

CORK METROPOLITAN AREA

DRAFT TRANSPORT STRATEGY 2040



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This Strategy will deliver an **accessible, integrated transport network** that enables the sustainable growth of the **Cork Metropolitan Area** as a dynamic, connected, and internationally competitive **European city region** as envisaged by the National Planning Framework 2040.

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01 INTRODUCTION

Cork already performs well as a major urban centre in Ireland and **the City has positioned itself as an emerging medium-sized European centre of growth and innovation.** Building on this potential is critical to further enhancing Ireland's metropolitan profile.

National Planning Framework 2040

The Cork Metropolitan Area (CMA) is in the midst of an exciting phase of its development. The recently-published National Planning Framework (NPF) 2040 envisages that Cork will become the fastest-growing city region in Ireland with a projected 50% to 60% increase of its population in the period up to 2040.

This projected population and associated economic growth will result in a significant increase in the demand for travel. This demand needs to be managed and planned for carefully to safeguard and enhance Cork's attractiveness to live, work, visit and invest in.

There is limited capacity within the existing CMA transport network to cater for additional motor traffic and what capacity is there will need to be allocated more efficiently. Land use and transport planning will need to be far more closely aligned to reduce the need to travel by car and support the functioning of a sustainable, integrated transport system.

To address this challenge, the Cork Metropolitan Area Transport Strategy (CMATS) 2040 (the "Strategy") has been developed by the National Transport Authority (NTA) in collaboration with Transport Infrastructure Ireland (TII), Cork City Council and Cork County Council.

CMATS represents a coordinated land use and transport strategy for the Cork Metropolitan Area. It sets out a framework for the planning and delivery of transport infrastructure and services to support the CMA's development in the period up to 2040.

The Strategy takes its lead at national level from the National Planning Framework 2040 and the National Development Plan 2018-2027 and builds upon previous transport studies including Cork City Centre Movement Strategy, Cork Area Strategic Plan (CASP) and the Cork Metropolitan Cycle Network Plan.

The Strategy will provide a coherent transport planning policy framework and implementation plan around which other agencies involved in land use planning, environmental protection, and delivery of other infrastructure such as housing and water can align their investment priorities.

CMATS will inform the development of regional and local planning, and associated investment frameworks. It will align with the the Southern Assembly's Regional Spatial and Economic Strategy (RSES), the statutory Cork Metropolitan Area Strategic Plan (MASP) and the statutory Development Plans of both Cork City Council and Cork County Council.

This document outlines the development of the Strategy, its underpinning analysis and strategy's development, underpinning and proposed measures.

Next Steps



Prepare CMATS
Implementation
Plan



Planning & design of
Proposed
Measures



Secure Funding for
Proposed
Measures



Implementation of
CMATS

A number of characteristics of the CMA result in problems and inefficiencies with respect to the movement of people and goods

Supporting technical documents have also been prepared to document the work undertaken in developing CMATS, including transport demand analysis, transport option development, transport modelling and transport networks appraisal.

The complete set of background reports comprise the following:

- Baseline Conditions Report;
- Planning Datasheet Development Report;
- Demand Analysis Report;
- Transport Modelling Report;
- Transport Options Development Report;
- Supporting Measures Report;
- Strategic Environmental Assessment (SEA); and
- Appropriate Assessment (AA).

The Strategy is considered to be flexible with the ability to scale up public transport capacity and frequencies as necessary along CMATS agreed transport corridors.

CMATS is considered to be a 'live' document and will be subject to a periodic review process (typically 5 years) over the lifetime of the Strategy.

Current Challenges

There are a number of challenges across the wider Cork Metropolitan Area that were considered in preparing this Strategy. These are set out in the following sections:

Land Use and Physical Constraints

- Cork is projected to be the fastest growing Metropolitan Area in the State. The substantial increase in population, employment and educational use will lead to a subsequent increase in demand for travel;
- A legacy of dispersed patterns of residential, employment and retail development, particularly outside of the central city area;
- A unique and challenging geography characterised by steep topography and waterways;
- The general unsuitability of the road network - particularly within the medieval city core and arterial routes - to accommodate relatively high volumes of peak time vehicular traffic;
- Cork City's pivotal role as the major regional centre for employment, education, retail and leisure for a large geographical area leading to a significant number of long distance trips made primarily by car;

- Many competing demands for scarce road and kerbside space for different road users;
- Some high capacity roads within Cork City such as the N22, N27 and N40, that cause community severance and hinder pedestrian and cyclist movement; and
- A lack of a strategic orbital corridor to the North of the city resulting in strategic traffic and HGV movement from the N20 routing through the city adding to congestion, noise and pollution.

Travel Behaviour

- An over-reliance on the private car for relatively short trips;
- Relatively low mode share of cycling and limited (though improving) dedicated cycle infrastructure;
- Low walking mode share outside of the current City Council administrative area;
- A high level of car use for the school run, suppressing the use of public transport, walking and cycling and contributing to car-based congestion during the morning and afternoon inter-peak periods
- Low level of parking control through, for example, controlled parking zones, leading to commuter parking in residential areas; and
- Complex one-way systems creating high speed environments.





Public Transport Provision

- A largely bus based local public transport network with a limited number of high frequency services (i.e. headways of 15 minutes or better);
- Long journey times and delays on the current bus network negatively impacting passengers and operating costs;
- Split inbound and outbound bus routes, and longer journey distances created by one-way systems;
- Inadequate level of Real Time Information (RTI) and bus shelters outside of the city centre;
- Unprotected and unmarked bus set-down areas frequently occupied by parked cars, forcing passengers to board and alight in the carriageway;
- A suburban rail service serving some of larger East Cork settlements but a disconnection between the location of stations relative to the town centres that they serve;
- Constraints on the rail network that limits frequency and capacity at Kent station; and
- Overprovision of car parking (including the continued use of minimum standards in some cases) undermining the viability and attractiveness of public transport.

Congestion and Economy

- Concerns that on-going congestion will inhibit the ability of the CMA to attract further inward investment;
- Concern from major employers that public transport provision is insufficient to cater for an increasingly millennial and car-free workforce;
- Traffic congestion and delays at key locations on the national road network during peak periods, such as the Dunkettle Interchange (junction of the N8, M8, N25 and N40) and on sections on the N40;
- Over-provision of junctions along the N40 resulting in motorists using the strategic road network for local trips 'and a lack of alternative orbital routes or public transport options for movement along this corridor; and

- A need to facilitate the movement of goods on the strategic road network and to maintain efficient access to key locations including the Port of Cork and the National Road network.

Public Health and Deprivation

- Concerns over rising levels of physical inactivity and childhood obesity;
- A recognition of the need to incorporate more active travel and incidental exercise into our transport system through the re-shaping of our public realm and transport choices;
- Rising concerns over the impact of transport on local air quality; and
- A need to provide equitable transport accessibility to essential services, education and employment to help reduce deprivation.

This Strategy will deliver an accessible, integrated transport network that enables the sustainable growth of the Cork Metropolitan Area as a dynamic, connected, and internationally competitive European city region as envisaged by the National Planning Framework 2040.

Vision and Principles

CMATS will deliver an integrated transport network that addresses the needs of all modes of transport, offering better transport choices, resulting in better overall network performance and providing capacity to meet travel demand and support economic growth.

To achieve this vision, the guiding principles upon which CMATS is based is depicted in the graphic below.

Planning Frameworks

CMATS will be incorporated and aligned with relevant future policy, strategies and implementation plans. These include the National Planning Framework 2040, the National Development Plan 2018-2027, the Southern Assembly's RSES and the statutory Cork MASP, Development Plans for both Cork City Council and Cork

County Council and Local Area Plans issued by both local authorities. Further detail on the relationship between CMATS and these Plans are discussed in Chapters 2 and 4.

Strategic Environmental Assessment (SEA) and Appropriate Assessment (AA)

The preparation of CMATS is subject to Strategic Environmental Assessment (SEA). Article 1 of SEA Directive (2001/42/EC) states that the 'objective of this Directive is to provide for a high level of protection of the environment and to contribute to the integration of environmental considerations into the preparation and adoption of plans and programmes with a view to promoting sustainable development, by ensuring that, in accordance with this Directive, an environmental assessment is carried out

of certain plans and programmes which are likely to have significant effects on the environment.'

Appropriate Assessment (AA) is a requirement of the European Union (EU) Habitats Directive (92/43/EEC) – on the conservation of natural habitats and wild flora and fauna – as transposed into Irish law through the European Communities (Birds and Natural Habitats) Regulations 2011, which consolidates the European Communities (Natural Habitats) regulations 1997 to 2005 and the European Communities (Birds and Natural Habitats) (Control of Recreational Activities) Regulations 2010.

Both the SEA and AA reports have been developed in parallel with CMATS and should be read and considered in parallel with this Strategy.

To achieve this vision the guiding principles upon which CMATS is based are:



Principle 01

To support the future growth of the CMA through the provision of an efficient and safe transport network.



Principle 02

To prioritise sustainable transport and reduce car dependency within the CMA.



Principle 03

To provide a high level of public transport connectivity to key destinations within high demand corridors.



Principle 04

To identify and protect key strategic routes for the movement of freight and services including the provision of a high level of freight access to the Port of Cork



Principle 05

To enhance the public realm through traffic management and transport interventions.



Principle 06

To increase public transport capacity and frequencies where needed to achieve the strategy outcomes.

SEA

SEA is required to be undertaken on the transport plan as it contributes towards the framework for future development consent of projects listed in Annexes I and II to Directive 2011/92/EU, as amended by 2014/52/EC. The provisions of the Strategy have been evaluated for potential significant effects, and measures have been integrated into the Strategy on foot of SEA recommendations in order to ensure that potential adverse effects are mitigated. The environmental topics (including interrelationships) which are considered by the SEA are as follows:

- Air and Climatic Factors;
- Population and Human Health;
- Biodiversity, Flora and Fauna;
- Material Assets;
- Soil;
- Water;
- Cultural Heritage; and
- Landscape.

The SEA Environmental Report, which should be read and considered in parallel with the Strategy sets out the findings of the assessment under headings including the following:

- Relevant aspects of the current state of the Environment;
- Evaluation of Alternatives;
- Evaluation of Strategy provisions;
- Mitigation Measures; and
- Monitoring Programme.

The overall findings of the SEA are that:

- All of the recommendations arising from the SEA process have been incorporated into the Strategy;

- The Strategy facilitates a mode shift away from the private car to public transport, walking and cycling and associated positive effects, including those relating to:
 - Contributions towards reductions in greenhouse gas emissions and associated achievement of legally binding targets
 - Contributions towards reductions in emissions to air and associated achievement of air quality objectives, thereby contributing towards improvement or air quality and protection of human health
 - Contributions towards reductions in consumption of non-renewable energy sources and achievement of legally binding renewable energy targets
 - Energy security
 - Enhancing the public realm
- Certain Strategy provisions would be likely to result in significant positive effects upon environmental management and protection; and
- Certain Strategy provisions would have the potential to result in significant negative environmental effects upon the environment. The integration of detailed mitigation into the Strategy has ensured that these effects are mitigated.

AA

The AA concludes that it is considered that the Strategy will not have a significant adverse effect on the integrity of the Natura 2000 network of sites. The details of the approach to the AA and the findings are set out in the AA Natura Impact Report that accompanies the Strategy. In a similar manner to the Environmental Report of the SEA, this separate document should be read and considered in parallel with the Strategy.

