13 MATERIAL ASSETS (ROADS AND TRAFFIC)

13.1 Introduction

This chapter has been prepared by Waterman Moylan Consulting Engineers on behalf of Lagan Homes Ballycullen Limited, written Fernando J. De Maio Traffic & Transportation Engineer at Waterman Moylan, with over 10 years' civil engineering experience, and reviewed by Joe Gibbons CEng MICE and Director of Waterman Moylan, with over 30 years' civil engineering experience in the industry.

This section assesses the potential impact of the proposed residential development in the townland of Woodtown, Ballycullen, Dublin 16, on the surrounding area regarding vehicular, pedestrian and cycle access throughout the lifetime of the development. Furthermore, the potential impact of vehicular movement during the construction and operational phases of the proposed development is considered.

The lands are located to the east of Abbots Grove Park, south-east of Abbots Grove Avenue, south of Stocking Avenue and Stocking Wood estate, and west of White Pines Park.

The proposed development will consist of 502 no. residential units (108no. 1-bed, 170no. 2-bed, 162 no. 3-bed; 62 no. 4-bed) comprising 197no. 2 storey houses (terraced/semi-detached/detached) (19no. 2-bed, 116no. 3-bed; 62no. 4-bed) and 28no. 3 and 4 storey simplex/duplex apartment blocks providing 305no. apartments (108no. 1-bed apartments, 151no. 2-bed apartments, 46no. 3-bed apartments). The proposed development also includes a crèche (c.475sq.m), public open space, car parking (surface/undercroft), bicycle parking, bicycle storage structures and lockers, bin stores, and 8no. ESB substations. Vehicular access to be provided from the existing spur road connection to Stocking Avenue to the west of the site, and via Stocking Wood Drive to the east of the site (with relocation of existing ESB substation and associated works to the existing hammerhead). Additional pedestrian only routes will be provided into Abbot's Grove Park and Stocking Wood Copse with future connections provided for into Stocking Wood Manor, White Pines Park and the future school site to the north of the application site. The proposed development includes all associated site development works (including site reprofiling, retaining structures and downing of ESB overhead lines), landscaping, boundary treatments and services provision.

The chapter outlines the methodology employed, the receiving environment at the application site and its surroundings, the characteristics of the proposal in terms of physical infrastructure, the potential impact that proposals of this kind would be likely to produce, the predicted impact of the proposal on the local road network, and the mitigation measures required to prevent, reduce or offset any significant adverse effects.

A Traffic and Transport Assessment has been prepared in accordance with best practice and in accordance with the requirements of both *Section 7.9 (Policy SM6 Objective 8)* of the *South Dublin County Development Plan 2022-2028* and the *Traffic and Transport Assessment Guidelines* published by *Transport for Ireland (TII) / National Roads Authority (NRA)* in May 2014.

13.2 Assessment Methodology

The study area for the Traffic and Transport Assessment EIAR chapter is the transport network and junctions immediately surrounding the site which could be impacted as part of the proposed development. The junctions chosen for assessment are outlined in **Figure 13.4** below and were chosen based on both experience and consultation with the Roads Department of South Dublin County Council.

In line with best practice, the following methodology has been adopted for this assessment:

- Review of relevant available information, as detailed in **Section 13.11** below, including the South Dublin County Development Plan 2022-2028, existing traffic information, existing traffic and transport assessments attached to planning applications for committed and potential future development, and other relevant studies.
- Site visit to gain an understanding of the site access and observe the existing traffic situation.
- Consultations with South Dublin County Council through the pre-application meetings, to agree on the site access arrangements and to determine the scope of the traffic analysis required to accompany the planning application.
- Preparation of the "Traffic Transport Assessment" (TTA) with the following detail:
    - Obtain data on existing traffic flow conditions.
    - Determine trips to be generated by the subject site and the committed and potential future developments in the surrounding area.
    - Determinate trip distribution for each development.
    - Assess the percentage impact of traffic generated by the site in relation to existing traffic flows at local junctions. Determine if this exceeds 5% at congested junctions or 10% at non-congested junctions.
    - Modelling the junctions with a high impact, based on the threshold indicated above.
    - Model the junctions with a high impact, based on the thresholds indicated above.
    - Identify, if necessary, mitigation measures.

13.3 Receiving Environment

The subject site is situated in Woodtown, Ballycullen, Dublin Co., to the south-west of junction number 12 of the M50 motorway.

Land use

South Dublin County Development Plan 2022-2028 indicates that the subject site falls within the objective RES-N, as can be seen in **Figure 13.1** below.

The objective RES-N is defined as "To provide for new residential communities in accordance with approved area plans", which is destined to: "Childcare Facilities, Community Centre, Cultural Use, Doctor/Dentist, Education, Enterprise Centre, Funeral Home, Garden Centre, Guest House, Health Centre, Housing for Older People, Industry-Light, Nursing Home, Offices less than 100sqm, Open Space, Primary Health Care Centre, Public House, Public Services, Recreational Facility, Recycling Facility, Residential Institution, Residential, Restaurant/Café, Retirement Home, Shop-Local, Shop-Neighbourhood, Sports Club/Facility, Stadium, Traveller Accommodation, Veterinary Surgery".

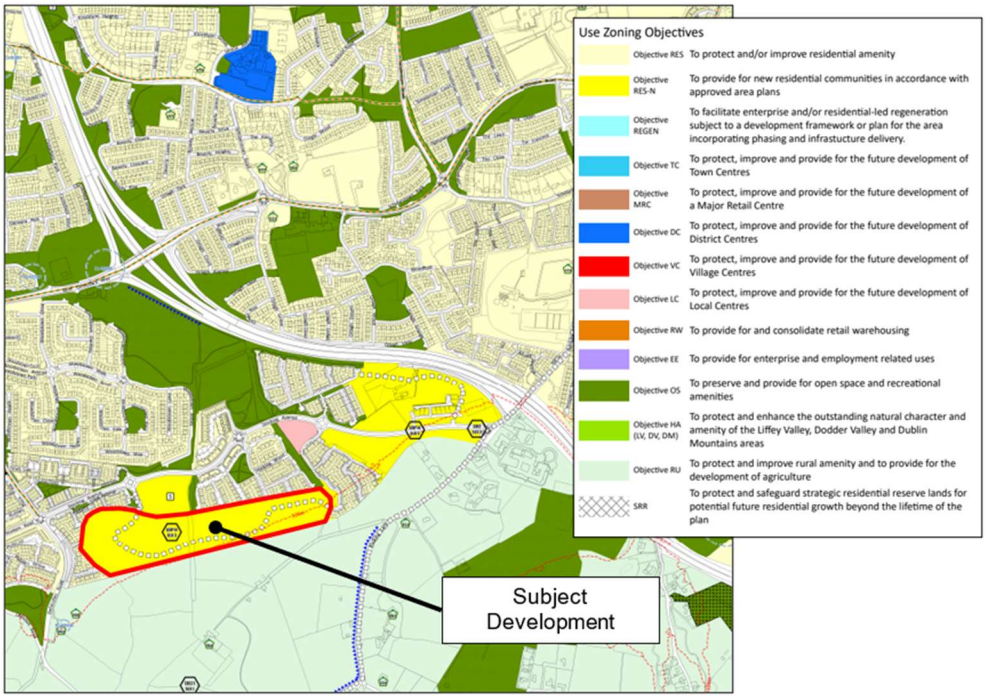

Figure 13.1: Land Use (Source: Map 10 - South Dublin County Development Plan 2022-2028)

Site Location and Description

The subject site is situated in Woodtown, Ballycullen, to the south-west of junction number 12 of the M50 motorway.

The site is currently a greenfield site, bounded to the east, north and west by existing residential areas and to the south by greenfield lands.

The subject development site is to be accessed by way of the established existing road infrastructure, with two road accesses off Stocking Avenue: one via an existing spur road from Stocking Avenue and the other via Stocking Wood Drive. These roads have footpaths on both sides.

The location of the subject development is shown in the **Figure 13.2** below.

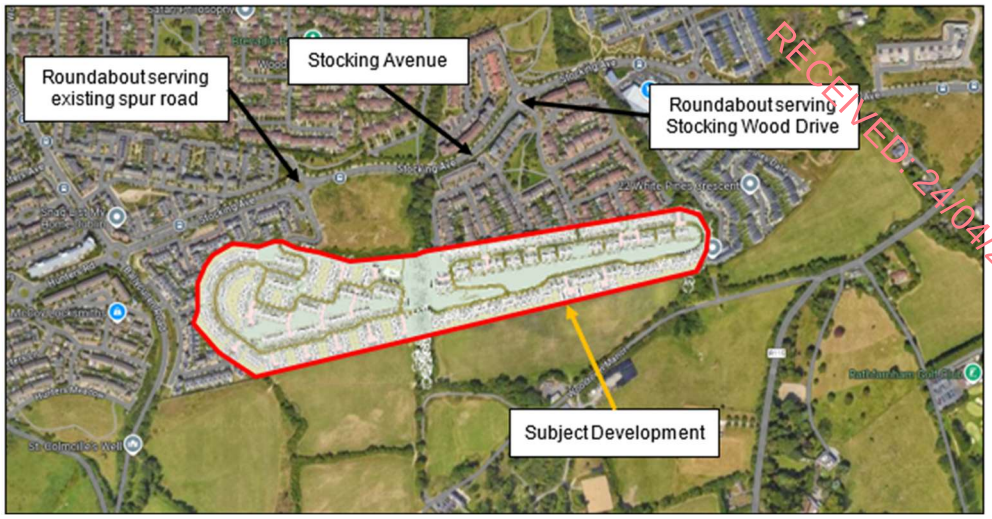

Figure 13.2: Site location

Local Road Network

Roads

The subject site is located to the south of the Stocking Avenue and east of Ballycullen Road, as seen in **Figure 13.3** below. Driving via Ballycullen Road northbound provides access to Kilinniny Road, which eastbound provides access to the M50 motorway via junction 12.

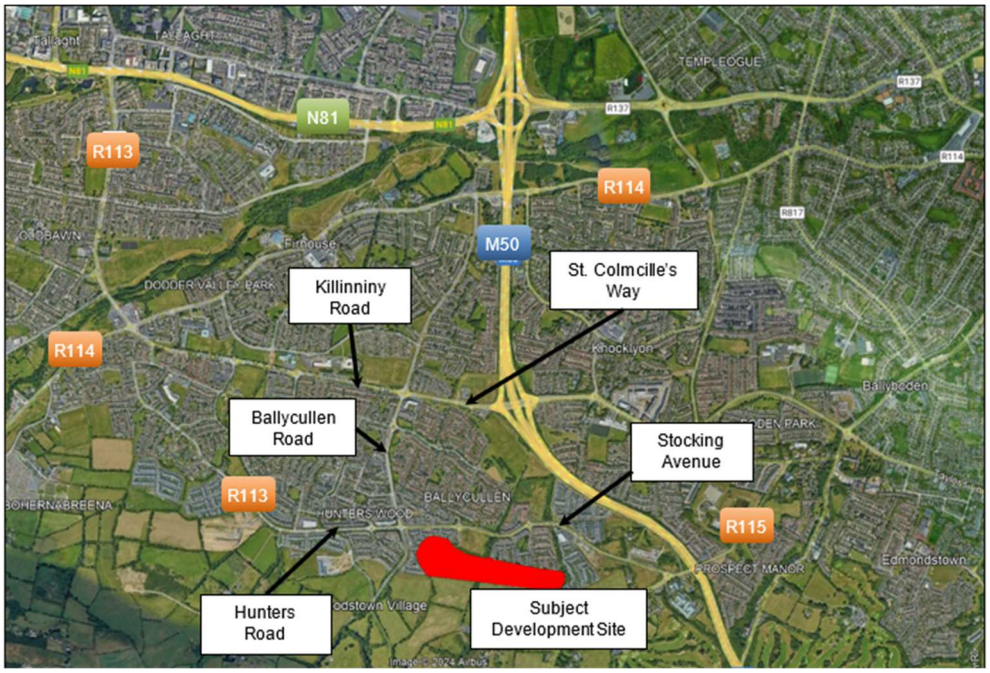

Figure 13.3: Existing Local Roads (Source: Google Earth)

Stocking Avenue is a two-way single carriageway road which starts at a three-arm roundabout (junction 7 in **Figure 13.4** below) and runs in the east-west direction c. 1.5km to end at a four-arm roundabout (junction 3 in **Figure 13.4** below). Stocking Avenue has a speed limit of 50km/h, a width of 7.5m and includes footpaths and cycle lanes either side of the road. The avenue also has bus stops in both directions.

Hunters Road is the continuation of the Stocking Av. to the west of the junction 3. The road continues in a westerly direction for c. 300m, and it terminates at a priority T-Junction with the R113 to the west of the site. The road has a speed limit of 50km/h, a width of 7m and includes footpaths and cycle lanes on both sides of the road. However, there are no bus routes currently using the road.

Ballycullen Road is a two-way single carriageway road which starts at a priority T-Junction on the R113 to the south of the site and runs with north direction for c. 2.3km to end at a priority T-Junction with the R114 to the north of the site. Ballycullen Rd. has a speed limit of 50km/h, a width of 10m, and, from the junction with Stocking Av. (junction 3 in **Figure 13.4** below), has a footpath on both sides and a cycle lane on the northbound side. In addition, the road has a priority bus lane on northbound and bus stops in both directions.

Killinniny Road is a two-way single carriageway road. It starts at signalised crossroad with Ballycullen Road (junction 1 in **Figure 13.4** below) and runs westerly direction for c. 1.3km to ends at a priority T-Junction with the R113. Ballycullen Rd. has a speed limit of 50km/h, a width of 10m, and includes footpaths either side of the road. In addition, the road has bus stops in both directions.

St. Colmcille's Way is a is a two-way single carriageway road which starts at the interchange with the M50 motorway at its Junction 12 and runs with west direction for c. 1.0km to ends at a signalised crossroad with Ballycullen Road (junction 1 in **Figure 13.4** below). St. Colmcille's Way has a speed limit of 50km/h, a width of 10m and 15m, and includes footpaths and cycle lanes either side of the road. In addition, the road has bus stops in both directions.

The **R113** road is a regional road which forms a semi-orbital route around the south of the city. It starts at the N31 at Temple Hill in Blackrock and ends at a junction with the N4 at Palmerstown.

The **R114** road is a regional road which runs from the city centre to Brittas in southwest County Dublin via Rathmines, Rathgar, Rathfarnham, Knocklyon, Firhouse and the mountainous area of Boharnabreena. The final stretch of the road runs just north of the border between County Dublin and County Wicklow, parallel to the Brittas River and a canal to the River Camac.

The **R115** road is a regional road in counties Dublin and Wicklow. It follows the Military Road. The R115 is 40.5 km long. The road runs between its junction with R114 at Butterfield Avenue Rathfarnham in the county of Dublin and its junction with R755 at Laragh in the county of Wicklow via Grange Road, Willbrook Road, Ballyboden Road, Scholarstown Road, Stocking Lane and Military Road in the county of Dublin: Glencree, Liffey Head Bridge, Sally Gap and Drummin County Wicklow.

The **M50 Motorway** is an important orbital motorway around Dublin which is subject to a speed limit of 100kph. It is a 40km, C-shaped ring around Dublin that connects all the National Primary Roads and carries more than 115,000 vehicles per day.

The **N81** road is a national secondary road in Ireland, from the M50 motorway to Tullow, County Carlow, north to south. The N81 continues past Tullow for another 8 km to terminate at the village of Closh,

County Carlow, where it intersects the N80. The road is a dual carriageway between M50 motorway and west of Tallaght, known as the Tallaght Bypass or Blessington Road. It intersects with the M50 motorway at Junction 11.

Junctions

The main junctions in the local surrounding area are illustrated in **Figure 13.4** below. Each junction is described in more detail below:

- Junction 1: is a signalised-controlled crossroad located at the intersection of Old Ballycullen Road, Killinniny Road and St. Colmcille's Way. Each arm has left turning slip lane.
- Junction 2: is a four-arm roundabout located at the intersection of Old Ballycullen Road, Daletree Drive and Woodstown Avenue.
- Junction 3: is a four-arm roundabout located at the intersection of Old Ballycullen Road, Hunters Road and Stocking Avenue.
- Junction 4: is a four-arm roundabout located at the intersection of Stocking Avenue, Dalriada Avenue and Abbot's Grove. Dalriada Avenue and Abbot's Grove are accesses to residential areas.
- Junction 5: is a four-arm roundabout located at the intersection of Stocking Avenue, Stocking Well and Stocking Wood Drive. Stocking Well and Stocking Wood Drive are accesses to residential areas.
- Junction 6: is a four-arm roundabout located at the intersection of Stocking Avenue, White Pines Way and White Pines Park. White Pines Way and White Pines Park are accesses to residential areas.
- Junction 7: is a three-arm roundabout located at the intersection of Stocking Avenue and R115 (Stocking Lane).

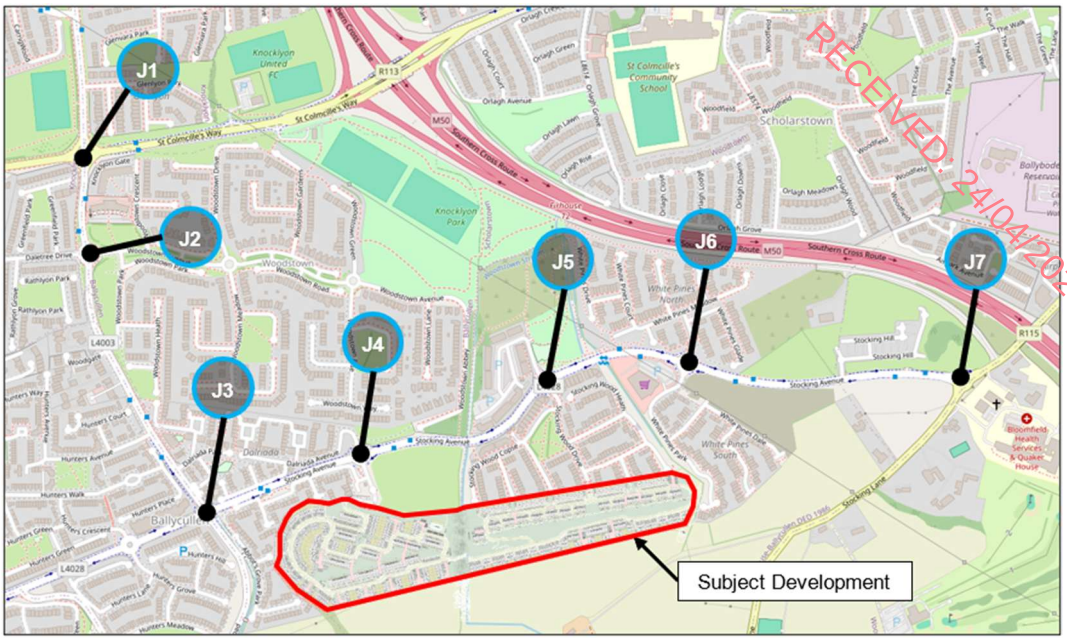

Figure 13.4: Primary Local Junctions (Source: Open Street Map)

Existing Traffic Condition

To quantify the volumes of traffic movements at the key junctions shown in **Figure 13.4** above, a traffic survey was commissioned by the applicant and carried out by IDASO on Thursday 16th January 2025 for a period of 24 hours.

The surveys were carried out on the above date to ensure that the flows were representative of a normal term and therefore not affected by school holidays or other public holidays or events. As such, they provide a reasonable representation of a neutral month during a period of normal school and work activity. The surveys are designed to provide representative values covering morning and evening periods during normal traffic conditions.

Based on the traffic survey, the peak traffic hours at various intersections are as follows:

- **Junction 1:** Morning peak hour is from 08:15 to 09:15 and evening peak hour is from 17:30 to 18:30.
- **Junction 2:** Morning peak hour is from 08:00 to 09:00 and evening peak hour is from 17:30 to 18:30.
- **Junction 3:** Morning peak hour is from 07:45 to 08:45, and evening peak hour is from 17:15 to 18:15.
- **Junction 4:** Morning peak hour is from 07:30 to 08:30, and evening peak hour is from 17:45 to 18:45.
- **Junctions 5, 6, and 7**: Morning peak hour is from 07:30 to 08:30, and evening peak hour is from 17:00 to 18:00.

As can be seen above, each junction exhibits different AM and PM peak hours. To ensure a comprehensive assessment, it is assumed that the peak hours for all junctions coincide during the same AM and PM periods. Therefore, the existing AM and PM peak hour traffic flows are presented in **Figure 13.5** below.

The number of vehicles indicated in the figure below are expressed in PCU. PCU represents the acronym for "Passenger Car Unit.". 1 PCU is equivalent to 1 passenger car or light goods vehicle (LGV), 1.5 PCUs to 1 medium heavy goods vehicle (Medium HGV), 2 PCUs to 1 bus, and 2 PCUs to 1 large heavy goods vehicle (Large HGV). 1 PCU is equivalent to 5.75 meters.

Figure 13.5: 2025 Surveyed Traffic Flows.

Multi-modal access to the site

Pedestrian Infrastructure and Walking Accessibility

As described above, the surrounding area has a well-connected pedestrian facility, which comprises of an inter-connected network of footpaths linking the various neighbourhoods to each other, to the existing schools, public spaces, and with the surrounding services/amenities.

The network of footpath in the immediate vicinity of the site is currently identified as safe and comfortable for all users, with dedicated pedestrian crossings, dropped kerbs and tactile pavement provided.

The *Guidelines for Providing for Journeys on Foot* published by The Institution of Highways & Transportation in 2000 indicates that the acceptability of walking distances will vary between individuals and circumstances. These include an individual's fitness, physical ability and personal motivation; the size of the city itself and the quality of the surrounding footpath network. Furthermore, the document proposes walking distances and times based on an average walking speed of 1.4 metres per second (approximately 400 metres in five minutes). **Table 13.1** below provides a summary of the distances and times.

