

Tiznow Property Company Limited (Comer Group Ireland)

City Park Development at the Former Tedcastles Site

Traffic and Transport Assessment

Reference: 267365-ARUP-XX-XX-RP-YT-0011

P02 | 25 March 2022







This report takes into account the particular instructions and requirements of our client. It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

Job number 267365-00

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Contents

1.	Introduction	1
2.	Study Methodology	2
3.	Planning Context	3
3.1	National Transport Policy	3
3.2	Regional and Local Transport Policy	4
4.	The Existing Receiving Environment	6
4.1	Site Location	6
4.2	Local Road Network	6
4.3	Temporary proposals on local road network	7
4.4	Pedestrian Facilities	8
4.5	Cyclist Facilities	8
4.6	Public Transport	11
4.7	Strategic Transport Proposals	15
4.8	Other Infrastructure Proposals in Site Vicinity	19
4.9	Existing Traffic Patterns	20
5.	Proposed Development	22
5.1	Nature of the Proposed Development	22
5.2	Pedestrian and Cyclist Access	22
5.3	Vehicle Access	22
5.4	Parking Provision	23
5.5	Development Assessment Scenarios	25
5.6	Projected Trip Generation	27
5.7	Construction Traffic Generation	30
5.8	Traffic Distribution	31
6.	Impact on Local Road Network	33
6.1	General	33
6.2	Link Flow Assessment	33
6.3	Junction Assessment	36
7.	Mitigation Measures	47
7.1	Construction Strategy	47
7.2	Hours of Working	47
7.3	Construction Traffic Management Plan	47
7.4	Construction Mobility Management	47
7.5	Outline Mobility Management Plan	48
8.	Conclusion	49

Tables

Table 1: 2019 Two-Way Link Flows (PCUs), AM peak (07:30 – 08:30) and PM peak (17:15 – 18:15)	21
Table 2: Proposed Development Breakdown	22
Table 3: Cork City Council Parking Standards	23

Table 4: Residential Parking Range	23
Table 5: Residential Parking Requirements	24
Table 6: Non-residential parking requirements	24
Table 7: Trip Generation Rates – Residential Units (all trips are ‘Person Trips’ per unit)	27
Table 8: Existing Mode Share in Site Locality	28
Table 9: Proposed 2030 Mode Share in Site Locality	29
Table 10: Trip Generation – 2025 Opening Year	29
Table 11: Trip Generation – 2030 Opening Year +5	29
Table 12: Proposed Trip Distribution Profile	32
Table 13: 2025 Opening Year – Two-Way Link Flows	34
Table 14: 2030 Opening Year +5 – Two-Way Link Flows	35
Table 15: Centre Park Road/Marquee Road Junction – 2019 Base Year Results	36
Table 16: Centre Park Road/Marquee Road Junction – 2025 Opening Year Results (AM Peak)	37
Table 17: Centre Park Road/Marquee Road Junction – 2025 Opening Year Results (PM Peak)	37
Table 18: Centre Park Road/Marquee Road Junction – 2030 Opening Year +5 Results (AM Peak)	37
Table 19: Centre Park Road/Marquee Road Junction – 2030 Opening Year +5 Results (PM Peak)	38
Table 20: Marquee Road/Monahan Road Junction – 2019 Base Year Results	38
Table 21: Marquee Road/Monahan Road Junction – 2025 Opening Year Results (AM Peak)	39
Table 22: Marquee Road/Monahan Road Junction – 2025 Opening Year Results (PM Peak)	39
Table 23: Marquee Road/Monahan Road Junction – 2030 Opening Year +5 Results (AM Peak)	39
Table 24: Marquee Road/Monahan Road Junction – 2030 Opening Year +5 Results (PM Peak)	40
Table 25: Maryville/Blackrock Road Junction – 2019 Base Year Results	40
Table 26: Maryville/Blackrock Road Junction – 2025 Opening Year Results (AM Peak)	41
Table 27: Maryville/Blackrock Road Junction – 2025 Opening Year Results (PM Peak)	41
Table 28: Maryville/Blackrock Road Junction – 2030 Opening Year +5 Results (AM Peak)	41
Table 29: Maryville/Blackrock Road Junction – 2030 Opening Year +5 Results (PM Peak)	42
Table 30: Victoria Roundabout Junction – 2019 Base Year Results	42
Table 31: Victoria Road Signalised Junction – 2025 Opening Year Results (AM Peak)	43
Table 32: Victoria Road Signalised Junction – 2025 Opening Year Results (PM Peak)	43
Table 33: Victoria Road Signalised Junction – 2030 Opening Year +5 Results (AM Peak)	44
Table 34: Victoria Road Signalised Junction – 2025 Opening Year +5 Results (PM Peak)	44
Table 35: Albert Road/N27 Junction – 2019 Base Year Results	45
Table 36: Albert Road/N27 Junction – 2025 Opening Year Results (AM Peak)	45
Table 37: Albert Road/N27 Junction – 2025 Opening Year Results (PM Peak)	45
Table 38: Albert Road/N27 Junction – 2030 Opening Year +5 Results (AM Peak)	46
Table 39: Albert Road/N27 Junction – 2030 Opening Year +5 Results (PM Peak)	46

Figures

Figure 1: Site Location – Cork City Centre Context	6
Figure 2: Walking Catchment of proposed development site	8
Figure 3: Cycling Catchment of proposed development site	9
Figure 4: Cycle Network Proposals for Cork City Centre	10
Figure 5: Cycle Network Proposals for site environs	10

Figure 6: Cycle Network Proposals for Site Environs	11
Figure 7: Existing Public Bike Hire station locations in site vicinity	11
Figure 8: Cork City Bus Service Termini and routes/stops in site vicinity	12
Figure 9: Existing bus stops and bus routes in site vicinity	12
Figure 10: AM Peak (08:30) Public Transport Catchment of proposed development site	13
Figure 11: PM Peak Public (18:00) Transport Catchment of proposed development site	13
Figure 12: Public Transport Destination Accessibility from The Site [Base map source: BusConnects.ie]	14
Figure 13: CMATS Bus Network Proposals in site vicinity	15
Figure 14: Proposed LRT East-West Corridor	16
Figure 15: Proposed Light Rail Transit Corridor through South Docklands and along site boundary	16
Figure 16: Proposed Suburban Rail Improvements	17
Figure 17: Proposed Streetscape Improvements on Albert Quay East under the Docklands to City Centre Road Network Improvement Scheme	19
Figure 18: Location of Traffic Surveys	20
Figure 19: Development Access Strategy	23
Figure 20: Electoral Division Zones in Cork City	28

1. Introduction

Arup has been commissioned by Tiznow Property Company Limited (Comer Group Ireland) to undertake a Traffic & Transport Assessment (TTA) of a proposed residential development at The Former Cork Warehouse Company, in the South Docks area of Cork City. This TTA will be submitted as part of a Strategic Housing Development (SHD) application to An Bord Pleanála (ABP). An Outline Mobility Management Plan (MMP) and other associated documentation will also accompany the SHD application.

The proposed development comprises the demolition of the existing structures on site and the construction of a strategic housing development of 823 no. apartments, resident amenity and ancillary commercial areas including childcare facilities. The development will comprise 6 no. buildings ranging in height from part 1 no. to part 35 no. storeys over lower ground floor level. The proposed development also comprises hard and soft landscaping, pedestrian bridges, car parking, bicycle stores and shelters, bin stores, ESB substations, plant rooms and all ancillary site development works. Vehicular access to the proposed development will be provided via Centre Park Road.

This report takes account of the following:

- Key considerations including current knowledge of the existing site and local constraints;
- Feedback from Cork City Council (CCC) through various meetings held to date;
- Current knowledge of existing and upcoming studies and proposals for the development site, including the Cork Metropolitan Area Transport Strategy;
- The background work being carried out by Cork City Council to prepare an Area-Based Transport Assessment (ABTA) for the South Docklands, and the emerging infrastructure requirements arising from same; and
- Current programme and timescales.

2. Study Methodology

A brief description of the methodology of this assessment is presented below:

- **Section 3** of this report describes the '*Planning Context*', with National, Regional and Local transport policy and relevant guidelines all presented and examined;
- **Section 4** of this report describes the '*Existing Receiving Environment*'. It describes the location of the proposed development in its context with the South Docks area and Cork City Centre and gives a detailed description of the surrounding road network, in respect of the proposed development. It also sets out the existing traffic patterns on the surrounding road network;
- **Section 5** sets out the '*Proposed Development*'. Within this section, the nature of the proposed development is set out, in terms of the proposed use and scale of development. It also details the projected trip generation and distribution on the local road network and the proposed parking provision as a result of the proposed development;
- **Section 6** sets out the '*Impact of the Proposed Development*'. This section details the expected background traffic during the opening year of the development, and fifteen years after opening, taking into account the approved future year growth rates in accordance with the TII (NRA) '*Project Appraisal Guidelines*' Unit 5.5 (*Link-Based Traffic Growth*'). The projected traffic generated by the proposed development is then applied to the local road network. This enables an assessment to be carried out of the impact on the local road network, both for the opening year and future years. The final part of this section sets out the critical junctions and provides an assessment of each with a summary of the findings in terms of the 'Ratio of Flow to Capacity' and mean maximum queues; and
- **Section 7** describes the '*Mitigation Measures*' proposed to assist with improvements to the local road network while reducing the impact of the proposed development on the receiving environment.

3. Planning Context

The following documents set out the transport planning policy framework on a national, regional and local level. The overarching emphasis of these documents is to promote and encourage the use of sustainable modes while reducing unnecessary trips.

3.1 National Transport Policy

3.1.1 Smarter Travel – A Sustainable Transport Future 2009

This document sets out the transport policy for Ireland for the years 2009 – 2020 and remains valid despite currently lying outside its' statutory timeframe. It identified a target for reducing work-related commuting by car from its current modal share of 65% to 45% by 2020.

The document admits that the targets are ambitious and may need to be adjusted in light of improving knowledge and changing trends, but also taking cognisance of the present economic situation.

3.1.2 National Cycle Policy Framework 2009 – 2020

The National Cycle Policy Framework (as part of Smarter Travel – A Sustainable Transport Future 2009) outlines national policy for cycling, in order to create a stronger cycling society and a friendlier environment for cycling.

The policy document set a target of 10% of all trips by bicycle by 2020, and equally recognises the needs of promoting and integrating cycle networks.

3.1.3 Design Manual for Urban Roads and Streets

The Design Manual for Urban Roads and Streets (DMURS), published by Department of Transport, Tourism and Sport and the Department of Environment, Community and Local Government (2013), provides guidance relating to the design of urban roads and streets. It presents a series of principles, approaches and standards that are necessary to achieve balanced, best practice design outcomes with regard to networks and individual streets.

DMURS aims to re-balance the transport modes and place the pedestrian and cyclist ahead of the vehicle when examining the street. The pedestrian perspective focuses on:

- **Connectivity and legibility:** where traffic movement is not given priority over pedestrians;
- **Comfort:** increased width and reduced clutter on footpaths. Promotion of passive surveillance and active street edges to help pedestrians feel less isolated and vulnerable; and
- **Safety:** by designing a street with a perceived increase level of risk for drivers encourages reduced speed. Therefore, designing a street for pedestrian comfort will naturally be designed for reduced vehicle speed.

Integrated approaches incorporate elements of urban design and landscaping that instinctively alter behaviour, thus reducing the necessity for more conventional measures (such as physical barriers and the road geometry) alone to manage behaviour. Streets and junctions are more compact, providing better value for money.

Consequently, there are four 'Key Design Principles' which are presented in DMURS. These are:

- **Connected networks:** To support the creation of integrated street networks which promote higher levels of permeability and legibility for all users, and in particular more sustainable forms of transport;
- **Multi-function streets:** The promotion of multi-functional, place-based streets that balance the needs of all users within a self-regulating environment;
- **Pedestrian focus:** The quality of the street is measured by the quality of the pedestrian environment; and

- **Multidisciplinary approach:** Greater communication and co-operation between design professionals through the promotion of a plan-led, multidisciplinary approach to design.

3.2 Regional and Local Transport Policy

3.2.1 Southern Regional Spatial and Economic Strategy (RSES)

All Regional Assemblies in the country have now adopted a Regional Spatial and Economic Strategy (an RSES) to give effect to the National Planning Framework at regional level. All Local Authorities are also required to ensure alignment of Development Plans and Local Area Plans with the RSES to ensure the achievement of national and regional policy objectives.

The RSES for the Southern Region outlines numerous objectives within Part 6, Section 2, ‘The Regional Transport Strategy’, including:

- To provide for the integrated development of sustainable transport infrastructure, including walking, cycling (including emerging e-modes) and public transport to accommodate the necessary switch from the private car, for the travel needs of all individuals in the region, in line with the stated government transport policy;
- To support improved strategic and local connectivity; To cater for the demands of longer-term population and employment growth, in a sustainable manner; and
- Supporting compact and smart growth through the achievement of mutual consistency between land -use and transport planning, investment, and service provision.

3.2.2 Cork City Development Plan (2015-2021)

The current Cork City Development Plan (2015-2021) sets out a number of strategic transport objectives, including the following:

- Provide for the greater consolidation of development within the City Centre, Docklands, Key Development Areas and Strategic Corridors, facilitated through the integration of land-use and transport planning, investment and service provision;
- To reduce the percentage of persons who drive to work to 60% by 2021;
- To invest in transport infrastructure based on the transport user hierarchy: pedestrians, cyclists, public transport users, freight, delivery and waste vehicles; private vehicle users;
- To encourage and facilitate cycling and walking for short/local trips by providing appropriate infrastructure, promoting “soft-measures” that influence change in transport behaviour, and by encouraging proximate, compact land uses;
- To develop a Bus Rapid Transit system from Ballincollig to Mahon via the City Centre and Docklands;
- To work with transport stakeholders to further integrate transport modes and facilitate multi-modal trip chains;
- To provide new local roads, streets, upgraded streets, and pathways where required to increase connectivity;
- To actively manage capacity of the city’s street system to reduce the negative impacts of congestion and to maximise the use of the existing street network; and
- To encourage the use of innovative measures to reduce the requirement for car parking.

3.2.3 Draft Cork City Development Plan (CDP) (2022-2028)

The Draft Cork City Development Plan (2022-2028) is expected to be finalised and adopted in mid-2022. The Draft Plan promotes the enhancement of the public realm and the promotion of sustainable transportation by the introduction of more space for public transport, pedestrian and cycle infrastructure and a reduction in road space and parking for cars in order to meet the challenge of accommodating the planned

growth of the city population. Sustainable and active travel represent a key strategic principle of the Draft Plan.

3.2.4 Cork Metropolitan Area Transport Strategy (CMATS)

The National Planning Framework (Ireland 2040) envisages sustained high growth in Ireland's urban centres, with Cork expected to record a 50-60% population growth in the period to 2040.

This population growth will see a commensurate increase in travel demand across the metropolitan area. To meet this challenge the NTA, in collaboration with Cork City and County Councils, has developed the Cork Metropolitan Area Transport Strategy 2040 (CMATS), a €3.5 billion strategy which sets out a framework for the planning and delivery of transport infrastructure and services to underpin the metropolitan area growth.

CMATS sets out a wide range of proposals across the entire transport network, including the following:

- Development of a new proposed metropolitan area bus network encompassing radial bus corridors into the city and orbital bus services across the network;
- Development of an east-west high frequency public transport corridor from Mahon to the City Centre and on to Ballincollig, envisaged to be provided as a Light Rail Transit (LRT) system in the medium to long-term, preceded by a high-frequency bus service in the interim;
- New city centre infrastructure to include several new river crossings at the Mill Road Bridge, Water Street Bridge and the South Docklands Eastern Gateway Bridge;
- Major supporting road infrastructure projects, including the Cork Northern Ring Road, Cork Northern Distributor Road and Cork Southern Distributor Road;
- Implementation of the Cork Metropolitan Area Cycle Network Plan with some additional or upgraded links from this plan; and
- Walking and cycling improvements throughout the metropolitan area.

The CMATS proposals in the development site vicinity are discussed in further detail later in this assessment.

3.2.5 Cork Metropolitan Area Cycle Network Plan

The Cork Metropolitan Area Cycle Network Plan (CNP) was developed in 2016 and outlined recommendations for cycling infrastructure and development of an integrated and coherent cycling network across the study area. The CNP outlined ambitions for an average cycling mode share within the overall South City Environs of 11% (with specific trip types targeted for a mode share of up to 20%). The CNP developed Primary, Secondary, Interurban and Greenway routes for the study area, with the Passage West Greenway identified as a major cycling route between the south-east city and the city centre.

As outlined above, the proposals within the CNP have largely been subsumed into the CMATS cycle network proposals. Proposals relating to the site vicinity are detailed later in this assessment.

4. The Existing Receiving Environment

4.1 Site Location

The development site is located in the eastern suburb of Cork City, approximately 2km east of the city centre, within the South Docklands, at The Former Tedcastles Site. The site is bounded to the north by Marina Walk, to the south by Centre Park Road and to the west by industrial lands. The site is also located quite close to Páirc Uí Chaoimh Stadium and Marina Park. The location of the site in the context of Cork City Centre can be seen in Figure 1.

The development site is approximately 4.86 hectares in area and is currently not in use, although there are remnants of a number of industrial-type buildings still present on site.