Cork Metropolitan Area Transport Strategy Methodology





02 POLICY CONTEXT

The World is changing and Ireland is changing too.
The best way for our country to address the changes that we will continue to face, is to plan for that change.

National Planning Framework 2040

This chapter sets out the prevailing national and regional policies which inform and interact with CMATS. These include those directly related to transport, climate change and land use planning.

Planning and Policy

CMATS is a Regional Level plan and is directly informed by National Level (Tier-1) policies. The most important and recent of these National Planning policy documents are the NPF 2040 and the NDP 2018-2027 both of which were published in February 2018.

The NPF 2040 sets out Ireland's planning policy direction for the next 22 years and the NDP sets out the investment priorities that will underpin the successful implementation of NPF 2040 in the short to medium term, up to 2027.

Other important National level policies which have informed CMATS include:

- Strategic Framework for investment in Landside Transport (SFILT); and
- Smarter Travel.

A detailed review of planning and policy documents relevant to CMATS is contained within the supporting CMATS Baseline Conditions Report. A synopsis of some of the key documents follows overleaf.

National Level

National Planning Framework 2040

The NPF 2040 document was published in February 2018 and sets out Ireland's planning policy direction for the next 22 years. 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 City and Suburbs alone. Some of the key transport growth enablers relevant to the development of the Strategy 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.

This Strategy has been developed in line with the core principles set out in the NPF 2040.

National Development Plan 2018-2027

The National development Plan (NDP) sets out a ten year investment plan to underpin the NPF's ten National Strategic Outcomes (NSOs). The key NSOs that have informed the development of CMATS are summarised as follows:

- **NSO 1 - Compact Growth**
 - Urban Regeneration and Development Fund - the Cork Docklands is included as an example project with potential to receive support; and
 - Establishment of a National Regeneration and Development Agency.
- **NSO 2 - Enhanced Regional Accessibility Road Network**
 - Establish the Atlantic Corridor road network linking Cork, Limerick, Galway and Sligo;
 - Improving average journey times targeting an average inter-urban speed of 90kph;

- M20 Cork to Limerick motorway including consideration of a complementary scheme – the Cork North Ring Road - linking the N20 to Dunkettle; and
- M28 Cork to Ringaskiddy Road.
- **Public Transport**
 - A feasibility study of high speed rail between Dublin Belfast, Dublin Limerick Junction/Cork by 2019; and
 - Complete construction of the National Train Control Centre.
- **NSO 4 – Sustainable Mobility**
 - A commitment to implement BusConnects for Cork;
 - Delivery of comprehensive walking and cycling network; and
 - Smarter Travel projects.
- **NSO 5 – A Strong Economy, supported by Enterprise, Innovation and Skills**
 - Upgrading of the Tyndall National Institute in Cork;
 - University College Cork; New business school, student accommodation, Innovation Park and new dental hospital;
 - Major Infrastructure project at CIT delivered through PPP.
- **NSO 6 – High-Quality International Connectivity**
 - Continued investment in Cork Airport; and
 - The consolidation of Port of Cork facilities at Ringaskiddy and redevelopment of existing port facilities at Ringaskiddy to accommodate larger sea-going vessels and increase capacity.
- **NSO 7 – Enhanced Amenity and Heritage**
 - Education, health and cultural infrastructure;
 - Capital investment at UCC including new Business school, Innovation Park, new dental hospital, expansion of the Tyndall National Institute and student accommodation;
 - Investment in the Crawford Art Gallery; and
 - Cork Event Centre.
- **NSO 8 – Transition to a Low-Carbon and Climate-Resilient Society**
 - Expansion of electric vehicle charging points;
 - Transition to low emission, including electric buses, for the urban public bus fleet with no diesel only buses purchased from 1 July 2019;
 - BusConnects for Cork; and
 - Sustainable travel measures, including comprehensive Cycling and Walking Network for metropolitan areas of Ireland's cities, and expanded Greenways.
- **NSO 10 – Access to Quality Childcare, Education and Health Services**
 - A new acute hospital in Cork
 - A new dedicated ambulatory elective-only hospital in Cork to tackle waiting lists and provide access to diagnostic services

National Mitigation Plan

The first National Mitigation Plan represents an initial step to set Ireland on a pathway to achieve the level of decarbonisation required to reduce greenhouse gas emissions in line with our international commitments under the Paris Agreement as well as to meet our more immediate EU obligations.

Decarbonising Transport is a key tenet of the Plan. The Plan sets out the various measures already helping to contain the level of emissions associated with the transport sector and identifies a range of potential additional measures that can help to intensify mitigation efforts within the sector. Some key measures related to CMATS include;

- T1 Public Transport Investment;
- T2 Smarter Travel Initiative;
- T8 Review of Public Transport;
- T9 Review of Active Travel Policy;
- T10 National Intelligent Transport Systems (ITS) Strategy;
- T16 Further Public Transport Investment;
- T17 Supports and Incentives to Modal Shift;
- T23 National Policy on Parking.

The latter measure suggests reducing parking limits in urban centres to free up space for pedestrians, cyclists and public transportation and should be considered in tandem with policies on 'out-of-town' parking.

The Cork City network, operated by Bus Éireann, offers reasonably extensive coverage of the City. **The majority of city bus services operate cross city and radially from the City Centre with some orbital routes catering for inter-suburban trips.**

Investing in Our Transport Future- Strategic Investment Framework for Land Transport

In keeping with the SFILT, the first priority for future investment under the Strategy will be the steady state maintenance of the existing land transport infrastructure and services in the CMA. This will involve expenditure on maintenance and renewal to keep the existing transport system in an adequate condition, and operating and management expenditure to ensure the continuing delivery of adequate transport services.

The next priority, consistent with SFILT, will be to address urban congestion and improve the efficiency and sustainability of the urban transport system in the CMA.

The response will focus on improved and expanded public transport capacity, improved and expanded walking and cycling infrastructure, the use of Intelligent Transport Systems (ITS) to improve efficiency and sustainability and to increase capacity and on demand management measures.

Major new roads are generally not seen as part of the solution to congestion, though capacity enhancements to existing roads coupled with demand management may be justified in limited circumstances.

Spatial Planning and National Roads (2012)

The Spatial Planning and National Roads guidelines sets out planning policy considerations relating to development affecting National Primary and National Secondary Roads, including motorways and associated junctions.

The document recognises the critical role that a world class road network plays in the State's social, economic and environmental development but also warns against repeating the land use planning mistakes of the past. The key quotes and principles relevant to the development of the road network in CMATS are reprised below.

"National roads play a key role within Ireland's overall transport system and in the country's economic, social and physical development.

The primary purpose of the national road network is to provide strategic transport links between the main centres of population and employment, including key international gateways such as the main ports and airports, and to provide access between all regions'.

However, in recent years, increasing population and car ownership rates, changes in lifestyle and employment, and improvements in the quality of the road network have also contributed to the unsustainable outward expansion of urban areas, and retail and employment centres.

These dispersed, car dependent forms of development are uneconomic, lead to increases in trip distance and make it difficult to develop attractive public transport, cycling and walking networks while also having serious implications for the viability and sustainability of town and city centres. **Government policy no longer proposes to cater for the type of unlimited road traffic growth driven by the scenario outlined above.**

Design Manual for Urban Roads and Streets 2013.

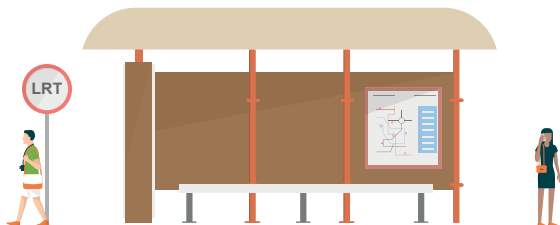
The Design Manual for Urban Roads and Streets (DMURS) sets out the manner in which roads and streets in urban and suburban areas should be designed to prioritise the needs of pedestrians, cyclists and public transport users and reduces the dominance of the private car. The plans and proposals outlined in CMATS are consistent with the goals and overarching objectives of DMURS.

Key principles applied in the context of CMATS include the following:

- More emphasis on the place function for streets and roads in Cork City, suburban areas and Metropolitan Town Centres;
- Greater consideration of the pedestrian environment including footway widths and crossing facilities;
- Emphasis on filtered permeability and connections for pedestrians and cyclists, especially to places of employment, education and public transport stops; and
- Distributor road layouts and requirements.

Smarter Travel – A Sustainable Future

Smarter Travel sets clear targets which have informed the preparation of CMATS. The Government sets its vision for sustainability in transport and sets out five key goals: (i) to reduce overall travel demand, (ii) to maximise the efficiency of the transport network, (iii) to reduce reliance on fossil fuels, (iv) to reduce transport emissions and (v) to improve accessibility to transport. In particular, it sets a goal that walking, cycling and public transport will make up 55% of total commuter journeys to work in the State.



In order to facilitate this shift, and to cater for additional trips by walking, cycling and public transport, the Strategy proposes a comprehensive public transport network and service structure, as well increasing the role of cycling and walking as feasible alternatives for many trips.

Sustainable Urban Housing: Design Standards for New Apartments Guidelines for Planning Authorities

This document represents an update on the earlier design standards guidelines issued in 2015. The updated standards contain a number of transport-related issues relevant to the development of CMATS including the following:

- A default policy for car parking provision to be minimised, substantially reduced or wholly eliminated in highly accessible areas such as in or adjoining city cores or at a confluence of public transport systems such as rail and bus stations located in close proximity. Typically, these locations are within 15 minutes walking of city centres or within 10 minutes walking distance of commuter rail or bus stops or within 5 minutes walking distance of high frequency bus services.

- A significant uptake in the quantity and quality of cycle parking provision in relation to the location; quantity; design, and management of bicycle storage areas
- A reduced overall parking standard and application of a maximum car parking standard of for housing schemes with more than 45 dwellings per hectare net in suburban/urban locations served by public transport or close to town centres or employment areas.
- A requirement that cycling is fully integrated into the design and operation of all new apartment schemes.

Regional Guidance

At a regional level, the NPF 2040 recommends the development of RSEs and MASPs. The RSEs are to ensure better co-ordination in planning and development policy matters across local authority boundaries. As part of the RSE process, MASPs are required to provide more specific focus on city and metropolitan issues. Further detail on the RSE and MASP process is provided below.

Regional Spatial & Economic Strategies (RSES)

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 RSEs for their regions.

The RSE is a link between the NPF, the City and County Development Plans and the 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.

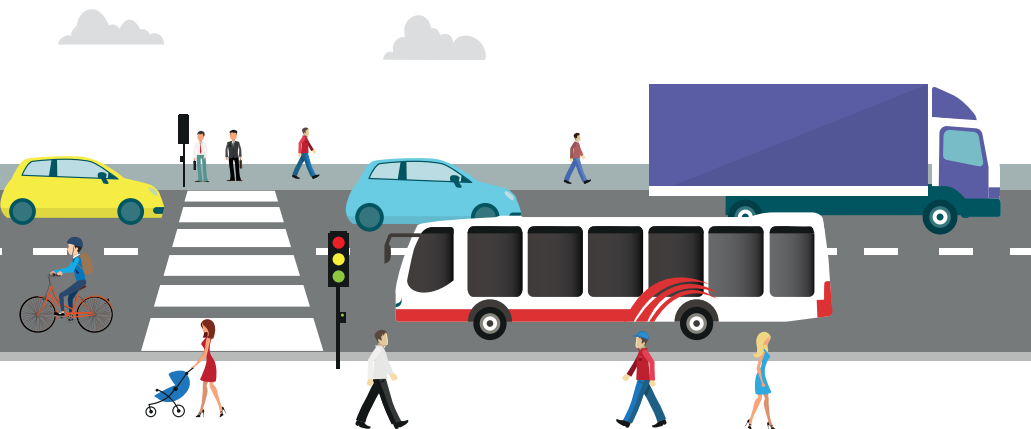
The draft RSE was available for public consultation from December 2018 to March 2019. The Strategy is expected to be available later in 2019.