	Town Centre	Commuting / School / Site Seeing	Elsewhere
Desirable	200m (2.5-mintues)	500m (6-minutes)	400m (5-minutes)
Acceptable	400m (5-minutes)	1,000m (12-minutes)	800m (12-minutes)
Preferred Maximum	800m (10-minutes)	2,000m (24-minutes)	1,200 (15-minutes)

Table 13.1: Ideal Walking Distances (Source: Guidelines for Providing for Journeys on Foot - Institute of Highways and Transportation)

Figure 13.6 below details the 10-minute, 15-minute and 25-minute walking catchments areas to summarise the accessibility of the subject site on foot (Preferred Maximum) to "Town Centres, and Commuting / School / Sight-seeing and Elsewhere" respectively, as per **Table 13.1** above. It illustrates the presence of grocery stores within the 10-minute walking isochrone, while the Bloomfield Hospital and other medical centres are within a 15-minute walk distance. Additionally, several primary schools are located within the 25-minute walk catchment area.

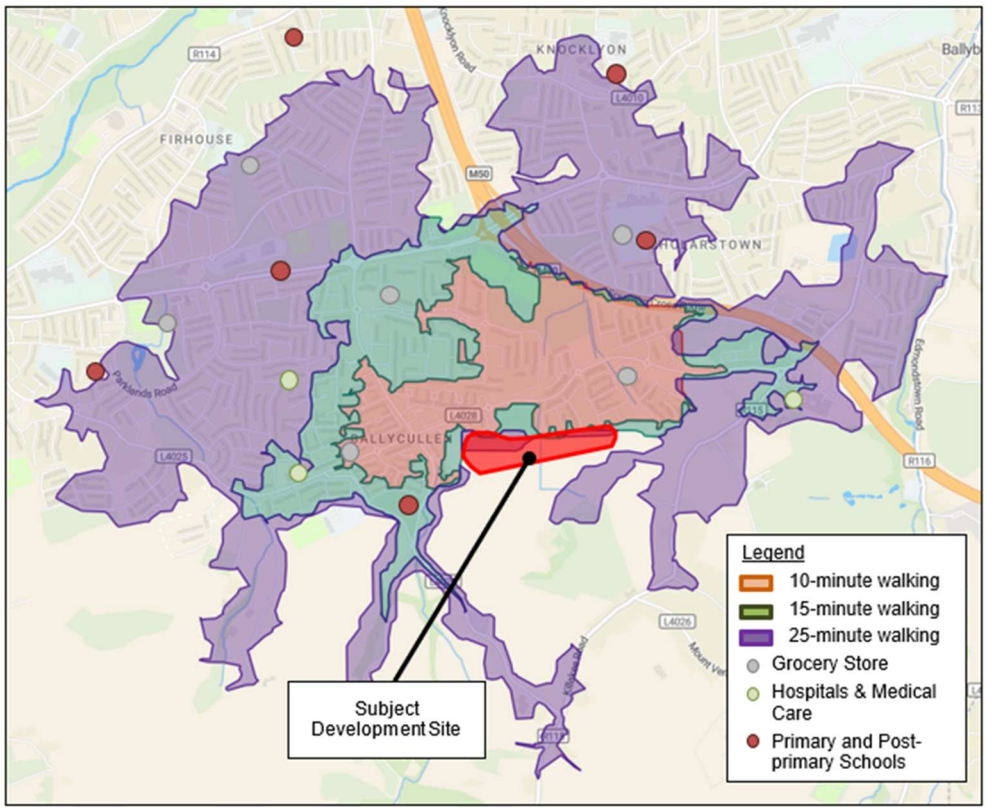

Figure 13.6: Site Accessibility – Isochrone map indicating walking accessibility (Source: Smappen & Google Maps)

Cycle Infrastructure and Cycling Accessibility

Figure 13.7 below indicates that the area surrounding the Subject Development is characterised by the presence of a well-interconnected cycling infrastructure.

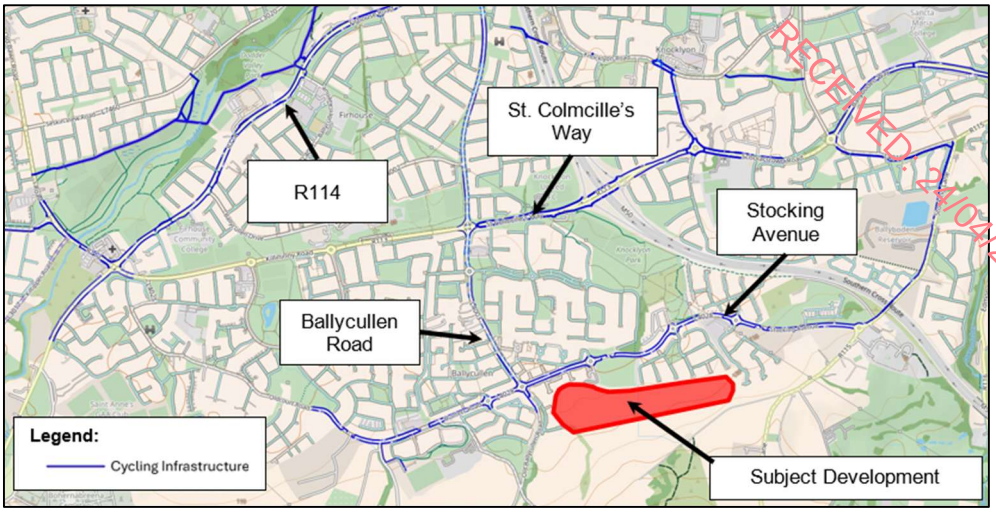

Figure 13.7: Existing Cycle facilities (Source: Open Street Map)

The figure above shows the presence of cycling infrastructure on both sides of Stocking Avenue to the north of the subject site, which runs east-west. In addition, there is cycling infrastructure on Ballycullen Road to the west of the site, which runs northwards. Further north, cycling infrastructure exists on St. Colmcille's Way and on the R114.

As presented for walking, a similar catchment exercise has also been undertaken for the cycling mode of transport. **Figure 13.8** summarises the site's bicycle accessibility by showing the 10-, 15-, and 25-minute cycling catchments areas based on an average cycling speed of 3.3m/sec (15 km/h). A 15-minute cycling time equates to approximately 3.0km.

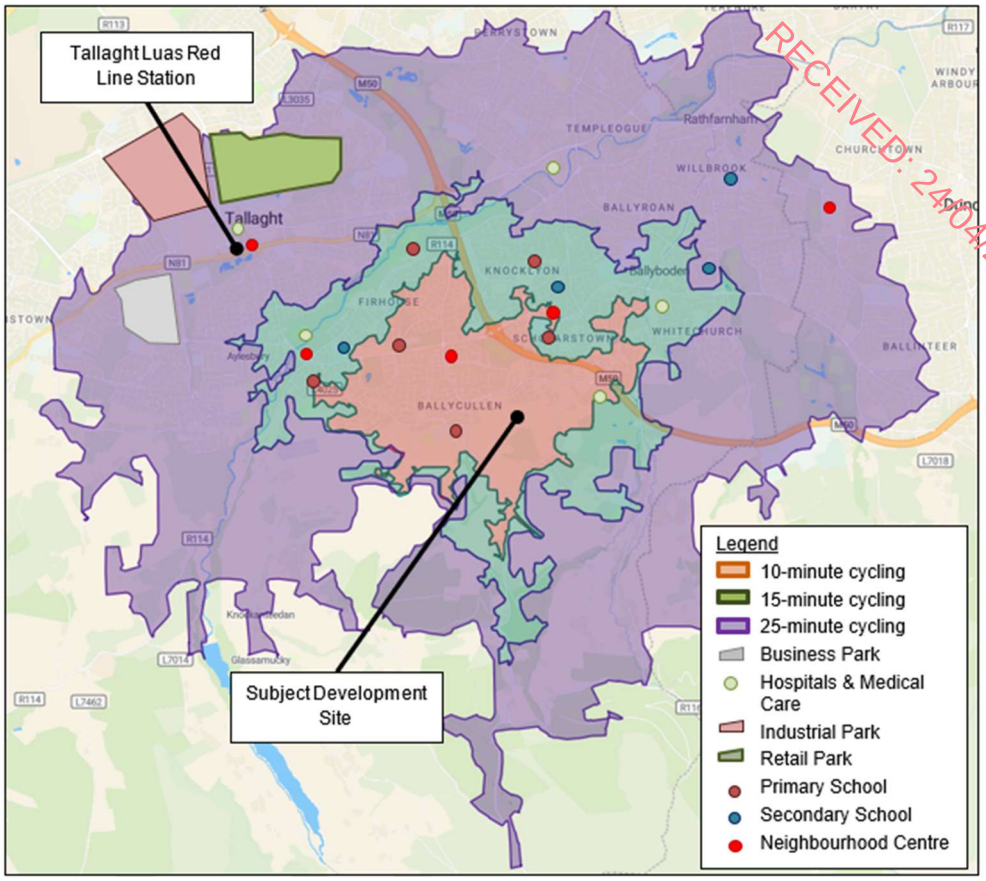

Figure 13.8: Site Accessibility – Isochrone map indicating cycling accessibility (Source: Smappen & Google Maps)

Figure 13.8 above illustrates that the subject site is situated in close proximity to significant business, industrial and retail parks that fall within the 25-minute cycling catchment area.

There are several primary schools, secondary schools and shopping centres within the 15-minute cycling isochrone. Finally, the resources accessible in the 10-minute cycling catchment area are also accessible in the 25-minute walking catchment area depicted in **Figure 13.6** above, as they are comparable.

In addition, Tallaght Luas Red Line Station (see **Figure 13.8** above) is a 17-minute cycle from the subject site.

Bus Network

The proposed development is well served in terms of public transport provision as can be seen in **Figure 13.9** below, which shows the bus stops in the surrounding area of the subject development.

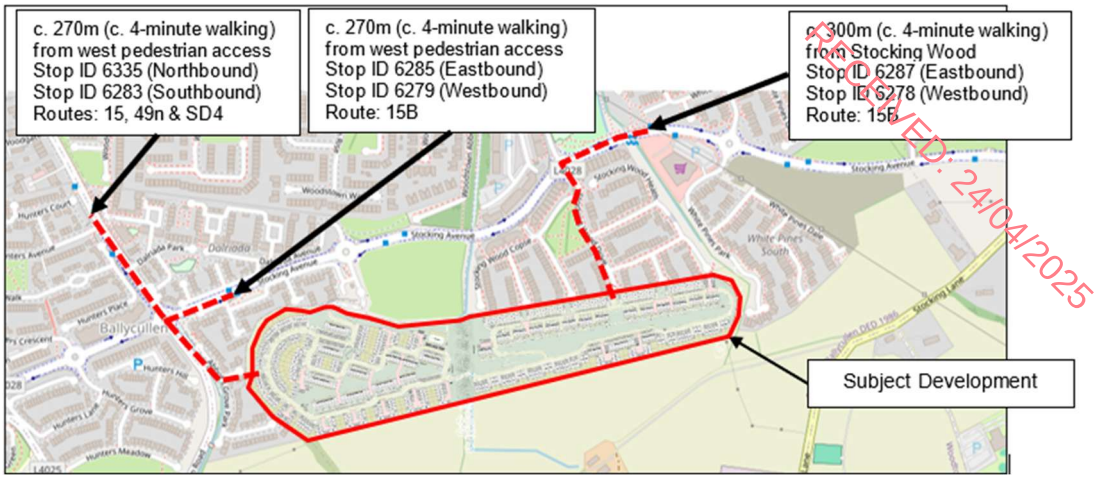

Figure 13.9: Location of the Closest Bus Stops (Source: Open Street Map)

Route 15 and Route 49 are operated by Dublin Bus while Route SD4 is operated by Local Link Kildare South Dublin. It is important to note that routes 15 start and end at bus stops 6335 and 6283 respectively.

The details of the bus serving each bus stop are shown in **Table 13.2** below.

Route	Stop ID Route Name	Frequency
15	Ballycullen Rd. - Clongriffin	**Weekday:** Every 10 minutes between 6:00 and 7:00, and between 17:10 and 19:00 Every 5-12 minutes between 7:00 and 17:10 Every 15 minutes between 19:00 and 0:00 Every 30 minutes between 0:00 and 6:00 **Saturday:** Every 15 minutes between 6:00 and 0:00 Every 30 minutes between 0:00 and 6:00 **Sunday:** Every 20 minutes between 8:00 and 12:00 Every 15 minutes between 12:00 and 0:00 Every 30 minutes between 0:00 and 8:00
15B	Stocking Avenue to Merrion Square	**Weekday:** Every 15 minutes between 6:00 and 7:00, and between 8:00 and 19:00 Every 10 minutes between 7:00 and 8:00 Every 20 minutes between 19:00 and 23:20 **Saturday:** Every 15 minutes between 6:30 and 19:00 Every 20 minutes between 19:00 and 23:30 **Sunday:** Every 30 minutes between 8:15 and 23:15
SD4	Tibradden Wood to Tallaght (Northbound) - **Weekday**: No Service - **Saturday**: 4 services: 8:38, 10:58, 14:18 & 16:53	

	- **Sunday**: No Service Tallaght to Tibradden Wood (Southbound) - **Weekday**: No Service - **Saturday**: 4 services: 8:11, 10:31, 13:51 & 16:26 - **Sunday**: No Service
49n	D'Olier Street - Kilnamanagah - **Weekday**: No Service - **Friday - Saturday**: 3 services: 0:29, 2:29. & 4:29 - **Sunday**: No Service

Table 13.2: Local Bus Routes Frequencies (Source: Transport for Ireland)

Nearest Car Sharing Facilities (GoCar)

The closest GoCar Base is located at the Lidl Ballycullen which is approximately 750m (or 10-minute walk) from the western pedestrian access of the subject site.

The location of the nearest GoCar Base to the subject site is shown in **Figure 13.10** below.

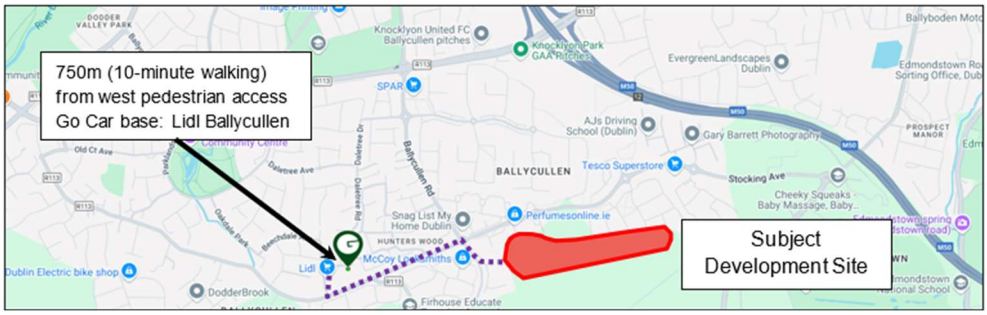

Figure 13.10: Location of the Nearest GoCar Stations (Source: Go Car website)

Planned Future Receiving Environment

BusConnects

South Dublin County Development Plan 2022-2028 outlines the Council's policy in relation to the provision of a quality bus network for the administrative area. In particular, the Policy SM1: Overarching – Transport and Movement indicates that:

"M3 Objective 11: To facilitate the delivery of the BusConnects Core Bus Corridors and seek additional bus corridor and orbital routes to serve the County by securing and maintaining any required route reservations and to ensure the BusConnects Corridors do not adversely affect the village life and livelihoods of any of our County Villages."

The BusConnects project, currently being promoted by the National Transport Authority (NTA), aims to deliver a significantly improved bus service in the Greater Dublin Area (GDA). Some of the route improvements identified in the BusConnects plan are already in place or underway. According to BusConnects the above route types can be defined as follows:

- Spines routes: are very frequent routes made up of individual bus services that are timetabled to work together over their common sections.
- Radials routes: are other services that operate into Dublin city centre. These services are not part of any Spine and operate to their own timetable.
- Orbitals routes: provide connections between suburbs, without having to travel into the city centre.
- Local routes: provide connections to Local centres and link to onward transport connections.
- Peak routes operate during peak travel periods, providing additional capacity along key bus corridors. Express routes are direct services from outer suburbs to the city centre during peak hours, serving limited stops to get passengers to their destination faster.

The routes proposed to serve the area surrounding the Subject Development are shown in **Table 13.3** below, which also gives the route name and weekday and weekend frequency, and the map showing the location of each bus route is shown in **Figure 13.11** below.

Route	Route Name	Frequency
A-Spine A1	Beaumont - City Centre - Knocklyon	**Weekday**: Every 12 minutes between 7:00 and 19:00 Every 15 minutes between 6:00 and 7:00 and between 19:00 and 23:00 Every 30 minutes between 23:00 and 6:00 **Saturday**: Every 15 minutes between 9:00 and 19:00 Every 20 minutes between 6:00 and 9:00 and between 19:00 and 23:00 Every 30 minutes between 23:00 and 6:00 **Sunday**: Every 20 minutes between 10:00 and 19:00 Every 30 minutes between 19:00 and 10:00
Orbital Route S8	Blanch SC - Dublin Airport - Clongriffin	**Weekday**: Every 30 minutes between 6:00 and 23:00 Every 60 minutes between 23:00 and 6:00 **Saturday**: Every 30 minutes between 9:00 and 23:00 Every 60 minutes between 23:00 and 9:00 **Sunday**: Every 30 minutes between 10:00 and 22:00 Every 60 minutes between 22:00 and 10:00
85	Tallaght – Ballyboden – Harold's Cross – Parnell Square	**Weekday**: Every 15 minutes between 6:00 and 22:00 Every 10 minutes between 7:00 and 9:00 and between 15:00 and 17:00 Every 30 minutes between 23:00 and 6:00 **Saturday**: Every 15 minutes between 9:00 and 18:00 Every 20 minutes between 6:00 and 9:00 and between 19:00 and 23:00

		Every 30 minutes between 23:00 and 6:00 **Sunday**: Every 20 minutes between 10:00 and 19:00 Every 30 minutes between 19:00 and 10:00

Table 13.3: Bus Connects Frequencies (Source: Bus Connects website)

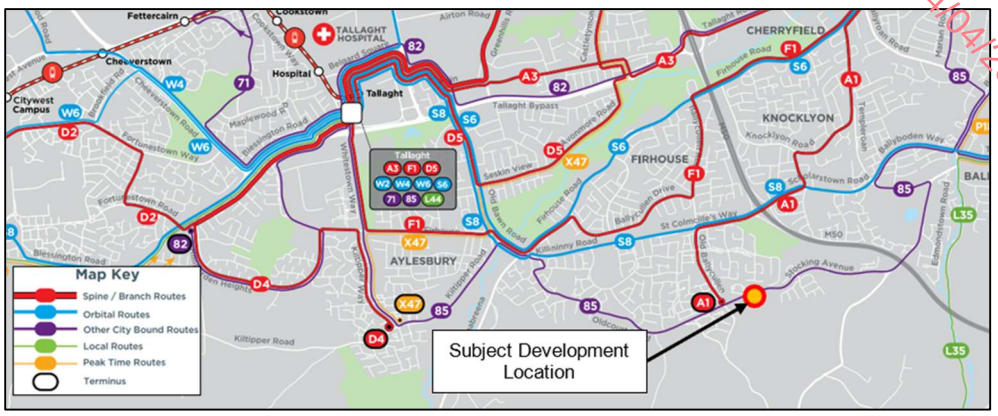

Figure 13.11: Bus Connects Routes Map (Source: Bus Connects website)

Ballycullen – Oldcourt LAP Main Link Street

The Ballycullen - Oldcourt LAP Main Link Street is included within the Six Year Road Programme in the South Dublin County Development Plan 2022-2028. Table 7.5 of the plan indicates that Ballycullen Old Court Street Network will be a strategic street network providing access throughout the site Ballycullen - Oldcourt LAP.

The Ballycullen - Oldcourt LAP Main Link Street is developed as part of the Planning Application Reg. Ref. SD17A/0041. The proposed road scheme comprises a 6.5m wide carriageway, approx. 1500m in length with a with footpaths and verges. A two-way cycle track is located on the northern side of the Link Street linking Oldcourt Road to Bohernabreena Road. Traffic calming will be provided through geometry design features with such as vertical deflections, particularly at junctions between the Link Street and internal estate roads where the footpath/cycle path crosses.

Currently, part of this Main Link Street is under construction by the committed development under planning application Reg. Ref. No. LRD24/0007, located on Oldcourt LAP lands.

Due to its proximity to the subject development as shown in **Figure 13.12**, this link street has been included as part of the assessment carried out in this report.