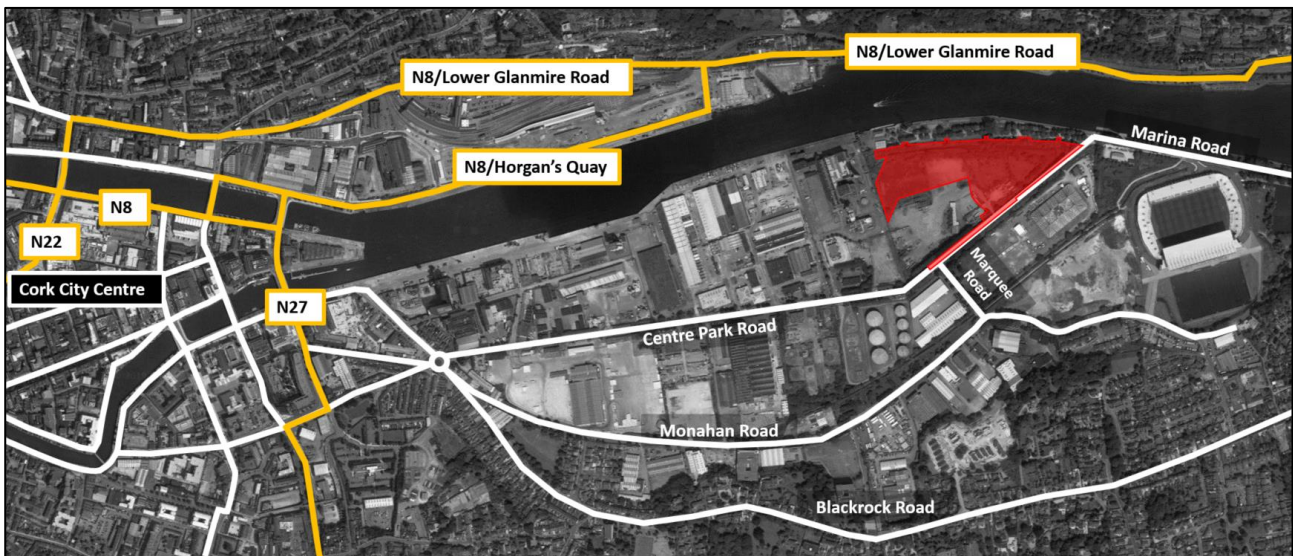


Figure 1: Site Location – Cork City Centre Context

4.2 Local Road Network

The roads located in the proximity of the development are described below and can be seen in Figure 1. The local area surrounding the site at present can largely be described as industrial in use, with a number of dormant sites towards the eastern end of the South Docklands. Centre Park Road and Monahan Road are connecting routes to Cork City Centre to the west, and to the Blackrock and Ballintemple suburban areas to the east/south-east. These routes are standard two-lane carriageways for the most part (with some localised flaring in certain locations). Marquee Road is a connecting road that links Centre Park Road and Monahan Road.

4.2.1 Centre Park Road

Centre Park Road is a 1.5km long, two-lane wide road which runs from the Victoria Road Roundabout to the West, to the Marina Road to the East. The road will be used to gain access to the development site. There are pedestrian facilities on both sides of the road and there are segregated cycle facilities (outbound) in place on the route. The 212 city bus service (Kent Station to Mahon Point) has an outbound stop on Centre Park Road approximately 250m west of the site.

Centre Park Road also acts as a link to the city centre from Blackrock Village via The Marina. Currently, there are no significantly active entrances on the section of Centre Park Road to the north-east of the junction with Marquee Road, and as such this section of Centre Park Road experiences very light traffic flows. Furthermore, Cork City Council have implemented traffic restrictions along the Marina to the north-east (as of December 2020), which effectively prohibits any non-essential through traffic along Centre Park Road east of its junction with Marquee Road.

4.2.2 Monahan Road

Monahan Road is a 2km long, two-lane wide road, which runs from the Victoria Road to the west to the Blackrock Road to the east. The northern side of the road has a footpath running the length of the road. There is on street parking on some sections of the southern side of the road, with intermittent footpath provision. There are segregated cycling facilities (inbound) in place on the route.

The 212 city bus service (Kent Station to Mahon Point) has inbound and outbound stops on Monahan Road approximately 200m south-east of the site.

The road experiences low-to-moderate traffic flow during the AM and PM peak periods as there are several employment areas situated along the road and the route also facilitates onward traffic flow to Centre Park Road. Monahan Road also acts as a link to the city centre from Blackrock Village and Ballintemple via Maryville/Blackrock Road.

4.2.3 Marquee Road

Marquee Road is a 135m long, two-lane wide road which links Centre Park Road with Monahan Road. There are no bus stops on the route, but the route has footpaths on both sides as well as segregated cycling infrastructure on the eastern side, connecting Centre Park Road to Monahan Road.

As with the other roads in the locality, Marquee Road experiences low-to-moderate traffic flow during the AM and PM peak periods as there are several employment areas situated in the vicinity and the route also facilitates onward traffic between Centre Park Road and Monahan Road, as well as traffic routing from Maryville/Blackrock Road to Centre Park Road to and from the city centre.

4.2.4 The Marina

The Marina is a narrow, two-lane road which runs along the southern bank of the River Lee, connecting Blackrock Village with Centre Park Road. The Marina has been designated by Cork City Council (as of late 2020) as a pedestrian and cyclist-only area, with restrictions in place preventing vehicular use of the route and limiting vehicle access to local access only.

Local access to the Shandon Boat Club, the Lee Rowing Club and Páirc Uí Chaoimh is retained, but no vehicular access is permitted to the east of the vehicle entrance to Páirc Uí Chaoimh (the road is now closed at this location). Further east, access via Blackrock Village is permitted for vehicles up to the junction with Church Avenue; west of this junction, no vehicle access is permitted.

Outbound traffic on Centre Park Road is also permitted to access the Marina for local access to the Lee Rowing Club, and to the Marina Park car park, and for access to Páirc Uí Chaoimh stadium. Otherwise, the Marina now carries no traffic flows of note.

4.3 Temporary proposals on local road network

In response to the prevailing impact of social distancing requirements on the public transport system serving Cork City (due to the Covid-19 situation), in May and June of 2020 Cork City Council announced a series of measures intended to promote and facilitate greater numbers of people walking and cycling both to and within the city centre. As part of this, a number of 'pop-up' proposals were brought forward for rapid implementation across the city and suburbs. These included the provision of temporary, protected cycle infrastructure and restrictions on certain roads and streets from general traffic.

In the site vicinity, temporary cycle lanes have been installed on Centre Park Road (outbound from the city to connect to The Marina), Monahan Road (inbound towards the city) and Marquee Road (southbound, connecting Centre Park Road and Monahan Road). These cycle lane proposals involved the re-designation of existing carriageway space to provide dedicated cycle lanes (no widening was undertaken), and the installation of protective bollards to segregate the facilities from vehicular traffic.

It is not known at this time as to the intended lifespan of these measures, including if or when they would be removed. However, it is envisaged that these cycle facilities on Centre Park Road, Monahan Road and Marquee Road will remain in place until such time as these routes are upgraded to permanent facilities in line with the recommendations in the Cork Metropolitan Area Transport Strategy. Indeed, these facilities have proved to be extremely popular and are well-used.

4.4 Pedestrian Facilities

All of the routes discussed in Section 4.2 have footpaths of varying quality. A program of footpath improvement works has been carried out in recent years in the site vicinity which has seen the replacement and upgrade of a significant portion of the existing footpaths along Centre Park Road in particular. Monahan Road has a continuous footpath along the northern side of the route, and intermittent footpath provision on the southern side. The pedestrian network in the site vicinity is extremely popular as a leisure walking and running route due to the onward connection to the southern bank of the River Lee (along The Marina). Marquee Road has footpaths provided on both sides of the road, of varying quality.

Figure 2 below shows the walking catchment of the development site (in 5-minute bands). It can be seen that Páirc Uí Chaoimh is within the 10-minute catchment. Marina Commercial Park, the South Dock Area and the Blackrock Road are all within the 15-minute catchment. Douglas Street is reachable within 30-minutes and Victoria Road is just outside the 20-minute walking catchment.

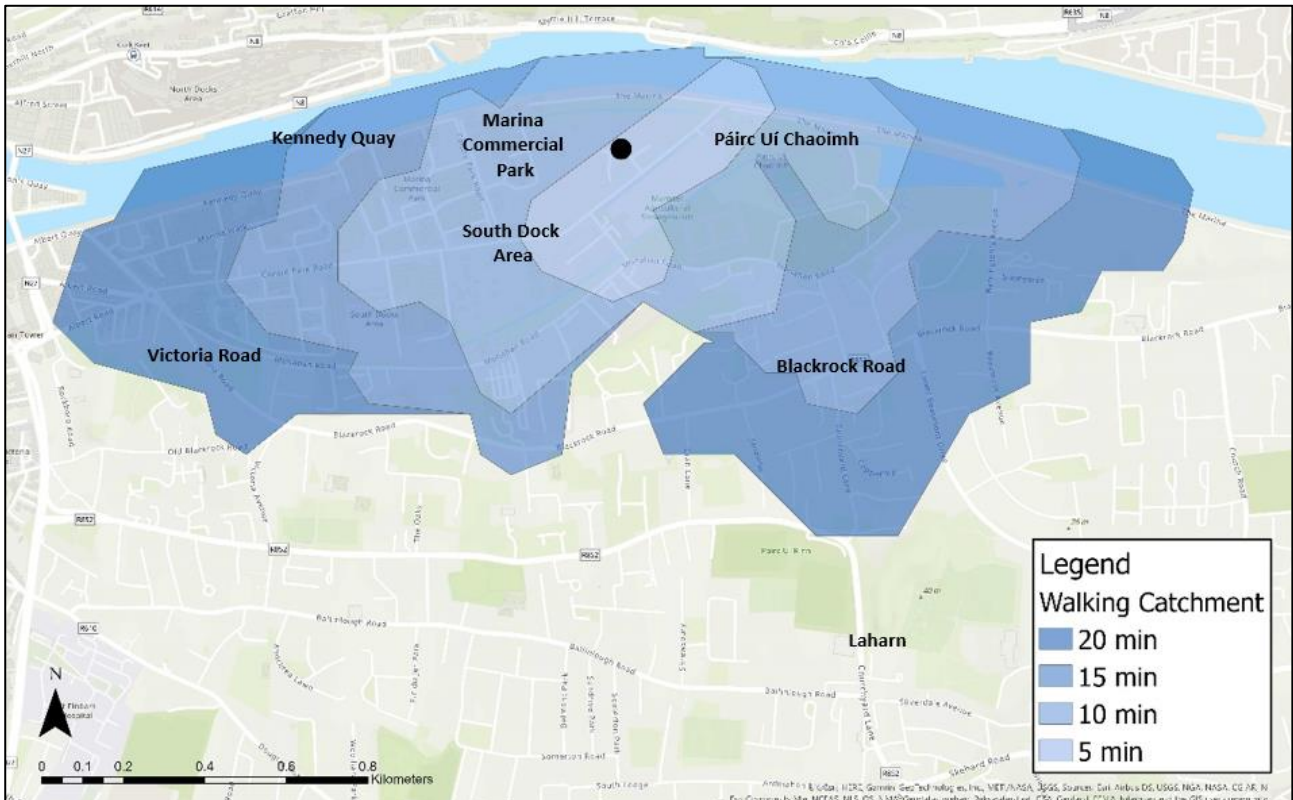


Figure 2: Walking Catchment of proposed development site

As set out in the Cork Metropolitan Area Transport Strategy (CMATS) a key aim is to improve walking infrastructure across the city to ensure the pedestrian environment is significantly enhanced, more attractive and safer.

4.5 Cyclist Facilities

As outlined above, there are a number of dedicated cycle infrastructure improvement schemes which have recently been implemented by Cork City Council in the site vicinity. Segregated cycle infrastructure is now in place on Centre Park Road (outbound), Monahan Road (inbound), Marquee Road (connecting Centre Park Road and Monahan Road), and segregated cycle infrastructure is also now in place between Centre Park Road (at the Victoria Road Roundabout) and Grand Parade, providing high-quality connections directly between the city centre core and the site. To the east, The Marina is also now a pedestrian and cyclist-only area, and approximately 1km from the site, the Passage Greenway line is accessible directly from the Marina.

The greenway is an extremely popular facility used for leisure and commuting, providing access via ramped connections to the Mahon Point area (via a ramped connection at St. Michael's Drive) and to Skehard Road (via a ramped connection in the vicinity of the Skehard Road/Mahon Link Road junction), and ultimately linking onwards to Cork City Centre.

The Passage Greenway is currently being upgraded by Cork City Council to allow for a wider facility, additional CCTV and public lighting, and new ramped connections from the adjacent road and street network. This is under construction at present and is expected to be complete and opened in mid-2022.

Figure 3 below shows the cycling catchment for the site. It can be seen that the 20-minute catchment encompasses most of Cork City. The city centre and Blackrock are within a 20-minute cycle from the site. University College Cork, Black Ash, Blackpool, Douglas and Ballyvolane are all within the 30-minute catchment. Munster Technological University (MTU), Whites Cross and Cork Airport are within the 40-minute catchment area.

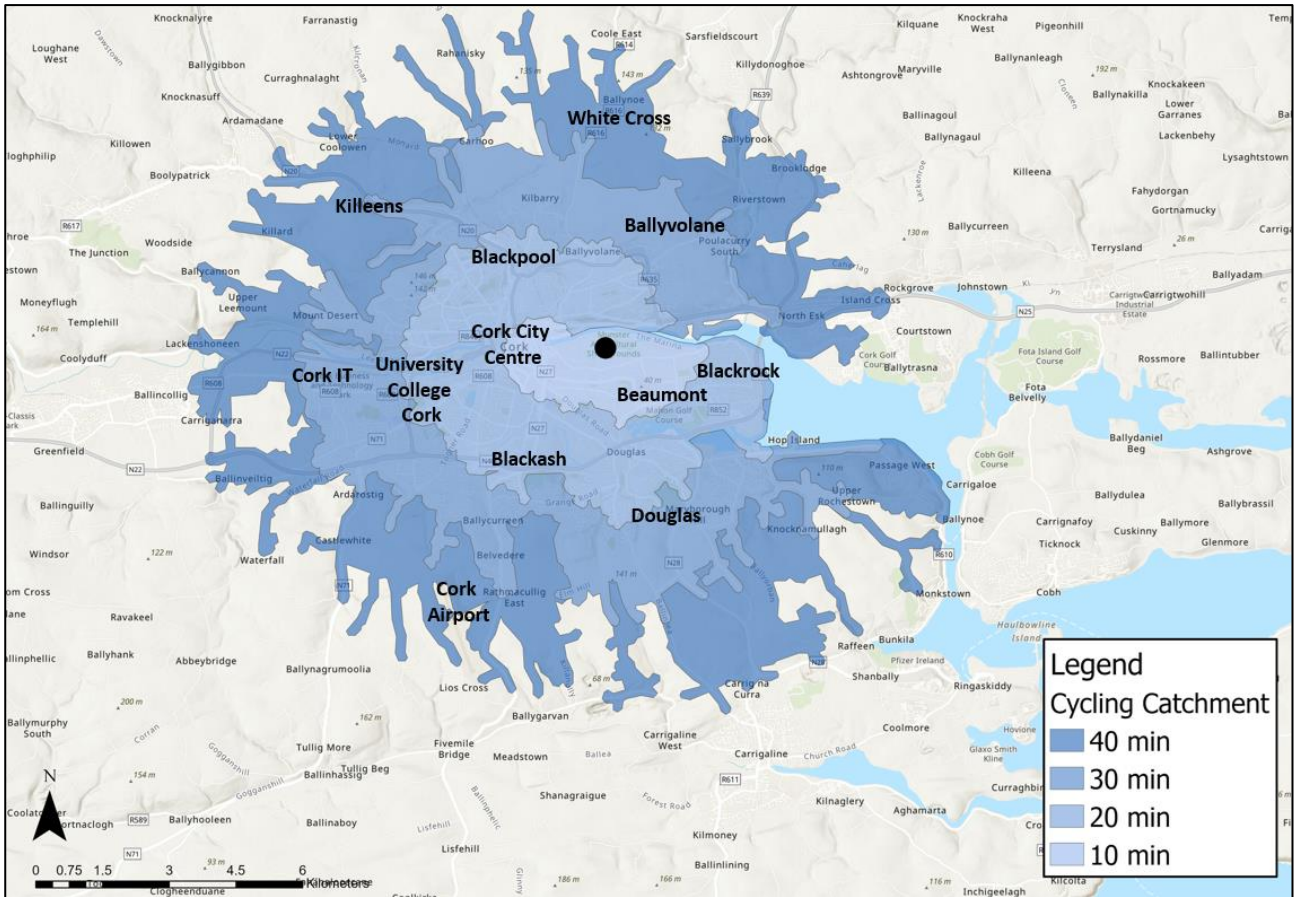


Figure 3: Cycling Catchment of proposed development site

Under the Cork Metropolitan Area Cycle Network Plan, a network of cycling facilities have been identified and are due to be implemented; Figure 4 and Figure 5 below show the cycle proposed cycling facilities for Cork City Centre and for the road network surrounding the site, respectively.