Metropolitan Area Strategic Plan (MASP)

RSEs will be developed to co-ordinate local authority plans at a strategic and regional assembly level. However, 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 RSE process, the NPF stipulates that, arrangements will be put in place to enable the preparation of five coordinated MASPs for the Dublin, Cork, Limerick, Galway and Waterford Metropolitan areas.

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.

The proposals outlined in CMATS informed the draft MASP which was available for public consultation with the RSE. The final Cork MASP is a statutory document and is expected to be adopted later in 2019.



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.

Local Guidance

The third tier in the planning and policy hierarchy is local planning, which involves the planning framework for the implementation of national and regional guidance at the local level. CMATS will inform the future update of Cork City and County development plans. The current development plans are summarised below.

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 Core Strategy sets out a population target of 150,000 and an employment target of 85,577 jobs by 2022. This would represent an increase of 25.8% and 22.3% respectively on the Census 2011 figures.

The plan focuses on improving the quality of life of its inhabitants and cognisant of climate change and the environmental effect of development. The Development Plan also seeks to promote more sustainable modes of travel within the city, noting the importance of aligning land use and transportation.

The Development Plan sets out a vision for Cork City as 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, adapt to climate change and mitigate against flood risk; and
- Protect and expand the green infrastructure of the city.

Cork County Development Plan 2014-2020

This Development Plan sets out an overall strategy for the appropriate planning and sustainable development of Cork County over a 6-year period.

The objective of the plan 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 Core Strategy of the Cork County Development Plan outlines 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:

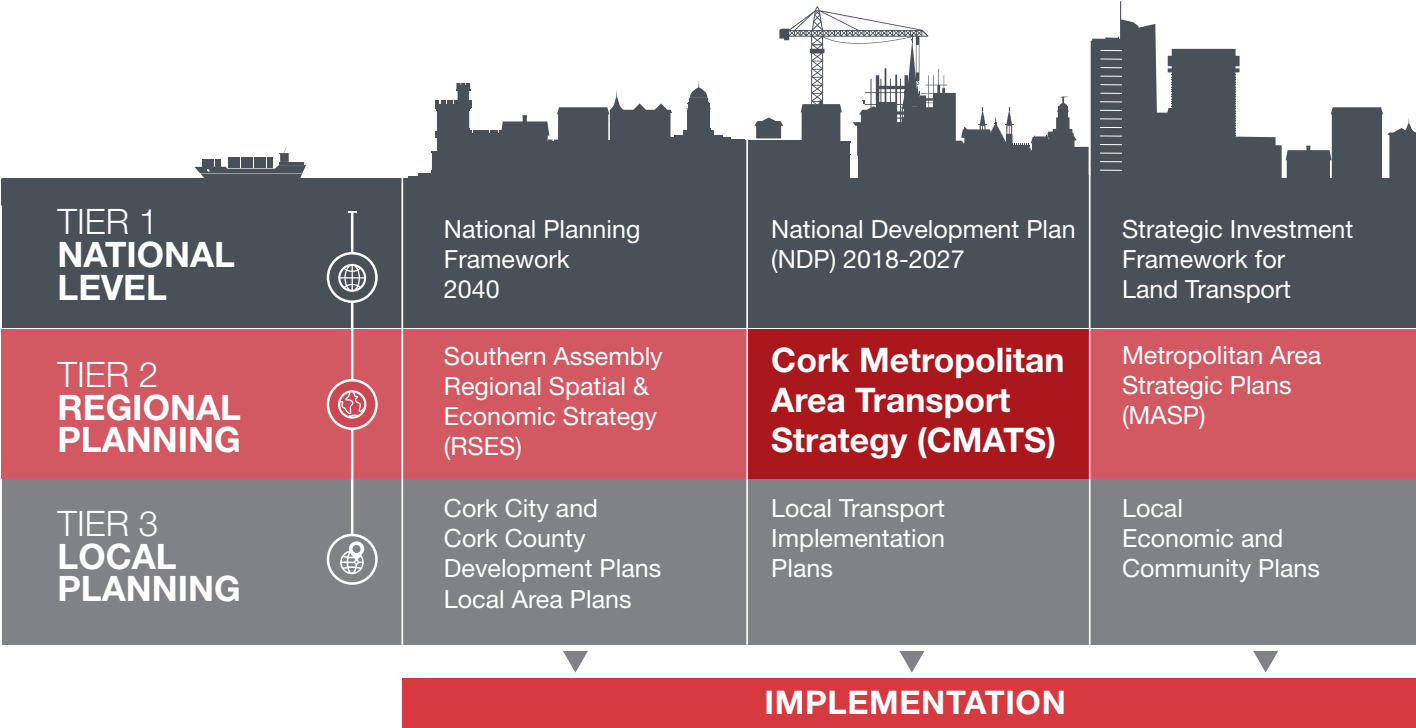
- Promote Metropolitan Cork development as an integrated planning unit to function as a single market area for homes and jobs where there is equality of access for all, through an integrated transport system, to the educational and cultural facilities worthy of a modern and vibrant European City;
- Assist 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;
- Provide an enhanced public transport network linking the City, its environs, the Metropolitan towns and the major centres of employment;

- Maintain the principles of the Metropolitan Cork Greenbelt;
 - 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; 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), Midleton (Water Rock) and Carrigtwohill (North of the Railway), Ballincollig (Maglin), North Environs (Ballyvolane), Glanmire (Dunkettle), Blarney (Stoneview), Monard and Cobh.
- The Core Strategies of both local Authorities are expected to be modified in the relevant areas by 2021.

Summary

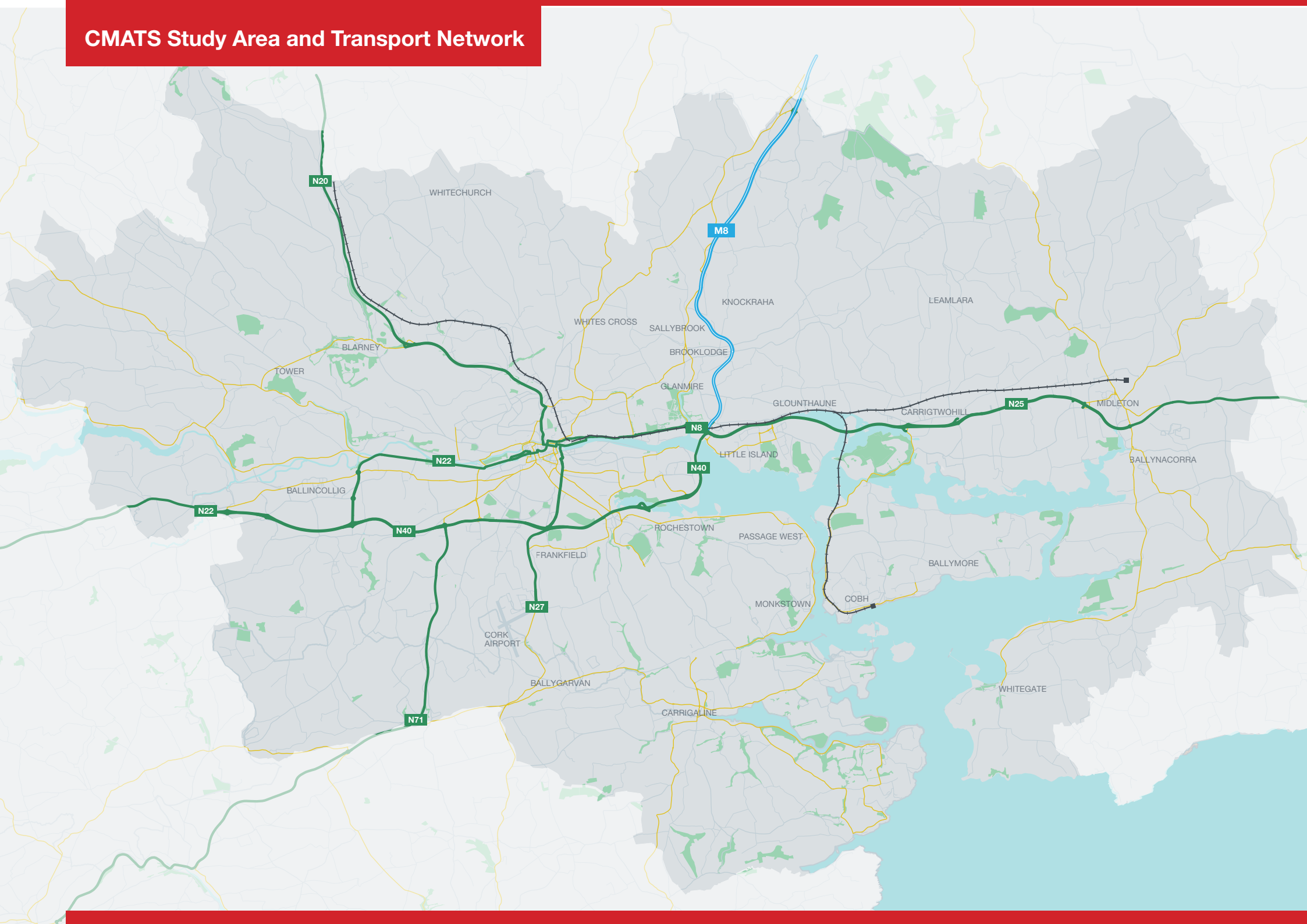
It is evident from the review, that policies have been in place for many years across many sectors, which aim to increase accessibility, promote active travel modes, and seek to reduce car use by a variety of means.

Plans are in place to better integrate land use and transport planning on a national and regional basis. These policies have informed and guided the development of CMATS.





CMATS Study Area and Transport Network



03 EXISTING TRANSPORT CONTEXT

If we continue with present policies, congestion will get worse, transport emissions will continue to grow, economic competitiveness will suffer and quality of life will decline.

Smarter Travel - A Sustainable Transport Future

The first task in the preparation of the Strategy was to undertake an assessment of existing transport conditions. This chapter outlines the current situation and conditions within the CMA in the context of land-use, transport supply and movement patterns.

Study Area

The Cork Metropolitan Area (CMA) was previously defined by the Cork Area Strategic Plan (CASP) and includes Cork City, its suburbs and the towns and rural areas in the immediate hinterland of the City of Cork as a single integrated unit.

The CMA covers 820km² and has a population of just over 305,000, as determined from the Census 2016.

The Study Area encompasses Cork Harbour and the Port of Cork. The River Lee runs directly from the harbour through the centre of the metropolitan area splitting into two channels which form the centre island of Cork City. The area is characterised by hilly, steep terrain to the north and south of the city.

Cork City is home to two large third level education centres, University College Cork (UCC) and Cork Institute of Technology (CIT), which are both located in the southwest of the city as is Cork University Hospital (CUH). The area is served by Cork Airport, located in the south of the city, Intercity and suburban rail services, and regional and city bus services. These are discussed in further detail in this chapter.

There are significant employment centres within the current City Council administrative area particularly in Mahon, the City Centre, Model Farm Road and southwest of the City at Cork University Hospital and Wilton. Outside the City, there are notable employment clusters at Cork Airport, along the N25 corridor and within Ringaskiddy, Ballincollig and Little Island.

