O'Flynn Construction

Old Fort Road LRD

Traffic and Transport Assessment

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Issue 2 | 16 June 2026

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1. Introduction

Arup has been commissioned by O'Flynn Construction Co. Unlimited Company to undertake a Traffic and Transport Assessment in respect of the proposed Large-scale Residential Development (LRD) at Old Fort Road, Ballincollig, Cork.

The development is proposed to comprise of the construction of 157 no. residential apartments (consisting of a mix of 1 and 2 bed units), in a development of 3 no. blocks ranging in height from 2 to 6 storeys, 1 no. childcare facility, and all associated site development works including footpaths, cycle lanes, car and cycle parking, drainage, bin stores, lighting, boundary treatment, landscaping/amenity areas, plant rooms and an ESB Substation. The provision of a new tabletop junction and access to the site will be provided along Old Fort Road.

This report describes the existing environment and current site accessibility, presents the proposed development, estimates the future traffic generated by the proposed development and assesses the impact of the traffic on the surrounding network.

The proposed development is located in the suburban town of Ballincollig, which is approximately 9km west of Cork City (see Figure 1.1). The site is located on the fringe of Ballincollig town centre, at the western side of the Cork City Council administrative boundary, within the Cork City Southwest local electoral area.



Figure 1-1: Site Location – proximity to Cork City Centre

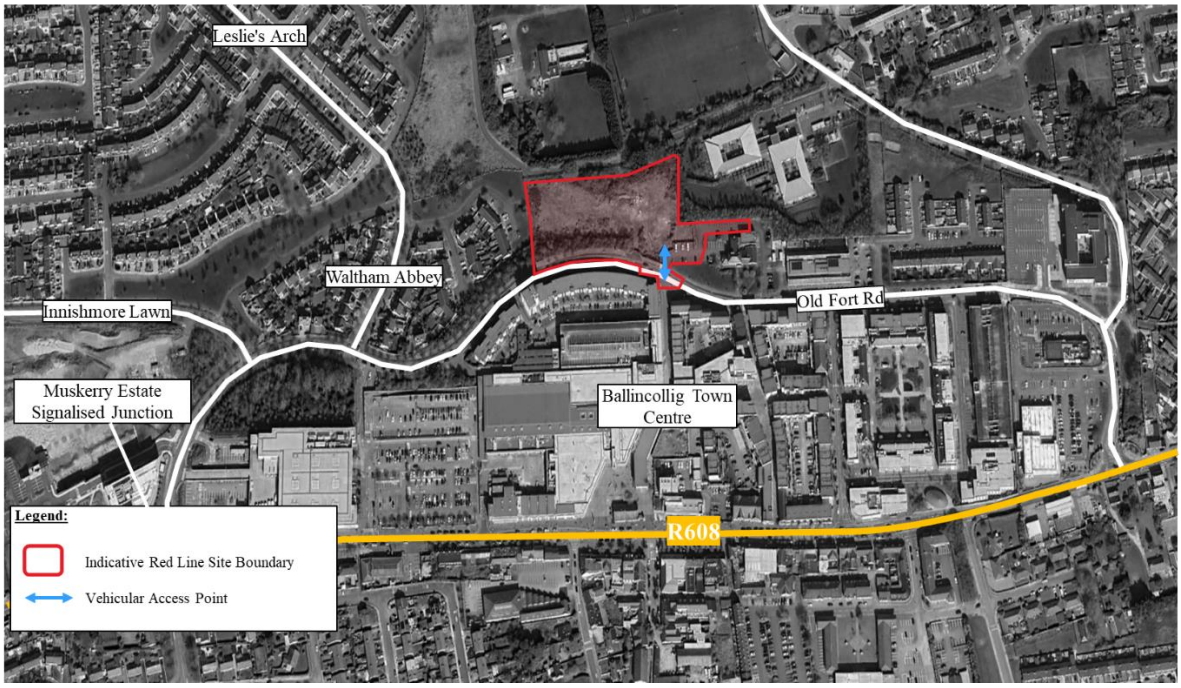


Figure 1-2: Site location- Local context

1.1 Proposed Development

The proposed Large-scale Residential Development (LRD) consists of the construction of 157 no. apartments, 1 no. childcare facility and all associated site development works. The site has a net area of 1.20 hectares and a proposed density of 130.2 units per hectare.

The development will be formed of three blocks, providing the following the apartment mix detailed in Table 1-1.

Table 1-1 Apartment Mix

Block	Unit Type			Total Units
	1 Bedroom	2 Bedroom (3 person)	2 Bedroom (4 person)	
Block A	23	2	22	47
Block B	28	3	26	57
Block C	26	3	24	53
Total	77	8	72	157

Car parking provision includes a total of 91 spaces, provided as 86 standard car parking spaces and 5 disabled spaces. This results in a parking ratio of 0.6 spaces per unit.

The development will provide 260 bicycle parking spaces, including 12 spaces for cargo or non-standard cycles within secure, interior storage rooms. These rooms will feature a two-tier rack system and will be exclusively accessible to residents, ensuring convenience and security.

2. Policy Context

2.1 National Sustainable Mobility Policy

The National Sustainable Mobility Policy (NSMP) sets out a strategic framework to support a 50% reduction in transport-related carbon emissions by 2030 as set out in the Irish Government's Climate Action Plan 2023 (CAP23). The Policy focuses on active travel and public transportation, and sets the following targets for 2030:

- At least 500,000 additional daily active travel and public transportation journeys; and
- 10% reduction in kilometres driven by fossil fuelled cars.

This development is located adjacent to Ballincollig Town Centre, is located along the route of a 24 hour bus service and is well connected by cycling infrastructure. The site is therefore well located to encourage the use of active travel and public transport per the NSMP.

2.2 Cork Metropolitan Area Transport Strategy 2040

In 2020 the National Transport Authority (NTA) in collaboration with Transport Infrastructure Ireland (TII), Cork City Council and Cork County Council published the Cork Metropolitan Are Transport Strategy (CMATS) which seeks to coordinate land use and transport planning to support future growth. The CMATS outlines a range of measures across all transport modes, including public transport, walking, cycling, and road improvements. One of the key proposals within this strategy is the development of a Metropolitan Rail Transport (MRT) system.

The strategy builds on previous work that considered the viability of a mass rapid transit system running east-west across Cork. The strategy identifies a linear route between Mahon and Ballincollig, which will initially be served by a high frequency bus service, and in later years will be replaced with a Light Rail Transit (LRT) tram system that can support new development at higher densities along the route. Figure 2.1 below provides an overview of the proposed LRT network.

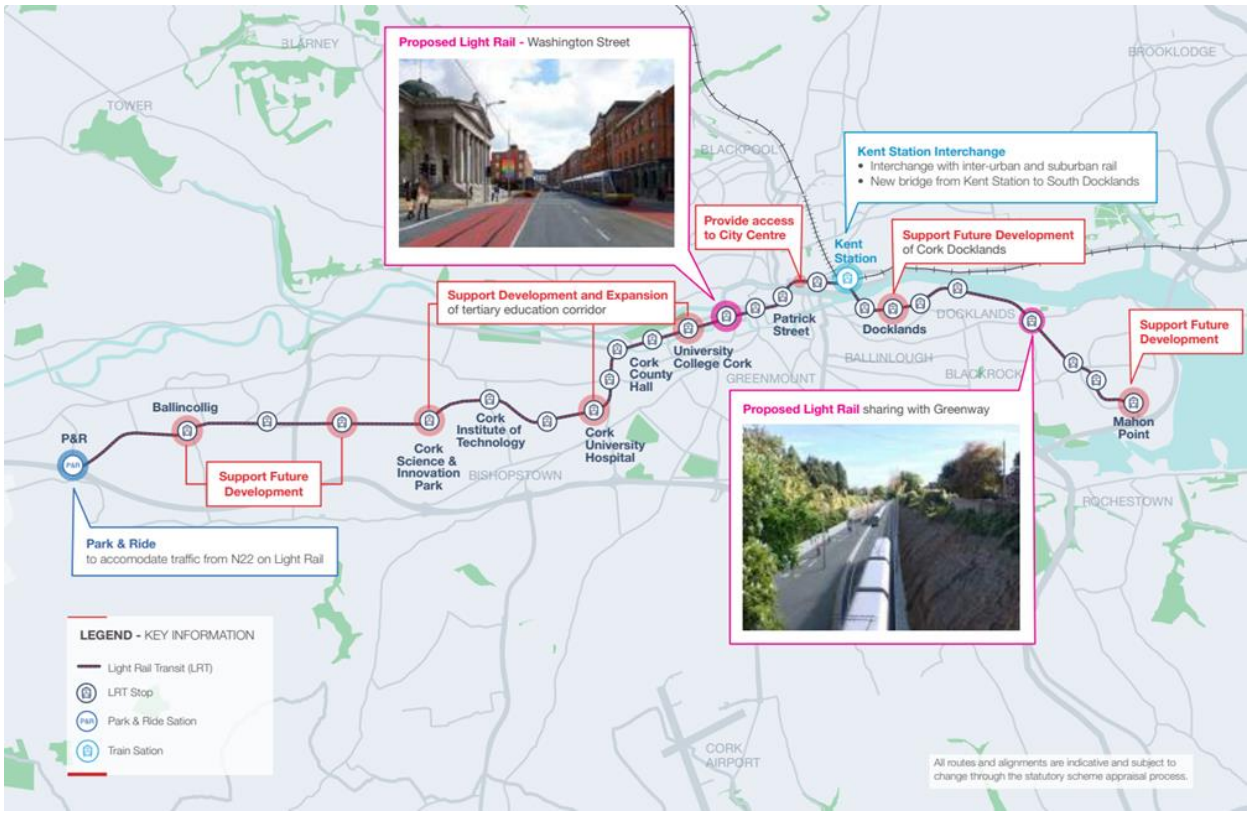


Figure 2-1: Proposed Light Rail Route Alignment

The CMATS notes that all journeys begin and end with walking, irrespective of other modes used. As such, the strategy recognises the importance of making improvements to walking routes, supporting the improvements that were previously identified in the Cork Walking Strategy 2013-2018. This strategy includes proposals to upgrade the Carrigrohane Road walking route to provide an alternative to the Lee Fields amenity route. Improvements could include vehicular speed reductions, segregated cycle facilities and crossing points.