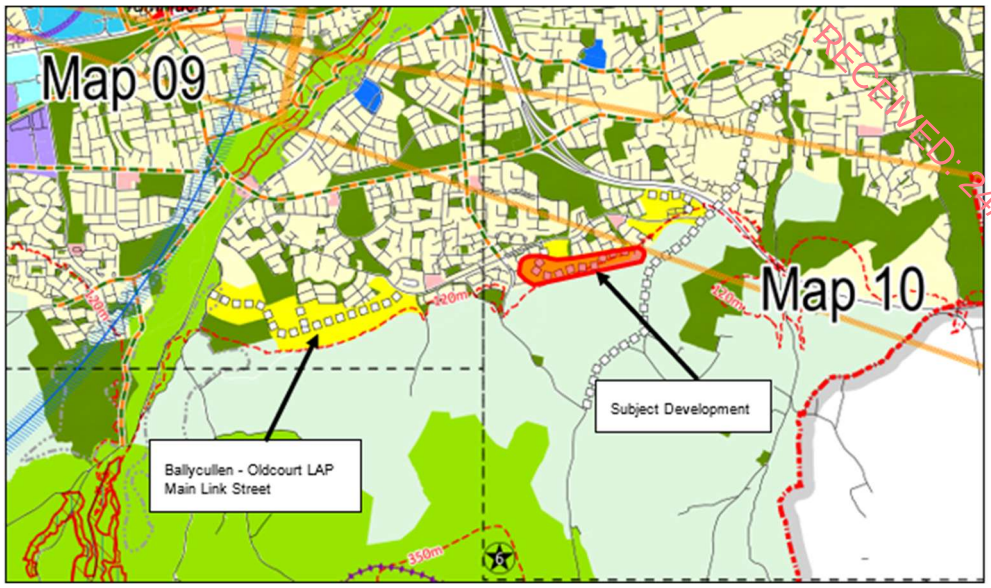

Figure 13.12: Zoning maps 9 and 10 of Plan Lands under SDCC (Source: South Dublin County Development Plan 2022-2028)

13.4 Characteristics of the Proposed Development

Description of the Proposed Development

The development with total of c.10.35 Ha will consist of the construction of 502 No. residential units with 197 No. houses (19 No. 2-bed, 116 No. 3-bed and 62 No. 4-bed units) and 305 No. apartments (108 No. 1-bed, 151 No. 2-bed and 46 No. 3-bed units) and a childcare facility with an GFC c. 474.8sqm.

The accommodation schedule is shown in **Table 13.4** below:

Description	1-bed	2-bed	3-bed	4-bed	Total	GFA (Sqm)
Houses		19	116	62	197	
Apartments	108	151	46		305	
Childcare Facility						474.8
Total	108	170	162	62	502	474.8

Table 13.4: Schedule of Accommodation

Internal Layout and Vehicular Access Points

The internal road network has been designed in accordance with the standards set out in the South Dublin Development Plan, which requires that all roads comply with DMURS. The roads vary in width between 4.8 metres and 6 metres wide, while all footpaths are 2 metres wide and connect the internal spaces.

All internal roads within the proposed development are designed for a speed limit of 20km/h. All junctions within the development itself will be priority junctions with raised tables where appropriate.

The low design speeds and traffic calming measures will ensure the safe operation of these junctions and a safe/secure environment for pedestrians and cyclists.

The design and layout of the proposal has been prepared to fully comply with the current relevant design standards and specifications applicable to this form of development.

Sufficient parking spaces have been reserved in accordance with local guidelines.

The following figure shows the layout of the development with the access points and connections with adjacent approved development.

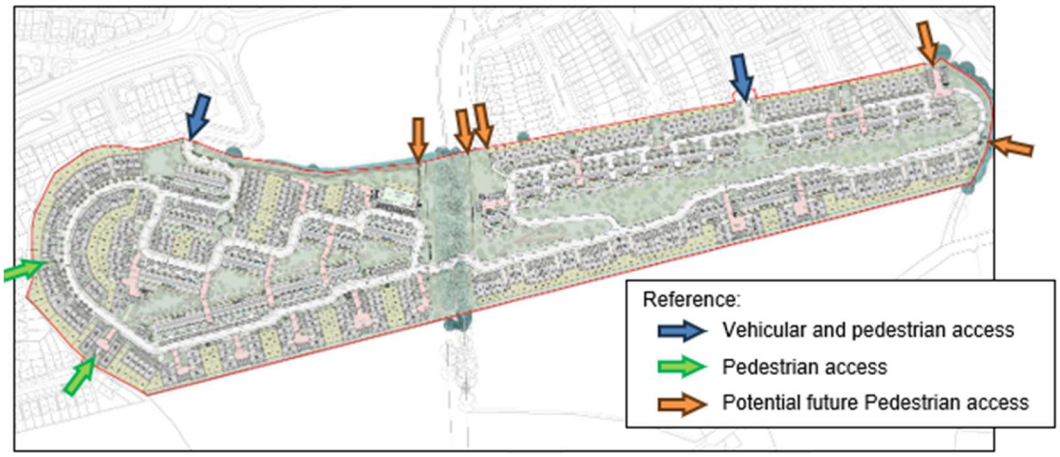

Figure 13.13: Layout

The road layout has been designed with careful consideration of the existing ground levels to reduce soil movements beyond the site location. By incorporating curvilinear streetscapes, the design effectively reduces the gradient to a maximum of 8%, even in the most challenging sections. This approach not only ensures smoother transitions but also enhances safety and accessibility for all users. **Figure 13.14** below illustrates the maximum and minimum elevations along the centre line of the internal road network, providing a clear visual representation of the terrain variations.

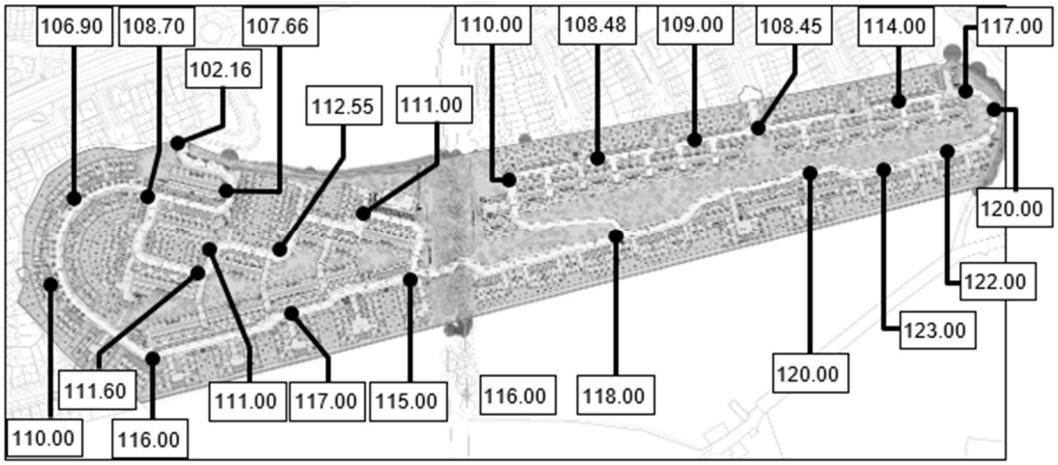

Figure 13.14: Maximum and minimum levels on the internal street layout

DMRUS

The proposed development is consistent with the principles and guidance outlined in the Design Manual for Urban Roads and Streets (DMURS). Outlined below are some of the specific design features that have been incorporated within the proposed scheme with the objective of delivering a design that is in full compliance with DMURS.

In order of importance, DMURS prioritises pedestrians, cyclists, public transport and private cars. The proposed development has been designed with pedestrians and cyclists taking precedence over other modes of transport. In this regard, footpaths are provided throughout the development, with the required pedestrian and cyclist linkages onto the facilities in the close proximity of the site.

DMURS recommends using active edges to enliven the street and create a more engaging environment. This is achieved through frequent entrances and openings that overlook the street and generate pedestrian activity. The roads in the development have regular junctions and driveways in accordance with this recommendation.

On-street parking is proposed at several locations. On-street parking separates pedestrians from the vehicle roadway and, as per DMURS Section 4.4.9, can calm traffic by increasing driver caution, contribute to pedestrian comfort by providing a buffer between the vehicular carriageway and footpath and provide good levels of passive security.

Streets have been designed in accordance with the alignment and curvature recommendations set out in DMURS Section 4.4.6. The road layout is generally orthogonal. Section 3.3.1 of DMURS notes that street networks that are generally orthogonal in nature are the most effective in terms of permeability (and legibility). Regular junctions along with raised pedestrian tables/crossings at main pedestrian desire lines will encourage reduced driving speeds.

The proposed 'home zones' are designed to prioritise the needs of pedestrians, cyclists, children and residents, and to reduce the speed and dominance of cars. The home zones consist of a shared roadway. Entrance treatment to home zones is in the form of a ramp, which helps to indicate that a driver is entering a home zone and intends to use a different road surface colour in the local zones.

Suitable sightlines will be provided throughout the development, ensuring that localised planting does not obscure visibility as cars make turning manoeuvres, improving the pedestrian safety at crossing points.

Public areas fronting and within the proposed development will be designed by a multidisciplinary design team to accommodate pedestrians and cyclists in accordance with the appropriate principles and guidelines set out in DMURS. In particular, the vehicular access and public footways within the remit of the development will incorporate the relevant DMURS requirements and guidelines as set out above.

Pedestrian infrastructure

The proposed development has been designed with a network of interconnects footpaths providing permeability throughout the site to the surrounding area. All footpaths within the proposed development have been designed as 2.0m wide. This is in accordance with Section 4.3.1 of the DMURS which suggests that a minimum 1.8m footpath should be provided.

The proposed development includes footpath to the north on both vehicles access roads, which will connect to Stocking Avenue and provide residents with convenient access to this road. In addition, provisions have been made to ensure pedestrian accessibility to both eastern and western sides.

The main pedestrian and cycle path is shown in the **Figure 13.15** below.

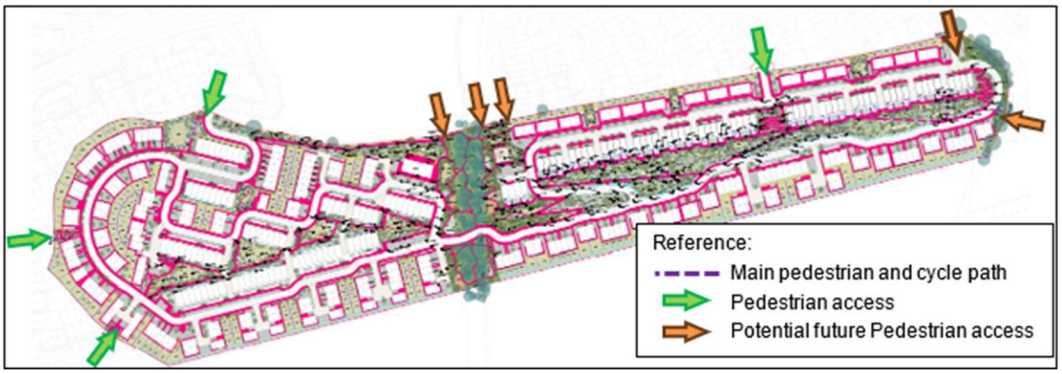

Figure 13.15: Proposed Pedestrian path

As indicated above, the road layout has been designed with careful consideration of the existing ground levels to minimise soil movement beyond the site. The pedestrian links have been designed to reduce the gradient to a maximum of 5%, even in the most challenging sections.

However, due to the existing topography on site, it has not been possible to design all areas as “access for all”. The level difference in some areas is over 3m’s and as such steps have been provided to ensure these spaces are useable where studies demonstrated that ramps would not comply when tested. Alternative Part M compliant routes are available throughout the site for all users.

Additionally, stairways have been provided in the public open spaces to offer an alternative route, thereby reducing walkable distances. This thoughtful design ensures accessibility and convenience for all users while maintaining the integrity of the natural landscape.

Car Parking

To determine the appropriate amount of car and cycle parking for the proposed development, reference will be made to the following guidelines/policies:

- Sustainable Residential Development and Compact Settlements Guidelines for Planning Authorities (2024)
- Sustainable Urban Housing: Design Standards for New Apartments (July 2023)

- Greater Dublin Area Transport Strategy (2022 – 2042) Standards
- South Dublin Development Plan (2022 – 2028)

Based on the guidelines/policies indicated above, it is considered that the *Sustainable Residential Development and Compact Settlements Guidelines for Planning Authorities (2024)* standards are the most restrictive for the subject development and is the reference for determining the proposed the car parking.

Table 13.5 below shows the breakdown of car parking spaces proposed.

Type	No. of units	Compact Settlements Guidelines		South Dublin County Development Plan		Car Parking Spaces Proposed	
		Ratio	Car Parking	Ratio	Car Parking	Ratio	Car Parking
1-bed apartment	108	2	216	1	108	0.50	54
2-bed apartments	151	2	302	1.25	189	1.00	151
3-bed apartments	46	2	92	1.5	69	1.30	60
2-bed houses	19	2	38	1.5	29	1.00	19
3-bed houses	116	2	232	2	232	1.50	174
4-bed houses	62	2	124	2	124	1.45	90
Crèche	6 per classroom	N/A	N/A	1	6	2.5 per classroom	15
Total	502	2	1004	1.51	757	1.12	563

Table 13.5: Car Parking Spaces Proposed

The proposal for parking spaces, indicated in the table above, reflects that 563 No. spaces are proposed, including 548 No. spaces for residential units and 15 No. spaces are proposed for the creche.

In addition, the proposed development includes EV car parking spaces in the ratio of 20% of the total on-street car parking spaces.

Cycle Parking

To determine the appropriate amount of cycle parking for the proposed development, reference will be made to the following guidelines/policies:

- Sustainable Residential Development and Compact Settlements Guidelines for Planning Authorities (2024)
- Sustainable Urban Housing: Design Standards for New Apartments (July 2023)
- South Dublin Development Plan (2022 – 2028)

The proposed cycle parking spaces for the apartment units have been determined in accordance with the South Dublin County Development Plan 2022-2028 Standards and the Sustainable Urban Housing: Design Standards for New Apartments (July 2023). House units without access to their rear gardens will be provided with bicycle storage in the front garden, in line with the Sustainable Residential Development and Compact Settlements Guidelines for Planning Authorities (2024).

The proposed Cycle Parking for housing units based on construction type is shown in the table below:

Type	No. of units	Compact Settlements Guidelines		Design Standards for New Apartments		South Dublin County Development Plan		Cycle Parking Spaces Proposed	
		Resident long stay	Visitor short stay	Resident long stay	Visitor short stay	Resident long stay	Visitor short stay	Resident long stay	Visitor short stay
1-bed apts.	108	108	54	108	54	108	54	108	54
2-bed apts.	151	302	75	302	75	302	75	302	76
3-bed apts.	46	138	23	138	23	138	23	138	23
2-bed houses	19	38	-					38	-
3-bed houses	30 No. terrace units	90	-					90	-
	86 No. with rear garden access	-	-					258	-
4-bed houses	62	-	-					248	-
Crèche	6 No. classrooms 107 No. Pupils 20 No. Staff							4	12
Total		**676**	**152**	**548**	**152**	**552**	**163**	**1186**	**165**

Table 13.6: Cycle Parking Spaces Proposed

For the subject site, a total of 1351 No. cycle spaces are proposed. Of this total, 634 No. spaces are for house units, 701 No. spaces are for apartment units, including 153 No. spaces for visitors, and 16 No. spaces are for the nursery, including 4 No. spaces for staff and 12 No. spaces for visitors.

Cycle parking for terraced housing units is provided in the storage locker. For non-terraced housing units, the cycle parking is provided in the back gardens. The apartments cycle parking is provided in the communal storage. Visitor cycle parking is provided in the public space. Apartments have been provided with visitor bicycle parking spaces. For the housing units, it is assumed that there may be unoccupied spaces available for visitors.

13.5 POTENTIAL IMPACT OF THE PROPOSED DEVELOPMENT

13.5.1.1 Construction Stage

Predicted Construction Traffic Flows

The subject development is planned to be developed in two distinct phases. Phase 1 is programmed to be constructed by mid-2028 and Phase 2 by 2030. Therefore, it is anticipated that the total construction period for the development will be approximately 5 years.

The construction phases and the proposed site compound is shown in figure below.

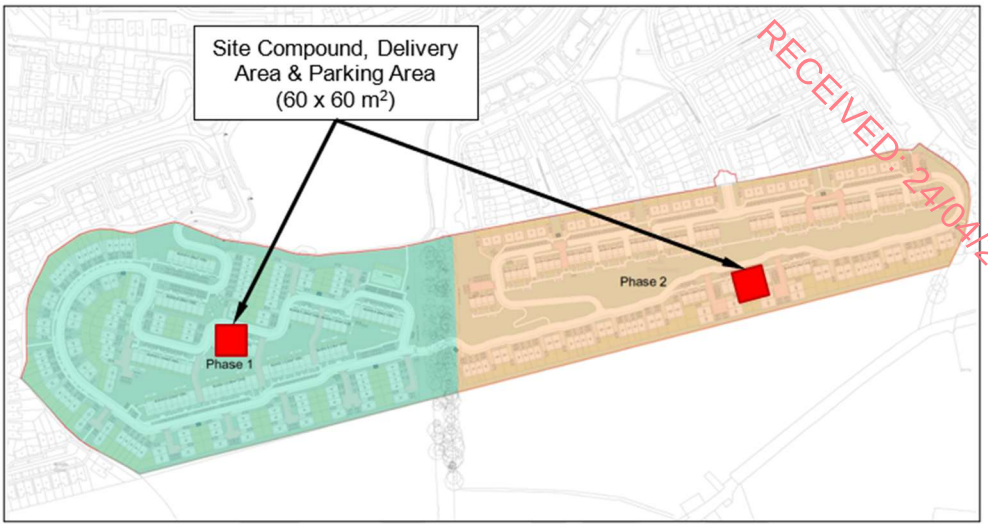

Figure 13.16: Proposed Pedestrian path

Predicted Construction Traffic Flows

The objective of this section is to estimate the number of trips to and from the construction site and their impact on the surrounding road network. It is important to note that during the construction phase, some traffic movements will be undertaken by heavy goods vehicles, while others will involve vehicle movements associated with the designated construction activities and personnel.

Regarding heavy goods vehicles, an estimate of the daily traffic movements associated with construction activities has been made based on experience of similar sites. This estimate is based on the assumption that the worst-case scenario for construction traffic will be during the excavation phase. The determination of construction traffic movements is based on the assumptions set out below:

- The work schedule is based on a 9-hour day between 08:00 - 17:00. Workers should therefore arrive on site before 08:00 and leave after 17:00.
- 20 working days per month.
- Conservatively assuming removal trucks will only operate Monday to Friday and between 8:30-12:00 and 13:00-16:30. This means that they will be working for 7 hours a day.
- Preliminary excavation volume calculations indicate that approximately 57,117 m3 of soil will need to be removed during the excavation phase. This estimate includes the removal of the topsoil, and the balancing of cut and fill volumes within the site. To provide a robust estimation, it is assumed that an additional 10% of soil to be remove from the site. Therefore, a total of 63,000 m3 of soil will be removed during the excavation phase.
- It is assumed that a Rigid HGV carries up to 20 tonnes in terms of payload. Considering a typical soil bulk density of 1.3 this would equate to approx. 15 m3 per load.
- Excavation works for both phases will be carried out during the first 6 months of construction.

Based on the above, it is estimated that the two-way movements will be some 4,200 No. trips over a 120-day period (6 months). This equates to an average of 35 No. trips to/from the site per working day during the peak 6-month period. Considering the schedule of the removal trucks (7 hours a day), the 35 No. trips per day will be 5 No. trips per hour. In addition, considering the supplementary trips for construction materials, ranging from 10 No. to 20 No. trips per day, it is anticipated that HGV movements during the excavation phase will vary between 45 No. and 55 No. trips per day during the excavation phase. As indicated above, it is assumed that the HGV trips will occur between 8:30 and 16:30.

The general workforce is expected to be approximately 120 No. people per day, rising to 150 No. people at peak times. Given the location of the subject site and considering the worst-case scenario, it is estimated that approximately 50% of the workforce will travel to/from the site by private car. This 50% includes people who travel alone, people who share their car with other co-workers, and company vans. As a result, it is estimated that the site will attract/generate between 60-75 No. car trips to the construction site during the morning, and the same number from the construction site during the evening. It is assumed that the workforces will arrive to the site before 8:00 AM and will leave the construction site after 17:00.

According to the Surveyed Traffic Flow, the peak hours on the existing road network are between 7:30-8:30 AM during the morning and between 5:30-6:30 PM during the evening. In addition, it has been estimated that the subject development when completed and fully occupied, will generate a total of 185 vehicular movements during the AM peak hour (48 inbound and 137 outbound) and a total of 190 vehicular movements during the PM peak hour (126 inbound and 64 outbound). The junction assessment results carried out in the Traffic and Transport Assessment for the subject site, indicate that all junctions would operate within their respective capacities for all scenarios assessed.

Considering the above, it is expected that the traffic generated by the general workforce will occur during the peak hours, while the HGV trips will be generated outside the peak hours. In addition, the number of trips during the construction phase will be less than the number of trips during the operational phase and these trips are not expected to cause congestion problems on the surrounding road network. Therefore, no junction assessment is required for the construction phase.

Routes for Heavy Goods Vehicles

Deliveries and access to the construction site will typically be made via the R113, Ballycullen Road, and Stocking Avenue, as shown in **Figure 13.17** below. All construction traffic flows to/from the site during both phases will be off Stocking Avenue via an existing spur road. It will not be permitted to use Stocking Wood Drive to access the site.

A restriction on using any of the surrounding residential roads for Construction traffic will be put in place.

The route for heavy goods vehicles is shown in the figure below. The figure shows the allowed and the not allowed HGV's routes.