Existing CMA Movement Context

There is in the region of 820,000 trips originating within the CMA on average each weekday (over 24 hours) with the morning peak and late afternoon being the busiest periods. The late afternoon trip intensity is due to the prominence of education trips as well as retail and leisure trip purposes.

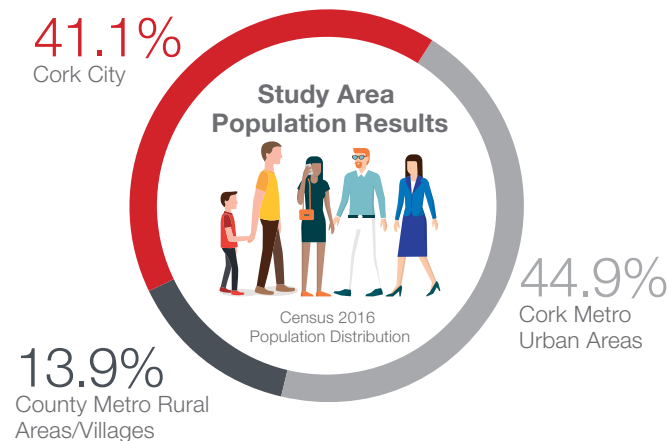
Trips to places of education make up the highest percentage of trips in the morning peak - representing 36% of the total. Whilst the volume of commute trips is also significant at 29%, 'other trip' purposes make up a greater proportion of 35%. These trips comprise of shopping, leisure, business and visiting friends or family representing 50% of all trips over the course of the whole day.

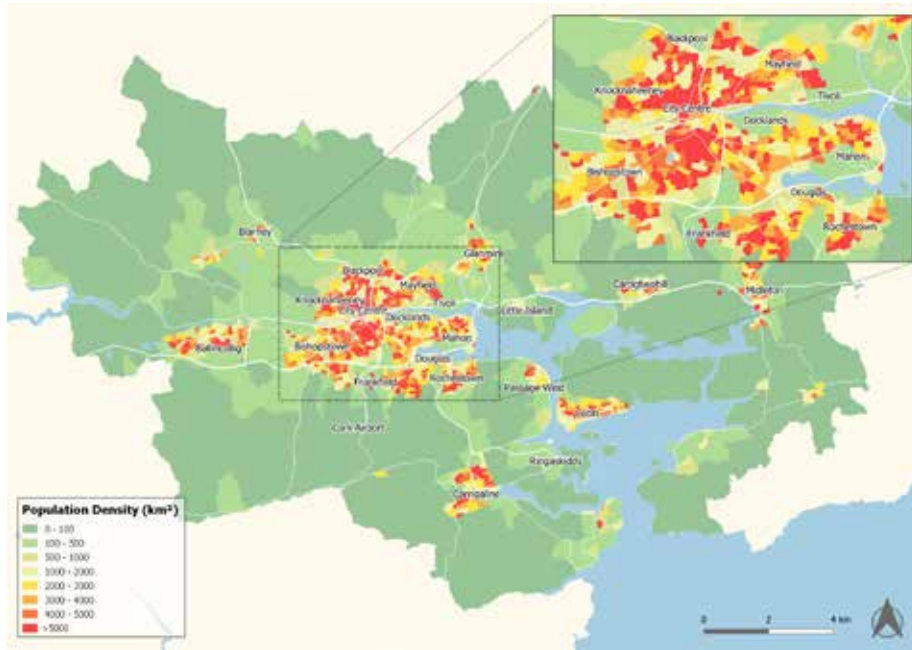
There is a dispersed pattern for journeys to work generally within the Metropolitan area. The private car tends to be used for radial trips into/out of the City as well as for trips on orbital routes between employment centres, such as along the N40.

Existing Development Patterns

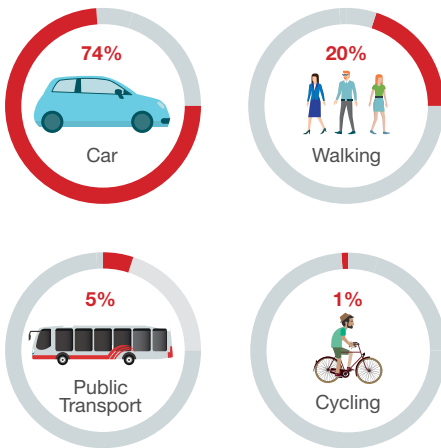
The residential population within the study area is primarily focused in urban areas comprising of Cork City, its environs, and the surrounding settlements. There is a higher residential population within the south of Cork City compared to the north.

The distribution of the population within the south of the City extends further east-west than north-south (roughly 10km east-west from Mahon to Bishopstown and 5km north-south from the City Centre). The most populated area outside the City is within the south Environs including Douglas.





2016 POPULATION DENSITY



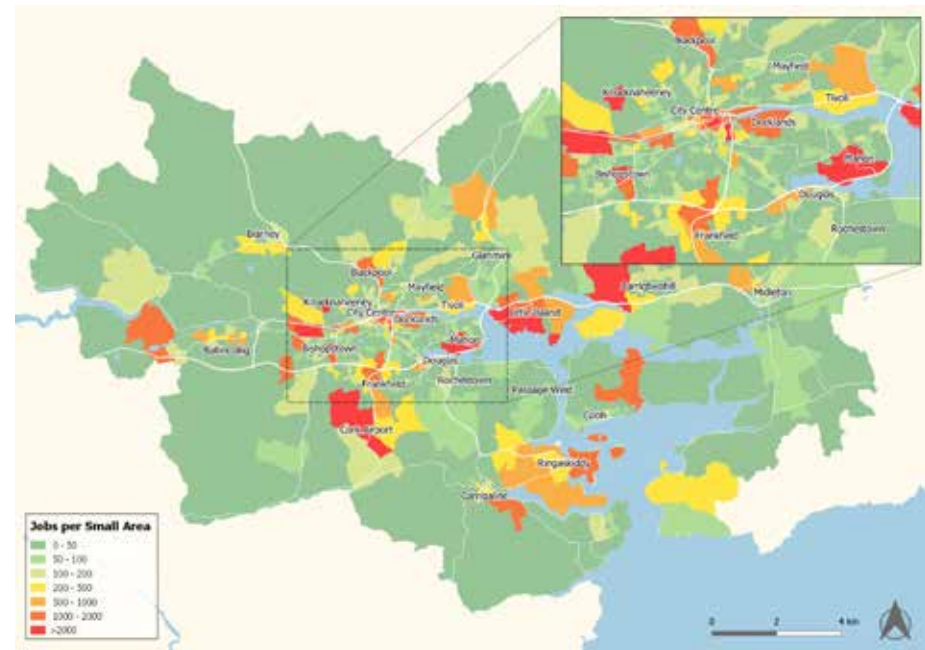
SWRM 24-HOUR MODE SHARE ACROSS THE CMA

CMA Mode Share

The current limitations of the public transport provision in the CMA are reflected in the low mode share for public transport of 5% across the whole day and all trip purposes.

Only 7% of journeys to work in Cork City are undertaken by public transport, whereas across the whole Metropolitan area, the equivalent figure is 3%.

By comparison, walking has a 20% mode share, while the dominant mode is car which is used for 74% of trips throughout the region. Cycling makes up the remainder of trips over the course of the day, with 1% of all trips made by bike.



2016 JOBS PER CSO SMALL AREA

Approximately 86% of trips to work in the Metropolitan area outside of the urban area are by car, with the car mode share reducing to 65% within the City boundary. This reflects the very high rate of car dependency in the non-urban areas of the CMA.

Current Transport Provision

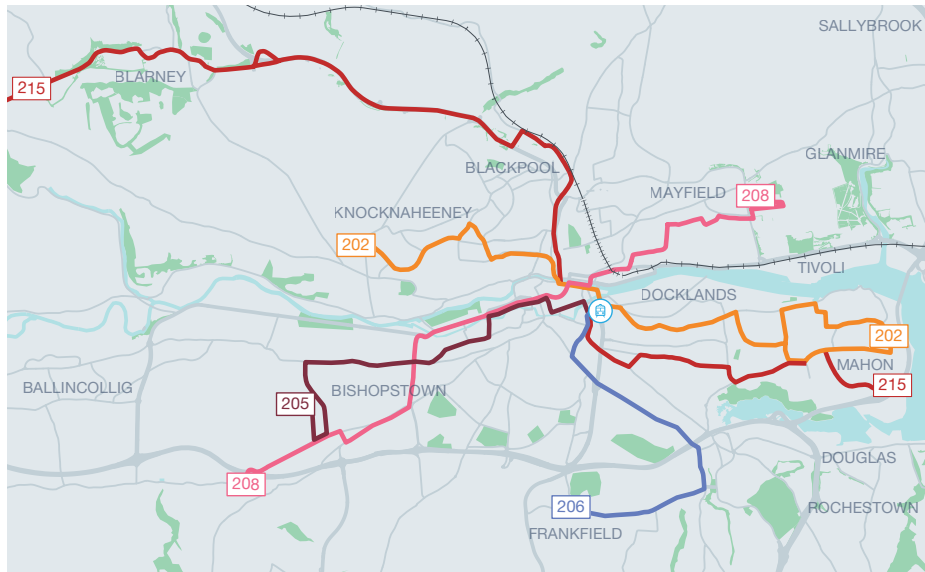
Local and Regional Bus Services

The Cork City network, operated as a State subvented network contracted by the NTA, offers a reasonably extensive coverage of the City. The majority of city bus services operate cross city and radially from the City Centre, with some orbital routes catering for inter-suburban trips and providing connections to both UCC and CIT.

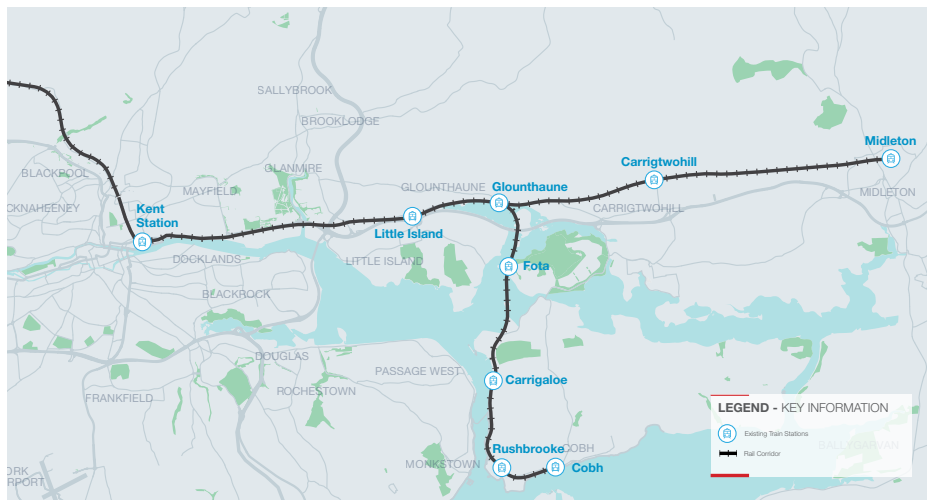
The frequency of services varies across the network and there are only five 'high frequency' routes (generally every 10 to 20 minutes).

There is a higher concentration of frequent bus services in the south of the city compared to the north reflecting the distribution of population. The City network extends beyond the City boundary to serve high populations and employment centres including the South City Environs, Ballincollig, Ringaskiddy and Blarney.

