



Cork Metropolitan Area Transport Strategy
Baseline Conditions Report

September 2018

National Transport Authority,
Dun Scéine,
Harcourt Lane,
Dublin 2.

Document Identification Table

Client / Project Owner	National Transport Authority
Document Title	Baseline Conditions Report
Task Order	
Task	Cork Metropolitan Area Transport Strategy
Deliverable Code	
Version	V2.0
Document Status	Draft

Document Status Tables

Version 1

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Version 2

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1 Introduction

1.1 Background

The National Transport Authority (NTA) is a public body set up under statute and established in December 2009. The role and functions of the NTA are set out in three Acts of the Oireachtas; the Dublin Transport Authority Act 2008, the Public Transport Regulation Act 2009 and the Taxi Regulation Act 2013. In August 2015, the Department of Transport, Tourism and Sport (DTTas) published its policy document *“Investing in our Transport Future - Strategic Investment Framework for Land Transport”*. Action 4 of that framework states that: *“Regional transport strategies will be prepared by the NTA and provide an input to regional spatial and economic strategies”*.

Having regard to its role in relation to transport, and the action placed upon it in the DTTas policy document, the NTA, in collaboration with Cork County and City Councils, is developing a Transport Strategy for the Cork Metropolitan Area (CMA) covering the period 2017 to 2036. The strategy will provide a framework for the planning and delivery of transport infrastructure and services in the CMA over the next two decades. It will also provide a planning policy for which other agencies can align their future policies and infrastructure investment.

1.2 Purpose of this Report

The methodology for the development of the Cork Metropolitan Area Transport Strategy (CMATS) 2040 is undertaken on a step by step basis, from: reviewing the existing policy and transport baseline, undertaking a demand analysis, developing transport options, optimisation of land use to align with high performing transport corridors, developing the draft Strategy for public consultation and subsequently finalising the Strategy. Figure 1-1 outlines the proposed methodology.

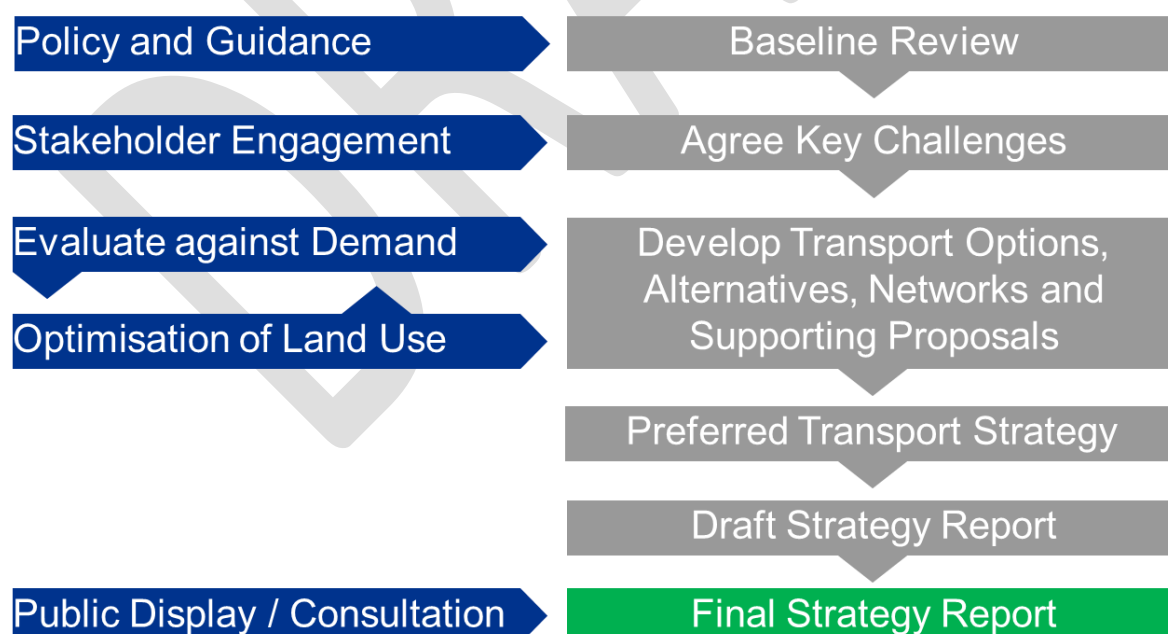


Figure 1-1: Cork Metropolitan Area Transport Strategy Methodology

The first task in the preparation of the Strategy is an assessment of existing transport conditions. This report outlines the current situation and conditions within the CMA in the context of land-use,

transport supply and movement patterns. In addition, the report outlines all current and relevant policies and planning documents pertaining to the CMA.

The purpose of this report is to establish a clear and thorough understanding of the current transport conditions and policies which will form the basis for subsequent tasks. A review of all existing data available has been undertaken to inform this report and consideration has been given to the demand of all modes across both Cork City and County Metropolitan Area.

1.3 Report Structure

The following outlines each section of the report:

- **Section 2:** Review of all relevant National, Regional and Local Policy and Planning Documents;
- **Section 3:** Outline of existing land-use patterns and demographic data;
- **Section 4:** Summary of existing travel demand patterns and characteristics;
- **Section 5:** Review of the current transport network and supply for all modes; and
- **Section 6:** Based on the data collated, this section highlights the key strengths and weaknesses of the current situation and potential opportunities and threats. This section also outlines the key challenges facing the CMA from a transport perspective.

2 Policy Overview (Statutory Plans, Guidelines and Studies)

This section of the report provides a concise overview of the relevant National, Regional, City/County/Metropolitan and local level policy relevant to Cork. **Error! Reference source not found.** outlines the documents that were reviewed as part of this policy review.



Figure 2-1: Overview of Policy and Guidance Reviewed

2.1 National Level Policy

2.1.1 National Planning Framework 2040 (Department of Housing, Planning, Community and Local Government, 2018)

The National Planning Framework (NPF) 2040 was published in February 2018 and will now replace the defunct National Spatial Strategy. This statutory document sets out the long-term context for Ireland's physical development and associated progress in economic, social and environmental terms. The NPF will be underpinned by supporting policies and actions at sectoral, regional and local level.

The NPF will be informed by the Regional Spatial and Economic Strategies (RSEs), which are to be prepared in tandem with the NPF process, by the 3 new Regional Assemblies, namely the Eastern and Midland, Northern and Western and Southern Regional Assemblies.

Due to the large geographical extent of each assembly, each strategy will be informed by smaller Strategic Planning Areas (SPAs) which cover key economic catchments. Cork lies within the South-West SPA.

The NPF will outline a strategic approach that promotes sustainable settlement and transport strategies in both urban and rural areas.

Cork is projected to grow significantly with at least an additional 125,000 people by 2040 to support a minimum population of 315,000 within the CSO defined *City and Suburbs* alone.

Some of the key transport growth enablers outlined in the NPF relevant to the development of CMATS include:

- Delivery of large-scale regeneration projects for the provision of new employment, housing and supporting infrastructure in Cork Docklands (City Docks and Tivoli);
- Progressing sustainable development of new greenfield areas for housing on public transport corridors;
- Intensifying development in inner-city and inner suburban areas;
- Development of a new science and innovation park to the west of the city accessible by public transport;
- Development of enhanced city-wide public transport system to incorporate proposals for an east-west corridor from Mahon, through the City Centre to Ballincollig and a north-south corridor with a link to the Airport;
- M8/N25/N40 Dunkettle Junction upgrade and improved Ringaskiddy Port access;
- Enhanced regional connectivity through improved average journey times by road;
- Improved traffic flow around the City, which, subject to assessment, could include upgrades of the N40, and/ or alternatives which may include enhanced public transport; and
- Improved rail journey times to Dublin and consideration of improved onward direct network connections.

2.1.2 The National Development Plan 2018-2027

The National Development Plan sets out the investment priorities that will underpin the successful implementation of NPF 2040 in the short to medium term, up to 2027. Some of the key National Strategic Outcomes (NSO) which are relevant to, or have been incorporated into, the Strategy are summarised as follows:

- Delivery of large-scale regeneration projects for the provision of new employment, housing

and supporting infrastructure in Cork Docklands (City Docks and Tivoli);

- Progressing sustainable development of new greenfield areas for housing on public transport corridors;
- Intensifying development in inner-city and inner suburban areas;
- Development of a new science and innovation park to the west of the city accessible by public transport;
- Development of enhanced city-wide public transport system to incorporate proposals for an east-west corridor from Mahon, through the City Centre to Ballincollig and a north-south corridor with a link to the Airport;
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- Improved traffic flow around the City, which, subject to assessment, could include upgrades of the N40, and/ or alternatives which may include enhanced public transport; and
- Improved rail journey times to Dublin and consideration of improved onward direct network connections.

2.1.3 Cork 2050 Submission to the National Planning Framework (Cork City Council and Cork County Council, 2017)

This document was submitted jointly by Cork City and County Councils as part of the consultation process for the National Planning Framework 2040. It outlines the joint approach developed by City and County to the future growth of the Cork Region extending beyond the horizon year of the NPF which is 2040 to a horizon year of 2050. The submission outlines the future potential of the Cork region in terms of population and employment growth and the necessary supporting infrastructure required in the region to accommodate this level of growth. The submission makes the following points in relation to future growth in the region:

- Metropolitan Cork will be the driver of population growth and economic activity;
- Cork City will be a focus for significant increases in population and employment (incl. delivery of the City Docks and Tivoli); and
- Growth will be focused on a corridor-based approach in Metropolitan Cork.

The document highlights that future growth should be based around the integration of transport and land use, encouraging efficient use of urban space and the consolidation of development. The Cork 2050 submission aims to integrate public transport and development along key growth corridors within CMA that have:

- Clusters of employment, population, education, health and institutional services;
- Brownfield regeneration opportunity sites (e.g. City Docks & Tivoli);
- Greenfield expansion opportunities in Metropolitan Area and County including Monard Strategic Development Zone
- Opportunities for recreation and amenity (e.g. Marina Park, Tramore Valley Park, Lee Fields to Ballincollig Park, and the Cork Harbour Greenway); and
- Access to important gateways (e.g. Airport and Port).

Based on the above, the potential future public transport network shown in Figure 2-2 was identified. This network provides high capacity public transport corridors along east-west and north-south corridors within the CMA (serving City Centre, City Docks, Tivoli and strategic greenfield locations in the Metropolitan Area including Monard SDZ).

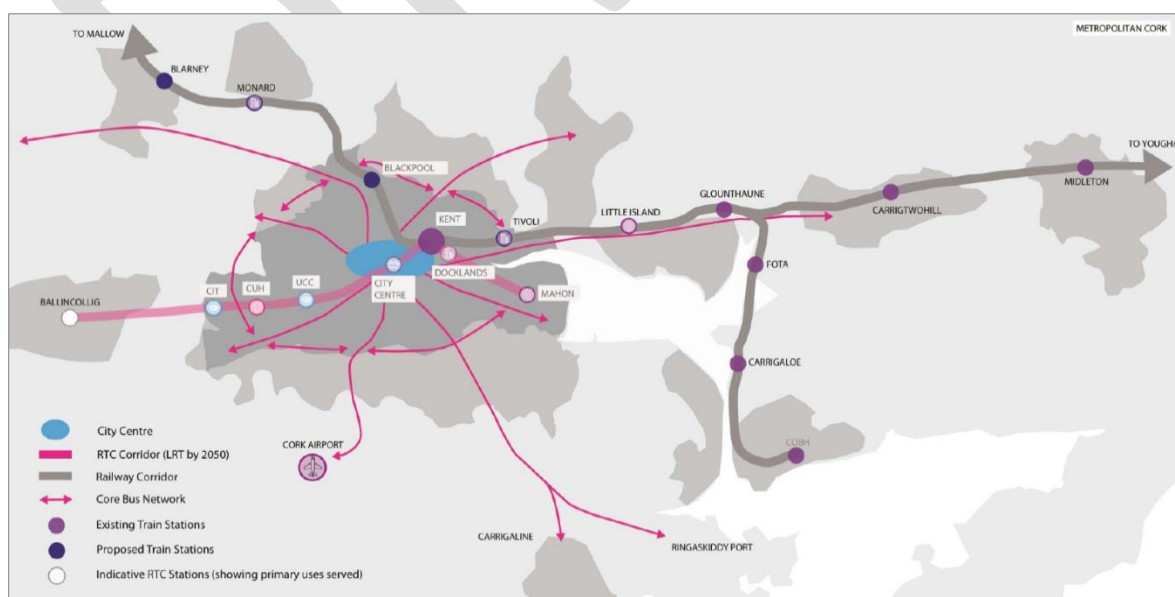


Figure 2-2: Potential Public Transport Connectivity (Cork 2050 Submission)

2.1.4 Building on Recovery: Infrastructure and Capital Investment 2016 – 2022 (Department of Public Expenditure and Reform, 2015)

The *Infrastructure and Capital Investment 2016 – 2022 Plan* presents the Government's €42 billion framework for infrastructure investment in Ireland over the period 2016 to 2021. The Plan prioritises spending on areas of greatest need as the economy continues its strong recovery. The Capital Plan combines direct investment by the Exchequer of €27 billion, a third phase of PPP investments of about €500 million and State-owned sector investment of around €14½ billion. Figure 2-3 outlines the breakdown of investment by sector.

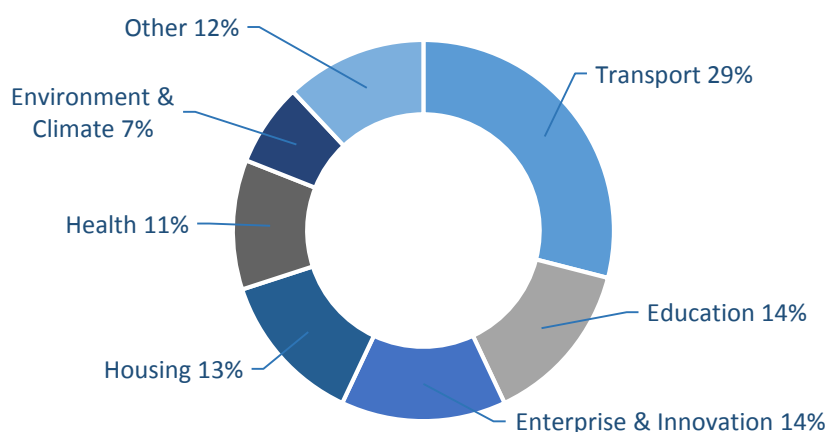


Figure 2-3: Sectoral share for planned investment under the Capital investment Plan

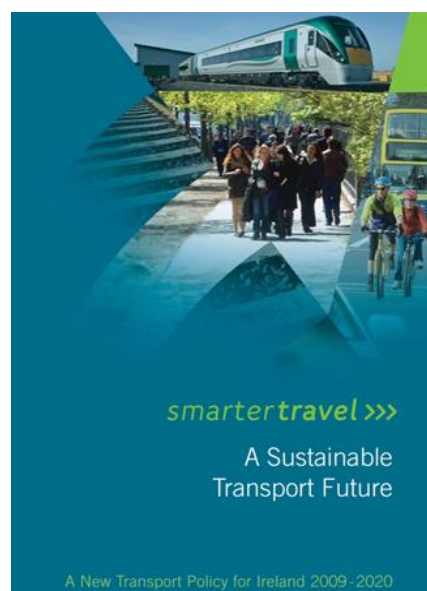
There are several strategic infrastructure schemes identified in the Cork Area to receive funding, including:

- N28 Cork to Ringaskiddy Road;
- N8/N25 Dunkettle Interchange; and
- Cork flood defence works.

2.1.5 Smarter Travel: A Sustainable Transport Future 2009-2020 (Department of Transport, Tourism and Sport, 2009)

The Government policy document “Smarter Travel: A Sustainable Transport Future 2009 – 2020”, recognises the vital importance of continued investment in transport to ensure an efficient economy and continued social development, but it also sets out the necessary steps to ensure that people choose more sustainable transport modes such as walking, cycling and public transport.

The policy acknowledges that continued growth in demand for road transport is not sustainable due to the impact on congestion, local air pollution, contribution to global warming and promotion of increasingly sedentary lifestyles. Its main objective is to promote a significant modal shift from private transport to public transport and active modes over the period up to 2020 and also to reduce the share of travel demand growth that is car dependant. Controlling development so that it is sustainable / public transport oriented, is identified as a mechanism by which this can be achieved.



The Key Goals of the policy document are to:

- Improve quality of life and accessibility to transport for all and with emphasis on people with reduced mobility and those who may experience isolation due to lack of transport;
- Improve economic competitiveness through maximising the efficiency of the transport system and alleviating congestion and infrastructural bottlenecks;
- Minimise the negative impacts of transport on the local and global environment through reducing localised air pollutants and greenhouse gas emissions;
- Reduce overall travel demand and commuting distances travelled by the private car; and
- Improve security of energy supply by reducing dependency on imported fossil fuels.

These are to be achieved by four main actions;

- Actions to reduce distance travelled by private car and encourage smarter travel, including focusing population growth in areas of employment and to encourage people to live near places of employment and the use of pricing mechanisms or fiscal measures to encourage behavioural change;
- Actions aimed at ensuring that alternatives to the car are more widely available, mainly through a radically improved public transport service and through investment in cycling and walking;
- Actions aimed at improving the fuel efficiency of motorised transport through improved fleet structure, energy efficient driving and alternative technologies; and
- Actions aimed at strengthening institutional arrangements.

Smarter Travel outlines a key target to reduce work-related commuting by car from a current modal share of 65% to 45%, with commuting by alternative sustainable modes rising to 55% by 2020.

2.1.6 Rebuilding Ireland: Action Plan for Housing and Homelessness (Department of Housing, Planning, Community and Local Government, 2016)

This action plan is designed to accelerate housing supply in Ireland and aims to tackle the country's housing shortage. The plan focuses on actions with a common trend of increasing the delivery of homes nationwide. The plan focuses on five main pillars that are the foundation of the plan and are the starting point for immediate action under the plan. The five pillars are:

- Address Homelessness.
- Accelerate Social Housing.
- Build more homes.
- Improve the rental sector.
- Utilise existing housing stock.

Part of the plan also includes a Local Infrastructure Housing Activation fund that aims to provide funding to local authorities to provide infrastructure required for the building of houses. Under this activation fund both Cork City and Cork County have been allocated funding for supporting infrastructure at six sites as outlined in

Table 2.1. The details of number of housing units to be provided in the short and long term is also outlined in the table.

Table 2.1 Details of sites in the CMA receiving funding under the Local Infrastructure Housing Activation fund

Local Authority	Project Name	Detail of infrastructure	No of housing units to be provided by 2021	Total potential for housing long-term	Total Allocation (€m)
Cork City	Old Whitechurch Road	Roads, drainage, relocation of powerlines	600	600	9.89
	South Docks	Road upgrades	700	830	15.5
Cork County	Ballincollig	Link road, road upgrade	520	3500	7.4
	Carrigaline	Road upgrade	400	1200	0.6
	Glanmire	Access Road, road upgrades	300	1200	5.9
	Midleton	Road upgrade, link road	520	2500	6.5

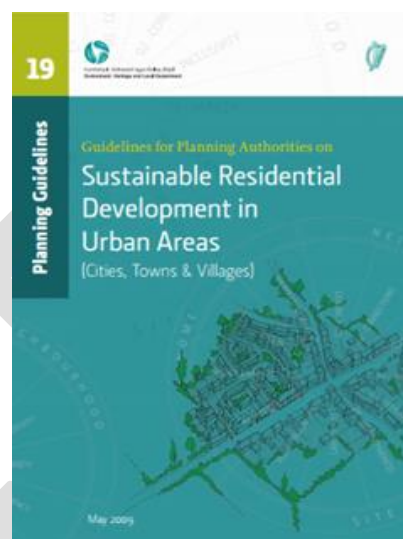
2.2 National Level Guidance

2.2.1 Sustainable Residential Development in Urban Areas (Department Environment, Heritage and Local Government, 2009)

The *Sustainable Residential Development in Urban Areas* guidance sets out the key planning principles which should be reflected in development plans and local area plans. It also guides the preparation and assessment of planning applications for residential development in urban areas.

The guidelines promote residential layouts that:

- Prioritise walking, cycling and public transport, and minimise the need to use cars;
- Are easy to access for all users and to find one's way around;
- Promote the efficient use of land and energy, and minimise greenhouse gas emissions; and
- Provide for a mix of land uses to minimise transport demand.



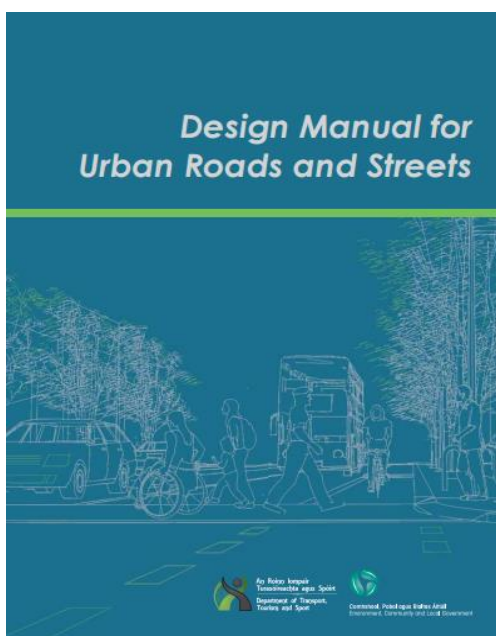
2.2.2 Urban Design Manual: A Best Practice Guide (Department of Environment, Heritage and Local Government, 2009)

Urban Design Manual: A Best Practice Guide provides advice on implementing sustainable residential development in urban areas and supersedes the Urban Design Manual - A Best Practice Guide: A Companion Document to the Draft Planning Guidelines on Sustainable Residential Development in Urban Areas, 2008. The Manual is intended to be read in conjunction with Guidelines for Planning Authorities on Sustainable Residential Development in Urban Areas (2009). The manual is underpinned by 12 design principles as outlined in Figure-24.



Figure 2-4: Graphic showing the 12 Design Principles that underpin the Urban Design Manual

2.2.3 Design Manual for Urban Roads and Streets (DTTAS, 2013)



The *Design Manual for Urban Roads and Streets (DMURS)* promotes an integrated street design approach within urban areas (i.e. cities, towns and villages) focused on:

- Influence by the type of place in which the street is located; and
- Balancing the needs of all users.

A further aim of this Manual is to put well designed streets at the heart of sustainable communities to promote access by walking, cycling and public transport.

The principles, approaches and standards set out in this Manual apply to the design of all urban roads and streets (with a speed limit of 60 km/h or less), except: (a) Motorways (b) In exceptional circumstances, certain urban roads and streets with the written consent of Sanctioning Authorities.

The Manual is underpinned by a holistic design-led approach, predicated on a collaborative and consultative design process. There is specific recognition of the importance to create secure and connected places that work for all, characterised by creating new and existing streets as attractive places with high priority afforded to pedestrians and cyclists while balancing the need for appropriate vehicular access and movement.

To achieve a more place-based/integrated approach to road and street design, the following four core principles are promoted within the manual:

- **Connected Networks** - To support the creation of integrated street networks which promote higher levels of permeability and legibility for all users, and with emphasis on more sustainable forms of transport;
- **Multi-Functional 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 environment for the user hierarchy as shown below in Figure 2-5 with pedestrians considered first; and
- **Multi-disciplinary Approach** - Greater communication and co-operation between design professionals through the promotion of a plan-led, multidisciplinary approach to design.

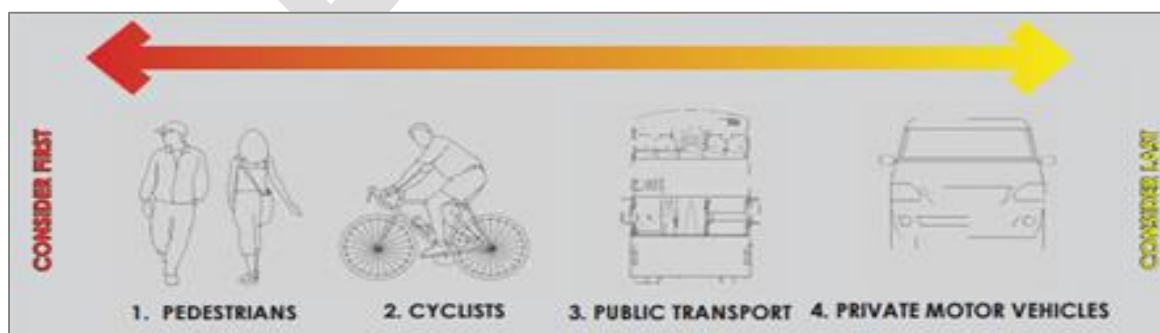


Figure 2-5: DMURS User Hierarchy

2.2.4 Permeability: A Best Practice Guide (National Transport Authority, 2015)

Permeability: A Best Practice Guide sets out guidance on how best to facilitate demand for walking and cycling in existing built-up areas. The scope extends to linkages for people to walk and cycle from their homes to shops, schools, local services, places of work and public transport stops and stations. For the purposes of the guidance, permeability is defined as the extent to which an urban area permits the movement of people by walking or cycling. Characteristics of a permeable environ are highlighted as follows:

- Interconnected pedestrian and cycle street network;
- Absence of high walls and fences segregating housing areas and local/district centres;
- Absence of cul-de-sacs for pedestrians and cyclists; and
- Secure, well-lit, overlooked pedestrian and cycle links between housing areas and between housing and local/district centres.

2.2.5 Spatial Planning and National Roads: Guidelines for Planning Authorities (Department of Environment, Community and Local Government, 2012)

Spatial Planning and National Roads: Guidelines for Planning Authorities set out planning policy considerations relating to development affecting national primary and secondary roads, including motorways and associated junctions, outside the 50-60 km/h speed limit zones for cities, towns and villages.

The guidelines aim to facilitate a well-informed, integrated and consistent approach that affords maximum support for the goal of achieving and maintaining a safe and efficient network of national roads in the broader context of sustainable development strategies, thereby facilitating continued economic growth and development throughout the country.

The following Key Principles have informed these guidelines:

- Land-use and transportation policies are highly interdependent;
- Proper planning is central to ensuring road safety;
- Development should be plan-led;
- Development Management is the key to Plan Implementation; and
- Planning Authorities and the National Roads Authority and other public transport bodies must work closely together.

2.2.6 Achieving Effective Workplace Travel Plans Guidance for Local Authorities (National Transport Authority, 2013)

Achieving Effective Workplace Travel Plans Guidance for Local Authorities aims to assist local authorities in fully integrating the principles and practice of Workplace Travel Plans into both the development plan process and the development management process.

The guidance advocates either a 'Standard' Workplace Travel Plan or a Workplace Travel Plan 'Statement' be assessed on a case by case basis with consideration taken of the location, scale of development, nature of the uses proposed and anticipated impact on the surrounding area, in terms of trip volume and congestion. As an indicative threshold, a 'Standard' Workplace Travel Plan should be required if an existing or proposed development has the potential to employ over 100 persons.

2.3 Regional Level

2.3.1 South West Regional Planning Guidelines

The *South West Regional Planning Guidelines (RPG)* is a strategic policy document designed to steer the future growth of the region over the medium to long term and works to implement the strategic planning frameworks set out in the National Spatial Strategy (NSS) published in 2002 and National Development Plan 2007-2013. The RPG sets out high level strategies, in line with the NSS, and promotes the overall sustainability and growth of the region. The RPG policies inform and advise the Local Authorities in the preparation and review of their respective Development Plans, thus providing clear integrated linkages from national to local levels, in terms of planning and development policy.

Greater Cork, as defined in the RPG, comprises the Cork Gateway, and includes the Mallow Hub and several other towns known as the Ring towns (Fermoy, Youghal, Bandon Kinsale and Macroom). This area is identified as the main driver for growth in the South West Region. The Guidelines set out a vision for the Greater Cork area which is to “encourage the growth of population and employment in the Cork Gateway to create the necessary critical mass for the Gateway so that it can compete more effectively for investment and growth”. Also, outlined within the RPG’s are key actions that must be undertaken in the Greater Cork area for it to achieve this vision. These actions are as follows:

- Realignment and reinforcement of spatial planning and land use policies;
- Plan for an increase in the population and employment of the Cork Gateway.
- Refocusing of economic and investment strategy;
- Front-loading of infrastructure and implementation of integrated transport strategy; and
- Priority infrastructure investments for the Cork Docklands.

Key infrastructural requirements that underpin the vision and actions for the Cork Gateway are also outlined within the RPG’s, these are:

- Cork Docklands Road and Bridge infrastructure;
- Remaining stages of the Cork Suburban Rail Network;
- Atlantic Corridor linking Waterford- Cork -Limerick –Galway;
- Cork Northern Ring Route;
- M20 Cork-Mallow-Limerick;
- Upgrading of N25 Cork-Waterford;
- N28 servicing the major industrial developments at Ringaskiddy;
- N22 which is the regional internal and strategic economic corridor connecting the Tralee/Killarney linked Hub with the Cork Gateway;
- N21 linking the Tralee/Killarney Hub to the Limerick Gateway; and
- N25 flyovers within Cork City.

Figure 2-6 illustrates the spatial development strategy for the South West Region outlined in the RPG and highlights Greater Cork Area, Cork Gateway Area and the key movement corridors linking the spatial development areas creating a developed and connected region.