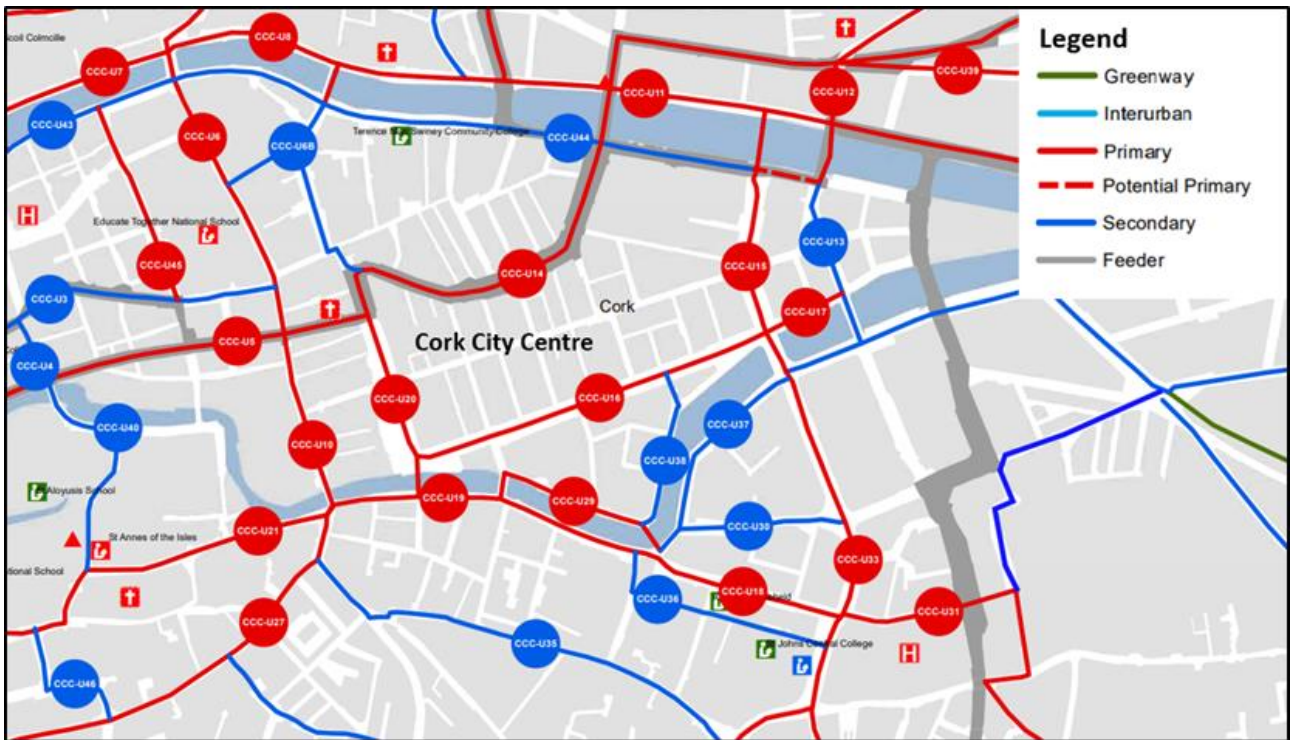


Figure 4: Cycle Network Proposals for Cork City Centre

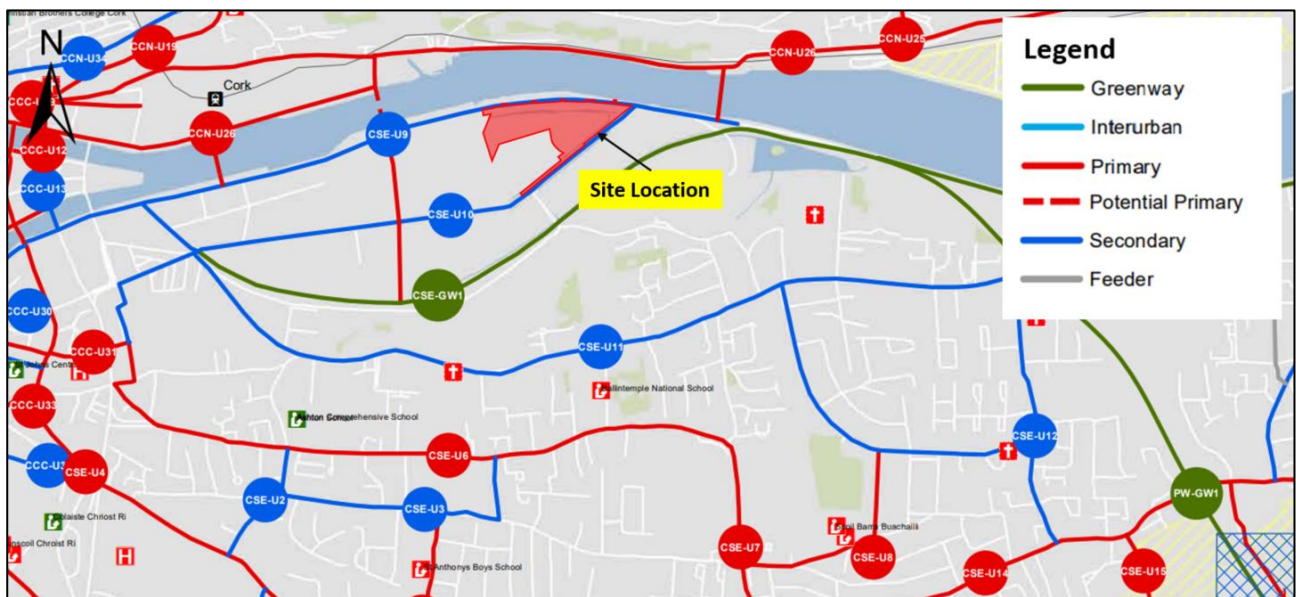


Figure 5: Cycle Network Proposals for site environs

In addition to the above, the Cork Metropolitan Area Transport Strategy (CMATS) outlines cycle proposals in the site environs. Figure 6 below illustrates the proposed cycle network as indicated in CMATS. The CMATS proposals are assumed in this regard to supersede the Cork Metropolitan Area Cycle Network Plan as the purpose of the strategy is to amalgamate all relevant proposals into a single framework for implementation. It is seen in Figure 6 below that CMATS proposes to amend the cycle network as proposed in the Cork Metropolitan Area Cycle Network Plan to extend the greenway on the Marina further west towards the city centre.

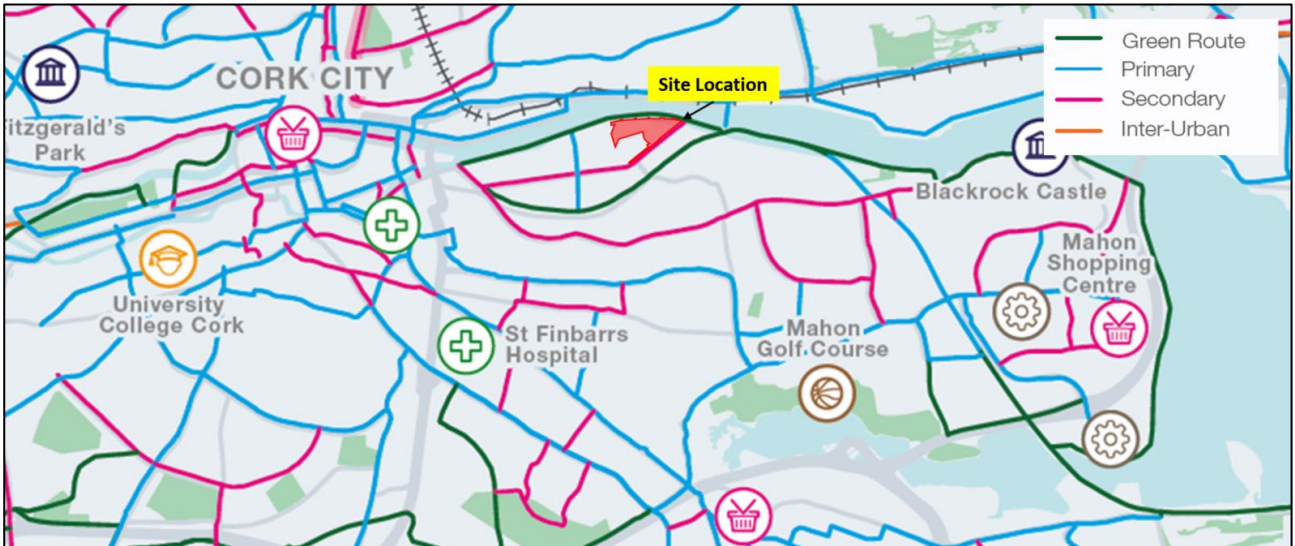


Figure 6: Cycle Network Proposals for Site Environs

Cork City is also served by a public bike hire scheme which covers a large portion of the city centre and extends from University College Cork in the west to Kent station in the east, as shown below in Figure 7. The nearest public bike share scheme docking stations to the site are on Lapp’s Quay and Anglesea Street, approximately 1.9km walking distance from the site. It is an ongoing objective of Cork City Council and the National Transport Authority to seek to expand the coverage of the network where feasible. An additional 11 stations have been announced for the scheme, of which 6 are constructed and operational with the remainder expected to be implemented and operational in mid-2022. These additional stations will include a proposed station at Victoria Road, which will be approximately 1.4km from the site.



Figure 7: Existing Public Bike Hire station locations in site vicinity

4.6 Public Transport

Cork City Centre has a large number of public transport services including city bus services, regional and commuter bus services and commuter/suburban rail. These are described in more detail below.

4.6.1 Cork City Bus Network

Cork City is served by 30 city bus services. Of these, 27 services travel to or through the City Centre. There are 3 main bus-stop/termini areas in the city centre; namely South Mall, St. Patricks Street and Merchants Quay/Parnell Place Station (see Figure 8 below). The Marina Commercial Park stop is located within 250m walking distance to the west of the site and is served by the 212 bus service, thereby connecting the development site directly with Cork City Centre to the east and Mahon Point to the south-west. To the south-east, the existing stop on Monahan Road is approximately 200m walking distance from the site.

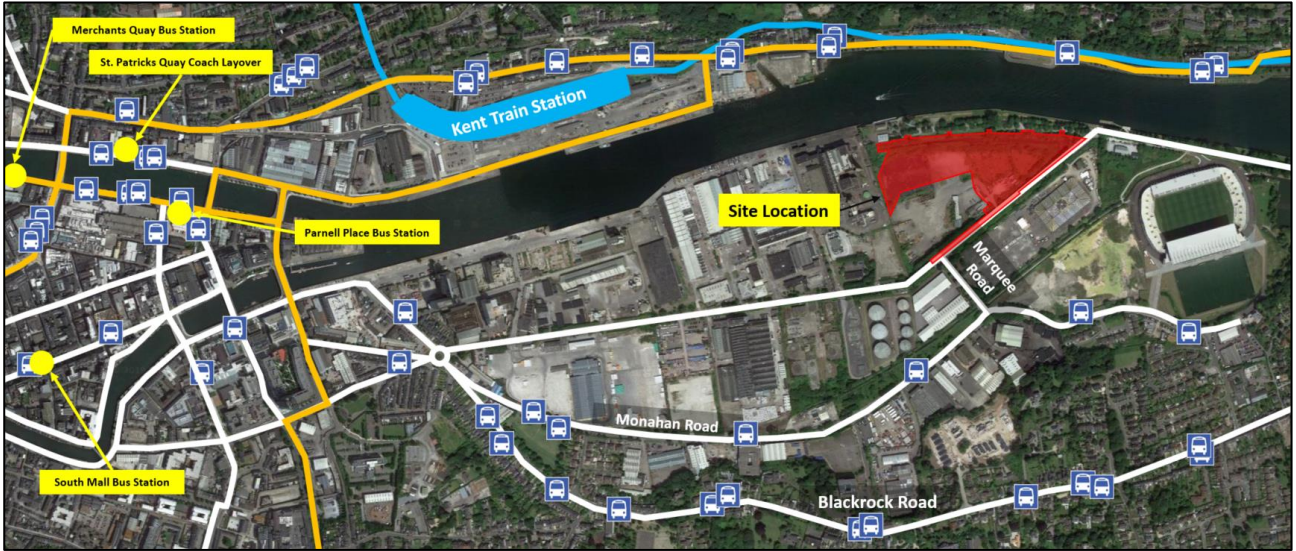


Figure 8: Cork City Bus Service Termini and routes/stops in site vicinity

The Bus Éireann 202/202A service (which runs from Mahon Point to Knocknaheeny at 10-minute frequencies) also has its' primary route corridor on Blackrock Road, approximately 800m walking distance south-east from the site.



Figure 9: Existing bus stops and bus routes in site vicinity

Figure 10 and **Figure 11** below show the 15, 30, 45 and 60-minute public transport catchments for the site during the AM peak (departing at 08:30) and the PM peak (arriving at 18:00).

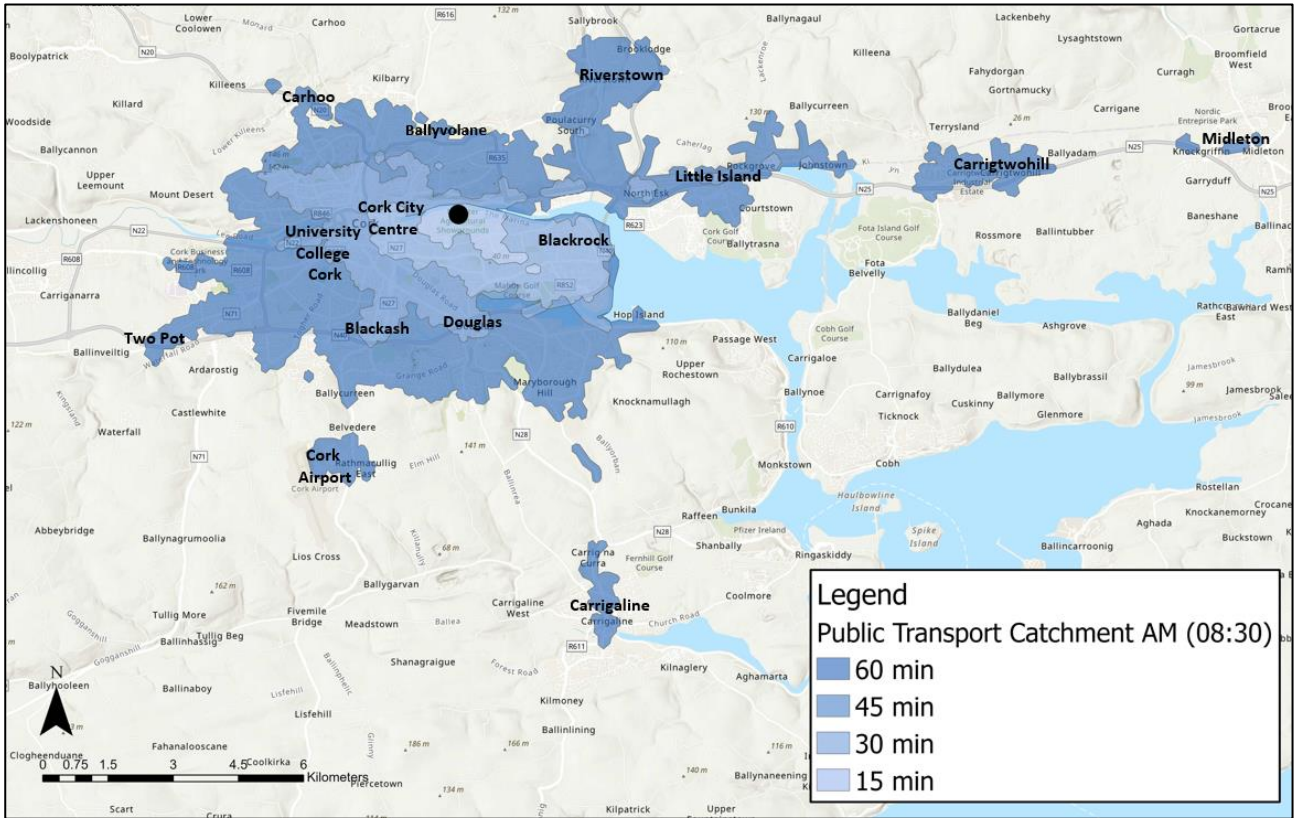


Figure 10: AM Peak (08:30) Public Transport Catchment of proposed development site

During the AM Peak Cork City Centre can be reached from the site within 30 minutes, with the western edge of the city centre area within a 45-minute catchment. The 45-minute catchment encompasses Blackrock/Mahon Point and University College Cork. Outside of this, the majority of the Cork City area is within the 60-minute catchment, as well as Riverstown to the north, and the Black Ash and Douglas to the south. Cork Airport lies just inside the 60-minute catchment area.

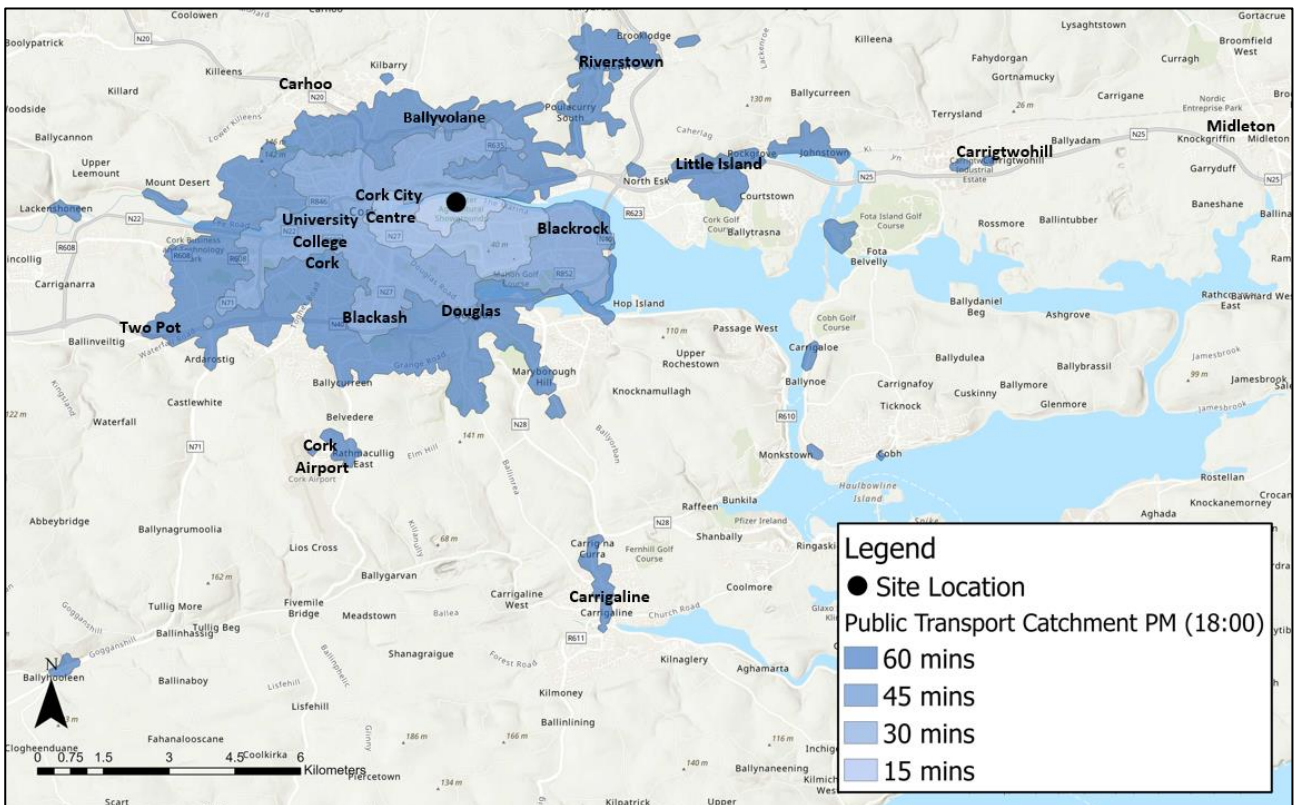


Figure 11: PM Peak Public (18:00) Transport Catchment of proposed development site

During the PM Peak the site can be reached from Cork City Centre within 30 minutes. Blackrock and University College Cork can be reached by public transport within 45-minutes. Ballyandreen, Riverstown and Carhuo to the north are within 60-minutes by public transport from the site. Cork Airport, Douglas and the Black Ash to the south are also within 60-minutes from the site.