2.3 Cork City Development Plan 2022-2028

The Cork City Development Plan (CDP) is a single statutory development plan that covers Cork city and its suburbs, including Ballincollig. The 2022-2028 plan was adopted by Cork City Council in June 2022, replacing the previous city plan and associated municipal district Local Area Plans (LAPs).

Within the CDP the site is zoned as ZO 06 "Urban Town Centre" (see figure 2.2), of which residential development is one of the permitted uses. Development within this zone is expected to consolidate and enhance the existing town centre use, something that will be achieved through development of this currently vacant site.

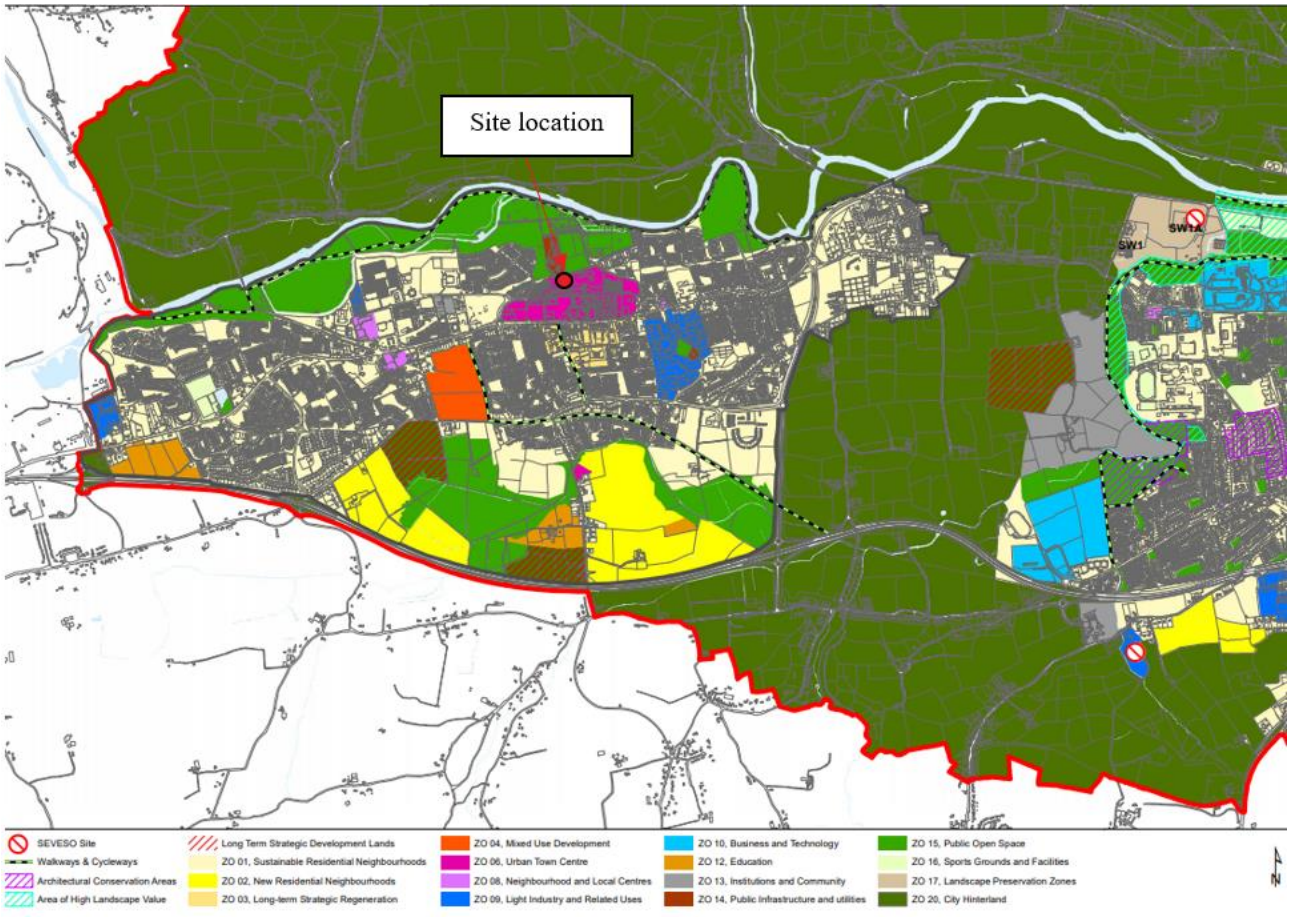


Figure 2-2: Cork City Development Plan Zoning

3. Existing Transport Network

3.1 Road Network

A brief description of the local road network in the vicinity of the proposed development is provided below. The layout of the local road network is also presented in 3.1 below.

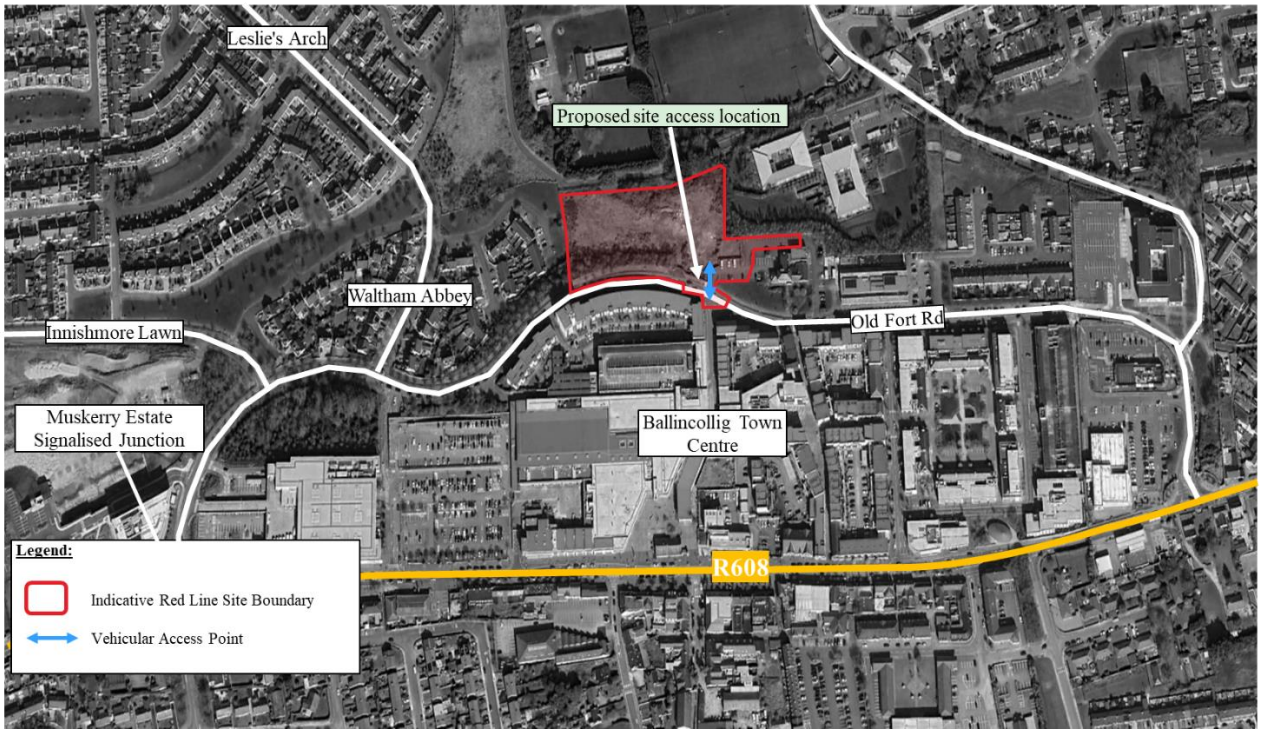


Figure 3-1: Site access to the local road network

Main Street Ballincollig (R608): The R608 is a regional single-carriageway two-way route, which acts as the primary east-west route in Ballincollig. It connects Cork City with the western regions on its own or via the N22. Footpaths are provided on both sides of the main street, with on-street parking also provided on both sides.

As part of the Green Route improvements in recent years, comprising urban realm improvements in Ballincollig town, upgrading junctions and provision of bus lanes, cycle lanes and new footpaths, a signalised junction replaced the old Muskerry Roundabout on the R608. The Muskerry Estate signalised junction provides accessibility to the proposed site via Old Fort Road. The R608 widens locally at this junction, with an eastbound bus lane through the junction, a westbound cycle lane on the western side of the junction, and additional lanes on the immediate approaches to facilitate vehicular turning movements.

Old Fort Road: This single-carriageway two-way route provides access to the proposed development site form the Muskerry signalised junction and acts as one of the main routes for the area coming to/from the N22 and N40. It also acts as a distributor road for the north side of the town. This road has one vehicular lane in each direction with a two-way cycle facility provided on the western side and a footpath on the eastern side. The existing junction from Old Fort Road to the medical centre will be the point of vehicular access into the site.

Innishmore Lawn: This road has one vehicular lane in each direction with a segregated cycle facility provided on the northern side and footpaths on both sides.

3.2 Cycling Infrastructure

In recent years cycling infrastructure in Ballincollig has seen significant improvement, following the delivery of the Ballincollig Green Route. This route included measures to improve cycling connectivity and safety as well bus priority measures and improvements to pedestrian facilities. The cycling infrastructure measures have provided greater access for cyclists into and through Ballincollig town centre and beyond.

The development site is well located to make use of this cycling infrastructure, as demonstrated in the cycling time catchment map in Figure 3.2. The catchment map demonstrates that all areas of the Ballincollig neighbourhood can be reached within a 15 minute cycle from the development site and Cork City Centre, including Kent Station, can be accessed within 45 minutes on bicycle.