South-West Region

Spatial Development Strategy

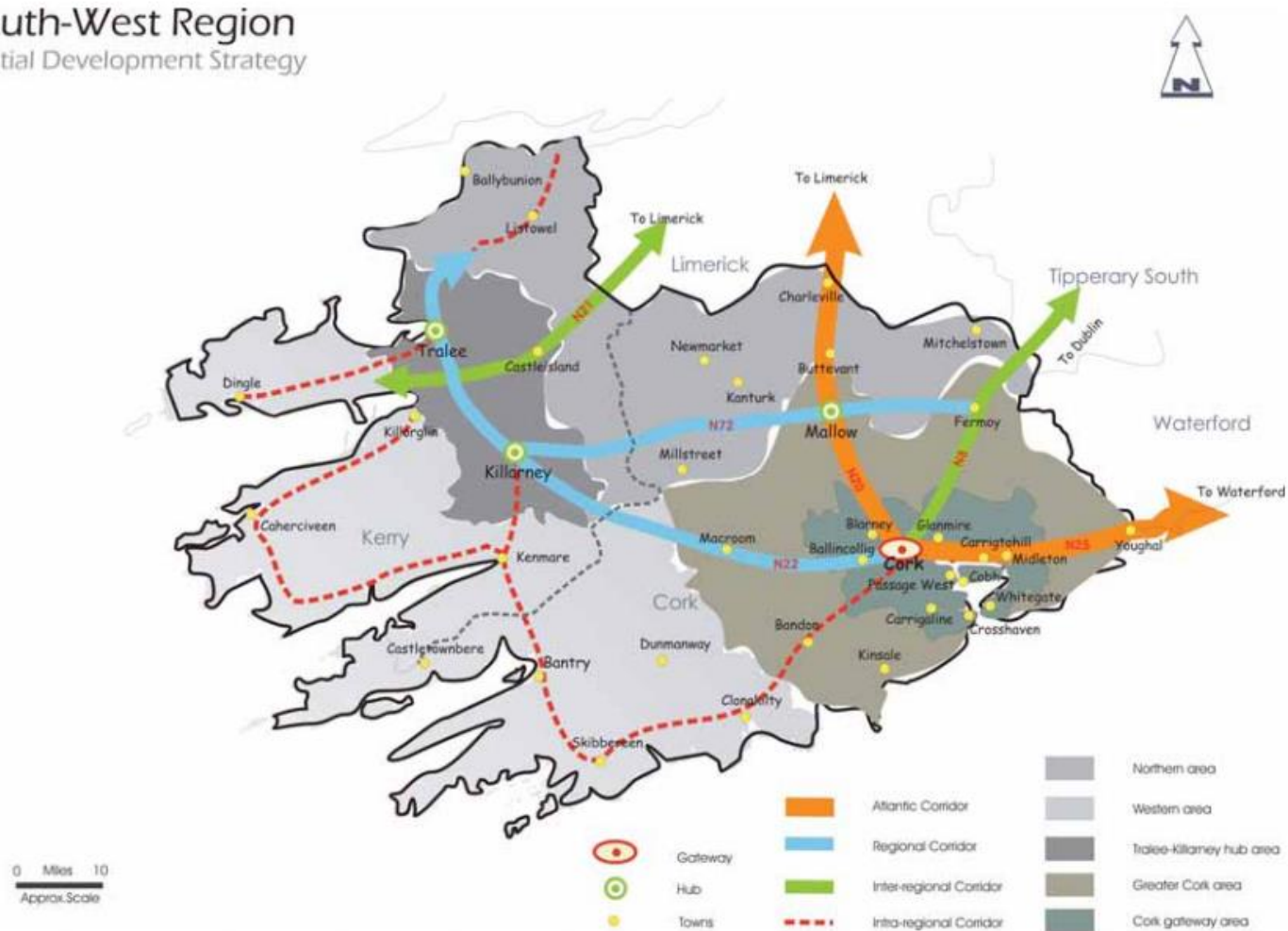


Figure 2-6: Regional Planning Guidelines – Spatial Development Strategy for the South West Region

2.3.2 Regional Spatial and Economic Strategies (RSES)

At a regional level, the National Planning Framework recommends the development of *Regional Spatial and Economic Strategies*. RSESs are to ensure better co-ordination in planning and development policy matters across local authority boundaries.

The CMA lies within the Southern Regional Assembly. The Southern Regional Assembly, established on 1st January 2015, is one of three Assemblies in Ireland along with the Northern and Western, and the Eastern and Midland regional assemblies.

The three new Assemblies incorporate the functions of both the former regional authorities and assemblies, with significant enhancement of some powers, particularly in relation to spatial planning and economic development. The Assemblies are charged with preparing new RSESs for their regions. The draft RSES for the Southern Region is due for publication and public consultation in September 2018, and adoption by early 2019.

The RSES is a link between the NPF, the City and County Development Plans, and Local Economic and Community Plans. Through this process, the Assemblies are centrally involved in the formulation of policies geared towards achieving a greater dispersal of economic growth and development throughout the region.

2.3.3 Metropolitan Area Strategic Plan (MASP)

While RSESs will be developed to co-ordinate local authority plans at a strategic and regional assembly level, the area of the Assemblies is too broad to be able to sufficiently focus on city and metropolitan issues. Accordingly, in tandem with and as part of the RSES process, the NPF stipulates that, arrangements will be put in place to enable the preparation of five co-ordination MASPs for the Dublin, Cork, Limerick, Galway and Waterford Metropolitan areas which will form part of the RSES documents.

In line with the RSES', the MASPs will be provided with statutory underpinning to act as 12-year strategic planning and investment frameworks for the city metropolitan areas, addressing high-level and long-term strategic development issues.

Following the publication of the RSES for the Southern Region, it is understood that the MASP for the CMA will be prepared by the end of 2018. CMATS in combination with the RSES for the Southern Region and the MASP for the CMA, provides the building blocks for regional planning in the Cork area, which is also informed by the national policy objectives contained within the NPF 2040 and the NDP.

2.4 Cork Metropolitan Level

2.4.1 Cork City Development Plan 2015-2021

Cork City Development Plan sets out the development framework for the city of Cork to 2021. The focus of the plan is to grow the city's residential and employment population. The plan also focuses on improving the quality of life of inhabitants and being cognisant of climate change and the environmental effect of development. The Plan also seeks to promote more sustainable modes of travel within the city noting the importance of aligning land use and transportation.

The plan sets out a vision for Cork City as a successful, sustainable regional capital with a high quality of life for its citizens and a robust local economy with a network of attractive neighbourhoods served by good quality transport and amenities. This vision for Cork City will be achieved through the realisation of the following strategic goals:

- Increase population and households to create a compact sustainable city;
- Achieve a higher quality of life, promote social inclusion and make the city an attractive and healthy place to live, work, visit and invest in;
- Support the revitalisation of the city's economy;
- Promote sustainable modes of transport and integration of land use and transportation
- Maintain and capitalise on Cork's unique form and character;
- Tackle climate change through reducing energy usage, reducing emissions, adapting to climate change and mitigating against flood risk; and
- Protect and expand the green infrastructure of the city.

The development plan's Core Strategy sets out the 2022 employment and population targets - 87,577 jobs and 150,000 population. This represents an increase of 22.3% and 25.8% on 2011 census figures. Much of this growth is planned for key development areas as outlined in Figure .

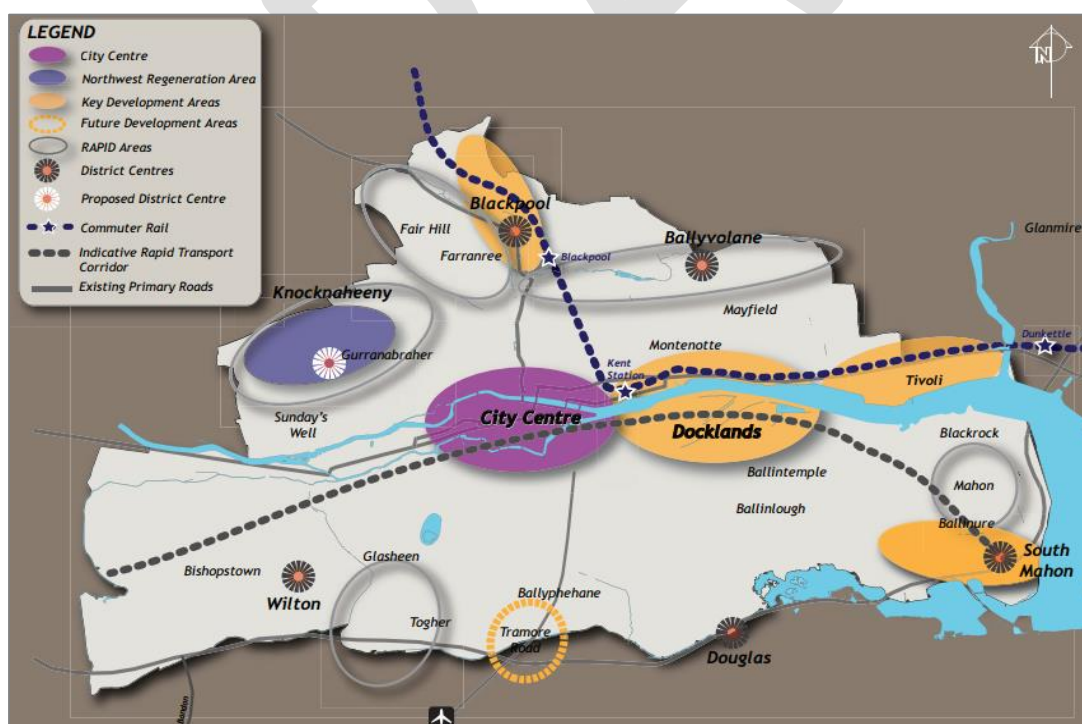


Figure 2-7: Cork City Core Strategy Diagram

2.4.2 Cork County Development Plan 2014 – 2020

This Plan sets out an overall strategy for the proper planning and sustainable development of Cork County over a 6-year period. The objective of the strategy is to make Cork a more competitive and sustainable county through the delivery of an efficient transport system whilst encouraging balanced investment and more energy efficient sustainable modes of public and private transport. The County Development Plan provides for an enhanced public transport network linking the large Metropolitan towns.

The development plan's Core Strategy sets out the strategic priorities for the Cork Metropolitan area to ensure it can fulfil its strategic function as a driver for growth in the south west region. These priorities include the following:

- Promote Metropolitan Cork development as an integrated planning unit to function as a single market area for homes and jobs where there is equality of access for all, through an integrated transport system, to the educational and cultural facilities worthy of a modern and vibrant European City;
- Maintain the principles of the Metropolitan Cork Greenbelt;
- Assist in the redevelopment of the Cork City Docklands by providing for the relocation and development of industrial uses and major port facilities, primarily at Ringaskiddy;
- Recognise the long-term importance of Cork International Airport and to maintain and enhance the infrastructure and other resources likely to be required for its future development;
- Develop the Cork City Environs so that they complement the City. In the south, priority should be given to consolidating the rapid growth that has occurred in recent years by the provision of services, social infrastructure and recreation facilities to meet the needs of the population. The North Environs will play a major role in the rebalancing of the City in terms of future population and employment growth;
- Provide an enhanced public transport network linking the City, its environs, the Metropolitan towns and the major centres of employment; and
- Development to provide the homes and jobs that are necessary to serve the planned population will be prioritised in the following locations within the CMA; Carrigaline (Shannon Park), Middleton (Water-rock) and Carrigtwohill (North of the Railway), Ballincollig (Maglin), North Environs (Ballyvolane), Glanmire (Dunkettle), Blarney (Stoneview), Monard and Cobh. Details of the proposed development will be set out in Master Plan studies and Local Area Plans as appropriate.

The proposed future populations of towns within the CMA as per the County Development Plan are outlined in Figure 2-8.

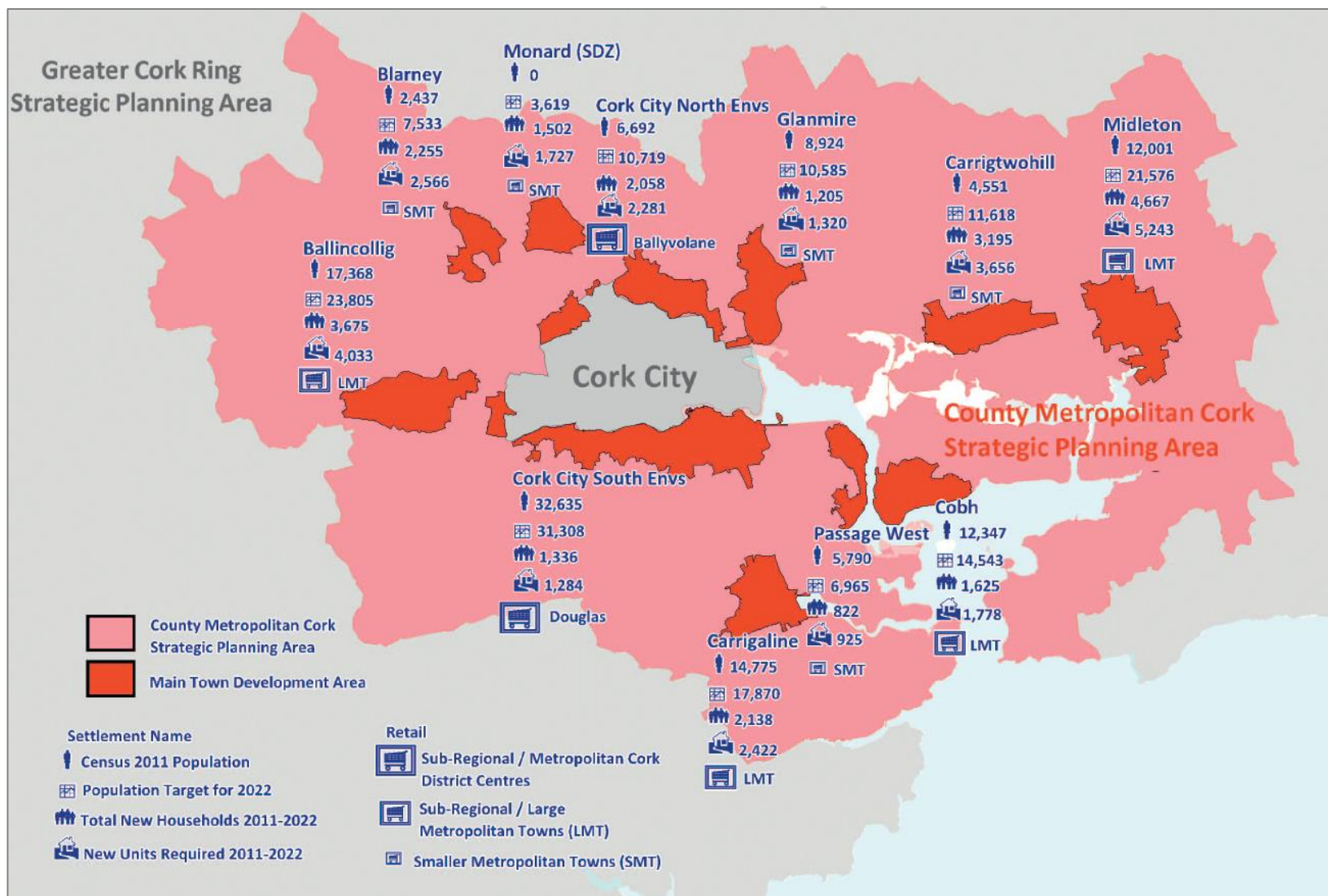


Figure 2-8: Cork Metropolitan Area Core Strategy (Cork County Development Plan, 2014)

2.4.3 Cork Area Strategic Plan Update 2008

The Cork Area Strategic Plan (CASP) strategy was created to achieve a vision for Cork, to address the key issues identified and to improve the quality of life for the people of Cork and its visitors over a 20-year period. The CASP strategy provides a reference framework within which other areas of public policy and service provision can be implemented. CASP recognises the need to support the use of sustainable transport modes (public transport, cycling and walking) and acknowledges that “future demand for transport must be met in a balanced way between all transport modes so that congestion can be reduced”.

The strategy appropriately sought to move towards a more sustainable form of development for the Cork City region. The CASP set out a framework that would:

- Attain critical mass;
- Integrate land use and transport;
- Make efficient use of investment in infrastructure;
- Provide a high-quality environment; and
- Improve the competitiveness and attractiveness of the region.

Figure 2-9 illustrates the CASP Strategy, outlining the following transportation elements:

- Major Roads (including North Ring Road and South Ring Road);
- International Airport;
- International Sea Port;
- Access to Air and Sea Ports;
- Proposed Rail Line expansion to Youghal;
- Quality Bus Corridors; and
- Park and Ride Provision outside the N40.



Figure 2-9: Cork Area Strategic Plan

2.4.4 Cork City Walking Strategy 2013 to 2018

The Cork Walking Strategy 2013 - 2018 seeks to enhance a culture of walking beyond the City Centre by providing better pedestrian connectivity between settlements, district centres, employment hubs, educational facilities and public transport services. It examines the quality of the existing network of streets and neighbourhoods, and examines mode choice for various trip purposes. The strategy outlines measures to encourage further walking across the County

There are four focus areas of the Walking Strategy:

- Network Development of the primary pedestrian network throughout the city;
- Neighbourhood Infrastructure to enhance neighbourhoods and walking safety;
- Behavioural Change initiatives that promote walking; and
- Collaboration between stakeholders.

Figure 2-10 shows the neighbourhoods and strategic and amenity walking routes identified within the strategy.

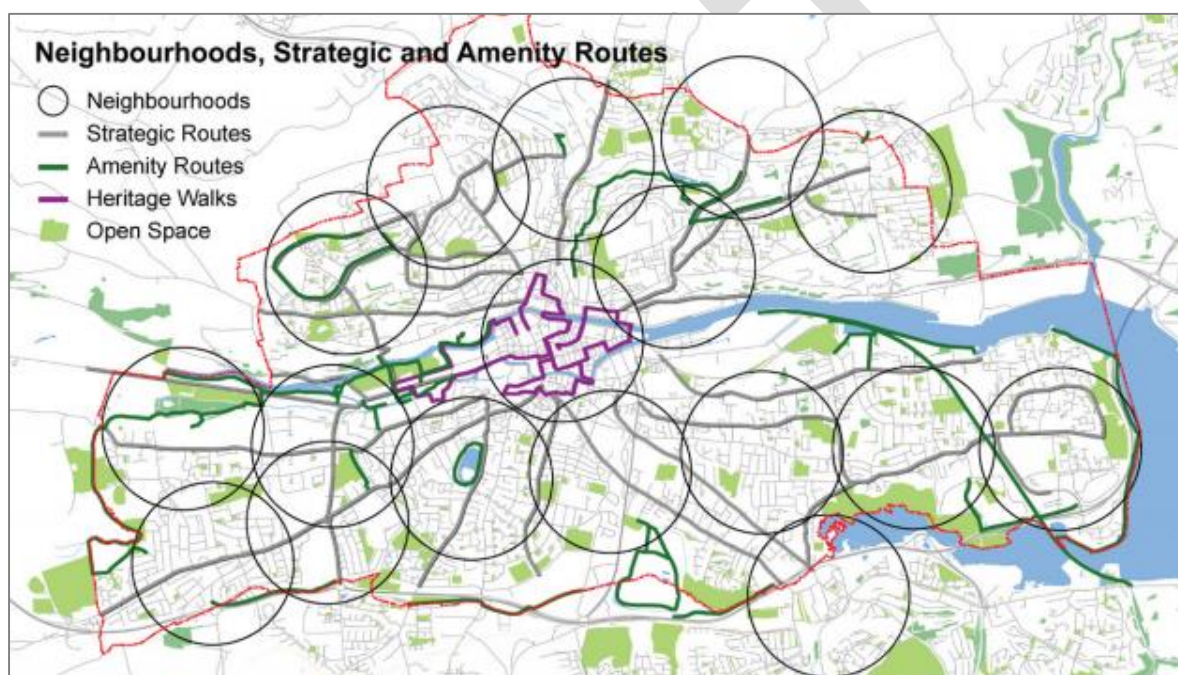


Figure 2-10: Existing Neighbourhoods, Strategic and Amenity Routes, including Heritage Walks and Open Space

2.4.5 Cork Metropolitan Area Cycle Network Plan 2015

The aim of the Cork Metropolitan Area Cycle Network Plan is to provide a coherent, safe and attractive cycle network that will support a shift from the private car to cycling for employment and education trips as well as provide a strong basis for increasing leisure and tourist cycling.

The key priorities of the Cork Cycle Network Plan are:

- Designating a coherent network of east-west and north-south cycle routes across the area which will provide access to all major trip generators; and
- The priority in terms of access is employment areas and third level education followed by schools.

The network developed as part of the plan for the CMA is shown below in Figure 2-11.

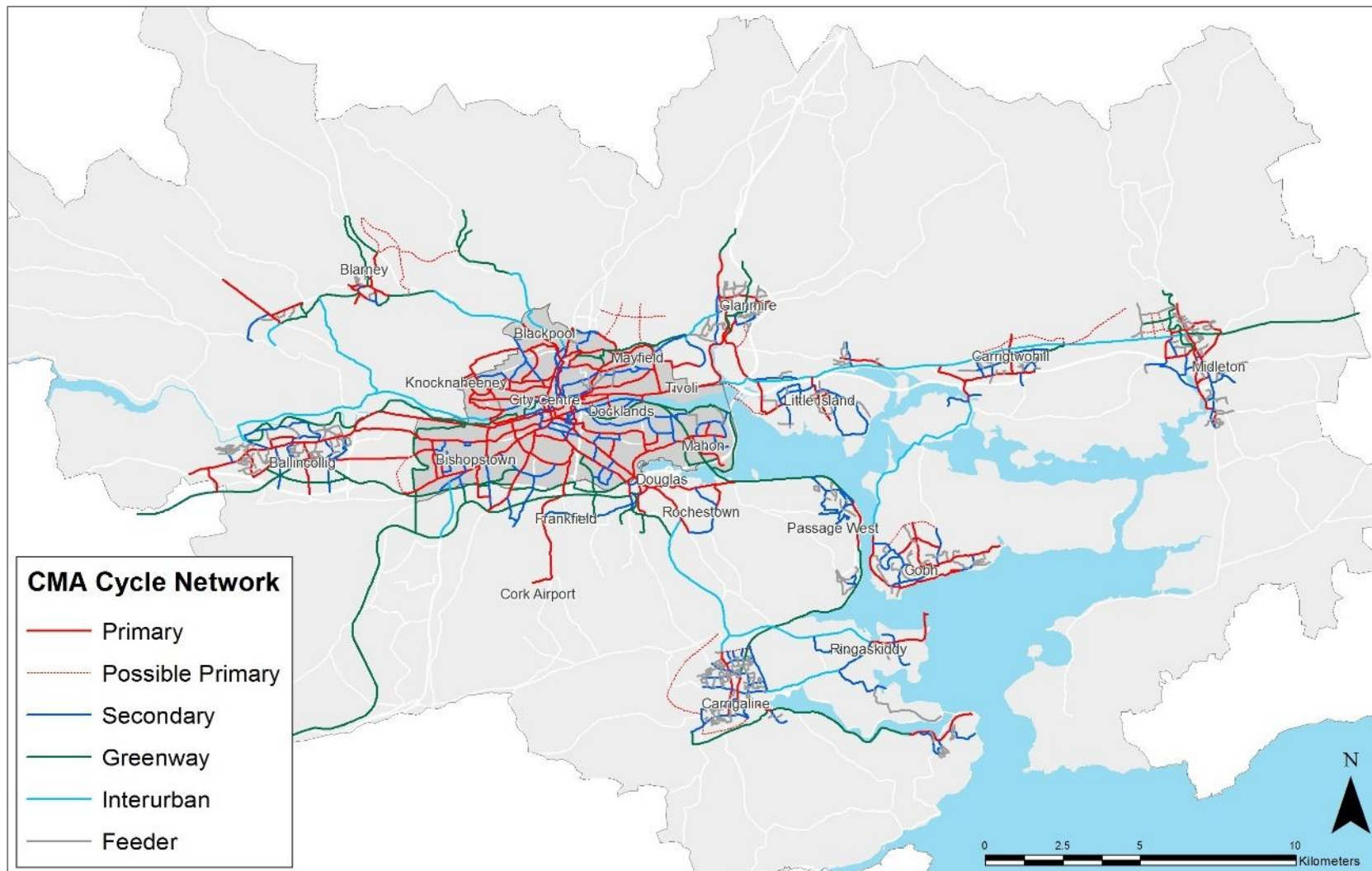


Figure 2-11: Cork Inter-Urban Cycle Route Network (Cork Metropolitan Cycle Plan, 2015)

These priorities have been established to support proposed modal shift targets. The plan also supports:

- Providing the highest possible Level of Service on identified corridors of high demand;
- Identifying and maximising opportunities for high quality greenways; and
- Responding to feedback from key stakeholders and the public.

2.4.6 Cork Area Transit Study (CATS) (2010)

The Cork Area Transit Study (CATS) was prepared to examine strategic public transport measures that would provide for future growth in the Cork Metropolitan area. An integrated package of measures was identified that would provide for a state of the art public transport system to ensure that all road users can move around in a less congested environment. Measures included:

- A BRT system linking Ballincollig and Mahon, via the City Centre and Docklands,
- Significantly improved bus services and priority measures on the key north-south corridor linking the Airport to the City Centre and onto Ballyvolane;
- Reconfigured bus network with improved frequencies, better linkages and improved on-street priority throughout the Cork Region;
- Revised Traffic Management arrangements to improve accessibility, and facilitate the introduction of improved public transport throughout the Cork Region;
- Supportive Parking Strategies in the Cork Region to achieve the desired study outcomes, and to support investment in public transport;
- Implement integration measures, including: park and ride;
- High quality bus stop infrastructure with Real Time Information and mapping;
- Integrated ticketing/ fares, and
- Seamless interchange at Kent Station.

Figure 2-12 outlines the public transport recommended within CATS.

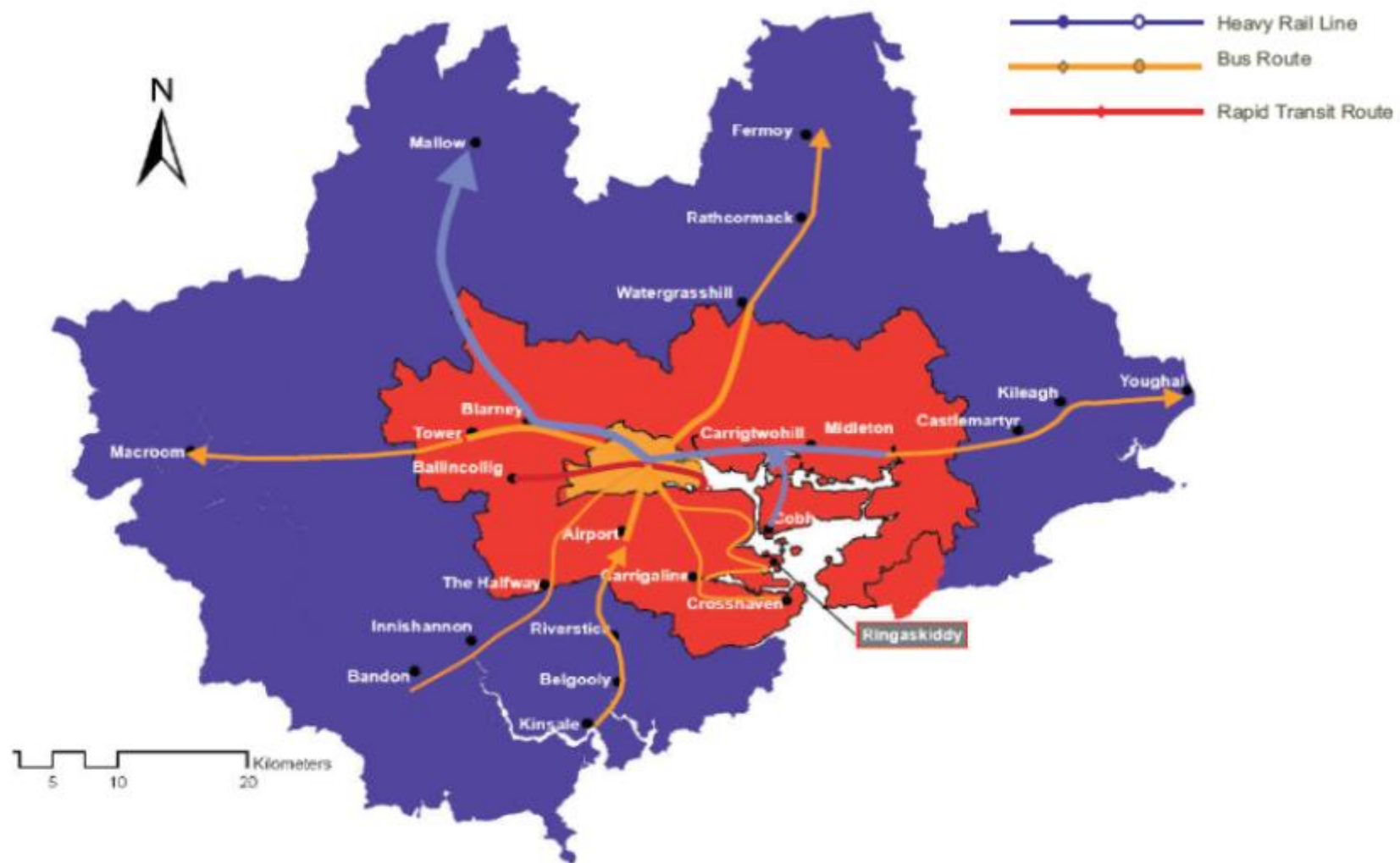


Figure 2-12: CATS Public Transport Routes

2.4.7 Historical Traffic and Transport Studies

The following outlines historical traffic and transport proposals proposed for Cork City and County Metropolitan Area dating back to 1968 and 1978.