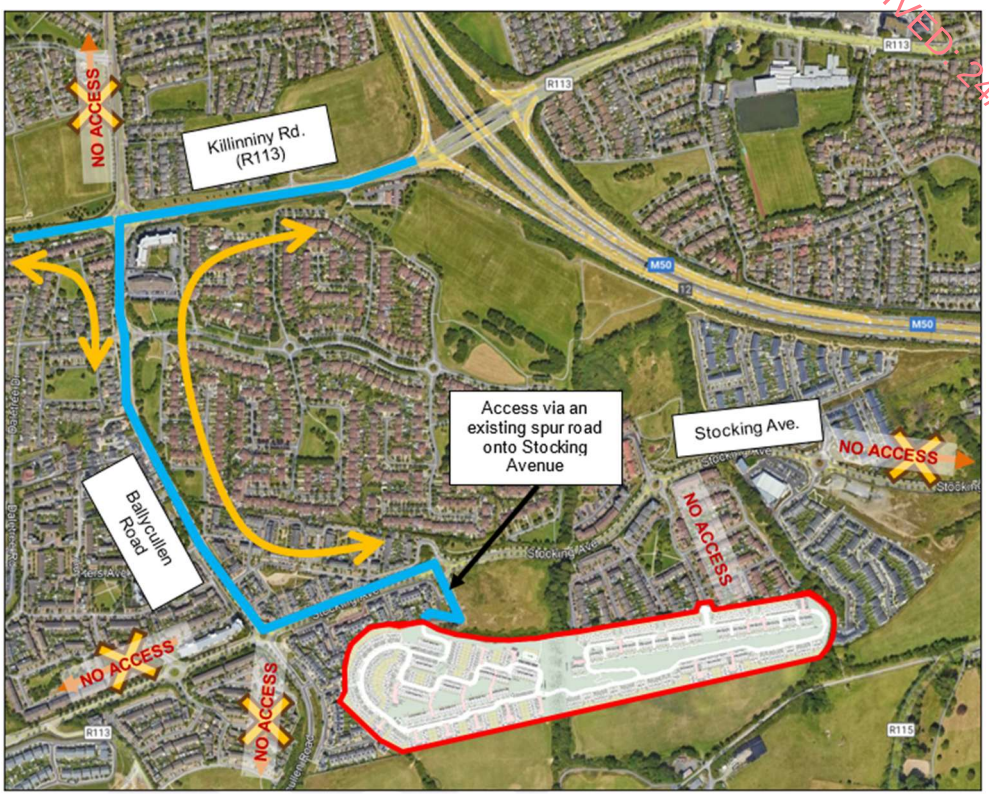

Figure 13.17: Proposed Pedestrian path

Due regard will be paid to minimising any impacts by construction vehicles on the existing developments in the area. Should routes become an issue, then the position will be reviewed by the Project Team and changes made.

Particular emphasis will be placed on the following:

- The issue of instructions and maps on getting to site to each supplier sub-contractor to avoid 'lost' construction traffic travelling on unapproved routes.
- Ongoing assessment of the most appropriate routes for construction traffic to and from the site.
- Interface with the operation of local traffic.
- Use of a banksman and/or traffic lights to control the exit of construction vehicles.
- No construction traffic waiting on the public roads.

A detailed Construction Management Plan will be prepared by the contractor before construction which will outline site logistics and indicate the following:

- Site Access Locations.

- Site Boundary Lines.
- Tower Crane Locations.
- Vehicle Entry and exit routes from the site.
- Unloading areas.
- Site Offices and welfare facilities.
- Material Storage areas.
- Banksmen Locations.

Materials will be ordered and delivered to site on an "as needed" basis to prevent oversupply to site. Deliveries will be managed upon arrival to the site and systems should be provided to avoid any queuing of delivery vehicles.

In the event that large concrete pours are required which may result in congestion at the entrance to the site the deliveries will be organised such that concrete trucks will queue at a pre-determined staging point (such that they do not cause an obstruction to general traffic in the area) and will then be called in by radio as appropriate to the site, via a pre-determined route and to the required access gate.

Set procedures and designated wash-out areas will be provided.

All delivery vehicles will be coordinated as required at the relevant access point.

Set procedures and designated wash-out areas will be provided, or vehicle wash-out will be prohibited if a suitable wash-out area is not identified. The Main Contractor will ensure that surface and ground waters are adequately protected from contamination by stored materials.

All delivery vehicles will be coordinated as required by a flagman on duty at the relevant access point.

All large pours will be carefully coordinated with the roads department at SDCC.

The main contractor will be required to schedule the delivery of materials daily. If necessary, the main contractor will be required to provide a secure material staging compound on the site.

The primary item of the plant will be towering cranes which are to be located within the curtilage of the site for the duration of the works.

Parking During Construction

A construction car park will be established at the commencement of the construction phase to serve as a parking area for vehicles of the workforce. This will be located within the construction site to avoid any impact on the surrounding development.

No parking of construction-related vehicles will be permitted on the adjoining road network (Abbot's Grove or Stocking Avenue) and adequate parking facilities will be made available within the Construction Compound for all site workers during construction.

For those who wish to cycle to and from the development, dedicated cycle parking area will be provided for the duration of the works within the site.

A Construction Stage Mobility Plan will be prepared by the contractor alongside the Construction Management Plan and agreed with South Dublin County Council prior to construction before starting on site.

13.5.2 Operational Stage

Programme

The subject development is planned to be developed in two distinct phases. Phase 1 is programmed to be constructed by mid-2028 and Phase 2 by 2030. Therefore, 2030 was chosen as the opening year.

The assessment years may lag pending approval of the planning application and may differ from the programme.

Assessment Year

The years that have been assessed as part of this Traffic and Transport Assessment are the following:

- Base Year : 2025
- Opening Year (With / Without Development) : 2030
- Opening Year + 5 Years Forecast (With / Without Development) : 2035
- Opening Year + 15 Years Forecast (With / Without Development) : 2045

These assessment years are in line with the 'Transport Assessment Guidelines (May 2014)'. Details of each assessment year is presented later in this report.

Trip Distribution

Trip Rates

To assess the potential impact of traffic generated by the Subject Development, trip rates from previously approved Traffic and Transport Assessment (TTA) Ref. SHD3-ABP-310578-21 have been used, on the basis that these trip rates have been accepted by the local authority and approved through the SHD planning process. These trip rates were generated using the Trip Rate Information Computer System (TRICS) database which is a standard practice for TTAs in Ireland.

These trip rates are set out in **Table 13.7** below.

	AM Peak Hour (08:00-09:00)	PM Peak Hour (17:00-18:00)

Land use category	Arrivals	Departures	Arrivals	Departures
Houses	0.133	0.381	0.352	0.180
Apartments	0.056	0.193	0.177	0.083

Table 13.7: AM & PM Peak Hours - TRICS Trip Rates extracted from SDCC Ref. SHD3-ABP-310578-21

In addition, the number of trips to/from the childcare facility has been taken from the TRICS database due to the planning application Reg. Ref. No. SHD3-ABP-310578-21 didn't include this information. The table below shows the results from the TRICS database.

Land use category	AM Peak Hour (08:00-09:00)		PM Peak Hour (17:00-18:00)	
	Arrivals	Departures	Arrivals	Departures
Creche	2.800	2.667	2.000	2.400

Table 13.8: AM & PM Peak Hours - TRICS Trip Rates extracted from SDCC Ref. SHD3-ABP-310578-21

Given the size of the proposed childcare facility, it is reasonable to conclude that it will primarily serve the residents of the subject development, as well as those from the neighbouring developments. Furthermore, given the proximity of the creche to public transport and considering the well-interconnected pedestrian and cycle infrastructure, it is anticipated that the majority of trips to and from the site will be made by foot, bicycle or public transport. Consequently, it is assumed that only 30% of trips to and from the creche will be made by private vehicles.

The AM and PM peak hour trip generation to/from the proposed development is shown in **Table 13.9** below.

Land use category	AM Peak Hour (08:00-09:00)		PM Peak Hour (17:00-18:00)	
	Arrivals	Departures	Arrivals	Departures
Houses (197 units)	27	76	70	36
Apartments (305 units)	18	59	54	26
Creche (474.8 sqm)	13	13	9	11
Total	**58**	**148**	**133**	**73**

Table 13.9: AM & PM Peak Hours

It has been estimated that the subject development will generate a total of 206 vehicular movements in the AM peak hour (58 inbound and 148 outbound) and a total of 206 vehicular movements in the PM peak hour (133 inbound and 73 outbound).

The distribution of trips for the subject is based on the approved Strategic Housing Development (Planning Application Reg. Ref. No. SHD3-ABP-310578-21). It has been estimated that 68% of the traffic flows will proceed westward along Stocking Avenue, while the remaining 32% will continue eastward.

This report considers both vehicular traffic access via Abbot's Grove and Stocking Wood Drive. The distribution of vehicular traffic has been calculated on the basis of the number of units on each side.

Accordingly, it has been assumed that 54% of drivers will utilise Abbot's Grove Road and 46% will use Stocking Wood Drive. In addition, in order to provide a worst-case scenario, it has been assumed that 100% of drivers will drive to/from the Creche via Abbot's Grove.

Traffic distribution flows to/from the subject site for both peak hours are illustrated in **Figure 13.18** below.

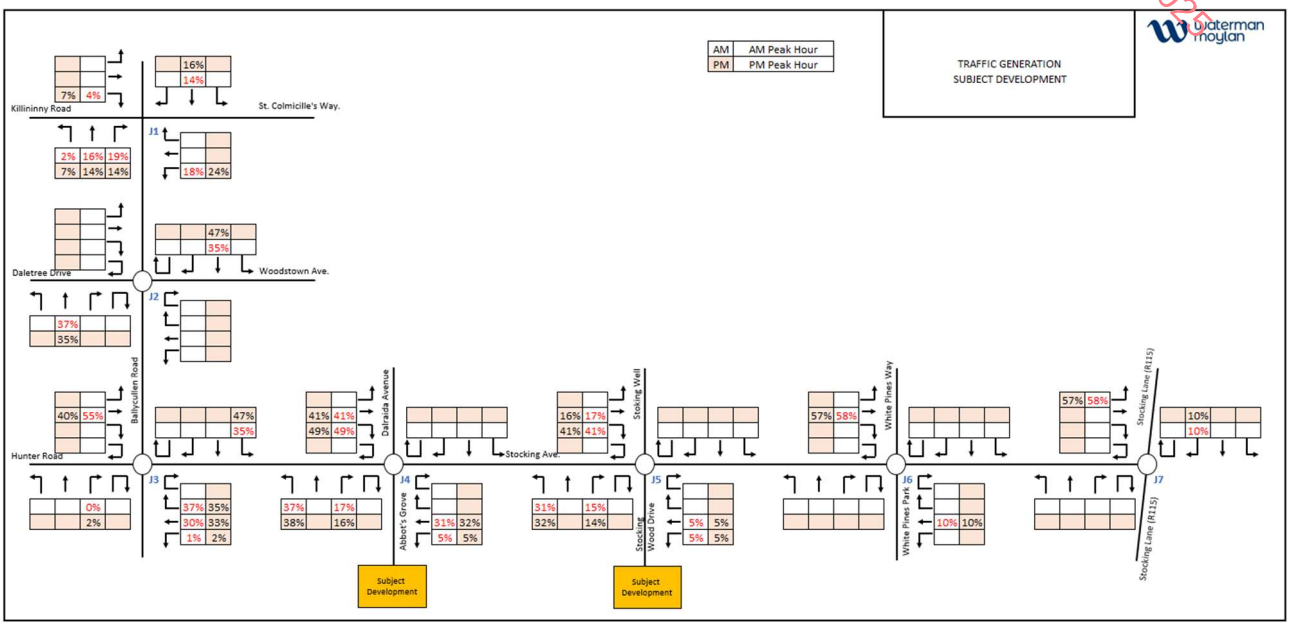

Figure 13.18: Trip Distribution – Subject Development

Trip assignment flows are provided in figure below

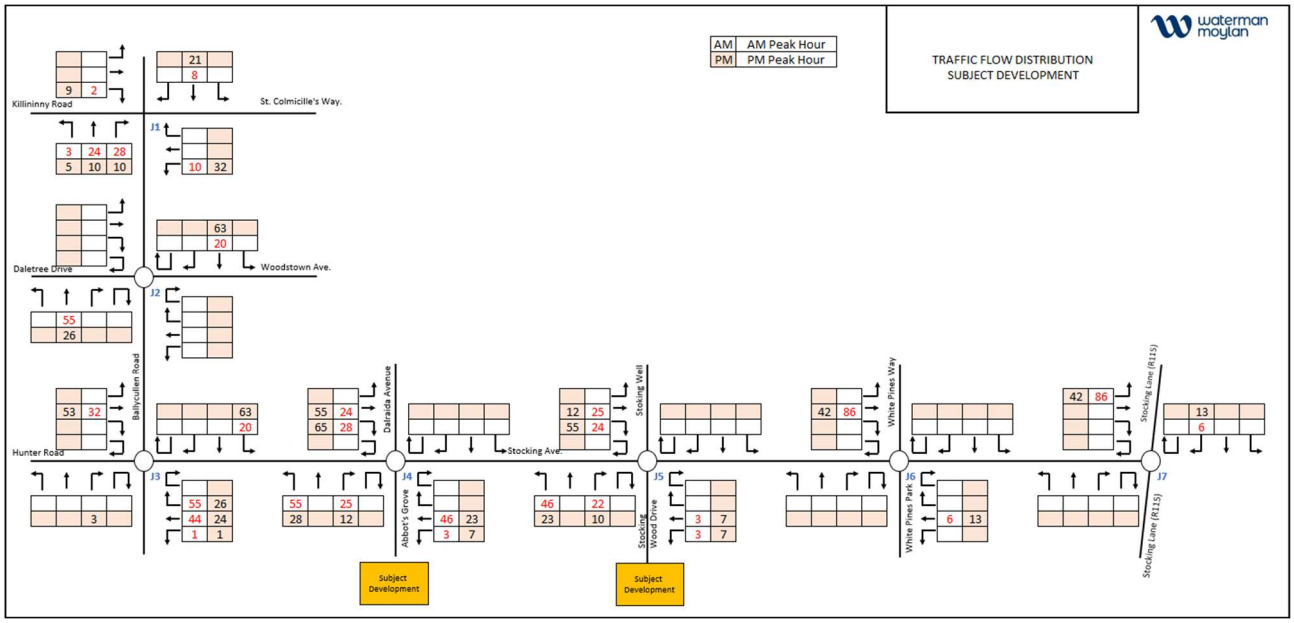

Figure 13.19: Trip Generation – Subject Development

Committed and Potential Future Developments

There are committed and future developments in the vicinity of the subject development which may have an impact on the capacity of the local road network influencing traffic flows and junction efficiency.

In evaluating the impact of traffic generated by the subject development, trip generation calculations from their approved planning permissions have been considered. **Figure 13.20** below shows the location of these committed developments.

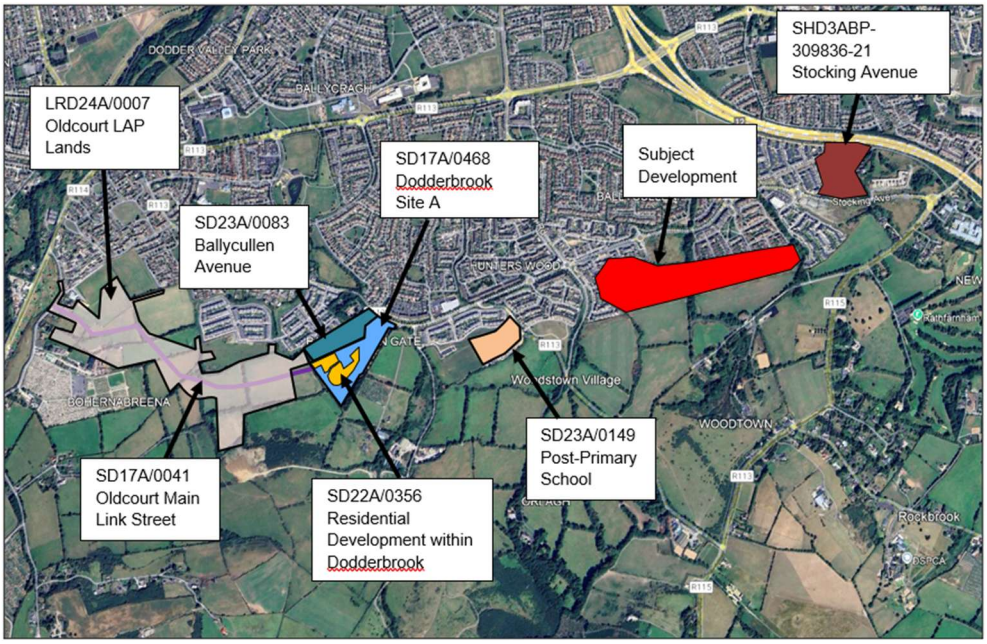

Figure 13.20: Location of committed developments

Post-Primary School Development - SD23A/0149.

Trip generation for the post-primary school development has been calculated in the approved Traffic and Transport Assessment (TTA) prepared as part of the Planning Application Reg. Ref. No. SD23A/0149.

The development will consist of a new educational campus, to be delivered on a phased basis. The development comprises 1 no. part 3-storey 1,000-No. pupils of the Post Primary School (Firhouse Educate Together Secondary School: Roll No. 68307J) and includes accommodation for children with special educational needs, a multi-purpose hall and all ancillary teacher and pupil facilities with a gross floor area of c. 11,021 sqm.

The calculated trips for the development are reproduced in **Table 13.10** below.

Land use category	AM Peak Hour (08:00-09:00)		PM Peak Hour (17:00-18:00)	
	Arrivals	Departures	Arrivals	Departures
Post-Primary School Development	184	154	154	184

Table 13.10: AM & PM Peak Hours Trip Generation – Post-Primary School Development

Based on the approved TTA during the morning period, car trips generated by schools are mostly drop off trips, made by parents dropping their children. The referenced report states that there will be 30 No. trips generated by the staff. As the staff will remain at the school, these trips only apply one way during the AM peak. The total trips generated on site in the AM will therefore be 184 trips (154 drop-off trips and 30 staff trips) travelling to the school and 154 trips from the school after drop-off.

As the report does not provide information on PM peak trips, an assumption is made that 154 trips will be made by parents picking up their children from school and an additional 30 No. trips made by staff leaving the school. Therefore, there will be 338 trips leaving the school during the evening pick up.

Trip Distribution: The TTA report in the approved Planning Application (Reg. Ref. No. SD23A/0149) outlines the trip distribution associated with the post primary school development. The school has vehicular access from the priority junction linking Hunters Road and Old Court Road. According to Figure 8 of that report, there are 83 trips assigned from this junction into the school and 69 trips assigned from the school into this junction as illustrated in **Figure 13.21** below.

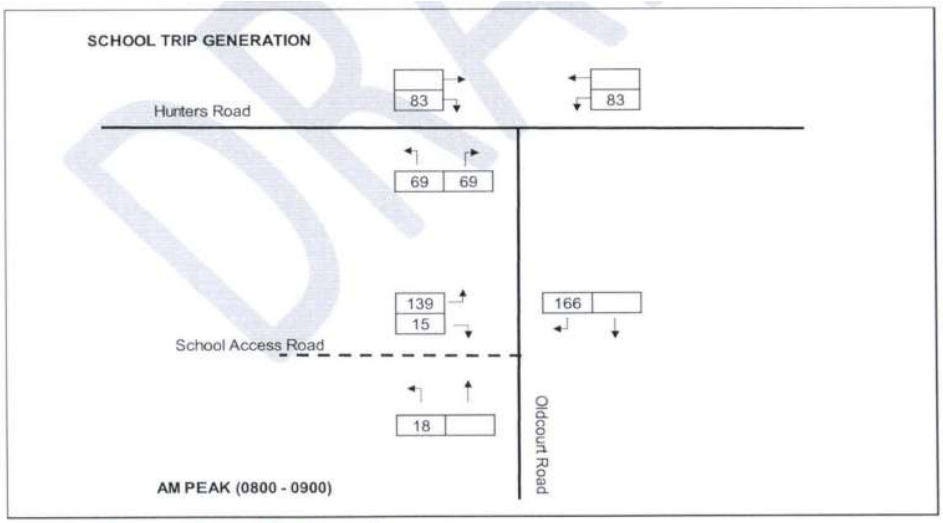

Figure 13.21: Trip Distribution extract from TTA in SDCC Ref. SD23A/0149

In accordance with the trip distribution indicated in figure above, a proportion of the traffic flows to / from the development will impact on the intersection of Hunters Rd. and Ballycullen Rd. For the purposes of this report, the remaining junctions have been distributed in a manner consistent with the proportions observed at each junction during the vehicle survey. In addition, given that this is a post-primary school, it is likely that any development in the surrounding area will generate a trip to this location.

Trip assignment to/from the post-primary school development is shown in **Figure 13.22** below.

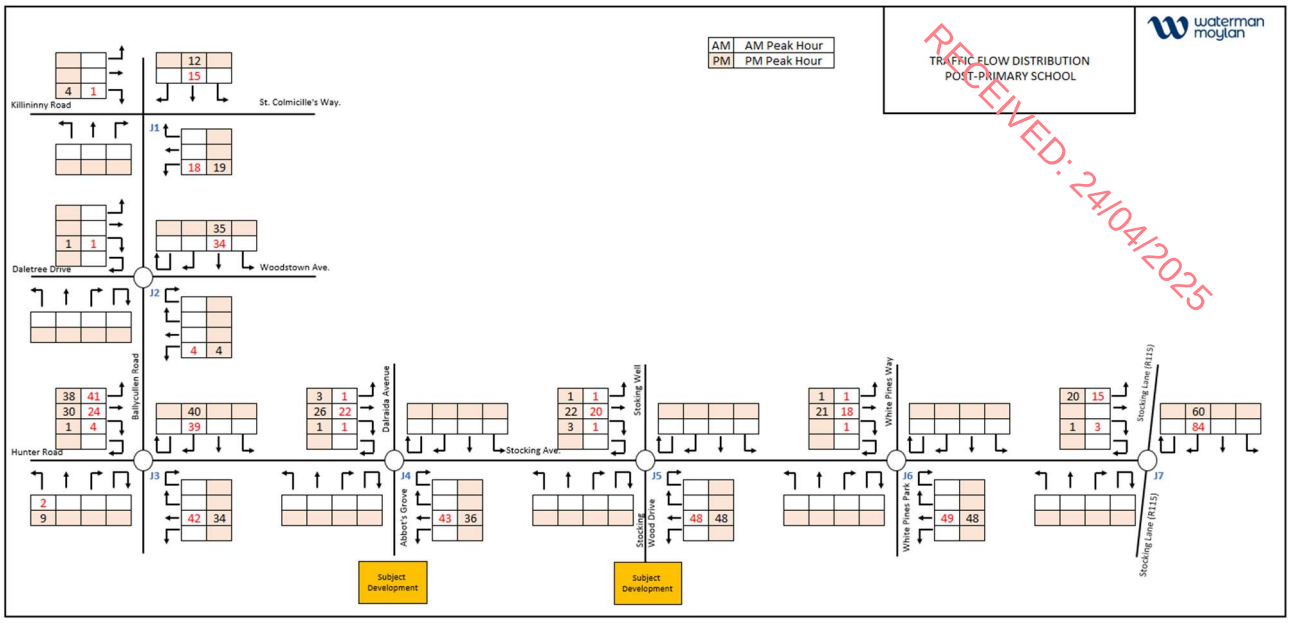

Figure 13.22: Trip Generation – Post-Primary School Development - SD23A/0149

Residential Development at Stocking Avenue - SHD3ABP-309836-21

Trip generation for the potential future development at Stocking Avenue has been calculated in the Traffic and Transport Assessment (TTA) prepared as part of the Planning Application Reg. Ref. No. SHD3ABP-309836-21 and subsequent Pl. Apl. Reg. Ref. No. ABP-320062.