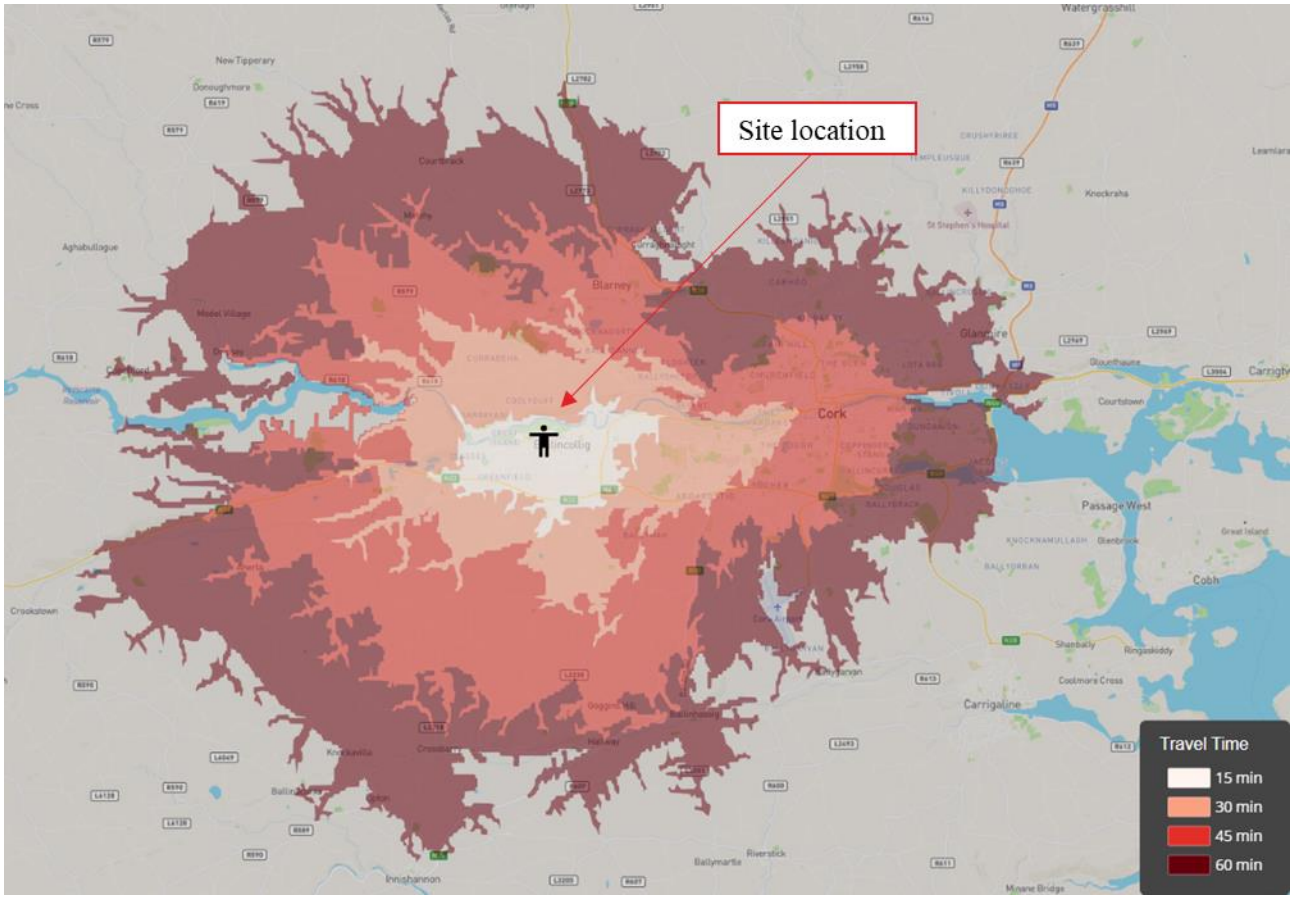


Figure 3-2: Cycling time catchment for the Old Fort Road site

Further improvements to the existing infrastructure are planned for Ballincollig, as identified in the CMATS and displayed in Figure 3-3 As part of this future network a primary cycling route is proposed along the R608, running in an east-west direction with a number of inter-linking routes including a secondary route on the Old Fort Road and a primary route on the Innishmore Lawn Road.

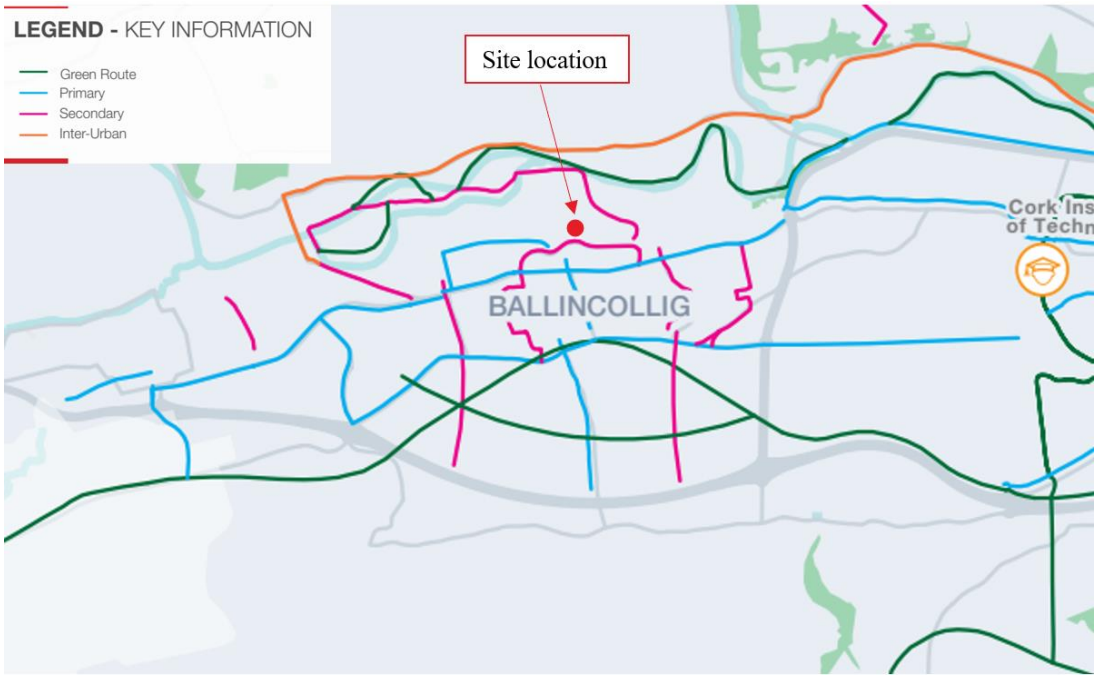


Figure 3-3: Planned cycling connectivity in Ballincollig

3.3 Walking Infrastructure

Similar to the cycling infrastructure in Ballincollig, there have also been significant improvements to the pedestrian environment in the area in recent years. These improvements have made it safer and more convenient for people to walk for some or all of their journey. Footways are provided on both sides of most streets in the vicinity of the proposed development, with pedestrian crossing facilities provided at busy intersections.

Figure 3.4 below provides a walking time catchment map from the development site. It demonstrates that Ballincollig town centre and the adjacent residential areas are within easy walking distance of the site, as well as local areas of interest such as Ballincollig Regional Park.

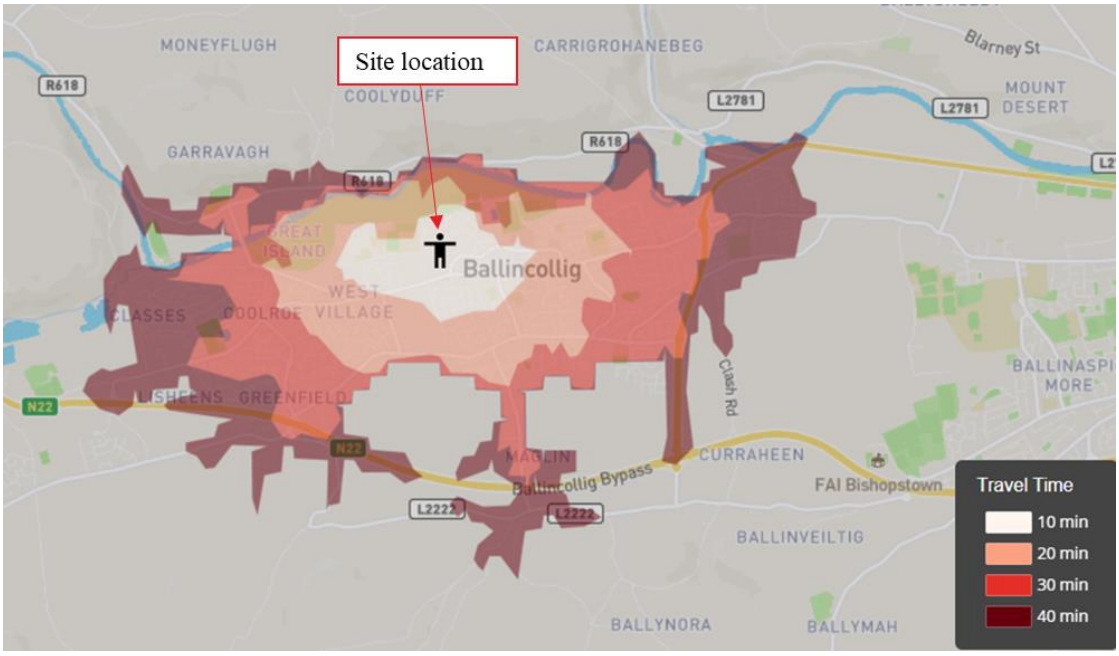


Figure 3-4: Walking time catchment for the Old Fort Road site

3.4 Public Transport Facilities

The site is well served by public transport. The closest bus stop is located on the R608 Main Street, approximately 275 m to the south of the proposed development site, as shown in Figure 3.5. A bus shelter is provided for eastbound routes.



Figure 3-5: Bus routes and bus stops close to the Old Fort Road site

The bus stops are served by the number 220 & 220X Carrigaline-Cork-Ballincollig and the number 233 Cork-Ballincollig-Ballingeary regional bus services. The approximate frequency of these services is presented in Table 3-1.

In 2019 the 220 service began to operate on a 24-hour basis with increased frequency during the day. Bus Éireann has confirmed that a 60% increase in customer journeys has been observed since these changes were implemented. This is the first 24-hour service in Cork City and will provide excellent connectivity for the proposed development to Cork City and its surrounding suburban areas.

Table 3-1: Public Transport Service Frequencies

Bus Service	Approximate Frequency
Bus No. 220/220X Carrigaline – Cork – Ballincollig	24-hour service operating every 15 mins
Bus No. 233 Cork – Ballincollig – Ballingeary	Westbound: 07:31, 07:47, 07:51, 07:47, 07:51, 07:47, 07:51, 09:14, 09:11, 09:11, 13:09, 13:34, 16:06, 17:52, 18:12, 21:19, 22:50, 22:49 Eastbound: 06:48, 07:52, 07:55, 09:32, 10:51, 10:57, 13:37, 13:44, 15:13, 16:51, 16:51, 16:51, 18:32, 19:08, 19:21

3.5 Existing Traffic Patterns

In order to assess the impact of the proposed development on the local road network, an examination of the existing traffic flows in the area was deemed necessary, and traffic surveys were carried out on Tuesday 1st April 2025 between the hours of 06:00 to 18:00, at the junctions marked 1-6 shown below in Figure 3.6.