Cork Traffic Study, 1968 – B.K.S. Consultants

In 1968 the Cork Traffic Study Report was published, which outlined road network and traffic management proposals for Cork City Centre. This study was very much “of its time”, in that it focussed predominantly on catering for vehicular movement and access to Cork City. The study proposed a large 3-lane raised dual carriageway ring-road surrounding Cork City Centre (referred to as the Inner Distributor Road), with dual carriageway and 4-lane radial roads providing direct access to the City Centre ring road. Increased parking provision was proposed on the periphery of the Inner Distributor Road to cater for the vehicular demand to the City Centre. Significant areas of Cork City would have been demolished to achieve this road network proposal, as such this proposal never gained traction and was never implemented.

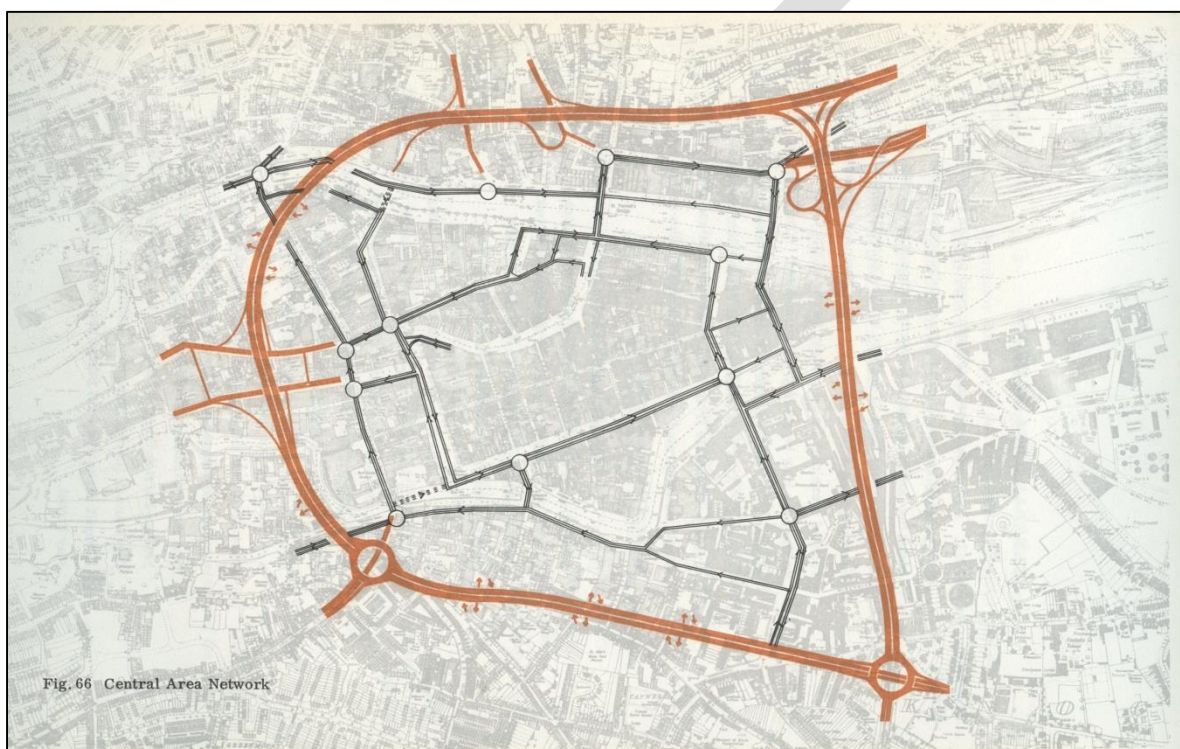


Figure 2-13: Cork Traffic Study, 1968: Inner Distributor Road Proposal¹

¹ Cork City and County Archives, Cork Traffic Study, 1968, CP/Eng/2006, 22-5-2017.

Cork Land Use and Transportation Study (LUTS), 1978 – Skidmore, Owings and Merrill

In 1978 the Cork Land Use and Transportation Study (LUTS) was published. This study set out the framework for the development of metropolitan Cork for the following decades. Employment areas such as Little Island, Ringaskiddy and Mahon were identified for development. Key transport proposals and improvements identified in the LUTS to support the development of the Cork Metropolitan Area include:

- Passenger rail service to Midleton;
- N8 Dublin Road;
- N20 Mallow Road;
- N20 City Radial Route;
- North Ring Road;
- Michael Collins and De Valera Bridges;
- N27 South City Link Road;
- River Lee downstream crossing (Jack Lynch Tunnel);
- Cork South Ring Road; and
- N28 Ringaskiddy Road.

Within Cork City the LUTS proposed a Central Control Area and an Outer Control Area, with the aim of restricting vehicular access to the City Centre, specified radial routes through and Area Traffic Control system of traffic signals. This approach would delay traffic entering these areas until congestion eased, while providing bus priority access to the City Centre via alternative dedicated bus access routes. St. Patrick's was proposed to be bus and access only, with significant areas of pedestrianisation within the City Centre.

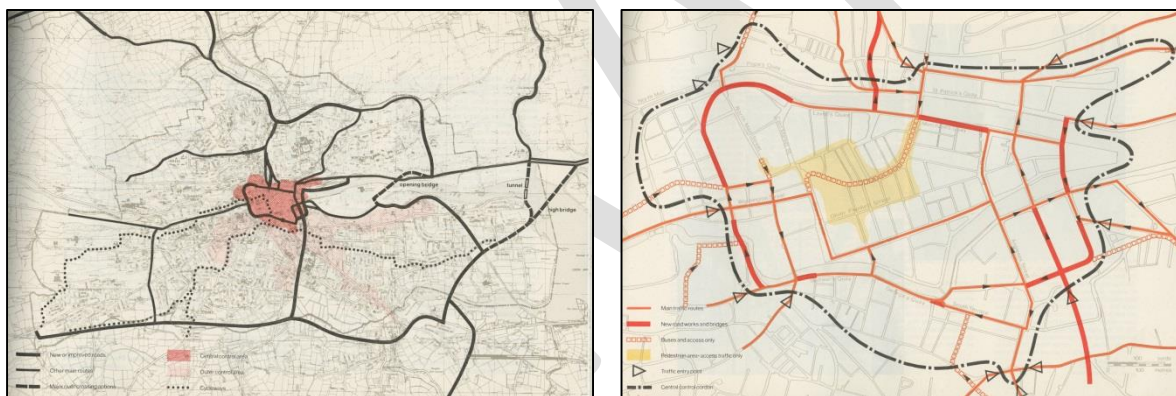


Figure 2-14: Cork Land Use and Transportation Study, 1978: Transport Proposals²

² Cork City and County Archives, Cork Land Use and Transportation Study, 1978, IEI/002, 22-5-2017.

2.5 Local Area Level

2.5.1 Local Economic and Community Plans (LECP)

Putting People First: Action Programme for Effective Local Government (October 2012) set out a requirement for Local Authorities, especially those containing NSS Gateways or Hubs, to prepare Local Economic Development Plans. The purpose of these plans is to ‘*guide the economic actions of local authorities and will align with, and form the implementation mechanism at individual local authority level for, the Regional Spatial and Economic Strategy*’.

Cork City has adopted their LECP and Cork County’s LECP is currently at draft stage.

2.5.2 Cork County Council Municipal District Local Area Plans

There are 8 Local Area Plans in the Cork County administrative area which are all currently at the draft stage. The eight plans are as follows:

- Draft Ballincollig Carrigaline Municipal District Local Area Plan 2016,
- Draft Cobh Municipal District Local Area Plan 2016,
- Draft Blarney Macroom Local Area Plan 2016,
- Draft Bandon Kinsale Local Area Plan 2016,
- Draft West Cork Local Area Plan 2016,
- Draft Kanturk Mallow Local Area Plan 2016,
- Draft Fermoy Local Area Plan 2016; and
- Draft East Cork Local Area Plan 2016.

Figure 2-15 outlines the geographical extent of each Local Area Plan.

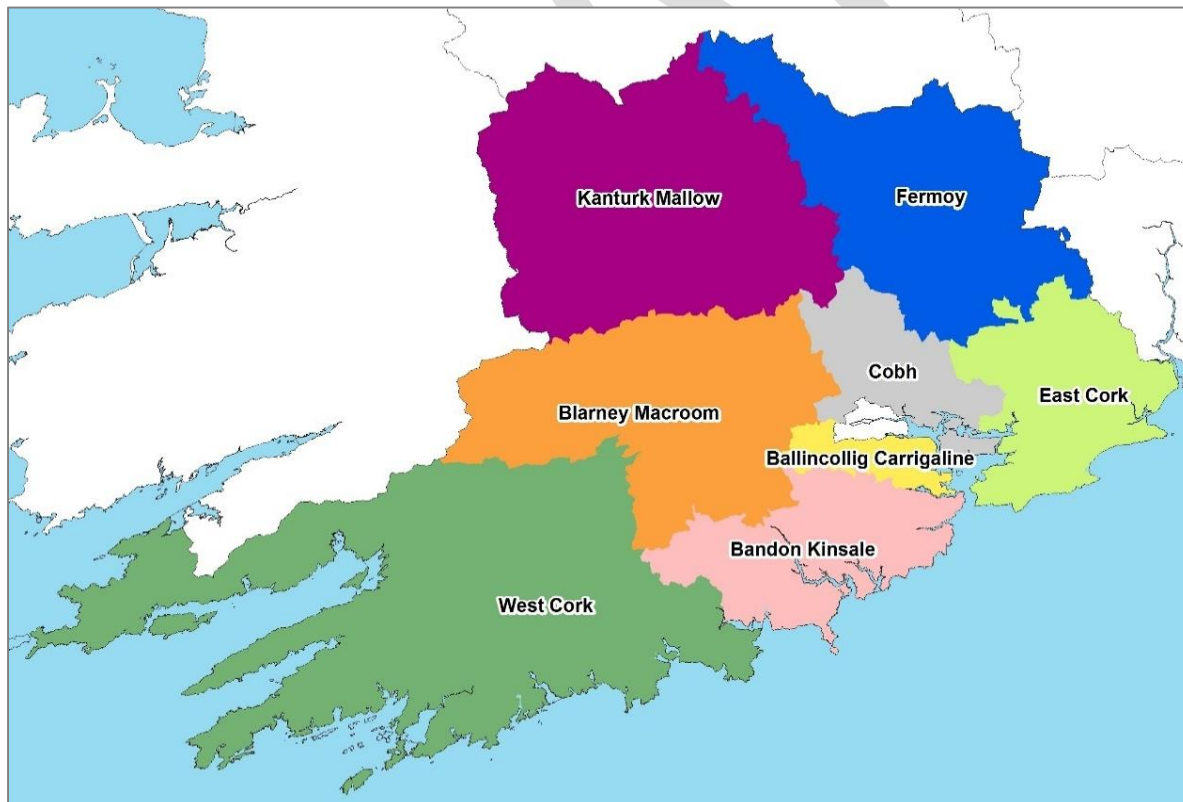


Figure 2-15: Cork County Local Area Plans

There are also nine Urban Expansion Areas designated in the Cork County Area, all of which are in the Metropolitan area, these Urban Expansion Areas fall within the following LAP's:

- Ballincollig South and Shannonpark Urban Expansion Areas – Ballincollig Carrigaline LAP
- Stoneview Urban Expansion Areas – Blarney Macroom LAP
- Monard, Ballyvolane, Ballinglanna Dunkettle, Carrigtwohill North and Cobh Urban Expansion Areas – Cobh LAP
- Water-Rock Urban Expansion Areas – East Cork LAP

The purpose of the Urban Expansion Areas is to accommodate employment and residential growth in the Cork Metropolitan area in a plan led manner.

2.5.3 Cork City Strategic Corridor Studies

Cork City Council has undertaken three strategic corridor studies over the last three years, focused on the South East, South West/ South Central and Northern parts of the City. The studies' objective was to assess how best to optimise transport provision on the basis of defined transport corridors within the City, with the identification of associated transport interventions for implementation over time, which were deemed to have the greatest potential to increase overall corridor capacity through modal shift to sustainable transport modes.

The proposed interventions for each corridor were selected to:

- Improve facilities for sustainable modes (walking, cycling and public transport) along the identified corridors;
- Reduce journey times for buses servicing routes to the Cork city centre and the South-East zone, considering the possibility of future upgrades of bus routes to Rapid Transit corridors;
- Upgrade/ improve traffic signals and providing bus priority measures at critical locations along routes; and
- Complement the City Centre Movement Strategy (see Section 2.5.5.).

Prior to the studies being undertaken, five indicative corridors had been identified, as outlined below in Figure 2-16. As stated in the city development plan, land-use strategies for each corridor would be developed to provide higher densities along defined corridors through development consolidation.



Figure 2-16: Cork City Strategic Transport Corridors

2.5.4 Cork City Council Local Area Plans

Four key development areas were identified in the Cork City Development Plan, for which local area plans have been prepared.

- South Docks Local Area Plan 2008-2018;
- Farranferris Local Area Plan 2009-2019;
- Blackpool Local Area Plan 2011-2017; and
- Mahon Local Area Plan 2014-2020.

The geographical area covered by each plan is shown below in Figure 2-17.

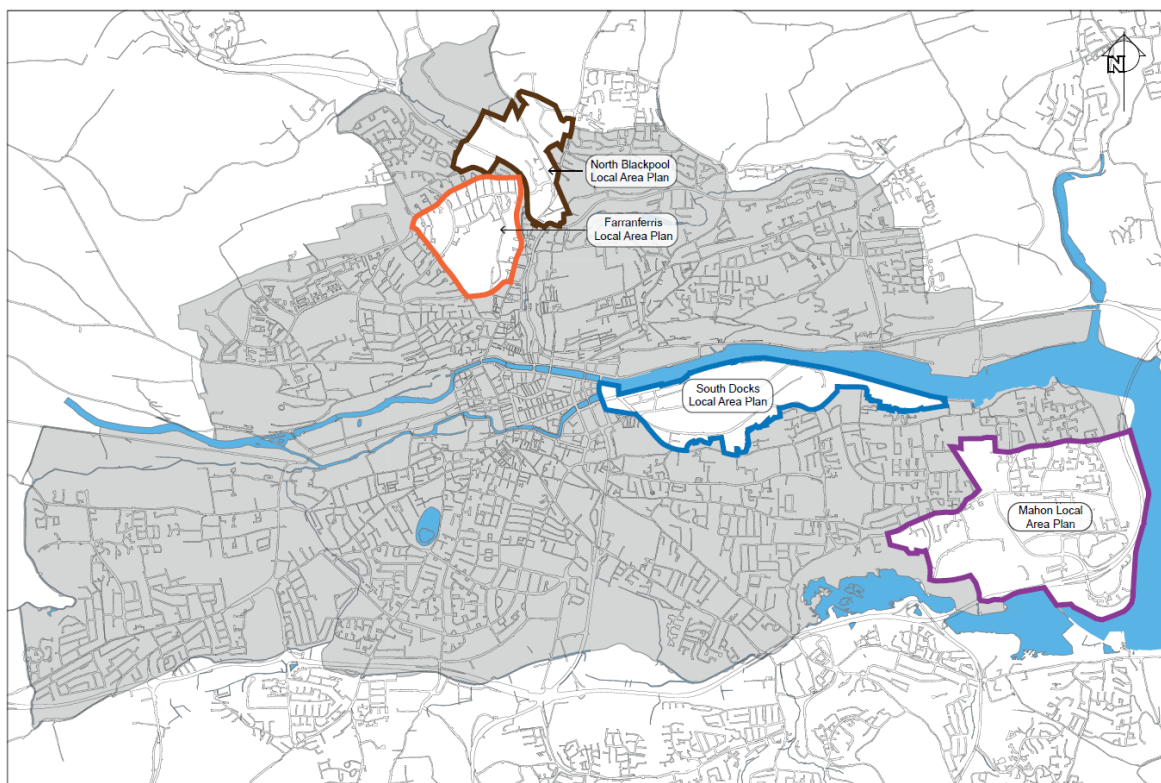


Figure 2-17: Cork City Local Area Plan Locations

2.5.5 City Centre Movement Strategy

The *City Centre Movement Strategy (CCMS)* was agreed by Cork City Council in 2013 and sets out nine phases of measures intended to reallocate road space to ensure a balance between all road users and remove traffic from core routes within the city centre. Some elements of the CCMS have been progressed to date, including the Parnell place renewal project and the Kent Station to City Centre improvement scheme. In addition, the implementation of 'Phases 1 and 2', involving a ban of general traffic along St. Patrick's Street between 3.00-6.30pm and associated interventions in the Granville Place/ Middle Parish area, were approved by the City Council in September 2016. This is currently being implemented.

Figure 2-18 outlines all proposed changes to one/two-way traffic management systems outlined within the CCMS.

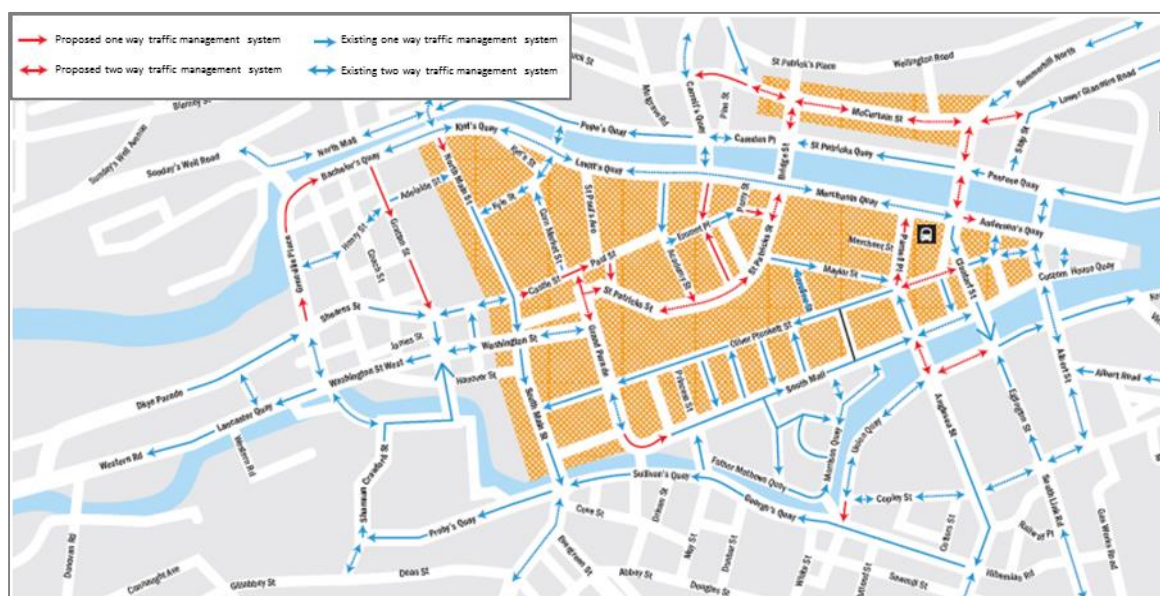


Figure 2-18: Cork City Centre Movement Strategy Proposed Traffic Management Systems

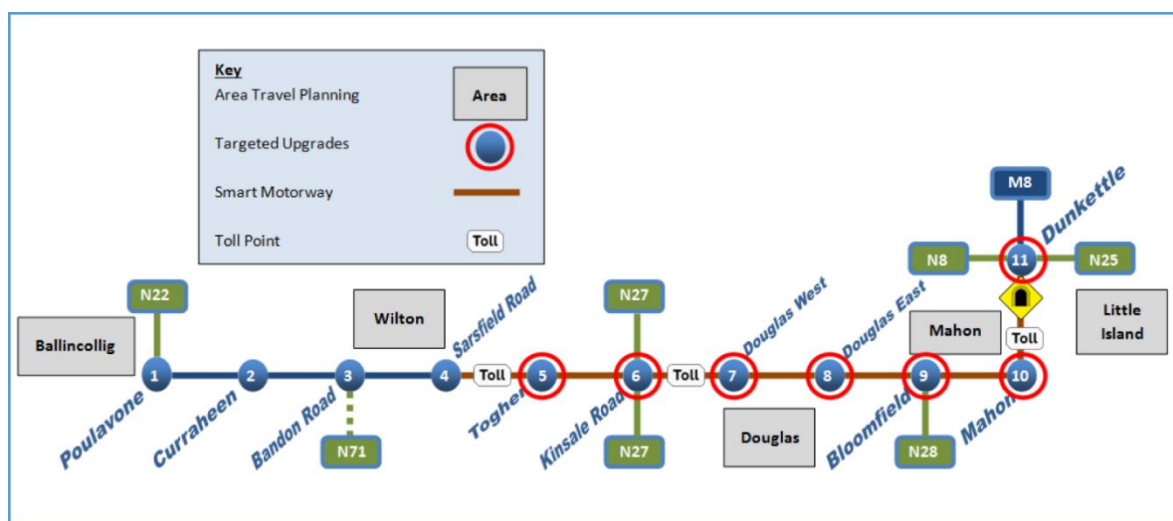
2.5.6 N40 Demand Management Study

Transport Infrastructure Ireland (TII), in consultation with Cork City Council, Cork County Council and various other stakeholders, undertook a study to identify a package of potential Demand Management Measures for the N40 corridor. The overarching study objective was to “develop a scheme of specific Demand Management Measures for the N40 which seeks to ensure the capacity along the N40 is protected as demand rises in the future”.

As part of the study, the following potential interventions were assessed:

- Integrated Land Use and Transportation;
 - Travel Planning & Awareness
 - Land Use Policies
 - Public Transport
 - Parking Policy
- Targeted Upgrades;
 - Upgrade to Motorway
 - Dunkettle Interchange Upgrade
 - Off Line Junction Improvements
 - Hard Shoulder Queuing
- Smart Motorway Interventions;
 - Traffic Control Centre
 - Variable Speed Limits
 - Variable Messaging Signage
 - CCTV
 - Incident Detection
 - Network Patrols
- Alternative Complementary Routes;
 - Douglas East-West Link

- Airport – Sarsfield Road Link
- Fiscal measures;
 - Multi Point Tolling.



2.6 Other Policy Documents /Guidelines/Studies

Several other policy documents, guidelines and studies were reviewed as part of this policy review report. These policy documents include the following:

- National Spatial Strategy 2002 – 2020;
- Douglas Land Use and Transportation Strategy;
- Monard SDZ Transport Assessment;
- Cork Northern Environs Transport Assessment; and
- Trans-European Transport Network (TEN-T) Policy Documents.

3 Study Area and Existing Development Patterns

3.1 Study Area Definition

The Study Area has been defined on the basis of the Cork Metropolitan Area (CMA). The CMA, covers 820km², and has a population of 305,000, as determined from Census 2016.

Figure below shows the extent of the Cork Metropolitan Area along with its key settlements and transport infrastructure. The city administrative area is also highlighted.

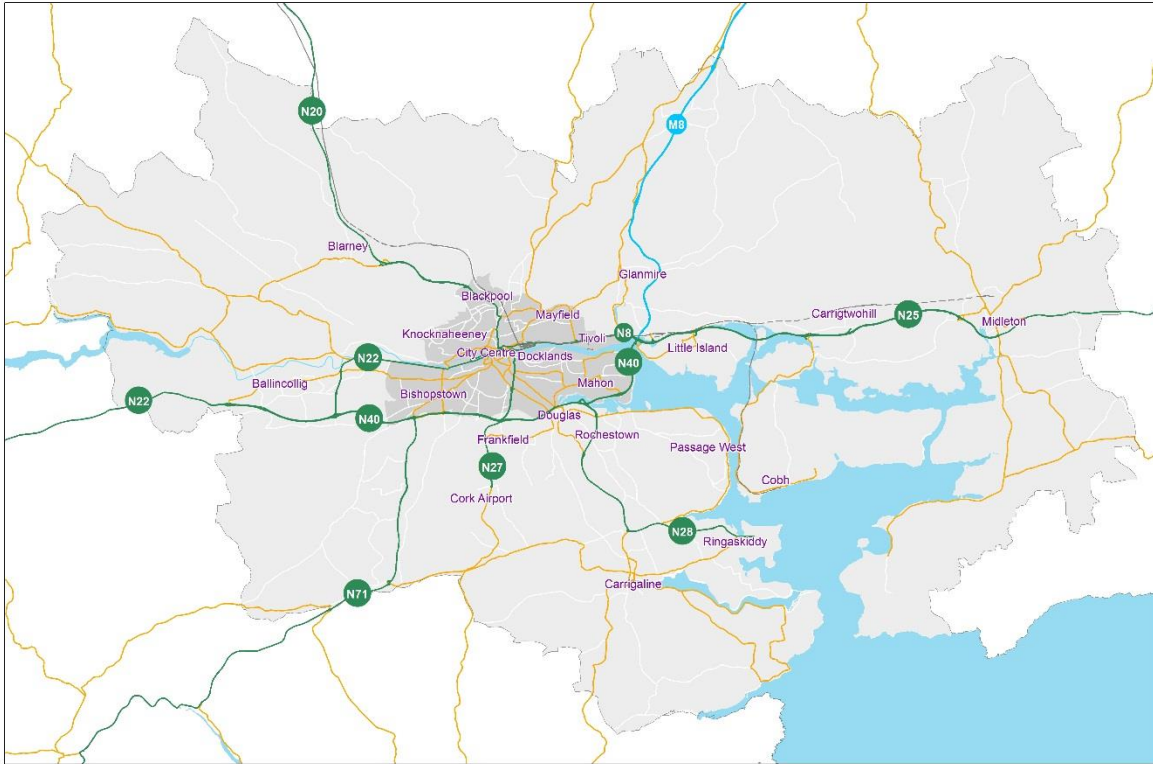


Figure 3-1: Cork Metropolitan Study Area and Main Settlements

Cork City is home to two large third level education institutions, University College Cork and Cork Institute of Technology, both of which, along with Cork University Hospital, are located in the southwest of the City. The City and its Metropolitan Area is served by commuter and intercity rail services; city, regional and expressway bus/ coach services; and Cork Airport is located 6km to the south of the City Centre. Existing public transport services will be discussed in more detail in Sections 3.5 and 3.6 of this report.

Figure shows a more detailed map of the City and the immediate County hinterland.

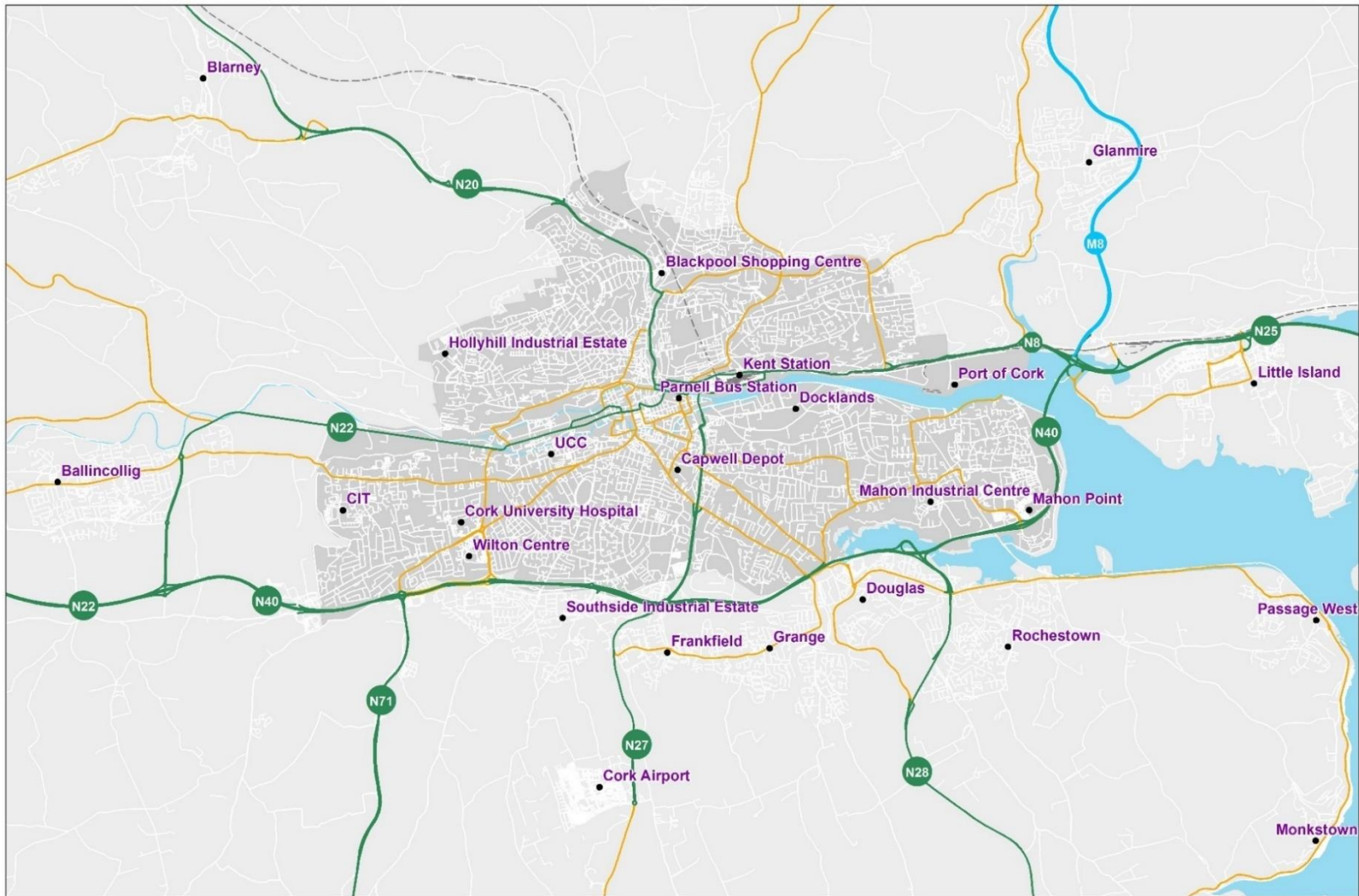


Figure 3-2: Cork City and Immediate Hinterland

3.2 Existing Development Patterns

3.2.1 Population

As stated above, the CMS was estimated to have a population of c.305,000 in 2016, indicating a population increase of 5.4% since 2011, as shown in Table 3.1, below. All further population figures presented in this report are based on the detailed data already available from the 2011 Census. Table 3.1 and Figure 3-3, below, shows the population totals for the CMA's functional areas.