The proposal is for a residential development of 241 no. units, 5 no. apartment blocks and 3 no. duplex blocks, located on lands to the northeast of the Stocking Avenue / White Pines Way / White Pines Crescent roundabout in Woodstown, Dublin, comprising 93 no. 1-bed units and 148 no. 2-bed units. The development also comprises 204 no. car parking spaces and 401 no. cycle parking spaces and will be accessed via Stocking Avenue located to the south of the subject development site. The development also includes a community centre of approx. 552 sqm.

The calculated trips for the development are reproduced in **Table 13.11** below

Land use category	AM Peak Hour (08:00-09:00)		PM Peak Hour (17:00-18:00)	
	Arrivals	Departures	Arrivals	Departures
Post-Primary School Development	184	154	154	184

Table 13.11: AM & PM Peak Hours Trip Generation – Residential Development at Stocking Avenue

Trip Distribution: The TTA report outlines the trip distribution associated with the residential development at Stocking Avenue. The residential development has two access routes: the southern site access and through White Pines Way to the west of the site, via and existing residential development. The referenced TTA assumes that this residential development has an impact on three junctions: Stocking Avenue / Stocking Well / Stocking Wood Hall; Stocking Avenue / White Pines Park

/ White Pines Way (Junction 6 in **Figure 13.4** above); Stocking Avenue / Stocking Lane (Junction 7 in **Figure 13.4** above). In the referenced report, trip distribution is carried out on the three junctions.

For the purpose of this TTA, it is assumed that trips beyond the Stocking Avenue / Stocking Well / Stocking Wood Hall junction turn right at the Ballycullen Road / Hunters Road / Stocking Avenue junction and head North towards the R113 road. From here, they can either turn right to join the M50 or turn left to join the N4 road.

The trip assignment for the residential development at Stocking Avenue is shown in **Figure 1.23** below.

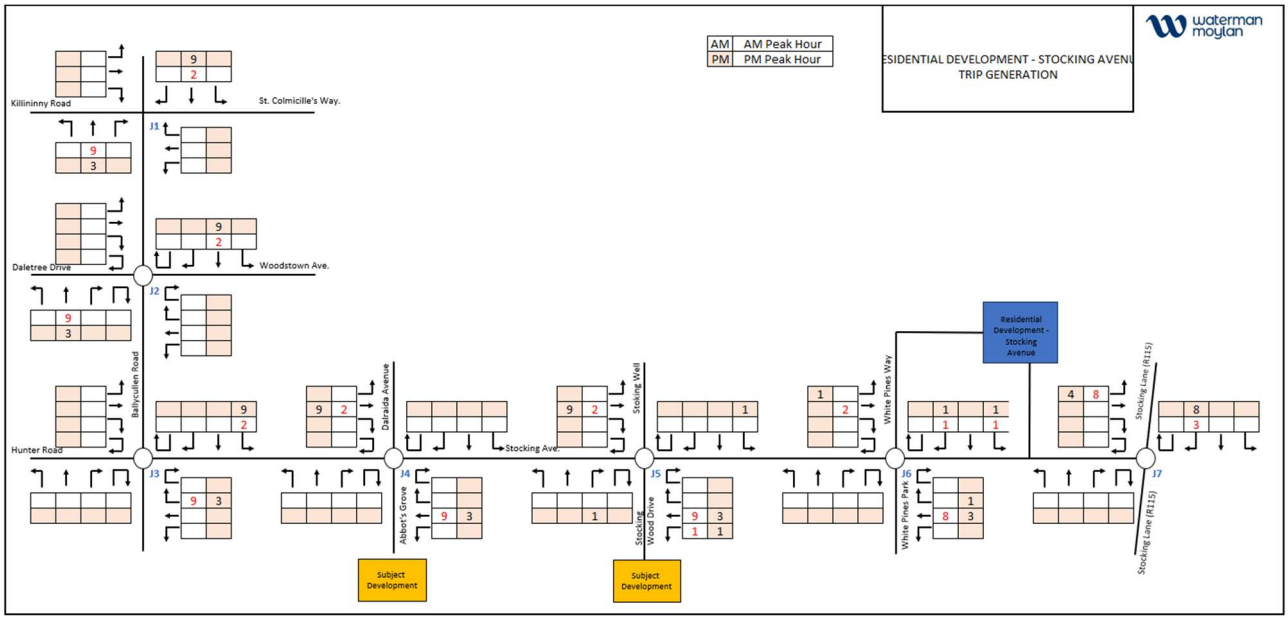

Figure 13.23: Trip Generation – Residential Development at Stocking Avenue - SHD3ABP-309836-21

Oldcourt Main Street Link - SD17A/0041

Trip generation for the Oldcourt Main Street Link has been calculated in the approved Traffic and Transport Assessment (TTA) prepared as part of the Planning Application Reg. Ref. No. SD17A/0041.

In the referenced TTA, DBFL Consulting Engineers considered that TRICS will provide a reasonable indication of traffic generation to/from the future residential developments around Oldcourt Main Street Link. As is indicated in the mentioned TTA, information from the Ballycullen-Oldcourt LAP (2014) was used to determinate the future residential developments. As such, the peak hour traffic generations to/from the site were calculated based on 750 housing units which will directly access the subject link road.

Oldcourt Main Street Link will serve residential development on the western lands of the Ballycullen-Oldcourt LAP. It will act as the primary access into and through the lands.

Oldcourt Main Street Link will connect with Oldcourt Road (R113) to the East and Bohernabreena Road to the West.

Table 13.12 below summarizes the predicted peak hour AM and PM traffic generated by the future residential developments around the link street scheme.

Land use category	AM Peak Hour (08:00-09:00)		PM Peak Hour (17:00-18:00)	
	Arrivals	Departures	Arrivals	Departures
Residential Development (750 units)	109	294	270	160

Table 14.12: AM & PM Peak Hours Trip Generation – Residential Development at Stocking Avenue

As previously mentioned, the 750 housing units outlined in the TTA made by DBFL include the future residential developments along the Oldcourt Main Street Link. These developments encompass the planning applications listed below, obtained from SDCC Planning Maps online. Additionally, the following planning applications reference the TTA made by DBFL in their traffic impact assessments.

- Planning Application Reg. Ref. No. SD17A/0468: Residential Development at Dodderbrook

  The planning application seeks permission for the construction of 97 no. new residential dwellings comprising of 20 no. apartments, 27 no. duplex units, 36 no. semi-detached houses and 14 no. detached houses. The development is to be constructed on two separate sites: site A with 64 no. units and site B with 33 no. units. Each site was submitted as two separate planning applications (SD17A/0468 & SD17A/0471). This TTA assessed the cumulative impact of both sites.

- Planning Application Reg. Ref. No.SD22A/0356: Residential Development within Dodderbrook

  The development is located on a site to the south of Oldcourt Road, which forms part of all overall permitted residential development at Dodderbrook (Planning Application Reg. Ref. No. SD17A/0468). The proposed development consists of changes of dwelling type and increase in unit number from 17 no. permitted houses to 24 no. proposed houses; The proposed dwellings are comprised of the following: 5 no. three-bed detached bungalows; 1 no. two-bed detached bungalow; 2 no. two-bed semi-detached bungalows; 1 no. two-storey 4 -bed detached house; 1 two-storey 3-bed detached house; 2 no. two-storey 2-bed semi-detached houses & 12 no. two-storey 3-bed semi-detached houses.

- Planning Application Reg. Ref. No. LRD24A/0007: Residential Development on Oldcourt LAP Lands

  The applicant intends to apply for permission for a Large-scale Residential Development on a site measuring c.20.3Ha, located in the townlands of Bohernabreena, Oldcourt, and Killininny, Dublin 24. The proposed development consists of 523 no. residential units comprised of 253 no. 2-, 3- & 4-bed detached, semi-detached and terraced houses, 208 no. 1-, 2- & 3-bed duplex units in 20 no. 2- & 3- storey blocks, and 62 no. 1-, 2- & 3-bed apartments in 4 no. 3- & 4-storey blocks, along with a 2-storey childcare facility of c. 457sq.m.

- Planning Application Reg. Ref. No. SD23A/0083: Residential Development at Ballycullen Avenue

  The proposed residential development consists of 71 no. dwellings comprised of 41 no. 3- and 4-bed 2- and 3-storey, detached, semi-detached and terraced houses and 30 no. 2-, 3- and 4-bed apartments & duplex units accommodated in 1 no. 2- and 3- storey block and 2 no. 3-storey blocks. The proposed development also includes for car parking, bicycle parking, bin storage, communal open spaces, public open space, pedestrian & cyclist connections, landscaping & boundary treatments, drainage connections, road infrastructure etc. and all associated site development works on a site of c. 2.56 hectares.

Trip Distribution: The TTA report in the approved Planning Application Reg. Ref. No. SD17A/0041 outlines the trip distribution associated with the Oldcourt Main Street Link.

The TTA made for this Planning Application sets up the traffic distribution for the 750 housing units plus the potential traffic redistribution for motorists bypassing the busy Killinniny Road/OLD Bawn Road/R114 Firhouse Road signalised junction shown in **Figure 13.24** below.

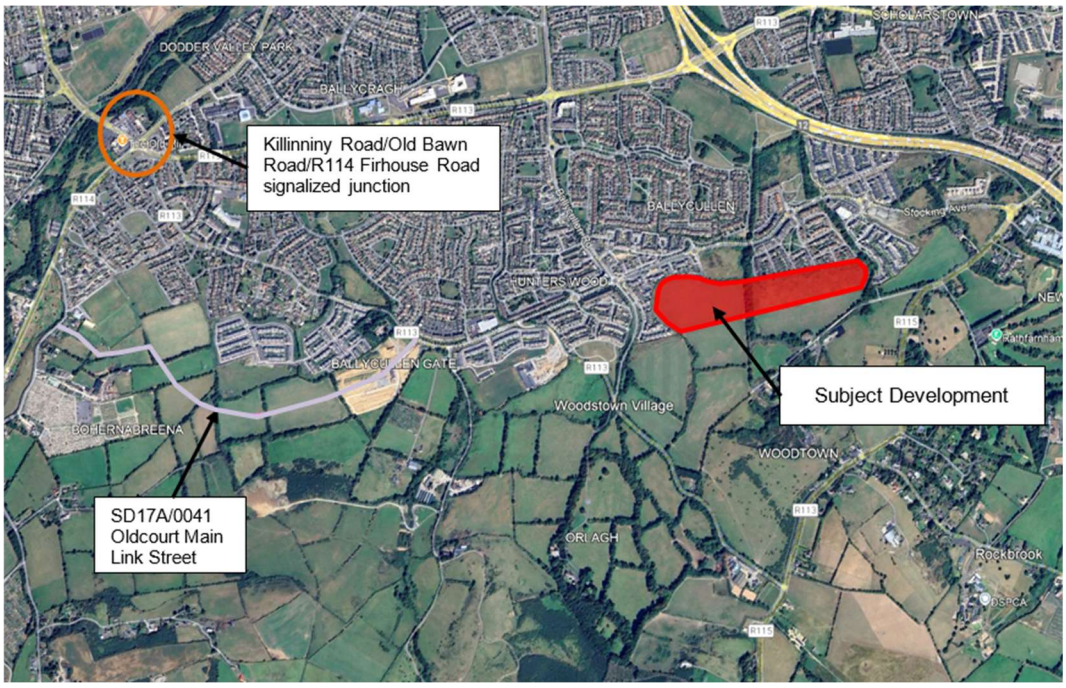

Figure 13.24: Location of Oldcourt Main Link Street

In accordance with the trip distribution indicated in the mentioned TTA, a proportion of the traffic flows to / from the development will impact on the intersection of Hunters Rd. and Ballycullen Rd. (Junction 3 on 14.23 below). For the purposes of this TTA, the traffic flows arriving at Junction 3 have been distributed using the proportions observed at this junction during the vehicle survey and was assumed that from here the traffic flows will continue to the N81 and M50 respectively.

The trip assignment for the overall Oldcourt Main Street Link is shown in **Figure 13.25** below.

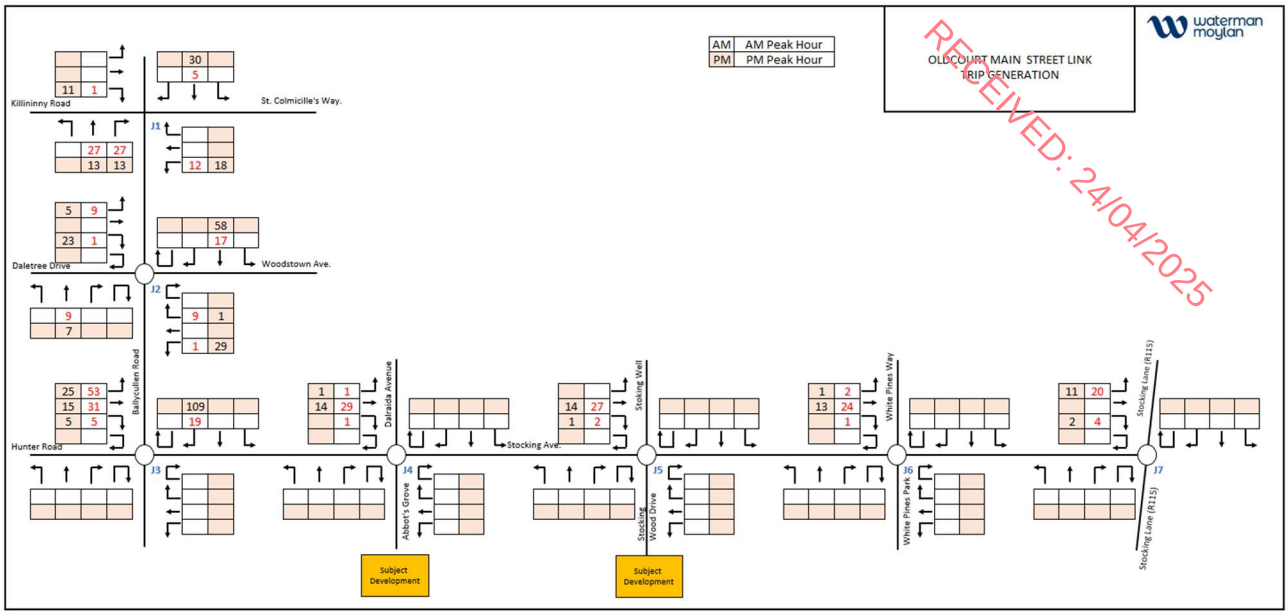

Figure 13.25: Trip Generation – Oldcourt Main Link Street

Summary of trips generated

A summary of the trips generated by all the above developments is provided in **Table 13.13** below.

Land use category	AM Peak Hour (08:00-09:00)		PM Peak Hour (17:00-18:00)	
	Arrivals	Departures	Arrivals	Departures
Subject Development	58	148	133	73
Post-Primary School Development	184	154	154	184
Residential Development at Stocking Avenue	12	45	45	20
Oldcourt Main Link Street	109	294	270	160
Total	**353**	**630**	**595**	**428**

Table 13.13: AM & PM Peak Hours Trip Generation – Summary

Baseline Traffic Flow

The existing traffic conditions have been presented in **Figure 13.5** above.

Traffic Growth Rates

It has been assumed within this TTA that the proposed development will be constructed, and the assumed opening year is 2030.

As per methodology adopted in the 'Transport Assessment Guidelines (May 2014)', which the subject TTA is based on, the surveyed junctions were also assessed for the future design years of 2035 (Opening year + 5 years) and 2045 (opening year +15 years).

The traffic growth rate used to factor up the 2025 base year traffic movements is in accordance with Table 6.1: Link-Based Growth Rates: Metropolitan Area Annual Growth Rates' within the TII Publications – Project Appraisal Guidelines for National Roads, Unit 5.3 – Travel Demand Projections (October 2021) and with the Appendix 4 of the Implementation Roadmap for the National Planning Framework (July 2018) which defines the Dublin Metropolitan Area.

Based on the Traffic Survey, the urban growth area has been identified as the central area, where Light Vehicles are the predominant vehicle type.

The factors considered in the current assessment are shown below:

- Base line: 2025
- Opening year: 2030 = 1.084 (growth factor from 2025 to 2030)
- Opening year + 5: 2035 = 1.112 (growth factor from 2025 to 2035)
- Opening year + 15: 2045 = 1.165 (growth factor from 2025 to 2045)

Junction Assessment

Assessed Junctions

The junctions assessed as part of this report are the following:

- Junction 1 (signalised four-arm crossroads): Killininny Road / Ballycullen Road / St. Colmcille's Way
- Junction 2 (four-arm roundabout): Ballycullen Road / Woodstown Avenue / Daletree Drive
- Junction 3 (four-arm roundabout): Ballycullen Road / Hunters Road / Stocking Avenue
- Junction 4 (four-arm roundabout): Stocking Avenue / Dalriada Avenue / Abbot's Grove Avenue
- Junction 5 (four-arm roundabout): Stocking Avenue / Stocking Well / Stocking Wood Hall
- Junction 6 (four-arm roundabout): Stocking Avenue / White Pines Park / White Pines Way
- Junction 7 (three-arm roundabout): Stocking Avenue / Stocking Lane

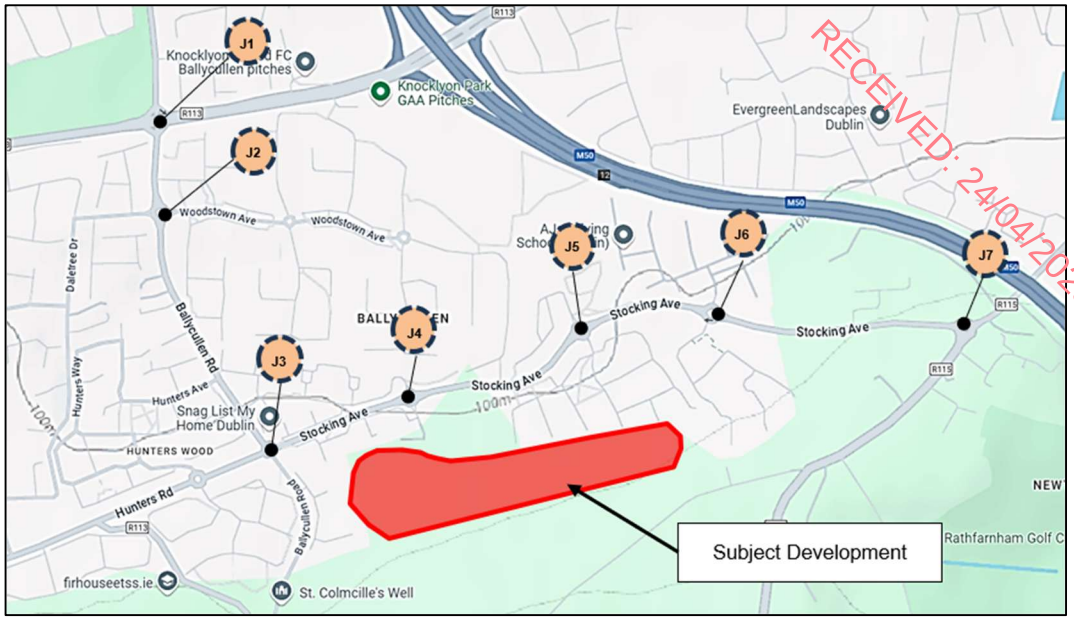

Figure 13.26: Existing Road Network (Source: Open Street Map)

Cumulative Impact

The TII document *Traffic and Transport Assessment Guidelines (2014)* provides thresholds in relation to the impact of a proposed development on the local road network.

According to *Traffic and Transport Assessment Guidelines (2014)*, the impact of new developments is considered to be significant if the level of traffic generated by them exceeds the thresholds of 10% for normal operating networks and 5% for congested networks. When such levels of impact are generated, a more detailed assessment should be carried out to determine the specific impact on the operational performance of the network.

Therefore, an assessment was conducted to determine the potential level of impact on the junctions in the local road network. This assessment was carried considering the traffic flows surveyed in 2025 (**Figure 13.4** above) and the traffic flows generated by the Subject Development (**Figure 13.20** above). The summary of this calculation is presented in the following table.

