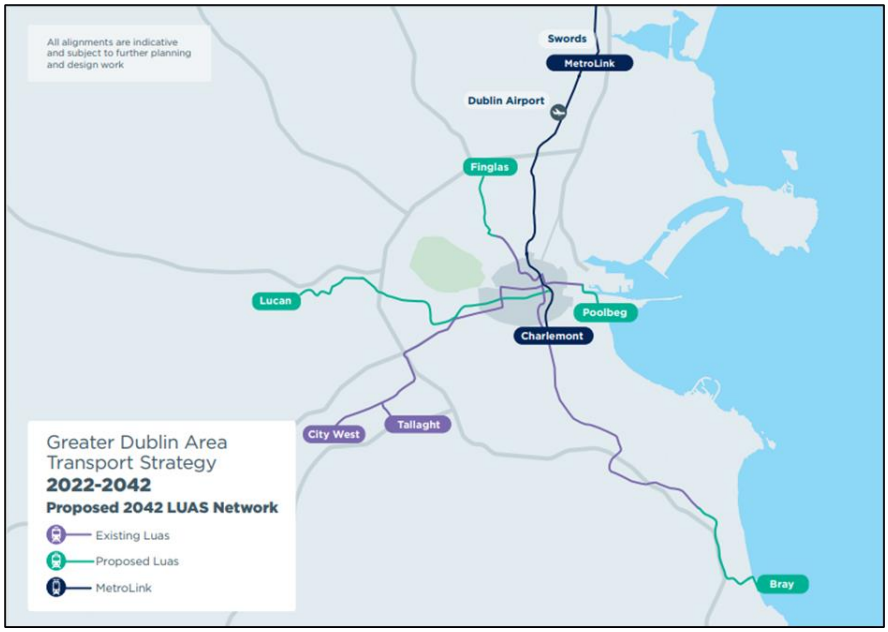

Figure 5-1 – GDA Transport Strategy 2022-2042 - Proposed Light Rail Network

5.5 GDA Cycle Network Plan

The purpose of the GDA Cycle Network Plan is to guide investment in cycle infrastructure and develop a network of cycle routes across the GDA. The network is made up of Primary, Secondary, Feeder and Inter-urban Routes as well as Greenways across the region. The NTA aims to follow this plan to provide a safe, attractive, comprehensive and legible cycle network for all users. Routes will be provided in accordance with Cycle Design Manual and will be maintained to a high standard by the relevant local authority. The plan for the cycle network in greater Bray area including covering Block A can be seen in Figure 5-2.

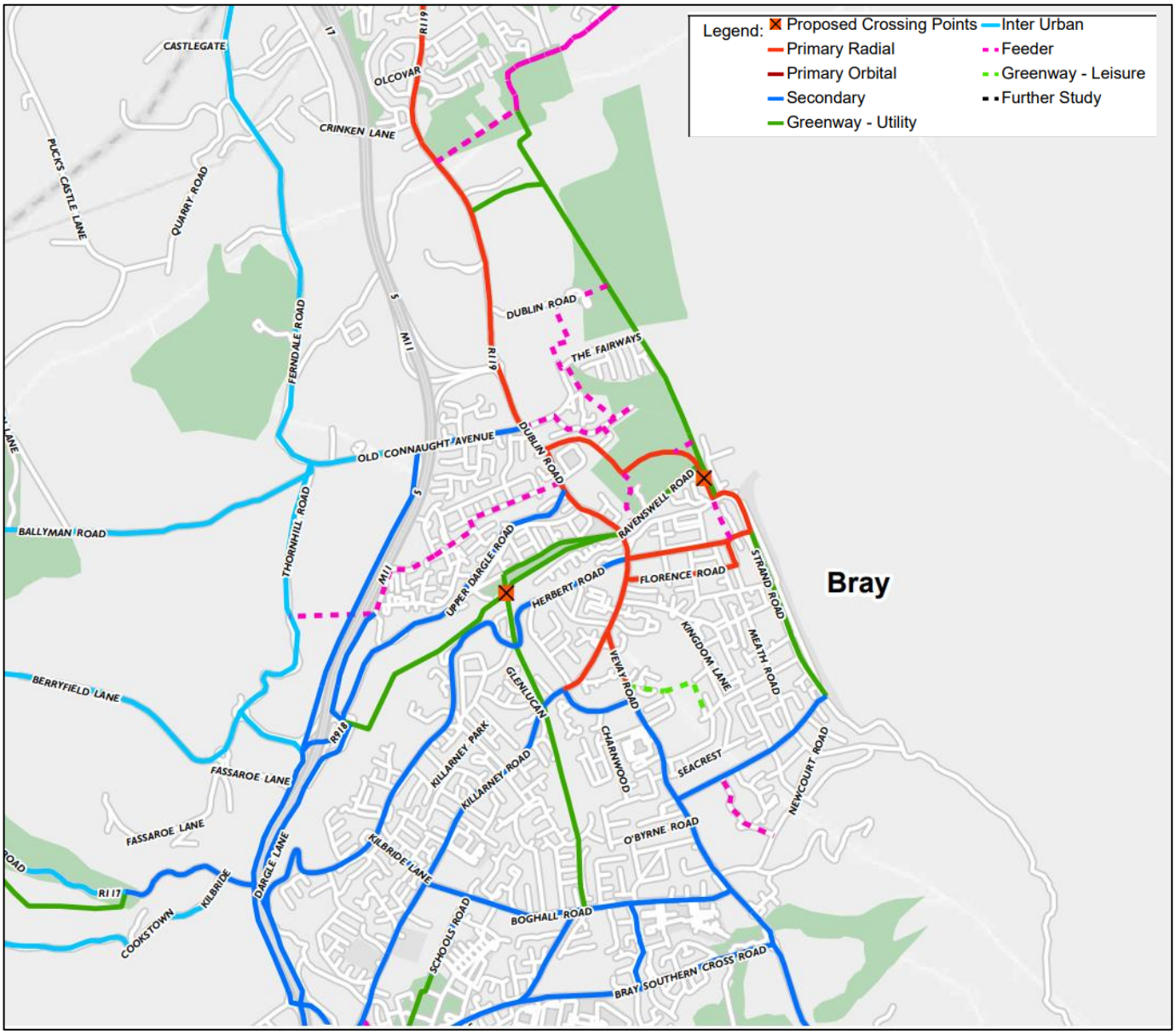

Figure 5-2 – Greater Dublin Area Cycle Network Plan for Bray

The primary radial cycle route indicated through Sea Gardens Masterplan lands has been provided for as part of the permitted permissions.

6. Proposed Development

The proposed development, Sea Gardens Phase1 Block A, will consist of the provision of 159 no. residential units over/around a shared 2-level podium comprising of: 9 no. 4-bedroom, 3 and 4-storey terraced houses with associated private gardens / terraces; and 150 no. apartments in 2 no. blocks ranging in height from 5 to 10-storeys (Block A1) and 6 to 11-storeys (Block A2) and consisting of a total of 48 no. 1-bedroom units, 58 no. 2-bedroom units, 44 no. 3-bedroom units, all with private balconies or terraces. The proposed development will link into the wider masterplan transport infrastructure including streets and active travel provision and from there the existing well developed transport facilities within the wider Bray area. The proposed development has been designed to follow the principles of a '10-minute neighbourhood' concept, with all key social and economic services within a 10-minute walk from the heart of the development including Bray Town Centre and public transport links on Dublin Road and at Bray Daly Train Station.

Please refer to AtkinsRealis drawings accompanying this TIA for transport related information.

Drawings Number	Drawings Name	Rev
1000118265-ATK-01-ZZ-DR-CE-900100	Site location Map	P01
1000118265-ATK-01-ZZ-DR-CE-66201	Street Typology	P01
1000118265-ATK-01-ZZ-DR-CE-66202	Road Layout	P01
1000118265-ATK-01-ZZ-DR-CE-66203	Junction Layout	P01
1000118265-ATK-01-ZZ-DR-CE-66204	Visibility Splay	P01
1000118265-ATK-01-ZZ-DR-CE-66205	Typical Cross Section	P01
1000118265-ATK-01-ZZ-DR-CE-66206	Vehicle tracking sheet 1 of 2	P01
1000118265-ATK-01-ZZ-DR-CE-66207	Vehicle tracking sheet 2 of 2	P01
1000118265-ATK-01-ZZ-DR-CE-66208	Pedestrian and Cycle Route	P01

6.1 Promotion of active travel and 10-minute Neighbourhood

Sea Gardens Phase1 Block A effectively responds to the need for improving connections with and between established communities by prioritizing strategic connections between homes, shops, public transport, and local amenities. Its focus on pedestrian-friendly routes, improved access to transport, a mix of uses within the development, and integration with existing communities ensures that the Sea Gardens Phase1 Block A development will strengthen Bray's overall connectivity and accessibility, benefiting both new and existing residents. The following section describes the key principles.

The proposed development has been designed to follow the principles of a '10-Minute Neighbourhood' concept, with all key social and economic services within a 10-minute walk from the heart of the development as seen in Figure 6-

1 and within cycling distances in Figure 6-2 . The following key amenities are located within walking distance from Sea Gardens Phase1 Block A:

- The Ravenswell School campus which accommodates the primary and secondary level schools is located to the west of the site.
- The existing Lidl supermarket on the Dublin Road and the Castle Street Shopping Centre are within 800m of the site
- Bray Main Street is 500m south of the site with the Bray Civic Offices, the HSE Primary Care Centre and the Mermaid Arts Centre all within a 1km walk.
- Recreational facilities such as the Corke Abbey Valley Park and Bray People's Park are all within easy reach of the site, the latter located just 800m, westward.
- An amazing natural setting surrounds the site, with Bray Harbour located 300m to the south and with the town's Promenade immediately south of the Harbour. In addition to the existing amenities surrounding the site, the proposed development will provide a new childcare facility, public house, medical centre and a number of new commercial units.

Connectivity is a key principle of Sea Gardens Phase1 Block A design. The scheme builds upon many assets of its immediate context and defines clear streets and landscaped areas to create a permeable and walkable public realm, allowing for a sense of community at ground level. Active travel is prioritised with only a single vehicular access point proposed to the car parking area integrated into Block A.

Figure 6-1 – Range of Facilities in Walking Distance of the Proposed Development

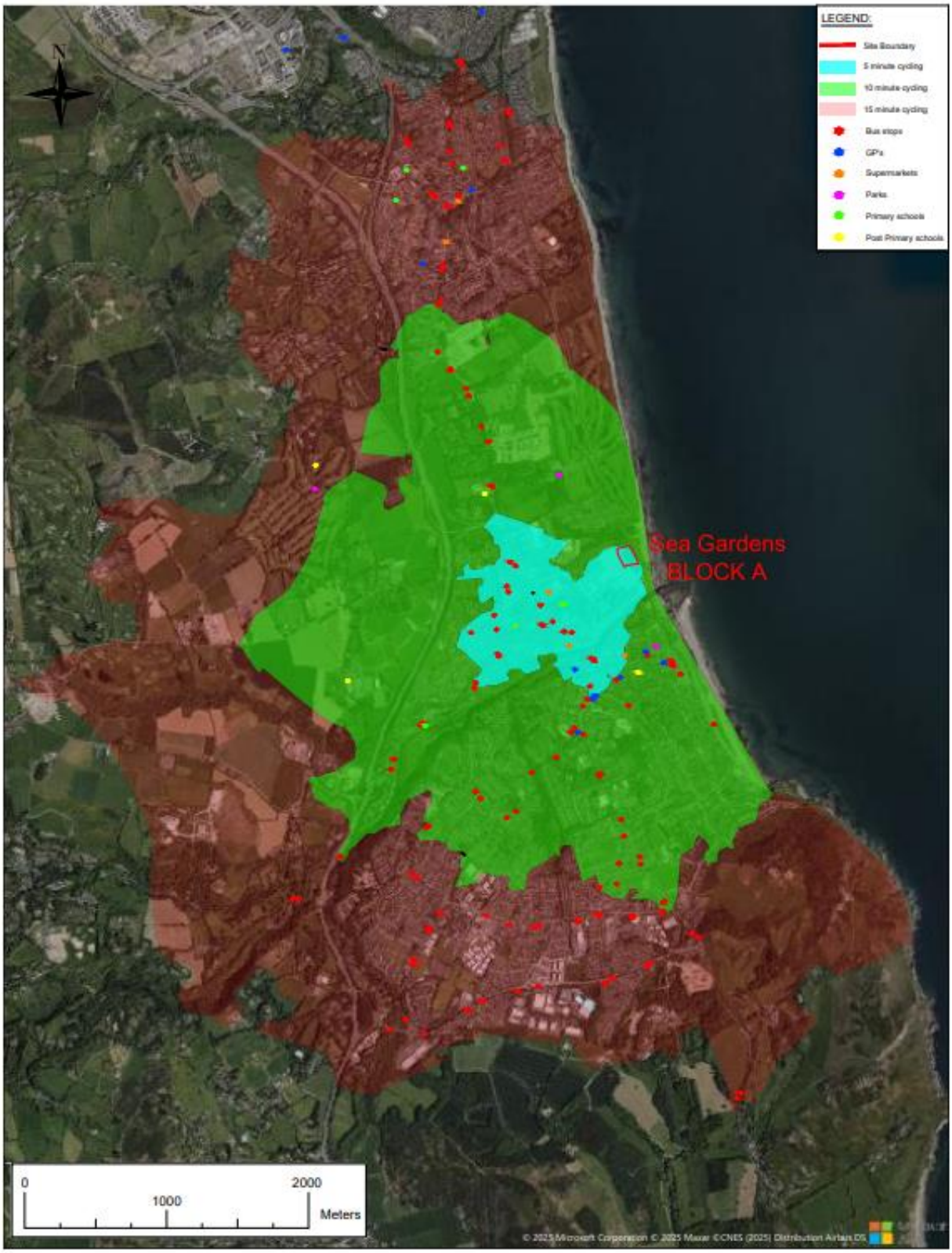

Figure 6-2 - Range of Facilities in Cycling Distance of the Proposed Development

6.2 DMURS

The proposed development proposes limited interventions to the permitted developments. The design of the masterplan lands is DMURS compliant. The street layouts have been developed to deliver a high place function wherein the streets and public spaces form part of the social fabric of the development. Achievement of this function can be greatly facilitated by developing a self-regulating street environment wherein vehicular movement function should be limited to, as much as is practicable and a desirable, a maximum design speed of 20kph-30kph. The DMURS statement shows how key elements of the development have been developed to create a safe environment that reduces vehicular impacts and encourages walking and cycling. This includes:

- Horizontal and vertical alignment to achieve a 20km/h - 30km/h design speed.
- Carriageway widths in line with DMURS requirement for street type.
- Constrained junction radii in line with DMURS requirement.
- Raised table entry treatments at access junctions; and
- Provision of raised tables at internal Junctions.