4.6.2 BusConnects Cork – Draft City Bus Network

In November 2021, the National Transport Authority announced details of a new metropolitan area bus network for Cork. This new network is currently at draft stage and a consultation process is underway, following which the final proposed new city bus network will be published.

The draft network design maps indicate that a proposed service (Route 9) is intended to link Jacobs Island, at 20-minute weekday frequencies and will pass the site on Marquee Road along its route. Additionally, the proposed Route 11 will link Mahon Point to Farranree at 30-minute frequencies and will route along the Blackrock Road. The online map of the draft network indicates that this proposed new network would place an estimated 1,000 additional jobs within a 30-minute travel time, and an additional 7,000 jobs within a 60-minute travel time.

Figure 12 below illustrates the catchment of the proposed new city bus network in relation to the development site.

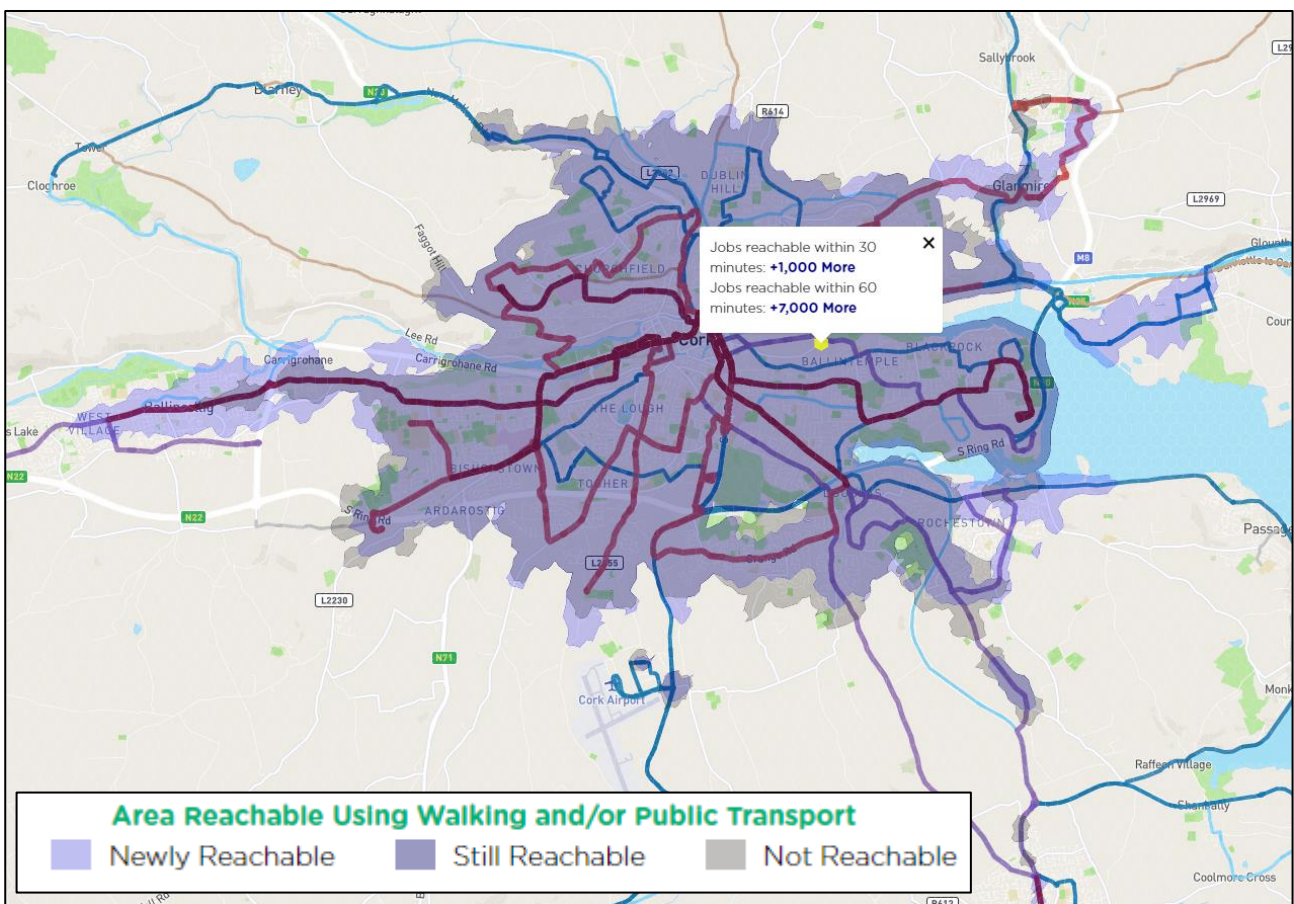


Figure 12: Public Transport Destination Accessibility from The Site [Base map source: BusConnects.ie]

4.6.3 Regional/Commuter Bus Services

A significant number of Bus Éireann Regional and Commuter services terminate or stop at Parnell Place bus station in the city centre, approximately 2.0km from the site.

4.6.4 Commuter/Suburban Rail Services

Kent Station is the principal train station serving Cork City. Services to and from Cobh, Mallow, Midleton and Dublin arrive and depart from Kent Station. The station is approximately 1.2km due north-west of the site but is approximately 2.5km by road.

The commuter services to and from Cobh run every 30 mins during the AM and PM peak periods (i.e., 07:00-09:00 and 16:00-19:00). There are 4 services from Mallow which arrive in Kent Station during the AM peak period and 6 services which depart from Cork to Mallow during the PM peak period. Services to and from Midleton run every 30 mins during the AM and PM peak periods.

Intercity services from Cork- Dublin typically run every hour during the day – a number of these are direct services and others have scheduled stops along the route.

4.7 Strategic Transport Proposals

The Cork South Docklands is envisaged to be a major regeneration hub for the city and will result in a substantial population and employment increase within the study area (including within the proposed development site). This will in turn require a commensurate improvement in both transport infrastructure and transport services.

Local and strategic transport proposals for the transport network in the site vicinity include upgrades to the local road network and additional road infrastructure in the site vicinity (including some additional river crossings), and at a strategic level the site lies along a proposed rapid transit corridor linking Mahon to Ballincollig via Cork City Centre. Therefore, regardless of the implementation of the proposed development, the local road network will see a significant increase in traffic flow arising from the redevelopment of the South Docklands and the implementation of new major transport infrastructure projects.

4.7.1 Cork Metropolitan Area Transport Strategy (CMATS)

CMATS has been developed by the National Transport Authority in collaboration with Transport Infrastructure Ireland, Cork City Council and Cork County Council. CMATS represents a co-ordinated land-use and transport strategy for the Cork Metropolitan Area to cover the period to 2040. The strategy builds upon previous similar strategies, including the Cork City Centre Movement Strategy (CCMS), the Cork Area Strategic Plan (CASP) and the Cork Metropolitan Area Cycle Network Plan.

CMATS is intended to provide a coherent transport planning policy framework and implementation plan for the measures contained therein.

CMATS aspires to support the future development of the Cork Metropolitan Area and specifically the South Docklands area as a key development zone within Cork City; to this end, high-frequency bus services are proposed across the entire Cork Metropolitan Area, with most services intended to have frequencies of 15 minutes or less. It is also understood that to serve the South Docklands in the short term, high-frequency bus services are deemed critical. The proposed bus network identified in CMATS is to be delivered in the coming years by the NTA and Cork City Council via the 'BusConnects Cork' funding programme.

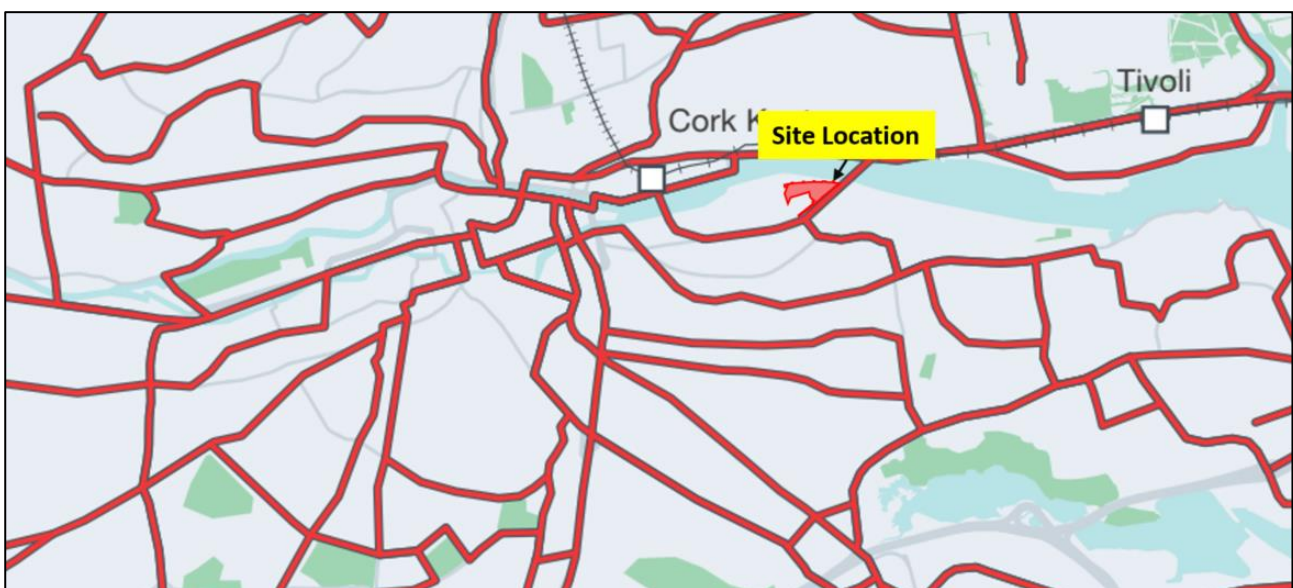


Figure 13: CMATS Bus Network Proposals in site vicinity

A significant portion of the proposed network above will be provided with bus priority measures – these are being developed by the National Transport Authority under the BusConnects Cork programme at present and are expected to be released for consultation in early 2022.

In addition, a Bus Rapid Transit (BRT) system is initially envisaged to serve the South Docklands area as part of a proposed rapid transit corridor to link Ballincollig to Mahon via Cork City Centre; ultimately, it is expected that this corridor will be upgraded to Light Rail Transit (LRT). A route feasibility study is underway at present to determine the preferred route corridor for a future LRT system.

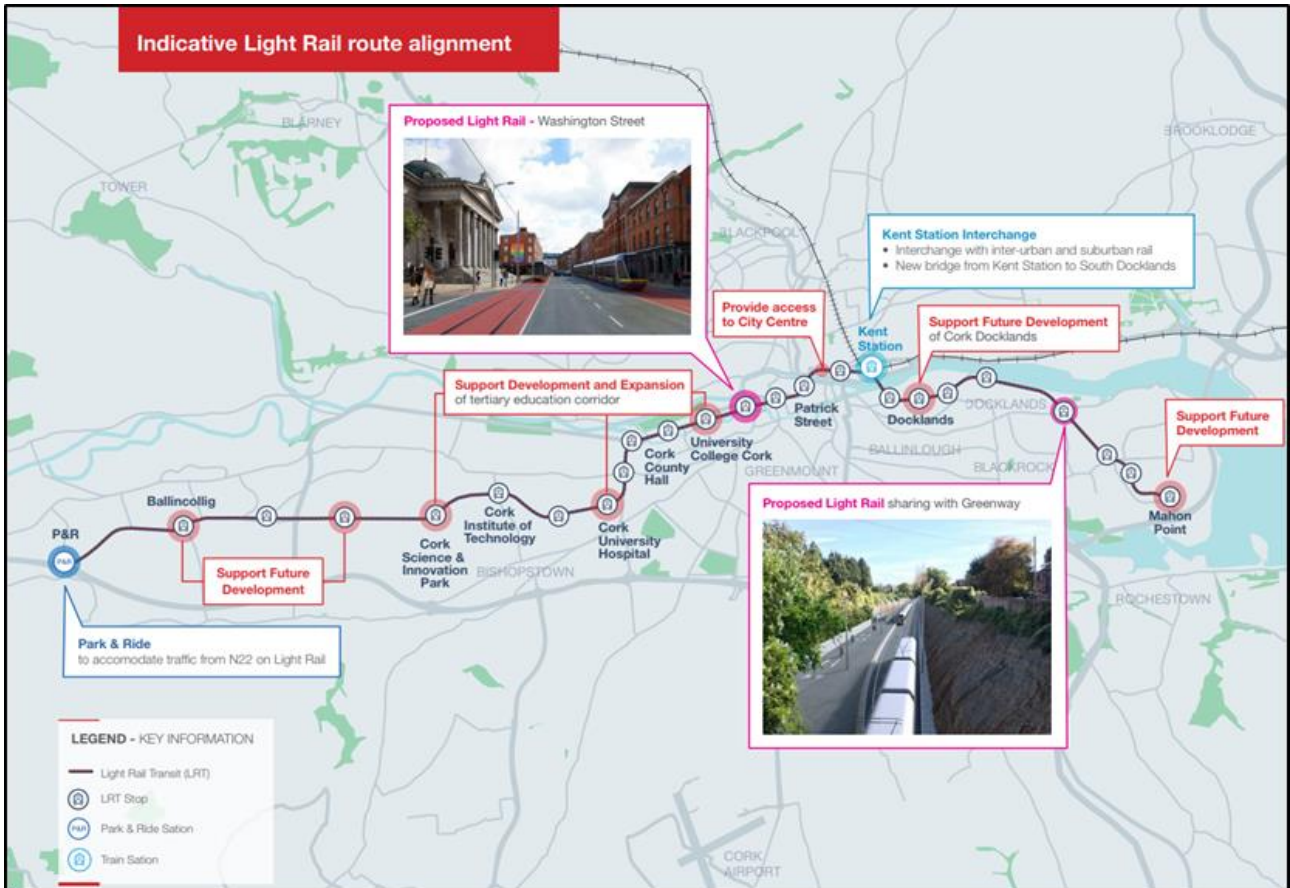


Figure 14: Proposed LRT East-West Corridor



Figure 15: Proposed Light Rail Transit Corridor through South Docklands and along site boundary

This transit corridor is proposed to route from Mahon to Ballincollig (via Cork City Centre) and to pass directly along the site boundary on Centre Park Road.

Improved throughput at Kent Station is also proposed as part of the CMATS, in order to enable direct train services from Mallow to Midleton/Cobh without requiring passengers to interchange between services at Kent Station. In addition, CMATS proposes the implementation of eight new train stations along the route to create a better suburban network.



Figure 16: Proposed Suburban Rail Improvements

As outlined above, since publication of CMATS a proposed LRT Route Feasibility Study has been tendered and awarded to a design consultant, and the BusConnects Infrastructure Cork project has also been awarded to consultants to develop the relevant infrastructure proposals for bus services on a number of corridors across the city and suburbs. Further details on these two transformational projects are expected in mid-2022.

4.7.2 South Docklands Area-Based Transport Assessment (ABTA)

CMATS is supported at a local level by an ‘Area-Based Transport Assessment’ (ABTA) for the South Docklands, developed by Cork City Council (due to be finalised and published in 2022). The CMATS and ABTA assessments in turn will then inform the (ongoing) development of a new Local Area Plan for the South Docklands. It is noted that the outputs from the ABTA study have been incorporated into a specific section of the Draft Cork City Development Plan (2022-2028) that outlines the strategic objectives for the South Docklands area.

The ABTA for the South Docklands is fully aligned with the proposals outlined in CMATS (including the proposed public transport services and transport infrastructure proposals) and is based on a 2040 horizon year to include full achievement of the population and employment growth for Cork envisaged in the National Planning Framework as well as full build-out of the South Docklands (including the proposed development site). The CMATS and ABTA have therefore determined the necessary transport infrastructure required to support this population and employment growth in the period to 2040.

The CMATS and ABTA also both support the implementation of a comprehensive cycle network across the metropolitan area, and specifically within the South Docklands dedicated cycle infrastructure is proposed on all roads that pass the site.

To complement the above transport proposals, the proposed development will adopt a robust approach to demand management, to include a reduced parking provision at the site and the promotion of walking, cycling and public transport. As a result, the expected trip generation for the scheme will be reduced, and the resultant impacts on the local road network will be reduced.

The scheme will have one distinct vehicle access point on Centre Park Road. This will also rationalise the distribution of traffic onto the local road network.

Crucially, the site is extremely well-placed to avail of the transformational sustainable transport proposals envisaged for the South Docklands and the wider city area and indeed to support the viability of these services.