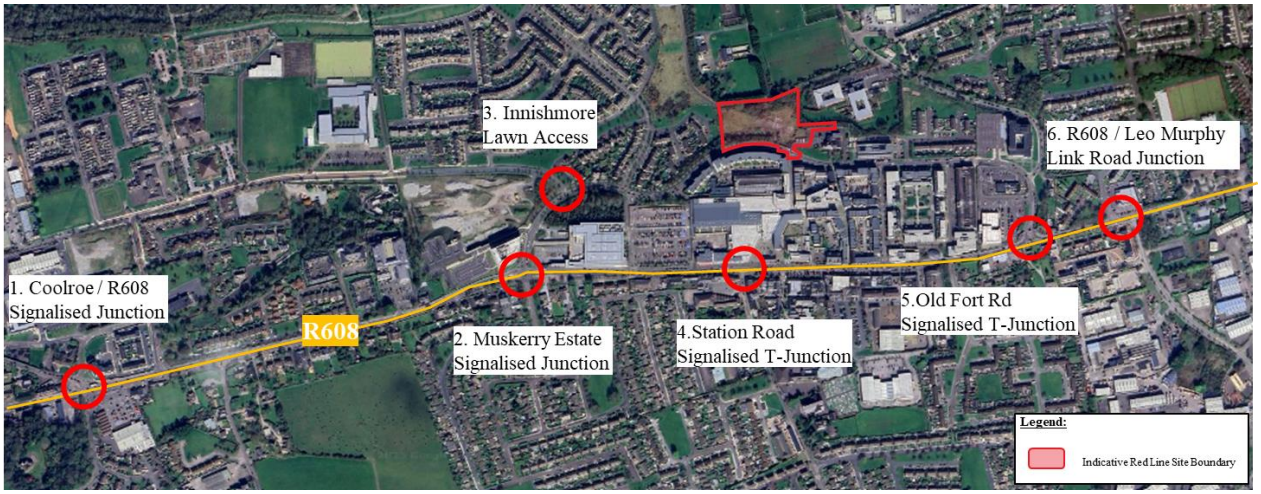


Figure 3-6: Traffic survey locations

3.5.1 Traffic Volumes

Examination of the traffic count data concluded that the peak morning traffic flows occurred between 08:15 and 09:15, while the evening peak period was observed to occur between 15:00 and 16:00. The two-way traffic flows recorded during these time periods are presented in Table 3-2.

Table 3-2: 2025 Two-Way Link Flows (PCUs), AM peak (08:15 – 09:15) and PM peak (15:00 – 16:00)

Junction	2025	
	AM Peak	PM Peak
1. Coolroe / R608 Signalised Junction	2031	1794
2. Muskerry Estate Signalised Junction	1494	1343
3. Innishmore Lawn Access	1008	740
4. Station Road Signalised T-Junction	1004	1013
5. Old Fort Rd Signalised T-Junction	1587	1607
6. R608 / Leo Murphy Link Road Junction	1855	1844

4. Proposed Development

The proposed Large-scale Residential Development (LRD) consists of the construction of 157 no. apartments, 1 no. childcare facility and all associated site development works. The development will provide 91 car parking and 260 cycle parking spaces as shown in Figure 4-1.

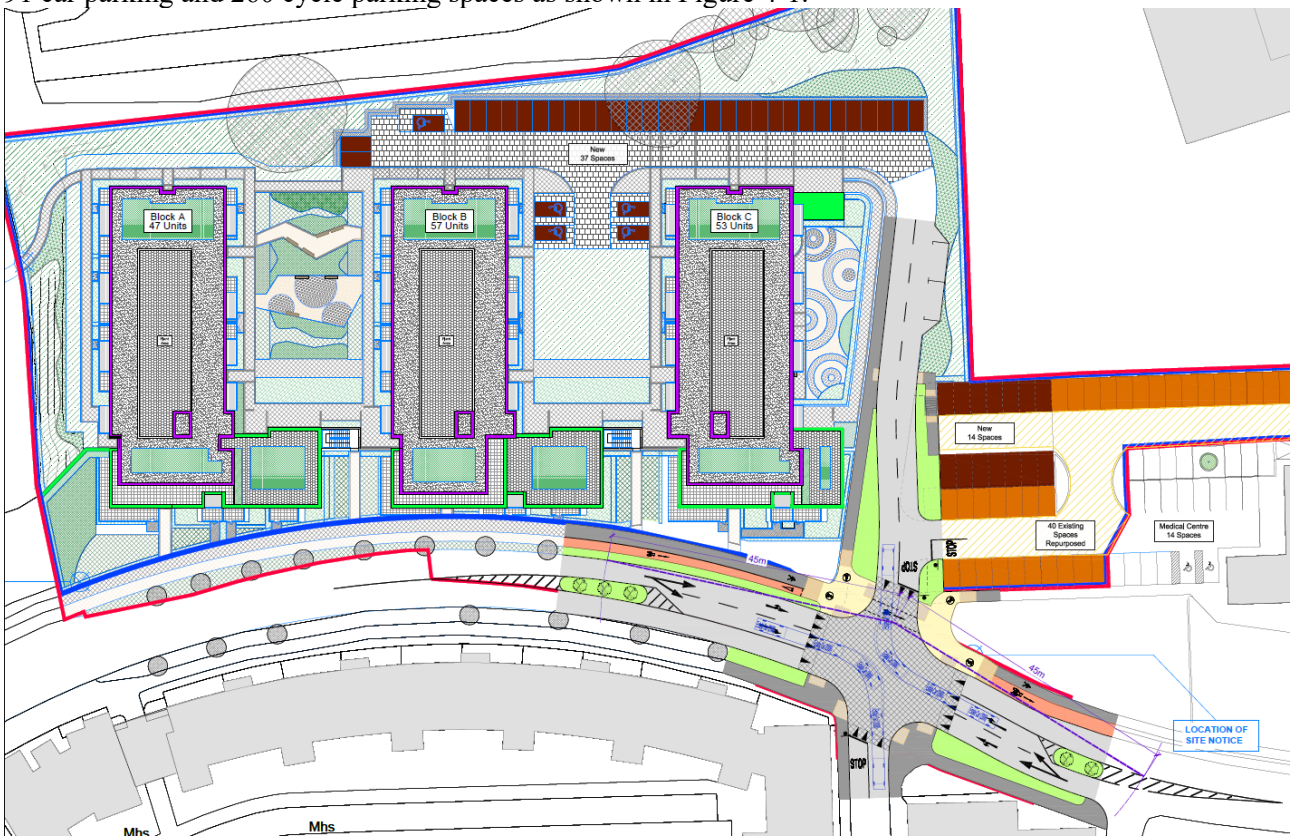


Figure 4-1 Proposed Development

The proposed development includes improvements to the existing access into the development site from Old Fort Road. The revised junction design includes introduction of a raised table in the centre of the junction and central raised planting areas to encourage lower vehicle speeds. Uncontrolled pedestrian crossing points are proposed on all arms of the junction, which include dropped kerbs and tactile paving to ensure accessibility for all.

The proposed development retains the existing pedestrian and cycle path along Old Fort Road, with additional pedestrian links provided into the development and through to Waltham Abbey to increase permeability for active modes.

A total of 91 car parking spaces are proposed for the development, including 5 disabled spaces. This equates to 0.6 parking spaces per dwelling which is considered appropriate for the highly accessible location of the site and the unit mix proposed. The car parking spaces are located to the rear and to the east of the site, utilising some of the existing excess capacity within the medical centre car park. The darker brown car parking spaces in Figure 4-1 indicate new car parking spaces, and the lighter brown spaces are existing spaces that will be repurposed from the medical centre car park. It is anticipated that the majority of trips to the on-site creche will originate from the development, and any external trips made by car will utilise the spaces within the site for short-stay parking whilst they drop off and collect children.

The revised junction layout also includes the realignment of the current cross-roads to enable opposing right-turn movements to be made without any conflicting hooking movements. Vehicle auto tracking of these opposing right-turn movements has been undertaken, as demonstrated in Figure 4-2.