The above DMURS approach together with a highly permeable network of streets will help maximise and facilitate active travel as the main mode for short to medium trips for future residents and visitors to the Sea Gardens Phase1 Block A.

6.3 Walking and Cycling Environment

The development will feature high-quality facilities for pedestrians and cyclists, which are central to its design. It will seamlessly integrate with the well-developed existing walking and cycling environment within the Sea Gardens Masterplan. Please refer to AtkinsRealis drawing 1000118265-ATK-01-ZZ-DR-CE-66208 for further details on walking and cycling routes within the red line of the development.

Wide shared paths will be provided to ensure cyclists of all abilities can access the services and facilities. These paths will connect smoothly with the broader masterplan, creating a coherent network of pedestrian streets and a safe cycle network. Pedestrian routes through and around the development have been designed to follow natural paths and connect to existing and planned amenities. The layout of Sea Gardens Phase1 Block A accommodates these routes. Raised crossings for pedestrians and cyclists will be installed at junctions to prioritize pedestrian movement and slow down vehicle speeds as shown in Figure 6-3, an extract from AtkinsRealis drawings 1000118265-ATK-01-ZZ-DR-CE-66202.

Figure 6-3 - Extract showing pedestrian priority at junction

6.4 Access

As noted above, access to Block A will tie into the wider masterplan lands. Figure 6-4 shows the multi-modal access locations for the proposed development. This consists of:

- a single vehicular access is proposed to an undercroft parking area
- Numerous pedestrian and cycle access points are proposed

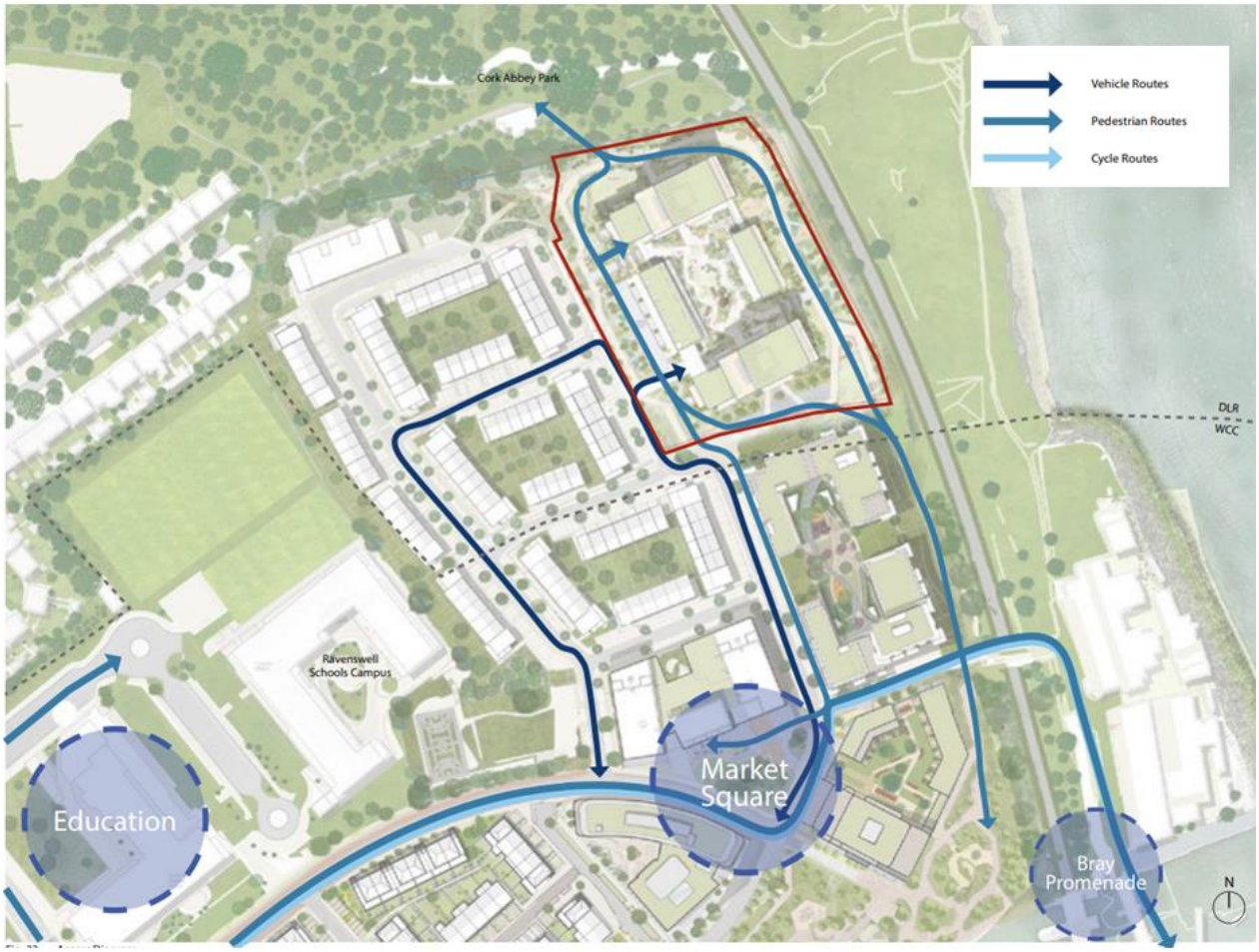

Figure 6-4 – Multi-modal access to Block A

7. Traffic Impact Analysis

The impact on the full masterplan lands was assessed for the opening year and future year scenarios (+5 and +15) in accordance with TII Traffic and Transport Assessment Guidance, both with and without the development. This assessment showed that the development, including vehicle trips, could be accommodated within the transport network. This was acknowledged through the grant of permission by An Bord Pleanála. Decision for 314686 Section 10.7.12, states:

"I have acknowledged third-party concerns that the proposed development would lead to traffic congestion in the area. However, I consider that the TTA has acceptably demonstrated that traffic congestion concerns would largely be a result of existing trends and that the proposed development would not significantly or unacceptably contribute to traffic congestion. Furthermore, I am satisfied that the proposed development has been suitably designed to minimise traffic generation, and that the area will benefit from future sustainable transport projects and policies which will reduce traffic growth in the area. Accordingly, I consider that proposals are acceptable in this regard."

The revised Block A application consists of 159 units, while the SHD 02 was a build-to-rent scheme consisting of 162 units. Therefore, in real terms, the number of units is a reduction from the permitted scheme. As outlined in section 7.6 in both the AM and PM the direct impacts of Block A vehicular impacts on the Lower Dargle Road (LDR), Southern Access Road (SAR) and Northern Access Road (NAR) are insignificant and in all cases less than 1%. Notwithstanding the above, we have undertaken a Trip Calculation exercise to show that the actual multi-modal trips from the proposed Block A development is negligible as well as providing details of the overall Sea Gardens Masterplan lands impacts as request by DLRCC in their formal LRD opinion.

7.1 Residential Trips

The person trip rate for the residential developments was estimated using the TRICS (Trip Rate Information Computer System) database, specifically the "Residential – Houses Privately Owned" and "Residential – Flats Privately Owned" subcategories for houses and apartment units, respectively. This provides the total number of trips generated per unit, regardless of transport mode. For trip generation, the trip rates for the 3-hour AM peak (7 to 10 am) and PM peak (4 to 7 pm) were considered. Based on CSO data, the percentage of people leaving during various hours of the morning peak was determined. Using this information, the trip rate for the AM peak (8 to 9 am) and PM peak (5 to 6 pm) was calculated. The TRICS data showing he trip rate for Block A is shown in Table 7-1.

Table 7-1 – Trips Rates for Block A

Period	Apartment Trip Rates	
	Arrivals	Departures
AM Period		
7 to 8	0.133	0.165
8 to 9	0.155	0.351
9 to 10	0.330	0.381
Trip rate AM PERIOD	**0.598**	**0.897**
PM period		
4 to 5	0.144	0.175
5 to 6	0.454	0.175
6 to 7	0.258	0.258
Trip rate PM PERIOD	**0.856**	**0.608**

7.2 Commuting Pattern

To understand the commuting patterns CSO data for the Small Areas (SA) adjacent to Block A were selected and analysis. The SA are shown in Figure 7-1. The SA's were chosen based on similar site characteristic, namely:

- Proximity To the site.
- Proximity to Public Transport; and
- Parking Characteristics.

Figure 7-1 – CSO Small Areas selected for comparison purposes

Commuting patterns from the above SA are shown in Table 7-2.

Table 7-2 – Small Area Commuting patterns

SA Code	07:00	08:00	09:00
A257080004	84	59	27
A257017002	47	42	19
A267122001	96	108	32
A257080005	47	64	17
A257080006	27	24	9
A257080007	45	46	21
A257081010	33	41	12
A257081012	52	59	21
A267122016	53	72	15
A267122017	78	87	11
Total	562	602	184
SA Code	07:00	08:00	09:00
%	42%	45%	14%

Based on the commuting patterns shown in Table 7-2.

- 42% of trips debate between 7 to 8 am
- 45% of trips depart between 8 to 9 am
- 14% of trips depart between 9 to 10am

CSO data does not contain for PM trips therefore it has been assumed that a similar arrival rate is mirrored for the 3 hours between 4pm to 7pm.

7.3 CSO Mode Share

The mode share numbers and percentage for the small areas identified in Table 7-2 have been calculated and are presented in Table 7-3.

Table 7-3 – CSO 2022 Mode Share for Small Areas

Means of Travel	Total	Mode Share %
Active Travel	856	22%
Public Transport	770	20%
Car driver	1398	36%
Car passenger	558	14%
Work From Home	312	8%
Total	**3894**	**100%**

The mode share percentages shown in Table 7-3 are considered a worst case scenario as the Greater Dublin Area (GDA) Transport Strategy 2022-2042 envisions significant improvements to mode share as indicated in Figure 7-2.

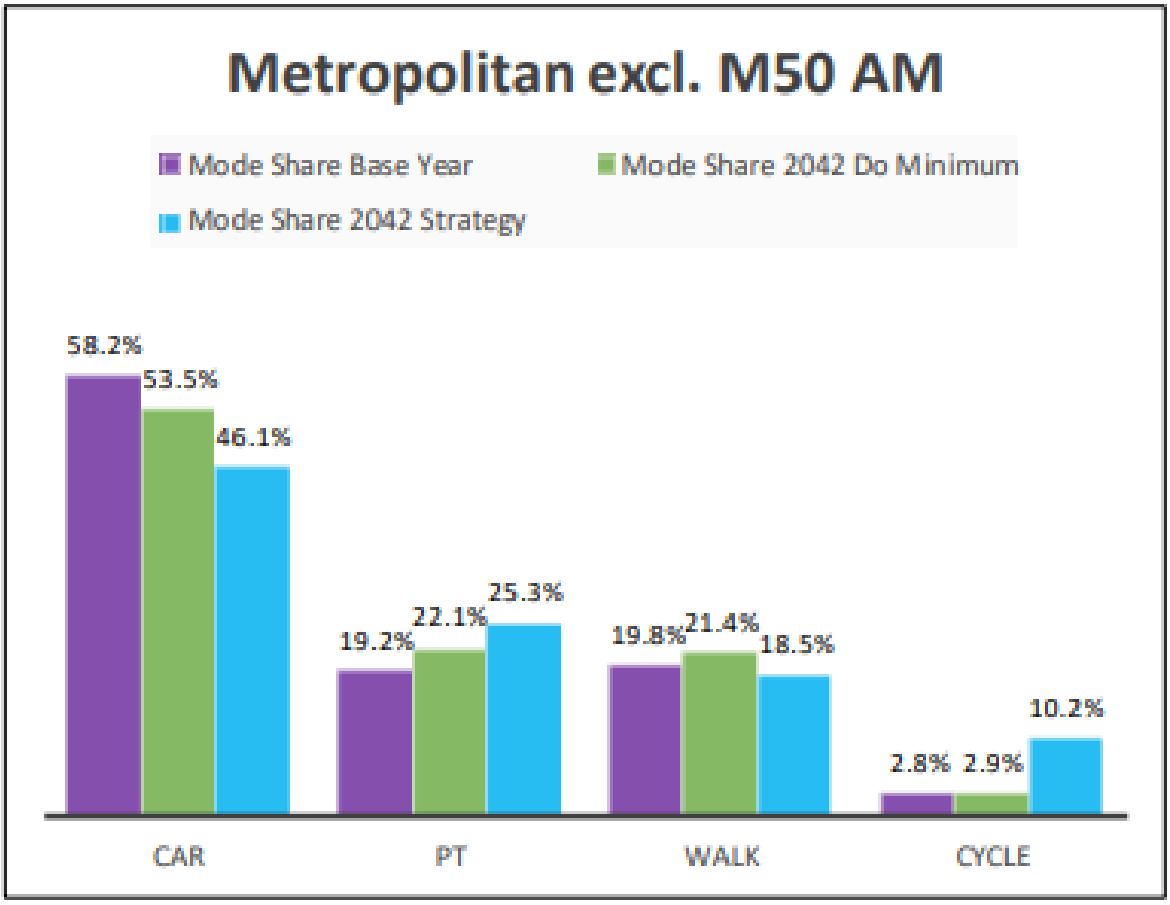

Figure 7-2 – GDA Transport Strategy Mode Share

Therefore, a sensitivity test mode share percentage has also been undertaken for Block A as indicated in Table 7-4.

Table 7-4 – Mode Share and Sensitivity Test Mode Share

Means of Travel	Existing Mode Share	Proposed Mode Share
Active Travel	22%	28% (+6%)
Public Transport	20%	24% (+6%)
Car driver	36%	24% (-12%)
Car passenger	14%	14%
Work From Home	8%	8%

7.4 Trip Rates

Based on the above steps the peak AM and PM trip rates for the Block A is outlined in Table 7-5.