Junction	Existing Two-way Flows (2025)		Additional Two-way Flows		% Expected Increase	
	AM P.H.	PM P.H.	AM P.H.	PM P.H.	AM P.H.	PM P.H.
1	2617	2427	75	87	2.9%	3.6%
2	1560	1474	75	89	4.8%	6.0%
3	1206	1239	152	170	12.6%	13.7%
4	645	761	181	190	28.1%	25.0%
5	644	818	123	114	19.1%	13.9%
6	655	915	92	55	14.0%	6.0%
7	615	789	92	55	15.0%	7.0%

Table 13.14: Surveyed Two-way Traffic and Expected Traffic Increase

As can be seen from the table above, Junction 1 is expected to receive a two-way traffic increase less than 5%. Junction 2 is expected to receive a two-way traffic increase higher than 5% during the PM peak hour, while junctions 3, 4, 5, 6 and 7 will receive an increase greater than 10% during both peak hours.

Therefore junctions 2, 3, 4, 5, 6 and 7 were assessed and the results are shown below.

Modelling Background

There are various modelling software packages available to assess every type of junction. Waterman Moylan uses ARCADY, TRANSYT and PICADY to analyse roundabouts, signalised and priority junctions, respectively.

ARCADY is a software for modelling roundabouts. This programme utilises roundabouts geometry and traffic flows input by the user to determine Ratio of Flow to Capacity (RFC) and queue length for each link on the roundabout.

TRANSYT (Traffic Network Study Tool) software is a widely accepted software for modelling signalled controlled junctions. This programme utilises the phases input by the user and optimises their timings over a cycle time. The outputs of a TRANSYT assessment include a Degree of Saturation percentage (DOS%) figure and queue length for each link on the road network.

PICADY is a software for modelling priority-controlled junctions. This programme utilises junction's geometry and traffic flows input by the user to determine Ratio of Flow to Capacity (RFC) and queue length for each link on the junction.

The results of the model include the following:

- DOS% / RFC ratio represents the ratio of demand flow to capacity. The practical capacity threshold is typically set at 0.85. A value below 0.85 indicates that the junction is operating in an efficient and stable state. A value between 0.85 and 1 represents variable operation and can be considered to be operating adequately if queuing and delay are deemed to be within an acceptable range. However, a junction is typically considered to be operating satisfactorily when the DOS%/RFC of each link does not exceed 0.9. A value exceeding 1 indicates a congested condition.
- Max Queue Length: This represents the maximum queue length of vehicles waiting to enter the junction on each arm.
- Average Delay: This shows the average amount of traffic delay at the junction per vehicle over the peak hour period.
- PCU: Passenger Car Unit. 1 car / LGV equals 1 PCU, 1 Medium HGV equals 1.5 PCU, 1 Bus equals 2.0 PCU, 1 Large HGV equals 2.3 PCU. 1 PCU equals 5.75m.

Assessment Scenarios

The performance of the junctions has been analysed for the critical AM Peak Hour and PM Peak Hour for the following scenarios:

- **BASE YEAR 2025:** With 2025 baseline traffic flow (see **Figure 13.5** above)
- **2030 DO NOTHING**: Baseline flows factored up + traffic to/from the Post-Primary School Development, Residential Development at Ballycullen, Residential Development at Stocking Avenue and Oldcourt Main Link Street. Traffic flows are indicated in **Figure 13.27** below.
- **2035 DO NOTHING**: Baseline flows factored up + traffic to/from the Post-Primary School Development, Residential Development at Ballycullen, Residential Development at Stocking Avenue and Oldcourt Main Link Street. Traffic flows are indicated in **Figure 13.28** below.
- **2045 DO NOTHING**: Baseline flows factored up) + traffic to/from the Post-Primary School Development, Residential Development at Ballycullen, Residential Development at Stocking Avenue and Oldcourt Main Link Street. Traffic flows are indicated in **Figure 13.31** below.
- **2030 DO SOMETHING**: 2030 DO NOTHING + traffic to/from the Subject Development. Traffic flows are indicated in **Figure 13.30** below.
- **2035 DO SOMETHING**: 2035 DO NOTHING + traffic to/from the Subject Development. Traffic flows are indicated in **Figure 13.31** below.
- **2045 DO SOMETHING**: 2045 DO NOTHING + traffic to/from the Subject Development. Traffic flows are indicated in **Figure 13.32** below.

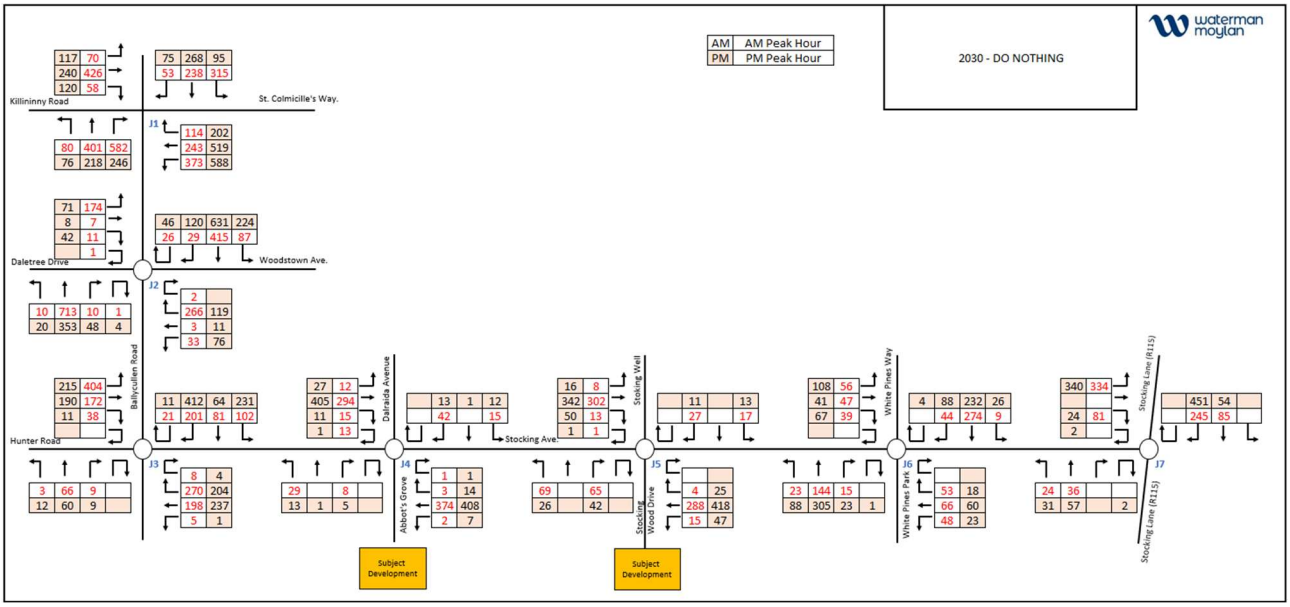

Figure 13.27: Traffic Flows - 2030 DO NOTHING -Opening Year, without development-

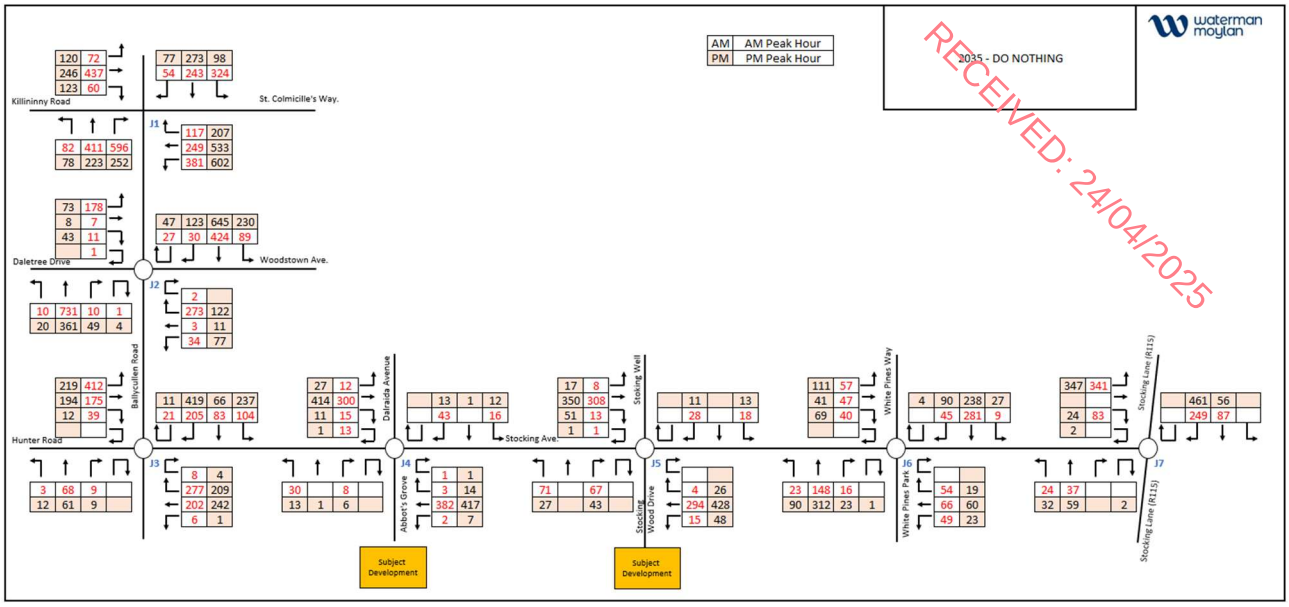

Figure 13.28: Traffic Flows - 2035 DO NOTHING -Opening Year + 5 Years, without development-

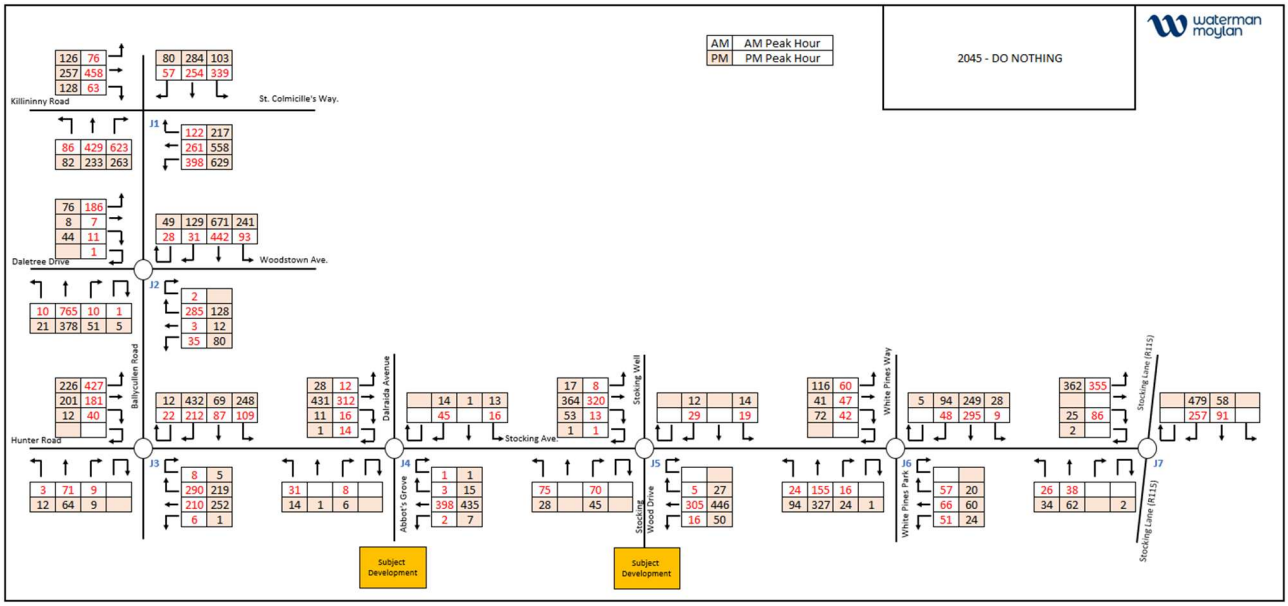

Figure 13.29: Traffic Flows - 2045 DO NOTHING -Opening Year + 15 Years, without development-

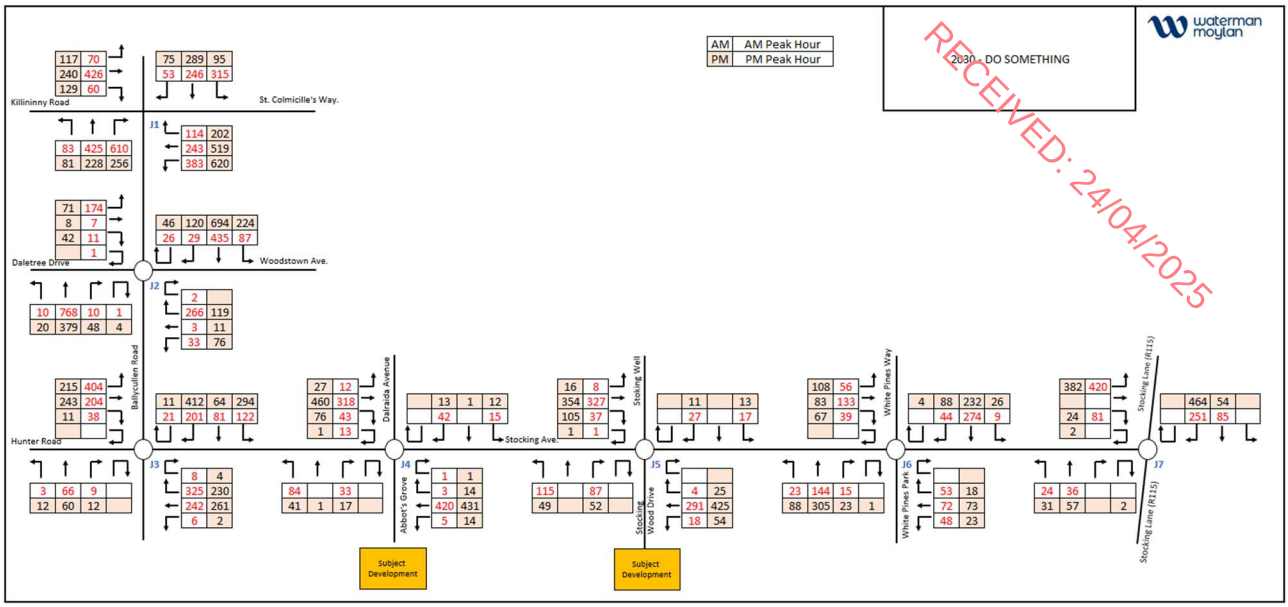

Figure 13.30: Traffic Flows - 2030 DO SOMETHING -Opening Year, with development-

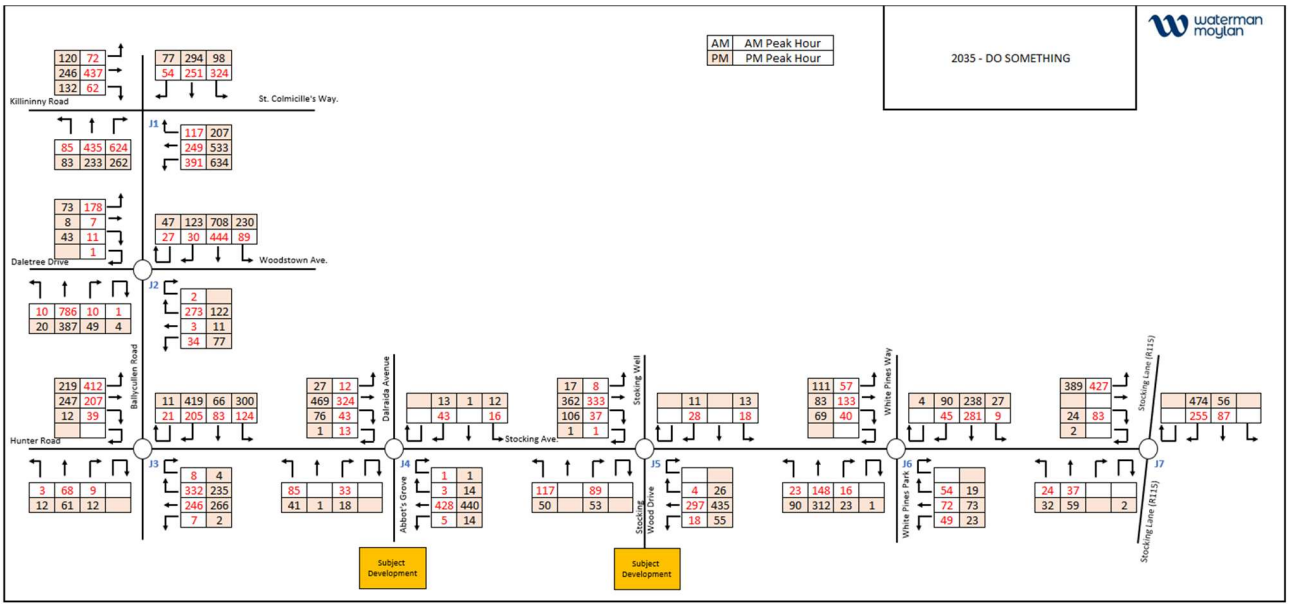

Figure 13.31: Traffic Flows - 2035 DO SOMETHING -Opening Year + 5 Years, with development-

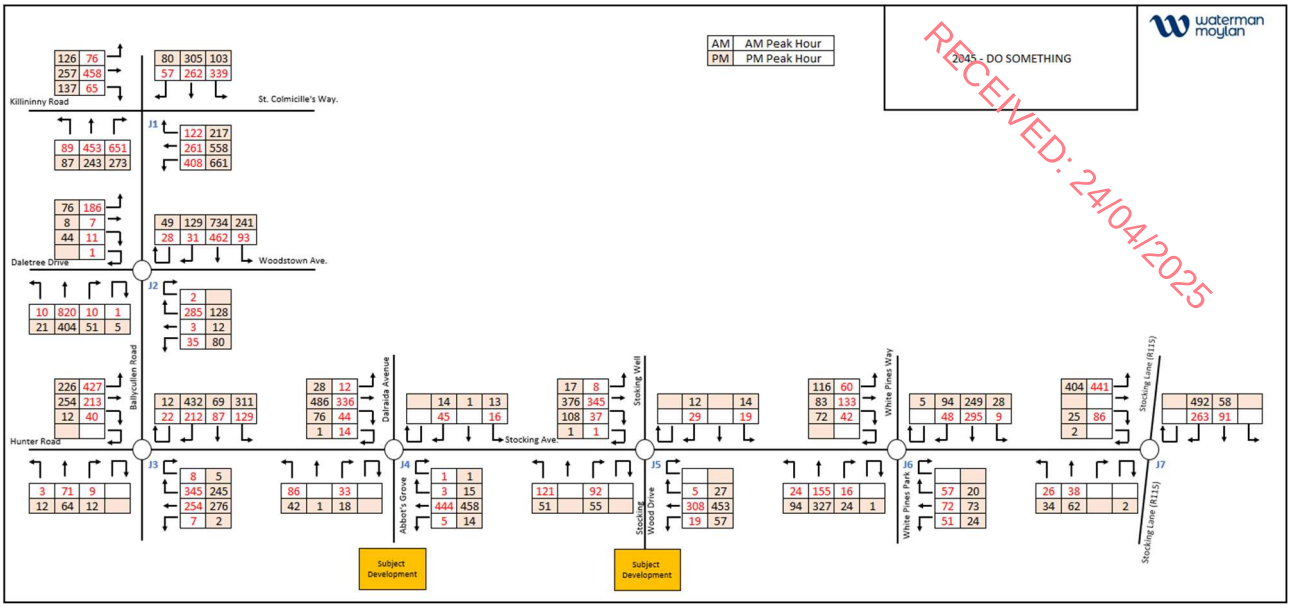

Figure 13.32: Traffic Flows - 2045 DO SOMETHING -Opening Year + 15 Years, with development-

Junction Modelling Results

The main results of the traffic assessment for each section are presented below.

Junction 2

Junction 2 is an existing four-arm roundabout is located to the northwest of the Proposed Development. It has been modelled based on its existing layout and the ARCADY analysis results are summarised below.