Table 3.1: Breakdown of 2011 Cork Metropolitan Area Population

Area	2011 Population	2016 Population	2011-16 Growth
County Metropolitan Urban Areas	117,520	Not Available	-
County Metropolitan Rural Areas & Villages	52,989	Not Available	-
County Metro Total	170,509	179,749	5.4%
City	119,230	125,657	5.4%
Total	289,739	305,406	5.4%

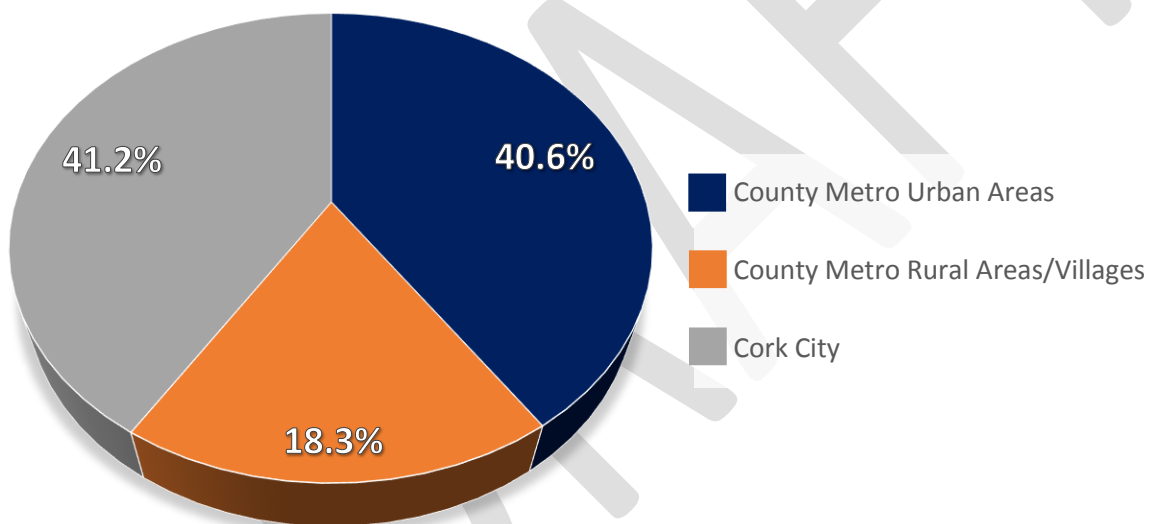


Figure 3-3: 2011 Population Percentage Breakdown-Cork Metropolitan Area

Table 3.2 and Figure give a further breakdown of the county metropolitan urban population (117,250) outlining the 2011 population of all the main urban settlements as defined in the Cork County Development Plan. As outlined below the largest population centres are the South Fringes of the city (Douglas, Rochestown, Grange & Frankfield), Ballincollig, Carrigaline, Cobh and Midleton.

Table 3.2: Breakdown of 2011 Cork County Urban Metropolitan Population by Settlement

Settlement	2011 Population	% of Total Population
Ballincollig	17,368	14.8%
Ballyvolane	6,692	5.7%
Blarney	2,437	2.1%
Carrigaline	14,775	12.6%
Carrigtwohill	4,551	3.9%
Cobh	12,347	10.5%
Cork South Environs (Frankfield, Douglas, Grange, Rochestown)	32,635	27.8%
Glanmire	8,924	7.6%
Midleton	12,001	10.2%
Passage West	5,790	4.9%

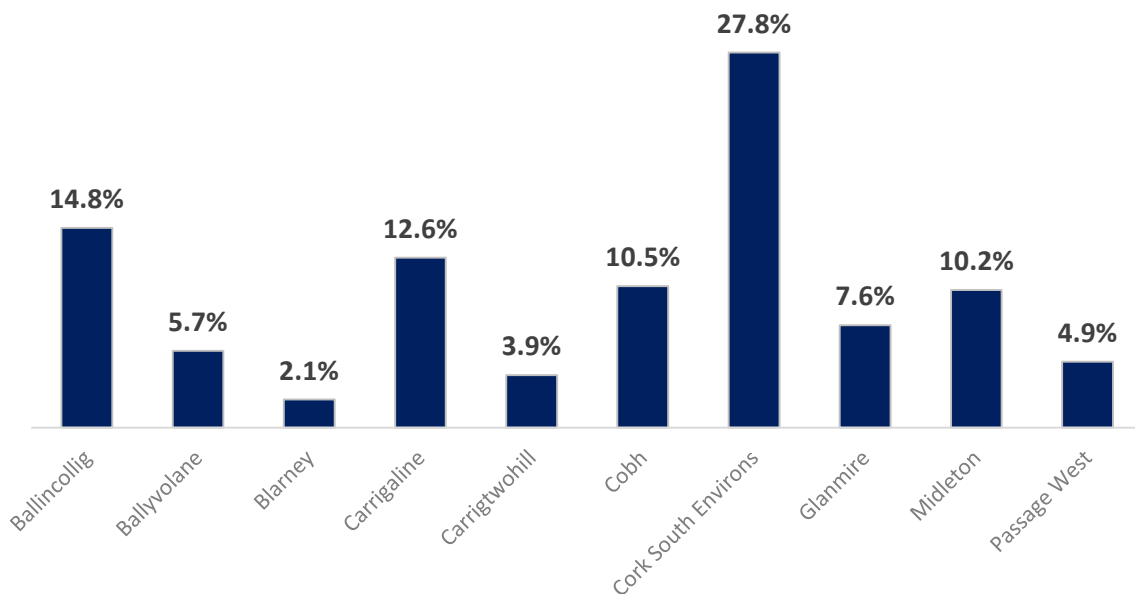


Figure 3-4: Population Percentage Breakdown-Cork Metropolitan Urban Area

In addition to the breakdowns given above the 2011 population density by CSO Small Area has been mapped for the Cork Metropolitan area and is shown in Figure. The map shows the significantly higher population density within the city and the larger county metropolitan towns mentioned above. Each CSO Small Area boundary was decided based on the number of households within each, with each Small Area having a similar population.

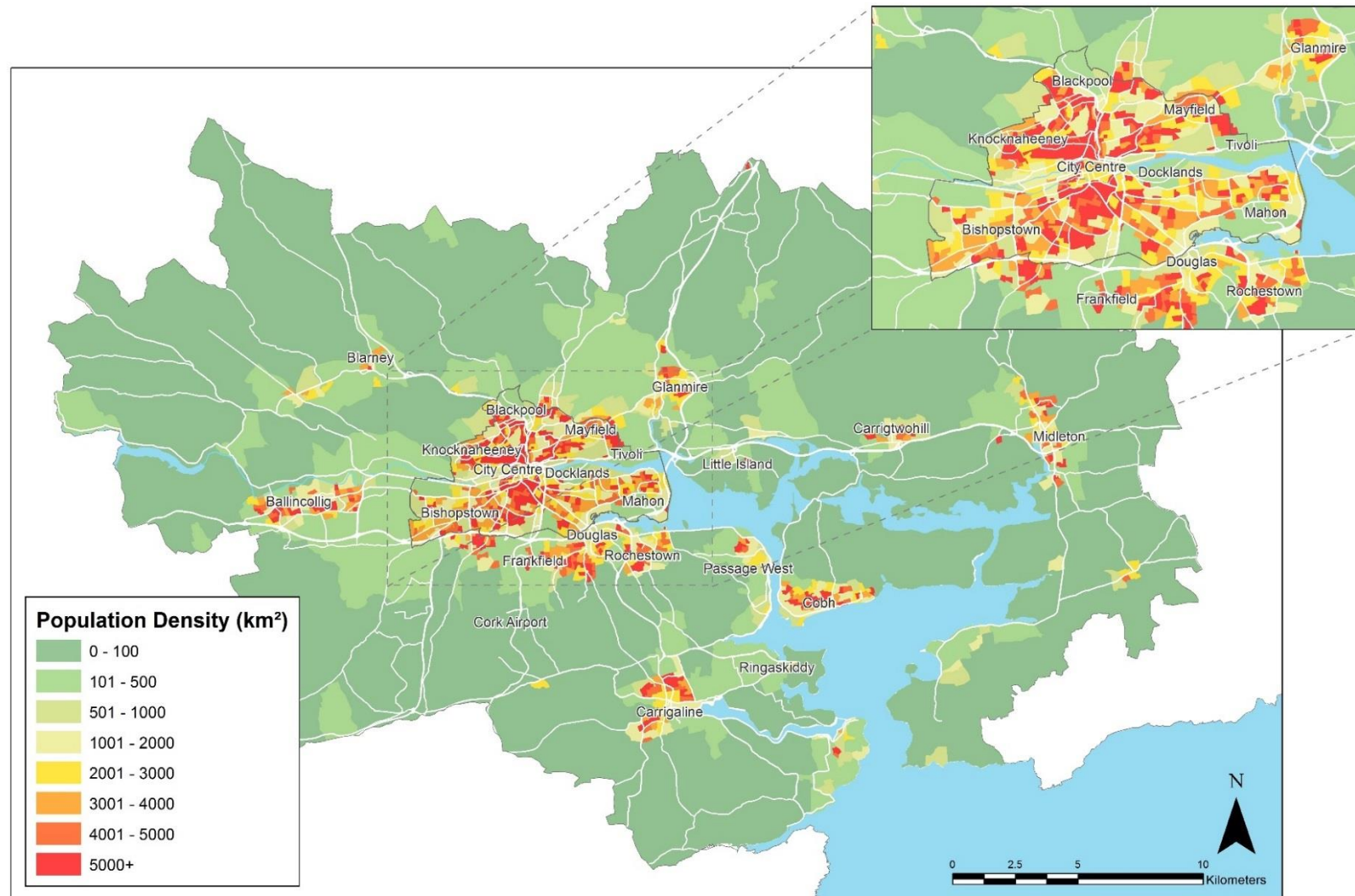


Figure 3-5: Cork Metropolitan Area 2011 Population Density (per square kilometre)

3.2.2 Employment

As part of the NTA's Regional Modelling System (RMS) a planning sheet was developed from the CSO's 2011 Small Areas Populations Statistics (SAPs) database. The number of jobs has been extracted from this planning sheet for the Cork Metropolitan area and a breakdown of the figures is presented in Table 3.3.

Table 3.3: Breakdown of 2011 Cork Metropolitan Area Jobs

Area	2011 Jobs	% of Total Jobs
County Metropolitan Area	47,414	42.3%
City	64,731	57.7%
Total	112,145	

In addition, Figure and Figure below show the distribution of these jobs. Figure presents total number of jobs per small area and Figure presents the job density per small area for the study area.

The maps show significant employment within the city particularly within Mahon, the Docklands and City Centre, along Model Farm Road and southwest of the city at the Hospital and Wilton Shopping Centre. Within the county, there are notable concentrations of employment along the N27, including the Airport, along the N25 corridor and within Ringaskiddy, Ballincollig and Midleton.

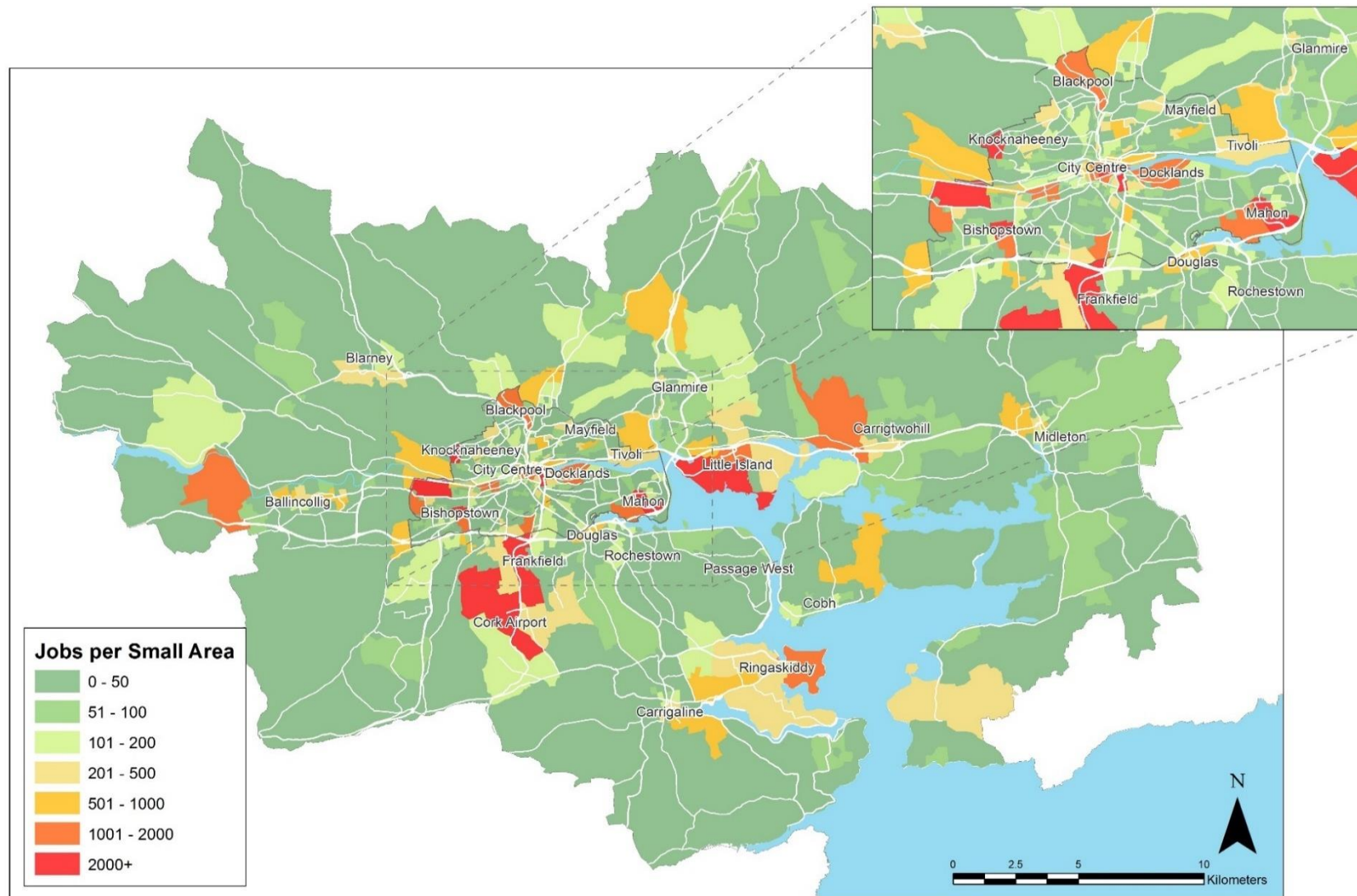


Figure 3-6: Cork Metropolitan Area 2011 Jobs per CSO Small Area

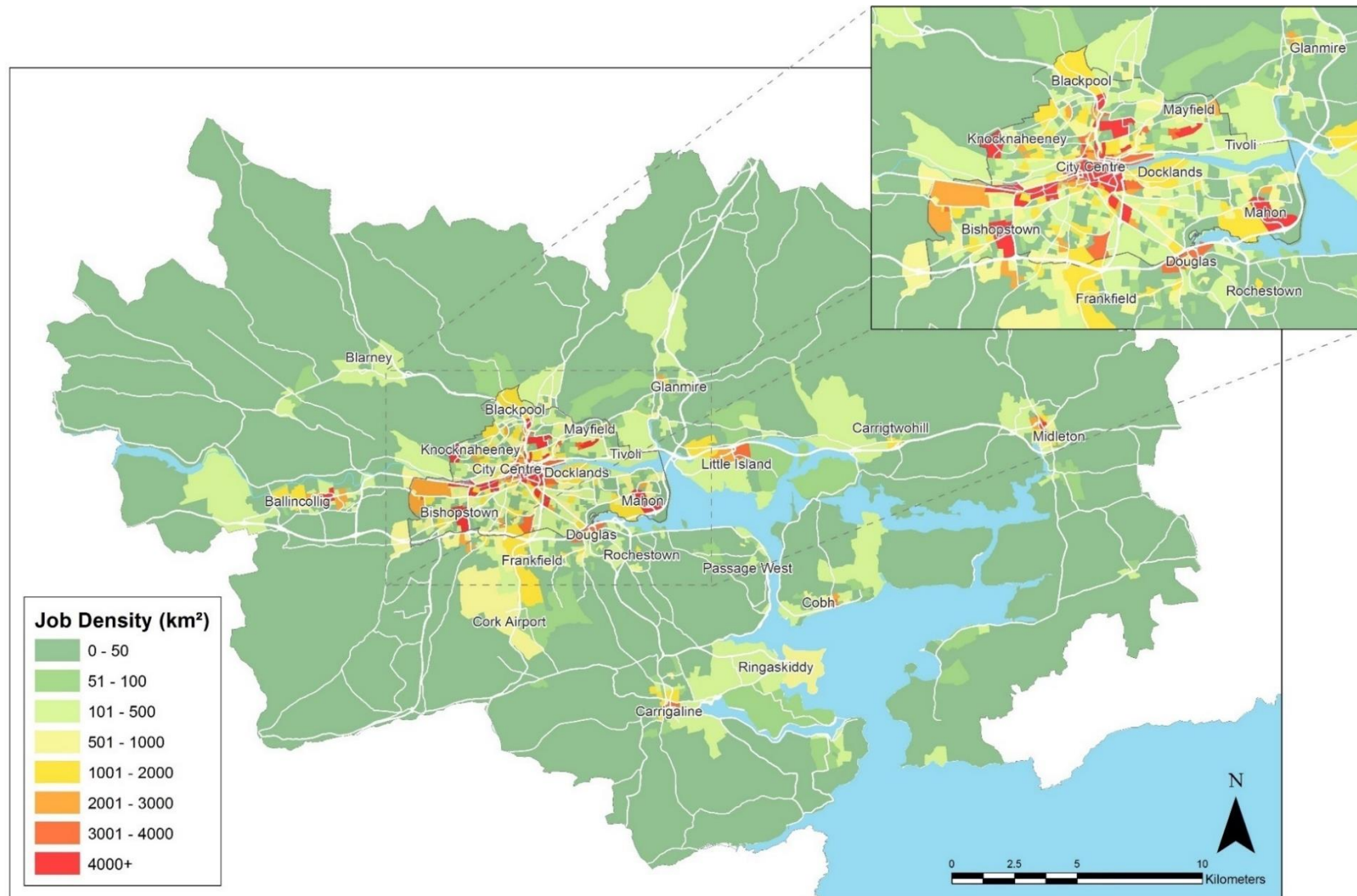


Figure 3-7: Cork Metropolitan Area 2011 Jobs Density (per square kilometre)

4 Existing Transport Demand

4.1 Data Sources

4.1.1 2011 Census Data

As discussed in Section 3, the latest available census data is from 2011 and provides data on population and social demographics at a CSO Small Area level. In addition to population totals and demographics, the 2011 census provides extensive information on commuting travel patterns for all work and education trips. This includes information on mode choice, time of departure, trip duration and destination choice which is collated as part of the Place of Work, School or College – Census of Anonymised Records (POWSCAR). Both the POWSCAR data and the small area population statistics are used in the calibration of the NTA's Southwest Regional Model (SWRM) discussed below in section 4.1.3.

4.1.2 2012 National Household Travel Survey

The NTA's National Household Travel survey (NHTS) was carried out between March and November 2012 with just over 6,000 houses participating nationally. The main purpose of the survey was to obtain essential information on all-day travel patterns and travel behaviour across the country and to build on the information gathered during the 2006 Greater Dublin Area (GDA) Household travel survey.

The all-day travel data obtained from the NHTS in particular was required to provide information on travel behaviour at off-peak times of the day when trips for purposes other than work or education become more significant and are not captured within POWSCAR. This data was used to inform the parameters used within the SWRM and the calibration of the final demand.

4.1.3 Southwest Regional Model

To examine the existing characteristics of demand within and to the Cork Metropolitan Area, data has been extracted from the NTA's Southwest Regional Model (SWRM). The SWRM is one of 5 regional models which comprise the NTA Regional Modelling System (RMS). The SWRM covers all the southwest region with detailed representation of the Cork City and Metropolitan Areas.

The model covers all surface access modes for personal travel and goods vehicles including private vehicles (taxis and cars), public transport (bus and rail), walking and cycling. The impact of the movement of goods is represented through the inclusion of goods vehicles within the highway element of the model.

The travel demand within the model is segmented according to trip purpose, car availability, employment type and educational level. The model represents an average weekday with five separate peak periods modelled:

- AM peak (07:00-10:00);
- Morning Inter peak (10:00-13:00);
- Afternoon Inter peak (13:00-16:00);
- PM peak (16:00-19:00); and
- Off peak (19:00-07:00).

All data presented in this section of the report has been extracted from the 2012 base year model which as stated above has been calibrated to data from the NHTS and 2011 Census as well as traffic counts and public transport count data.

4.2 Existing Transport Demand Characteristics

4.2.1 Profile of Demand throughout the Day

In total, there are approximately 820,000 trips originating within the Metropolitan area over the 24-hour period. The busiest periods in terms of total demand are the AM morning peak and the Afternoon Inter peak. The percentage breakdown of demand between the five modelled periods is shown below in Figure.

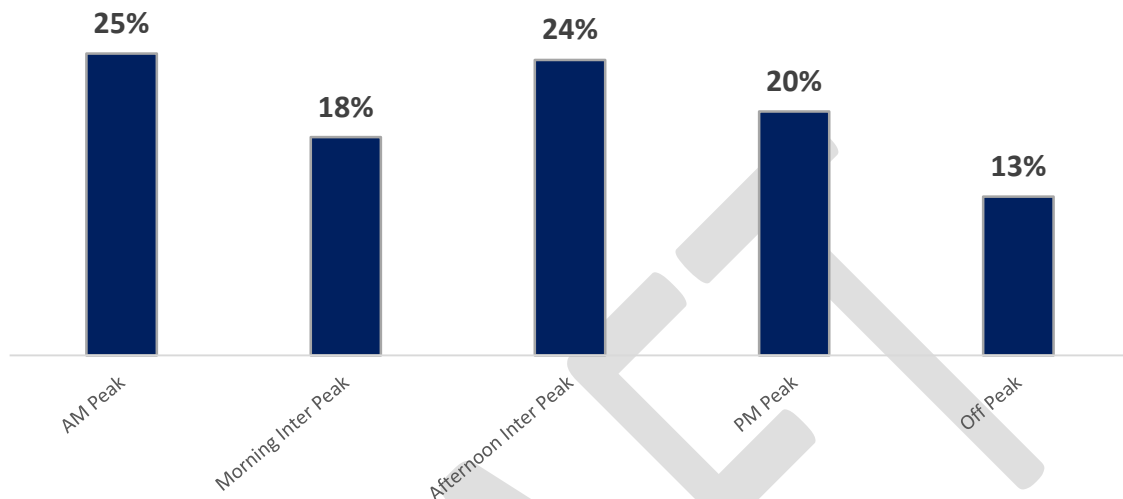


Figure 4-1: Percentage of Demand by Time Period

4.2.2 Breakdown of Trip Purposes

Figure below outlines the breakdown of demand between trip purposes by each peak period. The trip purposes defined are 'Food Shopping', 'Education' (including accompanying escort trips), 'Commute' trips and 'All Other Purposes'. The other purposes include visiting friends or relatives, leisure trips, business trips and non-food related shopping trips. All trips made by those in retirement are also classed as 'Other' trip purpose.

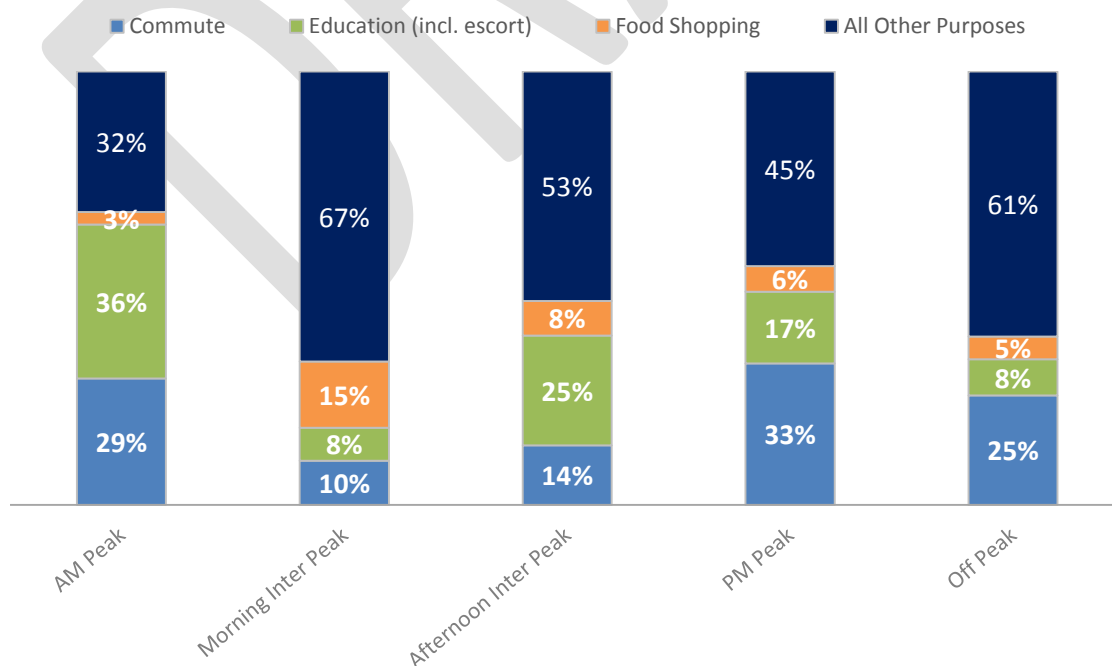


Figure 4-2: Percentage of Demand by Trip Purpose per Time Period

The figure above shows that trips for commuting and education account for 65% of all morning peak trip and 50% of evening peak trips. Other trip purposes dominant during the off and inter peaks and accounts for 45% of all day demand. Commuting to work and education accounts for 43% of all weekdays trips within Metropolitan Cork, as shown below in Figure 4-3.

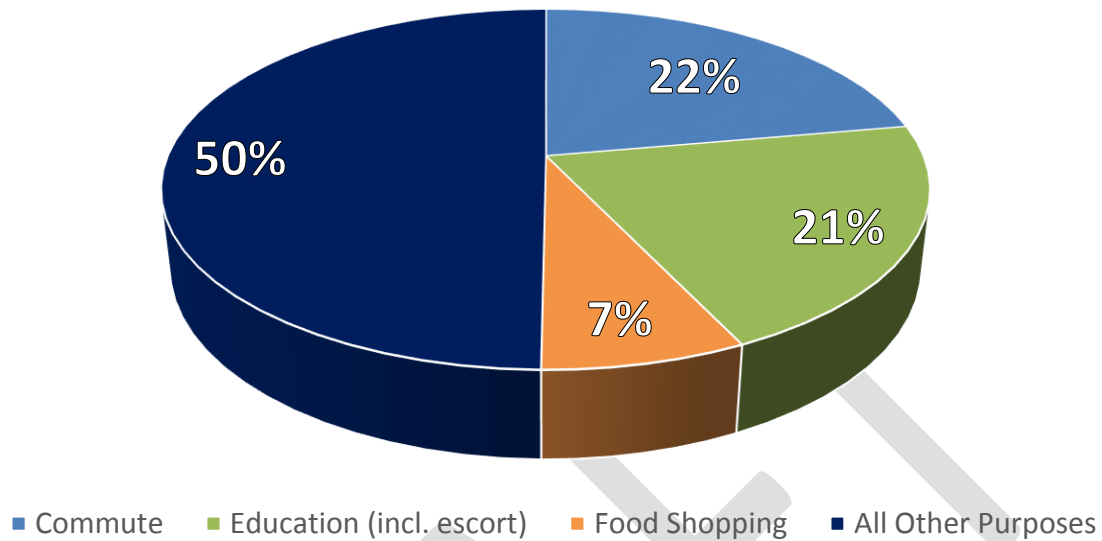


Figure 4-3: Percentage of 24-Hour Demand by Trip Purpose

4.2.3 Overall Mode Share

The overall mode share for the total 24-hour demand is illustrated in Figure and shows a dominant car mode share of 73.7%. Walking also accounts for a high proportion of trips although both the public transport and cycling mode shares are relatively low.