The proposed rapid transit corridor is seen in Figure 15 above to cross the River Lee using a new proposed public transport-only bridge (the Mill Road Bridge) and route directly to Kent Rail Station, providing interchange opportunity with suburban and inter-city rail services, and with city bus services that serve Kent Station. The LRT corridor continues eastwards to Mahon Point, and westwards to Ballincollig via the city centre, with proposed stops at key destination and interchange locations, including:

- Mahon Point;
- St. Patrick's Street;
- University College Cork;
- Cork County Hall;
- Cork University Hospital;
- Cork Institute of Technology;
- Cork Science & Innovation Park; and
- Ballincollig.

The LRT system is intended to ultimately operate at 5-minute frequencies. The site location along the proposed LRT system alignment on Centre Park Road ensures the proposed development is ideally placed to support the rapid transit corridor and to avail of the benefit of a flagship public transport system.

4.7.3 Cork Docklands to City Centre Road Improvement Scheme

The Docklands to City Centre Road Network Improvement Scheme has been identified by Cork City Council as an important project to support development in the South Docks of Cork City.

Funding has been secured by Cork City Council from the Local Infrastructure and Housing Activation Fund (LIHAF) to implement measures aimed at unlocking sustainable transport access between the South Docks and the city centre which will facilitate the beginning of the Docklands area realising its stated potential. The road improvement works will form part of Cork City Council's long-term infrastructure proposals for both the North and South Docks which will interconnect all zones within the Docklands area as development parcels are advanced.

The main project aims of the Docklands to City Centre Road Network Improvement scheme are:

- To provide key transport infrastructure that will act as the catalyst for the early development of the adjoining lands within the Docklands area;
- To provide a network for the optimum movement of all modes of transportation between Docklands and the City Centre; and
- To provide a high-quality public realm consistent with the overall ambition for the Docklands area as a vibrant, innovative, mixed use, sustainable, socially inclusive, new urban quarter.

The scheme extends from the Albert Road/Albert Quay/Éamon de Valera Bridge junction eastwards along Victoria Road and incorporates the junctions at Centre Park Road, Monahan Road and Blackrock Road. The main changes proposed to the network under the scheme are as follows:

- Replacement of the existing Victoria Road Roundabout with a signalised junction;
- Introduction of a northbound contraflow bus lane on Victoria Road North from the new signalised junction to Albert Quay, continuing west along Albert Quay through the Albert Quay/Albert Street Junction and terminating at the Eglinton Street/Albert Quay and Clontarf Bridge Junction;
- Introduction of a two-way Cycle Track on Albert Quay East;
- Introduction of a two-way Cycle Track on Victoria Road North which will continue down Centre Park Road and Monahan Road (for future connectivity);
- Improvement to the Monahan Road/Victoria Road Junction;
- Re-alignment of the Old Blackrock Road/Victoria Road Junction;
- Public Realm Improvements to Albert Quay East – this quay will act as the ‘gateway’ to the South Docks from the city centre; and
- Public Realm Improvements to Victoria Road, Albert Road, and Marina Terrace.

The implementation of these measures is to ensure connectivity for sustainable modes of transport between the South Docks and the city centre into the future. A planning application is expected to be submitted for this scheme in mid-2022.



Figure 17: Proposed Streetscape Improvements on Albert Quay East under the Docklands to City Centre Road Network Improvement Scheme

4.8 Other Infrastructure Proposals in Site Vicinity

In addition to the strategic and local sustainable transport proposals emerging from the CMATS and ABTA studies, Cork City Council are proposing to carry out a series of localised improvement/upgrade schemes on the existing road network in the site vicinity in addition to a series of new infrastructure projects. A number of these are detailed below:

- **Monahan Road Extension** – from the existing junction with Marquee Road to the proposed Eastern Gateway Bridge landing location. This project will result in the extension of Monahan Road from its’

current junction with Marquee Road, to route eastwards towards the proposed landing point of the Eastern Gateway Bridge. Local Infrastructure Housing Activation Fund (LIHAF) support has been secured for this proposal, and it is noted that the LIHAF funding award to Cork City Council is contingent on the delivery of residential development and is also time dependent. This project has progressed through the Part VIII planning process with Cork City Council, and therefore detailed design and construction will follow in 2022, with an estimated 12-month construction period;

- **Centre Park Road Upgrade** – Cork City Council are awaiting outputs from a series of ancillary studies applicable to the South Docks, including the ABTA study and a parallel Levels Strategy study. A potential recommended output from these may be improvement works to Centre Park Road (potentially to raise the level of the road). Improvements to the road have also been identified in the ABTA assessment, to increase the route width to ultimately cater for traffic flow and the proposed rapid transit corridor. There is currently no defined timeline for the design and implementation of this project; and
- **Eastern Gateway Bridge** – there is a legacy planning permission in place for the Eastern Gateway Bridge scheme (which is proposed to link Monahan Road to the Lower Glanmire Road in Tivoli). This is expected to be superseded by a new proposal for the bridge (with a different proposed cross-section width and facilities for public transport and cycling incorporated into the bridge). The implementation of the Eastern Gateway Bridge will be transformative for the site locality as it will provide an alternative river crossing for traffic travelling to and from South Docklands and is identified within CMATS and ABTA as a key infrastructure project. There is currently no timeline for the design and implementation of this project.

4.9 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 30th of April 2019 between the hours of 07:00 – 19:00, at the 11 junctions shown below in **Figure 18**. At the time of the traffic surveys, the Marina (to the north-east of the site) was open to vehicular traffic. Although this route is now closed to traffic, no reduction in the traffic flows that were recorded on the Marina has been applied to ensure a conservative, robust assessment and to allow for traffic to and from the new public car parking area associated with Phase 1 of Marina Park, which has since been constructed and is open for public use.



Figure 18: Location of Traffic Surveys

4.9.1 Traffic Volumes

Examination of the traffic count data concluded that the peak morning traffic flows occurred between 07:30 and 08:30, while the evening peak period was observed to occur between 17:15 and 18:15. The two-way traffic flows recorded during these time periods are presented in Table 1.

Table 1: 2019 Two-Way Link Flows (PCUs), AM peak (07:30 – 08:30) and PM peak (17:15 – 18:15)

Junction/Link	AM Peak (07:30- 08:30)	PM Peak (17:15- 18:15)	AADT	%HGV (of AADT)
Centre Park Road (east of Marquee Road)	232	430	2,990	1.3%
Centre Park Road (west of Marquee Road)	410	484	4,291	3.0%
Marquee Road	222	214	2,412	4.5%
Monahan Road (west of junction with Marquee Road)	262	252	2,777	3.2%
Monahan Road (east of Victoria Rbt)	292	391	3,598	2.9%
Maryville (north of Blackrock Road)	352	324	3,473	1.6%
Blackrock Road (west of Maryville)	887	977	9,934	1.2%
Blackrock Road (east of Maryville)	857	895	9,337	1.2%
Victoria Road (north of Victoria Rbt)	840	957	9,849	7.1%
Victoria Road (south of Victoria Rbt)	1,028	848	9,775	2.1%
Victoria Road (south of Monahan Road)	799	615	7,145	1.7%
Albert Road (west of Victoria Roundabout)	518	379	4,684	5.7%
Montenotte View (west of Victoria Rbt)	135	186	1,916	3.1%
N27 (south of Albert Road)	2,141	2,144	23,920	4.2%
N27 (north of Albert Road)	2,357	2,196	24,605	4.0%
Albert Street	2,287	2,416	25,812	4.1%
Eglinton Street	1,102	921	12,210	4.1%
Old Station Road	1,341	1,380	16,921	1.7%
N27 South Link	2,952	3,237	36,294	3.8%
Albert Quay (east of N27)	729	606	7,217	6.6%
Albert Quay (west of N27)	994	951	10,368	3.9%

5. Proposed Development

5.1 Nature of the Proposed Development

The development will consist of demolition of the existing structures on site and the construction of a strategic housing development of 823 no. apartments, resident amenity and ancillary commercial areas including childcare facilities. The development will comprise 6 no. buildings ranging in height from part 1 no. to part 35 no. storeys over lower ground floor level. The proposed development also comprises hard and soft landscaping, pedestrian bridges, car parking, bicycle stores and shelters, bin stores, ESB substations, plant rooms and all ancillary site development works. Vehicular access to the proposed development will be provided via Centre Park Road.

The development will deliver a new neighbourhood which will be conveniently located in proximity to Cork City Centre and to the south-eastern suburbs. The site lies on the strategic transport corridor intended to facilitate a rapid transit system as identified in the Cork Metropolitan Area Transport Strategy.

All of the 268 residential parking spaces (inclusive of 18 accessible spaces) will be located at sub-podium level, with 10 non-residential parking spaces proposed at street level. In addition, 1,718 bicycle parking spaces are proposed at sub-podium level and a further 412 visitor cycle parking spaces are proposed at surface level.

The breakdown of the proposed development is shown below.

Table 2: Proposed Development Breakdown

Schedule of Accommodation	All Blocks
1-bed Apartments	282
2-bed Apartments	414
3-bed Apartments	127
Commercial/Retail	2,484m ²
Crèche/Montessori	662m ²
Food/Beverage	1,089m ²
Amenity	2,760m ²

5.2 Pedestrian and Cyclist Access

Pedestrian and cyclist access and permeability through the site is provided throughout. The site is bounded to the north by Marina Walk, to the south by Centre Park Road and to the west by industrial lands. The site is also located quite close to Páirc Uí Chaoimh Stadium and Marina Park.

All of the existing roadways that bound the site will have numerous entries to the site at street level for pedestrians and cyclists. In addition, a single internal street is proposed within the site, from the access on Centre Park Road. This street (Street A) will facilitate vehicle access to the sub-podium car parking areas and will function as a 'local' street as per DMURS, with a reduced emphasis on the movement of vehicles.

5.3 Vehicle Access

As outlined above, the development consists of 6 no. blocks and will be constructed on a phased basis. The site will have a quantum of sub-podium vehicle parking; therefore, the site will provide vehicle access to car parking areas via the access junction with Centre Park Road.

With the exception of emergency vehicle access, no surface level vehicular through movements will be permitted on the site outside of the proposed internal street (Street A), which will be only permitted route through the site for vehicles at street level and will be a cul-de-sac route with a turning area at the western end.

A diagram of the main vehicular access to the site is presented in **Figure 19**.



Figure 19: Development Access Strategy

5.4 Parking Provision

5.4.1 Car Parking

The Area-Based Transport Assessment (ABTA) prepared by Cork City Council for the Cork South Docklands area includes recommendations for parking provision within the South Docklands. The subject site lies within the easternmost portion of the overall docklands, and ABTA indicates suggested parking standards for origin (residential) and destination (employment/education) developments as follows:

Table 3: Cork City Council Parking Standards

Unit Type	Recommended ABTA Maximum Parking Standard	Maximum Parking Capacity Per Zone
1-bedroom units	0-0.25	Up to 2,650
2/2+ bedroom units	0-0.5	Up to 2,650
Employment	1 per 6 employees	Up to 1,800

Table 4: Residential Parking Range

Unit Type	Number of Units	Parking Range	Total
1-bedroom units	282	0-71	0-341
2/2+ bedroom units	541	0-271	

The associated parking standards for the proposed development under the current Cork City Development Plan are as follows (note that the site lies within Zone 2B of the current city parking zones):

Table 5: Residential Parking Requirements

Unit Type	No. Units	Parking Standard (per unit)	Visitor Spaces	Total
1-2 Bedroom	696	1 space	N/A	696
3/3+ Bedroom	127	2 spaces	N/A	254
TOTAL				950

As per Table 16.8 of the Cork City Development Plan, for Zone 2B of the city no visitor parking is required.

Under the emerging ABTA guidance, it is seen that a maximum of 341 residential parking spaces would be warranted for the site, based on the parking standards outlined above. Under the existing City Development Plan, a maximum of 950 parking spaces would be permitted.

A total of 268 residential parking spaces are proposed across the proposed development, which represents 79% of the suggested maximum standards as per the ABTA guidance, and 28% of the maximum requirement as per the City Development Plan.

The ABTA parking standards are appropriate for the longer-term development of the South Docklands, with a phased approach intended for the roll-out of enhanced public transport services commencing with high-frequency bus services and upgrading to Bus Rapid Transit and ultimately Light Rail Transit in the period to 2040. The ABTA will inform the development of an updated LAP for the South Docklands area, and the parking standards associated therein will become applicable (taking precedence over the City Development Plan).

Furthermore, the ABTA indicates a suggested maximum residential parking capacity for the ‘South Docks East’ zone of the study area of 2,650 parking spaces. The proposed development would equate to 10% of this maximum parking capacity.

This approach to parking provision for the development is in recognition of the programme of intended improvements to public transport serving the area over the short, medium and long-term.

5.4.2 Non-Residential Car Parking Provision

The breakdown of non-residential parking space requirements, as per the Cork City Development Plan, are indicated below. The site lies within Zone 2B of the current Cork City Development Plan parking zones.

Table 6: Non-residential parking requirements

Use	Parking Standard (1 space per)	GFA (m ²)	Total
Retail/Neighbourhood Centre	1 per 30 m ² (convenience retail)	2,484	83
Creche/Montessori	1 per 6 students	662	16 (assuming 50% of GFA is ‘floor space’ and assuming 3.5m ² per child)
Food/Beverage	1 per 50m ²	1089	22
TOTAL			121

It is seen above that the current City Development Plan would indicate a maximum of 121 parking spaces be permissible for the non-residential elements of the development.

The draft ABTA for the South Docklands identifies ‘Destination’ parking standards for the ‘South Docks East’ zone of the study area – a maximum of 1,800 spaces are suggested.

The proposed development includes a total of 10 non-residential parking spaces internally within the site at street level, which is approximately 14% of the maximum parking as per the City Development Plan and equates to less than 1% of the 1,800 maximum ‘destination’ parking total envisaged for the South Docks East zone as per ABTA. This is in recognition of the fact that the majority of the on-site non-residential uses

(retail, crèche, café, etc.) are likely to primarily serve the development itself and are not expected to generate a significant quantum of external trips.

5.4.3 Electric Car Parking Provision

The Cork City Development Plan stipulates that developments with ten or more parking spaces shall incorporate at least one space fully equipped with electric vehicle charging facilities, and that at least 10% of the entire parking provision shall be equipped with the relevant ducting to enable future fit-out for electric vehicle charging.

63 of the 268 residential parking spaces will therefore have access to electric charging points, which corresponds to approximately 24% of the proposed spaces. All residential spaces will however be future-proofed with the necessary ducting, etc. to allow for future conversion to EV-compatible spaces.

5.4.4 Disabled Parking Provision

The Cork City Development Plan stipulates that 5% of car parking spaces provided should be set aside for disabled car parking. A total of 18 accessible car parking spaces are therefore to be provided below podium-level, which exceeds the required 14 spaces.

5.4.5 Cycle Parking

The Cork City Development Plan stipulates that an allocation of at least 0.5 bicycle parking space per residential unit (in suburban locations) be provided. This equates to a minimum of 419 bicycle parking spaces for the proposed development. The Development Plan does not stipulate a requirement for visitor cycle parking spaces.

The City Development Plan also stipulates that the non-residential elements of the proposed development would warrant a total of 25 additional cycle parking spaces.

The 'Sustainable Urban Housing: Design Standards for New Apartments' indicate that cycle parking shall be provided at a rate of 1 storage space per bedroom (and at least 1 per studio), with visitor cycle parking provided at a rate of 1 space per 2 residential units. The scheme comprises a total of 1,491 bedrooms in 823 units. Therefore, a total of 1,491 cycle parking spaces are recommended based on these standards, however the development will be providing more than the standard rate. Furthermore, a total of 412 visitor cycle parking spaces are recommended based on these standards.

A total of 1,718 bicycle parking spaces (a rate of 1.15 spaces per bedroom) and 412 visitor bicycle parking spaces will be provided as part of the development. It is assumed that the 412 visitor cycle parking spaces will also be sufficient to cater for the cycle parking demand associated with the non-residential elements of the scheme.

All of the residential cycle parking spaces will be provided below street level in secure bicycle parking and storage areas. All of the 412 visitor cycle parking spaces will be provided at street level.

5.4.6 Motorcycle Parking Provision

The Cork City Development Plan stipulates that an allocation of 1 motorcycle parking space be provided per 10 car parking spaces. 27 motorcycle parking spaces will be provided as part of the development.

5.5 Development Assessment Scenarios

5.5.1 2025 Opening Year

The development will be fully constructed and open in 2025. Construction is expected to commence in 2023 and would be approximately 24 months duration. Background traffic flows on the surrounding road network have been increased using growth factors to account for the period between 2019 and 2025. This is based on a 'Central' growth profile as outlined in the Transport Infrastructure Ireland Project Appraisal Guidelines.

5.5.2 2030 Opening Year +5

For the 2030 scenario, background traffic flows on the surrounding road network will be increased using growth factors to account for the period between 2025 and 2030. Again, this is based on ‘Central’ growth profile as outlined in the Transport Infrastructure Ireland Project Appraisal Guidelines.

It has been agreed with Cork City Council that the ‘Opening Year +15’ scenario for the proposed development (which would be in 2040) is not a requirement of this traffic assessment, as it is closely aligned with the CMATS and ABTA strategies and it is considered that the proposed development has already been considered from a traffic and transport perspective in the development of these two governing strategic assessments.

5.5.3 Cumulative Developments

Four significant developments have been identified in the general site vicinity that are of note.

Marina Park (Phase 1 of which substantially complete and has opened as of December 13th, 2021) includes the creation of a new public park in the lands surrounding Páirc Uí Chaoimh stadium. This includes the creation of a new parking area along the Marina to service the park. It is envisaged that the majority of vehicle trips to and from the parking area associated with Marina Park will be off-peak, and as the existing traffic surveys account for traffic flow onto the Marina via Centre Park Road it is considered that any potential vehicle trips to the Marina Park car parking area will be accounted for in this existing traffic and in the proposed traffic growth rates applied to baseline survey data.

The **Monahan Road Extension** has obtained planning consent (via the Part 8 process) as of November 2021. The brief of works for this project involves the design of the proposed extension of Monahan Road eastbound to the potential future Eastern Gateway Bridge landing location (which is not part of the works). It is envisaged that the proposed extension will progress through detailed and commence construction in late mid-2022 and will be completed within 12 months (estimated to be early to mid-2023).