That is 0700-1000 - 3hour trip rate shown in Table 7-1 by CSO 8-9am travel patterns (45%) by mode share shown in Tabel 7-4 by number of apartments (159 units) =0.59 rate by.

Example 0.598 (7-10 apartment arrival rate) x 45% = 0.267AM peak arrival rate for apartment x active travel mode share 22% = 0.59 rate by number of units (159) = 9 trips by active travel.

Table 7-5 – Block A - Multimodal Trip Rates

			Apartments					Apartments			
Mode	Mode Share base	Units	Arrival	Depart	Trips Arrival	Trips Depart	Mode share Future	Arrival	Depart	Trips Arrival	Trips Depart
AM Peak 8 to 9pm											
Active Mode	22%	159	0.59	0.24	9	14	28%	0.75	0.1102	12	18
PT	20%		0.54	0.21	9	13	26%	0.69	0.104	11	17
cars	36%		0.96	0.39	15	23	24%	0.064	0.096	10	15
Car pas	14%		0.38	0.15	6	9	14%	0.03	0.056	6	9
WFH	8%		0.21	0.009	3	5	8%	0.021	0.032	3	5
Total	100%	159	0.268	0.401	42	64	100%	0.268	0.401	42	64
PM Peak 5 to 6pm											
Active Mode	22%	159	0.070	0.042	11	7	28%	0.089	0.054	14	9
PT	20%		0.064	0.039	10	6	26%	0.082	0.050	13	8
cars	36%		0.114	0.069	18	11	24%	0.076	0.046	12	7
Car pas	14%		0.045	0.027	7	4	14%	0.045	0.027	7	4
WFH	8%		0.025	0.015	4	2	8%	0.025	0.015	4	2
Total	100%		0.318	0.193	50	30	100%	0.318	0.193	50	30

7.5 Trip Distribution

The distribution of trips to the local network is based on the data obtained from Census 2016 Place of Work, School or College - Census of Anonymised Records (POWSCAR) for the Bray Area.

Based on the POWSCAR data, the methodology used for determining the percentage of trips to/from the different zones of the model cordon is summarised below.

- Commuter data originating from the Bray Area was filtered and their destinations determined. Thereafter, the most likely routes taken by commuters to reach various destinations from Bray were determined using Google Maps for the AM peak period. (e.g. people travelling to Dublin are likely to use the Dublin Road Northbound Road).
- Based on these likely routes to different destinations, the total number of people traveling to different zones within the model cordon was calculated. The raw data from the POWSCAR for Bray Area and the corresponding model zones to which commuters are travelling is summarised in Appendix C.
- Thereafter, the percentage of people traveling to each zone within model cordon was determined. These are summarised in Table 7-6.
- Since the percentage of trips arriving to these zones are not in POWSCAR data, it was assumed that the same percentage of trips will apply to arrivals also. In addition, since the data for the PM peak is not available, so the corresponding AM peak data were used for PM peak also.

Ravenswell Road will be closed (as instructed by Wicklow County Council) therefore no traffic will enter or exit via this road, resulting from this the existing traffic on the Ravenswell Road was redistributed in line with Table 7-6.

Table 7-6 – Percentage of commuters to different zones

Zones	AM		PM	
	Arrival	Departure	Arrival	Departure
Northern Access Road	53% (20)	53% (20)	53% (15)	53% (15)
Upper Dargle Road	13% (4)	13% (4)	13% (4)	13% (4)
Southern Access Road	34% (14)	34% (14)	34% (10)	34% (10)

7.6 Trip Impact and Planning Application Assessment

As shown in Table 7-5 the proposed development is anticipated to generate a total of 106 No. multi-modal trips across all modes during the AM peak period, with 40No. of these trips expected to be car-based. During the PM peak period, Block A is anticipated to generate approximately 80No. multi-modal trips, of which 30No. are expected to be car-based.

When future mode share is considered, the number of vehicle trips in the AM peak reduces by 13No. to 40No. trips. In the PM peak, the number of car trips reduces by 20No. to 30No. trips. These trips would be distributed across the network, thereby reducing the overall impact at any one junction from the total vehicular trips.

Based on the above calculations and distribution matrices the anticipated vehicle trip impact at key junctions is shown in Table 7-7. As shown both the AM and PM vehicular impacts on the Lower Dargel Road (LDR), Southern Access Road (SAR) and Northern Access Road (NAR) are insignificant and in all cases less than 1%.

Table 7-7 – Traffic Screening Table

Site	AM Peak						PM Peak					
	Base	Dev Trips	Future Mod Share Trips	Dev + Future Mod Share	Total	%	Base	Dev Trips	Future Mod Share Trips	Dev + Future Mod Share	Total	%
LDR Jn	1652	4	-2	2	1654	0.2%	1743	4	-2	2	1745	0.1%
SAR Jn	1460	14	-4	10	1470	0.7%	1683	10	-3	7	1690	0.4%
NAR Jn	1489	20	-7	13	1502	0.9%	1483	15	-5	10	1493	0.7%

TII Transport Assessment Guidance Section 2.1 shown below indicates that at these levels no further assessment is required.

Table 2.1 Traffic Management Guidelines Thresholds For Transport Assessments

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.*

Notwithstanding the fact that the traffic impacts are below the TII thresholds for modelling as requested by DLRCC in their opinion letter the TIA section 7.7 contains an assessment of the larger Sea Garden masterplan lands for completeness.

7.7 Bray Sea Gardens Masterplan Overview

The Bray Sea Gardens masterplan spans approximately 40 acres (around 21.3 hectares), making it one of the largest projects in the area. It includes over 1,200 new residential units, comprising a mix of houses and taller buildings.

The masterplan is split into three phases as can be seen in Figure 7-3:

- Phase 1 Coastal Quarter, including phase 1a (App Ref: ABP-311181-21) was permitted and is in construction. Planning permission for Phase 1b (App Ref: ABP-314686-22) has been permitted.
- Phase 2 has been submitted to Wicklow County Council (Wicklow County Council Planning Ref: 2560207)
- Phase 3 forms part of the future application which is south of the new park and will form the final part of the Sea Gardens Masterplan.

It should be noted that the ABP-314686-22 for Block A was to construct build to rent units, where this proposal is to construct build to sell unit.

Figure 7-3 – Sea Gardens Masterplan Phasing Plan

The residential units are designed to cater to various needs, including two and three-storey houses, duplexes, and apartments. The development also includes a new public park, hotel, shops, cafés, and improved pathways to the sea and nearby woodlands. The design emphasizes community-focused living, with facilities that encourage social interaction and outdoor activities.

7.8 Modelled Scenarios

An initial assessment was undertaken to quantify the additional traffic from the development that will be distributed onto the local road network and the potentially impacted junctions. The baseline traffic surveys were looked at for three key junctions as seen in Figure 7-4 :

- (JTC 1) R761 North / Lower Dargle Road / R761 South / Ravenswell Road Car Park
- (JTC 2) R761 North / Upper Dargle Road / R761 West / R761 South / North Wicklow Educate Together Access
- (JTC 3) R761 North / Chapel Lane / R761 South / Ravenswell

Figure 7-4 – Location of Key Junctions

In terms of the future network routing, it is important to note that that Ravenswell Road / Dublin Road (junction 1 in Figure 7-4 above) is closed to vehicular traffic. Filtered permeability still allows active travel to occur. The closure of Ravenswell Road / Dublin Road junction was a request of Wicklow County Council to promote this is a key active travel route to and from Bray Town Centre, Sea Gardens masterplan lands and access to the Dargle River.

As a result, vehicles from Bray turning right from Dublin Road towards the Ravenswell Road, as well as vehicles exiting Ravenswell Road toward Dublin Road, were redistributed to the Southern Access Road junction (junction 2 in Figure 7-4).

A new DMURS compliant junction is proposed at the location of junction 2, referred to a Southern Access Road (SAR). The existing and proposed SAR layout is shown in Figure 7-5. The SAR provides a single carriageway in each direction with a cycle track and pedestrian footpath. The SAR forms an off-set 4-arm junction with Dublin Road and Upper Dargle Road under signal control.

The Northern Access Road (junction 3) general arrangement is Figure 7-6. The NAR junction was modelled as per the existing conditions, consisting of a priority junction onto Dublin Road. The NAR has two lanes exiting onto Dublin Road and one entry lane along with pedestrian and cycle facilities.

Figure 7-5 – Southern Access Road Junction Layout

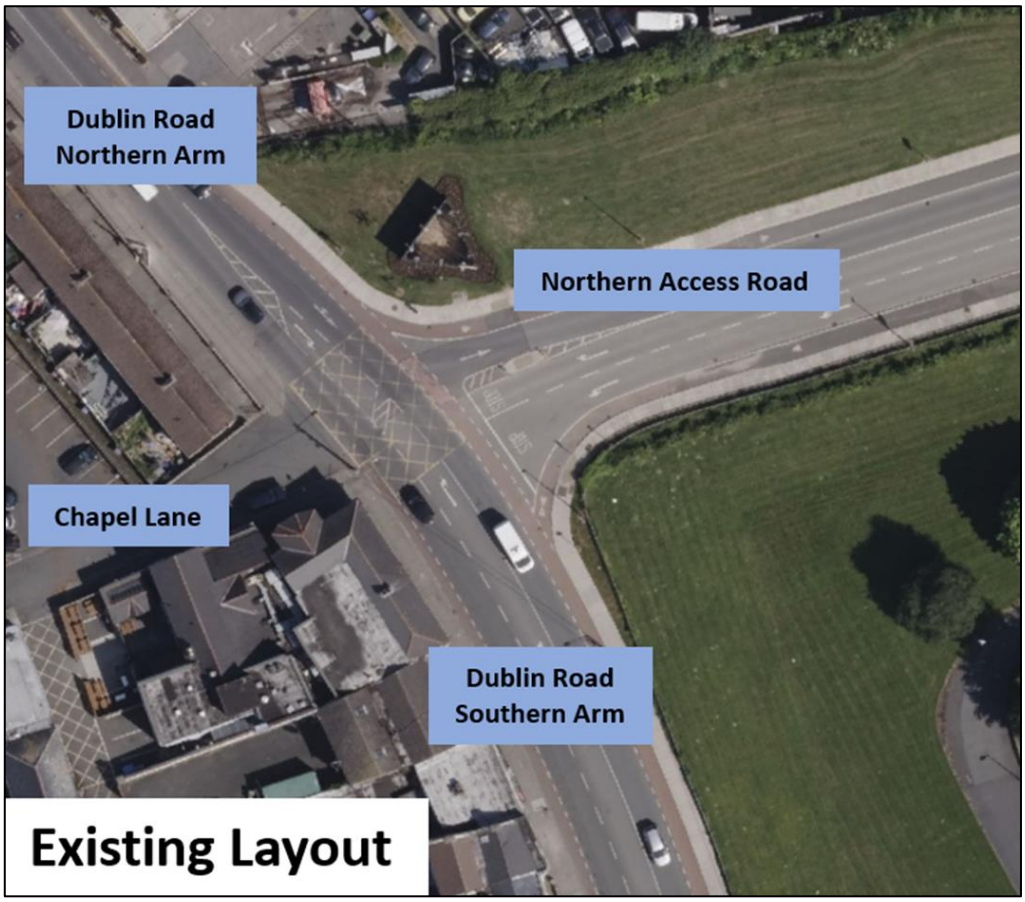

Figure 7-6 – Northern Access Road Junction Layout

Table 7-8 outlines the various modelled scenarios for the full build out of Bray Sea gardens masterplan Lands for both the AM and PM peak periods.:

- **Do Something 1 (DS1):** Existing trips are increased in accordance with background growth + Trips redistribution due to closure of Ravenswell Rd at Lower Dargle Road Junction + Committed + Proposed Development trips.

- **Do Something 2 (DS2):** Same as DS1 but with no right turn from Dublin Road South into Southern Access Road.

In addition, a sensitivity Scenario was modelled as part of the approved BusConnects schemes on the Dublin Road corridor.

Table 7-8 – Scenarios Modelled

Scenario No	Name	Layout & Junction	Trips
1	Do Something 1 (DS1)	Existing Layout + Southern Access Road included	Existing trips increased in accordance with background growth + Trips redistribution due to closure of Ravenswell Rd at Lower Dargle Road Junction + Committed + Proposed Development trips
2	Do Something 2 (DS2)	Same as Sc 3 but no right turn allowed from Dublin Road South arm towards SAR	Same as Sc 1 with no right turn from Dublin Road South into Southern Access Road
3	Do Something 1 (DS1)	Same as Sc 2	Existing trips increased in accordance with background growth + Trips redistribution due to closure of Ravenswell Rd at Lower Dargle Road Junction + Committed + Proposed Development trips
4	Do Something 2 (DS2)	Same as Sc 2	Same as Sc 3 with no right turn from Dublin Road South into Southern Access Road
5	Do Something 1 (DS1)	Same as Sc 2	Existing trips increased in accordance with background growth + Trips redistribution due to closure of Ravenswell Rd at Lower Dargle Road Junction + Committed + Proposed Development trips
6	Do Something 2 (DS2)	Same as Sc 2	Same as Sc 5 with no right turn from Dublin Road South into Southern Access Road

7.9 Traffic Impact Results

7.9.1 Southern Access Road Junction

The proposed Southern Access Arm layout is shown in Figure 7-5. The junction was analysed using LinSig with a cycle time for the model was set to 120 seconds for all scenarios, with the pedestrian/cycle stage called in every cycle. The minimum green time for each stage was set to 7 seconds, in accordance with the Traffic Signs Manual. Stage Sequence for Do Something Scenario 1 (Sc 1,3,5)

In the *Do Something 1* scenario, Ravenswell Road is closed to general traffic at its junction with Dublin Road. As a result, traffic—particularly vehicles on Dublin Road South making right turns—has been redistributed across the network. This redistribution has led to increased right-turn demand at the SAR junction from the Dublin Road South link. To accommodate this additional demand, the signal stage sequence was modified to include a general green phase (Stage 1) for the Dublin Road South link, as illustrated in the signal staging diagram (Figure 7-7).

Additionally, the lane configuration on Upper Dargle Road was adjusted to enhance junction capacity. Specifically, the outbound inner lane on Upper Dargle Road was designated for left-turn movements only, while the outer lane was assigned for straight-through and right-turn movements. Consequently, as shown in the Stage 2 sequence, left-turning traffic from Upper Dargle Road can now proceed concurrently with traffic from the northern arm of Dublin Road.