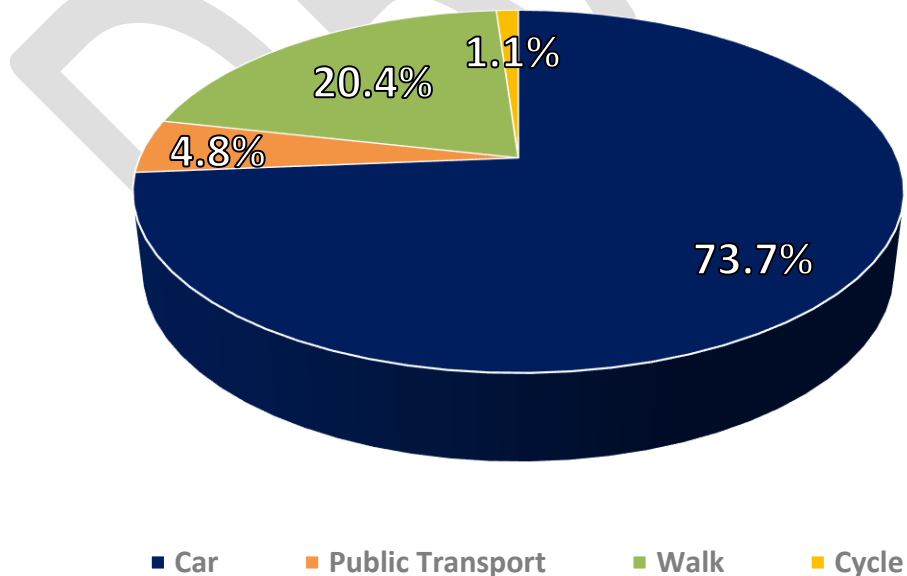


Figure 4-4: Cork Metropolitan 24-Hour Mode Share Split

4.2.4 Mode Share by Trip Purpose

The mode share by trip purpose is outlined in Table 4.1. The figures show a lower car and higher walking and public transport mode shares for educational trips. The split between modes for Commuting and Other trip purposes is broadly similar.

Table 4.1: Cork Metropolitan Area Mode Share by Trip Purpose

Purpose	Road	PT	Walk	Cycle
Commute	74.1%	2.6%	21.4%	1.9%
Education	60.8%	12.7%	25.3%	1.2%
All Other Purposes	75.9%	4.1%	19.1%	0.9%

4.2.5 Mode Share by Area

The 24-hour mode share for the city and county metropolitan urban and rural areas is presented in Figure and shows a significantly lower car mode share within Cork City, with correspondingly higher shares of walking and public transport. The highest car mode share, 85.8%, is within the Metropolitan rural areas.

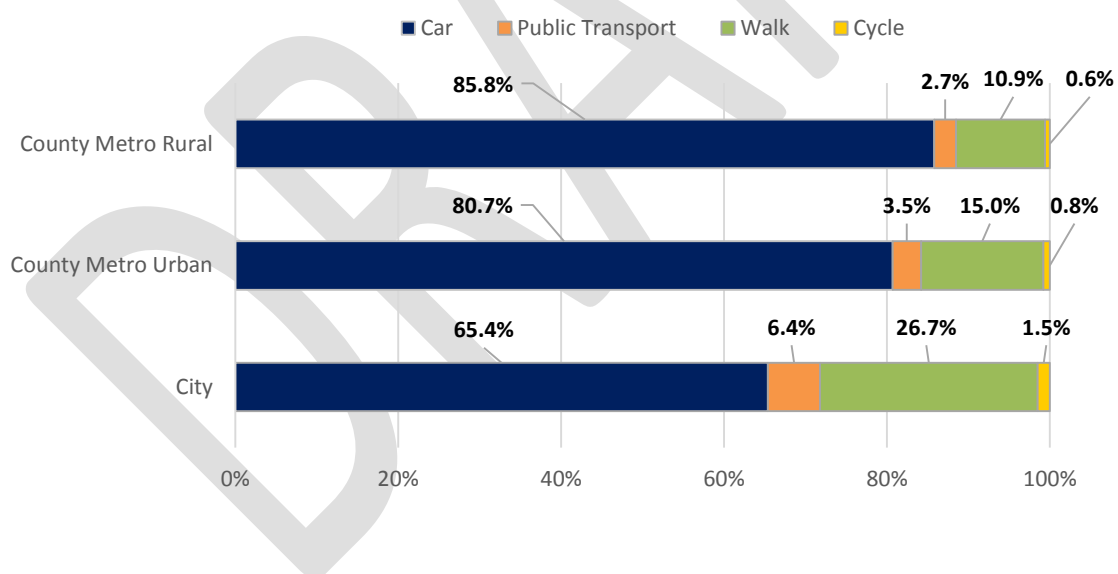


Figure 4-5: Cork Metropolitan 24-Hour Mode Share Split by Area

A more detailed breakdown of mode share by area is shown in Figure , Figure and Figure which illustrate the car, public transport and combined walking and cycling mode share for each SWRM zone within the Cork Metropolitan Area. The figures demonstrate the higher non-car mode share, overall, within the City and some County Towns.

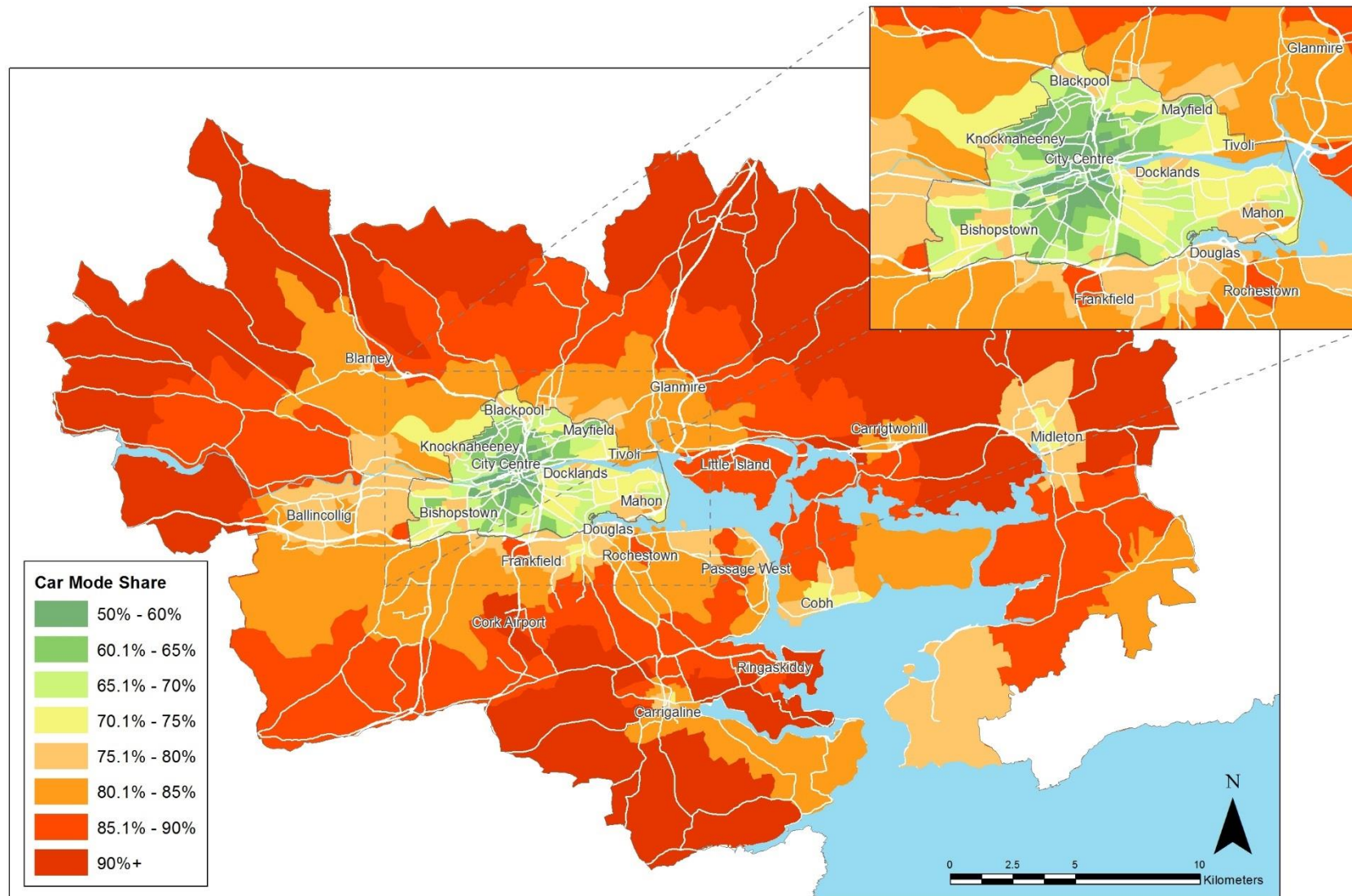


Figure 4-6: Cork Metropolitan 24-Hour Car Mode Share by SWRM Zone

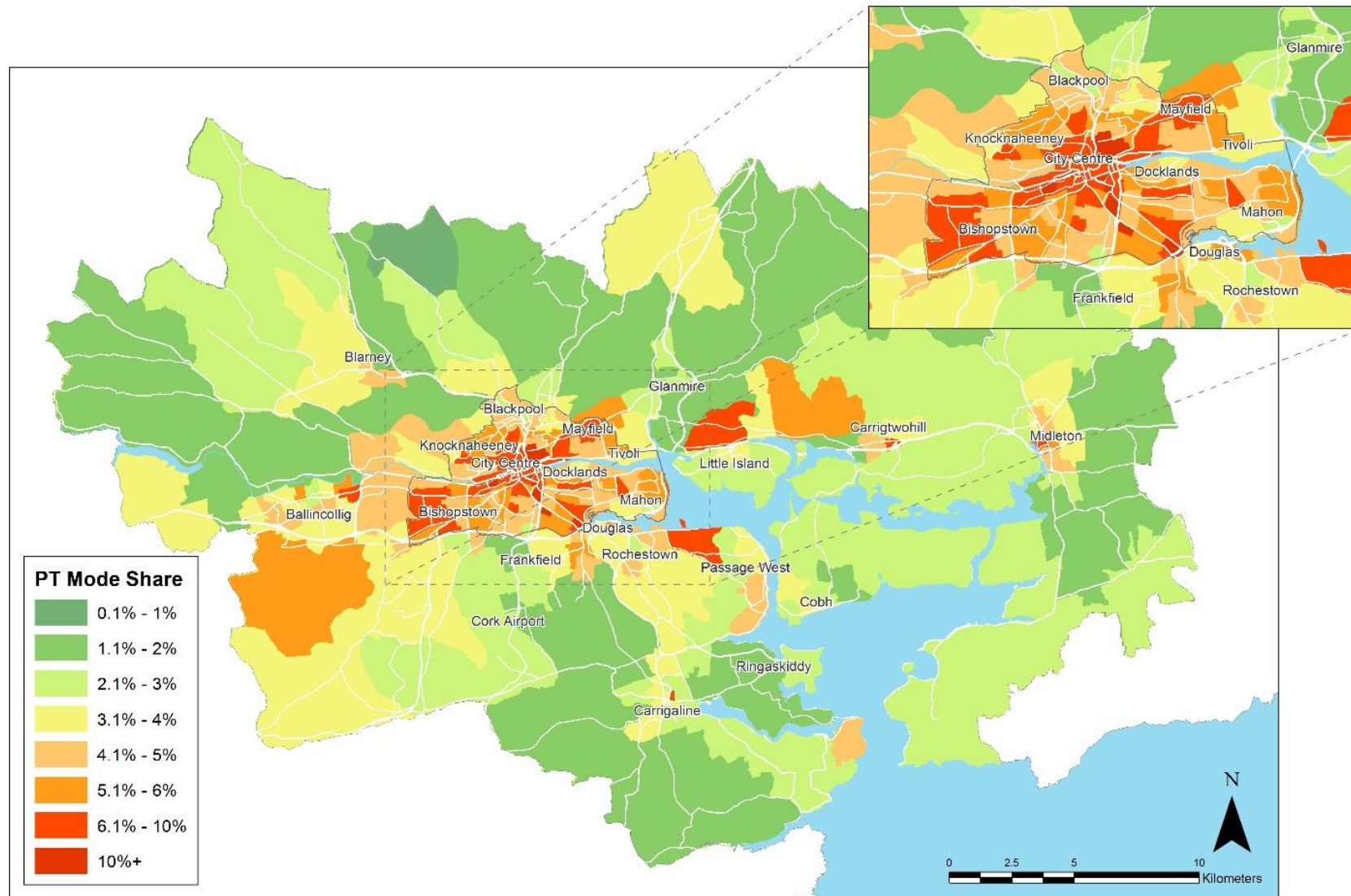


Figure 4-7: Cork Metropolitan 24-Hour PT Mode Share by SWRM Zone

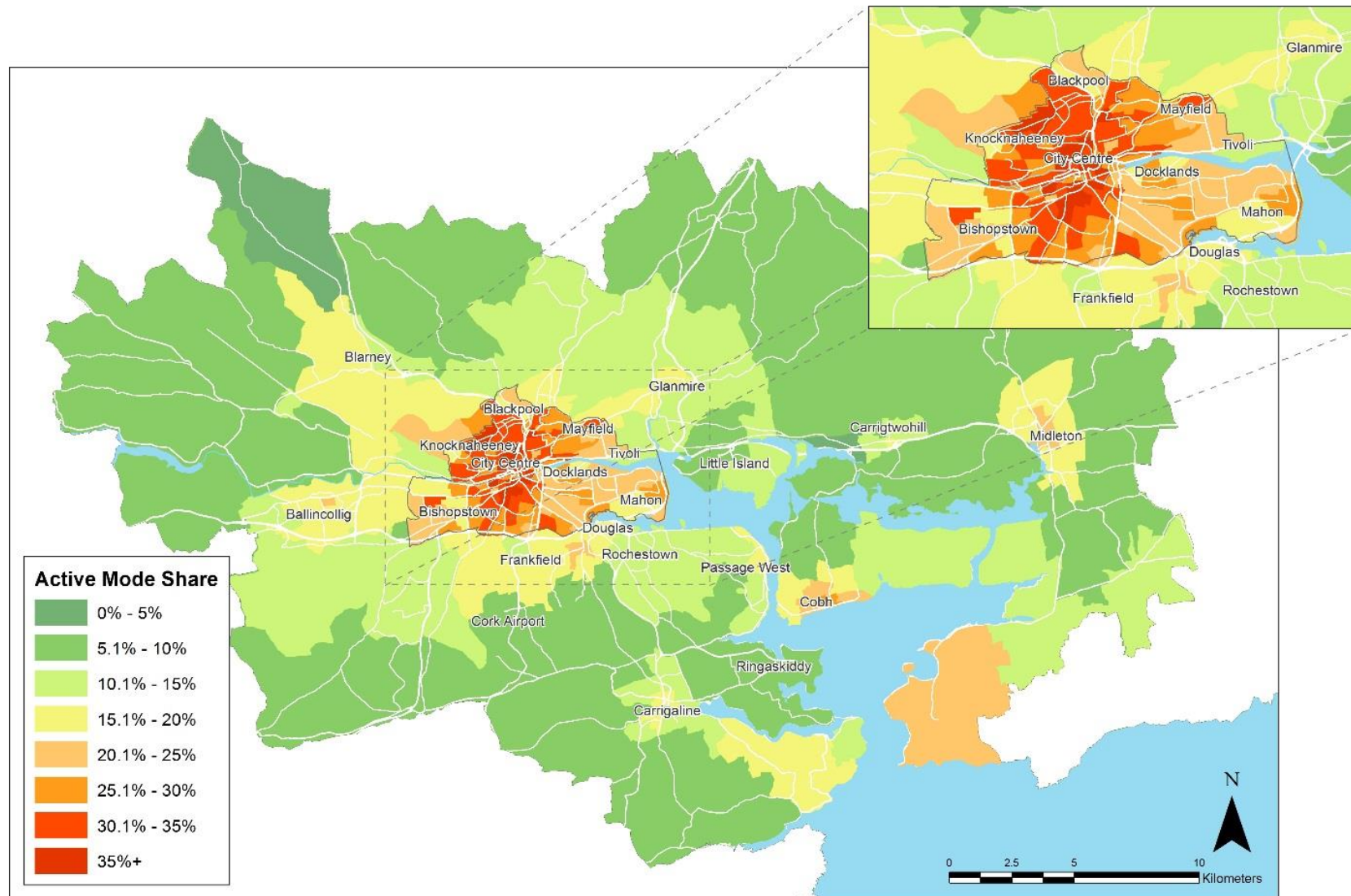


Figure 4-8: Cork Metropolitan 24-Hour Active Mode Share by SWRM Zone

4.2.6 Mode Share by Time Period

Figure below shows the mode share for the Cork Metropolitan Area by each 3hr time period. The graph the lowest car mode share occurs within the AM peak periods which results in the highest walking, cycling and public transport mode shares of all time periods. The highest car mode share is observed during off-peak hours (19:00-07:00). Throughout the day the highest car mode share is during the Afternoon Inter peak.

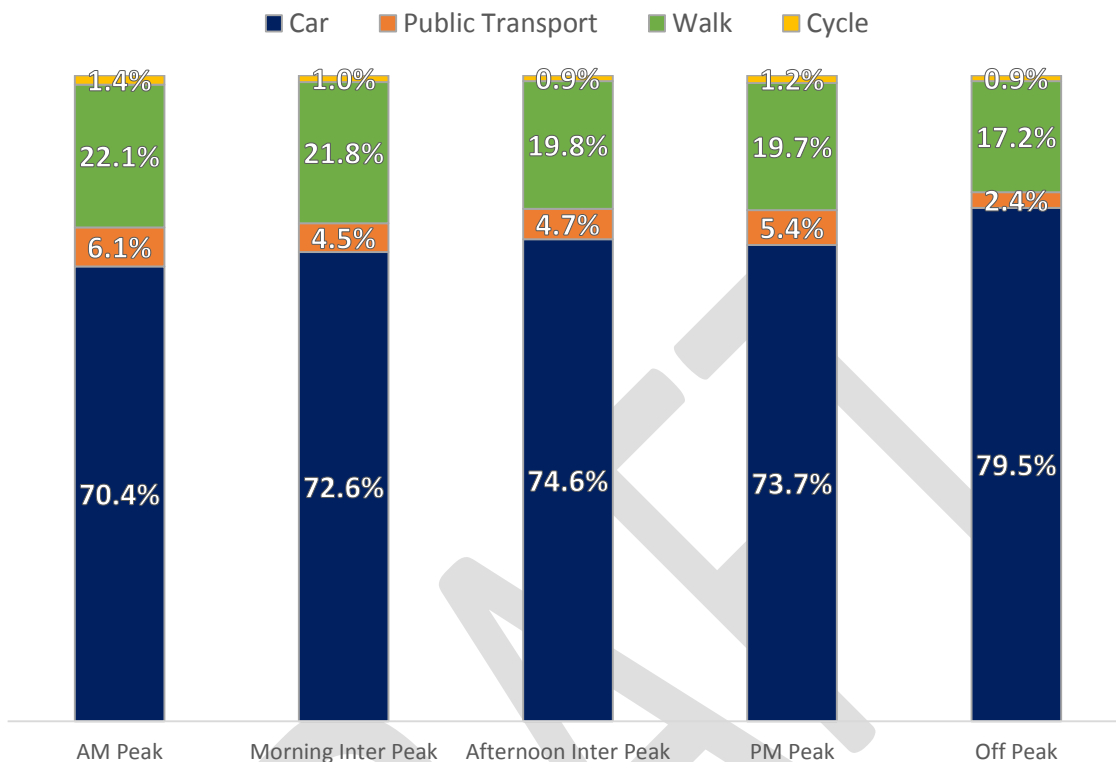


Figure 4-9: Cork Metropolitan 24-Hour Active Mode Share by Time Period

4.3 Existing Transport Demand Movement Patterns

4.3.1 Key Origins and Destinations

The number of origin and destination trips by SWRM model zone are shown in Figure and Figure for the AM morning peak. The figures show a strong demand originating from across the City and the larger Metropolitan Towns such as Ballincollig, Carrigaline, Cobh and Midleton as well as the south fringes of the City.

In term of destinations, demand within the City is focused around the City Centre island and its environs. There is also strong demand to Bishopstown where the Hospital and Wilton Shopping Centre are located and to UCC, CIT and Mahon. Within the County Metropolitan Area there is strong demand to Ballincollig, Carrigaline, Cobh and Midleton as well as the employment centres of Ringaskiddy, Little Island and the Airport.

The demand has also been aggregated to a sector level system which covers the key settlements within the Metropolitan Area. The origin and destination demand at a sector level is shown in Figure and Figure for the AM peak.