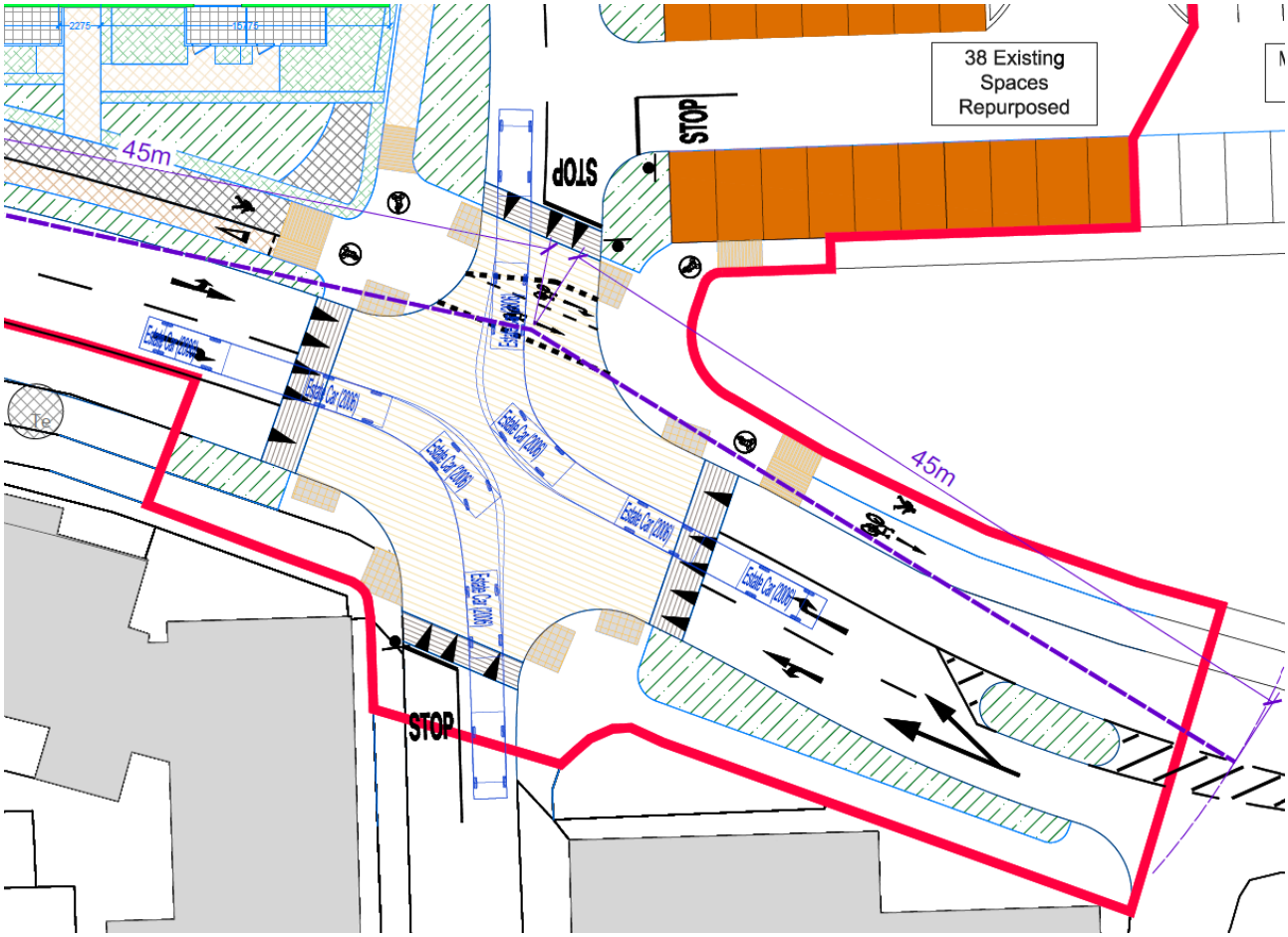


Figure 4-2: Auto tracking of right-turn vehicle movements

4.1 Projected Trip Generation

The potential traffic generated by the proposed development has been calculated by examining the TRICS 8.25.12 online database. The TRICS database contains trip generation for various land uses across the UK and Ireland.

The proposed location and floor area for different uses of the proposed development was used to establish a 'best fit' in terms of trip generation rates for the proposed development. Trip generation rates are calculated throughout the day as rates vary depending on time of day for different land uses. The trip rates calculated for the proposed development at peak hours are presented in Table 4-1 below.

Table 4-1:Trip Generation Rates (residential trips per dwelling, childcare trips per 100m2)

	AM (08.15-09.15)		PM (15:00-16:00)	
	Arrival	**Departure**	**Arrival**	**Departure**
Residential	0.144	0.426	0.265	0.19
Childcare Facility	4.195	3.126	1.536	1.749

Total traffic expected to be generated by the development is then calculated based on the trip rates above and the proposed floor areas for different uses. Consideration has been given to the purpose of the creche to primarily serve the childcare needs of the proposed development and as such the number of external trips will be less than what is derived from the trip generation rate. A conservative estimate has been applied to the trip generation of the creche which assumes that 60% of trips generated will be coming from within the development itself and thus not arriving to the proposed development externally, with the remaining 40% of trips attributed those accessing the creche not originating from within the proposed development.

The expected volume of traffic, expressed in passenger car units (PCUs), generated by the proposed development can be seen in Table 4-2. PCUs are used as the unit of measurement rather than individual vehicles in order to examine and measure the relative effect on traffic networks by a variety of vehicles. Essentially, a passenger car is assumed to be the standard vehicle for the network and is therefore given a PCU value of 1. A factor is then applied to vehicles other than a standard car in order to convert their relative effects in terms of volume, speed, delay etc. to that of a car. A Heavy Goods Vehicle, for example, would have an equivalent PCU value of 2.3.

Table 4-2: Trip Generation (PCUs)

	AM (08.15-09.15)		PM (15:00-16:00)	
	Arrival	**Departure**	**Arrival**	**Departure**
Residential	23	68	42	30
Childcare Facility	8	6	3	4
Total	31	74	45	34

Note: figures in the above table have been rounded up/down for clarity

The existing AM and PM peak traffic hours were determined based on the traffic counts undertaken at the three junctions outlined above and were used as the 'base' scenario for the assessment of additional traffic arising from the proposed development. These peak hours are the time periods in which the surrounding road network experiences the highest vehicle volumes.

The proposed vehicle trip generation shows that there will be 105 new two-way movements in the AM peak traffic hour (08.15-09.15) and 79 new two-way movements in the PM peak traffic hour

(15.00-16.00) to and from the proposed development. It has been assumed that the proposed development will be fully constructed and operational in 2028.

4.2 Traffic Distribution

As derived from the traffic survey undertaken for this assessment, the majority of arriving and departing traffic accessing the proposed site will do so via the R608 and onto Old Fort Road. The existing trip distribution for the AM and PM peak hours is shown in Table 4-3 below.

Table 4-3: Existing Trip Distribution Profile

Access Route	AM		PM	
	Arrivals	Departures	Arrivals	Departures
Old Fort Road West	60%	60%	60%	60%
Old Fort Road East	40%	40%	40%	40%

Using the traffic distribution profile outlined in Table 4-3, traffic from the proposed development was assigned to the surrounding road network. Table 4-4 presents the traffic assignment to and from the proposed development via Old Fort Road.

Table 4-4: Proposed Trip Distribution (PCUs)

Access Route	AM		PM	
	Arrivals	Departures	Arrivals	Departures
Old Fort Road West	19	44	27	20
Old Fort Road East	12	30	18	14

4.3 Parking Provision

4.3.1 Car Parking

The Cork City Development Plan 2022-2028 specifies the maximum permissible parking spaces for a range of development types. The parking standards identify different zones across Cork City, and each of these zones has its own maximum parking standard. The site is located within zone 2 and as such is a location described as being “accessible to mass transport (existing/committed public transport)”. The standard for zone 2 presented in Table 4-5 below, along with the proposed parking provision associated with the proposed development.

Table 4-5: Car Parking Standards

No. Bedrooms	Total Units	Maximum Car Parking Provision Rate	Maximum no. Parking Spaces Permitted	Parking spaces proposed
1-2	157	1.0	157	91
3 – 3+	0	2.0	0	0
Total	**157**	**-**	**157**	**91**
Land Use	**Number of Children**	**Maximum Car Parking Provision Rate**	**Maximum no. Parking Spaces Permitted**	**Parking spaces proposed**
Creches	29	1 per 6 children	5	2 spaces allocated for 'visitor' use which can serve the residential and childcare facility

This illustrates that a maximum of 157 parking spaces for residential use and up to 5 additional spaces for Creche use are allowable at the proposed development site. This accords with the standards for development within 'Car Parking Zone 2' as identified in the City Development Plan. The total proposed provision of 91 car parking spaces falls within the maximum limit and represents a ratio of 0.6 car parking spaces per dwelling. This level of parking provision is considered appropriate for the proposed development given its proximity to Ballincollig town centre and the good provision of walking, cycling and public transport services in the area, the high proportion of one bedroom dwellings proposed and the provision of more cycle parking than what the Development plan standards propose. Such a level of parking provision also aligns with the mode share targets set within the Cork Metropolitan Area Transport Strategy (CMATS) of 49.3% private vehicle by 2040.

It is anticipated that the majority of trips to the on-site creche will originate from within the development, meaning there will be a low parking demand from the creche. In addition, the creche will operate during the day, when many residents will be at work and therefore not parked on site. It is therefore proposed that dedicated parking spaces for the creche are not provided, Instead, 2 parking spaces will be marked as 'visitor' spaces which will enable them to be used flexibly as set-down for the creche during the day and by visitors to the rodential properties at other times. Given the low number of trips expected to be generated by the creche, and the site's accessible location it is not considered necessary to provide the maximum number of spaces allowed within the City Development Plan.

Approval of residential development with car parking numbers below the maximum standard set in the development plan is not uncommon. Permission has recently been granted for 124 residential apartments at the 'Barry's Field' site in Douglas, Cork (ref. 25/43605). This development provided a total of 26 car parking spaces, equivalent to a ratio of 0.2 spaces per dwelling. Permission has also been granted for 348 residential dwellings in Sarsfield Road, Wilton (ref. 25/43819), providing 148 car parking spaces, equating to a ratio of 0.42 spaces per dwelling. Similar to the proposed development in Old Fort Road, the sites in Douglas and Wilton are located within walking distance of the local town centre and have good public transport links.

4.3.2 Disabled Parking Provision

The Cork City Development Plan stipulates that 5% of car parking spaces provided should be set aside for disabled car parking. 5 disabled parking spaces will therefore form part of the total 91 spaces.

4.3.3 Cycle Parking

The Cork City Development Plan stipulates that an allocation of at least 1 Cycle parking space per residential unit in city centre/ urban areas. This equates to a minimum of 157 Cycle parking spaces for the development.

A total of 260 Cycle parking spaces, including 12 spaces for cargo or non-standards cycles will be provided as part of the development, which is above the required provision.

4.3.4 Car Parking Management Strategy

All parking spaces associated with the development, as shown in Figure 1.3, will be dedicated as Old Fort Road carparking, and adequate signage will be in place to ensure the public are aware which spaces are reserved for residents of the Old Fort Road development. Any unauthorised parking will receive warning notices in the first instance and clamping will be introduced to ensure car spaces are, at all times, available for residents of the complex.

O'Flynn Group will form a management company which will be tasked with the management of the development, including car parking, once completed. The management will ensure that all the common parts are maintained together with all equipment, lifts, fire safety etc. in line with good estate management. The management company will ensure that the landscaping is maintained as well as roads, paths and carparking.

5. Impact on Local Road Network

5.1 General

The impact on the local road network has been assessed by examining the projected traffic flows on seven links in the vicinity of the proposed development, and at four junctions both without and with the proposed development.

The morning peak period (08.15 – 09.15) and evening peak period (15.00 – 16.00) have been examined to assess the busiest case in terms of local traffic on the road network and traffic generated by the proposed development.

For this assessment, it has been assumed that the proposed development will be constructed and fully occupied during the year 2027. The impact on the local road network has been assessed for this opening year (2027), an interim year of five years after opening (2032), and a design year 15 years after opening (2042). Traffic volumes surveyed in 2025 on the local road network have been increased to account for the growth in background traffic to the years 2027, 2032 and 2042. These growth rates are in accordance with the Transport Infrastructure Ireland (formerly National Roads Authority) Project Appraisal Guidelines for Link-Based Traffic Growth Forecasting.