The stage sequence is summarised below.

- **Stage 1:** Dublin Road Southern arm receives its own green.
- **Stage 2:** Dublin Road Northern arm, along with the left-turning movement from Upper Dargle Road, receives green.
- **Stage 3:** Upper Dargle Road receives green.
- **Stage 4:** Southern Access Road (upgraded local access road on the east side) receives green.
- **Stage 5:** Pedestrian/cycle stage

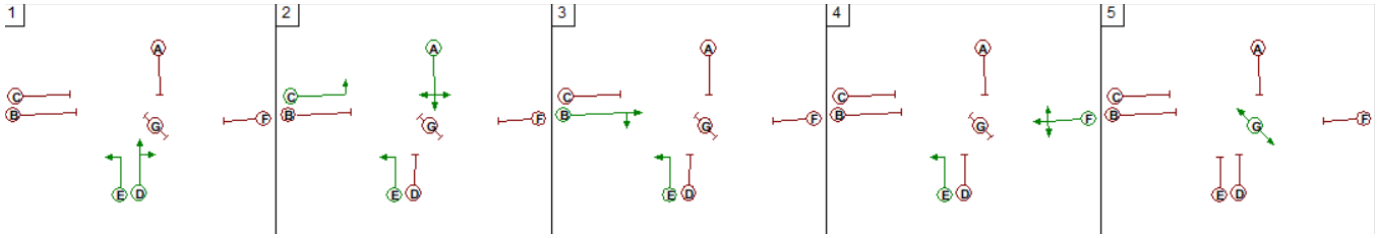

Figure 7-7 – Staging Sequence Diagram for Do Something 1

To enhance the capacity of the Southern Access Junction, right-turn movements from the Dublin Road Southern arm into the local access road were restricted. These trips were instead rerouted to the Northern Access Junction. The staging sequence diagram for Do Something Scenario 2 is presented in **Figure 7-8**.

The configuration of the Upper Dargle Road remains unchanged from both the Do Minimum and Do Something Scenario 1. The revised stage sequence is as follows:

- **Stage 1:** The Dublin Road Southern arm receives a general green signal. Right-turning vehicles from the Dublin Road Northern arm must yield and wait for suitable gaps.
- **Stage 2:** The Dublin Road Northern arm and the left-turn movement from Upper Dargle Road receive a green signal.

- **Stage 3:** The Upper Dargle Road receives a green signal.
- **Stage 4:** The Southern Access Road (an upgraded version of the local access road on the eastern side) receives a green signal.
- **Stage 5:** Dedicated pedestrian and cyclist stage.

As in Do Something Scenario 1, the general green for the Local Access Road in Stage 4 is programmed to be called every cycle, reflecting the increased traffic demand on this link. Consistent with other scenarios, during all stages except Stage 5, the left-turn movement from the Dublin Road Southern arm toward Upper Dargle Road is modelled to yield to conflicting traffic movements.

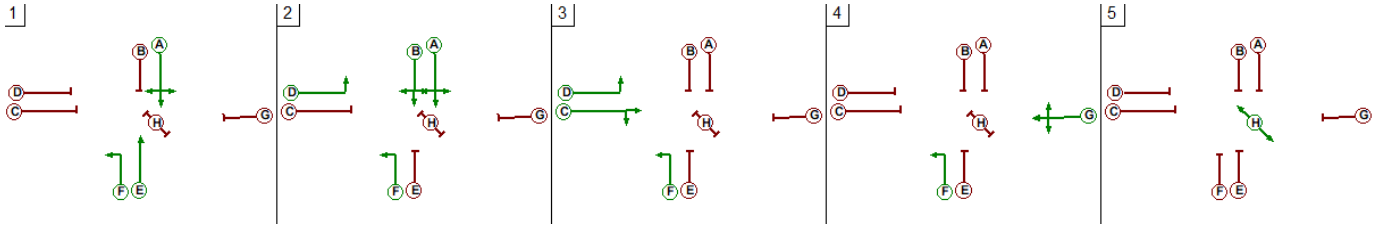

Figure 7-8 – Staging Sequence Diagram for Do Something 2

7.9.2 Opening Year Results

The results for the Southern Access Road Junction for the Opening Year are summarised in Table 7-9.

Table 7-9 – Southern Access Road Model Results Opening Year

Arm	MMQ		Delay		DOS		PRC	
	DS1	DS2	DS1	DS2	DS1	DS2	DS1	DS2
AM Peak								
Dublin Road (N)	96 pcu	81 pcu	10 min	8 min 12 sec	138%	128%	-53%	-43%
Upper Dargle Road	50 pcu	36 pcu	9 min 43 sec	6 min 56 sec	137%	122%		
Dublin Road (S)	168 pcu	148 pcu	9 min 39 sec	8 min 20 sec	136%	129%		
Southern Access Road	51 pcu	43 pcu	10 min 8 sec	8 min 24 sec	136%	127%		
PM Peak								
Dublin Road (N)	149 pcu	209 pcu	10 min 52 sec	15 min 48 sec	144%	181%	-60%	-101%
Upper Dargle Road	20 pcu	21 pcu	4 min 56 sec	5 min 1 sec	111%	111%		
Dublin Road (S)	191 pcu	27 pcu	10 min 47 sec	34 sec	143%	86%		
Southern Access Road	5 pcu	5 pcu	2 min 2 sec	2 min 2 sec	80%	80%		

The traffic modelling results for the Southern Access Road Junction in the Opening Year compare the performance of Do Something Scenario 1 (DS1) and Do Something Scenario 2 (DS2) during both the AM and PM peak periods. Key performance indicators include Maximum Queue Length (MMQ), Average Delay, Degree of Saturation (DoS), and Practical Reserve Capacity (PRC).

7.9.2.1 AM Peak Observations

- Overall Improvement in DS2: Across all arms, DS2 shows a reduction in queue lengths and delays compared to DS1, indicating improved junction performance.
- Dublin Road (North): Queue length reduced from 96 to 81 PCUs, and delay dropped by nearly 2 minutes. DoS decreased from 138% to 128%, suggesting slightly less over-saturation.
- Upper Dargle Road: Notable reduction in queue (50 to 36 PCUs) and delay (9:43 to 6:56), with DoS improving from 137% to 122%.
- Dublin Road (South): Queue and delay both decreased, and DoS improved from 136% to 129%.
- Southern Access Road: Slight improvements in all metrics, with delay reduced by nearly 2 minutes and DoS dropping from 136% to 127%.

7.9.2.2 PM Peak Observations

- Dublin Road (North): Performance worsened significantly in DS2, with queue length increasing from 149 to 209 PCUs and delay rising by nearly 5 minutes. DoS jumped from 144% to 181%, indicating severe over-saturation. PRC also dropped further into the negative, suggesting a critical capacity issue.
- Upper Dargle Road: Performance remained stable, with minimal changes in queue, delay, and DoS (steady at 111%).
- Dublin Road (South): Major improvement in DS2, with queue length dropping from 191 to just 27 PCUs and delay reduced from nearly 11 minutes to just 34 seconds. DoS improved dramatically from 143% to 86%, indicating the junction is now operating within capacity.
- Southern Access Road: No change in performance between scenarios, with low queue lengths and delays, and DoS remaining at 80%.

7.9.2.3 Overall Performance

- In the DS1 and DS2 scenario, the redistribution of trips (primarily school trips) from the closure of the Ravenswell Road at the LDR (Lower Dargle Road) junction to the Southern Access Road junction increased the demand on the junction significantly, consequently, key performance indicators for the junction deteriorated, and the junction was found to be operating over capacity.
- DS2 offers clear benefits during the AM peak, reducing congestion and delays across all arms.
- In the PM peak, DS2 significantly improves conditions on the Dublin Road (South) but at the cost of increased congestion on Dublin Road (North).
- The Southern Access Road performs consistently well in both scenarios and time periods, indicating sufficient capacity.

7.9.2.4 +5 Year Results

The results for the Southern Access Road Junction for the Opening Year + 5 are summarised in

Table 7-10.

Table 7-10 – Southern Access Road Model Results Opening Year +5

Arm	MMQ		Delay		DOS		PRC	
	DS1	DS2	DS1	DS2	DS1	DS2	DS1	DS2
AM Peak								
Dublin Road (N)	107 pcu	93 pcu	10 min 53 sec	9 min 9 sec	143%	133%	-59%	-48%
Upper Dargle Road	57 pcu	43 pcu	10 min 38 sec	7 min 56 sec	143%	128%		
Dublin Road (S)	184 pcu	164 pcu	10 min 24 sec	9 min 8 sec	140%	133%		
Southern Access Road	51 pcu	43 pcu	10 min 8 sec	8 min 24 sec	136%	127%		
PM Peak								
Dublin Road (N)	165 pcu	247 pcu	11 min 42 sec	18 min 13 sec	149%	207%	-65%	-130%
Upper Dargle Road	25 pcu	25 pcu	5 min 49 sec	5 min 54 sec	116%	116%		
Dublin Road (S)	209 pcu	30 pcu	11 min 33 sec	38 sec	148%	89%		
Southern Access Road	5 pcu	5 pcu	2 min 2 sec	2 min 2 sec	80%	80%		

The traffic modelling results for the Southern Access Road Junction in the **Opening Year +5** assess the impact of background traffic growth on junction performance under **Do Something Scenario 1 (DS1)** and **Do Something Scenario 2 (DS2)** during both **AM and PM peak periods**. Key indicators include, **Maximum Queue Length (MMQ)**, **Average Delay**, **Degree of Saturation (DoS)** and **Practical Reserve Capacity (PRC).**

AM Peak Observations:

- Overall Improvement in DS2: All arms show reduced queue lengths and delays in DS2 compared to DS1, indicating improved operational efficiency.
- Dublin Road (North): Queue reduced from 107 to 93 PCUs; delay dropped by nearly 2 minutes. DoS improved from 143% to 133%.

- Upper Dargle Road: Queue decreased from 57 to 43 PCUs; delay reduced from 10:38 to 7:56. DoS improved from 143% to 128%.
- Dublin Road (South): Queue and delay both decreased; DoS improved from 140% to 133%.
- Southern Access Road: Delay reduced by nearly 2 minutes; DoS dropped from 136% to 127%.

PM Peak Observations:

- Dublin Road (North): Performance deteriorated significantly in DS2:
  - Queue increased from 165 to 247 PCUs.
  - Delay rose from 11:42 to 18:13.
  - DoS surged from 149% to 207%.
  - PRC dropped from -65% to -130%, indicating severe over-saturation and potential gridlock.

Key Takeaways:

- DS2 remains beneficial during the AM peak, offering consistent improvements across all arms.
- PM peak performance is mixed: in general SAR, UDR and Dublin Road South perform well however Dublin Road North performs poorly
- Southern Access Road continues to perform reliably in both scenarios and time periods.

7.9.2.5 +15 Year Results

The results for the Southern Access Road Junction for the Opening Year + 15 are summarised in Table 7-11

Table 7-11 – Southern Access Road Model Results Opening Year +15

Arm	MMQ		Delay		DOS		PRC	
	DS1	DS2	DS1	DS2	DS1	DS2	DS1	DS2
AM Peak								
Dublin Road (N)	124 pcu	110 pcu	11 min 43 sec	10 min 7 sec	149%	139%	-70%	-57%
Upper Dargle Road	70 pcu	55 pcu	12 min 1 sec	9 min 22 sec	153%	136%		
Dublin Road (S)	217 pcu	197 pcu	11 min 48 sec	10 min 37 sec	149%	142%		
Southern Access Road	59 pcu	52 pcu	11 min 57 sec	10 min 12 sec	147%	136%		
PM Peak								
Dublin Road (N)	199 pcu	183 pcu	13 min 18 sec	12 min 5 sec	160%	152%	-78%	-69%
Upper Dargle Road	33 pcu	33 pcu	7 min 20 sec	7 min 17 sec	124%	124%		
Dublin Road (S)	252 pcu	232 pcu	13 min 11 sec	11 min 57 sec	159%	151%		
Southern Access Road	5 pcu	5 pcu	2 min 2 sec	2 min 2 sec	80%	80%		

The traffic modelling results for the Southern Access Road Junction in the Opening Year +15 assess the impact of background traffic growth on junction performance under Do Something Scenario 1 (DS1) and Scenario 2 (DS2) during both AM and PM peak periods. Key indicators include Maximum Queue Length (MMQ), Average Delay, and Degree of Saturation (DoS).

AM Peak Observations

- Overall Improvement in DS2: All arms show reduced queue lengths and delays in DS2 compared to DS1, indicating improved operational efficiency.
- Dublin Road (North): Queue reduced from 124 to 110 PCUs; delay dropped by nearly 2 minutes. DoS improved from 149% to 139%.
- Upper Dargle Road: Queue decreased from 70 to 55 PCUs; delay reduced from 12:01 to 9:22. DoS improved from 153% to 136%.
- Dublin Road (South): Queue and delay both decreased; DoS improved from 149% to 142%.
- Southern Access Road: Delay reduced by nearly 2 minutes; DoS dropped from 147% to 136%.

PM Peak Observations

Dublin Road (North): Performance deteriorated significantly in DS2: Queue increased from 199 to 183 PCUs; delay rose from 13:18 to 12:05. DoS surged from 160% to 152%. PRC dropped from -78% to -69%, indicating severe over-saturation and potential gridlock.

Key Takeaways

- Similar to the Opening+5 design year, in the Opening+15 design year, the capacity of the junctions further deteriorated due to an increase in background traffic for both the AM and PM peaks DS2 remains beneficial during the AM peak, offering consistent improvements across all arms.
- PM peak performance is mixed: while DS2 may benefit other arms (data not shown), Dublin Road (North) becomes critically congested.
- Southern Access Road continues to perform reliably in both scenarios and time periods.

Overall Performance of Southern Access Road

Based on the performance the preferred option is Do Something 2. This scenario was primarily selected because it deals with the proposed developments, committed developments, background traffic growth and traffic redistribution more efficiently than both the Do Minimum and Do Something scenarios.