The fare structure has also recently been changed enabling passengers in these areas to avail of the lower cost city fares.



EXISTING HIGH FREQUENCY BUS SERVICES



EXISTING RAIL NETWORK

Within the wider metropolitan area there are regular bus services serving the main settlements, but no orbital services operating across the wider metropolitan area or through the Jack Lynch Tunnel. Longer distance bus services are generally characterised by limited stop coach services operated by Bus Éireann from their Cork City bus station on Parnell Place. There are a limited number of licenced commercial bus services such as the recent Cobh Connects service linking Cork City with Cobh.

Longer distance trips extending beyond the CMA are well served by a variety of commercially licensed bus services. Cork City Centre has an extensive one-way traffic system that has a negative impact on public transport operations as bus routes are separated on inward and outward legs. This can be confusing for infrequent bus passengers and visitors to the City unfamiliar with the city bus network. Certain bus routes are also separated due to restricted road widths.

Rail Network

Cork City is reasonably well connected on the Irish Rail Network offering connections within the CMA to Cobh, Rushbrooke, Carrigaloe, Fota Island, Midleton, Carrigtwohill, Glounthaune and Little Island.

The Cork–Dublin rail line, providing hourly services, is the top performing InterCity line in the country in terms of passenger numbers. Apart from the direct InterCity morning service to Dublin, connections are available at Mallow, Limerick Junction and Heuston Station in Dublin.

All rail services in the CMA operate to and from Kent station. The location of the station and its current access and layout arrangements are not ideal for accessing the City Centre. Way-finding and legibility are poor despite some recent improvements. The one-way traffic system around the station also negatively impacts bus journey times and the attractiveness of rail-bus interchange.

Less than 1% of all goods transported in Ireland are now transported by rail freight. Port of Cork, traditionally one of the biggest generators of rail freight movements, had a rail freight facility at Tivoli serving the Port. However, in recent years the station has become disused and freight movements are now undertaken by road.

Cycle Network

The past five years has seen significant improvements in cycling infrastructure primarily within in the City Centre as part of the roll out of the Cork City Centre Movement Strategy.

Whilst the cycle network is improving, the present network is disjointed and of variable quality. This is particularly the case outside the immediate City Centre where there is currently a lack of quality cycle infrastructure and segregated routes on roads with traffic speeds of over 30kph. The steep topography in parts of the CMA poses a barrier to cycling.

Nonetheless, the success of recent improvements, not least the calls to extend the bike share scheme and use of the cycle network, demonstrate a significant latent demand for cycling as either a primary mode of choice in its own right, or as part of linked trips with public transport.

Pedestrian Network

Walking levels and the quality of the pedestrian environment vary considerably across the CMA. This reflects differing intensities of land use, changing movement and place priorities and community severance caused by physical barriers such as waterways and heavily trafficked vehicular routes. Cork City Centre has a well-established pedestrian network with a generally attractive and walkable environment. Outside of the City Centre, the quality of the pedestrian environment is inconsistent even allowing for changes in topography.

Many of the key arterial walking routes to the City have inconsistent footpath quality and sub-standard widths in some areas particularly at local and neighbourhood centres. Some residential areas including Ballinlough, Ballintemple, Sundays Well and Blackrock lack footways on certain parts of the network and pedestrian priority over local junctions.

Across the CMA, attempts to promote higher and safer levels of walking trips to shops, local services and schools are undermined by a lack of permeability in housing and retail development layouts. The development of community facilities in unsuitable locations that lack supporting pedestrian infrastructure is also an issue.

Cars parked illegally on the footpaths and at dropped kerbs is a recurring problem, reducing sightlines and forcing pedestrians including those with mobility impairments onto the carriageway.

Other barriers to walking and access to public transport for people with disabilities and push chairs, include insufficient crossing times at signalised junctions, street furniture clutter, and a lack of public seating and toilets.

Improving the quality of the pedestrian network and the environment to support safer and higher levels of walking and accessibility to other forms of transport will be a key objective of the Strategy.

Strategic Road Network

The movement of goods and services within the CMA is supported by the strategic road network comprising eight national roads, five of which form part of the TEN-T (Trans European Network - Transport) Core and Comprehensive network.

There is a major reliance on strategic roads such as the N28 (connecting with Ringaskiddy), N27 (connecting with Cork Airport), N40, M8, N25 and N20 for national, regional and local connectivity. Maintaining the capacity of the roads with optimal levels of service is of critical importance for growing the economy of Cork.

There is capacity in parts of the strategic road network but also high volumes of traffic in certain areas, resulting in congestion at some pinch-point locations, including the Dunkettle Interchange and sections of the N40.

Transport Infrastructure Ireland (TII) is progressing the upgrade of the Dunkettle Interchange and has completed a Demand Management Study for the N40 corridor, identifying a number of low cost interventions aimed at improving traffic flow and maintaining capacity.

The CMA lacks a strategic orbital corridor to the north of the city resulting in strategic traffic and Heavy Goods Vehicles (HGVs) from the N20 routing through the City adding to congestion in residential streets and within the City Centre itself.

The enhancement and management of the road network for the movement of strategic traffic will be an important aspect of the CMA's future transport network including measures identified in TII's N40 Demand Management Study

Regional and Local Road Network

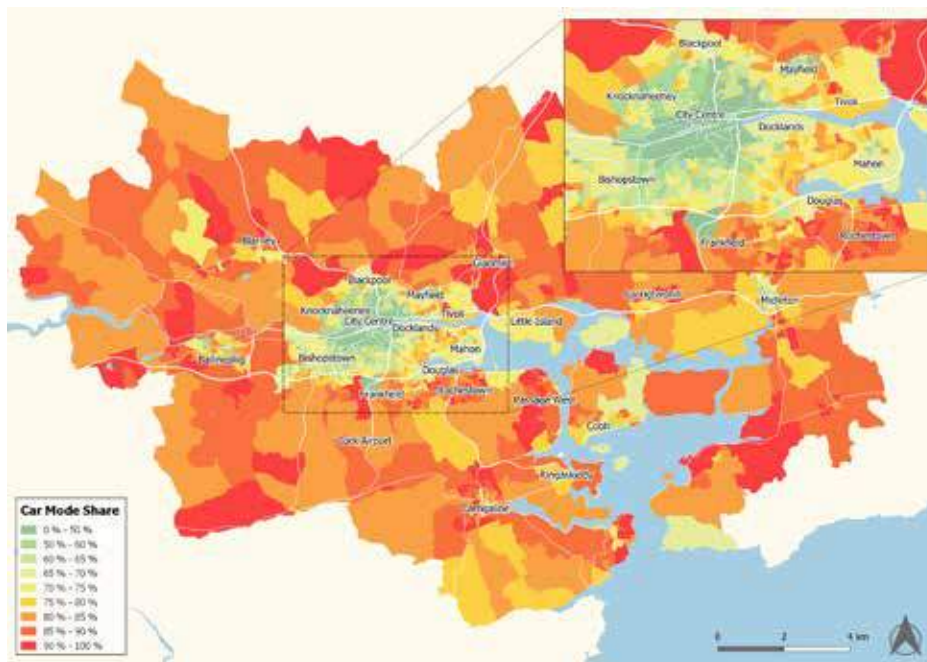
The regional and local road network provides access to local services and links communities. The current local road network has evolved over many years but may be considered unsuitable to facilitate the safe and efficient movement of people and goods in the future. There are very few orbital routes in Cork City resulting in local journeys routing through the City Centre or redistribution to the National Road network for local trips.

Congestion is experienced during peak periods within the City Centre and on radial routes. In many areas, the opportunity to provide additional road capacity is limited and often undesirable in terms of the impact it would have on the quality of the urban realm.

To provide for a better, more efficient and sustainable transport network, **there are a number of key challenges that must be addressed by CMATS.**

Traffic congestion and delays will inevitably rise with future growth if the current dependence within the CMA on the private car is not addressed.

Many parts of the local road network fail to make appropriate provision for pedestrians, cyclists, those with mobility impairments and other vulnerable road users including children. Nowhere is this more apparent than on roads serving recently developed residential areas on the edge of the city's built up area.



2016 CAR MODE SHARE

Summary and key challenges to be addressed within CMATS

Cork's transport network is coming under increasing strain and the existing network will not support the future transport needs of a growing City and Metropolitan area. Cork has a very high mode share for car and unless the attractiveness of alternative modes of transport is enhanced, Metropolitan Cork will continue to have high levels of car dependency, journey delays, congestion and pollution, which all have impacts on quality of life.

To provide for a better, more efficient and sustainable transport network, there are a number of key challenges that must be addressed by CMATS. These include:

- Ensuring that the transport network can support the population, employment and educational growth as envisaged by the NPF 2040;
- Supporting the vibrancy, accessibility and liveability of Cork City Centre and Metropolitan centres;
- Ensuring that future development is located and designed in a fashion that prioritises walking, cycling and public transport and reduces the need to travel by car;
- Improving the public transport offering through higher frequency services operating with greater speed, directness and journey time reliability;
- Balancing 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;

- Increasing residential density levels on the basis of centrality within centres and public transport accessibility;
- Accommodating a greater number of trips more efficiently by maximising connectivity by walking, cycling and public transport to major employment and education centres;
- Supplementing 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;
- Maintaining an effective strategic road network in the CMA that is integrated with the wider national road network to cater for strategic through trips and the movement of goods especially serving the expanding Port of Cork facilities at Ringaskiddy;
- Maximising existing transport infrastructure including the InterCity and Commuter rail network and Cork Airport;
- Overcoming physical constraints for transport presented by the challenging topography and physical features in Cork;
- Improving transport infrastructure in a cost-efficient manner that will support the case for funding and investment;
- Achieving efficiency and resilience within Cork City Metropolitan Area's transport network;
- Improving the safety of road users in Cork through the reduction in traffic collisions and incidents;
- Prioritising active modes (walking and cycling) to improve health benefits; and
- Reducing the impact of transport on the environment through targeted measures to limit the negative impact of air and noise emissions.



04 CMATS 2040 LAND USE

Supporting ambitious growth targets to enable Cork to grow by at least 50% to 2040 and to enhance its significant potential to become a city of scale.

National Planning Framework 2040

In February 2018, the Government published the NPF 2040. This document sets out the planning policy framework for the next 22 years. The publication of the NPF provides a major new policy emphasis on renewing and developing existing settlements, rather than continual expansion and sprawl of cities and towns into the countryside, at the expense of town centres and smaller villages.

National Growth

The NPF 2040 document estimates that the population of Ireland will increase by approximately 1 million people by 2040 with a requirement of an additional 600,000 jobs and a minimum of 500,000 additional homes.

The NPF recognises the role that Cork and the other regional cities of Limerick, Galway and Waterford have to play in providing a counter-weight to Dublin and assigned a minimum population growth forecast of 50-60% to each regional city.

Regional Growth

The NPF 2040 will be translated at a regional level, metropolitan and local level through the production of the RSES, MASPs and the forthcoming Development Plans and Local Area Plans of both Cork City Council and Cork County Council.

As discussed in Chapter 2, the draft RSES and MASP was open for consultation between December 2018 and March 2019. These provided population projections to the horizon year of 2031 for both Cork City and Suburbs (283,669) and the Rest of the Cork Metropolitan Area (125,157). In the absence of a definitive land use distribution for the CMA, assumptions have been made considering the NPF National Planning Objectives and the statutory development plans of both Cork local authorities.