	AM			PM		
	Queue (PCU)	Delay (s)	RFC	Queue (PCU)	Delay (s)	RFC
Junction 2 - AM & PM - 2025 BASELINE YEAR						
1 - Woodstown Avenue (E)	0.3	4.21	0.25	0.2	4.43	0.18
2 - Ballycullen Road (S)	1.5	7.43	0.6	0.5	4.42	0.34
3 - Daletree Drive (W)	0.3	5.72	0.22	0.1	3.64	0.09
4 - Ballycullen Road (N)	0.5	4.08	0.35	1.9	7.91	0.66
Junction 2 - AM & PM - 2030 DO NOTHING						
1 - Woodstown Avenue (E)	0.4	4.74	0.3	0.3	5.57	0.26
2 - Ballycullen Road (S)	2.1	9.38	0.68	0.6	4.77	0.38
3 - Daletree Drive (W)	0.4	6.72	0.28	0.1	3.93	0.13
4 - Ballycullen Road (N)	0.7	4.61	0.43	4.1	14.22	0.81
Junction 2 - AM & PM - 2030 DO SOMETHING						
1 - Woodstown Avenue (E)	0.4	4.82	0.31	0.4	5.94	0.27
2 - Ballycullen Road (S)	2.6	11.1	0.73	0.7	4.95	0.4
3 - Daletree Drive (W)	0.4	7.2	0.3	0.1	4.01	0.13

4 - Ballycullen Road (N)	0.8	4.74	0.44	5.8	19.25	0.86
Junction 2 - AM & PM - 2035 DO NOTHING						
1 - Woodstown Avenue (E)	0.5	4.83	0.31	0.4	5.71	0.27
2 - Ballycullen Road (S)	2.3	10.02	0.7	0.6	4.85	0.39
3 - Daletree Drive (W)	0.4	6.99	0.29	0.2	3.98	0.13
4 - Ballycullen Road (N)	0.8	4.69	0.44	4.7	15.82	0.83
Junction 2 - AM & PM - 2035 DO SOMETHING						
1 - Woodstown Avenue (E)	0.5	4.92	0.32	0.4	6.09	0.28
2 - Ballycullen Road (S)	2.9	12.01	0.75	0.7	5.05	0.41
3 - Daletree Drive (W)	0.4	7.51	0.31	0.2	4.06	0.13
4 - Ballycullen Road (N)	0.8	4.82	0.45	6.8	22.16	0.88
Junction 2 - AM & PM - 2045 DO NOTHING						
1 - Woodstown Avenue (E)	0.5	5.01	0.33	0.4	6.01	0.29
2 - Ballycullen Road (S)	2.7	11.47	0.73	0.7	5.06	0.41
3 - Daletree Drive (W)	0.5	7.56	0.32	0.2	4.07	0.14
4 - Ballycullen Road (N)	0.8	4.84	0.45	6	19.9	0.87
Junction 2 - AM & PM - 2045 DO SOMETHING						
1 - Woodstown Avenue (E)	0.5	5.1	0.33	0.4	6.43	0.3
2 - Ballycullen Road (S)	3.5	14.14	0.78	0.8	5.27	0.43
3 - Daletree Drive (W)	0.5	8.16	0.34	0.2	4.15	0.14
4 - Ballycullen Road (N)	0.9	4.99	0.47	9.5	30.08	0.92

Table 13.15: Junction 2 – ARCADY Analysis Results

The analysis results as summarised above indicate that the existing Junction 2 would operate within capacity in 2030 DO SOMETHING during AM and PM peak hour and would continue to do so for in 2035 DO SOMETHING scenario.

For the year 2045, both scenarios without and with the subject site, it is likely that drivers would experience some congestion problems during the PM peak hour. The highest RFC is 0.92 with a queue of 9.5 PCU and a delay of 30.08 seconds. It is important to note that drivers will experience this situation over a short period of time.

Junction 3

Junction 3 is an existing four-arm roundabout is located to the northwest of the Proposed Development. It has been modelled based on its existing layout and the ARCADY analysis results are summarised below.

	AM			PM		
	Queue (PCU)	Delay (s)	RFC	Queue (PCU)	Delay (s)	RFC
Junction 3 - AM & PM - 2025 BASELINE YEAR						
1 - Stocking Avenue (E)	0.6	5.27	0.38	0.6	5.48	0.38
2 - Ballycullen Road (S)	0.1	4.2	0.08	0.1	4.49	0.08
3 - Hunters Road (W)	0.8	5.98	0.43	0.4	4.53	0.28
4 - Ballycullen Road (N)	0.4	4.29	0.28	0.9	5.91	0.48

Junction 3 - AM & PM - 2030 DO NOTHING						
1 - Stocking Avenue (E)	1	6.67	0.49	1	7.65	0.51
2 - Ballycullen Road (S)	0.1	4.77	0.1	0.1	5.64	0.12
3 - Hunters Road (W)	1.8	9.71	0.64	0.7	5.71	0.42
4 - Ballycullen Road (N)	0.6	5.15	0.37	2.2	10.21	0.69
Junction 3 - AM & PM - 2030 DO SOMETHING						
1 - Stocking Avenue (E)	1.4	8.3	0.59	1.3	8.61	0.56
2 - Ballycullen Road (S)	0.1	5.17	0.11	0.2	5.94	0.13
3 - Hunters Road (W)	2.3	11.74	0.7	0.9	6.46	0.48
4 - Ballycullen Road (N)	0.7	5.45	0.4	3.3	14.23	0.77
Junction 3 - AM & PM - 2035 DO NOTHING						
1 - Stocking Avenue (E)	1	6.9	0.5	1.1	7.94	0.52
2 - Ballycullen Road (S)	0.1	4.84	0.1	0.1	5.74	0.12
3 - Hunters Road (W)	1.9	10.23	0.66	0.8	5.83	0.43
4 - Ballycullen Road (N)	0.6	5.24	0.38	2.3	10.8	0.7
Junction 3 - AM & PM - 2035 DO SOMETHING						
1 - Stocking Avenue (E)	1.5	8.71	0.61	1.4	9.05	0.58
2 - Ballycullen Road (S)	0.1	5.27	0.11	0.2	6.07	0.14
3 - Hunters Road (W)	2.5	12.69	0.72	1	6.65	0.49
4 - Ballycullen Road (N)	0.7	5.57	0.41	3.6	15.57	0.79
Junction 3 - AM & PM - 2045 DO NOTHING						
1 - Stocking Avenue (E)	1.1	7.32	0.53	1.2	8.54	0.55
2 - Ballycullen Road (S)	0.1	4.98	0.11	0.2	5.97	0.13
3 - Hunters Road (W)	2.2	11.31	0.69	0.8	6.06	0.45
4 - Ballycullen Road (N)	0.7	5.41	0.4	2.7	12.01	0.73
Junction 3 - AM & PM - 2045 DO SOMETHING						
1 - Stocking Avenue (E)	1.7	9.4	0.63	1.5	9.82	0.61
2 - Ballycullen Road (S)	0.1	5.44	0.12	0.2	6.32	0.14
3 - Hunters Road (W)	2.9	14.39	0.75	1	6.95	0.51
4 - Ballycullen Road (N)	0.8	5.77	0.43	4.3	18.15	0.82

Table 13.16: Junction 3 – ARCADY Analysis Results.

The analysis results as summarised above indicate that the existing Junction 3 would operate within capacity in 2030 DO SOMETHING during AM and PM peak hour and would continue to do so for in 2045 DO SOMETHING scenario.

Junction 4

Junction 4 is an existing four-arm roundabout located to the north of the proposed site. It is the primary access of the subject development. It has been modelled based on its existing layout and the ARCADY analysis results are summarised below.

	AM			PM		
	Queue (PCU)	Delay (s)	RFC	Queue (PCU)	Delay (s)	RFC
Junction 4 - AM & PM - 2025 BASELINE YEAR						

1 - Stocking Avenue (E)	0.3	3.78	0.26	0.4	3.96	0.3
2 - Abbot's Grove Avenue (S)	0	3.54	0.04	0	3.53	0.02
3 - Stocking Avenue (W)	0.2	3.09	0.19	0.4	3.49	0.27
4 - Dalriada Avenue (N)	0.1	3.41	0.05	0	3.52	0.02
Junction 4 - AM & PM - 2030 DO NOTHING						
1 - Stocking Avenue (E)	0.5	4.17	0.32	0.6	4.34	0.36
2 - Abbot's Grove Avenue (S)	0	3.73	0.04	0	3.7	0.02
3 - Stocking Avenue (W)	0.3	3.34	0.25	0.5	3.84	0.34
4 - Dalriada Avenue (N)	0.1	3.59	0.06	0	3.71	0.03
Junction 4 - AM & PM - 2030 DO SOMETHING						
1 - Stocking Avenue (E)	0.6	4.54	0.37	0.7	4.76	0.4
2 - Abbot's Grove Avenue (S)	0.2	4.24	0.13	0.1	3.93	0.07
3 - Stocking Avenue (W)	0.4	3.58	0.29	0.8	4.5	0.43
4 - Dalriada Avenue (N)	0.1	3.77	0.06	0	4.06	0.03
Junction 4 - AM & PM - 2035 DO NOTHING						
1 - Stocking Avenue (E)	0.5	4.21	0.33	0.6	4.39	0.37
2 - Abbot's Grove Avenue (S)	0	3.76	0.04	0	3.72	0.02
3 - Stocking Avenue (W)	0.3	3.36	0.25	0.5	3.88	0.35
4 - Dalriada Avenue (N)	0.1	3.61	0.06	0	3.73	0.03
Junction 4 - AM & PM - 2035 DO SOMETHING						
1 - Stocking Avenue (E)	0.6	4.59	0.38	0.7	4.82	0.41
2 - Abbot's Grove Avenue (S)	0.2	4.28	0.13	0.1	3.96	0.07
3 - Stocking Avenue (W)	0.4	3.61	0.29	0.8	4.56	0.44
4 - Dalriada Avenue (N)	0.1	3.8	0.06	0	4.08	0.03
Junction 4 - AM & PM - 2045 DO NOTHING						
1 - Stocking Avenue (E)	0.5	4.31	0.34	0.6	4.51	0.38
2 - Abbot's Grove Avenue (S)	0	3.81	0.04	0	3.78	0.02
3 - Stocking Avenue (W)	0.4	3.41	0.26	0.6	3.97	0.36
4 - Dalriada Avenue (N)	0.1	3.65	0.06	0	3.78	0.03
Junction 4 - AM & PM - 2045 DO SOMETHING						
1 - Stocking Avenue (E)	0.6	4.71	0.39	0.7	4.97	0.42
2 - Abbot's Grove Avenue (S)	0.2	4.34	0.14	0.1	4.02	0.07
3 - Stocking Avenue (W)	0.4	3.66	0.3	0.8	4.68	0.46
4 - Dalriada Avenue (N)	0.1	3.84	0.07	0	4.14	0.03

Table 13.17: Junction 4 – ARCADY Analysis Results

The analysis results as summarised above indicate that the existing Junction 4 would operate within capacity in 2030 DO SOMETHING during AM peak hour and would continue to do so for in 2045 DO SOMETHING scenario.

Junction 5

Junction 5 is an existing four-arm roundabout located to the north of the proposed site. It has been modelled based on its existing layout and the ARCADY analysis results are summarised below.

	AM			PM		
	Queue (PCU)	Delay (s)	RFC	Queue (PCU)	Delay (s)	RFC
Junction 5 - AM & PM - 2025 BASELINE YEAR						
1 - Stocking Avenue (E)	0.2	3.45	0.19	0.5	4.27	0.34
2 - Stocking Wood Drive (S)	0.1	3.9	0.13	0.1	3.95	0.07
3 - Stocking Avenue (W)	0.3	3.79	0.22	0.4	4.17	0.29
4 - Stocking Well (N)	0	3.45	0.04	0	3.48	0.02
Junction 5 - AM & PM - 2030 DO NOTHING						
1 - Stocking Avenue (E)	0.4	3.77	0.26	0.7	4.85	0.42
2 - Stocking Wood Drive (S)	0.2	4.16	0.14	0.1	4.21	0.08
3 - Stocking Avenue (W)	0.4	4.16	0.29	0.6	4.65	0.36
4 - Stocking Well (N)	0	3.63	0.05	0	3.67	0.03
Junction 5 - AM & PM - 2030 DO SOMETHING						
1 - Stocking Avenue (E)	0.4	3.86	0.27	0.8	5.2	0.44
2 - Stocking Wood Drive (S)	0.3	4.56	0.22	0.1	4.42	0.12
3 - Stocking Avenue (W)	0.5	4.51	0.34	0.7	5.18	0.43
4 - Stocking Well (N)	0.1	3.8	0.05	0	3.86	0.03
Junction 5 - AM & PM - 2035 DO NOTHING						
1 - Stocking Avenue (E)	0.4	3.8	0.26	0.8	4.94	0.43
2 - Stocking Wood Drive (S)	0.2	4.2	0.15	0.1	4.26	0.08
3 - Stocking Avenue (W)	0.4	4.2	0.29	0.6	4.72	0.37
4 - Stocking Well (N)	0.1	3.65	0.05	0	3.69	0.03
Junction 5 - AM & PM - 2035 DO SOMETHING						
1 - Stocking Avenue (E)	0.4	3.89	0.27	0.8	5.3	0.45
2 - Stocking Wood Drive (S)	0.3	4.61	0.22	0.1	4.47	0.12
3 - Stocking Avenue (W)	0.5	4.55	0.34	0.8	5.27	0.44
4 - Stocking Well (N)	0.1	3.83	0.05	0	3.89	0.03
Junction 5 - AM & PM - 2045 DO NOTHING						
1 - Stocking Avenue (E)	0.4	3.86	0.28	0.8	5.11	0.45
2 - Stocking Wood Drive (S)	0.2	4.28	0.16	0.1	4.34	0.09
3 - Stocking Avenue (W)	0.4	4.27	0.31	0.6	4.85	0.39
4 - Stocking Well (N)	0.1	3.7	0.05	0	3.75	0.03
Junction 5 - AM & PM - 2045 DO SOMETHING						
1 - Stocking Avenue (E)	0.4	3.95	0.28	0.9	5.5	0.47
2 - Stocking Wood Drive (S)	0.3	4.71	0.23	0.1	4.56	0.13
3 - Stocking Avenue (W)	0.6	4.65	0.35	0.8	5.43	0.45

4 - Stocking Well (N)	0.1	3.87	0.05	0	3.94	0.03

Table 13.18: Junction 5 – ARCADY Analysis Results

The analysis results as summarised above indicate that the existing Junction 5 would operate within capacity in 2030 DO SOMETHING during AM peak hour and would continue to do so for in 2045 DO SOMETHING scenario.

Junction 6

Junction 6 is an existing four-arm roundabout located to the north of the subject development. It has been modelled based on its existing layout and the ARCADY analysis results are summarised below.

	AM			PM		
	Queue (PCU)	Delay (s)	RFC	Queue (PCU)	Delay (s)	RFC
Junction 6 - AM & PM - 2025 BASELINE YEAR						
1 - Stocking Avenue (E)	0.1	3.6	0.1	0	3.45	0.04
2 - White Pines Park (S)	0.2	3.74	0.16	0.6	4.97	0.37
3 - Stocking Avenue (W)	0.1	3.45	0.08	0.2	4.08	0.17
4 - White Pines Way (N)	0.4	3.92	0.26	0.4	4.11	0.28
Junction 6 - AM & PM - 2030 DO NOTHING						
1 - Stocking Avenue (E)	0.2	3.96	0.17	0.1	3.74	0.1
2 - White Pines Park (S)	0.2	3.97	0.18	0.7	5.53	0.41
3 - Stocking Avenue (W)	0.2	3.7	0.14	0.3	4.45	0.23
4 - White Pines Way (N)	0.4	4.2	0.29	0.5	4.4	0.32
Junction 6 - AM & PM - 2030 DO SOMETHING						
1 - Stocking Avenue (E)	0.2	3.99	0.17	0.1	3.8	0.12
2 - White Pines Park (S)	0.2	3.98	0.18	0.7	5.6	0.41
3 - Stocking Avenue (W)	0.3	4.09	0.22	0.4	4.72	0.27
4 - White Pines Way (N)	0.4	4.48	0.31	0.5	4.54	0.32
Junction 6 - AM & PM - 2035 DO NOTHING						
1 - Stocking Avenue (E)	0.2	4	0.17	0.1	3.77	0.1
2 - White Pines Park (S)	0.2	3.99	0.18	0.7	5.63	0.42
3 - Stocking Avenue (W)	0.2	3.72	0.14	0.3	4.51	0.23
4 - White Pines Way (N)	0.4	4.25	0.3	0.5	4.46	0.32
Junction 6 - AM & PM - 2035 DO SOMETHING						
1 - Stocking Avenue (E)	0.2	4.03	0.18	0.1	3.83	0.12
2 - White Pines Park (S)	0.2	4.01	0.19	0.7	5.7	0.42
3 - Stocking Avenue (W)	0.3	4.12	0.22	0.4	4.78	0.28
4 - White Pines Way (N)	0.5	4.53	0.32	0.5	4.61	0.33
Junction 6 - AM & PM - 2045 DO NOTHING						
1 - Stocking Avenue (E)	0.2	4.08	0.18	0.1	3.83	0.11
2 - White Pines Park (S)	0.2	4.05	0.19	0.8	5.86	0.44
3 - Stocking Avenue (W)	0.2	3.77	0.15	0.3	4.62	0.24
4 - White Pines Way (N)	0.5	4.35	0.32	0.5	4.57	0.34
Junction 6 - AM & PM - 2045 DO SOMETHING						
1 - Stocking Avenue (E)	0.2	4.11	0.18	0.1	3.89	0.12
2 - White Pines Park (S)	0.2	4.07	0.19	0.8	5.94	0.44

3 - Stocking Avenue (W)	0.3	4.18	0.23	0.4	4.91	0.29
4 - White Pines Way (N)	0.5	4.65	0.33	0.5	4.73	0.35

Table 13.19: Junction 6 – ARCADY Analysis Results

The analysis results as summarised above indicate that the existing Junction 6 would operate within capacity in 2030 DO SOMETHING during AM peak hour and would continue to do so for in 2045 DO SOMETHING scenario.

Junction 7

Junction 7 is an existing three-arm roundabout located to the north of the subject development. It has been modelled based on its existing layout and the ARCADY analysis results are summarised below.

	AM					PM
	Queue (PCU)	Delay (s)	RFC	Queue (PCU)	Delay (s)	RFC
Junction 7 - AM_PM - 2025 BASELINE YEAR						
1 - Stocking Lane (R115) (E)	0.3	4.02	0.21	0.6	4.92	0.38
2 - Stocking Avenue (N)	0.1	4.23	0.07	0.1	5.06	0.11
3 - Stocking Lane (R115) (W)	0.5	4.46	0.31	0.4	4.32	0.28
Junction 7 - AM_PM - 2030 DO NOTHING						
1 - Stocking Lane (R115) (E)	0.5	4.66	0.32	0.9	5.83	0.47
2 - Stocking Avenue (N)	0.1	4.54	0.08	0.1	5.51	0.13
3 - Stocking Lane (R115) (W)	0.6	5.01	0.39	0.5	4.73	0.34
Junction 7 - AM_PM - 2030 DO SOMETHING						
1 - Stocking Lane (R115) (E)	0.5	4.7	0.32	0.9	5.97	0.48
2 - Stocking Avenue (N)	0.1	4.56	0.08	0.1	5.57	0.13
3 - Stocking Lane (R115) (W)	0.9	5.76	0.47	0.6	5.03	0.38
Junction 7 - AM_PM - 2035 DO NOTHING						
1 - Stocking Lane (R115) (E)	0.5	4.71	0.32	0.9	5.96	0.48
2 - Stocking Avenue (N)	0.1	4.56	0.08	0.2	5.59	0.13
3 - Stocking Lane (R115) (W)	0.7	5.08	0.4	0.5	4.79	0.35
Junction 7 - AM_PM - 2035 DO SOMETHING						
1 - Stocking Lane (R115) (E)	0.5	4.75	0.33	1	6.1	0.49
2 - Stocking Avenue (N)	0.1	4.57	0.08	0.2	5.65	0.13
3 - Stocking Lane (R115) (W)	0.9	5.86	0.48	0.6	5.1	0.39
Junction 7 - AM_PM - 2045 DO NOTHING						
1 - Stocking Lane (R115) (E)	0.5	4.8	0.34	1	6.19	0.5
2 - Stocking Avenue (N)	0.1	4.6	0.08	0.2	5.72	0.14
3 - Stocking Lane (R115) (W)	0.7	5.23	0.41	0.6	4.91	0.37
Junction 7 - AM_PM - 2045 DO SOMETHING						
1 - Stocking Lane (R115) (E)	0.5	4.84	0.34	1.1	6.34	0.51
2 - Stocking Avenue (N)	0.1	4.62	0.08	0.2	5.79	0.14
3 - Stocking Lane (R115) (W)	1	6.05	0.49	0.7	5.24	0.41

Table 13.20: Junction 7 – ARCADY Analysis Results

The analysis results as summarised above indicate that the existing Junction 7 would operate within capacity in 2030 DO SOMETHING during AM peak hour and would continue to do so for in 2045 DO SOMETHING scenario.

13.5.3 Do-Nothing Impact

Should the proposed development not take place, the access roads and infrastructure will remain in their current state and there will be no change. Background traffic would be expected to grow over time. Given the location and zoning of the subject site, and the objective of the Kellystown Development Plan, it is reasonable to assume that a similar development, with a potentially more intensive requirement for vehicular trips, would be established on this site at some stage in the future.

13.6 Mitigation Measures (Ameliorative, Remedial or Reductive Measures)

13.6.1 Construction Stage

A detailed Construction Traffic Management Plan will be prepared and agreed with South Dublin Council before commencing works on site, which must describe the following (but not limited to):

- Dedicated construction transport routes, which will be identified and agreed upon with South Dublin County Council before the commencement of construction activities on site.
- A dedicated "construction site"' access/egress system to be implemented during the construction phases.
- Manage the entry and exit of heavy vehicles to and from the site, with a detailed description of operations during this time, including the assignment of staff to assist pedestrians and traffic flow during heavy vehicle movements on the roads.
- Define schedules for the entry and exit of materials and machinery to limit the generation of noise on the network to specific time slots.
- Conduct regular inspections of public roads affected by development activities to ensure that any disruption to public mobility is minimised and managed effectively.
- Due to the proximity of the proposed site along well-serviced bus routes and being well served by cycle lanes, it is intended to limit construction staff parking and to encourage the use of public transport. A limited number of car parking spaces may be provided for senior construction managers within the development site. Suitable locations in the surrounding area may be identified where staff can park and link to public transportation.
- For those wishing to cycle to and from the site, dedicated cycle parking will be provided for the duration of the works within the site. Shower facilities and lockers will also be provided.
- A shuttle service to/from the parking will be provided if required.

The coordinator responsible for the implementation of a Construction Mobility Management Plan will carry out the following (but not limited to):

- Encourage staff to avoid using of their cars and use alternative modes of transport in order to reduce the number of cars on the road and the need of car parking spaces.
- Provide an extensive information service for public transport options and routes at a public location(s) within the development for construction workers.
- Update the public transport information adjacent to the development on an ongoing basis.
- Advise company staff of tax incentives for public transport and bicycles. For those wishing to cycle to and from the site, dedicated cycle parking will be provided for the duration of the works within the site. Shower facilities and lockers will also be provided.