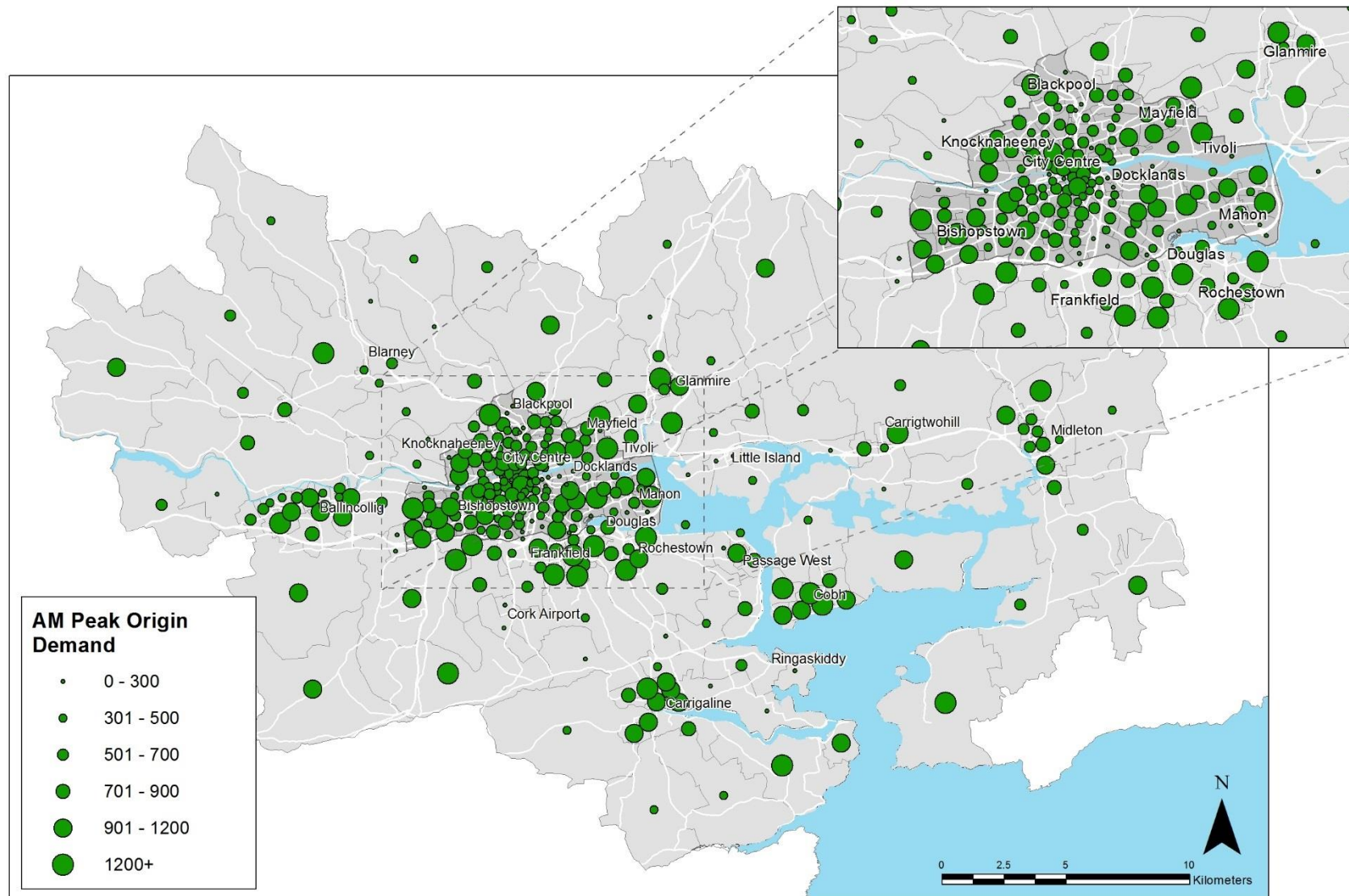


Figure 4-10: Cork Metropolitan AM Peak Origin Demand by Zone

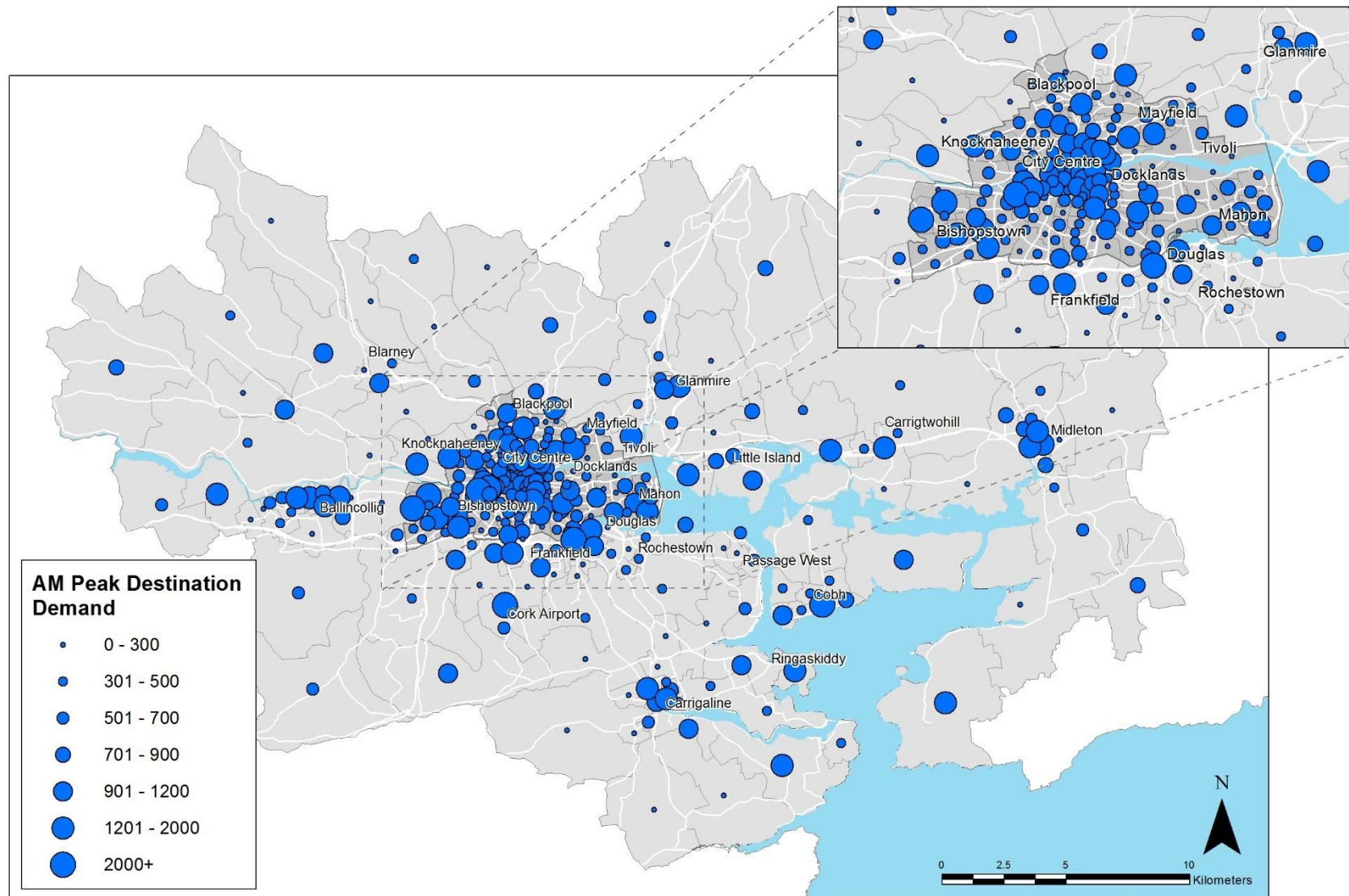


Figure 4-11: Cork Metropolitan AM Peak Destination Demand by Zone

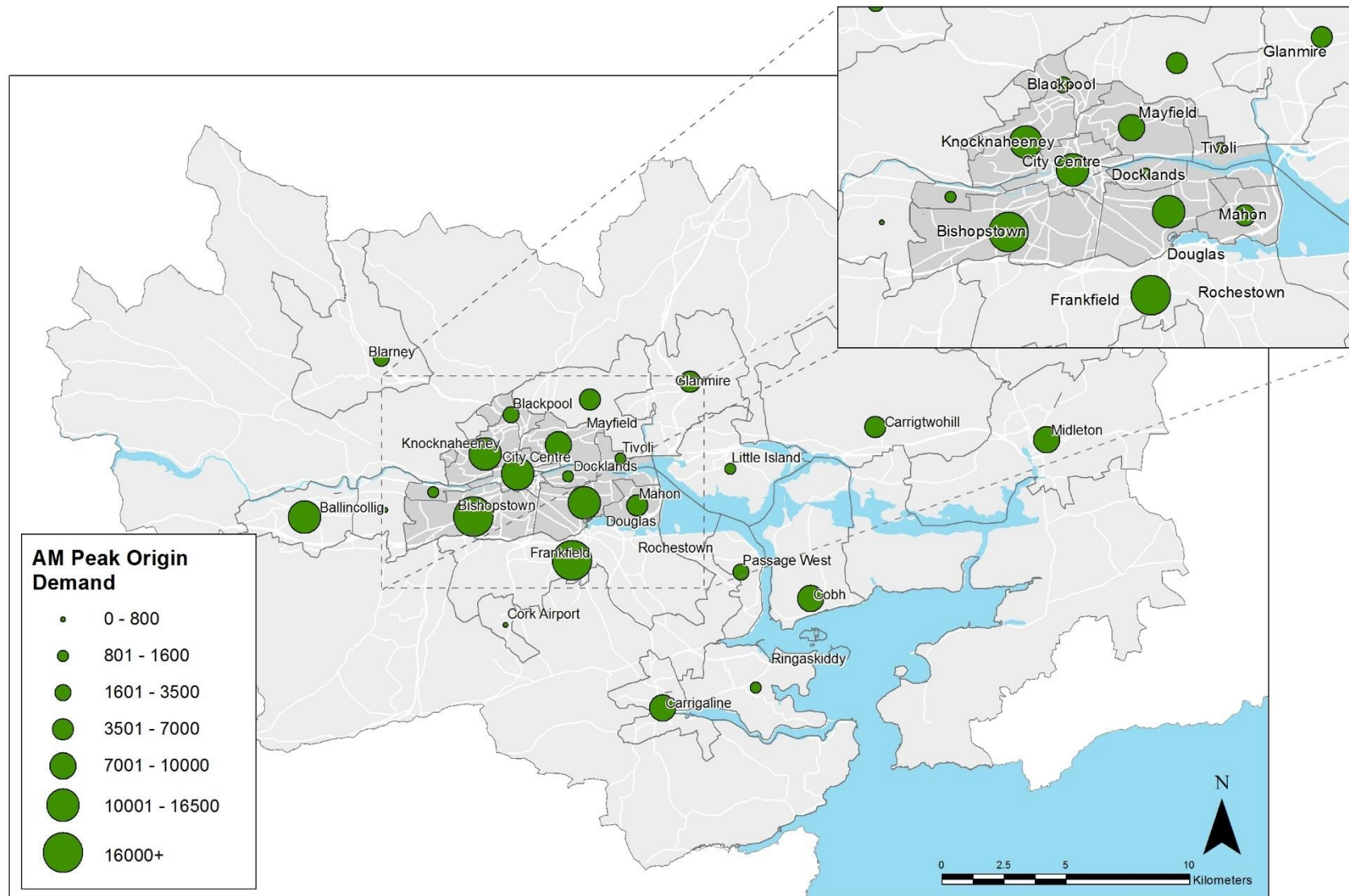


Figure 4-12: Cork Metropolitan AM Peak Origin Demand by Sector

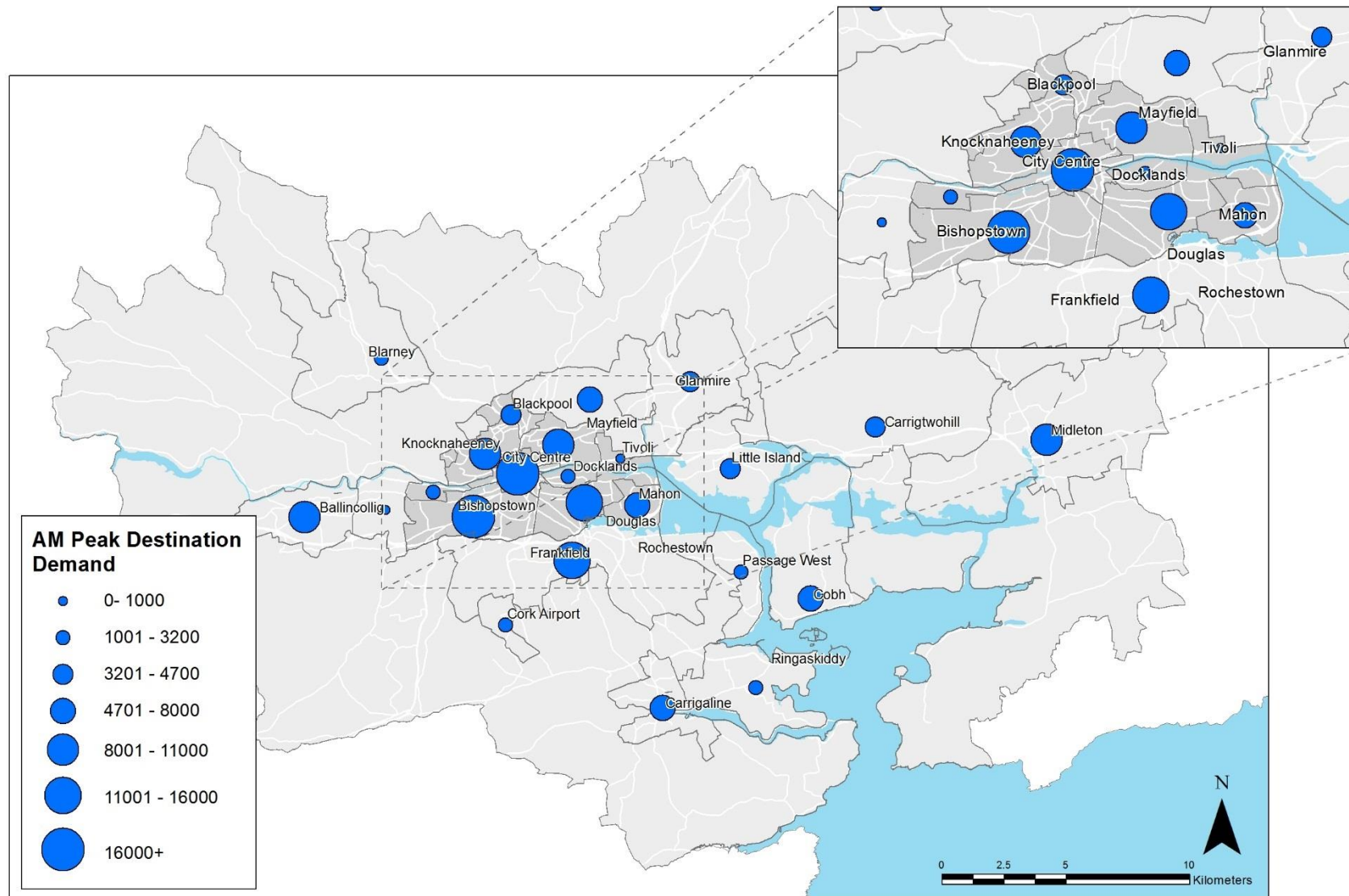


Figure 4-13: Cork Metropolitan AM Peak Destination Demand by Sector

4.3.2 Sector to Sector Analysis

The movement between sectors was also extracted from SWRM for both the AM peak and 24-Hour Periods. Figure below summaries this information at an aggregated county level. The Figure shows the proportion of demand from the city, county metropolitan area and county that travel to each of the other areas over the 24-hour period.

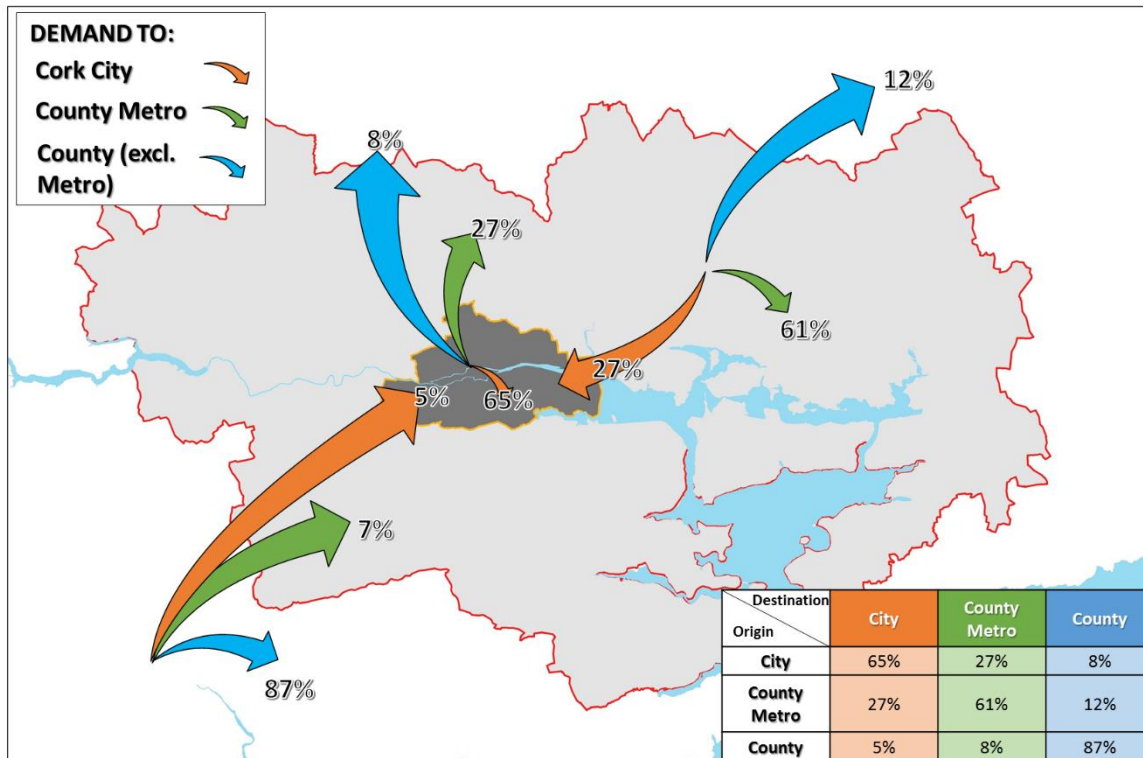


Figure 4-14: Cork Metropolitan AM Peak Destination Demand by Sector

The figure shows most travel demand is internal within each area, however 27% of demand from the county metropolitan area travels inwards to the city each weekday and a further 12% to the wider county demand. A significant proportion, 27%, of city demand also travel outwards to the wider metropolitan area. Table 4.2 below outlines the 24-hour total trip demand.

Table 4.2: County Level Total 24 Hour Demand

24-hour Demand		Destination			
		City	County Metro	County	Total
Origin	City	265,938	109,924	32,490	408,351
	County Metro	111,080	250,402	47,404	408,887
	County	29,250	42,888	501,495	573,633
	Total Destination Demand	406,268	403,214	581,389	1,390,871

A map, dividing the Metropolitan Area into sectors (or settlements) is provided in Figure and sector to sector demand is presented in Table 4.3 and in Table 4.4 in a matrix format which outlines the key origin-destination movements within the Cork Metropolitan Area for the AM peak and 24-hour periods respectively. It should be noted that the sector system is based on the SWRM zone system and some larger zones have been included as part of settlements though they cover large greenfield areas as well.

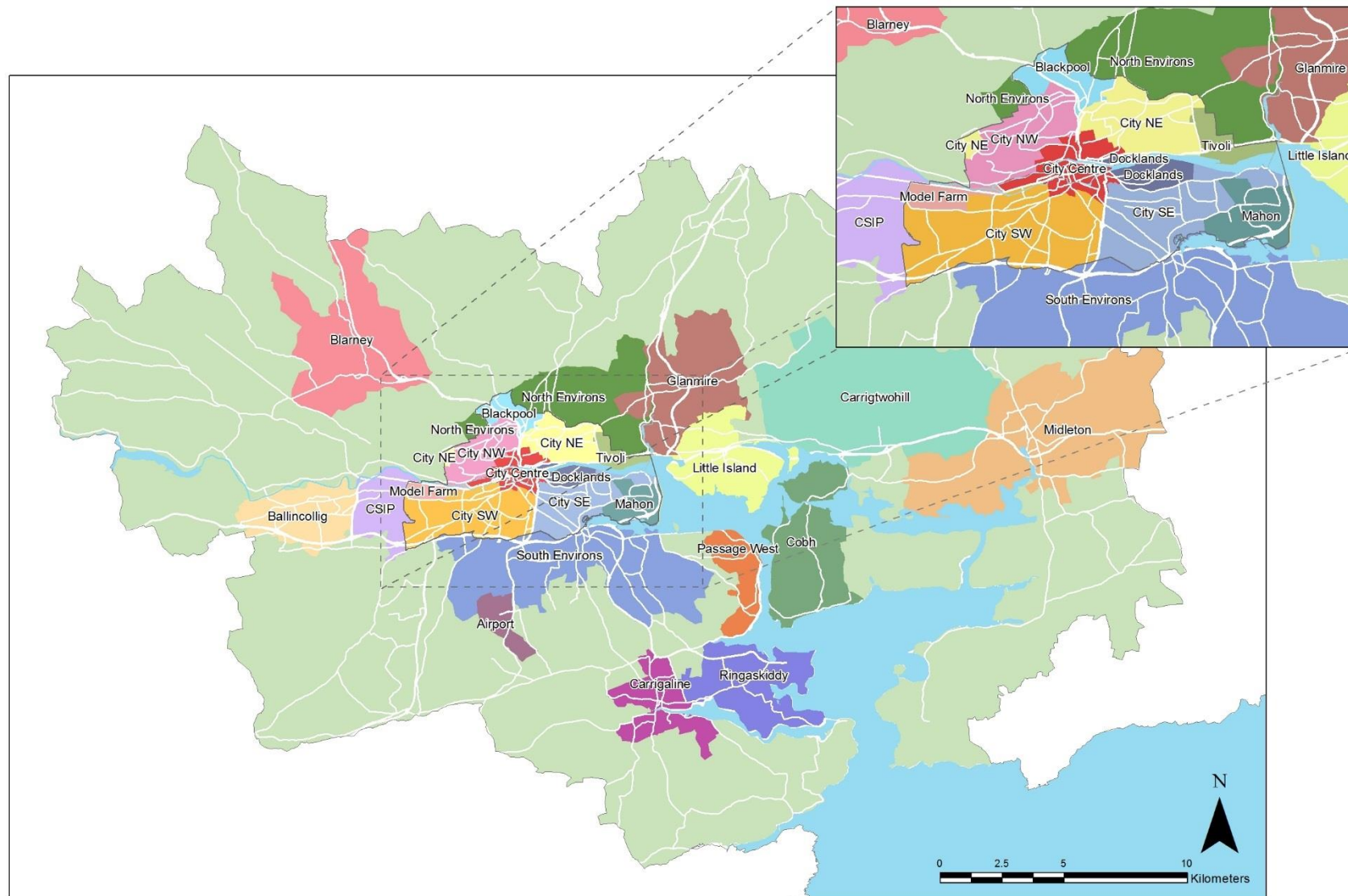


Figure 4-15: Sector System used for Origin-Destination Analysis

Table 4.3 Sector to Sector AM Peak Demand

AM Peak Sector to Sector Demand			Destination																								
			Cork City										Cork County Metropolitan Area														
			City Centre	City NW	City NE	City SE	City SW	Blackpool	Tivoli	Docklands	Mahon	Model Farm	CSIP	Ballincollig	Glanmire	Little Island	Airport	Blarney	Ringaskiddy	Carrigtwohill	South Environs	Passage West	North Environs	Cobh	Carrigaline	Midleton	Metro Rural
Origin	Cork City	City Centre	6067	1179	936	869	3141	390	71	346	249	160	36	243	131	93	77	92	34	58	726	44	275	58	116	75	566
		City NW	2757	2998	618	326	1624	471	34	148	108	135	22	170	81	52	35	148	13	28	272	13	276	24	36	34	542
		City NE	2363	616	2236	355	861	336	143	194	140	53	14	75	218	143	43	61	21	70	266	19	591	48	48	73	376
		City SE	2315	296	336	3223	1868	123	30	342	1089	87	37	188	83	136	139	28	99	67	1378	84	117	47	212	66	395
		City SW	4280	850	467	1171	11909	216	36	245	343	753	169	797	99	113	202	94	74	67	1720	83	158	63	224	86	1040
		Blackpool	685	506	248	88	297	346	14	43	31	22	4	31	38	21	11	57	4	11	70	4	163	9	11	13	183
		Tivoli	313	69	294	53	132	41	126	33	35	8	3	12	53	53	9	8	7	22	48	4	90	11	11	19	64
		Docklands	295	56	67	189	164	20	7	75	59	7	3	18	12	11	9	5	5	7	86	6	19	7	15	9	43
		Mahon	447	69	86	633	381	27	11	85	1245	21	9	52	54	81	30	8	32	40	330	38	57	33	72	41	147
		Model Farm	100	30	11	18	576	6	1	4	6	111	8	57	3	2	2	5	1	2	35	2	5	2	5	2	58
	Cork County Metropolitan Area	CSIP	71	23	10	22	253	6	1	5	10	46	31	114	3	4	7	6	3	2	43	2	4	2	6	3	59
		Ballincollig	723	239	100	261	1988	63	8	61	136	391	139	4882	33	68	115	93	47	33	528	26	51	21	71	31	1155
		Glanmire	559	167	428	145	373	114	59	62	177	23	12	49	1877	336	44	23	44	143	211	23	706	60	60	90	517
		Little Island	105	24	59	48	96	12	10	11	46	5	2	17	75	429	8	4	9	84	70	11	67	44	23	64	109
		Airport	31	6	6	20	50	2	1	3	7	3	1	10	3	3	75	1	4	2	52	3	3	2	19	3	29
		Blarney	334	289	116	48	296	145	7	24	23	45	11	147	21	18	13	843	5	9	57	3	62	6	9	9	563
		Ringaskiddy	49	7	10	45	78	3	1	6	24	4	2	13	8	11	15	1	388	6	101	43	8	9	169	7	90
		Carrigtwohill	171	35	88	66	174	22	15	23	90	11	6	25	89	301	21	5	22	1101	108	13	88	176	31	354	387
		South Environs	2337	327	338	2352	3985	123	38	270	817	253	109	503	162	329	572	42	512	154	4963	297	201	90	884	125	1158
		Passage West	196	25	38	196	315	11	5	27	122	19	10	45	28	55	44	4	194	26	335	917	31	52	183	23	253
		North Environs	850	451	599	135	369	198	67	63	88	27	7	41	361	136	23	44	18	65	134	14	1071	36	34	52	363
		Cobh	300	53	122	101	303	32	17	36	137	17	9	39	82	345	31	8	52	445	162	95	95	4478	55	304	620
		Carrigaline	503	61	82	447	774	27	11	62	222	45	23	102	55	113	266	10	766	53	894	175	61	36	3695	46	794
		Midleton	272	51	125	93	298	33	20	36	137	17	9	41	92	372	33	8	34	649	162	19	98	226	48	4917	836
		Metro Rural	1997	914	620	657	3014	431	58	176	416	344	114	1178	489	512	353	500	410	601	1178	158	581	421	967	1390	7989

Table 4.4 Sector to Sector 24 Hour Demand

24 Hour Sector to Sector Demand			Destination																									
			Cork City										Cork County Metropolitan Area															
			City Centre	City NW	City NE	City SE	City SW	Blackpool	Tivoli	Docklands	Mahon	Model Farm	CSIP	Ballincollig	Glanmire	Little Island	Airport	Blarney	Ringaskiddy	Carrigtwohill	South Environs	Passage West	North Environs	Cobh	Carrigaline	Midleton	Metro Rural	
Origin	Cork City	City Centre	29546	8229	6899	6618	15768	2476	712	1608	1661	501	234	2297	1452	429	256	995	204	570	6758	587	2229	899	1417	990	5703	
		City NW	8200	9676	2424	1280	5202	1932	177	454	431	299	94	927	491	152	86	833	50	146	1451	109	1154	209	261	252	2745	
		City NE	6840	2398	7598	1409	2853	1285	679	552	548	123	52	438	1196	357	96	386	73	332	1449	157	1911	427	355	514	2118	
		City SE	6830	1305	1428	9313	5626	490	145	948	3030	186	109	961	475	327	275	183	245	279	6237	491	525	371	1166	436	2088	
		City SW	15915	5243	2890	5537	39207	1237	311	912	1669	1851	712	5266	994	436	478	898	313	537	10719	833	1135	845	2009	955	7713	
		Blackpool	2444	1912	1284	483	1214	1412	109	151	149	57	24	239	313	68	28	401	19	80	498	45	649	111	105	127	1258	
		Tivoli	829	202	760	164	352	124	321	82	109	18	7	53	194	103	19	36	17	68	202	24	257	68	60	97	263	
		Docklands	1506	437	541	913	867	145	71	310	282	22	16	179	153	47	25	67	25	69	717	72	171	106	162	118	477	
		Mahon	1754	441	582	3057	1675	155	101	303	4348	55	44	466	502	240	75	81	119	293	2369	358	351	426	664	464	1332	
		Model Farm	608	330	136	199	1988	65	17	28	64	309	79	686	53	18	14	92	14	29	508	43	64	45	99	51	657	
	Cork County Metropolitan Area	CSIP	246	97	54	111	727	25	7	17	45	76	99	428	31	15	16	37	10	18	288	25	26	25	59	30	313	
		Ballincollig	2341	960	446	944	5288	248	45	187	465	651	427	15506	215	171	216	522	117	144	2253	182	234	184	432	229	4042	
		Glanmire	1544	513	1270	474	1021	330	177	161	494	51	31	224	5192	603	85	110	95	385	865	122	1585	330	288	434	1778	
		Little Island	529	171	402	343	490	78	100	56	252	18	16	187	621	1250	27	46	44	563	743	123	341	648	270	748	1085	
		Airport	245	83	93	262	464	26	17	24	70	10	15	213	82	20	215	27	33	42	956	77	48	63	436	70	618	
		Blarney	937	802	378	173	855	396	29	66	76	84	36	497	99	41	27	3037	15	34	268	23	192	41	55	52	1781	
		Ringaskiddy	273	59	88	269	373	22	16	32	136	15	12	136	100	44	42	18	1095	58	1037	374	65	113	1465	99	865	
		Carrigtwohill	634	159	366	284	569	88	62	76	296	29	19	156	396	562	46	39	56	3228	593	91	290	1107	204	1790	1673	
		South Environs	6925	1476	1476	6186	10920	505	178	744	2353	485	289	2327	838	693	992	286	957	560	17940	1208	772	680	3327	807	4829	
		Passage West	607	111	162	491	847	46	21	75	358	41	25	189	117	114	81	25	348	85	1228	2797	110	289	663	124	753	
		North Environs	2320	1184	1973	520	1152	678	230	181	329	59	25	235	1535	313	51	207	55	269	766	108	2982	297	241	359	1622	
		Cobh	915	214	445	361	849	115	58	107	415	42	25	189	318	627	66	44	105	1068	694	297	301	15174	257	1276	2051	
		Carrigaline	1485	269	370	1172	2076	108	51	171	662	94	59	454	275	247	454	60	1372	189	3378	666	246	251	12056	289	3324	
		Midleton	965	250	522	409	931	129	81	116	436	46	29	228	404	707	74	54	88	1690	798	123	352	1258	285	17659	4165	
		Metro Rural	5688	2745	2149	2035	7668	1277	225	488	1297	621	309	4037	1706	1026	634	1823	793	1597	4752	744	1599	2032	3263	4186	25639	

5 Current Transport Supply

The following section outlines the existing transport network, services and facilities within the CMA by mode.

5.1 Road Network

5.1.1 National Road Network

The strategic road network is important for the movement of goods and services within the CMA. Maintaining the capacity of the roads with optimal levels of service is of critical importance for growing the economy of Cork. The National Road network provides the basis for Cork's inter-regional and national-level connectivity. There are eight National Roads within the Cork Metropolitan Area, five of which comprise the TEN-T (Trans European Network – Transport) Core and Comprehensive network.

- N8 / M8 Cork – Dublin: Inter-urban national primary route (TEN-T Core);
- N20 Cork – Limerick: Inter-urban national primary route (TEN-T Comprehensive);
- N22 Cork – Tralee: National primary route (TEN-T Comprehensive);
- N25 Cork – Rosslare Port: National primary route (TEN-T Comprehensive);
- N27 Cork – Cork Airport: National primary route;
- N28 Cork – Ringaskiddy Port: National primary route (TEN-T Core);
- N40 Cork South Ring Road: National primary route; and
- N71 Cork – Killarney: National secondary route.

The N8, N20 and N27 consist of dual carriageway radial routes to the City Centre. Congestion is experienced at certain locations on the national road network within the Metropolitan Area during the AM and PM peak periods. Congestion is experienced at the Dunkettle Interchange (junction of the N8, M8, N25 and N40) and on the N40, resulting in delays to movement and unreliable journey times. There are also constraints to the south of the interchange through the Jack Lynch Tunnel which causes further delays. However, recent upgrades at the Kinsale Road, Bandon Road and Sarsfield Road Interchanges on the N40 appear to have alleviated previous bottlenecks.

Though the N40 acts as a strategic orbital route to the south of the city, the large number of junctions along its short length induces car-based local trip making. This is further compounded by the lack of separated crossing points over the N40 with no interaction with the road. There is currently no strategic orbital corridor to the North of the city which results in strategic traffic and HGVs from the N20 routing through the city adding to congestion in the city centre.

TII is progressing the upgrade of the Dunkettle Interchange and are commencing the process for procuring a contractor for the construction of the interchange. In addition, the N40 Demand Management Study aims to identify measures to improve and maintain the capacity of the N40 South Ring Road. The design for the planned new interchange is shown in Figure .



Figure 5-1: Proposed Dunkettle Interchange Upgrade

5.1.2 Regional Road Network

The Regional road network supports the National road network by providing connectivity with National Roads and links between Urban Centres, Neighbourhoods, and Suburbs. In the context of Cork City, the Regional Road network provides key radial (and sometimes orbital) connectivity in addition to the National Road Network. A significant amount of the Cork City Bus network is also accommodated on the regional road network, as discussed later in the report. Key regional routes within Cork City and environs include:

- R635 Northern Ring Road (orbital route);
- R614 Ballyhooly Road / Summerhill North (radial route);
- R852 Skehard Road / Boreenmanna Road (radial / orbital route);
- R610 Douglas Road (radial route);
- R851 South Douglas Road (radial route); and
- R608 Model Farm Road / Glasheen Road (radial route).

Congestion is experienced within the City Centre and on the radial routes to/from the City Centre in the AM and PM peak periods. This congestion results in increased delays and unreliable journey times within Cork City, also impacting on bus, compounded by the current limited availability of bus priority across the network.

There are very limited orbital routes in Cork City, with orbital movements using the indirect local network resulting in inefficient journeys, routing through the City Centre or resorting to the use of the national road network, impacting on its intended strategic function. It is apparent from Figure that there is a very limited road network serving the northwest quadrant of Cork City compared to other parts of the city.

5.1.3 Local Road Network

These roads have a local distribution function, linking to routes with a more strategic function and are typically characterised by frontage development and side road accesses at frequent intervals.

5.1.4 Overall Road Network

Figure illustrates the Cork Metropolitan Area road network hierarchy.