Additionally, the Strategy transport measures have been developed to be scalable, flexible and have adequate reserve capacity to allow for any changes in growth that may arise from the RSES and MASP processes to be catered for by the proposed strategy network.

NPF National Policy Objectives

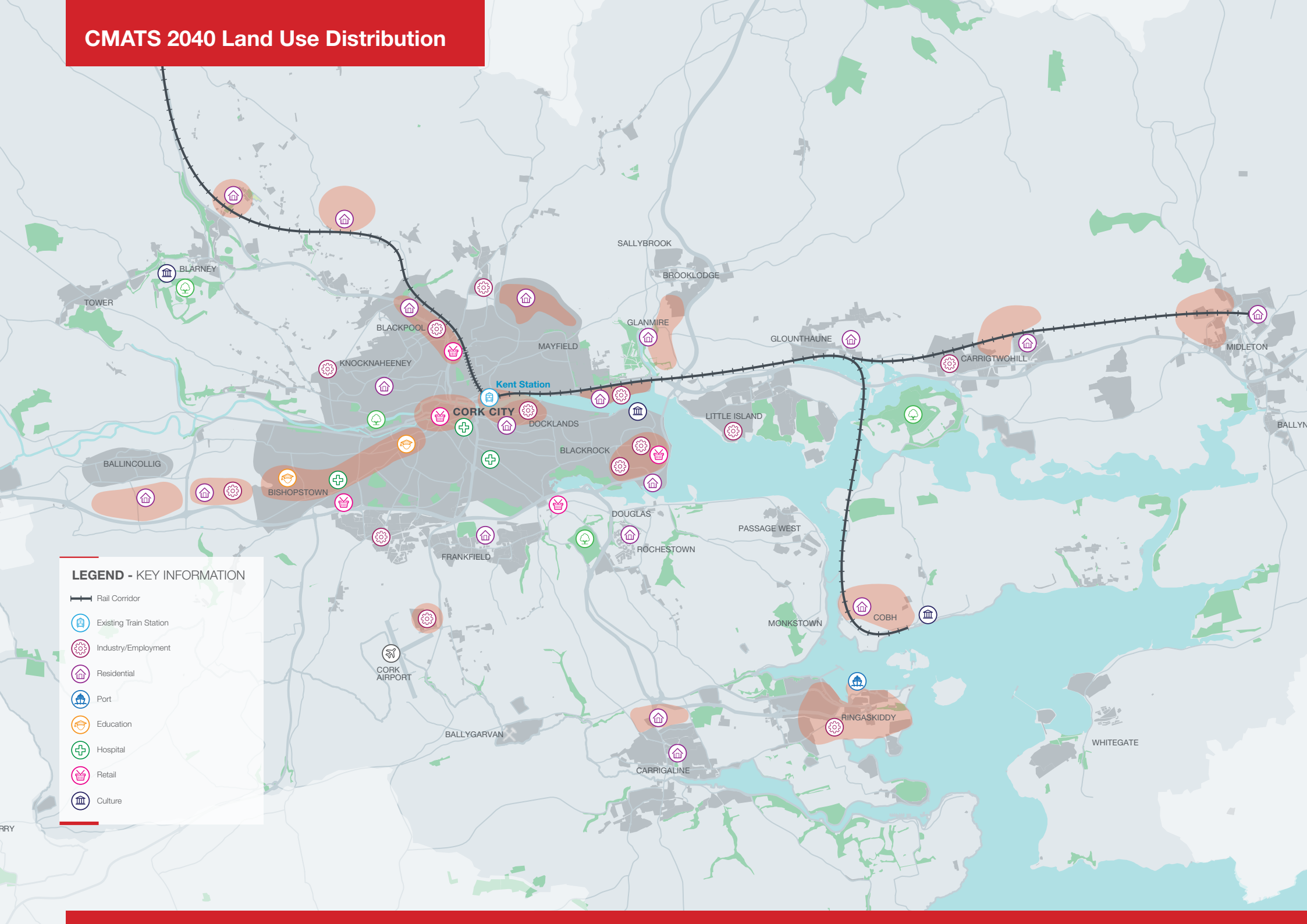
The various policies within the NPF are structured under National Policy Objectives (NPOs). NPOs were developed following extensive analysis and consultation and set a new way forward for regional and local planning and sustainable development policy in Ireland. The NPOs have been used as the basis to develop the land-use growth targets and distribution of growth for CMATS, along with the core strategies within the Cork City and Cork County Development Plans.

Some of the key NPOs relevant to the development of CMATS include:

- NPO 1b – Southern Region population growth of between 340,000-380,000 to 2040 i.e. a target population of almost 2 million;
- NPO 1c – 225,000 additional people in employment in the Southern Region i.e. 880,000 in total;
- NPO 2a – A target of half (50%) of future population and employment growth will be focused in the existing five cities and their suburbs;
 - This translates into a targeted population growth for the Cork City and Suburbs (NPO8) of between 105,000 and 125,000 above 2016 levels.
- NPO 3 – The NPF sets a target for at least 40% of all new housing to be delivered nationally within the existing built-up areas of cities, towns and villages on infill and/or brownfield sites;



CMATS 2040 Land Use Distribution



- This translates to 50% of the growth to be accommodated within the built-up footprints of the Cork City and Suburbs and 30% of the growth in surrounding settlements within their existing built-up footprints.
- NPO 9 – In each Regional Assembly area, settlements outside of ‘City and Suburbs’ may be identified for significant (i.e. 30% or more) rates of population growth at regional and local planning stages;
- The NPF makes specific reference to the fact that these settlements may lie within the commuter catchment of the city or areas that have potential for high levels of travel by sustainable modes;
- For Cork, this would align with settlements along the existing rail line and future high capacity transport corridors.
- NPO 68 – NPF outlines that Metropolitan Area Strategic Plans (MASPs) may enable up to 20% of the phased population growth targeted in the principal City and Suburban area, to be accommodated in the wider metropolitan area i.e. outside the city and suburbs, in addition to growth identified for the Metropolitan area. The NPF states that this should be subject to:
 - Any relocated growth being in the form of compact development, such as infill or a sustainable urban extension; and
 - Any relocated growth being served by high capacity public transport and/or related to significant employment provision.
- NPO 69 – Statutory arrangements between spatial planning and transport planning in the Greater Dublin Area will be extended to other cities.

CMATS Land-Use Outcome

CMATS supports the delivery of the 2040 population growth target for the Cork Metropolitan Area of 172,000 persons (125,000 for Cork City and 47,000 for the County Metropolitan area and attendant jobs and education growth.

Metropolitan Cork will be a national driver of population growth and economic activity over the lifetime of CMATS. To support the compact growth aspiration of the NPF 2040, Cork City will become the focus for significant regeneration opportunities at brownfield locations such as the Cork Docklands, Blackpool and Tivoli.

In terms of employment and education, CMATS prioritises development along its identified high capacity public transport corridors. Increased employment growth along the proposed Ballincollig-City Centre-Docklands-Mahon high capacity public transport corridor is envisaged while also serving the significant education, health and research cluster at University College Cork, Cork Institute of Technology and Cork University Hospital.

The development of the proposed Science and Innovation Park at Curraheen is supported to further increase demand for the corridor.

Across the wider Metropolitan area, clusters of employment, population, education, health and institutional services will be located mainly within or at the edge of existing urban settlements such as Glanmire, Ballincollig and Cobh.

However, in line with Cork County Council’s nine designated Urban Expansion Areas, there will be limited greenfield development along identified high capacity transport corridors such as Water-rock and Carrigtwohill North (on the Midleton-Cork rail line) and Monard and Stoneview (on the Mallow-Cork rail line).

The Strategy supports the growth of strategic employment growth areas located along the Mallow and Midleton/Cobh rail lines at Blackpool, Tivoli, Little Island, Carrigtwohill, Midleton and Cobh. Little Island is identified as a key strategic employment area with significant capacity potential.

A number of strategic employment sites exist within the CMA at Cork City Centre, Docklands, Ringaskiddy and Cork International Airport. They have significant comparative advantages and their continued growth is supported in this Strategy.

Ringaskiddy and Marino Point are identified for employment growth through the facilitation of the planned re-development of the Docklands with relocation of industrial uses and major port facilities. Cork International Airport has significant capacity for growth as a gateway for business and tourism through transatlantic flights routes, proximity to London and continental Europe.

CMATS Land-Use Priorities

This Strategy is confronting a historical legacy which saw significant levels of growth and migration of land uses to suburban and peri-urban fringe locations, typically at lower densities and unconnected to existing and planned public transport services.

To ensure the success of this Strategy, the planning policy frameworks and implementation measures of both Cork City Council and Cork County Council must look to target higher development densities in areas where opportunities exist for sustainable transport provision and in a manner that better aligns the provision of transport with demand.

CMATS will provide this opportunity to integrate new development at appropriate densities with high capacity public transport infrastructure in conjunction with more attractive walking and cycling networks and associated public realm improvements.

This has the potential double benefit of extending the catchment of sustainable modes to more people and places and improving the viability of future investment in public transport by attracting higher demand.

Guided by the principles of the NPF, the following strategy development priorities for the distribution of land-use have been identified for the CMA:

- Ensure effective integration between transport and land-use through the delivery of Public Transport Orientated Development (PTOD). PTOD is consolidated development that provides higher density, a balanced mixed of land uses and compact settlements that reduce trip distances and are of a magnitude that supports the viability of high capacity public transport.
- The application of this principle in Cork will result in a high-intensity, mix of uses being directed to locations at existing or planned stations along the suburban and light rail lines and along the high frequency bus corridors;
- The density of future residential and employment developments such as the Tivoli Docks and existing, centrally located and accessible settlements including Cork City and the City Docks will be increased. Higher densities contribute to a more compact urban footprint that brings more people closer to destinations and public transport services with easy walking and cycling distance;

- Deliver consolidated development in a manner that can avail of existing transport infrastructure, nearby amenities and facilities in the short term to deliver a critical mass of growth in population and employment which can support the transition and sequencing of investment to higher capacity public transport infrastructure and services;
- Land use policies that minimise the requirement to travel longer distances, particularly during peak times, by encouraging mixed-use development. This should include ensuring areas are developed in tandem with the delivery of schools and other amenities to maximise the use of more sustainable modes of transport such as walking and cycling; and
- Land use policies that support the provision and design of new development in locations, layouts and at densities which prioritise walking and cycling and enable the efficient provision of public transport services.







05 STRATEGY DEVELOPMENT & OUTCOMES

Key future growth enabler for Cork: The development of a much enhanced Citywide public transport system.

National Planning Framework 2040

Accommodating the scale of projected growth within the CMA will mean increasing pressure on the existing transport network. This Strategy has been developed and assessed in the context of the following notional scenarios:

- A Business as Usual case that incorporates committed investment in the road network only;
- A second scenario that substantially increases Public Transport Investment; and
- A third scenario, building on the second, that represents the optimal outcome for Land-Use and Sustainable Transport Integration.

Scenario Testing - Transport Choices for Cork

Choice 1 - 'Business as Usual' Scenario

Choice 1 is the 'Business As Usual' scenario. This scenario is based on the historic trend that investment in transport infrastructure in the CMA will continue to be predominantly focussed on adding road capacity to accommodate the growth in travel demand. Committed improvements such as the upgrade to the Dunkettle Interchange and M28 will be realised. However, investment in public transport, walking and cycling networks will remain static. Land use policy and implementation within the CMA will remain relatively unrestricted and dispersed.

The likely outcome will be that the CMA region will continue to grow as a highly car dependent region. The additional capacity in roads will attract more car trips in response. Long-distance commuting will increase as house-holders will be attracted to cheaper land and housing stock in more dispersed settlements.