The following must be noted and implemented during the construction stage:

Measures to Minimise Nuisance

The measures, which are proposed to be operational at this site will include:

- Use of a properly designed access and egress to minimise impact on both external traffic and local amenity.
- Check on each arriving and departing vehicle at the site entrance from the public street.
- Use of banksman, where necessary, to control exit of construction vehicles onto public road.
- Issue of instructions and maps clearly setting out the construction traffic route to the site to each sub-Contractor to ensure that all contractors are clearly briefed on the route to/from the site.
- Ongoing assessment of the route for construction traffic to and from the site and prompt action when issues are identified.
- Working hours of 07h00-17h00 Monday – Friday and 08h00-13h00 Saturday or as otherwise may be agreed with South Dublin County Council.

Site Control Measures

The designated and operational on-site control measures, which will be established and maintained at this site, will include:

- Designated hard routes and appropriate signage will be provided throughout the site to ensure the safety of all road users and construction workers.
- Each departing vehicle to be checked by banksman.

- All heavy vehicles spilling solid material on the road must cover the material to prevent dust being thrown onto the road.
- All vehicles should wash their wheels, as necessary, at egress point.
- Hoarding will be set up around the perimeter to prevent pedestrian access.
- A material storage zone will also be provided in the Construction Compound area. This storage zone will include material recycling areas and facilities.
- Facility to clean local roads if mud or spillage occurs.
- The contractor will be obliged to ensure that any sub-contractors engaged on the site are made fully aware of the required mitigation measures and that they are properly implemented as part of any works that they undertake.

Control of Noise

Site deliveries will be confined to working hours and an allocated offloading location will be utilized for all deliveries. Measures for the control and monitoring of noise and vibration during construction, including measures to mitigate noise are indicated below:

- Ensure all vehicle movement (on site) occur within normal working hours. (Other than where extension of work requiring such movements has been granted in cases of required road closures or for health and safety reasons).
- Plan deliveries and vehicle movements so that vehicles are not waiting or queuing on the public highway, if unavoidable engines should be turned off.
- Plan the site layout to ensure that reversing is kept to a minimum.
- Where reversing is required use broadband reverse sirens or where it is safe to do so disengage all sirens and use banksmen.
- Rubber/neoprene or similar non-metal lining material matting to line the inside of material transportation vehicles to avoid first drop high noise levels.
- Wheel washing of vehicles prior to exiting the site shall take place to ensure that adjoining roads are kept clean of dirt and debris. Regular washing of adjoining streets should also take place as required by road sweepers.

13.6.2 Operational Stage

A Mobility Management Plan will be implemented and developed on an ongoing basis with the triple objectives of promoting sustainability, enhancing public transport, and reducing dependency on the use of the private car.

This Mobility Management Plan focuses primarily on intangible measures such as promotion, marketing and events. A significant proportion of the measures included in this section are low cost but highly visible and contribute to creating a culture of sustainability within the organisation.

Consequently, the proposed Mobility Management Plan comprises a series of measures designed to encourage more sustainable travel habits among residents and visitors. In addition, the plan is designed to address the typical day-to-day operational requirements at the site. The implementation and management of the plan will be overseen by a Coordinator.

The developer will appoint a Mobility Management Plan coordinator or management company to oversee the development of the plan. The latter will appoint a senior member of staff as Mobility Management Plan Coordinator.

The Mobility Management Plan Coordinator will represent the philosophy of the plan and act as a coordinator for the proper functioning of the plan. The coordinator shall be appointed within two months of the site being occupied. The Mobility Management Plan Coordinator's responsibilities shall include:

- Implementing and maintaining the plan.
- Monitoring the progress of the plan.
- Liaise with internal stakeholders, and external public transport operators, planning and government authorities.
- Producing information reports for the developer, employees, visitors, clients and government authorities.
- Ongoing evaluation of the Plan's objectives.

The Mobility Management Plan Coordinator will be responsible for the creation and maintenance of up-to-date travel information boards for residents/students and/or Mobility Plan’s mobile app and/or a website. The travel information boards will be installed in strategic location, where residents will have access to a variety of resources, including travel information, timetables, internet access, and notice boards.

In addition to the above responsibilities, the Mobility Management Plan Coordinator must also undertake the following activities:

- Local Policies Review with the aim of understanding their impact on the daily resident travel patterns
- Site Audit considering the following guidance:
    - Public Transport service: considering the location of the bus stops and the train stations, the route which is served and the frequency of services passing through the bus stop or train station.

- Pedestrian and cycle accessibility: this should include an assessment of the local cycling and walking environment from the subject development to the various public transport stops. This assessment must consider the current conditions and the need, where necessary, identify areas for improvement.
- Road condition: considering the traffic condition and if there is congestion near the site.
- Car parking spaces near to the site: A survey of the car parking facilities in the vicinity of the site will provide an indication of the potential parking areas, if employees and visitors do not have sufficient space within the site's car park. The survey must consider the volume and usage of the parking spaces, their location, quality and quantity, and the relationship between these factors and the demand for parking spaces. It must also consider any management issues that may arise.
- Facilities' location: it is important for employees and visitors to be aware of the location of the primary shops, as well as the relative distance to the site. The distance should be provided in metres and in travel time, either walking or cycling.

- Residents Travel Survey: This can be achieved by means of self-completion questionnaires, which will help to identify travel requirements and set targets and needs. The information requested in the questionnaire should include:
  - Basic Personal information (age, household size, car ownership, occupation)
  - Primary mode of transport.
  - Current travel patterns including the time taken to/from the subject site to/from their destination.
  - It is also necessary to find out the views of workers and visitors on alternative modes of transport to the car, in order to identify the factors that would encourage them to switch to other modes. Furthermore, it is important to encourage the use of car-sharing schemes.
- Promoting the Mobility Management Plan the Mobility Management Coordinator to provide all new resident with a Mobility Pack (or Travel Pack). The mobility pack should include:
  - The Mobility Management Plan.
  - Public transport information, including bus and rail routes and frequencies.
  - The benefits of the Mobility Management Plan for residents and visitors.
  - Details of tax incentives available, such as the Bike to Work Scheme, the Tax Saver Scheme for public transport tickets, etc.

- A travel survey form.
- Details of pedestrian and cycle facilities.

Action Plan

Walking

It is well documented that there are numerous benefits to walking to and from their destination on a daily basis. The Subject Development is situated within an area characterised by a wider range of land uses that are accessible by walking. The surrounding area is characterised by a variety of land uses, food discount store, a primary school, and a secondary school.

It is proposed that residents be encouraged to reduce the use of the car for short journeys and indeed choose to walk to the nearest bus stops, grocery store, and to commute to their place of work, school, or college. For that, the connection of footpaths within the Subject Development with the existing will allow people to establish connections beyond the development itself.

The Mobility Management Coordinator will provide maps of the local area, which will show walking routes, local facilities, and distances with health information. This information will be displayed on the information board and/or the Mobility Plan mobile app and/or via a specific website; in order to assist residents and visitors understand the importance of choosing this mode of transportation over the automobile.

This communication tool will be developed to encourage residents to meet and walk together, fostering a sense of community between them. Furthermore, children enrolled in local schools will be encouraged to walk to school on a daily basis, thus reducing the number of private vehicles on the road.

Cycling and cycle parking

Cycling is an effective mode of transport, promoting independence and sustainable travel and allowing for shorter distances to various facilities.

The Subject Development is located in close proximity to a variety of amenities and employment areas, grocery stores, health care centres and shopping centres.

In order to facilitate the storage and maintenance of bicycles in the area, the subject development included cycle parking in line with the local guidelines and standards. The house units, those are provided with access to their rear garden with the possibility of storage the cycle and it is not considered necessary to provide any external bicycle store.

The Mobility Management Coordinator will provide maps of the local area, indicating cycle routes, local facilities, and distances with health information. This information will be displayed on the information board and/or the Mobility Plan mobile app and/or via a specific website; in order to assist

residents and visitors in order to assist residents and visitors understand the importance of choosing this mode of transportation over the automobile.

Furthermore, the Mobility Management Coordinator will inform residents of future development of cycle infrastructure.

If there is a genuine interest in bicycle maintenance, public courses on the use, maintenance, repair, and improvement of bicycles may be proposed.

Additionally, residents are encouraged to avail themselves of the government's Cycle to Work scheme, which may be available through their employers. Moreover, a fleet of hire bikes may be provided, which can be used to attend meetings or to test cycling to and from work before making a purchase.

Private and shared cars

Every day, thousands of commuters drive to work on the same routes to the same destinations at the same time as their colleagues. If every driver carried another driver, there would be 50% fewer cars on the road at peak times. There are numerous advantages to utilising sharing services for commuting purposes, including a reduction in carbon emissions, fuel costs and parking fees, as well as a reduction in congestion and journey times due to a reduction in the number of vehicles on the road. Additionally, the experience of the journey is enhanced due to a reduction in congestion and the presence of company.

Car sharing is a particularly attractive travel option for those living in areas with long distances or poor public transport connections. The Mobility Management Coordinator will encourage communication between different drivers by promoting the use of the information board and/or the Mobility Plan mobile app and/or a dedicated website, to facilitate the establishment of these car-sharing schemes. Furthermore, if the number of drivers is important, it may be beneficial to designate specific parking spaces in prime locations for carsharers only.

Car Park Management Plan

- Location and Allocation

All the car parking spaces at the subject development are controlled by the Mobility Management Plan Coordinator. They are all numbered and allocated.

The locations, numbers and allocation of the spaces are shown on the architectural drawings included with the planning application. The subject development included car parking spaces in line with the local guidelines and standards.

- Residents

Cars spaces are leased to residents by the Mobility Management Plan Coordinator. The duration of leases is for a minimum of 1 month and a maximum of 12 months, after which the lease can be

renewed at the discretion of the Mobility Management Plan Coordinator, and subject to availability and demand, and strictly in accordance with the rules of the Car Park Management Plan in force at that time.

When a resident is allocated the use of a car space, the car space must be linked to a single vehicle only and the resident must be the owner, lessee or primary beneficial user of that vehicle.

Residents cannot park multiple vehicles in their designated parking space. Residents are not permitted to allow any other vehicles (whether owned by residents or not) to use their parking space.

- Visitors

Access to the space must be granted to the visitor by the resident and the allocated space must be free for the incoming visitor's car.

- Accessible Spaces

Accessible car spaces are leased to residents with disabilities, upon presentation of a valid disabled parking permit, as issued by the Disabled Drivers Association on behalf of Department of Transport.

The spaces reserved for disabled badge holders cannot be used by non-badge holders.

- Electric Charging

The development will provide 20% of the total number of proposed parking spaces for electric vehicles. The remaining spaces have been designed to facilitate the relevant infrastructure to accommodate future electric charging.

- Inappropriate Parking

All vehicles must be properly parked within their designated bay. Consistent failure to do so, may result in the suspension or termination of the parking lease, at the discretion of the Mobility Management Plan Coordinator.

All car park users will be advised by signage that clamping of inappropriately parked cars will be in operation at the development. The fee for release of a clamp will be €40.00 - €80.00. This fee will be subject to annual review by the Mobility Management Plan Coordinator.

Inappropriate parking is defined as parking in restricted areas and locations such as:

  - Access roads, ramps and aisles
  - Disabled bays (if no window badge is displayed).
  - Parking by unregistered drivers at spaces reserved for registered users.
  - The Mobility Management Plan Coordinator will arrange for clamping to be in place to prevent parking in authorised spaces or areas.

- Parking Control Measures

The following measures are in place in the car park at the subject development.

- Numbering of car parking spaces, so as to permit their allocation to specific uses / users.
- Frequent 'on-the-beat' parking surveys conducted by site security and/or by parking management contractors, to monitor compliance with all parking restrictions.
- Enforcement of parking restrictions by means such as clamping and fines.
- Information on the use of alternative modes of transport, provided to development occupants and visitors by means of travel information via the travel information board and/or the Mobility Plan mobile app and/or a dedicated website.

If deemed necessary by the Mobility Management Plan Coordinator, folding parking barriers or hinged bollards may also be installed within individual parking spaces.

- Car Maintenance

Major repairs or servicing of vehicles is prohibited within the car park spaces or grounds at the subject development. However, where a vehicle is immobile due to breakdown, temporary access will be permitted for recovery vehicles for the purpose of undertaking minor repair and/or recovery.

Strategy for public transport use

- Promote Tax Saver Commuter tickets

The TaxSaver Commuter Ticket Scheme is a cost-reduction initiative for public transport. It offers employers the opportunity to make PRSI savings of up to 10.75%. Residents can also benefit from savings on their travel costs, with savings of between 28.5% and 52% possible due to tax, PRSI and USC savings. The ticket covers bus, rail, and the Luas system.

The scheme is open to residents who wish to participate. They can discuss the matter with their employer, who will then apply for and purchase the ticket on their behalf.

The TaxSaver scheme is managed in conjunction with the Revenue Commissioners by the following transport providers:

- Dublin Bus
- Bus Éireann
- Luas
- Irish Rail
- Approved transport providers

Residents may obtain tickets as part of their salary package (salary sacrifice) in lieu of an annual cash bonus or as a benefit-in-kind. TaxSaver tickets are not subject to tax, PRSI or USC. It is important to note that residents are only liable to pay tax, PRSI, and USC on the portion of their salary that represents the actual remuneration. In addition, the employer is also responsible for calculating PRSI on the same basis.

The Mobility Management Plan Coordinator will be responsible for disseminating this information to the residents of the subject development, thereby affording them the opportunity to request this benefit at their place of employment.

- Update travel information

The Mobility Management Plan Coordinator will provide maps of the local area, indicating the nearest bus stop and train stations and the distance between the Subject Development and these points. Additionally, the Mobility Management Plan Coordinator will provide updated local train and bus maps and timetables.

This information will be displayed in strategic locations to facilitate understanding of the importance of choosing this mode of transport over the car. Furthermore, the Mobility Management Plan Coordinator will inform residents of future plans for the development of public transport routes in the area.

Residents of the area will be informed about online public transportation information systems, their use and the advantages that this entails.

- Monitoring of the Public Transport service

It is the responsibility of the Mobility Management Plan Coordinator to conduct regular assessments of the public transport service in order to ascertain the quality of the service provided. In order to ensure the provision of high-quality public transport services, the coordinator must consider a number of factors, including fare, travel time, vehicle conditions, and frequency.

The Mobility Management Plan Coordinator may also engage in lobbying activities with the public transport operators in order to ensure the continued provision of a high level of service on the public transport routes serving the development.

13.7 Residual Impact of the Proposed Development

13.7.1 Construction Stage

In line with their experience working on projects of this scale in similar locations and in consideration of the reduced number of car parking spaces that should be available as outlined in the Mitigation Measures, the developer will construct a limited car park at the start of works by laying a temporary surface for vehicles.

Nevertheless, it is probable that there will be an increase in surrounding traffic particularly during the PM peak hour. It is likely that staff will arrive on site before 8am (before the morning peak of 8-9am) and it is likely that they will leave during the evening peak of 5-6pm. However, the mentioned increased traffic will be occurred during a short term.

Care will be taken to ensure existing pedestrian and cycling routes are suitably maintained or appropriately diverted as necessary during the construction period, which will be addressed by the Contractor as part of the Construction Traffic Management Plan, and which will be approved by South Dublin County Council. On this basis construction will likely have a negligible impact on pedestrian and cyclists. Due to the proposed mitigation measures outlined above, the impact of the proposed development will be temporary and minimised during the construction phase.

13.7.2 Operational Stage

There will be an increase in the use of the road network by private vehicles. However, a Mobility Management Plan will promote more sustainable forms of transport to help reduce the use of private vehicles by the residents of the proposed development.

There is likely to be an increase in the number of pedestrians and cyclists arising from the development. Footpaths and cycling paths, both internally and externally (along the site frontage) are provided as part of the development, thus, the impact should be minimal.

The traffic modelling undertaken includes growth in background traffic flows which accounts for other developments in the area.

The increase in traffic volumes as a result of the proposed development will impact the adjacent existing developments as the traffic flows through access and egress from the site will increase. The transport assessment carried out indicates that all assessed junctions, operating with improved layouts as proposed as part of the subject application, would operate within the capacity and the impact arising from the proposed development would be considered negligible.

13.7.3 Worst Case Impact

The application of traffic growth rates assumes a worst case for the future year scenarios. The worst-case scenario for this development is assumed to be 2045 + Proposed Development + junctions not being upgraded.

13.8 Monitoring

13.8.1 Construction Stage

As part of the Construction Management Plan, traffic management and deliveries will be subject to close monitoring during the construction stage. The contractor's mobility management plan will be subject to oversight on the part of the appointed contractor, with a view to ensuring the plan is operating effectively.

The responsibility for monitoring and reviewing the Plan will be borne by the main contractor. The principal indicators that will be subject to monitoring are as follows (but not limited to):

- Status of complaints received about the passage of Heavy Goods Vehicles.
- Level of compliance with management plans by the main contractor and subcontractors working on site.
- Changes in modal split – both 'usual' and 'occasional' modes used.
- Cycle Parking on site: Include the state of the bike racks and that there are no abandoned bikes without owners.
- Number of car parking permits issued.
- Others that may be important.

It is recommended that within three months of the start of construction, and then every six months thereafter, the main contractor meets with South Dublin County Council, to assess and review the progress of the management plans and to agree targets for the next six months.

13.8.2 Operational Stage

The responsibility for monitoring and reviewing the Plan will be borne by the Mobility Management Plan Coordinator. The principal indicators that will be subject to monitoring are as follows:

- Changes in modal split – both 'usual' and 'occasional' modes used.
- Cycle Parking on site: Include the state of the bike racks and that there are no abandoned bikes without owners.
- Bikes purchase through the Cycle to Work scheme.
- Number of car parking permits issued.
- Number of registered carsharers.
- Others that may be important.

An initial travel survey should be carried out by the Mobility Management Plan Coordinator. Once the travel survey has been completed and analysed, the Mobility Management Plan Coordinator will agree annual targets with the main stakeholders (the developer, the occupier(s), the Local Authority, or its agents, etc.) for increasing the percentage of non-car modes of transport.

It is recommended that the Mobility Management Plan Coordinator meet with the stakeholders, officers of the Local Authorities or its agents within six months of the occupation of the building(s) and thereafter every twelve months to assess and review progress of the Plan and agree objectives for the next twelve months.

As a consequence of the evaluation, the following potential outcomes may emerge:

- The objectives have been achieved, and no further intervention is deemed necessary to ensure alignment with existing local development plans.
- The objectives have not been fully achieved, necessitating the implementation of corrective measures that, due to their scale, can be managed by the Transport Coordinator.
- Large measures: the results are found to be significantly divergent from the stated objectives, which may necessitate the engagement of external consultants to develop the requisite mobility studies and implement the measures deemed necessary to realign the development with the originally stated objectives.

It is recommended that the Mobility Management Plan Coordinator prepare and submit to senior management of the Developer, the residents and the Local Authorities or its agents an annual Monitoring Report.

13.9 Reinstatement

13.9.1 Construction Stage

During the construction phase, the designated coordinator responsible for the implementation of the Construction Mobility Management Plan will conduct regular inspections of the public streets impacted by the development activities to ensure that any disruptions to public mobility are minimized and managed effectively.

The coordinator will work closely with the construction team to address any issues that arise, ensuring that the public streets remain as accessible and safe as possible throughout the construction period. The coordinator will propose measure to mitigate any potential negative impacts on the local community and traffic flow.

Upon the completion of the construction phase, the appointed contractor will undertake the reinstatement of the affected public streets. This process will involve restoring the streets to their original condition or better, in compliance with the stringent requirements set forth by South Dublin County Council. The contractor will also adhere to any specific conditions outlined in the planning permission granted for the development.

The reinstatement process includes repairing any damage caused by the construction activities, ensuring that the streets are safe and functional for public use. This may involve resurfacing roads, repairing sidewalks, and reinstalling any street furniture or signage that was temporarily removed during the construction phase.

By adhering to these guidelines and maintaining open communication with South Dublin County Council, the project team aims to ensure a smooth transition from the construction phase to the operational phase, minimizing any long-term disruptions to the local community and infrastructure.

13.9.2 Operational Stage

During the Operational Stage, no reinstatement activities are planned beyond the routine maintenance of infrastructure. This includes the ongoing upkeep of roads, footpaths, buildings, and services to ensure they remain in good condition and fully functional.

13.10 Difficulties Encountered

There were no difficulties encountered.

13.11 Reference

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- Greater Dublin Area Cycle Network Plan, NTA, 2022

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- National Planning Framework – Project Ireland 2040

  www.gov.ie/pdf/?file=https://assets.gov.ie/246231/39baaa8c-48dc-4f24-83bd-84bbcf8ff328.pdf#page=null

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  https://www.tiipublications.ie/library/PE-PAG-02017-03.pdf

- Smarter Travel: A Sustainable Transport Future

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- Traffic and Transport Assessment Guidelines. PE-PDV-02045

  https://www.tiipublications.ie/library/PE-PDV-02045-01.pdf

- Traffic and Transport Assessment for Residential Development at Ballycullen Avenue – SD23A/0083

  https://planning.southdublin.ie/Home/ViewDocument?fileId=6654226

- Traffic and Transport Assessment for Post Primary School – SD23A/0149

  https://planning.southdublin.ie/Home/ViewDocument?fileId=6667248

- Traffic and Transport Assessment for Residential Development at Stocking Avenue – SHD3ABP-309836-21

  https://planning.southdublin.ie/Home/ViewDocument?fileId=6502435

- Traffic and Transport Assessment for Oldcourt Main Link Street – SD17A/0041

  https://planning.southdublin.ie/Home/ViewDocument?fileId=5846297