7.9.3 Northern Access Road

presents traffic performance data for the Northern Access Road junction under different scenarios:

- Years: Opening Year (OY), +5 Year, and +15 Year
- Scenarios: Do-Something 1 (DS1) and Do-Something 2 (DS2)
- Time Periods: AM Peak and PM Peak

Each arm is evaluated using:

- Queue Length (PCU) in vehicles
- Delay in seconds per vehicle
- RFC (Ratio of Flow to Capacity)
- LOS (Level of Service), rated from A (best) to F (worst)

Table 7-12 presents traffic performance data for the Northern Access Road junction under different scenarios:

- Years: Opening Year (OY), +5 Year, and +15 Year
- Scenarios: Do-Something 1 (DS1) and Do-Something 2 (DS2)
- Time Periods: AM Peak and PM Peak

Each arm is evaluated using:

- Queue Length (PCU) in vehicles
- Delay in seconds per vehicle
- RFC (Ratio of Flow to Capacity)
- LOS (Level of Service), rated from A (best) to F (worst)

Table 7-12 – Northern Access Road Junction Modelling Results

Arm	Queue (PCU)		Delay (s)		RFC		LOS	
	DS1	DS2	DS1	DS2	DS1	DS2	DS1	DS2
OY AM Peak								
Chapel Lane	0 pcu	0 pcu	15 sec	17 sec	0.0	0.0	B	C
Dublin Road (S)	0.1 pcu	0.9 pcu	8 sec	14 sec	0.1	0.5	A	B
Northern Access Road	1.1 pcu	1.9 pcu	28 sec	50 sec	0.5	0.7	D	F
Dublin Road (N)	0 pcu	0 pcu	0 sec	0 sec	0.0	0.0	A	A
OY PM Peak								
Chapel Lane	0.1 pcu	0.1 pcu	12 sec	12 sec	0.0	0.0	B	B
Dublin Road (S)	0 pcu	0.2 pcu	8 sec	9 sec	0.1	0.5	A	A
Northern Access Road	0.4 pcu	0.5 pcu	21 sec	23 sec	0.5	0.7	C	C
Dublin Road (N)	0 pcu	0 pcu	7 sec	8 sec	0.0	0.0	A	A
OY+5 AM Peak								
Chapel Lane	0 pcu	0 pcu	15 sec	18 sec	0.0	0.0	C	C
Dublin Road (S)	0.1 pcu	0.9 pcu	8 sec	14 sec	0.1	0.5	A	B

Northern Access Road	1.2 pcu	2.3 pcu	31 sec	1 min 1 sec	0.5	0.7	D	F
Dublin Road (N)	0 pcu	0 pcu	0 sec	0 sec	0.0	0.0	A	A
OY+5 PM Peak								
Chapel Lane	0.1 pcu	0.1 pcu	12 sec	12 sec	0.0	0.0	B	B
Dublin Road (S)	0 pcu	0.2 pcu	8 sec	9 sec	0.1	0.5	A	A
Northern Access Road	0.5 pcu	0.5 pcu	23 sec	26 sec	0.5	0.7	C	D
Dublin Road (N)	0 pcu	0 pcu	8 sec	8 sec	0.0	0.0	A	A
OY+15 AM Peak								
Chapel Lane	0 pcu	0 pcu	17 sec	20 sec	0.0	0.0	C	C
Dublin Road (S)	0.1 pcu	1 pcu	8 sec	16 sec	0.1	0.5	A	C
Northern Access Road	1.6 pcu	3.9 pcu	41 sec	1 min 43 sec	0.5	0.7	E	F
Dublin Road (N)	0 pcu	0 pcu	0 sec	0 sec	0.0	0.0	A	A
OY+15 PM Peak								
Chapel Lane	0.1 pcu	0.1 pcu	13 sec	14 sec	0.0	0.0	B	B
Dublin Road (S)	0 pcu	0.2 pcu	8 sec	9 sec	0.1	0.5	A	A
Northern Access Road	0.6 pcu	0.7 pcu	27 sec	31 sec	0.5	0.7	D	D
Dublin Road (N)	0 pcu	0 pcu	8 sec	8 sec	0.0	0.0	A	A

Overall Performance

Across all years, scenarios, and time periods, Level of Service (LOS) varies from A to F. Delays and queue lengths are minimal for most arms, suggesting the junction operates efficiently under both current and future traffic volumes.

Comparison: Do Something 1 v's Do-Something 2

In the DS2 scenario, the right-turning restrictions for the Dublin Road southern arm at the Southern Access Road junction resulted in redirected traffic to this junction resulting in additional demand. As a result of this The Do-Something 2 (DS2) scenario shows slightly higher queue lengths and delays in some cases, particularly on Northern Access Road, which are more pronounced in the AM peak periods.

Year on Year Trends

Slight increases in queue lengths and delays are observed from Opening Year to +15 Year, especially on Northern Access Road, reflecting expected traffic growth. Despite these increases, RFC values remain well below 1.0, indicating that the junction has sufficient capacity to handle projected traffic volumes.

Arm Specific Observations

Northern Access Road consistently experiences the highest queues and delays at this junction being the minor arm on a priority junction.

Conclusion

The traffic modelling indicates that the junction performs well under most tested scenarios and timeframes. Even with projected traffic growth by +15 years, the junction maintains acceptable Level of Service (LOS) across all arms and time periods.

7.9.4 Sensitivity Scenarios

BusConnects is the NTA's programme to greatly enhance bus services in the GDA. It consists of both the implementation of the Core Bus Corridors (CBCs) and the Network Redesign. A planning application has been permitted (App Ref: 317742) for the proposed Dublin to Bray CBC Route 13 which forms one part of the 16 radial routes across the greater Dublin area. On the 28th of January 2025 the National Transport Authority received notification of planning approval by An Bord Pleanála (Reg Ref HA27.317742)[4] for the Bray to City Centre BusConnects Scheme.

At the Dublin Road / Upper Dargle Road / Southern Access Road a revised layout is proposed as shown in Figure 7-9. The overall ethos is to provide a more compact junction design with benefits / priority to bus movements and active travel users. This has a knock-on impact of reducing through traffic at this junction reducing the junction carrying capacity for private cars. Based on the proposed BusConnects layout, the following upgrades were changes were undertaken to traffic modelling at this junction

- The left-turn slip lane for the Dublin Road southern arm was removed.
- All left-turning movements were modelled with a radius of 3 meters.
- Right-turning movements were also modelled with a radius of 3 meters.
- The width of all lanes was assumed to be 3 meters.

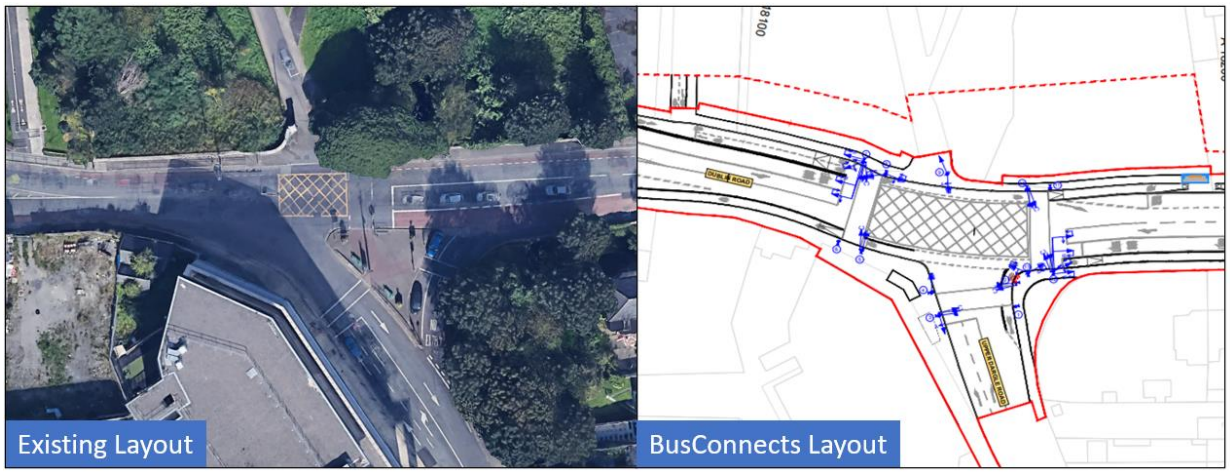

Figure 7-9 – Existing and Proposed BusConnects Southern Access Junction Layout

7.9.4.1 Modelled Scenarios

The sensitivity analysis was undertaken for Do-Something scenario 1 (DS1) and Do -Something scenario 2 (DS2) in line with previous modelled scenarios.

[4] 317742 | An Bord Pleanála

For the Southern Access Road junction, the stage sequence for all scenarios remained consistent with the previously discussed configurations, except that the left-turn movement from the Dublin Road southern arm was not modelled as an indicative arrow in any stages, where yielding to conflicting movements was required. The staging sequence for all scenarios is shown in Figure 7-10 and Figure 7-11.

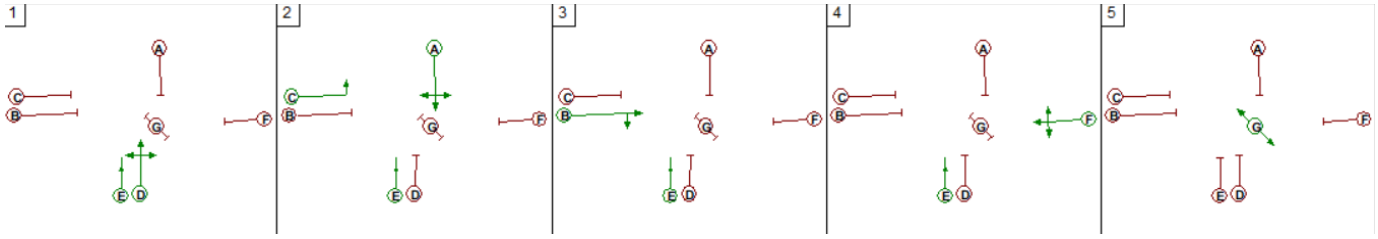

Figure 7-10 – Do Something 1 Sensitivity Staging Sequence

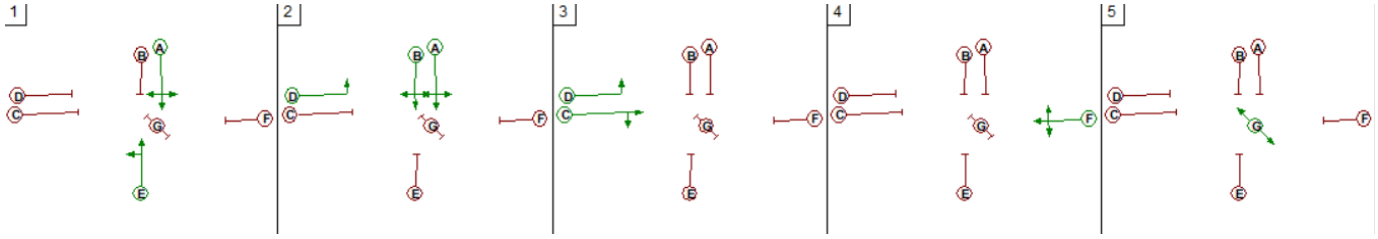

Figure 7-11 – Do Something 2 Sensitivity Staging Sequence

Comparison with existing layout

Based on the outputs shown in Table 7-13 the BusConnects layout at Dublin Road / Upper Dargle Road / SAR results in a deterioration of performance for private vehicles when compared to the existing layout. Across all metrics including maximum queue length (MMQ), average delay (delay) and degree of saturation (DOS)and practical reserve capacity (PRC) the junction performs less well.

This is to be expected given that BusConnects junction layout is a tighter configuration that the existing junction configuration with a reduced throughput capacity for private cars. As you would expect with the geometric design all scenarios are show a deteriorating the performance of the junction under the BusConnects layout.

Comparing BusConnects DS1 versus BusConnects DS2 it is clear across all metrics (MMQ, delay, DOS, PRC) that the DS2 scenario performs better.

7.9.4.2 Southern Access Road Junction (SAR Junction)

The results for the Southern Access Road Junction for all the design years are summarised in Table 7-13.

Table 7-13 – SAR Model Results: Sensitivity Scenario

Arm	MMQ				Delay				DOS				PRC			
	Existing Layout		BusConnects Layout		Existing Layout		BusConnects Layout		Existing Layout		BusConnects Layout		Existing Layout		BusConnects Layout	
	DS1	DS2	DS1	DS2	DS1	DS2	DS1	DS2	DS1	DS2	DS1	DS2	DS1	DS2	DS1	DS2
Opening year AM Peak																
Dublin Road (N)	96 pcu	81 pcu	116 pcu	101 pcu	9 min 60 sec	8 min 12 sec	12 min 24 sec	10 min 33 sec	138%	128%	153%	141%	-53%	-43%	-72%	-62%
Upper Dargle Road	50 pcu	36 pcu	59 pcu	45 pcu	9 min 43 sec	6 min 56 sec	11 min 25 sec	8 min 48 sec	137%	122%	149%	132%				
Dublin Road (S)	168 pcu	148 pcu	193 pcu	174 pcu	9 min 39 sec	8 min 20 sec	12 min 35 sec	11 min 19 sec	136%	129%	155%	146%				
Southern Access Road	51 pcu	43 pcu	62 pcu	56 pcu	10 min 8 sec	8 min 24 sec	12 min 33 sec	11 min 10 sec	136%	127%	151%	142%				
Opening Year PM Peak																
Dublin Road (N)	149 pcu	209 pcu	183 pcu	166 pcu	10 min 52 sec	15 min 48 sec	13 min 40 sec	12 min 16 sec	144%	181%	163%	153%	-60%	-101%	-82%	-70%
Upper Dargle Road	20 pcu	21 pcu	28 pcu	28 pcu	4 min 56 sec	5 min 1 sec	7 min 2 sec	6 min 59 sec	111%	111%	122%	122%				
Dublin Road (S)	191 pcu	27 pcu	218 pcu	198 pcu	10 min 47 sec	34 sec	13 min 46 sec	12 min 21 sec	143%	86%	163%	153%				