For the purpose of this assessment, it has also been assumed that the extended Monahan Road will not carry any traffic flows beyond that associated with the Former Ford Distribution Site residential development outlined below (due to the Eastern Gateway Bridge not being in place and general traffic having no onward route).

Marina Quarter, Ltd. have received a grant of planning for a proposed residential development at the Former Ford Distribution Site (used in recent years for the ‘Live at the Marquee’ concert series) which is directly adjacent to the proposed development site, located on the other side of Marquee Road. It is assumed that this development will be implemented in line with the phasing strategy associated with the planning documentation submitted (the development will be built over three individual phases), with Phase 1 estimated to be complete and opened by 2024 and construction to be ongoing on Phase 2 at the same time, and the full site to be built by 2029. The operational and construction traffic flows associated with this development have been incorporated into this transport assessment.

The Former Cork Warehouse Company Site – Tiznow Property Company Limited (Comer Group Ireland) have submitted pre-application documentation for a strategic housing development to An Bord Pleanála for a development comprising 190 apartments in a single building at a site located to the south east of the proposed development site. A full application to ABP is expected to follow in Q2 of 2022. Although this development does not therefore have a grant of planning, for robustness it has been assumed that it will be permitted and will be implemented and will be constructed and operational by 2025.

5.5.4 Traffic Growth

In addition to consideration of planned developments in the immediate vicinity, background traffic from the 2019 baseline surveys has been adjusted to account for normal traffic growth in the area.

Background traffic growth for each future assessment year has been based on the updated TII Project Appraisal Guidelines for National Roads Unit 5.3 – Travel Demand Projections (Transport Infrastructure Ireland, 2019). Calculated growth rates for light vehicles and for heavy vehicles have been applied to AM, PM and daily traffic volumes (a ‘Central’ growth profile has been adopted). These factors correspond to the Cork Metropolitan Area.

5.6 Projected Trip Generation

The potential traffic generated by the proposed development has been determined by using a multi-step methodology.

Firstly, the potential trip rate is calculated by examining the TRICS online database. The TRICS database contains trip-generation rates relating to a variety of land uses from sites in the UK and Ireland. Through careful selection of input parameters relating to a variety of criteria such as land use, location, and public transport provision, the TRICS database allows an estimate to be made of trip generation rates for a proposed development.

Total traffic expected to be generated by the development is then calculated based on the trip rates identified in TRICS, the proposed floor areas/number of units for different uses and the modal split of the local area, based on Census 2016 data.

For the purpose of developing a robust trip generation and distribution profile for this scheme, the following methodology was adopted:

1. The TRICS online database was interrogated for multi-modal site surveys, in order to allow a trip rate for 'person trips' to be derived for the scheme (as opposed to a trip rate for vehicles only) – this allows for a more representative trip rate to be developed for the scheme;
2. The 'person' trip rate is then applied to the number of units and the other proposed uses to derive a total number of 'person trips' that the scheme is expected to generate;
3. For the non-residential elements of the scheme, it has been agreed with Cork City Council that these proposed uses are intended and are likely to only serve the residents of the development itself, and consequently it has been agreed that these non-residential uses will not generate any new vehicle trips on the local road network;
4. The Central Statistics Office (CSO) Small Area Population (SAP) statistics were reviewed for the local area. A total of 5 relevant zones were identified and reviewed (Knockree B – which contains the site itself, Mahon A, Mahon C, Knockree A, and Ballinlough C). The SAP information for these zones is based on Census 2016 data, and provides data on existing travel habits from the site, including mode share, departure times and distances to work, etc.;
5. The modal split information for these 5 aggregated zones is then applied to the total 'person trips' the scheme will generate, with the vehicle mode share used to determine the total number of vehicular trips to and from the site at peak periods; and
6. The CSO SAP statistics for the Electoral District containing the development site and a number of adjoining sites were reviewed to determine the origins and destinations for traffic travelling to and from the site, in order to apply this traffic distribution to traffic leaving and returning to the site at peak times.

Firstly, as outlined above the potential traffic generated by the proposed development has been calculated by examining the TRICS online database. The trip rates calculated for the proposed development at peak hours are presented in

Table 7 below. Note that the trips presented below are for the development peak hours of 08:00-09:00 and 17:00-18:00, as per TRICS.

Table 7: Trip Generation Rates – Residential Units (all trips are 'Person Trips' per unit)

	AM Peak Period		PM Peak Period	
	Arrival	Departure	Arrival	Departure
Trip Rate	0.095	0.339	0.399	0.232
Two-Way	0.434		0.631	

Secondly, using the available Census 2016 information for the general site vicinity, a breakdown of mode share for trips undertaken to work, school or college is determined. As outlined above, a number of zones in the site vicinity were identified and aggregated so as to ensure a sufficient sample size.

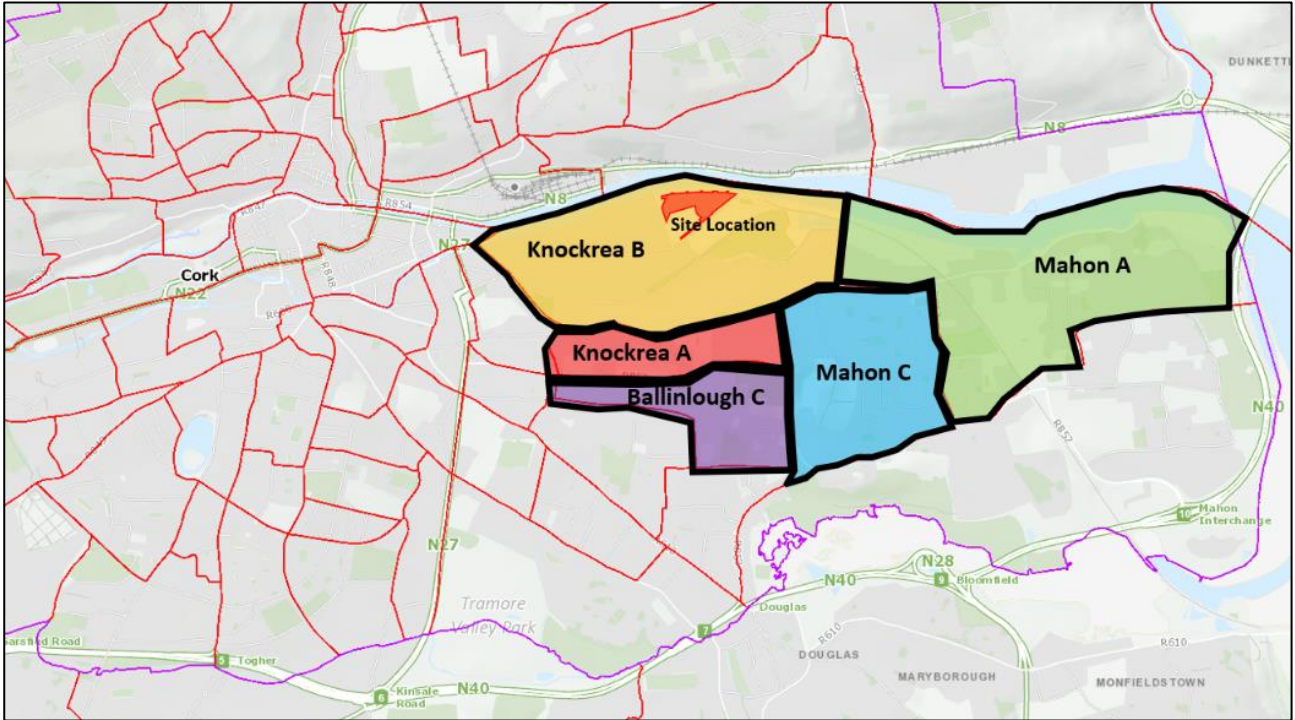


Figure 20: Electoral Division Zones in Cork City

Table 8: Existing Mode Share in Site Locality

Mode of Travel	Modal Split
On foot - Total	14%
Bicycle - Total	4%
Bus, minibus or coach - Total	8%
Train, DART or LUAS - Total	0%
Motorcycle or scooter - Total	0%
Car driver - Total	46%
Car passenger - Total	20%
Van - Total	3%
Other (incl. lorry) - Total	0%
Work mainly at or from home - Total	2%
Not stated - Total	3%
Total	100%

It is seen above in **Table 8** that an existing mode share of 49% exists for car drivers and van drivers for these zones. This is to be expected given the proximity to both the city centre and to the Mahon employment area, the presence of a high-frequency bus service serving these areas (the Bus Éireann 202 route) and the connection to the Passage Greenway line for cycling. These mode share splits are also from Census 2016 and would not account for more recent improvements to public transport and cycling facilities (for example the Skehard Road improvement schemes, the Passage Greenway widening and lighting scheme, the current closure of the Marina to traffic, the new 212 bus service and the temporary cycle infrastructure installed on Centre Park Road, Marquee Road and Monahan Road).

In light of the improvements made since 2016 and the envisaged introduction of a high-frequency bus service to serve the South Docklands in the short term, a reduced mode share from the 49% noted above could be justified.

However, for robustness and to ensure a conservative assessment, it has been agreed with Cork City Council that the prevailing mode share of 49% for vehicle trips should be assumed for the site by the Opening Year

scenario (2025), and that a mode share of 40% for vehicle trips can be assumed for the Opening Year +5 scenario (assumed to be 2030).

This is in recognition of the pending implementation of further walking, cycling and public transport service improvements within the South Docklands as the CMATS and ABTA strategies are applied and implemented across the Cork Metropolitan Area.

Table 9: Proposed 2030 Mode Share in Site Locality

Mode of Travel	Modal Split
On foot - Total	15%
Bicycle - Total	8%
Bus, minibus or coach - Total	12%
Train, DART or LUAS - Total	0%
Motorcycle or scooter - Total	0%
Car driver - Total	37%
Car passenger - Total	20%
Van - Total	3%
Other (incl. lorry) - Total	0%
Work mainly at or from home - Total	2%
Not stated - Total	3%
Total	100%

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. The proposed development is expected to be constructed in phases, with the opening of the initial phase (Blocks A, B and C) expected to occur by 2025 and the full development build out expected to be completed by 2030. The expected volume of traffic for the 2025 Opening Year can be seen in **Table 10**. The trips below are based on the development peak periods as per the TRICS database.

Table 10: Trip Generation – 2025 Opening Year

	AM Peak Hour (08:00-09:00)		PM Peak Hour (17:00-18:00)	
	Arrival	Departure	Arrival	Departure
Total	16	57	67	39

Note: figures in the above table have been rounded up/down for clarity. All values are in vehicles.

The proposed vehicle trip generation shows that for the proposed opening year of 2025 there will be 73 new two-way movements in the AM peak traffic hour (08:00-09:00) and 106 new two-way movements in the PM peak traffic hour (17:00-18:00) to and from the proposed development. For robustness, the peak hours for trip generation for the development shown above will be applied to the morning and evening peak periods on the local road network (07:30-08:30 and 17:15-18:15) to ensure a conservative assessment.

By the end of 2030, it is assumed that all phases of the development will be constructed (all 823 units). A revised mode share for the site locality has also been assumed to be achieved by 2030. The associated trip generation for the 2030 Opening Year +5 is shown below in **Table 11**.

Table 11: Trip Generation – 2030 Opening Year +5

	AM Peak Hour (08:00-09:00)		PM Peak Hour (17:00-18:00)	
	Arrival	Departure	Arrival	Departure
Total	31	112	131	76

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

The proposed vehicle trip generation shows that for the proposed design year of 2030 there will be 143 new two-way movements in the AM peak traffic hour (08:00-09:00) and 207 new two-way movements in the PM peak traffic hour (17:00-18:00) to and from the proposed development. For robustness, as with the 2025 Opening Year the peak hours for trip generation for the development shown above will be applied to the morning and evening peak periods on the local road network (07:30-08:30 and 17:15-18:15) to ensure a conservative assessment.

The existing AM and PM peak traffic hours were determined based on the traffic counts undertaken at the junctions in the site vicinity and were used as the 'base' scenario for the assessment of additional traffic arising from the proposed development.

5.7 Construction Traffic Generation

The level of construction traffic associated with the proposed development will vary over the course of the construction programme and the following section presents the projected volume of traffic generated during the peak construction activity only.

It is envisaged that the construction of the development will be phased from west to east, with enabling works to podium level (Phase 1) and Blocks A, B and C (Phase 2) to be constructed as part of the initial works, Blocks D and E blocks to be constructed as part of Phase 3 and Block F to be constructed in Phase 4.

An opening year of 2025 is assumed for Phases 1-2 as outlined above of the development. Following this, construction will commence at Phase 3, and so forth. In 2025 (the assumed opening year) therefore there will be traffic associated with the residents of Phase 2, and construction traffic associated with Phase 3 will be present on the site and local road network at the same time.

By 2030, which corresponds to the Opening Year +5 it has been assumed that the full development is in place, and as such there will be no construction traffic present on the local road network associated with the development.

5.7.1 Construction Traffic – Heavy Vehicles

The movements of HGV's and LGV's to and from the site is expected to generate traffic from the following activities:

- Enabling works (piling, substructure, etc.);
- Superstructure works;
- Façade;
- Fit-Out; and
- Landscaping.

Peak weekly HGV/LGV vehicle trips to the site during construction are estimated to be a maximum of 50 vehicles per day.

Typically, heavy vehicles are expected to have a distribution profile that is more evenly spread across a typical working day and will therefore be present on the local road network during the morning and evening peak periods. There may also be particular activities which are more intensive in terms of heavy vehicle movements, such as during the enabling works phases for example when there may be earthworks ongoing at the site.

For robustness it is therefore assumed that a total of 8 HGV's and 4 LGV's arrive and depart the site (a total of 12 vehicles) in the peak periods on the local road network (07:30-08:30 and 17:15-18:15).

5.7.2 Construction Traffic - Workforce

The peak construction period is expected to see 350-400 construction personnel on site per day.

Due to the site benefiting from a high-frequency bus service in the vicinity and additional cycle connectivity, it is therefore envisaged that a proportion of the construction staff will travel to and from the site by public

transport and other alternative modes. It is anticipated that approximately 25% of staff will travel by bus, by bike or on foot.

To support this, only a limited amount of parking is proposed for construction staff (to be located within the applicant's landholding). Those workers that do travel to the site by car will be encouraged to car-pool, and it is assumed that there will be an average occupancy of 1.2 persons per car.

This will result in a total of 250 vehicles travelling to the site on a daily basis for construction workers. Allowing a 10% increase to account for miscellaneous trips increases this to 275 vehicles per day at the site.

During lunchtime, it is expected that the majority of the workers will remain on site, as it is intended that on-site catering will be in place, and the time taken to process and exit the site and leave for lunch by car for a construction employee will also reduce the likelihood of these trips. However, it has been assumed that 10% of the vehicles (25 vehicles) will leave the site and return during lunch, with any other departing workers expected to leave on foot. This therefore increases the total daily number of vehicle trips to the site to 300 (i.e., a daily total of 600 vehicle movements).

Construction hours are expected to be from 07:00-19:00; therefore, the above trips will not coincide with the morning and evening peaks on the local road network (07:30-08:30 and 17:15-18:15, respectively).

5.8 Traffic Distribution

In addition to the modal splits for the site and surrounding areas, the CSO records of travel data for Electoral Districts in the site vicinity was also interrogated to determine the likely destinations for trips to and from the site. This trip distribution profile was applied to the development traffic for the morning and evening peak periods.

The proposed trip distribution for the AM and PM peak hours is shown in **Table 12** below.

Table 12: Proposed Trip Distribution Profile

Access Route	Traffic Leaving the site	Further distribution at nearby junctions	Comment
In site vicinity			
Maryville	36%		
	Of which Blackrock Road (W)	13%	
	Of which Blackrock Road (E)	23%	
Monahan Road	20%		
	Of which Victoria Road (N)	15%	
		Of which Albert Road	10%
		Of which Montenotte View	5% Routes on to Albert Street
	Victoria Road (S)	5%	
Centre Park Road	44%		
	Of which Albert Road	44%	
City Distribution			
N27 South of Albert Quay	32%		
	Of which Albert Street	32%	5% from Montenotte View added to 32%
		Of which Eglinton Street	8% Total 37%
		Of which Old Station Road	14%
		Of which N27 South Link	15%
N27 North of Albert Quay	22%		

A similar trip distribution profile was applied to returning traffic to the site, with localised amendments to account for specific routing within the city centre (where there are a number of one-way streets).

Using the traffic distribution profile outlined in **Table 12**, traffic from the proposed development was assigned to the surrounding road network for analysis purposes.

5.8.1 Construction Traffic Distribution

The above trip distribution profile for residential traffic associated with the development once complete and occupied is also expected to apply to construction personnel arriving and departing the site. For heavy vehicles associated with the construction works, it is assumed that all of these vehicles will route to and from the site via Centre Park Road and the Victoria Roundabout.

6. Impact on Local Road Network

6.1 General

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

1. Centre Park Road/Marquee Road junction;
2. Monahan Road (existing/extended)/Marquee Road junction;
3. Maryville/Blackrock Road junction;
4. Victoria Road Roundabout/Signalised junction; and
5. Albert Road/N27 signalised junction.

It has been agreed with Cork City Council that the existing roundabout at the Victoria Road/Albert Road junction can be assumed to be upgraded to a signalised junction by 2025 (as part of the Docklands to City Centre improvement scheme, due to be submitted for planning approval in 2022).

The morning peak period (07.30-08.30) and evening peak period (17.15-18.15) have been examined to assess the busiest case in terms of local traffic on the road network and traffic generated by the proposed development.

As outlined above, for assessment purposes it has been assumed that Phase 2 of the proposed development (Blocks A, B and C) will be constructed and fully occupied during the year 2025. The impact on the local road network has been assessed for this opening year (2025) and an interim year of five years after opening (2030), by which time it is envisaged that the development will be fully constructed.