5.2 Link Flow Assessment

The background traffic flows recorded in April 2025 were applied to the following seven links, as shown in Figure 5-1:

1. R608 Old Fort Road/ Main Road
2. R608 Old Fort Road/ Carrigrohane Road
3. Old Fort Road South
4. Old Fort Road North
5. Innishmore Lawn
6. Old Fort Road East
7. R608 East

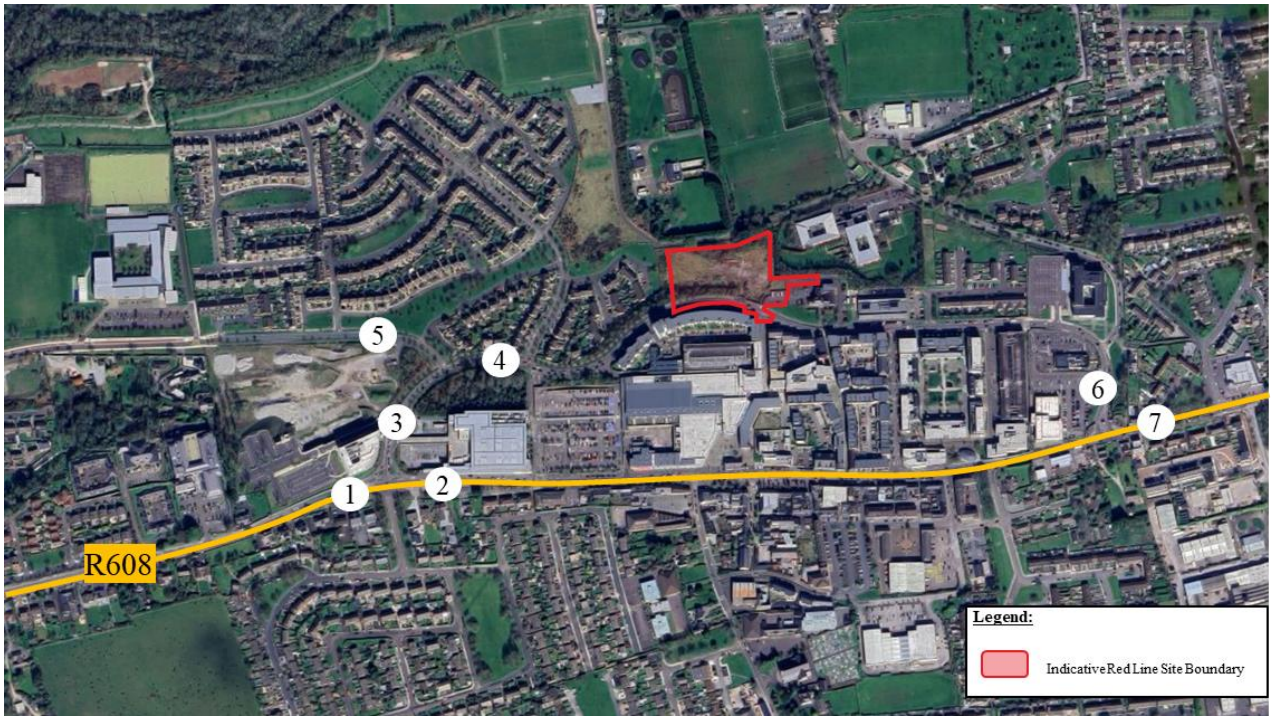


Figure 5-1: Road links in the vicinity of the development site

The projected link traffic flows for both the 'With' and 'Without' development scenarios are presented for each of the assessment years in the following tables. The figures in brackets relate to the percentage increase in link traffic volumes as a result of the development.

5.2.1 Opening Year 2027

The existing two-way traffic volumes on links in the vicinity of the proposed development in 2027, for scenarios with and without the proposed development in place, are shown Table 5-1 below.

Table 5-1: Future Two-Way Traffic Flows – Opening Year 2027 (PCUs)

Link	2027 AM Peak (08.15-09.15) Without Development	2027 AM Peak (08.15-09.15) With Development	2027 PM Peak (15.00-16.00) Without Development	2027 PM Peak (15.00-16.00) With Development
1. R608 Old Fort Road/ Main Road	1132	1195 (6%)	1102	1149 (4%)
2. R608 Old Fort Road/ Carrigrohane Road	836	836 (0%)	802	802 (0%)
3. Old Fort Road South	665	728 (9%)	495	542 (10%)
4. Old Fort Road North	756	819 (8%)	622	670 (8%)
5. Innishmore Lawn	664	664 (0%)	414	414 (0%)
6. Old Fort Road East	805	847 (5%)	745	776 (4%)
7. R608 East	1559	1601 (3%)	1572	1603 (2%)

For the 2027 opening year, the proposed development shows varying increases of between 0% and 5% in traffic flows on the surrounding road network. It should be noted that higher percentage increases are generally observed on local roads immediately adjacent to the proposed access points, and that the flows without the development are relatively low hence the large percentage increase.

5.2.2 Interim Year 2032

The two-way traffic volumes on links in the vicinity of the proposed development in the 2032 interim year, for scenarios both with and without the proposed development in place, are shown in Table 5-2 below.

Table 5-2: Future Two-Way Traffic Flows - Interim Year 2032 (PCUs)

Link	2032 AM Peak (08.15-09.15) Without Development	2032 AM Peak (08.15-09.15) With Development	2032 PM Peak (15.00-16.00) Without Development	2032 PM Peak (15.00-16.00) With Development
1. R608 Old Fort Road/ Main Road	1212	1275 (5%)	1179	1226 (4%)
2. R608 Old Fort Road/ Carrigrohane Road	894	894 (0%)	858	858 (0%)
3. Old Fort Road South	713	776 (9%)	530	577 (9%)
4. Old Fort Road North	809	872 (8%)	666	714 (7%)
5. Innishmore Lawn	710	710 (0%)	442	442 (0%)
6. Old Fort Road East	862	904 (5%)	797	829 (4%)
7. R608 East	1668	1710 (3%)	1683	1714 (2%)

For the 2032 interim year, the proposed development shows varying increases of between 0% and 5% in traffic flows on the surrounding road network. Similar to the opening year, higher percentage increases are generally observed on local roads immediately adjacent to the proposed access points, and that the flows without the development are relatively low hence the large percentage increase.

5.2.3 Design Year 2042

The two-way traffic volumes on links in the vicinity of the proposed development in the 2042 design year, for scenarios both with and without the proposed development in place, are shown in Table 5-3 below.

Table 5-3: Future Two-Way Traffic Flows - Design Year 2042 (PCUs)

Link	2042 AM Peak (08.15-09.15) Without Development	2042 AM Peak (08.15-09.15) With Development	2042 PM Peak (15.00-16.00) Without Development	2042 PM Peak (15.00-16.00) With Development
1. R608 Old Fort Road/ Main Road	1323	1386 (5%)	1287	1334 (4%)
2. R608 Old Fort Road/	976	976 (0%)	936	936 (0%)

Carrigrohane Road				
3. Old Fort Road South	779	842 (8%)	579	626 (8%)
4. Old Fort Road North	883	946 (7%)	728	775 (7%)
5. Innishmore Lawn	775	775 (0%)	483	483 (0%)
6. Old Fort Road East	941	983 (4%)	871	903 (4%)
7. R608 East	1821	1863 (2%)	1838	1870 (2%)

For the 2042 interim year, the proposed development shows an increase of between 0% and 4% in traffic flows on the local road network, again with higher percentage increases generally observed on local roads immediately adjacent to the proposed access points.

5.2.4 Summary

The above tables show that the increase in traffic flow on the local and regional road network in the vicinity of the proposed Old Fort Road development as a result of the development will vary, with larger percentage increases observed on the immediate approaches to the development on links which are currently carrying relatively low traffic flows. According to the TII Transport Assessment Guidelines, a Transport Assessment is required when traffic to and from the proposed development exceeds 10% of the traffic flow on the adjoining road. In the case of this development, there are no links with increases exceeding 10% in the with development scenario. However, for the purposes of a robust assessment, a number of junctions in the immediate vicinity of the development have been modelled.

5.3 Junction Assessment

The background traffic flows recorded in April 2025 were applied to the four junctions outlined above, as follows:

1. Old Fort Road/Innishmore Lawn Priority T-Junction;
2. Muskerry Estate Signalised Junction;
3. Station Road Signalised T-Junction; and
4. Old Fort Road Signalised T-Junction.

The signalised junctions were analysed using LinSig V3, a dedicated software package for the analysis of signal-controlled junctions. The priority junctions, including proposed accesses, were analysed using Junctions 9 software, which is a dedicated software package for the analysis of priority junctions (containing the PICADY and ARCADY analysis packages).

5.3.1 Old Fort Road/Innishmore Lawn Priority T-Junction

5.3.1.1 Base Year 2025

The 2025 Base Year AM and PM results for the ‘Without’ scenario are shown below in Table 5-4 indicating ‘Queue’ and Ratio of Flow to Capacity ‘RFC’ values for the respective arms.

Table 5-4: Junctions 9 Assessment: 2025 Base Year, AM and PM Peaks – Without Development

Approach Arm	AM Peak (08.15-09.15)		PM Peak (15.00-16.00)	
	Queue (PCU)	RFC (%)	Queue (PCU)	RFC (%)
Innishmore Lawn	2.7	74%	0.7	43%
Old Fort Road	0.6	36%	0.4	26%

It can be seen from the results above that the Old Fort Road/Innishmore Lawn Priority T-Junction is currently operating within capacity during the AM and PM Peak periods in the 2025 Base Year.

5.3.1.2 Opening Year 2027

The 2027 Opening Year AM and PM results for both the 'Without' and 'With' scenarios are shown below in Table 5-5 and Table 5-6 respectively, indicating 'Queue', 'Delay' and Ratio of Flow to Capacity 'RFC' values for the respective arms.