Southern Access Road	5 pcu	5 pcu	8 pcu	8 pcu	2 min 2 sec	2 min 2 sec	4 min 2 sec	4 min 2 sec	80%	80%	100%	100%			
Opening Year+5 AM Peak															
Dublin Road (N)	107 pcu	93 pcu	128 pcu	113 pcu	10 min 53 sec	9 min 9 sec	13 min 15 sec	11 min 26 sec	143%	133%	159%	147%			
Upper Dargle Road	57 pcu	43 pcu	66 pcu	53 pcu	10 min 38 sec	7 min 56 sec	12 min 19 sec	9 min 46 sec	143%	128%	155%	138%	-59%	-48%	-77%	-67%
Dublin Road (S)	184 pcu	164 pcu	208 pcu	190 pcu	10 min 24 sec	9 min 8 sec	13 min 14 sec	12 min 3 sec	140%	133%	159%	151%			
Southern Access Road	51 pcu	43 pcu	62 pcu	56 pcu	10 min 8 sec	8 min 24 sec	12 min 33 sec	11 min 10 sec	136%	127%	151%	142%			
Opening Year+5 PM Peak															
Dublin Road (N)	165 pcu	247 pcu	199 pcu	182 pcu	11 min 42 sec	18 min 13 sec	14 min 25 sec	13 min 4 sec	149%	207%	168%	158%			
Upper Dargle Road	25 pcu	25 pcu	33 pcu	33 pcu	5 min 49 sec	5 min 54 sec	7 min 57 sec	7 min 53 sec	116%	116%	127%	127%	-65%	-130%	-88%	-76%
Dublin Road (S)	209 pcu	30 pcu	236 pcu	216 pcu	11 min 33 sec	38 sec	14 min 25 sec	13 min 4 sec	148%	89%	169%	158%			
Southern Access Road	5 pcu	5 pcu	8 pcu	8 pcu	2 min 2 sec	2 min 2 sec	4 min 2 sec	4 min 2 sec	80%	80%	100%	100%			
Opening Year+15 AM Peak															

Dublin Road (N)	124 pcu	110 pcu	146 pcu	138 pcu	11 min 43 sec	10 min 7 sec	13 min 60 sec	13 min 7 sec	149%	139%	165%	159%	-70%	-57%	-88%	-77%
Upper Dargle Road	70 pcu	55 pcu	79 pcu	65 pcu	12 min 1 sec	9 min 22 sec	13 min 37 sec	11 min 7 sec	153%	136%	165%	147%				
Dublin Road (S)	217 pcu	197 pcu	240 pcu	214 pcu	11 min 48 sec	10 min 37 sec	14 min 27 sec	12 min 49 sec	149%	142%	169%	156%				
Southern Access Road	59 pcu	52 pcu	69 pcu	63 pcu	11 min 57 sec	10 min 12 sec	14 min 1 sec	12 min 37 sec	147%	136%	161%	151%				
Opening Year+15 PM Peak																
Dublin Road (N)	199 pcu	183 pcu	233 pcu	216 pcu	13 min 18 sec	12 min 5 sec	15 min 50 sec	14 min 34 sec	160%	152%	181%	170%	-78%	-69%	-103%	-90%
Upper Dargle Road	33 pcu	33 pcu	42 pcu	42 pcu	7 min 20 sec	7 min 17 sec	9 min 26 sec	9 min 22 sec	124%	124%	136%	136%				
Dublin Road (S)	252 pcu	232 pcu	278 pcu	258 pcu	13 min 11 sec	11 min 57 sec	15 min 51 sec	14 min 37 sec	159%	151%	182%	171%				
Southern Access Road	5 pcu	5 pcu	8 pcu	8 pcu	2 min 2 sec	2 min 2 sec	4 min 2 sec	4 min 2 sec	80%	80%	100%	100%				

7.9.5 Summary of Modelling Results based on Individual Scenarios

7.9.5.1 Southern Access Road Junction

With existing layout scenarios

- Do Something 2: This scenario was identified as the most effective option, accommodating the increased demand resulting from the redistribution of trips due to the closure of Ravenswell Road and the proposed development trips.
- Performance Comparison: The junction's performance deteriorated significantly in the Do Something 1 and Do Something 2 scenarios. However, Do Something 2 demonstrated the most effective operation under increased demand conditions.

Sensitivity Scenarios (with BusConnects layout)

- Do Something 2: This scenario operated most efficiently under the expected increase in demand and reduction of capacity at the Southern Access Road junction, compared to the Do Something 1 scenario.
- Right Turn Restriction: The restriction of right-turn movements from the Dublin Road Southern arm to the Local Access Road arm allowed for a more effective staging sequence.
- Preferred Option: Do Something 2 emerged as the preferred option for both the existing and BusConnects layouts, making it the overall recommended scenario.

7.9.5.2 Northern Access Road Junction

- Capacity: The junction was generally found to operate within capacity, with maximum queues across all scenarios approximately 4 PCU and typical queues approximately 0-2 PCU.
- Performance: The junction performed well under increased demand from the proposed development and the removal of the right turn at the Southern Junction Road (Dublin Road Southern arm - Local Access Road arm).

7.9.5.3 Overall Impact

The development will positively impact the surrounding network by integrating walking and cycling facilities with existing infrastructure and public transport. The recommended traffic changes ensure efficient operation of key junctions, supporting future growth and accessibility.

7.9.6 Summary of Sea Garden Masterplan Traffic Modelling

Sensitivity analyses, including the BusConnects revised layout and no right turn movements from Dublin Road onto Southern Access Road, were conducted to understand the development's implications. Traffic modelling showed that the base road network is constrained, with the closure of Ravenswell Road Junction being the main driver of decreased capacity and increased traffic. This closure of Ravenswell Road was instructed by WCC.

At the SAR junction the Do-Something 2, proposed no right turns movements from Dublin Road onto Southern Access Road provide to be a better layout and means of control to optimise junction performance. Vehicles restricted from making a right turn from Dublin Road South into SAR can turn at the Northern Access Road junction. The Northern Access Road junction operated well with the increased demand from the proposed development and the removal of the right turn on the Southern Junction Road.

Overall, the Sea Gardens Masterplan development is an exemplary model of integrated land use and transportation planning, promoting sustainable travel choices and aligning with national and local transport strategies. The impact on the existing road network is expected to be modest and manageable within the current infrastructure's capacity.

The above analysis and finding align with an ABP's decision in November 2024 for a revised application for Bray Sea Gardens masterplan lands under plan reference (ABP-314686-22[5] seeking permission for 586 units, a childcare facility, café, retail unit, and one commercial unit incorporating a gym and a juice bar). Section 10.7.12, of the ABP inspectors report stated:

"I have acknowledged third-party concerns that the proposed development would lead to traffic congestion in the area. However, I consider that the TTA has acceptably demonstrated that traffic congestion concerns would largely be a result of existing trends and that the proposed development would not significantly or unacceptably contribute to traffic congestion. Furthermore, I am satisfied that the proposed development has been suitably designed to minimise traffic generation, and that the area will benefit from future sustainable transport projects and policies which will reduce traffic growth in the area. Accordingly, I consider that proposals are acceptable in this regard."

Block A incorporates sustainable transport principles, with a reduced car parking quantum versus national and local polices, substantial number of high-quality cycle parking and a high degree of permeability and connectivity that encourages and promotes sustainable travel that will reduce the modelled traffic impact of the Sea gardens Masterplan lands on the road network.

[5] r314686.pdf

8. Car Parking Standards

Car parking for the proposed development has been carefully considered, taking into account the site characteristics, including:

- The site is in DLRCC Parking Zone 2 (Section 12.4.5.1 Parking Zones), which is considered to have good access to existing or planned public transport and active travel provisions.
- The site is in an accessible location as defined by the Compact Settlement Guidelines (Table 3.8), which state that “car parking provision should be substantially reduced.”
- The mixed-use nature of the overall Sea Gardens masterplan, which aligns with 10-minute neighbourhood principles, providing future residents with good access to services and facilities by active and sustainable means.
- The provision of high-quality cycle infrastructure and cycle parking.
- Phase 1 car parking provision levels while noting that SHD application for Block A was designed for built to rent units and the subject application is for build to sell units which are anticipated to have different long term parking needs.
- National, regional, and local policy directions to minimize car parking in locations with good access to public transport.
- Pre-application feedback from DLRCC officers, indicating that car parking should be minimized at this location given the accessible location.

8.1 Policy Context

The relevant car parking policy standards for the proposed development are:

- Compact Housing Guidelines SPPR3
- Dún Laoghaire-Rathdown County Development Plan 2022-28 (Table 12.8)

8.1.1 Dún Laoghaire – Rathdown County Development Plan 2022-2028

Section 12.4.5 of the Development Plan divides the County into four Parking Zones, reflecting the level of access to public transport and viable options to choose non-car modes. Zone 1 comprises of the major town areas of Dún Laoghaire and Dundrum along with Blackrock District Centre with a maximum car parking standard of 1 space per unit recommended for residential developments. Bray Sea Gardens is located in Zone 2 which is defined as:

Parking Zone 2

These are areas, which are generally characterised by:

- *Access to a good level of existing or planned public transport services.*
- *A good level of service accessibility, existing and planned, by walking or cycling.*
- *A capacity to accommodate a higher density of development than surrounding areas.*

Within parking zone 2 maximum standards shall apply for all uses except for residential where the standard is required. For residential uses reduced provision may be acceptable dependent on criteria set out in Section 12.4.5.2 below.

Table 12.5 Car parking Zones and Standards states that in zone 2 the following standards should apply for residential development.

Land Use	*Criterion*	*Zone 2 Near Public Transport*
House 1-bed	*Unit*	*1*
House 2-bed	*Unit*	*1*
House 3 bed or more	*Unit*	*2*

It is noted that DLR policy is clear that for residential uses the car parking standards required are considered standard, but some deviation (reduction) can be considered from the rates set out in Table 12.5, subject to a site meeting certain defined criteria as set out in the Section 12.4.5.2 of the Development Plan.

8.1.2 Sustainable Residential Development and Compact Settlements Guidelines

Table 3.8 of the Sustainable Residential Development and Compact Settlements Guidelines defines accessible, intermediate, and peripheral locations which are then used in SPPR 3 Car Parking as a basis for defining car parking ratio for new developments. There are three car parking zones identified. As defined by SPPR 3 Bray Sea Gardens Block A is in an accessible location where the maximum car parking of 1.5 space per unit is allowed. SPPR 3 states that in accessible locations car parking provision should be substantially reduced from this maximum number. It is our opinion that a ratio of 1.08 car parking spaces per dwelling unit presents a substantial reduction, is in line with relevant policy and is appropriate to the site context as set out in this report and in the Traffic and Transport Assessment (TTA) submitted as part of the LRD Planning Application.

SPPR 3 Car Parking:

In accessible locations defined in Chapter 3 (Table 3.8) car- parking provision should be substantially reduced. The maximum rate of car parking provision for residential development, where such provision is justified to the satisfaction of the planning authority, shall be 1.5 no. spaces per dwelling.

Applicants should be required to provide a rationale and justification for the number of car parking spaces proposed and to satisfy the planning authority that the parking levels are necessary and appropriate, particularly when they are close to the maximum provision.

The maximum car parking rates for the above policies are shown in Table 8-1.

As indicated Compact Housing guidelines allows a maximum of 239No. car parking spaces. While DLRCC requires 212No. standard car parking spaces.

Table 8-1 – Car Parking Policy

DLRCC Development Plan 2022-2028 – Zone 2			
Land Use	**Units**	**DLRCC Standard Long Stay**	**Maximum Standard Parking**
1 & 2 bed Units (Apartments)	106	1 Space per unit	106
3+ bed	53	2 spaces per unit	106

Total	**159**		**212**
Compact Housing Guidelines SPPR 3			
All dwellings	**159**	1.5 spaces per unit	**239**

8.2 Proposed Block A Car Parking

The car parking spaces proposed for the Block A application are shown in Table 8-2.

Table 8-2 – Proposed Car Parking Provision

Location	Units	Allocated spaces	Accessible bays	Total Car Parking Spaces	Car parking Ratio	Motorbike
Block A Apartments	150	157	9	166	1.08	8
Block A Duplex	9	5	0	5		
Total	**159**	**162**	**9**	**171**		

Key car parking points are:

- The proposed number of car parking spaces 171No spaces.
- This is 20% lower than standard DLRCC Development Plan car parking number (212No.) shown in Table 8-1
- This is 28% lower than the Compact Housing Guideline car parking number (239No.) as shown in Table 8-1
- There is a large percentage of 3+ bed units (33% of total units, 53No) that are considered family units where access to car parking is more critical.
- A total of 9No accessible bays are provided
- In addition, 8No motor bike spaces are provided.
- The level of car parking is considered appropriate to the site location and characteristics so the development.
- 20% of car parking spaces are provided with direct EV charging facilities, with 100% provided with necessary ducting for future adoption if required.

Figure 8-1 shows the proposed car is 20% below the maximum Local (DLR County Development Plan 2022-2028) and 28% lower than the maximum car parking ratio allowed under National (Compact Settlement Guidelines SPPR3) policy context. In all cases the proposed car parking ratio is below and substantially reduced from the maximum standards

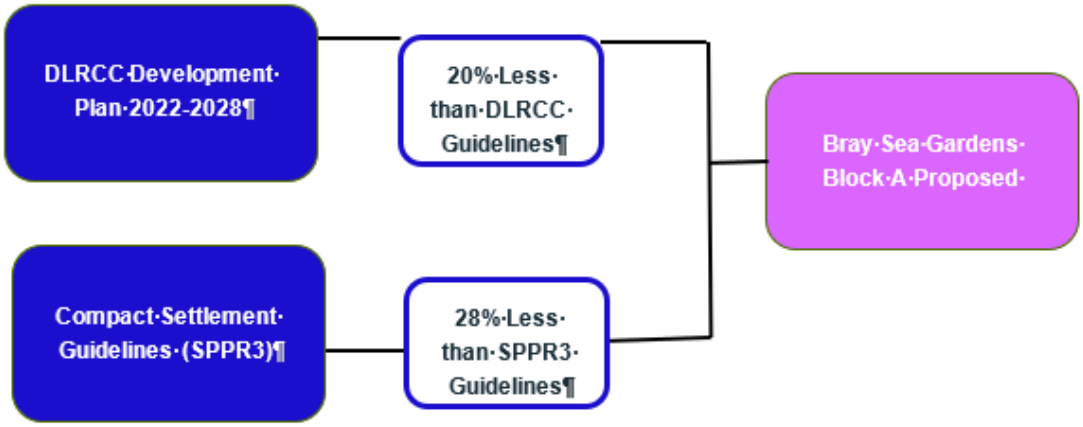

Figure 8-1 - Car Parking Comparison

The local context for Sea Gardens Phase1 Block A is that it is well connected in terms of public transport with access to the Bray DART station and future BusConnects corridor along Dublin Road. Given the above, some reduction in car parking below the maximum rates for this area would appear appropriate and has been provided for with a 28% and 20% reduction based on National and Local policy guidance.