Traffic congestion will increase on the strategic and local network as longer distance commuters continue to access employment set in dispersed locations throughout the CMA. Congestion on the network will increase costs to business and undermine the region's appeal for inward investment. Pollution and emissions will continue to rise, undermining the region's quality of life and liveability and the competitive advantage of Cork City and Metropolitan town centres.

The case for public transport investment will become increasingly marginalised as the increasingly low density and sprawled distribution of land-use within the region will undermine the business case to provide it. Existing services will be subject to increased delays due to congestion further undermining its viability. Walking and cycling levels may increase in urban areas as a means of avoiding congestion; however, the environment will become less pleasant.

Choice 2 - Improvements to Public Transport and Sustainable Travel

Choice 2 is to prioritise investment in providing a comprehensive public transport network in line with the Strategy proposals. New railway stations will be opened on the existing suburban rail corridor and frequencies on existing routes will be increased. Bus services throughout the CMA will be enhanced.

Bus priority measures will be adopted, significantly improving bus journey time and reliability. Improvements to the pedestrian environment will improve accessibility to local services and the wider public transport network. The cycling network proposed in the Cork Metropolitan Cycle Network Plan will be delivered in full.

The likely outcome is that public transport will become more attractive relative to car travel for a significant number of journeys. The modal shift away from car will result in reduced congestion, 'freeing-up' some capacity on the strategic road network enabling more efficient movement of freight. Reduced emissions and the accompanying health benefits associated with the creation of a safe, accessible, active travel network will reduce health costs to businesses in the region and State, as a result of reductions in absenteeism.



Public health and quality of life will be further improved as emissions from private transport continues to fall and health benefits increase due to the delivery of a comprehensive walking and cycling network, with associated increases in their mode share.

Choice 3 - Better Integration of Land Use with Public Transport and Sustainable Travel

Choice 3 involves better integration of land-use with public and sustainable transport. This scenario builds upon Choice 2 and represents the optimal case of full integration of land-use development with sustainable transport provision.

Within the city and metropolitan towns, the majority of residential, employment and educational uses would be directed to locations that are highly accessible by walking and cycling networks and high frequency public transport corridors. Land use policies and implementation will largely restrict one-off housing and under-planned greenfield development. Growth will be consolidated and intensified around suburban rail, light rail and high frequency bus corridors.

The likely outcomes of this scenario is that the demand for car travel will reduce as people live closer to their workplaces and places of study. Longer distance trips across the CMA will be undertaken, in greater numbers, by public transport and will be supported by linked cycling and walking infrastructure. The business case for continued investment in public transport infrastructure will be enhanced as patronage continues to grow.

The sustainable transport measures proposed later in this report have been developed in line with Choice 3, which aligns with the overarching national, regional and local policy objectives for sustainable transport provision in Ireland.

Developing the Strategy

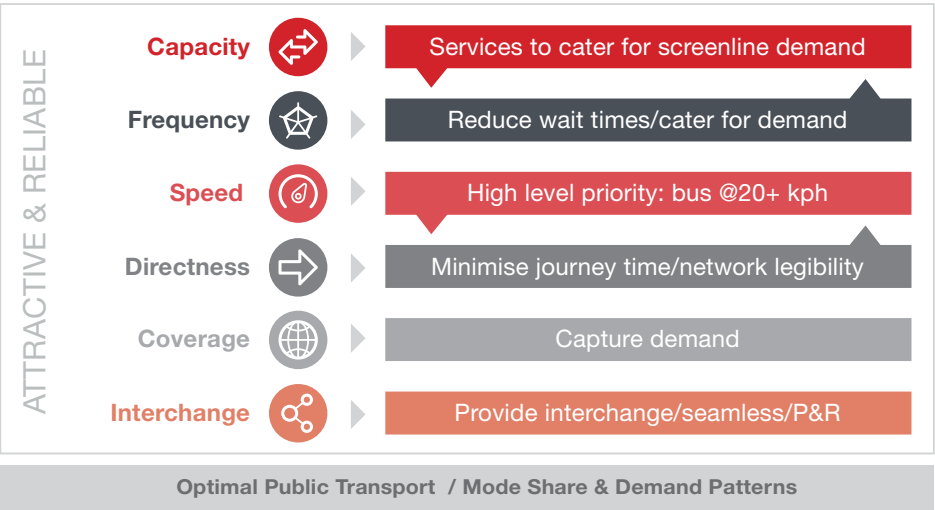
The approach applied in developing and assessing the proposed CMATS 2040 transport measures was as follows:

- Reviewing and establishing relevant policy and guidance;
- Establishing the baseline transport conditions;
- Identifying key challenges to be addressed, in consultation with key stakeholders;
- Developing network options based on guiding principles;
- Testing the transport network options with future land use scenarios including optimisation of land use to align with high performing transport corridors;
- Identification of preferred transport strategy; and
- Public consultation and subsequent finalisation of the Strategy.

The provision of a significantly enhanced public transport network within the CMA was a key priority for the Strategy.

To help in the development and assessment of options, a series of key guiding principles were set out that are inherent in all successful public transport networks:

- Provision of sufficient capacity to cater for demand;
- Suitable frequency to attract and service demand;
- High average speeds to offer a quality service and reliability of journey times;
- Direct services to minimise journey times and increase network legibility;
- High level of network coverage, to ensure the wider CMA population has access to high quality public transport services; and
- Providing seamless Interchange between modes to enhance accessibility and integration. The adoption of the principles outlined above will result in an attractive, public transport service that produces a competitive and in many cases, a more attractive journey time and experience to that of the private car.



CMATS will deliver a package of measures that will **improve all modes of transport in a balanced and integrated manner** to bring about better combined results.

Option Development and Assessment Methodology

To develop options for the future transport network in the CMA, it was important to understand the potential “upper-limit” demand for travel by public transport within each corridor.

For this reason, an “idealised” public transport network model run was undertaken, using the NTA’s South West Regional Model (SWRM).

The “idealised” public transport network was developed based on the six core principles outlined above. The “Idealised” network scenario facilitated an unconstrained analysis of the potential public transport demand within key transport corridors in the CMA.

The individual Strategy transport options could then be developed, refined and optimised along each corridor.

This process is shown below as an iterative process linking the development of the Strategy Options with the pattern of the land use forecasts, which were then assessed using the NTA SWRM. The outcome of this process was the identification of an Emerging Preferred Strategy, with a transport network and recommended land use optimisation that optimises utility of the proposed transport interventions, in achieving the CMATS objectives.

The optimisation of land use and transport proposals will also inform the phasing and implementation plan for the strategy.

Network Options Development Hierarchy

The following lists the order in which the transport network has been developed. Initial stages focused on the development of the public transport network as the demand analysis has shown that the public transport mode has the greatest potential for improvement.

The road, cycling and walking networks were subsequently developed. The overall order of development was:

- Public Transport Network;
- Development of Indicative Overall Public Transport Network;
- Strategic Public Transport Network;
- Corridor Specific Public Transport Network Options;
- Road Network;
- Cycling Network; and
- Walking Network.

Public Transport Network

Development of Indicative Overall Public Transport Network

In order to shape the transport network for the CMA an indicative high level public transport network was developed that provides a context for the overarching transport options and proposals. It identified key strategic public transport routes and corridors, and identified the supporting public transport requirements for the remaining areas of the CMA.

Once a high level indicative network was identified, more detailed analysis and specific considerations for the public transport network were considered at a corridor level.

Strategic Public Transport Network

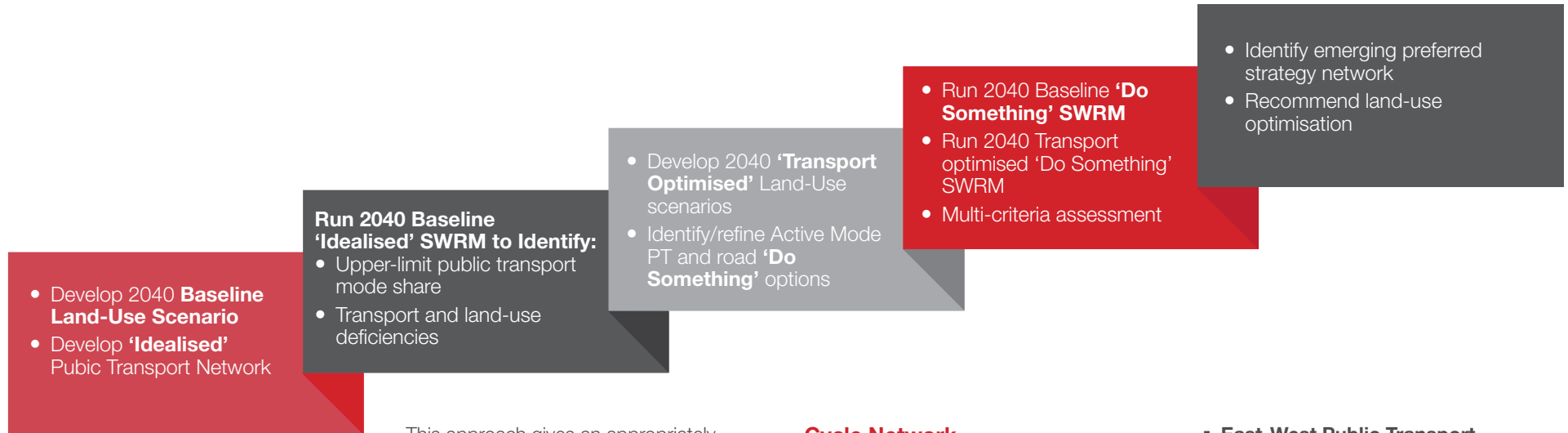
Taking the indicative public transport network as a starting point, the identified strategic corridors were considered in greater detail. This included the scale and type of public transport requirement on the strategic corridors, the route alignment, the level of priority required, the frequency of service, as well as the level of coverage provided by the strategy public transport proposals.

Corridor Specific Public Transport Network Options

Within each specific corridor, the public transport proposals were developed based on the identified public transport demand from the ‘idealised’ network analysis. Further details on the methodology employed can be found in the “Demand Analysis Report” and “Transport Options and Network Development Report”.

The identification of the appropriate infrastructure to service the demand levels, was based on a typical range of public transport capacities, in passengers per hour per direction (pax/hr/dir), that can be achieved by various public transport modes.

It has been shown that bus based public transport can cater for capacities of up to 2,000pax/hr/dir, Bus Rapid Transit (BRT) can cater for capacities between 1,000 and 4,000 pax/hr/dir, Light Rail (LRT) can cater for capacities between 3,000 and 7,000pax/hr/dir, with Metro and Heavy Rail catering for capacities above 5,000pax/hr/dir.



This approach gives an appropriately scaled public transport network that has the flexibility and scalability to adapt to changes in travel demand levels and distribution.

Based on the radial demand and the orbital demand, the proposed route, service type, service frequency and level of priority was developed for each corridor.

Road Network

A review of the road network demand, which includes road network travel demand from beyond the CMA, was undertaken to determine the requirement for road network improvements. National, regional and city road networks were considered.

A review of currently proposed road network infrastructure was undertaken and aligned to policy and demand needs within the CMA. The road network was also reviewed with the aim of aligning road network provision with public transport, walking and cycling provision.

Cycle Network.

The cycle network development focused on the Cork Cycle Network Plan 2017, which was reviewed to ensure integration and alignment with the transport proposals within this strategy.