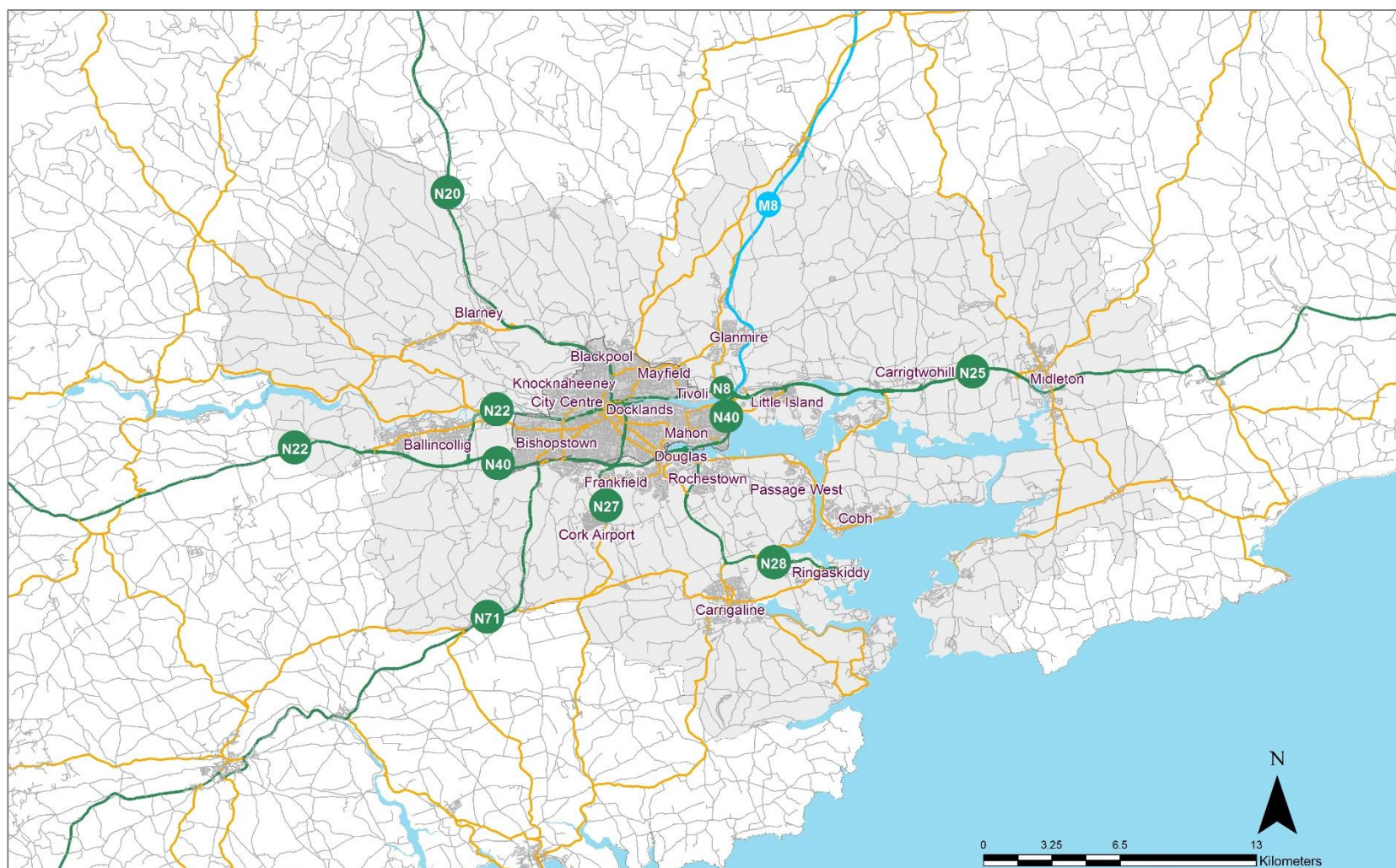


Figure 5-2: Cork Metropolitan Area Road Network Map

5.2 Rail Network

5.2.1 National Rail Network

Passenger Rail

Passenger rail connectivity within the Cork Metropolitan Area include intercity services, serving Cork City and Mallow, with hourly services between Cork and Dublin. Intercity connections are provided at Mallow onward to Banteer, Millstreet, Rathmore, Killarney, Farranfore and Tralee, and interchange provided for at Limerick Junction to destinations on the Waterford, Ennis and Galway routes.

The Cork – Dublin rail line is one of the best performing in the country in terms of passenger numbers, accounting for over 35 per cent of total Intercity passengers (Source: *2030 Rail Network Strategy Review*, 2011).

Rail Freight

Rail freight movements in Ireland have been declining since 1980 with an 88% reduction according to Iarnród Éireann's 2030 Rail Network Strategy Review. Less than 1% of all goods transported in Ireland are now transported by rail freight. Port of Cork, which has been one of the biggest generators of Rail Freight movements in the Cork area, had a rail freight facility at Tivoli serving the Port. However, in recent years the station has become disused and the freight movements are now undertaken by road.

5.2.2 Commuter Rail Network

Commuter rail services provide access between Cork City and Mallow and destinations on the Midleton and Cobh lines.

Commuter services to Midleton and Cobh currently operate at 30min frequencies in the AM and PM peaks and an hourly interpeak frequency.

Rail services between Cork and Mallow operate on a half hourly service frequency during the peak periods, between intercity and commuter rail services. Table 5.1 shows the stations served by each corridor and Figure shows the rail network within the CMA.

Table 5.1: Frequency of Existing Rail Services by Corridor

Corridor	Serving	Peak Hour Frequency	Inter Peak Frequency
Midleton	Midleton – Carrigtwohill - Glounthaune - Little Island – Cork Kent	30 Mins	1 Hr
Cobh	Cobh – Rushbrooke – Carrigaloe – Fota - Little Island – Cork Kent	30 Mins	1 Hr
Mallow	Mallow-Cork	30 Mins	1 Hr

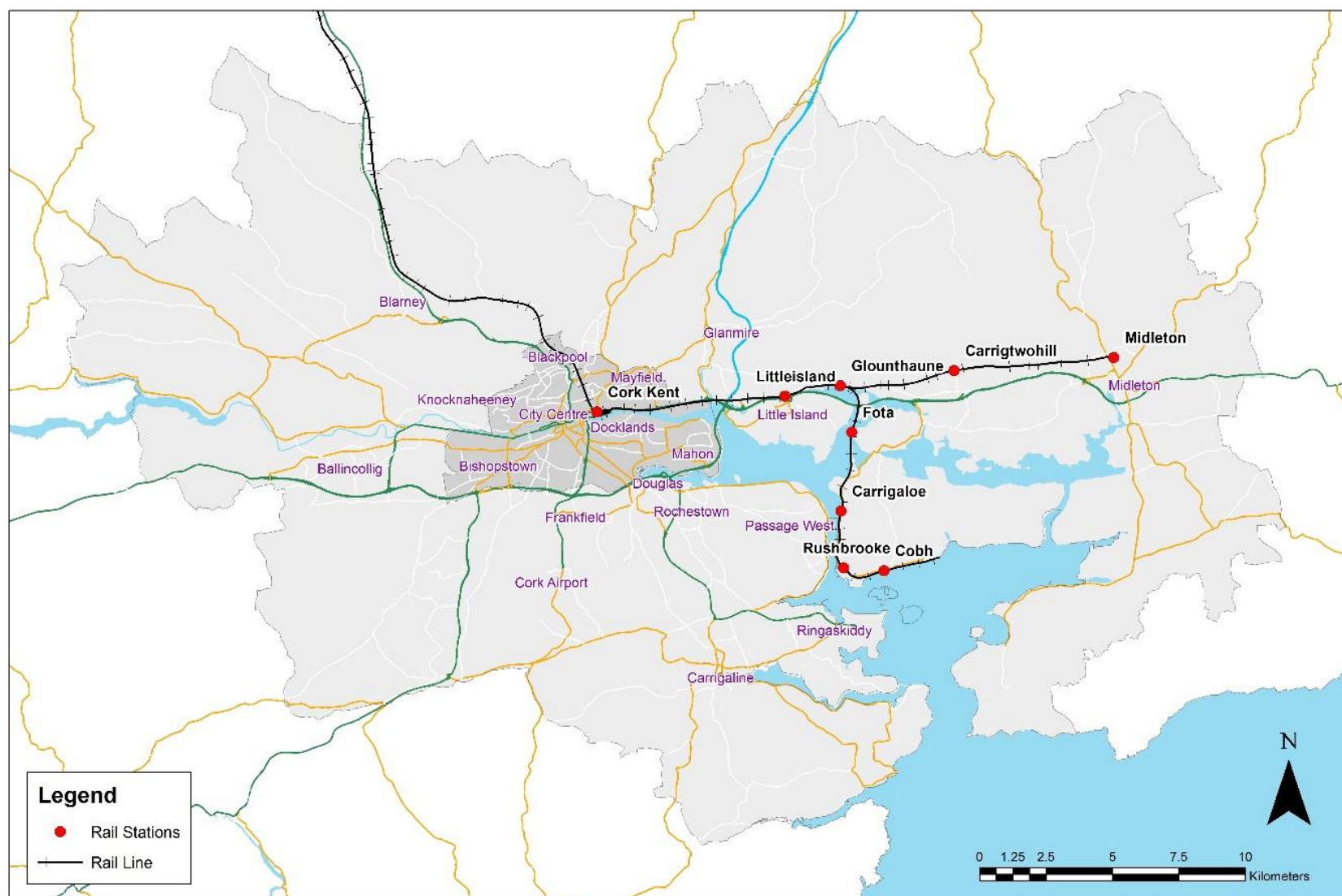


Figure 5-3: Existing Rail Network in Cork Metropolitan Area

5.2.3 Kent Station

Cork Kent Station is located on the Lower Glanmire Road to the north east of Cork City Centre, the station has 5 platforms and it originally opened in 1893. Kent Station is located at a significant detachment from the City Centre, offering limited opportunities for direct interchange with local bus services. For those bus services that do serve the station, onward connectivity to the city centre is hampered by the existing circuitous route along the Lower Road and Horgan's Quay. The station improvement scheme, currently nearing completion, combined with the recently completed bus, cycle and pedestrian connectivity to the City Centre, will remedy this, also offering a more direct pedestrian route to the City Centre and presenting greater opportunities for greater bus / rail connectivity.

5.3 Bus Networks

5.3.1 City & Regional Bus Networks

Bus Éireann operates a reasonably extensive city bus network. The majority of city bus services are cross city radial routes. There are a small number of radial routes which terminate in the City Centre. Bus Éireann has also introduced orbital routes to cater for inter-suburban trips within Cork City. However, there are no orbital services operating across the wider metropolitan area or through Jack Lynch Tunnel.

Collectively, there are five higher-frequency (generally every 10 to 20 minutes) city bus routes, nine 'low' frequency (every 30 to 60 minutes) radial city bus routes and two 'low' frequency (limited number of services per day) orbital city bus routes.

Cork City Centre has an extensive one-way traffic system, which has a negative impact on public transport operations, as bus routes are separated on inward and outward legs. This can be confusing for less frequent bus passengers and visitors to the City, who may not be familiar with the city bus network. Certain bus routes are also separated as a result of restricted road widths. Some roads that are sufficiently wide for two-way traffic flows are not wide enough to accommodate two-way bus movements in Cork City, e.g. the 202 bus route on Convent Road (Mahon) and 201, 205 and 219 on Rossa Avenue. As a result, a number of bus services only operate in one direction on some narrow two-way roads.

Since the first publication of the Cork Area Strategic Plan (CASP), Cork City and County Councils have implemented a programme of bus priority measures, termed Cork Green Routes, which aim to improve bus services within the area. The purpose of the Green Routes investment programme was to protect buses from general increases in traffic congestion on key radial corridors between the suburbs and Cork City Centre. Unfortunately, the Green Routes programme has been unable to provide full bus priority in both directions, which means that many bus routes are impacted by general traffic congestion.

Bus Éireann operate a dedicated Park and Ride service from the Black Ash Park and Ride site, which is owned by Cork City Council. The service is operated by a dedicated fleet of double decker buses that are specifically branded. Buses operate at 10 to 15 minute frequencies throughout the day. Studies have shown that there is a high level of demand from people going to Cork City for shopping purposes.

Table 5.2 classifies each of the Bus Éireann city services into either high or low frequency service. A high frequency service is classified as four or more buses an hour anything lower than this has been classified as a low frequency service. The city services are mapped in Figure , Figure 5-1 and Figure .

Table 5.2 Frequency of Existing Cork Metropolitan City Services

Service	Route	Frequency
201	From Lotabeg Terminus Towards Cork University Hospital	Low
202/202A	From Ringmahon Road / CC Towards Hollyhill-Knocknaheeney	High
203	From Ballyphehane Towards Farranree	Low
205	From Kent Rail Station Towards Cork Institute of Technology	High
206	From Grange Towards South Mall	High
207	From Donnybrook Towards Glenheights	Low
207A	From Glenthorn Towards Merchants Quay	Low
208	From Lotabeg (Boherboy Rd) / CC Towards Curraheen (Marymount Hospice)	High
209	From Lotamore via Audley Place Towards City Centre	Low
209A	From Manor Farm (Northbound) towards City Centre	Low
214	From St. Patrick Street Towards Cork University Hospital	Low
215/215A	From Mahon Point / CC Towards Cloghroe	High
216	Mount Oval / CC Towards Cork University Hospital	Low
219	Mahon Towards Cork Institute of Technology	Low
220	Ballincollig / CC towards Carrigaline	Low
221	Knockraha/Glanmire towards Cork City	Low
223	H'line/Ringaskiddy/M'town towards Cork City	Low
226	From Kinsale towards Kent Rail / Cork Bus Stations	Low
226A	From Kent Rail/Cork Bus Stations Towards Cork Airport	Low

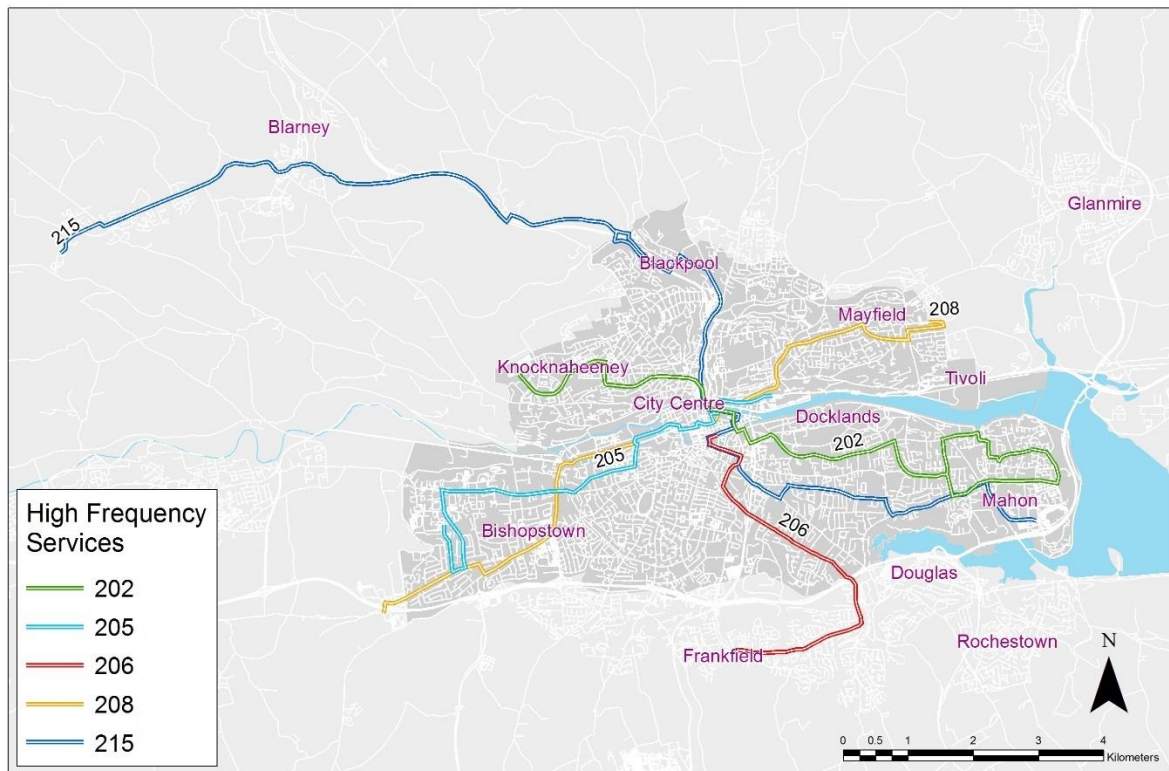


Figure 5-6: Existing High Frequency City Bus Network in Cork Metropolitan Area

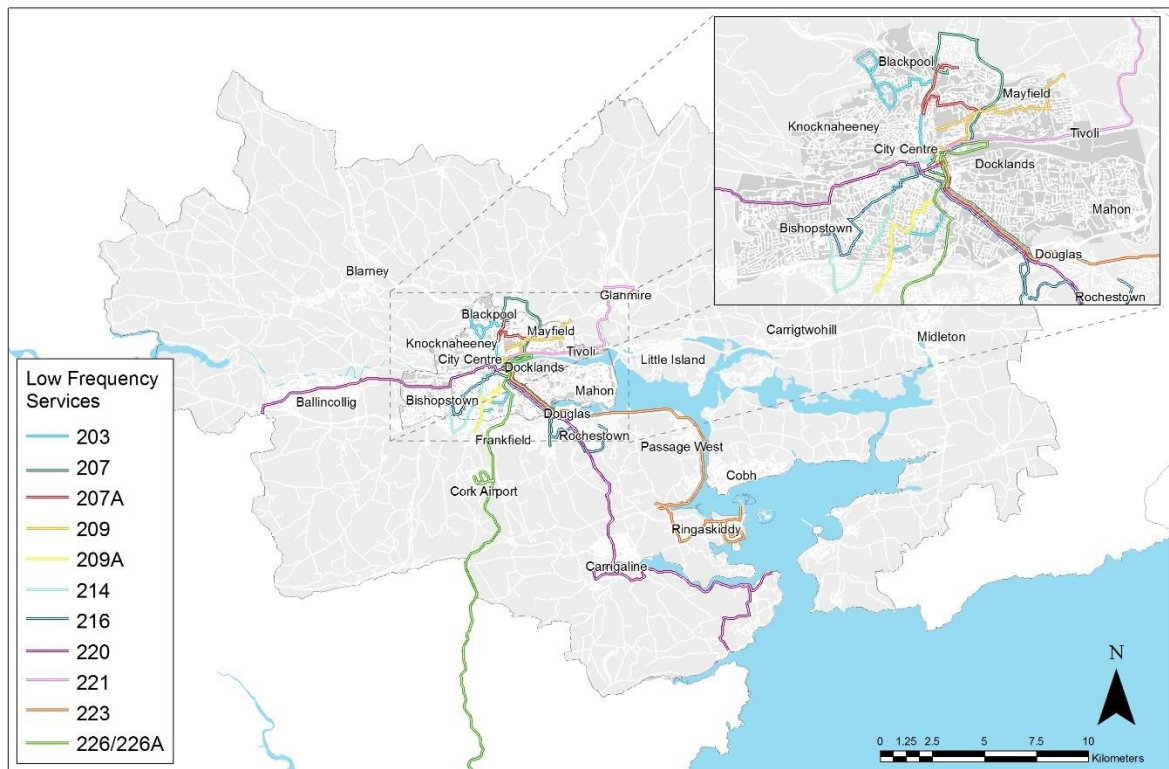


Figure 5-1: Existing Low Frequency City Bus Network in Cork Metropolitan Area

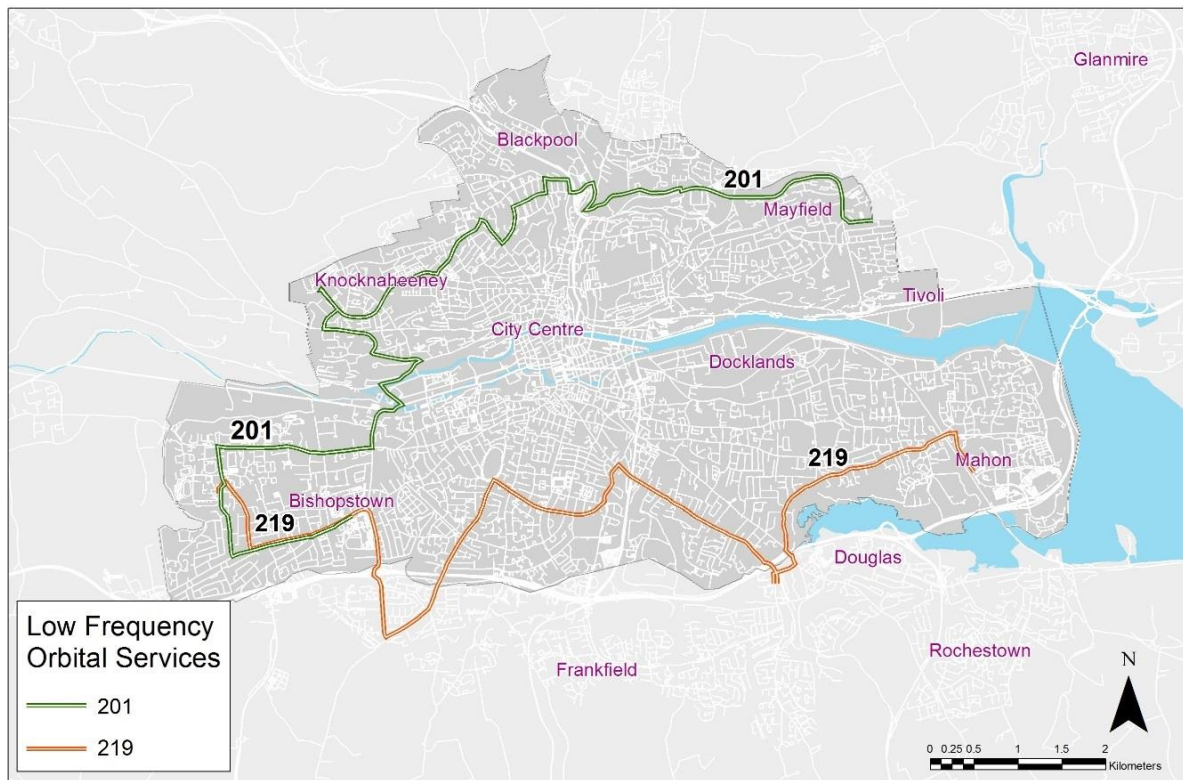


Figure 5-8: Existing City orbital services in Cork Metropolitan Area

In addition to the city services there are a number of regional Bus Éireann Services which provides links from the wider county to the CMA as shown below in Figure 5-9.

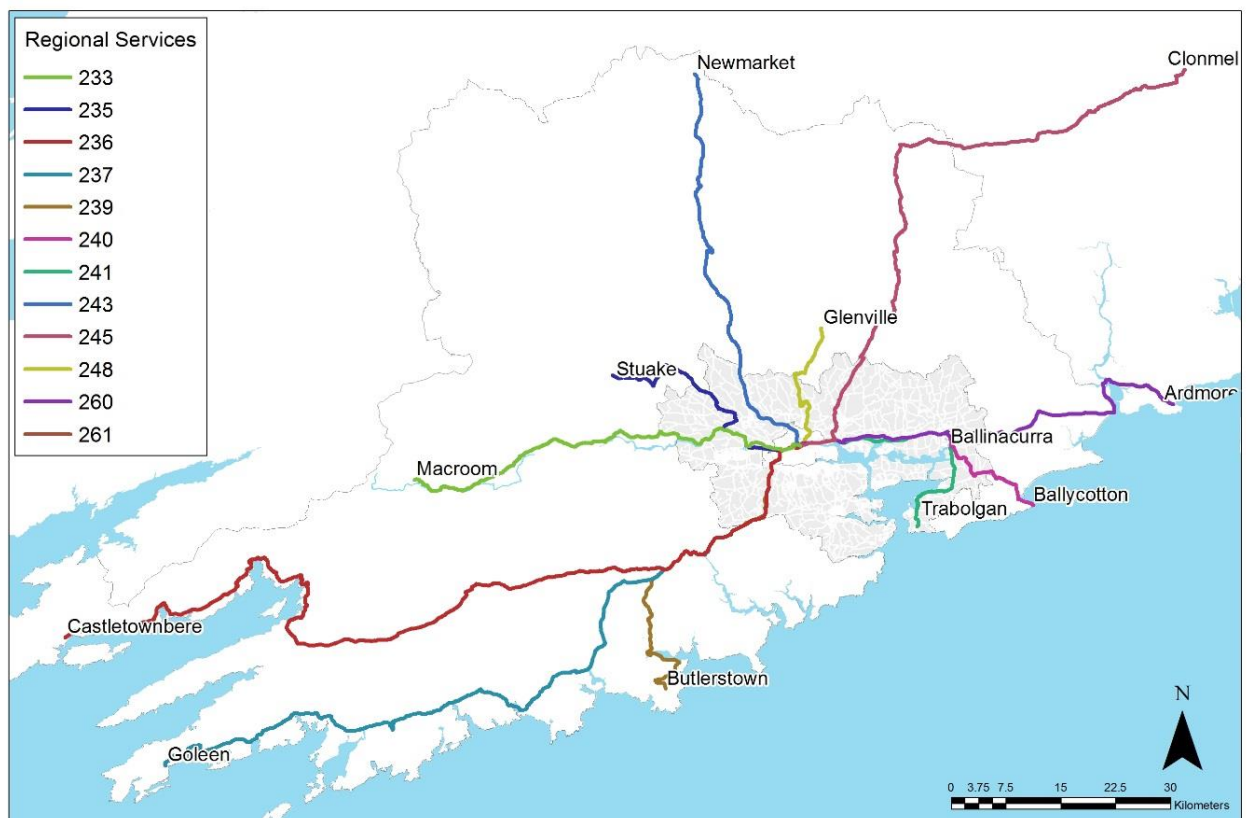


Figure 5-9: Existing Regional Bus Network in Cork Metropolitan Area

5.3.2 Bus Lanes

The existing network of bus lanes within the Cork Metropolitan Area has been mapped as shown below in Figure 5-10.. The vast majority of existing bus lanes are within the city centre although there are some bus lanes within Ballincollig to the west of the town centre.

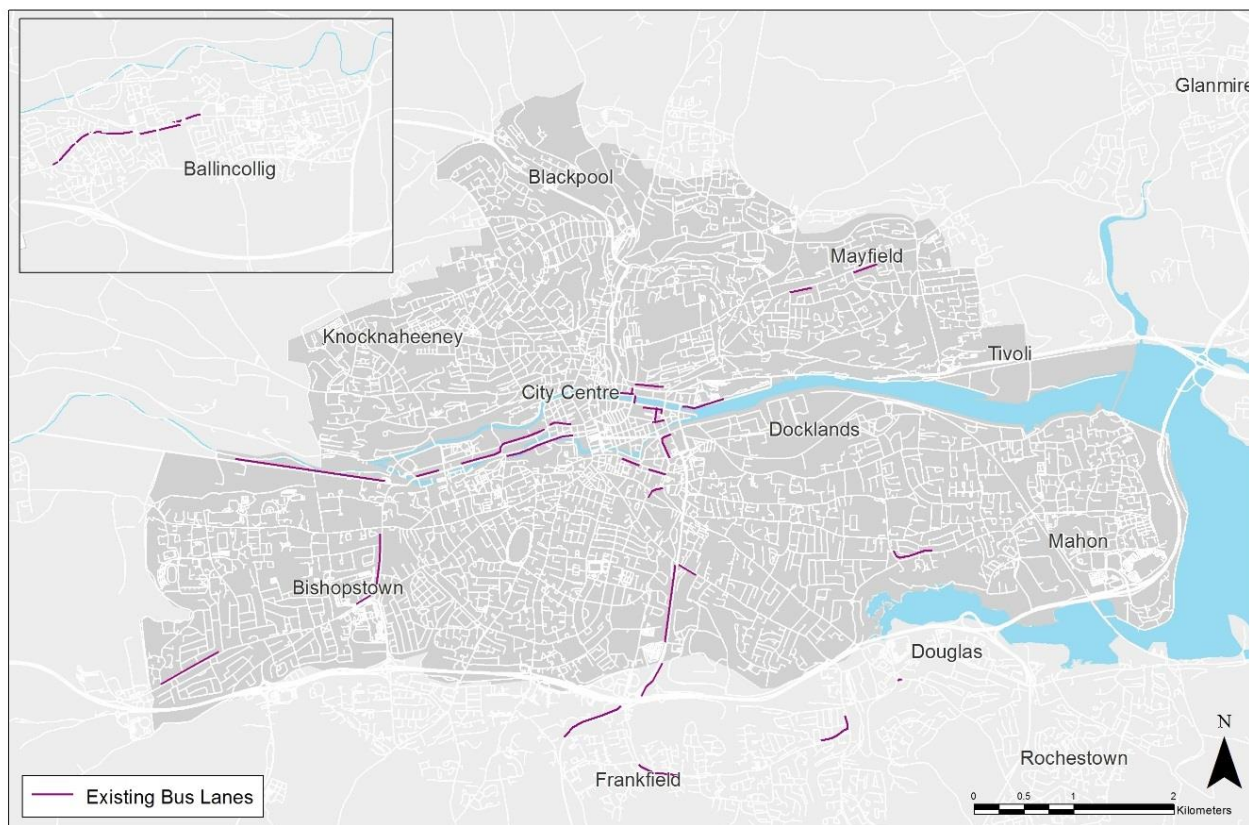


Figure 5-10: Existing Bus lanes within the Cork Metropolitan Area

5.3.3 Stations & Depots

Parnell Place Bus Station

The main bus station within Cork is Parnell Place Bus station which is in Parnell Place on the banks of the River Lee between St Patricks Bridge and Brian Boru Bridge immediately behind Merchants Quay Shopping Centre. The station is the principal bus station in Cork for Expressway and Regional services operated by Bus Éireann, InterCity services operated by GoBé, and international services operated by Eurolines. There is a good level of integration between long distance express services, outer suburban services and city services within the City Centre area and in environs of the central bus station. Parnell Place Bus Station is shown below in Figure 5-11.