The unit mix for Sea Gardens Phase1 Block A contains a large percentage of 3+ bed units is at 33.3% for the Duplex, presented in Table 8-3.

Table 8-3 – Mix of Residential Units at Northern Housing Area (NHA)

Northern Housing Area (NHA)		
1 & 2 Bed Units (apartments)	**3+ Bed Unit (Duplex)**	**TOTAL**
106	53	159
66.6%	33.3%	100.0%

These 3+ units will likely include larger families and/or several different families and cohabitants sharing these dwelling units. Typically, these units require access to a car given the range of activities throughout the day and over a week / month/ year where even with good access to public transport, service times and service routes do not always suit end user needs.

Therefore, in both the context and unit mix we consider that the current rate of car parking which is 20% below the DLR Guidelines and 28% lower than the Compact Housing Guidelines is appropriate to needs and would not undermine sustainable transport policy aspirations to reduce reliance on private car.

The proposed car parking level facilitates a reasonable level of car storage whilst promoting a modal shift to public transport and active travel. Residents, particularly families, will inevitably have some commuting, recreational, social and family responsibilities not catered to by the north -south catchment of DART and BusConnects.

Therefore, we assert that the proposed ratio, being 20% below the maximum allowed by the Local (DLR County Development Plan 2022-2028) and 28% lower than the maximum permitted under National (Compact Settlement Guidelines SPPR3) policy, is realistic given the location, unit mix, and the necessity to offer users genuine choices. This proposal complies with all relevant policy standards and guidance.

8.3 Car Parking Layout & Design

Car parking is proposed on two levels within Block A, as shown in the architects' drawings:

- BRA-HWS-BA-00-D-20100 Rev P12 Block A GA Plan L100
- BRA-HWS-BA-0M-D-20099 Rev P11 Block A GA Plan Mezzanine

Extracts of these drawings are shown in Figure 8-2 and Figure 8-3. The parking is split over two levels with a ramp house internally. Ventilation is provided in the façade to the east and west and will be integrated into the planting strategy and terracing. The accessible bays are located near to the entrances to the cores with motorbike spaces provided in the corners of the car park.

The design of the undercroft and mezzanine floor car parking layouts accords with the Design Recommendations for Multi-Storey and Underground Car Parks (4th edition) published by the Institute of Structural Engineers. Entrance widths, ramp levels including transition areas, bay lengths and widths, and aisle and circulation widths all comply with the above guidance.

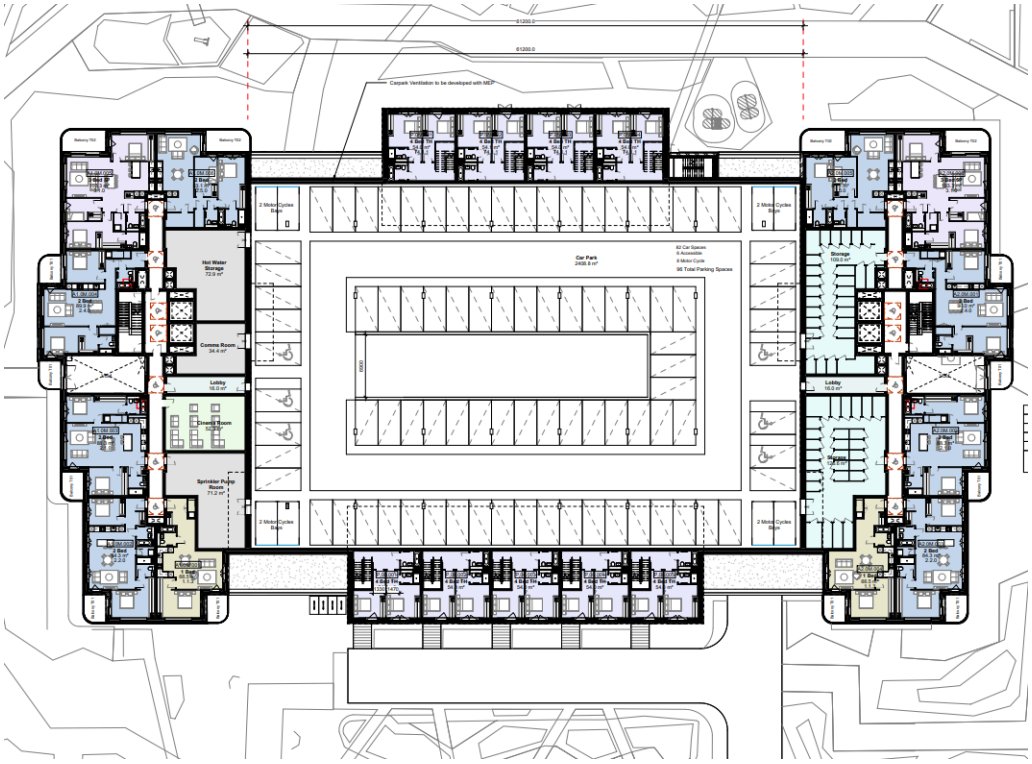

Figure 8-2 – Car Parking Layout for Mezzanine floor plan.

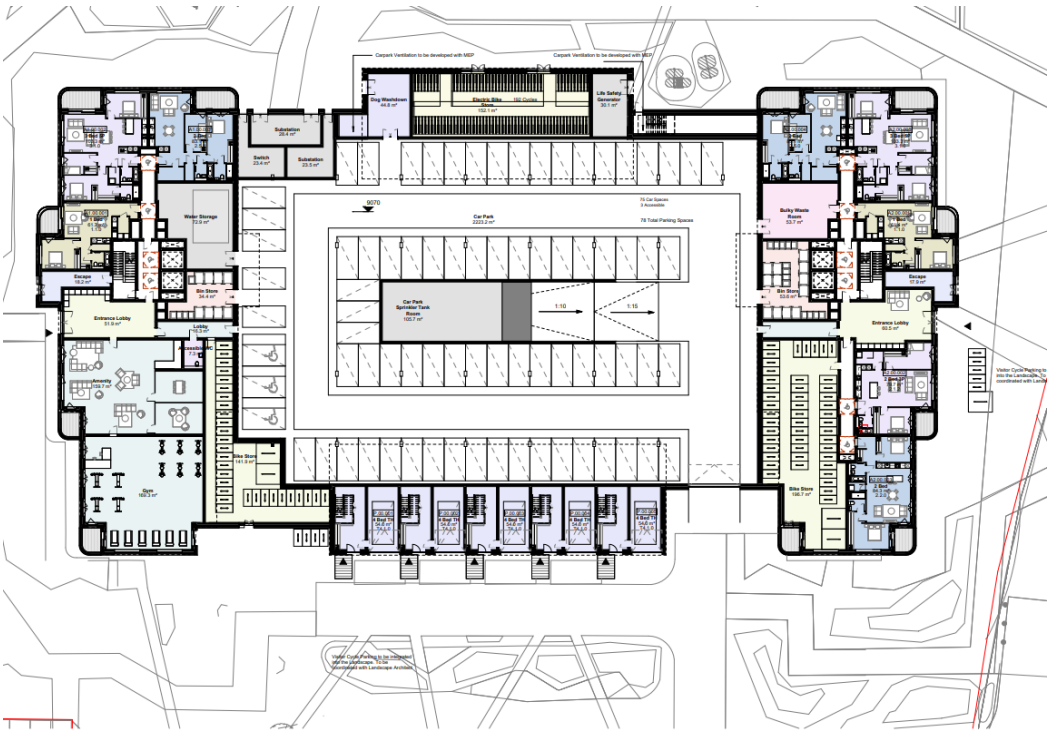

Figure 8-3 – Car Parking Layout for Ground floor plan.

9. Cycle Parking

High-quality cycle parking is an integral part of the proposed development and has been designed accordingly. The following guidance documents have been used to inform cycle parking numbers and quality:

- SPPR 4 – Cycle Parking and Storage section of the Sustainable Residential Development
- Sustainable Urban Housing: Design Standards for New Apartments (July 2023)
- DLR Cycle Parking Guidance (2019)

Cycle parking facilities have been designed and located in accordance with Section 6.2, Design Principles of the Cycle Design Manual published in September 2023. The five core principles for designing cycle infrastructure mentioned within the Cycle Design Manual are as follows:

1. **Safe** – Cycle parking should be secure for the cycle, and users should feel safe from the risk of personal crime.
2. **Direct** – Cycle parking should be near the cycle route and/or as close as possible to the final destination.
3. **Coherent** – Cycle parking should be well-connected to routes and buildings, well-signed, and easy to find.
4. **Attractive** – Cycle parking areas should be of good quality design and well-maintained.
5. **Comfortable** – Cycle parking should be easy to use and accessible to all.

The design and location of both long-stay and short-stay cycle parking for the proposed development are based on the following considerations, which are also in accordance with the above-stated design principles and the SPPR 4 – Cycle Parking and Storage section of the Sustainable Residential Development and Compact Settlements Guidelines for Planning Authorities. The number of spaces is also cognizant of DLR Cycle Parking Guidance (2019):

- All long-stay cycle parking will be in accessible, safe, secure, well-lit, and sheltered locations.
- Short-stay cycle parking is located in highly visible areas with good passive surveillance, easy access, and proximity to their destination entry points.
- Where required, end-of-trip facilities, including shower and change facilities, are provided.
- A range of cycle parking solutions are provided, including Sheffield stand type facilities and stacked cycle solutions.
- The cycle parking layouts cater for oversized cycles, including cargo bikes and accessible bike formats.

The cycle parking facilities provided for the residential units consist of a range of facilities in accordance with Section 6.5 (Types of Equipment and Layout) of the Cycle Design Manual published in September 2023. They include:

- Stands or hoops – where the cycle is leaned against a metal structure and locked (this may include hi/low arrangements where alternate sides are ramped to avoid handlebars clashing).
- Cycle lockers – where individual cycles are secured in a metal box.
- Cycle hangers – where several cycles are secured in a metal box.
- Semi-vertical or vertical racks – where cycles are lifted into a vertical position.

Cycle parking is proposed to be in accordance with Compact Housing Guidelines SPPR 4, which requires one cycle storage space per bedroom.

Visitor cycle parking is also required and provided at rates of **1 space per 5** residential unit. The proposed cycle parking is detailed in Table 9-1.

Table 9-1 – Block A Proposed Cycle Parking

Block A	Units	Bed Rooms	Long stay	Visitor (1 in 5)	Total
1-bed	48	48	48	33	365
2-bed	58	116	116		
3-bed	44	132	132		
4-bed	9	36	36		
Total	**159**	**332**	**332**	**33**	**365**

Of the 332No long stay cycle parking 174No (52%) are single stack “Sheffield stand” type facilities. This equates to at least 1no Sheffield stand style rack per residential unit which is in line with DLR Cycle Parking Standards. The remainder of the long stay cycle parking (158No.) is in the form of double stack arrangements. All visitor cycle parking (33No.) is single stacked “Sheffield stand” style facilities in line with DLR Cycle Parking Standards. These spaces are located within the landscape of the development.

The development is proposing cycle parking in accordance with DLR Cycle Parking Standards Sheffield type stands will be provided at a rate of 1 per unit and 1 in 5 units for visitors. The remainder of the long stay cycle parking is provided in double stacked arrangements.

9.1 Cycle Audit

Figure 9-1 shows the current location and access arrangements for cycle parking.