It has been agreed with Cork City Council that a horizon design year (15 years after opening, in 2040) is not required for this assessment.

Traffic volumes surveyed in 2019 on the local road network have been increased to account for the growth in background traffic to the years 2025 and 2030. These growth rates are in accordance with the Transport Infrastructure Ireland (formerly National Roads Authority) Project Appraisal Guidelines for Link-Based Traffic Growth Forecasting (assuming a 'Central' growth profile).

The construction stage of the development is expected to generate workforce trips to and from the site outside the morning and evening peak periods, and as such has not been included in this transport assessment. Construction hours are expected to be from 07:00-19:00 and will be the subject of a specific Construction Traffic Management Plan which shall be developed and agreed with Cork City Council prior to commencement. However, in the year of opening (2025) it is assumed that construction at the adjacent residential developments (the Ford Distribution site and the Former Cork Warehouse Company Site) will be ongoing, and as such this construction traffic has been retained on the road network for analysis purposes in 2025.

Consequently, the Opening Year (2025) assessment includes traffic associated with the residential element of the development (Blocks A, B and C being completed and assumed to be fully occupied) and the ongoing construction of Phase 3 (Blocks D & E). This scenario is more conservative than assessing the construction of Phases 1-2 independently as it considers operational traffic and construction traffic in the same assessment scenario.

6.2 Link Flow Assessment

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. **Table 13** below shows the analysed links. Traffic flows are presented in vehicles.

Table 13: 2025 Opening Year – Two-Way Link Flows

Link	2025 Opening Year			
	AM Peak		PM Peak	
	Base	Base + Dev	Base	Base + Dev
Centre Park Road (east of Marquee Road)	302	424 (+40%)	523	679 (+30%)
Centre Park Road (west of Marquee Road)	546	619 (+13%)	661	753 (+14%)
Marquee Road	316	365 (+16%)	339	402 (+19%)
Monahan Road (west of junction with Marquee Road)	316	330 (+4%)	307	322 (+5%)
Monahan Road (east of Victoria Rbt)	349	364 (+4%)	462	478 (+3%)
Maryville (north of Blackrock Road)	447	483 (+8%)	435	483 (+11%)
Blackrock Road (west of Maryville)	1,012	1025 (+1%)	1,119	1136 (+2%)
Blackrock Road (east of Maryville)	993	1016 (+2%)	1,047	1077 (+3%)
Victoria Road (north of Victoria Rbt)	745	781 (+5%)	848	900 (+6%)
Victoria Road (south of Victoria Rbt)	1,166	1175 (+1%)	963	972 (+1%)
Victoria Road (south of Monahan Road)	902	907 (+1%)	697	704 (+1%)
Albert Road (west of Victoria Roundabout)	878	921 (+5%)	777	823 (+6%)
Montenotte View (west of Victoria Rbt)	156	158 (+2%)	212	215 (+2%)
N27 (south of Albert Road)	2,442	2472 (+1%)	2,439	2472 (+1%)
N27 (north of Albert Road)	2,666	2678 (+0%)	2,480	2495 (+1%)
Albert Street	2,610	2643 (+1%)	2,747	2783 (+1%)
Eglinton Street	1,266	1295 (+2%)	1,077	1114 (+3%)
Old Station Road	1,522	1535 (+1%)	1,571	1589 (+1%)
N27 South Link	3,349	3388 (+1%)	3,669	3712 (+1%)
Albert Quay (east of N27)	858	894 (+4%)	751	803 (+7%)
Albert Quay (west of N27)	1,130	1157 (+2%)	1,108	1145 (+3%)

It is seen in **Table 13** that the impact of the proposed development in the 2025 Opening Year scenario is low. The largest proportional increases are on the local roads adjacent to the site (Marquee Road, Centre Park Road and Maryville, with a maximum increase seen on Centre Park Road of 40% in the AM Peak) – these larger proportional increases are due to the prevailing low flows on these roads during the morning and evening peaks and correspond to a low increase in vehicle numbers.

However, it is seen that the majority of the road links assessed above show traffic increases below 5%, with a number of road links showing traffic flow increases of between 5-10%.

The development traffic therefore is considered to have a minor impact on prevailing traffic flows, even when accounting for construction traffic as well as operational traffic generated by the development being present on the road network simultaneously.

Table 14: 2030 Opening Year +5 – Two-Way Link Flows

Link	2030 Opening Year + 5			
	AM Peak		PM Peak	
	Base	Base + Dev	Base	Base + Dev
Centre Park Road (east of Marquee Road)	333	476 (+43%)	604	811 (+34%)
Centre Park Road (west of Marquee Road)	602	668 (+11%)	749	854 (+14%)
Marquee Road	323	399 (+24%)	342	444 (+30%)
Monahan Road (west of junction with Marquee Road)	359	384 (+7%)	351	378 (+8%)
Monahan Road (east of Victoria Rbt)	396	421 (+6%)	522	549 (+5%)
Maryville (north of Blackrock Road)	509	560 (+10%)	507	582 (+15%)
Blackrock Road (west of Maryville)	1,118	1136 (+2%)	1,239	1266 (+2%)
Blackrock Road (east of Maryville)	1,102	1134 (+3%)	1,167	1215 (+4%)
Victoria Road (north of Victoria Rbt)	805	824 (+2%)	965	1043 (+8%)
Victoria Road (south of Victoria Rbt)	1,291	1309 (+1%)	1,066	1083 (+2%)
Victoria Road (south of Monahan Road)	994	1001 (+1%)	769	779 (+1%)
Albert Road (west of Victoria Roundabout)	993	1053 (+6%)	851	893 (+5%)
Montenotte View (west of Victoria Rbt)	174	179 (+3%)	233	237 (+2%)
N27 (south of Albert Road)	2,701	2737 (+1%)	2,678	2703 (+1%)
N27 (north of Albert Road)	2,949	2973 (+1%)	2,730	2747 (+1%)
Albert Street	2,890	2931 (+1%)	3,016	3045 (+1%)
Eglinton Street	1,387	1405 (+1%)	1,197	1241 (+4%)
Old Station Road	1,678	1698 (+1%)	1,735	1764 (+2%)
N27 South Link	3,678	3700 (+1%)	4,027	4059 (+1%)
Albert Quay (east of N27)	929	948 (+2%)	859	937 (+9%)
Albert Quay (west of N27)	1,232	1243 (+1%)	1,236	1285 (+4%)

The development traffic therefore is considered to have a minor impact on prevailing traffic flows, even when accounting for construction traffic as well as operational traffic generated by the development being present on the road network simultaneously

Table 14 above shows that the impact of the proposed development in the 2030 Opening Year +5 scenario remains low.

By 2030, the development is assumed to be fully constructed and therefore there is no additional construction traffic present on the road network.

As with 2025, the largest proportional increases are on the local roads adjacent to the site (Marquee Road, Centre Park Road and Maryville, with a maximum increase seen on Centre Park Road of 43% in the AM Peak) – these larger proportional increases are again due to the prevailing low flows on these roads.

However, it is seen that the majority of the road links assessed above show traffic increases of below 5%, with a number of road links showing traffic flow increases of between 5-10%.

The development traffic therefore is considered to have a minor impact on prevailing traffic flows in the 2030 assessment year.

6.3 Junction Assessment

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

- Centre Park Road/Marquee Road;
- Marquee Road/Monahan Road Extension; and
- Maryville/Blackrock Road;
- Victoria Roundabout/Victoria Signalised Junction; and
- Albert Road/N27 Junction.

These junctions have been assessed under the following scenarios:

- 2019 Base Year (the year that the traffic surveys were undertaken);
- 2025 Opening Year; and
- 2030 Design Year.

The impact of the development at each junction has been assessed using LinSig, which is a computer software package for the assessment and design of traffic signal junctions, or Junctions 9, which is a software package for the assessment and design of priority junctions and roundabout junctions.

The impacts on these junctions resulting from the operational phase of the development are assessed and presented below. Results are presented in terms of Ratio of Flow to Capacity (RFC), measured as a percentage, and Mean Max Queue Length, measured in PCU's (Passenger Car Units).

PCU's have been used for modelling purposes, and are used as the unit of measurement rather than using 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.

6.3.1 Centre Park Road/Marquee Road Junction

The junction of Centre Park Road and Marquee Road is a standard priority T-junction, with Marquee Road forming the minor arm.

6.3.2 2019 Base Year

Table 15: Centre Park Road/Marquee Road Junction – 2019 Base Year Results

Arm	Turning Movement	AM Base 07:30-08:30		PM Base 17:15-18:15	
		RFC (%)	Mean Max Queue (PCU)	RFC (%)	Mean Max Queue (PCU)
Centre Park Road (WB)	L/St	-	-	-	-
Marquee Road	L	24%	<1	8%	<1
	R	4%	<1	13%	<1
Centre Park Road (EB)	St/R	7%	<1	15%	<1

It is seen in the above table that the junction has significant spare capacity in the morning and evening peak periods.

6.3.3 2025 Opening Year

Table 16: Centre Park Road/Marquee Road Junction – 2025 Opening Year Results (AM Peak)

Arm	Turning Movement	AM Base 07:30-08:30		AM Base + Dev 07:30-08:30	
		RFC (%)	Mean Max Queue (PCU)	RFC (%)	Mean Max Queue (PCU)
Centre Park Road (WB)	L/St	-	-	-	-
Marquee Road	L	34%	1	35%	1
	R	7%	<1	12%	<1
Centre Park Road (EB)	St/R	10%	<1	11%	<1

In 2025, the background traffic from the 2019 traffic surveys has been growthed up in line with traffic growth forecasts for the area.

The introduction of traffic associated with the opening of Phase 2 (Blocks A, B and C) and ongoing construction of Phase 3 at the junction in 2025 is seen to have little impact in the AM Peak, with the RFC value on Marquee Road increasing from 34% to 35%. The junction retains significant spare capacity.

Table 17: Centre Park Road/Marquee Road Junction – 2025 Opening Year Results (PM Peak)

Arm	Turning Movement	PM Base 17:15-18:15		PM Base + Dev 17:15-18:15	
		RFC (%)	Mean Max Queue (PCU)	RFC (%)	Mean Max Queue (PCU)
Centre Park Road (WB)	L/St	-	-	-	-
Marquee Road	L	14%	<1	16%	<1
	R	16%	<1	25%	<1
Centre Park Road (EB)	St/R	29%	1	32%	1

As with the AM Peak, the introduction of traffic associated with the opening of Phase 2 and ongoing construction of Phase 3 at the junction in 2025 is seen to have little impact in the PM Peak, with the RFC value on Centre Park Road (eastbound) increasing from 29% to 32%. However, the junction retains significant spare capacity.

6.3.4 2030 Opening Year +5

Table 18: Centre Park Road/Marquee Road Junction – 2030 Opening Year +5 Results (AM Peak)

Arm	Turning Movement	AM Base 07:30-08:30		AM Base + Dev 07:30-08:30	
		RFC (%)	Mean Max Queue (PCU)	RFC (%)	Mean Max Queue (PCU)
Centre Park Road (WB)	L/St	-	-	-	-
Marquee Road	L	36%	1	38%	1
	R	5%	<1	9%	<1
Centre Park Road (EB)	St/R	11%	<1	12%	<1

In 2030, as with the 2025 scenario the background traffic from the 2019 traffic surveys has been growthed up in line with traffic growth forecasts for the area.

The introduction of traffic associated with the opening of all phases of the development at the junction in 2030 is seen to have a very minor impact in the AM Peak, with the RFC value on Marquee Road increasing from 36% to 38%. The junction retains significant spare capacity.

Table 19: Centre Park Road/Marquee Road Junction – 2030 Opening Year +5 Results (PM Peak)

Arm	Turning Movement	PM Base 17:15-18:15		PM Base + Dev 17:15-18:15	
		RFC (%)	Mean Max Queue (PCU)	RFC (%)	Mean Max Queue (PCU)
Centre Park Road (WB)	L/St	-	-	-	-
Marquee Road	L	15%	<1	17%	<1
	R	18%	<1	35%	1
Centre Park Road (EB)	St/R	31%	1	34%	1

As with the AM Peak, the introduction of traffic associated with the opening of all phases of the development at the junction in 2030 is seen to have a minor impact in the PM Peak, with the RFC value on Centre Park Road (eastbound) increasing from 31% to 34%. However, the junction retains significant spare capacity.

6.3.5 Marquee Road/Monahan Road/Monahan Road Extension

In the 2019 base year scenario, the junction of Marquee Road and the Monahan Road is a standard priority T-junction, with Marquee Road forming the minor arm (i.e., the current arrangement).

However, by 2025 it is assumed that the Monahan Road Extension scheme is implemented, which will convert this existing three-arm junction to a four-arm, signalised junction. The 2025 and 2030 scenarios are based on this junction upgrade.

The Monahan Road Extension scheme is a precursor to the longer-term implementation of the Eastern Gateway Bridge scheme, which is not assumed to be in place in 2025 or in 2030 (but has been factored into the strategic modelling carried out for the Cork Metropolitan Area as part of the CMATS and ABTA assessments). Consequently, in 2025 and 2030, even with the Monahan Road Extension scheme in place, there will be no traffic present on this arm of the junction, with the exception of the development traffic associated with the residential development at the permitted Former Ford Distribution Centre (a portion of which will exit this site onto the Monahan Road Extension).

6.3.6 2019 Base Year

Table 20: Marquee Road/Monahan Road Junction – 2019 Base Year Results

Arm	Turning Movement	AM Base 07:30-08:30		PM Base 17:15-18:15	
		RFC (%)	Mean Max Queue (PCU)	RFC (%)	Mean Max Queue (PCU)
Marquee Road	L	5%	<1	15%	<1
Monahan Road (NWB)	R	3%	<1	2%	<1
	St/R	28%	1	12%	<1
Monahan Road (EB)	L/St	-	-	-	-

It is seen in the above table that the junction has significant spare capacity in the morning and evening peak periods.

6.3.7 2025 Opening Year

Table 21: Marquee Road/Monahan Road Junction – 2025 Opening Year Results (AM Peak)

Arm	Turning Movement	AM Base 07:30-08:30		AM Base + Dev 07:30-08:30	
		RFC (%)	Mean Max Queue (PCU)	RFC (%)	Mean Max Queue (PCU)
Marquee Road	L/St/R	57%	3	76%	5
Monahan Road (WB)	L/St/R	-	-	-	-
Monahan Road (NB)	L/St	81%	11	84%	12
	R	-	-	-	-
Monahan Road (EB)	L/St	12%	1	14%	1
	R	50%	2	50%	2

It is seen in the above table that the junction has significant spare capacity in the morning peak period on the Marquee Road and Monahan Road (eastbound arms), and that on the Monahan Road (northbound arm), the junction increases from 81% to 84% RFC. The introduction of traffic signal control at this junction reduces the extent of free movement of vehicles compared to the existing (2019) situation.

In the opening year, there is no development traffic associated with the Monahan Road Extension and consequently there are no results provided for this arm.

Table 22: Marquee Road/Monahan Road Junction – 2025 Opening Year Results (PM Peak)

Arm	Turning Movement	PM Base 17:15-18:15		PM Base + Dev 17:15-18:15	
		RFC (%)	Mean Max Queue (PCU)	RFC (%)	Mean Max Queue (PCU)
Marquee Road	L/St/R	62%	5	69%	6
Monahan Road (WB)	L/St/R	-	-	-	-
Monahan Road (NB)	L/St	62%	5	70%	6
	R	-	-	-	-
Monahan Road (EB)	L/St	20%	1	25%	1
	R	62%	4	67%	4

It is seen in the above table that the junction has ample spare capacity in the evening peak period on all arms, with the largest increase in RFC on Monahan Road NB (from 62% to 70%). However, the introduction of the development has a minor impact on the junction.

In the opening year, as with the AM Peak there is no development traffic associated with the Monahan Road Extension and consequently there are no results provided for this arm.

6.3.8 2030 Opening Year +5

Table 23: Marquee Road/Monahan Road Junction – 2030 Opening Year +5 Results (AM Peak)

Arm	Turning Movement	AM Base 07:30-08:30		AM Base + Dev 07:30-08:30	
		RFC (%)	Mean Max Queue (PCU)	RFC (%)	Mean Max Queue (PCU)
Marquee Road	L/St/R	57%	3	92%	8
Monahan Road (WB)	L/St/R	19%	1	19%	1
	L/St	86%	12	89%	13

Monahan Road (NB)	R	2%	<1	2%	<1
Monahan Road (EB)	L/St	12%	1	14%	1
	R	54%	3	54%	3

It is seen in the above table that the junction has significant spare capacity in the morning peak period on the Marquee Road and Monahan Road (eastbound arms), and that on the Monahan Road (northbound arm), the junction increases from 86% to 89% RFC. The increase noted from 57% to 92% on the Marquee Road arm of the junction is associated with the optimisation of the signals to balance capacity between the various arms. The introduction of traffic signal control at this junction reduces the extent of free movement of vehicles compared to the existing (2019) situation.

In 2030, traffic flows associated with the full build out of the development are present on the road network, and in addition the full build out of the Former Ford Distribution Site development will also be in place. A portion of the development traffic associated with the Former Ford site is assumed to enter and exit the site via a new entrance junction from the Monahan Road Extension, and consequently in 2030 there is additional traffic on the road network on this approach and there are results provided above for this arm, which is seen to have significant capacity.

Overall, it is seen that the introduction of the development has a minor impact on the junction.

Table 24: Marquee Road/Monahan Road Junction – 2030 Opening Year +5 Results (PM Peak)

Arm	Turning Movement	PM Base 17:15-18:15		PM Base + Dev 17:15-18:15	
		RFC (%)	Mean Max Queue (PCU)	RFC (%)	Mean Max Queue (PCU)
Marquee Road	L/St/R	66%	5	84%	7
Monahan Road (WB)	L/St/R	13%	1	13%	1
Monahan Road (NB)	L/St	65%	5	81%	8
	R	12%	1	12%	1
Monahan Road (EB)	L/St	19%	1	25%	1
	R	63%	4	63%	4

It is seen in the above table that the junction has ample spare capacity in the evening peak period on all arms, with the largest increase in RFC on Marquee Road (from 66% to 84%). However, the introduction of the development has a minor impact on this arm of the junction and indeed on the junction as a whole.