Figure 5-11: Parnell Place Bus Station, Cork City Centre

Capwell Bus Depot

The main depot for Bus Éireann Buses is Capwell Bus Garage which is located just off Summerhill South. There are currently bus lanes along Summerhill South as far as the depot as shown previously in Figure.

5.3.4 Private Bus Operators

There are several private bus operators within the CMA which provide a number of express regional services. These services are outlined below in Table 5.3. The services all currently stop at St. Patrick's Quay near Parnell Place Bus Station.

Table 5.3 Frequency of Existing Cork Metropolitan City Services

Operator	Route	Frequency
Aircoach	704X Cork – Dublin City -Dublin Airport	1 Hr
GoBus	707 Cork – Dublin City -Dublin Airport	1 Hr
City Link	251 Cork Airport – Cork City- Limerick - Galway	3 Hr

5.4 Cycle Network

The past five years have seen significant improvements in cycling infrastructure in the city centre with the introduction of with-flow and contra-flow cycling facilities. The improvements and facilities that have been implemented with limited funding to date are of a high standard and will form the basis for further improvements to the sustainable modes network into the future.

The CMA Cycle Network Plan 2017 sets out clear objectives and guidance for the development of cycling infrastructure within the Metropolitan Area. As part of the development of the Plan an audit of existing cycling facilities was undertaken which determined as of 2015 there was approximately 100km of cycling infrastructure in the Cork Metropolitan area. Figure 5-12 below gives a breakdown of this 100km of cycle infrastructure by type.

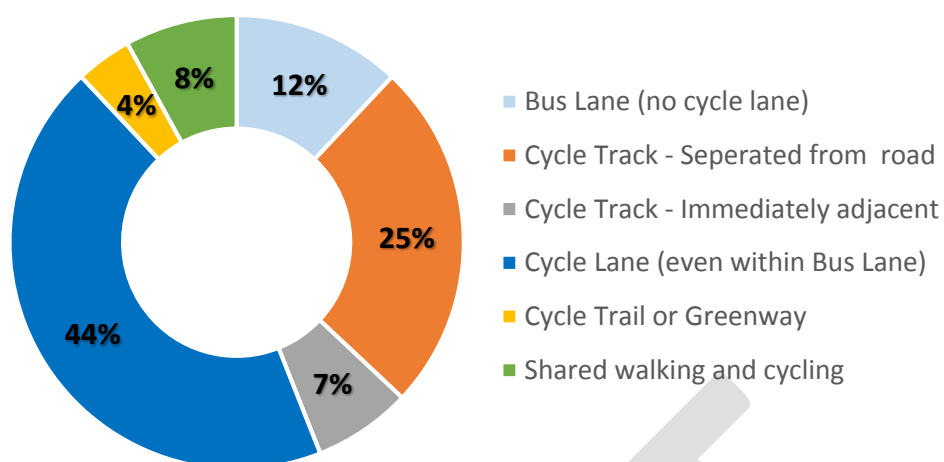


Figure 5-12: Breakdown of Facility Type in Cork Metropolitan Area (Source: Cork Metropolitan Cycle Network Plan 2015)

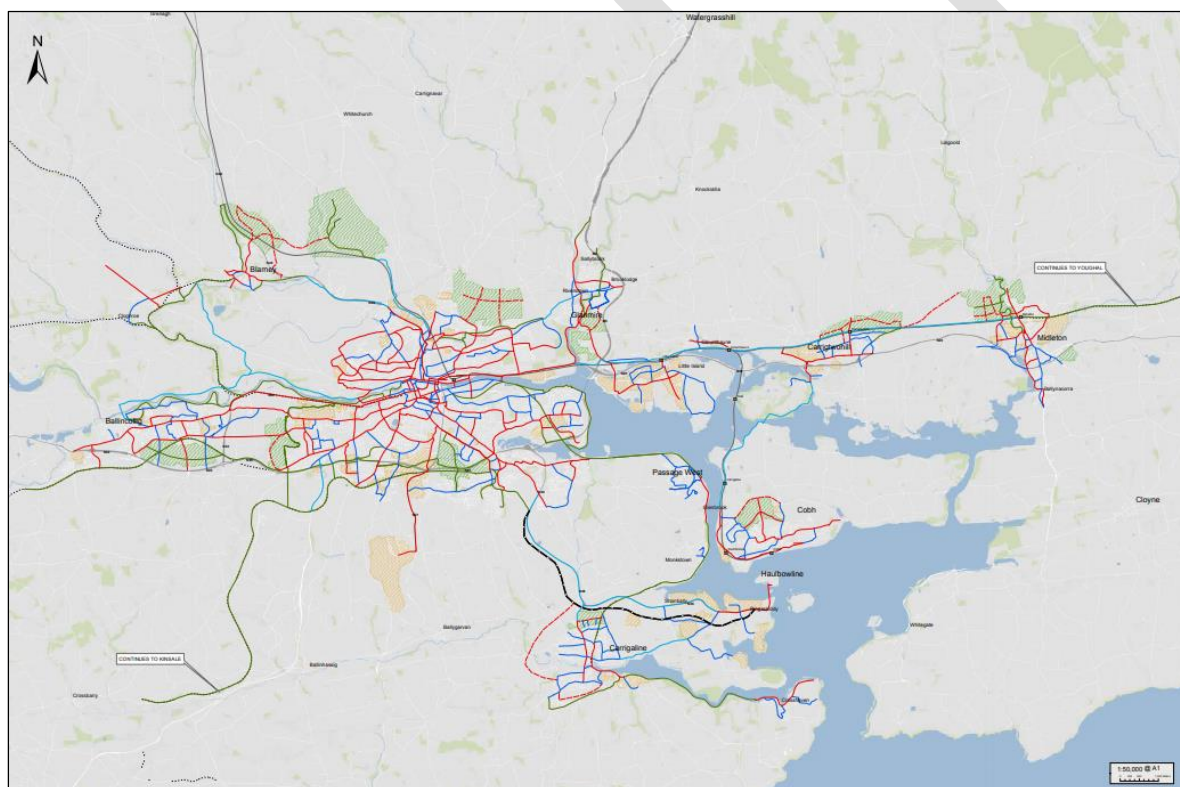


Figure 5-13: Cork Cycle Network Plan (Source: Cork Cycle Network Plan 2017)

In addition to the above cycle infrastructure, the Cork Coke Zero Bike Share Scheme was introduced in 2015 with 330 bikes at 31 stations across the city available for hire. A map of station locations is shown in Figure 5-14 below.

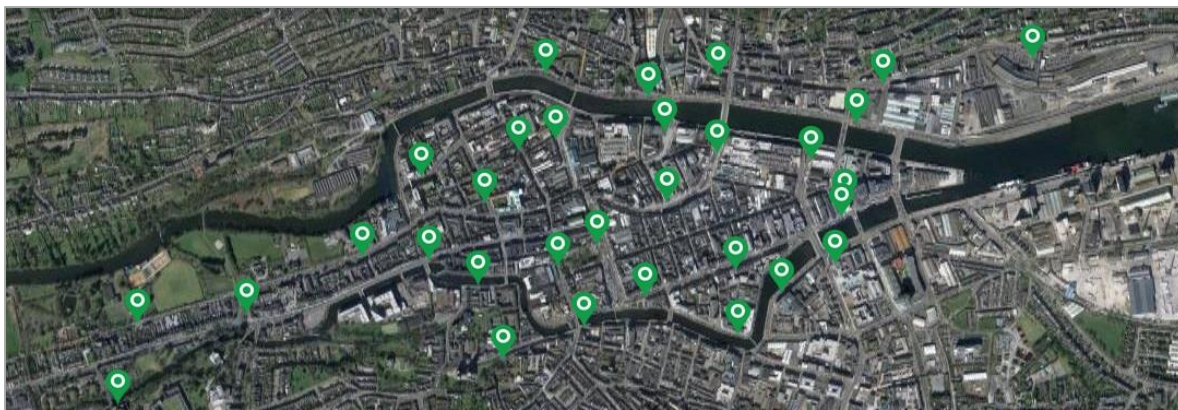


Figure 5-14: Cork Zero Bike Station Location Map (Coke Zero Bike Share Website, 2017)

5.5 Pedestrian Network

The pedestrian environment in Cork City centre is heavily influenced by its compact nature located on an island formed by the north and south channels of the River Lee. The City Centre has a mix of wide streets with generous pedestrian areas and narrow streets with less generous pedestrian provision. Within the City Centre there is a significant network of pedestrian only and pedestrian priority streets in the Huguenot Quarter (around Paul Street) and around Oliver Plunket Street (between St. Patrick's Street and the South Mall). To the north of the City centre the topography is more challenging with considerable gradients on streets leading northwards making them less attractive to pedestrians. To the south of the City Centre the topography is flatter as the city centre transitions to more suburban type development.

Cork City Council published the Cork Walking Strategy 2013 - 2018 which seeks to enhance a culture of walking beyond the City Centre with improved strategic connections to the wider city area. As part of the strategy an audit of the existing network was undertaken, the result of which is presented in Figure 5-15.

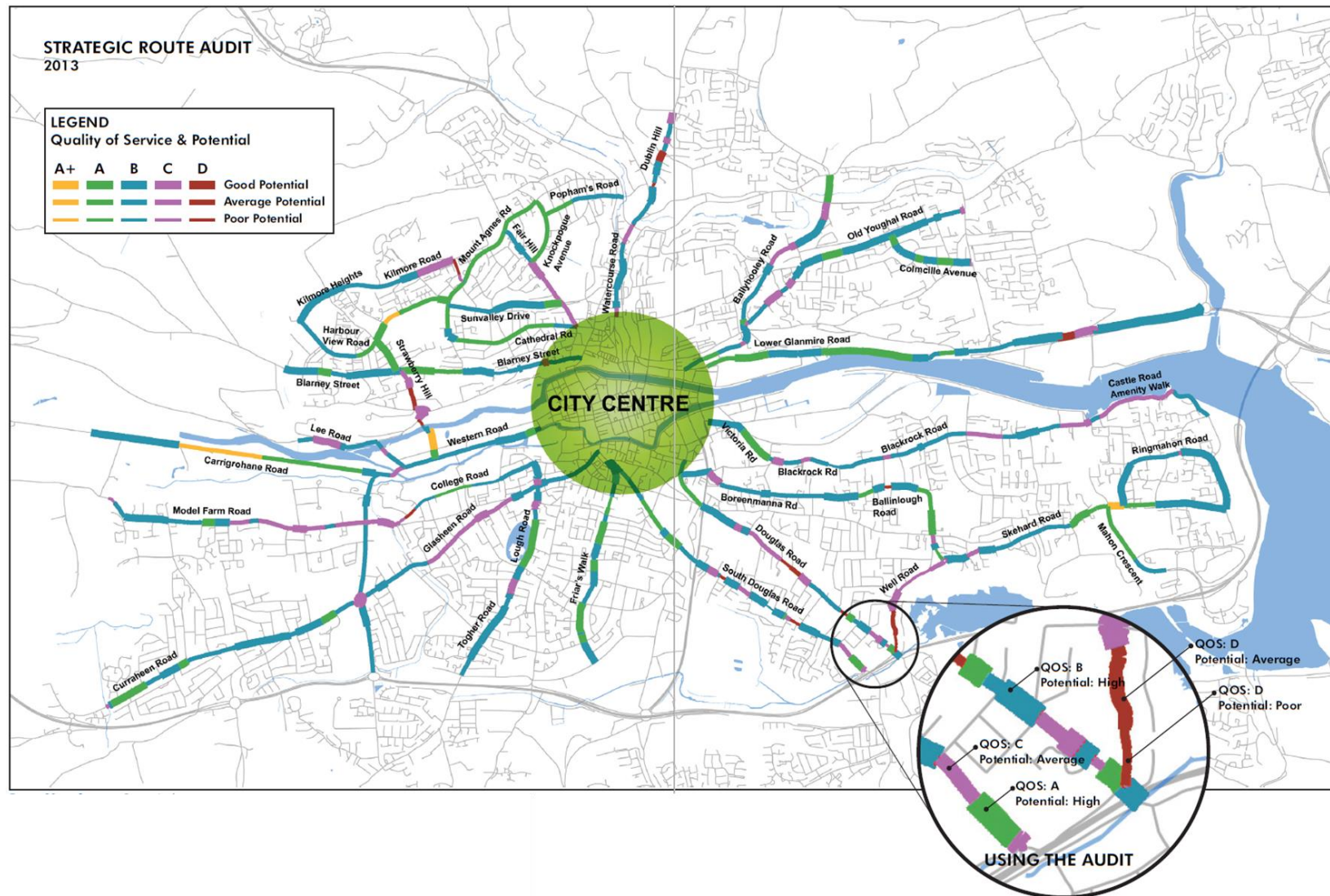


Figure 5-15: Level of Service of Existing Walking Network (Cork City Walking Strategy)

5.6 Parking Supply

A review of the current demand for parking within the city was undertaken using data from Cork Smart Gateway website. The data available included the total capacity and number of free spaces over the day for 8 car parks within the City. There are 4,318 available parking spaces at these car parks. Figure 5-16 below shows the hourly percentage occupancy for each car park on Wednesday the 10th of May and the total number of spaces available.

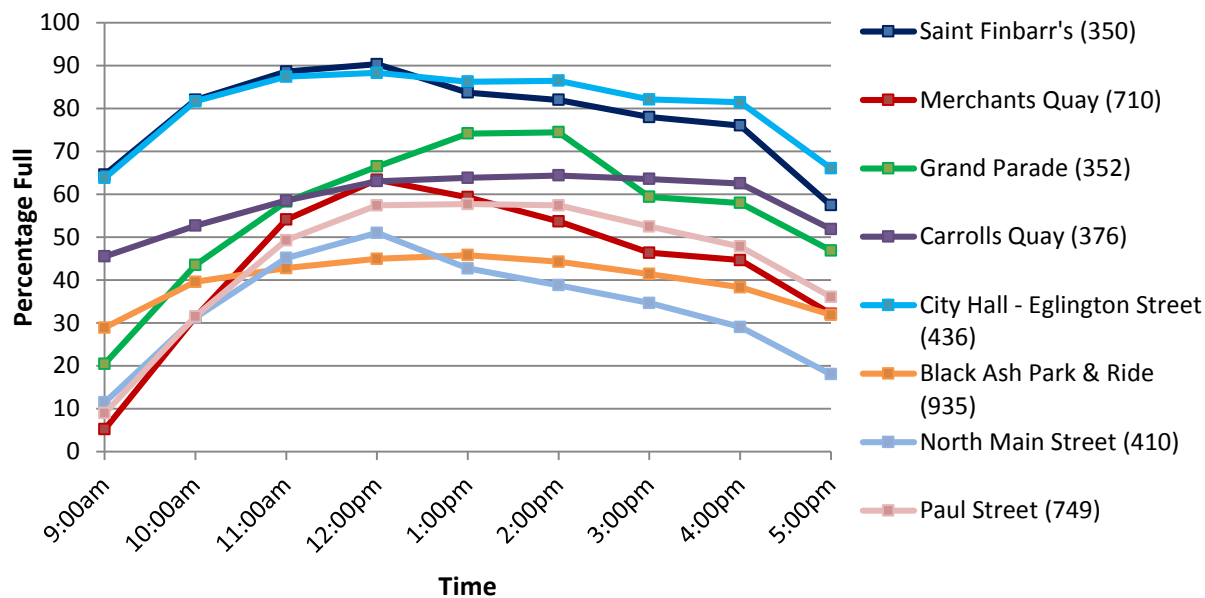


Figure 5-16: Car Park Occupancy Cork, Wednesday May 10th 2017

As shown the busiest period is during the lunchtime peak when just over 60% (2,600) of car spaces across all 8 car parks are occupied. The location of car parks is shown below in Figure 5-17.

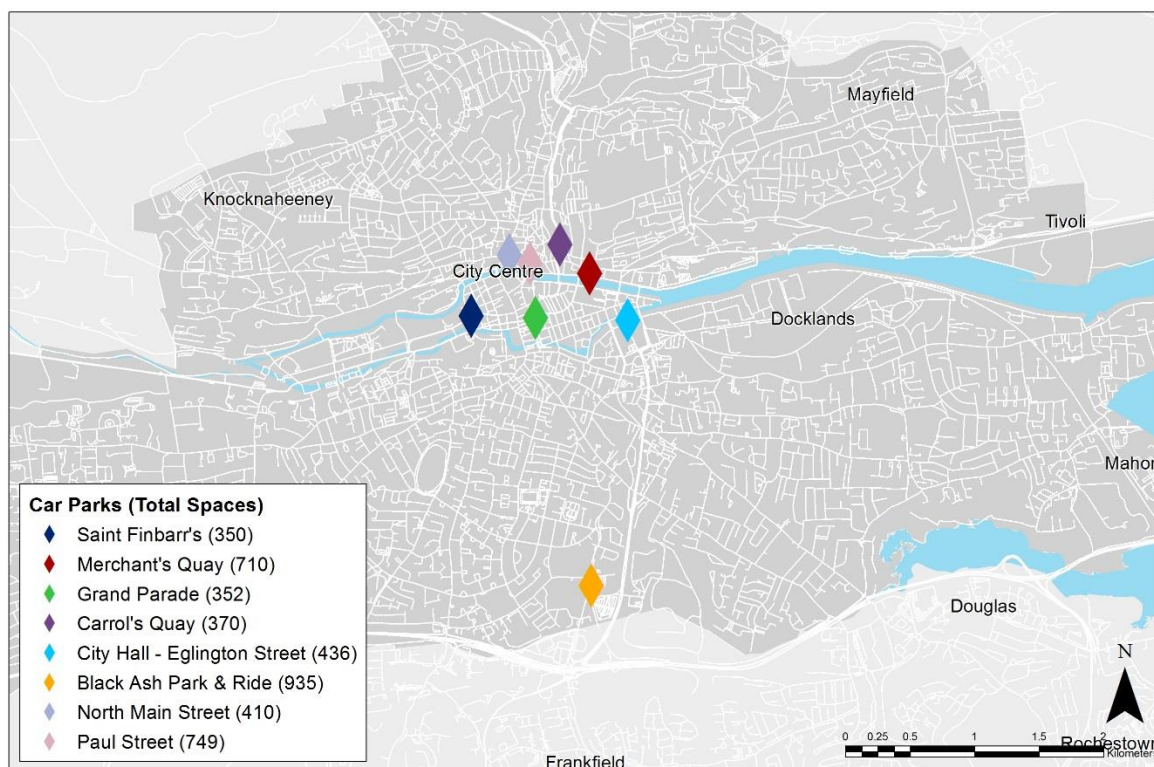


Figure 5-17: Car Park Locations & Total Spaces

5.7 Summary of Transport Supply

There have been several recent improvements to the transport supply within the CMA in recent years including:

- Upgrades to Sarsfield and Bandon Interchanges;
- Cork – Middleton/Cobh Rail Line;
- An expansion of the bus priority network;
- Implementation of first phases of City Centre Movement Strategy;
- An expansion of the cycle network;
- Cork Zero Bike Share; and
- Improved pedestrian infrastructure and priority within the City Centre.

Despite these improvements to the network there is still significant levels of congestion within the CMA attributable to the continued movement of both strategic and local traffic into and through the City Centre area which negatively impacts on all modes and particularly impacts on the reliability of bus services. The frequency of many bus services remains low particularly within the County Metropolitan Area which contributes to low public transport mode share as shown in Section 4.

There are however significant opportunities to improve the existing transport network for all modes particularly walking, cycling and public transport.

6 Key Objectives and Challenges

6.1 Key Objectives

The following outlines the NTA's Vision, Mission and relevant Priorities and Objectives as set out in the NTA Statement of Strategy 2015 – 2017.

6.1.1 NTA Vision

“Greater share of high quality, accessible sustainable transport being used by all.”

6.1.2 NTA Mission

The NTA's mission is to:

“increase the share of travel by sustainable transport across the country by

- *Regulating and procuring attractive, high quality and safe public transport services;*
- *Securing the development and implementation of an accessible and integrated transport system;*
- *Contributing to the effective integration of transport and land use planning policy and investment; and*
- *Enhancing the perception and raising awareness of public transport*

in a manner that supports Government policies and priorities and contributes to economic development, environmental sustainability and social cohesion in the State.”

6.1.3 NTA Relevant Priorities and Objectives

The following outlines Priorities and associated Objectives set out in the NTA Statement of Strategy 2015 – 2017 that are of relevance to the Cork Metropolitan Area Transport Strategy 2017 – 2036.

- **Priority 1:** Determine and manage the Capital Investment Programme in both public transport and sustainable transport measures in the greater Dublin Area (while Priority 1 focusses on the Greater Dublin Area, its objectives are relevant to the development of the Cork Metropolitan Area Transport Strategy)
 - Key Objectives:
 - Develop an efficient, effective and safe transport system so that most people including those with a disability or mobility impairment are within easy reach of a reliable public transport service
 - Develop appropriate networks and infrastructure for cycling and walking
- **Priority 3:** Ensure that Land Use considerations are fully addressed as part of the Transport Planning Process
 - Key Objectives:
 - Promote the effective integration of transport and land use planning
 - Promote consideration of transport issues in wider Government policies
- **Priority 4:** Secure optimal provision of high-quality subsidised public transport services in the state
 - Key Objectives:
 - Identify the appropriate network of public passenger transport services
 - Procure high quality and accessible bus, heavy rail and light rail services, at best value for money

- **Priority 5:** Develop and secure the infrastructure to ensure a seamless customer experience across all travel modes
 - Key Objectives:
 - Improve the customer experience of public transport by removing barriers to interchange between public transport services
 - Leverage existing infrastructure and develop new measures to improve door-to-door journeys
 - Integrate rural transport and small public service vehicles into mainstream transport network
- **Priority 6:** Promote the use of more sustainable modes of transport
 - Key Objectives:
 - Promote a shift from the car to more sustainable modes of transport (public transport, cycling and walking)
 - Promote the convenience and attractiveness of public transport
- **Priority 7:** Manage the Department of Transport, Tourism and Sport's Capital Investment Programme
 - Key Objective:
 - Provide appropriate transportation and project management expertise to ensure value for money and timely delivery of the Department's regional cities' investment programmes and National Accessibility Fund

6.2 Strengths, Weaknesses, Opportunities and Threats

Strengths

- Cork enjoys strong transport connections to Dublin by way of motorway infrastructure and hourly rail services with the addition of frequent express bus services;
- Cork City's air and sea ports offer strong international connections making it an ideal location for foreign direct investment and export led businesses;
- Recently improved commuter rail network with growing passenger demand;
- On-going improvements to bus services within the City bus service area and substantial increases in passenger numbers since 2010;
- M8- Free flow high speed motorway linking Dublin to Cork;
- N40 South Ring Road with recently upgraded interchanges which improves capacity at National Road intersections;
- Urban centres within the Metropolitan Area that support short distance local trips within walking and cycling distance, especially trips to education and for retail, leisure, social purposes;
- Improved connectivity between Kent Station and the City Centre, with bus/ rail interchange nearing completion;
- Bus Éireann terminus in City Centre for regional services;
- Attractive, compact City Centre ideally suited to walking and cycling;
- The success of the recently introduced Cork City bike scheme demonstrates the potential to popularise the bicycle as an efficient and attractive mode of transport in Cork City; and
- The continued roll out of the City Centre Movement Strategy which includes improvements to pedestrian and cycle infrastructure, bus priority and public realm improvements.

Weaknesses

- Low levels of public transport mode share at present and poor public perception of public transport;
- The popularity and current dependence on the private car as a means of travel into and around the city leads to traffic congestion which will invariably worsen with future growth if not addressed;
- Heavy reliance on the private car due to the dispersed and low density settlement patterns outside of the City, with limited public transport network;
- The availability of low cost City Centre parking makes travel by private car an attractive option;
- Current lack of quality cycle infrastructure and pedestrian priority outside of the city centre inhibits people from using the most sustainable modes;
- Whilst showing signs of reversal in the 2016 census, Cork City's population had been declining over four decades, with high levels of population and employment growth in the County Metropolitan Area creating a doughnut effect;
- Steep topography to the north of the city centre is challenging for trip making by walking and cycling modes;
- Kent train station is at a remove from the City Centre core; and
- Current service frequencies on public transport is unattractive and public transport has little priority, making current journey times uncompetitive in comparison to the private car alternative.

Opportunities

- Cork City is the main driver of growth for the South West regional economy making Cork an ideal location for employment and population growth in the region, which can provide the critical mass and development intensity needed for a high quality public transport system;
- The ongoing reorientation of Kent Station, providing a southern access to the station, will enable better pedestrian and cycling connectivity with the City Centre, and potentially enabling increased bus service access to the train station improving opportunities for interchange and journey time reliability;
- Potential for a higher density public transport-orientated city, attracting further investment along defined development corridors. An example of this is the potential for high capacity public transport services, linking Ballincollig to the City Centre and the City Docklands area;
- The relocation of the Port of Cork's facilities from the City docks and Tivoli port estate to Ringaskiddy will provide for significant redevelopment potential whilst allowing for HGV management strategies to be introduced to reduce volumes of HGVs in the City Centre;
- Significant potential to improve public transport priority, service frequency and reliability;
- Potential to increase walking and cycling levels as demonstrated by the recent success of the Cork City bike scheme;
- Intensification of the Metropolitan Area population and employment densities to increase the potential for sustainable transport use;
- Lee river crossing proposals, downstream of the City Centre, to provide accessibility to brownfield development areas in the Docklands and Tivoli areas;
- Rail line speeds could be improved and opportunity for electrification in the long term;
- Planned or proposed upgrades to the strategic road network, including the N28, Dunkettle Interchange and a northern ring road;
- Demand Management initiatives for the strategic road network, including the N40 and N28, to support the long-term capacity of key infrastructure routes;
- Opportunity for growth in the bus network coverage;
- Potential to increase the attractiveness of the Cork Metropolitan Area for inward investment in employment generating activities, by providing a larger, compact, integrated, attractive and accessible city, which can be achieved through the effective integration of land use and transport planning and investment, over time; and
- Exploit the opportunities for the redevelopment of large, centrally located brownfield lands such as the Docklands.

Threats

- Commuter rail stations are not ideally situated to serve the existing population; Little Island, Cobh, Carrigtwohill and Midleton are located on the fringes of their settlements;
- Further development in areas not supported by sustainable modes would result in further unsustainable travel patterns and increase pressure on the strategic road network;
- Insufficient investment in Public Transport and failure to deliver a more integrated approach to land use and transport planning / investment could lead to a further increase in private car travel, city centre congestion and reduce economic competitiveness;
- Delayed delivery of major infrastructure, such as Dunkettle Interchange and M28, could impact on the efficiency of the strategic road network and could inhibit economic development;
- Slow delivery of favourably located major development areas, could also affect delivery of sustainable transport infrastructure and services;
- Commuter rail line capacity is limited as there is only a single track beyond Glounthaune towards Carrigtwohill and Midleton;
- Proposals to reduce parking availability or increase charges will potentially lack public support without counter-balancing measure to facilitate modal shift over time;
- The historical core within Cork City and limited road capacity space will create challenges for providing improved public transport priority and public realm improvements, whilst providing accessibility for an increasing residential and employment population;
- Significant investment is needed to improve the public transport offering; and
- A continuation of the current, poly-centric, low density development pattern will lead to dispersed, car-based travel patterns.

6.3 Key Challenges

Cork's transport network is coming under increasing strain and the existing network will not support the future transport needs of the City and Metropolitan area. Cork has a very high mode share for car and unless the attractiveness of alternative means of transport is improved, the City and Metropolitan area will continue to have high levels of dependency on the private car and worsening delays and congestion as a result. To provide for a better, more efficient and effective transport network, there are a number of key challenges that must be addressed by the Cork Metropolitan Area Transport Strategy. These include:

- The need to improve the quality and availability of sustainable transport to reduce the levels of dependency on the private car;
- The need to improve public transport through higher frequency services operating with greater speed and journey time reliability, and attracting higher demand;
- The need to balance the needs of different transport modes to better support the movement of people through the transport network particularly within the confines of the limited space available in parts of the City;
- The need to ensure the future transport needs of well-located development areas are provided for in a way that that will enhance the opportunity to increase the efficiency and sustainability of the transport network;
- The need to support a vibrant and accessible City Centre, urban centres and county towns;
- The need to accommodate a greater number of trips more efficiently by maximising connectivity by walking, cycling and public transport to major employers and education facilities;
- The need to supplement the public transport network with complementary facilities such as Park and Ride for the benefit of people accessing the city from the surrounding rural areas;
- The need to maintain an effective strategic road network in the Cork Metropolitan Area that is integrated with the wider national road network to cater for strategic trips and the movement of goods especially to and from the expanding Port of Cork port estate at Ringaskiddy;
- The need to take advantage of the existing transport infrastructure including the InterCity and Commuter rail network and the International Airport;
- The need to address the physical constraints for transport presented by the challenging topography and physical features in Cork such as the waterways and existing road network;
- The need to improve transport infrastructure in a cost efficient manner that will support the case for funding and investment;
- The need to achieve efficiency and resilience within Cork City Metropolitan Area's transport network across all modes;
- The need to improve the health and safety of road users in Cork, through promoting active modes to improve health benefits and through the reduction in traffic collisions and incidents; and
- The need to consider the impact of transport on the environment through targeted measures to limit the negative impact of transport emissions.