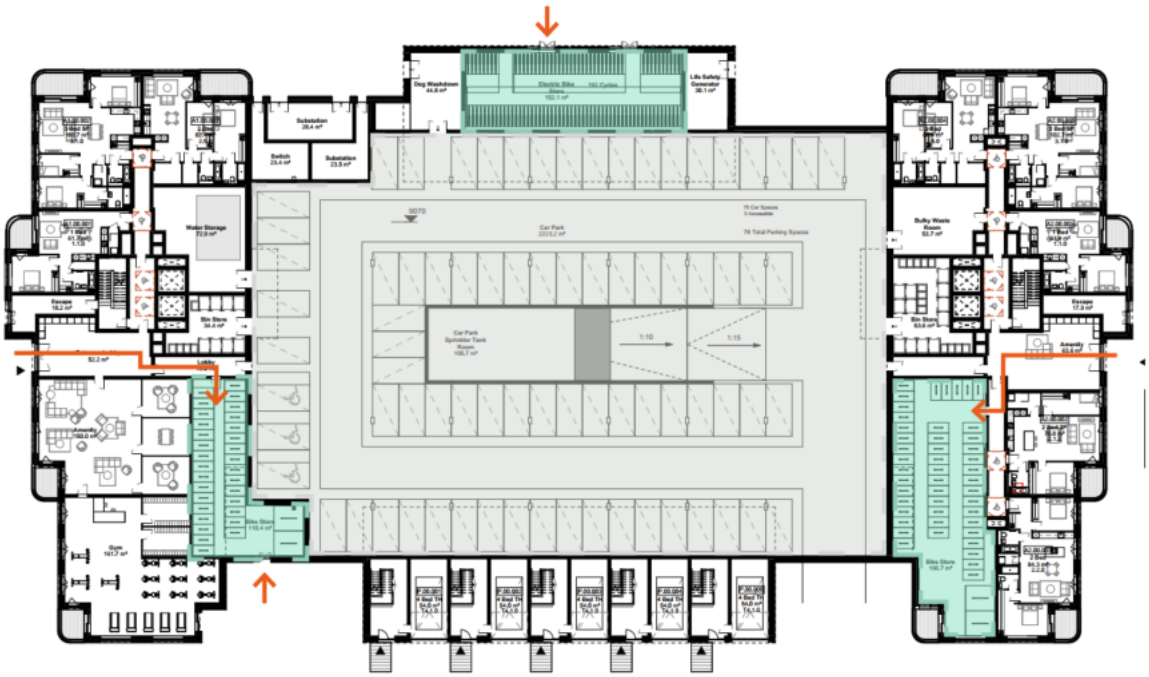

Figure 9-1 – Proposed Ground Floor Cycle Parking Locations

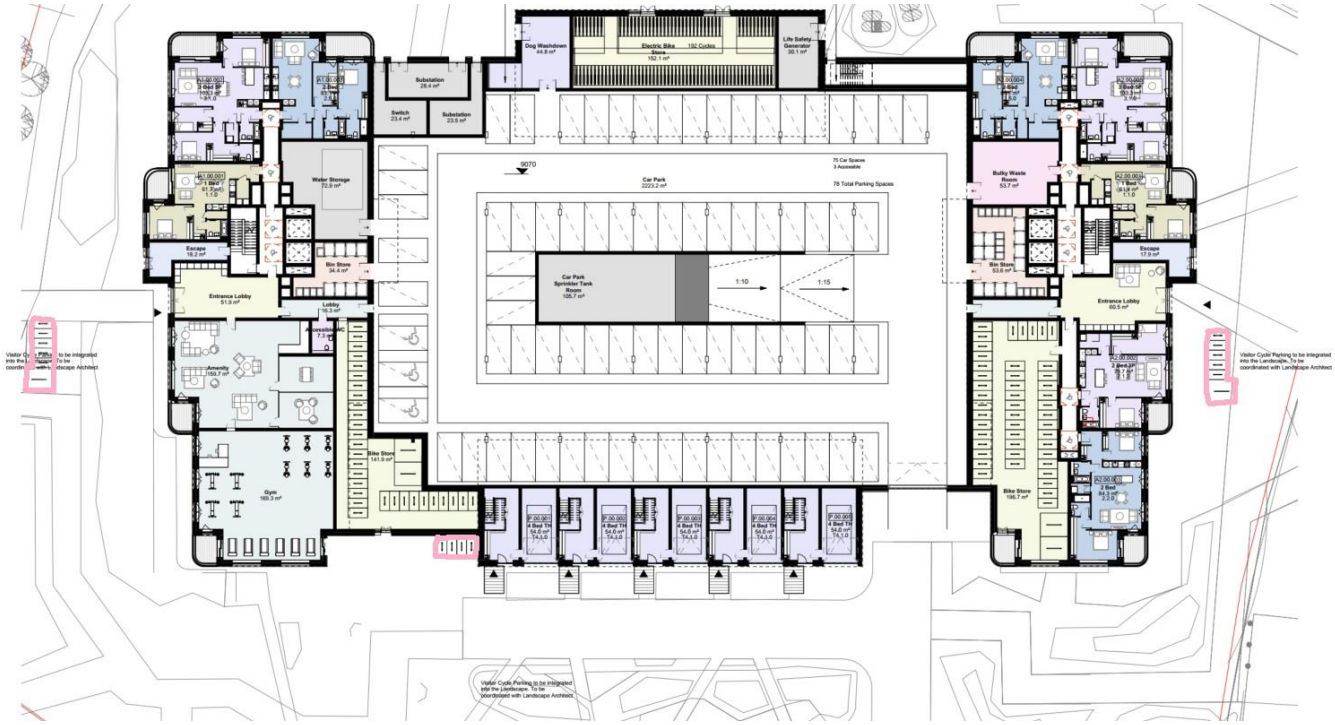

Figure 9-2 – Proposed Visitors Cycle Parking Locations

For The visitors parking, as seen in Figure 9-2 above, the visitors cycle parking is integrated into the landscape. At the eastern and western entrances of Block A we have 10 visitor parking spaces allocated with 5 Sheffield stands and 2 cargo bike spaces each on both the western and eastern entrances near the entrance lobby. To the south towards the Duplexes, we have 8 visitors spaces allocated.

As required under Section 12.4.6.1 of the DLRCC Development Plan for new development of 5 residential units or more or non-residential development of 400sqm or over a Cycle Audit is required. Table 9-2 provides our response to the cycle audit questions outlined in section 12.4.6.2 Cycle Parking Assessment Criteria of the DLRCC Development Plan.

Table 9-2 – Cycle Audit Response

DLR Cycle Parking Assessment Criteria	Response
Is the number of cycle parking spaces and footprint adequate and is there suitable provision for parking of outsized formats (cargo bikes etc)?	Yes. Cycle parking numbers, both long stay and short stay for residential and visitors accords with Compact Housing Guidelines SPPR4 of 1no. space per bedroom plus visitor parking as shown in Table 9-1. The development proposes a mix of bicycle stand types including a high percentage of Sheffield stands and the stacked cycle parking as well as provision for cargo bikes.
Is the location of cycle parking convenient, appropriate, and secure with adequate provision for covered parking?	Yes. The residential cycle parking is located on the ground floor level with legible routes to and from cores and entrances to storage areas making it easy to use. Visitor cycle storage is provided to the east and west of Block A beside entrance lobby and to the south near the duplex car parking area as seen in Figure 9-2.
Is the cycle parking area accessible in terms of dedicated access routes with ramps and/or kerb dishing where required?	Yes. Cycle parking is located on ground floor with general level access provided. Cycle parking areas are accessible with gradients within tolerances.
Do the internal cycle access routes connect well with off-site cycle facilities – existing and proposed?	Yes. A significant internal network of cycle is proposed both on street, segregated and off -street through parks and linkages. The Sea Gardens Masterplan provides a fully segregated cycle path that connects to facilities on Dublin Road and the DART station.
Is there adequate and appropriately designed and integrated provision for ancillary cycling and pedestrian facilities including showers, locker / changing rooms and drying areas?	Yes. Residential users have access to changing and showering facilities.
For short-term cycle parking (e.g., for customers or visitors), cycle parking is required at ground level. This should be located within 25 metres of the destination in an area of good passive surveillance. Weather protected covered facilities should be considered where appropriate. Consideration should be given to using green roofs in the design of standalone cycle parking shelters. Appropriate cycle parking signage may also be required to direct cyclists to the end destination.	Yes, residential visitor cycle parking is located in the public realm adjacent to building entrances. The locations are overlooked by active and passive surveillance. Street lighting illuminates the visitor cycle parking.
For long-term cycle parking (e.g., for more than 3 hours for residents, staff, students), secure covered cycle parking is a requirement. This should be conveniently located within 50 metres of the destination and located near building access points where possible.	Yes, long term cycle parking is covered and located within 50m of destination.
In all cases it is a requirement to provide showers, changing facilities, lockers and clothes drying facilities, for use by staff that walk or cycle to work.	Yes. Contained with residential units. Cycle storage is located so that active and passive surveillance occurs.

DLR Cycle Parking Assessment Criteria	Response
CCTV cameras or passive surveillance of car parks and cycle parks may be required for personal safety and security considerations.	
All cycle facilities in multi-storey car parks shall be at ground floor level and completely segregated from vehicular traffic. Cyclists should also have designated entry and exit routes at the car park and with minimum headroom of 2.4 metres to facilitate access by cyclists.	All cycle facilities are on the ground floor and are completely segregated from vehicular traffic and have their own entry and exit as illustrated in Figure 9-1.
Within larger new developments cycle routes shall link to the existing cycle network where possible and maintain a high degree of permeability through developments. Cycle Audits may be required in such developments.	Cycle permeability is provided across the masterplan lands. Cycle provision links to existing and proposed external cycle infrastructure. Design of cycle network accords with NTA Cycle Manual. DMURS Quality Audit including Cycle Audit has been undertaken as part of the development. Cycle measures identified will be included in the scheme.

10. Quality & Road Safety Audit

The proposal development is for relatively minor changes to the external street and road network as previously permitted. The proposed red line is largely to the back footpath as shown in Figure 10-1 with minor changes required to facilitate vehicular access to Block A.

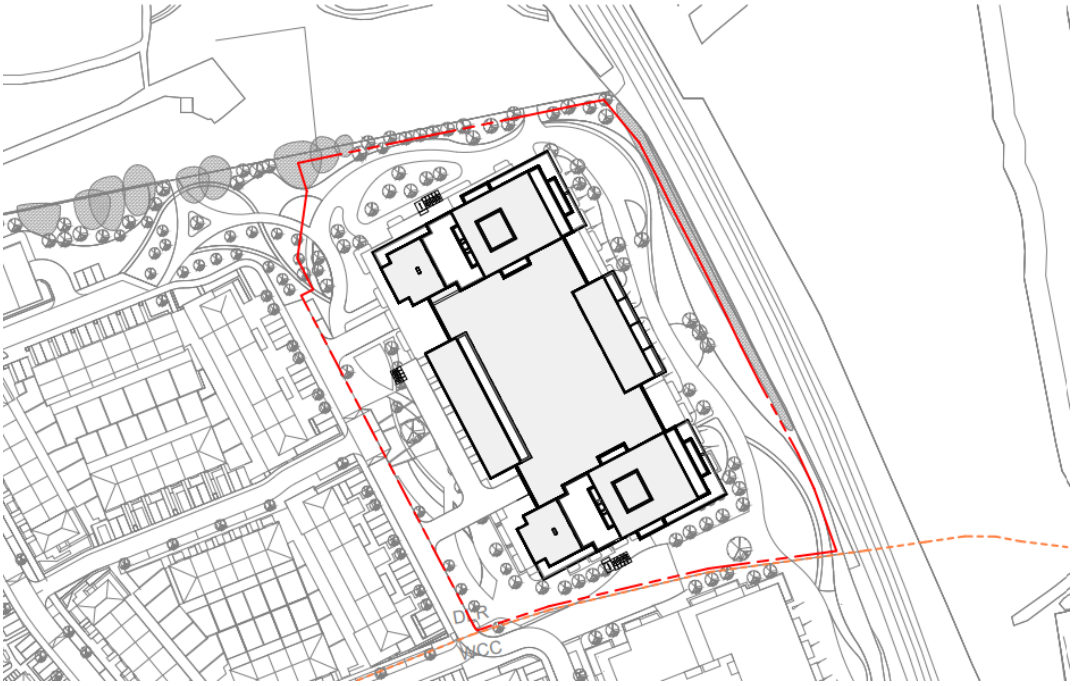

Figure 10-1 – Red line showing limited changes to permitted street network

AtkinsRealis considers the transport and road changes to be relatively minor, requiring only slight adjustments to the permitted layout. Therefore, a Quality Audit is not required.

We believe this aligns with your guidance as set out in the DLRCC Development Plan Section 12.4.1 Traffic Management and Road, which states: "A Quality Audit may be required for **major developments** that impact on the road network and for all new road and traffic schemes" (page 256).

Additionally, Appendix 3 Development Management Thresholds states in relation to Quality Audits (Thresholds 3.3, page 108):

"*To be dealt with on a case-by-case basis through the Preplanning process but are likely to be required* ***for major new developments and significant new road and traffic schemes****." (bold our emphasis)*

It should also be noted that a Quality Audit, including a Stage 1 Road Safety Audit, was prepared and submitted with the permitted application, as shown on the ABP website, which takes into consideration the area around Block A.

Based on the above a Quality Audit, including a Stage 1 Road Safety Audit has not been prepared for Block A development.

11. Servicing Strategy

As part of the full planning application auto-tracking for emergency and refuse vehicles will be undertaken that demonstrates that all necessary vehicles can access the proposed development, circulate and leave in a safe manner. Figure 5-14 shows the swept path drawing for a large car circulating within the car parking areas.

Figure 11-1 – Swept Path Drawings

See drawings 1000118265-ATK-01-ZZ-DR-CE-6606 AND 1000118265-ATK-01-ZZ-DR-CE-6607 accompanying this submission for swept path of car parking levels.

12. Summary & Conclusion

This Traffic Impact Assessment (TIA) outlines the transport and traffic considerations for Block A of the Sea Gardens development in Bray, Ireland, and supports the full Large-Scale Residential Development (LRD) application to Dún Laoghaire–Rathdown County Council (DLRCC).

The proposed development comprises **159No residential units** and is fully integrated into the existing **Bray Sea Gardens Masterplan**, a well-connected area served by **DART rail services** and multiple **bus routes**. Future transport infrastructure, including the **Luas Green Line Extension** and **BusConnects**, will further enhance regional connectivity.

Integration with Existing and Planned Infrastructure

Block A has been designed to align with the permitted and under-construction street and road network within the masterplan lands. The development embraces **sustainable transport principles**, including:

- **Reduced car parking provision** in line with national and local policies.
- **High-quality cycle parking** facilities.
- **Enhanced permeability and connectivity**, encouraging walking, cycling, and public transport use.

These measures are expected to **minimise traffic generation** and reduce the overall traffic impact of the Sea Gardens Masterplan on the surrounding road network.

Parking Provision

- **Car Parking**: **171No. spaces provided,** representing a **20% reduction** from local guidelines and **28% below** national standards.
- **Cycle Parking**:
    - **332No long-stay spaces**, including:
        - 174No (52%) single-stack **Sheffield stands** (at least one per unit), compliant with DLR Cycle Parking Standards.
        - 158No double-stack spaces.
    - **33No visitor spaces**, all single-stack Sheffield stands, integrated into the landscape design.

Traffic Impact and Modelling

Traffic impacts from the proposed development are **negligible**, with:

- Less than **1% increase** at external junctions.
- Impacts falling **below thresholds** set by the TII Transport Assessment Guidelines.

As requested by DLRCC, additional modelling has been included to assess the **cumulative impact** of the entire Bray Sea Gardens Masterplan on the **Dublin Road corridor**. The findings confirm that the development has been carefully

designed to **minimise traffic generation** through reduced car parking and strong access to sustainable transport options.

Alignment with ABP Decision

The TIA findings are consistent with the **An Bord Pleanála (ABP)** decision in **November 2024** (Ref: ABP-314686-22), which granted permission for a broader development of **586No units**, a **childcare facility**, **café**, **retail unit**, and a **commercial unit** (gym and juice bar). The ABP Inspector's Report (Section 10.7.12) concluded:

"...the TTA has acceptably demonstrated that traffic congestion concerns would largely be a result of existing trends and that the proposed development would not significantly or unacceptably contribute to traffic congestion... the area will benefit from future sustainable transport projects and policies which will reduce traffic growth..."

Conclusion

The Sea Gardens Masterplan exemplifies **integrated land use and transport planning**, promoting sustainable travel and aligning with both **national and local transport strategies**. Key highlights include:

- Excellent connectivity to **DART** and future transport projects.
- Comprehensive **pedestrian and cyclist infrastructure**.
- Parking provisions aligned with **DLR and national standards**.
- Internal road network designed in accordance with **DMURS** principles.
- Strong emphasis on **sustainable travel choices**.

The TIA concludes that the proposed development will support **efficient, low-impact, and sustainable transportation** for future residents and the wider community.

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