Table 5-5: Junctions 9 Assessment: 2027 Opening Year, AM and PM Peaks – Without Development

Approach Arm	AM Peak (08.15-09.15)		PM Peak (15.00-16.00)	
	Queue (PCU)	RFC (%)	Queue (PCU)	RFC (%)
Innishmore Lawn	3.2	77%	0.8	43%
Old Fort Road	0.6	37%	0.4	26%

Table 5-6: Junctions 9 Assessment: 2027 Opening Year, AM and PM Peaks – With Development

Approach Arm	AM Peak (08.15-09.15)		PM Peak (15.00-16.00)	
	Queue (PCU)	RFC (%)	Queue (PCU)	RFC (%)
Innishmore Lawn	3.4	78%	0.8	44%
Old Fort Road	0.7	38%	0.4	27%

It can be seen from the results above that the Old Fort Road/Innishmore Lawn Priority T-Junction will operate within capacity during the AM and the PM Peak periods in the 2027 'Without' scenario, and that it will continue to operate within capacity in the 2027 'With' scenario.

5.3.1.3 Interim Year 2032

The 2032 Interim Year AM and PM results for both the 'Without' and 'With' scenarios are shown below in Table 5-7 and Table 5-8 respectively, indicating 'Queue', 'Delay' and Ratio of Flow to Capacity 'RFC' values for the respective arms.

Table 5-7: Junctions 9 Assessment: 2032 Interim Year, AM and PM Peaks – Without Development

Approach Arm	AM Peak (08.15-09.15)		PM Peak (15.00-16.00)	
	Queue (PCU)	RFC (%)	Queue (PCU)	RFC (%)
Innishmore Lawn	4.7	84%	0.9	46%
Old Fort Road	0.7	41%	0.4	29%

Table 5-8: Junctions 9 Assessment: 2032 Interim Year, AM and PM Peaks – With Development

Approach Arm	AM Peak (08.15-09.15)		PM Peak (15.00-16.00)	
	Queue (PCU)	RFC (%)	Queue (PCU)	RFC (%)
Innishmore Lawn	5.3	86%	0.9	47%
Old Fort Road	0.8	41%	0.5	29%

It can be seen from the results above that the Old Fort Road/Innishmore Lawn Priority T-Junction will operate within capacity during the AM and the PM Peak periods in the 2032 'Without' scenario, and that it will continue to operate within capacity in the 2032 'With' scenario.

5.3.1.4 Design Year 2042

The 2042 Design Year AM and PM results for both the 'Without' and 'With' scenarios are shown below in and Table 5-9 and Table 5-10 respectively indicating 'Queue', 'Delay' and Ratio of Flow to Capacity 'RFC' values for the respective arms.

Table 5-9: Junctions 9 Assessment: 2042 Design Year, AM and PM Peaks – Without Development

Approach Arm	AM Peak (08.15-09.15)		PM Peak (15.00-16.00)	
	Queue (PCU)	RFC (%)	Queue (PCU)	RFC (%)
Innishmore Lawn	9.8	94%	1.1	51%
Old Fort Road	0.9	45%	0.5	32%

Table 5-10: Junctions 9 Assessment: 2042 Design Year, AM and PM Peaks – With Development

Approach Arm	AM Peak (08.15-09.15)		PM Peak (15.00-16.00)	
	Queue (PCU)	RFC (%)	Queue (PCU)	RFC (%)
Innishmore Lawn	11.6	97%	1.1	52%
Old Fort Road	1.0	46%	0.5	32%

It can be seen from the results above that the Old Fort Road/Innishmore Lawn Priority T-Junction will operate within capacity during the AM and the PM Peak periods in the 2042 'Without' scenario, and that it will continue to operate within capacity in the 2042 'With' scenario. However,

it is noted that the junction is approaching capacity in both the without and with development scenarios.

5.3.2 Muskerry Estate Signalised Junction

5.3.2.1 Base Year 2025

The 2025 Base Year AM and PM results for the 'Without' scenario are shown below in Table 5-11 indicating 'Queue' and Ratio of Flow to Capacity 'RFC' values for the respective arms.

Table 5-11: LinSig Assessment: 2025 Base Year, AM and PM Peaks – Without Development

Approach Arm	AM Peak (08.15-09.15)		PM Peak (15.00-16.00)	
	Queue (PCU)	RFC (%)	Queue (PCU)	RFC (%)
R608 West	18.9	74%	12.6	70%
R608 East	8.1	73%	11.6	69%
Old Fort Road North	6.7	74%	9.9	70%
Old Fort Road South	8.4	72%	6	67%

It can be seen from the results above that Muskerry Estate Signalised Junction is currently operating within capacity during the AM and PM Peak periods in the 2025 Base Year.

5.3.2.2 Opening Year 2027

The 2027 Opening Year AM and PM results for both the 'Without' and 'With' scenarios are shown below in Table 5-12 and Table 5-13 respectively, indicating 'Queue' and Ratio of Flow to Capacity 'RFC' values for the respective arms.

Table 5-12: LinSig Assessment: 2027 Opening Year, AM and PM Peaks – Without Development

Approach Arm	AM Peak (08.15-09.15)		PM Peak (15.00-16.00)	
	Queue (PCU)	RFC (%)	Queue (PCU)	RFC (%)
R608 West	20.1	77%	13.3	72%
R608 East	8.5	75%	12.2	71%
Old Fort Road North	7	77%	10.5	73%
Old Fort Road South	8.8	74%	6.3	69%

Table 5-13: LinSig Assessment: 2027 Opening Year, AM and PM Peaks – With Development

Approach Arm	AM Peak (08.15-09.15)		PM Peak (15.00-16.00)	
	Queue (PCU)	RFC (%)	Queue (PCU)	RFC (%)
R608 West	22	81%	14.3	75%
R608 East	8.9	79%	12.4	73%
Old Fort Road North	8.6	80%	11.3	75%
Old Fort Road South	9.2	78%	6.6	74%

It can be seen from the results above that the Muskerry Estate Signalised Junction will operate within capacity during the AM and the PM Peak periods in the 2027 'Without' scenario, and that it will continue to operate within capacity during the AM Peak period and PM Peak period in the 2027 'With' scenario.

5.3.2.3 Interim Year 2032

The 2032 Interim Year AM and PM results for both the 'Without' and 'With' scenarios are shown below in Table 5-14 and Table 5-15 respectively, indicating 'Queue' and Ratio of Flow to Capacity 'RFC' values for the respective arms.

Table 5-14: LinSig Assessment: 2032 Interim Year, AM and PM Peaks – Without Development

Approach Arm	AM Peak (08.15-09.15)		PM Peak (15.00-16.00)	
	Queue (PCU)	RFC (%)	Queue (PCU)	RFC (%)
R608 West	23.3	82%	15.1	77%
R608 East	9.6	80%	13.5	76%
Old Fort Road North	8	82%	11.7	78%
Old Fort Road South	9.9	80%	7	74%

Table 5-15: LinSig Assessment: 2032 Interim Year, AM and PM Peaks – With Development (PCUs)

Approach Arm	AM Peak (08.15-09.15)		PM Peak (15.00-16.00)	
	Queue (PCU)	RFC (%)	Queue (PCU)	RFC (%)
R608 West	25.5	86%	16.1	80%
R608 East	10.2	84%	13.9	79%
Old Fort Road North	9.8	84%	12.7	80%
Old Fort Road South	10.5	84%	7.5	80%

It can be seen from the results above that the Muskerry Estate Signalised Junction will operate within capacity during the AM and the PM Peak periods in the 2032 'Without' scenario, and that it will continue to operate within capacity during the AM Peak period and PM Peak period in the 2032 'With' scenario.

5.3.2.4 Design Year 2042

The 2042 Design Year AM and PM results for both the 'Without' and 'With' scenarios are shown below in Table 5-16 and Table 5-17 respectively, indicating 'Queue' and Ratio of Flow to Capacity 'RFC' values for the respective arms.

Table 5-16: LinSig Assessment: 2042 Design Year, AM and PM Peaks – Without Development

Approach Arm	AM Peak (08.15-09.15)		PM Peak (15.00-16.00)	
	Queue (PCU)	RFC (%)	Queue (PCU)	RFC (%)
R608 West	28.9	89%	17.8	84%
R608 East	11.6	86%	15.7	83%
Old Fort Road North	10.1	90%	14	85%
Old Fort Road South	11.8	87%	8.1	81%

Table 5-17: LinSig Assessment: 2042 Design Year, AM and PM Peaks – With Development

Approach Arm	AM Peak (08.15-09.15)		PM Peak (15.00-16.00)	
	Queue (PCU)	RFC (%)	Queue (PCU)	RFC (%)
R608 West	33.2	94%	19.4	87%
R608 East	13	92%	16.4	86%
Old Fort Road North	12.1	91%	15.1	87%
Old Fort Road South	13.1	91%	8.9	87%

It can be seen from the results above that the Muskerry Estate Signalised Junction will operate within capacity during the AM and the PM Peak periods in the 2042 'Without' scenario, and that it will continue to operate within capacity during the AM Peak period and PM Peak period in the 2042 'With' scenario. It is noted that the junction is approaching capacity in both the without and with development scenarios.

5.3.3 Station Road Signalised T-Junction

5.3.3.1 Base Year 2025

The 2025 Base Year AM and PM results for the 'Without' scenario are shown below in Table 5-18 indicating 'Queue' and Ratio of Flow to Capacity 'RFC' values for the respective arms.

Table 5-18: LinSig Assessment: 2025 Base Year, AM and PM Peaks – Without Development

Approach Arm	AM Peak (08.15-09.15)		PM Peak (15.00-16.00)	
	Queue (PCU)	RFC (%)	Queue (PCU)	RFC (%)
R608 West	7.4	59%	7.1	60%
R608 East	6.5	59%	8	60%
Station Road	6	57%	6.2	59%

It can be seen from the results above that the Station Road Junction is currently operating within capacity during the AM and PM Peak periods in the 2025 Base Year.

5.3.3.2 *Opening Year 2027*

The 2028 Opening Year AM and PM results for both the 'Without' and 'With' scenarios are shown below in Table 5-19 and Table 5-20 respectively, indicating 'Queue' and Ratio of Flow to Capacity 'RFC' values for the respective arms.

Table 5-19: LinSig Assessment: 2027 Opening Year, AM and PM Peaks – Without Development

Approach Arm	AM Peak (08.15-09.15)		PM Peak (15.00-16.00)	
	Queue (PCU)	RFC (%)	Queue (PCU)	RFC (%)
R608 West	7.8	61%	7.5	62%
R608 East	6.8	61%	8.3	62%
Station Road	6.2	59%	6.5	61%

Table 5-20: LinSig Assessment: 2027 Opening Year, AM and PM Peaks – With Development

Approach Arm	AM Peak (08.15-09.15)		PM Peak (15.00-16.00)	
	Queue (PCU)	RFC (%)	Queue (PCU)	RFC (%)
R608 West	7.8	61%	7.5	62%
R608 East	6.8	61%	8.3	62%
Station Road	6.2	59%	6.5	61%

It can be seen from the results above that the Station Road Junction will operate within capacity during the AM and the PM Peak periods in the 2027 'Without' scenario, and that it will continue to operate within capacity during the AM and PM Peak periods in the 2027 'With' scenario.