6.3.9 Maryville/Blackrock Road Junction

The Maryville/Blackrock Road junction operates as a standard priority junction at present and is expected to continue as such in 2025 and 2030.

6.3.10 2019 Base Year

Table 25: Maryville/Blackrock Road Junction – 2019 Base Year Results

Arm	Turning Movement	AM Base 07:30-08:30		PM Base 17:15-18:15	
		RFC (%)	Mean Max Queue (PCU)	RFC (%)	Mean Max Queue (PCU)
Maryville Road	L	9%	<1	19%	<1
	R	11%	<1	37%	1
Blackrock Road (WB)	St/R	31%	1	12%	<1
Blackrock Road (EB)	L/St	-	-	-	-

It is seen above that the junction has ample spare capacity in the morning and evening peak periods.

6.3.11 2025 Opening Year

Table 26: Maryville/Blackrock Road Junction – 2025 Opening Year Results (AM Peak)

Arm	Turning Movement	AM Base 07:30-08:30		AM Base + Dev 07:30-08:30	
		RFC (%)	Mean Max Queue (PCU)	RFC (%)	Mean Max Queue (PCU)
Maryville Road	L	14%	<1	17%	<1
	R	19%	<1	22%	<1
Blackrock Road (WB)	St/R	41%	1	44%	2
Blackrock Road (EB)	L/St	-	-	-	-

It is seen above that the junction has ample spare capacity in the AM Peak period, with the introduction of the development having little impact.

Table 27: Maryville/Blackrock Road Junction – 2025 Opening Year Results (PM Peak)

Arm	Turning Movement	PM Base 17:15-18:15		PM Base + Dev 17:15-18:15	
		RFC (%)	Mean Max Queue (PCU)	RFC (%)	Mean Max Queue (PCU)
Maryville Road	L	31%	<1	37%	1
	R	53%	1	59%	1
Blackrock Road (WB)	St/R	22%	1	26%	1
Blackrock Road (EB)	L/St	-	-	-	-

It is seen above that the junction has ample spare capacity in the PM Peak period, with the introduction of the development having little impact.

6.3.12 2030 Opening Year +5

Table 28: Maryville/Blackrock Road Junction – 2030 Opening Year +5 Results (AM Peak)

Arm	Turning Movement	AM Base 07:30-08:30		AM Base + Dev 07:30-08:30	
		RFC (%)	Mean Max Queue (PCU)	RFC (%)	Mean Max Queue (PCU)
Maryville Road	L	20%	<1	26%	<1
	R	26%	<1	33%	1
Blackrock Road (WB)	St/R	48%	2	50%	2
Blackrock Road (EB)	L/St	-	-	-	-

It is seen above that the junction has ample spare capacity in the AM Peak period, with the introduction of the development having a minor impact, increasing RFC values by approximately 7% on the Blackrock Road arm of the junction.

Table 29: Maryville/Blackrock Road Junction – 2030 Opening Year +5 Results (PM Peak)

Arm	Turning Movement	PM Base 17:15-18:15		PM Base + Dev 17:15-18:15	
		RFC (%)	Mean Max Queue (PCU)	RFC (%)	Mean Max Queue (PCU)
Maryville Road	L	44%	1	64%	2
	R	68%	2	80%	3
Blackrock Road (WB)	St/R	30%	1	40%	1
Blackrock Road (EB)	L/St	-	-	-	-

It is seen above that the junction has ample spare capacity in the PM Peak period, with the introduction of the development having a minor impact, increasing RFC values by approximately 20% on the Maryville Road arm of the junction.

6.3.13 Victoria Roundabout/Victoria Signalised Junction

The junction of Victoria Road/Albert Road/Centre Park Road is a roundabout junction at present. However, it has been assumed that by 2025 this junction will be upgraded to a signalised junction as part of the Cork Docklands to City Centre Improvement Scheme. This scheme is intended to rationalise the number of arms at the junction and to introduce traffic signal control and also to facilitate a contra-flow bus lane inbound on Victoria Road towards Albert Quay, as well as improving pedestrian and cyclist safety at the junction and its approaches.

Consequently, the introduction of traffic signal control will have the effect of reducing the capacity of the junction compared to the existing roundabout form.

The junction is assessed as a roundabout in 2019 and as a signalised junction in 2025 and 2030.

6.3.14 2019 Base Year

Table 30: Victoria Roundabout Junction – 2019 Base Year Results

Arm	Turning Movement	AM Base 07:30-08:30		PM Base 17:15-18:15	
		RFC (%)	Mean Max Queue (PCU)	RFC (%)	Mean Max Queue (PCU)
Victoria Road (SB)	L/St/R	24%	<1	25%	<1
Centre Park Road	L/St	23%	<1	32%	1
Victoria Road (NB)	L/R	42%	1	30%	<1
Albert Road	Exit Only	-	-	-	-

It is seen above that the roundabout has sufficient capacity in the AM and PM peak periods.

6.3.15 2025 Opening Year

Table 31: Victoria Road Signalised Junction – 2025 Opening Year Results (AM Peak)

Arm	Turning Movement	AM Base 07:30-08:30		AM Base + Dev 07:30-08:30	
		RFC (%)	Mean Max Queue (PCU)	RFC (%)	Mean Max Queue (PCU)
Victoria Road (SB)	L	41%	5	47%	6
	St/R	107%	37	112%	45
Centre Park Road	L/St	105%	28	114%	45
Victoria Road (NB)	L/R	110%	>50	112%	>50
Albert Road	Exit Only	-	-	-	-

It is seen above that the signalisation of the junction and the introduction of a contra-flow bus lane has a significant impact on the junction performance, with RFC values of over 100% on a number of arms. It must be noted that this is to be expected given the relative free-flowing operation of the junction at present and the impact of introducing traffic signal control and a contra-flow bus lane.

These changes mean that the Victoria Road (southbound and northbound) and Centre Park Road arms of the junction are now mostly separated out and stopped at the junction until their respective stages are in effect (due to potential conflict with opposing movements). In addition, this junction represents the convergence of a number of approach routes to the city from the south-eastern suburbs and therefore carries large traffic flows.

However, the development itself is seen to have a small impact at the junction, increasing RFC by up to 9%.

Table 32: Victoria Road Signalised Junction – 2025 Opening Year Results (PM Peak)

Arm	Turning Movement	AM Base 07:30-08:30		AM Base + Dev 07:30-08:30	
		RFC (%)	Mean Max Queue (PCU)	RFC (%)	Mean Max Queue (PCU)
Victoria Road (SB)	L	36%	5	42%	5
	St/R	99%	25	103%	31
Centre Park Road	L/St	101%	27	105%	38
Victoria Road (NB)	L/R	100%	26	105%	34
Albert Road	Exit Only	-	-	-	-

As with the AM Peak, a similar impact is seen at the junction as a result of signalisation of the roundabout. However, the development itself is seen to have a minor impact at the junction, increasing RFC by up to 6%.

6.3.16 2030 Opening Year +5

Table 33: Victoria Road Signalised Junction – 2030 Opening Year +5 Results (AM Peak)

Arm	Turning Movement	AM Base 07:30-08:30		AM Base + Dev 07:30-08:30	
		RFC (%)	Mean Max Queue (PCU)	RFC (%)	Mean Max Queue (PCU)
Victoria Road (SB)	L	42%	5	43%	6
	St/R	119%	>50	125%	>50
Centre Park Road	L/St	120%	>50	123%	>50
Victoria Road (NB)	L/R	122%	>50	128%	>50
Albert Road	Exit Only	-	-	-	-

As with the 2025 Opening Year scenario, the introduction of signal control at the junction is seen to significantly increase RFC values on most of the arms/movements.

However, the development itself is seen to have a small impact at the junction, increasing RFC by up to 6%.

Table 34: Victoria Road Signalised Junction – 2025 Opening Year +5 Results (PM Peak)

Arm	Turning Movement	AM Base 07:30-08:30		AM Base + Dev 07:30-08:30	
		RFC (%)	Mean Max Queue (PCU)	RFC (%)	Mean Max Queue (PCU)
Victoria Road (SB)	L	42%	6	50%	7
	St/R	109%	46	114%	>50
Centre Park Road	L/St	108%	42	111%	>50
Victoria Road (NB)	L/R	111%	>50	113%	>50
Albert Road	Exit Only	-	-	-	-

As with the AM Peak, a similar impact is seen at the junction as a result of signalisation of the roundabout.

However, the development itself is seen to have a minor impact at the junction, increasing RFC by up to 8%.

6.3.17 Albert Road/N27 Junction

The junction of Albert Road and the N27 is a signalised T-junction at present (with Albert Road forming the minor arm). Albert Road is a one-way, two-lane road as it approaches the junction, widening locally to a total of 4 entry lanes (two turning north and two turning south). The N27 as it passes the junction is a 4-lane, dual carriageway route. The junction is heavily trafficked at present.

6.3.18 2019 Base Year

Table 35: Albert Road/N27 Junction – 2019 Base Year Results

Arm	Turning Movement	AM Base 07:30-08:30		PM Base 17:15-18:15	
		RFC (%)	Mean Max Queue (PCU)	RFC (%)	Mean Max Queue (PCU)
N27 (SB)	St	75%	20	63%	16
Albert Road	L	73%	12	59%	7
	R	74%	12	64%	8
N27 (NB)	St	29%	6	26%	1

It is seen above that the junction has spare capacity in the AM and PM peak periods at present, although it is noted that the junction has RFC values of up to 75% in the AM period.

6.3.19 2025 Opening Year

Table 36: Albert Road/N27 Junction – 2025 Opening Year Results (AM Peak)

Arm	Turning Movement	AM Base 07:30-08:30		AM Base + Dev 07:30-08:30	
		RFC (%)	Mean Max Queue (PCU)	RFC (%)	Mean Max Queue (PCU)
N27 (SB)	St	86%	26	86%	26
Albert Road	L	57%	7	63%	8
	R	84%	17	86%	18
N27 (NB)	St	33%	7	33%	7

It is seen above that the junction has spare capacity in the AM Peak in 2025, although it is noted that the junction has RFC values of up to 86% in the AM and PM in both with and without development scenario. However, the introduction of the development traffic is seen to have a minor impact, increasing RFC values by up to 6%.

Table 37: Albert Road/N27 Junction – 2025 Opening Year Results (PM Peak)

Arm	Turning Movement	PM Base 17:15-18:15		PM Base + Dev 17:15-18:15	
		RFC (%)	Mean Max Queue (PCU)	RFC (%)	Mean Max Queue (PCU)
N27 (SB)	St	72%	20	75%	21
Albert Road	L	72%	10	76%	12
	R	73%	11	73%	11
N27 (NB)	St	30%	6	31%	6

It is seen above that the junction has spare capacity in the PM Peak in 2025. However, the introduction of the development traffic is seen to have a minor impact, increasing RFC values by up to 4%.

6.3.20 2030 Opening Year +5

Table 38: Albert Road/N27 Junction – 2030 Opening Year +5 Results (AM Peak)

Arm	Turning Movement	AM Base 07:30-08:30		AM Base + Dev 07:30-08:30	
		RFC (%)	Mean Max Queue (PCU)	RFC (%)	Mean Max Queue (PCU)
N27 (SB)	St	95%	34	96%	36
Albert Road	L	63%	9	67%	10
	R	94%	24	96%	26
N27 (NB)	St	37%	7	37%	8

It is seen above that the junction has spare capacity in the AM Peak in 2030, although it is noted that the junction has RFC values of up to 95% in the AM in particular in the ‘without development’ scenario. However, the introduction of the development traffic is seen to have a minor impact, increasing RFC values by up to 4%.

Table 39: Albert Road/N27 Junction – 2030 Opening Year +5 Results (PM Peak)

Arm	Turning Movement	PM Base 17:15-18:15		PM Base + Dev 17:15-18:15	
		RFC (%)	Mean Max Queue (PCU)	RFC (%)	Mean Max Queue (PCU)
N27 (SB)	St	81%	24	81%	24
Albert Road	L	76%	11	80%	13
	R	79%	13	82%	14
N27 (NB)	St	33%	7	33%	7

It is seen above that the junction has spare capacity in the PM Peak in 2030. However, the introduction of the development traffic is seen to have a minor impact, increasing RFC values by up to 4%.

7. Mitigation Measures

7.1 Construction Strategy

Construction traffic will be limited to certain routes and times of day, with the aim of keeping disruption to existing traffic and residents to a minimum. To minimise disruption to the local areas, construction traffic volumes will be managed through the following measures:

- During peak hours, ancillary, maintenance and other site vehicular movements will be discouraged;
- Daily construction programmes will be planned to minimise the number of disruptions to surrounding streets by staggering HGV movements to avoid site queues; and
- The contractor will be required to promote travel by sustainable modes of transport. An indicative Construction Mobility Management Plan is outlined later in this section.

7.2 Hours of Working

- Construction operations on site are proposed to be between the hours of 07:00-19:00, Monday to Friday, and 07:00-16:00 on Saturdays. Similarly, deliveries of materials to site will generally be between the hours of 07:00-19:00, Monday to Friday, and 07:00-16:00 on Saturdays.
- The construction shift times will ensure construction traffic will have limited impact on the peak periods of 07:30-08:30 in the morning and 17:15-18:15 in the evening as it is envisaged most construction staff will arrive to work before 07:00 in the morning and leave after 19:00 in the evening.

Due to the specific nature of some construction activities, or to mitigate disruption to the local environment, there may be a requirement for working outside these hours. Should this be required, it will be by agreement with Cork City Council.

7.3 Construction Traffic Management Plan

A Construction Traffic Management Plan (CTMP) will be developed by the Contractor and presented to Cork City Council for approval prior to commencement of the construction works. The CTMP will contain detailed temporary traffic management drawings for each construction stage and will include the mitigation measures described in this section.

7.4 Construction Mobility Management

The contractor will be required as part of the contract to introduce a Construction Stage Mobility Management Plan for its workforce to encourage access to the site by means other than by private car. The following section identifies some of the measures the contractor will provide as part of the Mobility Management Plan.

The Construction Stage Mobility Management Plan will form part of the overall Construction Traffic Management Plan and will be agreed with Cork City Council prior to works beginning on site.

Walking: The pedestrian environment surrounding the site is considered to be good with footpaths provided along all roads. Good pedestrian routes exist between the site and nearby bus stops on the Monahan Road and on the Blackrock Road.

Cycling: Cycle parking spaces and associated showers and lockers will be provided on the site for construction staff.

Car Sharing: Car sharing among construction staff should be encouraged, especially from areas where construction staff may be clustered. The Contractor shall aim to organise shifts in accordance to staff origins, hence enabling higher levels of car sharing. Such a measure offers a significant opportunity to reduce the proportion of construction staff driving to the site car parking facility and will minimise the potential traffic impact on the road network surrounding this facility.

Public Transport: The Contractor will issue an information leaflet to all staff as part of their induction on site highlighting the location of the various public transport services in the vicinity of the construction site, including bus routes that operate in the vicinity of the site. The Contractor will also offer the “Travel to Work Scheme” to employees.

7.5 Outline Mobility Management Plan

An Outline Mobility Management Plan for the residents of the proposed development has been prepared and will be submitted with the planning documents for this development. This document sets mode split targets for residents at the proposed development and sets out initiatives proposed in order to encourage travel by sustainable modes and meet the targets set.

8. Conclusion

This Traffic and Transportation Assessment (TTA) has been carried out for the proposed development at The Former Tedcastles Site on the eastern urban fringe of Cork City, situated to the eastern end of the South Docklands, an area envisaged to play a major role in Cork's planned population and employment growth as outlined in the National Planning Framework.

The proposed development is located on a site owned by Tiznow Property Company Limited (Comer Group Ireland) situated between Centre Park Road and the Marina.

The proposed development is a strategic housing development and will consist of 823 no. apartments, resident amenity and ancillary commercial areas including childcare facilities.

The TTA includes a comprehensive review of the area within which the development will be located, a review of applicable transportation planning policy and proposed transportation infrastructure provision within the area. Car parking requirements are considered, and an overall traffic assessment has been carried out. Mitigating measures are proposed in the form of a Mobility Management Framework which will be presented in separate report.

This site avails of good public transport and cycle infrastructure connecting the site directly with Cork City Centre and other important areas in Cork City. In addition, further significant improvement and investment in sustainable and active travel is planned which will benefit the proposed development, including initiatives such as the Docklands to City Centre Road Network Improvement Scheme, new BusConnects Cork routes and supporting infrastructure adjacent to the site, and the planned regional and commuter bus and rail services, and the proposed rapid transit system envisaged to link Ballincollig to Mahon via the city centre.

These initiatives are expected to improve the accessibility of the proposed development site by sustainable modes of transportation and thereby reduce the dominance of car-based transportation in the medium to long term.

A total of 268 residential parking spaces are proposed across the proposed development, which represents 79% of the suggested maximum standards as per the ABTA guidance, and 28% of the maximum requirement as per the City Development Plan.

The trips generated by the proposed development is low in the context of the existing traffic volumes within the vicinity. Generally, the additional traffic on the network added by the proposed development is less than 5%, except for Marquee Road, Centre Park Road and Maryville which have low baseline traffic flows.

The junction modelling shows that at these junctions the difference in the operation of the junction between the 'with development' and 'without development' scenarios is typically minor (up to 10%).

It is therefore concluded that the impact of the proposed development on the local road network would not result in any material impact on the operation of the local road network.

Mitigation measures are proposed for the development in terms of the mobility management plan which promotes sustainable modes of transportation, as well as a reduced parking provision on site in accordance with the most recent guidance from Cork City Council in line with their objectives for the sustainable development of the wider South Docks area.