5.3.3.3 *Interim Year 2032*

The 2033 Interim Year AM and PM results for both the 'Without' and 'With' scenarios are shown below in Table 5-21 and Table 5-22 respectively, indicating 'Queue' and Ratio of Flow to Capacity 'RFC' values for the respective arms.

Table 5-21: LinSig Assessment: 2032 Interim Year, AM and PM Peaks – Without Development

Approach Arm	AM Peak (08.15-09.15)		PM Peak (15.00-16.00)	
	Queue (PCU)	RFC (%)	Queue (PCU)	RFC (%)
R608 West	8.9	65%	8.4	66%
R608 East	7.5	65%	9.1	66%
Station Road	6.8	63%	7.1	65%

Table 5-22: LinSig Assessment: 2032 Interim Year, AM and PM Peaks – With Development

Approach Arm	AM Peak (08.15-09.15)		PM Peak (15.00-16.00)	
	Queue (PCU)	RFC (%)	Queue (PCU)	RFC (%)
R608 West	8.9	65%	8.4	66%
R608 East	7.5	65%	9.1	66%
Station Road	6.8	63%	7.1	65%

It can be seen from the results above that the Station Road Junction will operate within capacity during the AM and the PM Peak periods in the 2032 'Without' scenario, and that it will continue to operate within capacity during the AM and PM Peak periods in the 2032 'With' scenario.

5.3.3.4 Design Year 2042

The 2042 Design Year AM and PM results for both the 'Without' and 'With' scenarios are shown below in Table 5-23 and Table 5-24 respectively, indicating 'Queue' and Ratio of Flow to Capacity 'RFC' values for the respective arms.

Table 5-23: LinSig Assessment: 2042 Design Year, AM and PM Peaks – Without Development

Approach Arm	AM Peak (08.15-09.15)		PM Peak (15.00-16.00)	
	Queue (PCU)	RFC (%)	Queue (PCU)	RFC (%)
R608 West	10.6	71%	10	72%
R608 East	8.5	71%	10.4	72%
Station Road	7.7	69%	8.2	72%

Table 5-24: LinSig Assessment: 2042 Design Year, AM and PM Peaks – With Development

Approach Arm	AM Peak (08.15-09.15)		PM Peak (15.00-16.00)	
	Queue (PCU)	RFC (%)	Queue (PCU)	RFC (%)
R608 West	10.6	71%	10	72%
R608 East	8.5	71%	10.4	72%
Station Road	7.7	69%	8.2	72%

It can be seen from the results above that the Station Road Junction is currently operating within capacity during the AM and the PM Peak periods in the 2042 'Without' scenario, and that it will continue to operate within capacity during the AM and PM Peak periods in the 2042 'With' scenario.

5.3.4 Old Fort Road Signalised T-Junction

5.3.4.1 Base Year 2025

The 2025 Base Year AM and PM results for the 'Without' scenario are shown below in Table 5-25, indicating 'Queue' and Ratio of Flow to Capacity 'RFC' values for the respective arms.

Table 5-25: LinSig Assessment: 2025 Base Year, AM and PM Peaks – Without Development (PCUs)

Approach Arm	AM Peak (08.15-09.15)		PM Peak (15.00-16.00)	
	Queue (PCU)	RFC (%)	Queue (PCU)	RFC (%)
R608 West	14.2	71%	14.8	69%
R608 East	16.2	72%	14.1	70%
Old Fort Road	6.1	35%	6.9	37%

It can be seen from the results above that the Old Fort Road Junction is currently operating within capacity during the AM and PM Peak periods in the 2025 Base Year.

5.3.4.2 *Opening Year 2027*

The 2027 Opening Year AM and PM results for both the 'Without' and 'With' scenarios are shown below in Table 5-26 and Table 5-27 respectively, indicating 'Queue' and Ratio of Flow to Capacity 'RFC' values for the respective arms.

Table 5-26: LinSig Assessment: 2027 Opening Year, AM and PM Peaks – Without Development

Approach Arm	AM Peak (08.15-09.15)		PM Peak (15.00-16.00)	
	Queue (PCU)	RFC (%)	Queue (PCU)	RFC (%)
R608 West	14.9	73%	15.6	72%
R608 East	17.4	74%	15.2	73%
Old Fort Road	6.3	36%	7.2	38%

Table 5-27: LinSig Assessment: 2027 Opening Year, AM and PM Peaks – With Development

Approach Arm	AM Peak (08.15-09.15)		PM Peak (15.00-16.00)	
	Queue (PCU)	RFC (%)	Queue (PCU)	RFC (%)
R608 West	15.1	75%	15.9	73%
R608 East	17.7	75%	16.2	74%
Old Fort Road	6.9	37%	7.4	39%

It can be seen from the results above that the Old Fort Road Junction will operate within capacity during the AM and the PM Peak periods in the 2027 'Without' scenario, and that it will continue to operate within capacity during the AM and PM Peak period in the 2027 'With' scenario.

5.3.4.3 *Interim Year 2032*

The 2032 Interim Year AM and PM results for both the 'Without' and 'With' scenarios are shown below in Table 5-28 and Table 5-29 respectively, indicating 'Queue' and Ratio of Flow to Capacity 'RFC' values for the respective arms.

Table 5-28: LinSig Assessment: 2032 Interim Year, AM and PM Peaks – Without Development

Approach Arm	AM Peak (08.15-09.15)		PM Peak (15.00-16.00)	
	Queue (PCU)	RFC (%)	Queue (PCU)	RFC (%)
R608 West	16.6	78%	17.3	77%
R608 East	20.5	80%	18	78%
Old Fort Road	6.9	38%	7.9	41%

Table 5-29: LinSig Assessment: 2032 Interim Year, AM and PM Peaks – With Development

Approach Arm	AM Peak (08.15-09.15)		PM Peak (15.00-16.00)	
	Queue (PCU)	RFC (%)	Queue (PCU)	RFC (%)
R608 West	17	80%	17.8	79%
R608 East	21	80%	19.1	79%
Station Road	7.4	39%	8.1	42%

It can be seen from the results above that the Old Fort Road Junction will operate within capacity during the AM and the PM Peak periods in the 2032 'Without' scenario, and that it will continue to operate within capacity during the AM and PM Peak periods b in the 2032 'With' scenario.

5.3.4.4 Design Year 2042

The 2042 Design Year AM and PM results for both the 'Without' and 'With' scenarios are shown below in Table 5-30 and Table 5-31, indicating 'Queue' and Ratio of Flow to Capacity 'RFC' values for the respective arms.

Table 5-30: LinSig Assessment: 2042 Design Year, AM and PM Peaks – Without Development

Approach Arm	AM Peak (08.15-09.15)		PM Peak (15.00-16.00)	
	Queue (PCU)	RFC (%)	Queue (PCU)	RFC (%)
R608 West	19.4	85%	20.2	84%
R608 East	25.7	87%	22.6	85%
Station Road	7.8	42%	8.9	45%

Table 5-31: LinSig Assessment: 2042 Design Year, AM and PM Peaks – With Development (PCUs)

Approach Arm	AM Peak (08.15-09.15)		PM Peak (15.00-16.00)	
	Queue (PCU)	RFC (%)	Queue (PCU)	RFC (%)
R608 West	20.2	87%	20.9	86%
R608 East	126	87%	23.7	86%
Station Road	8.3	43%	9	45%

It can be seen from the results above that the Old Fort Road Junction will operate within capacity during the AM and the PM Peak periods in the 2042 'Without' scenario, and that it will continue to operate within capacity during the AM and PM Peak periods in the 2042 'With' scenario.

5.4 Assessment Summary

Sections 5.2 and 5.3 above indicate that the majority of the network continues to perform well within capacity in the Opening Year (2027), +5 Interim Year (2032) and +15 Design Year (2043).

The maximum increases in link flows on the regional road network in the Opening Year is 8%. This increase occurs during the AM Peak period on The Old Fort Road, which will experience an increase in traffic due to the proposed entrance to the development. The percentage increase in this and similar locations is large due to relatively low base traffic flows. Increases on the R608 regional road are in the region of 6% during the AM Peak period and 4% in the PM Peak period. Thus, the impact on the regional road network through Ballincollig town centre is minimal.

Analysis of the junctions indicates that the majority of the network will continue to operate within capacity during the peak hours in the Opening Year, +5 Year and +15 Year. The Muskerry Estate signalised junction is approaching capacity in both the 'Without' and 'With' development scenarios in the 2043 +15 year.

This analysis presents a worst-case scenario in terms of traffic volumes generated by the proposed development and does not make any provision for an increased modal share by public transport due to the excellent provision in close proximity to the site of the proposed development.

6. Mitigation Measures

As discussed above, the network will continue to operate within capacity for the majority of the scenarios outlined, with some localised exceptions in future years where junction are approaching capacity in both 'Without' and 'With' development assessment. The volume of traffic generated by the development has been developed on a conservative basis and does not take account of the likelihood of increased use of public transport in future years due to the proximity of the proposed urban light rail route operating at a high frequency basis connecting to Cork City. For this reason, the traffic generation shown above and its impact on the network represents a worst-case scenario.

To further reduce the modal split of the private car, an Outline Mobility Management Plan has been prepared for the proposed development, which will be updated to a full Mobility Management Plan upon occupation. This includes encouragement of use of sustainable modes of transport for staff to reduce the number of private car trips to and from the proposed development.

7. Conclusion

The proposed development is located to the north of Ballincollig, on land zoned 'Urban Town Centre'. The development will consist of construction of 157 no. apartments, 1 no. childcare facility and all associated site development works.

The analysis presented above represents a conservative estimate of traffic generated by the proposed development. Notwithstanding this, most of the network will experience some growth but will continue to operate within capacity through to the Design Year of 2042. The impact on the operation of the town centre is therefore considered to be minor, and the impacts on the outskirts is expected to be mitigated to a certain extent by increased use of sustainable modes as outlined in the mitigation measures above.

Due to the combination of these factors, the traffic impact from the proposed development on the receiving street network is likely to be low.