Walking Network

The walking network focused on the Cork City Walking Strategy 2013 – 2018. The walking strategy was reviewed to ensure integration and alignment with the proposals for the public transport, cycling and road modes proposed in the strategy.

Public Transport Network

Based on the analysis of demand the future public transport network structure will have a number of components that will best provide for future public transport demand within the CMA:

- **Rail Network:** Strategic public transport services along the existing rail lines;

- **East-West Public Transport Corridor:** A strategic east-west public transport corridor from Mahon to Ballincollig via the City Centre;
- **Core Bus Network:** A comprehensive network of high frequency bus services providing radial services to other corridors and orbital services across the network;
- **Public Transport Integration:** provision for interchange opportunities together with information provision and revised fare structures; and
- **Supporting Measures:** Further measures to support the delivery of the Strategy, including parking management, Park and Ride, demand management, mobility management, behavioural change programmes, etc.



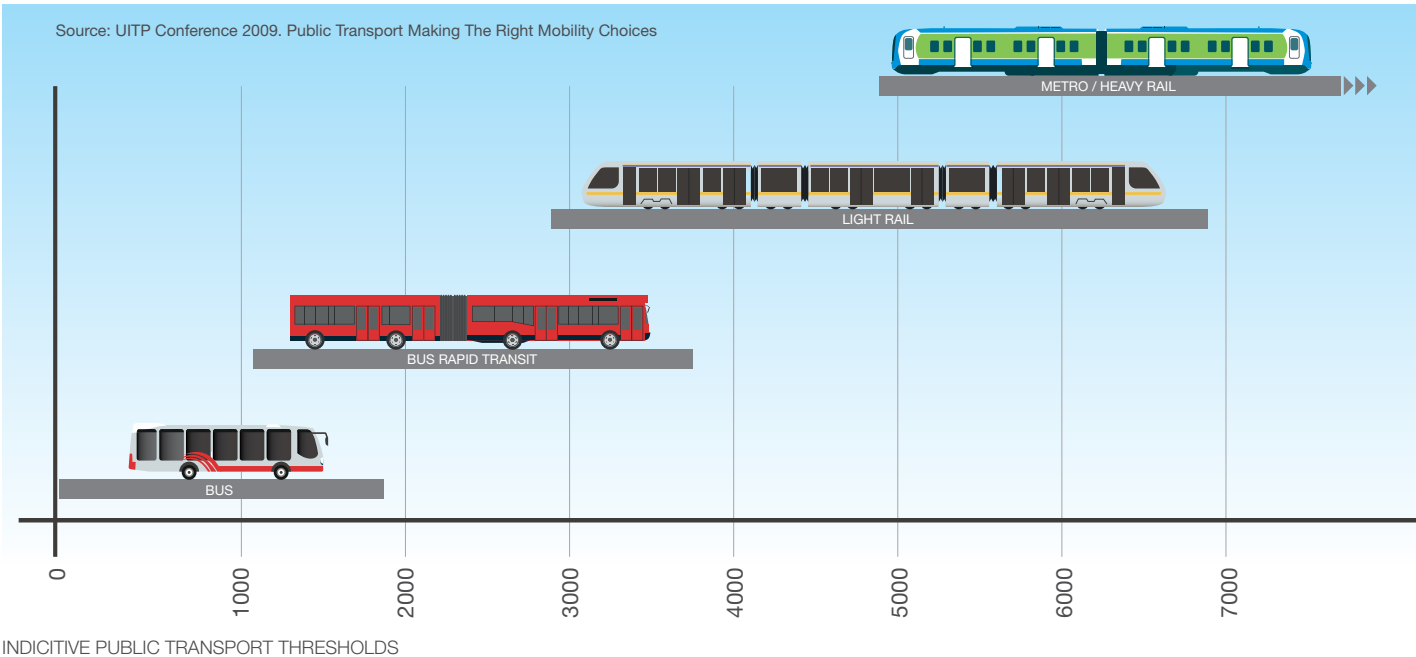
The network approach as outlined above can best meet the current and proposed land use trend in the CMA and would represent an integrated public transport network offering residents of, and visitors to, the CMA access to high quality services and the ability to conveniently access more destinations than a single high capacity line or sticking with the existing network.

The following chapters will outline in detail the required infrastructure and supporting measures needed to deliver the proposed CMATS outcomes. CMATS was developed in an iterative manner to provide a transport network to underpin the ambitious population and employment growth envisaged for Cork under the NPF to 2040 and beyond.

Strategy Outcomes

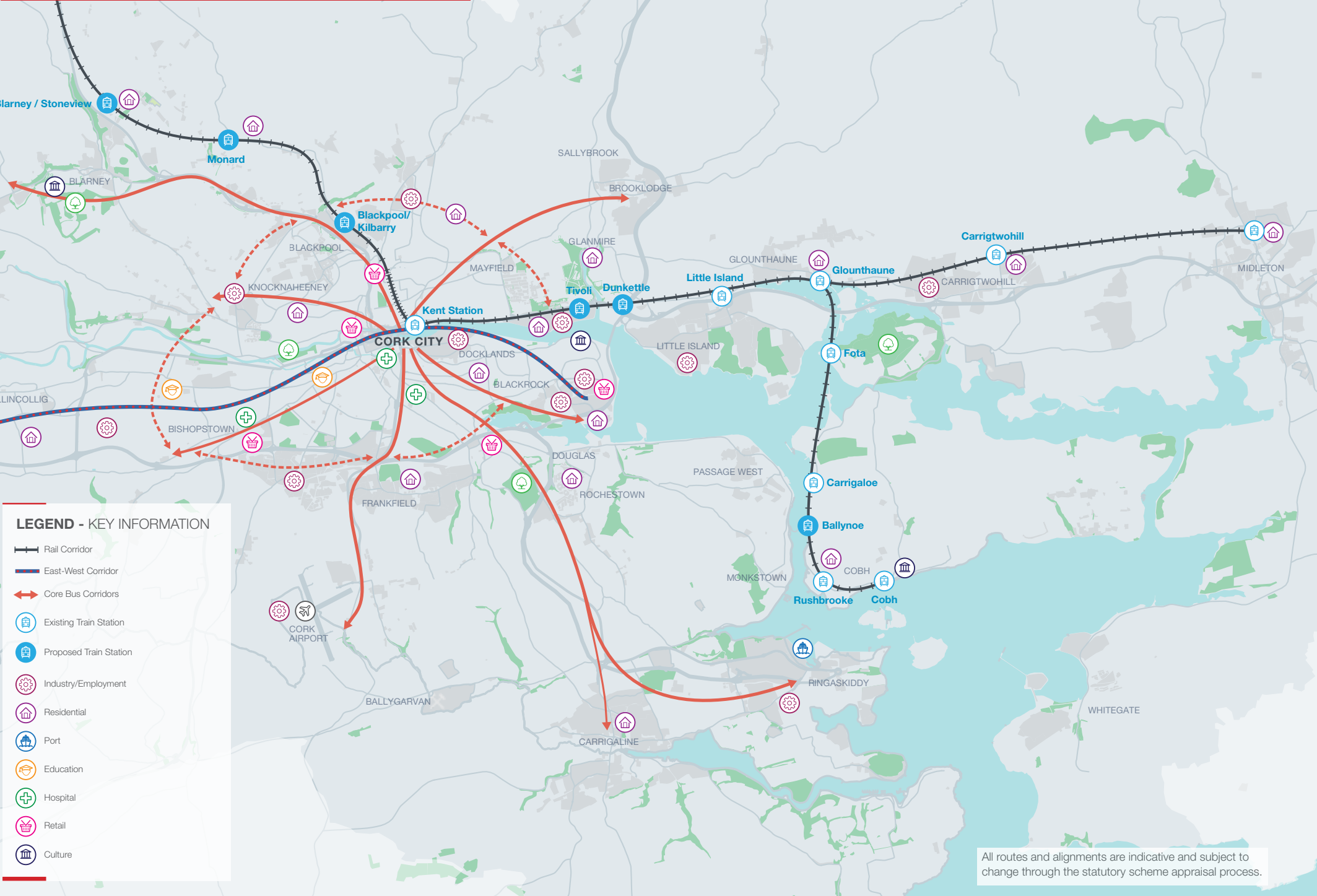
The Strategy goes a significant way to address the following social, economic and environmental challenges:

- Provides a scalable transport network framework to better manage the increased demand for travel resulting from significant population growth;
- Prioritises public transport, walking and cycling in urban areas across the Cork Metropolitan Area;
- Supports social inclusion objectives through the provision of a more equitable transport system and wider public transport accessibility to more areas of deprivation;
- Provides a safer transport network where investment is priority focussed and data led;
- Promotes better health by incorporating more active travel and incidental exercise in the transport network, either as walking and cycling trips in their own right or as part of linked trips with public transport;
- Reduces transport-related emissions through a provision of a cleaner, greener public transport fleet and reduction in private car use; and
- Provides a robust economic case for transport investment in the Cork Metropolitan Area producing a significant benefit cost ratio of approximately 2.5:1.





Indicative Public Transport Network







WALKING



90m
annual
walking trips



63% increase
in walking trips between
2011 and 2040



250% increase
in footfall on
St. Patrick's Street



Additional **24,000**
daily car trips potentially
transferable to walking



>200km
new and upgraded
footpaths



Estimated **€50m**
investment including
elements of BusConnects



Enhanced
Wayfinding
System



140km
of Greenways



69,000
walking trips made in
the **AM peak period**



Age-Friendly
Town Centres



Safer
Routes to school



20 mins of activity a day
reduces the risk of heart disease,
type 2 diabetes and depression
by **at least 20%**



Improved
accessibility
to public transport





06 WALKING

Cork will be the most walkable city in Ireland, where **people choose to walk as the safe, healthy and attractive alternative to private transport.**

Cork City Walking Strategy 2013-2018

All journeys begin and end by walking irrespective of other modes used. A range of high quality, public realm improvements have been implemented in recent years to include pedestrian priority areas, wider footways and improved crossing facilities in Cork City Centre and Ballincollig Town Centre in particular. However, the quality of the pedestrian environment is inconsistent across the CMA, particularly upon approaches to centres of activity even allowing for changes in topography. A range of barriers to walking is evident including street clutter, insufficient footpath widths, insufficient crossing opportunities, pavement parking and a lack of pedestrian priority across local junctions.

Cork, with its relatively compact city centre and reasonably self-sufficient metropolitan towns has significant potential to enhance the pedestrian experience.

A successful outcome for the Strategy will result in greater levels of safer walking trips, which can be undertaken more often, either a part of a linked trip with other modes or as a trip in its own right. The public realm will need to adapt in many cases to support a growing population and a wider range of all ages, abilities and needs.

Key outcomes for walking in the Strategy include:

- An increase in walking levels for work, education and leisure across the CMA, particularly for short journeys (less than 2-3km);
- Addressing the safety issues and barriers that prevent citizens and visitors from walking more in Cork;
- Supporting a high quality and fully accessible environment for all abilities and ages by continuing to develop a safe, legible and attractive public realm;
- Facilitate walking's role as part of linked trips, particularly with rail and bus journeys; and
- Promote a far higher standard of urban design in new developments, and in highway design, in a fashion that consistently prioritises pedestrian movement and safety over that of the private car.

Walking Network Improvements

The Cork Walking Strategy 2013-2018 provides a clear vision and implementation plan for increasing the modal share of walking for commuting within Cork City's suburbs.

The Walking Strategy proposed the development of a walking network that connects neighbourhoods, origins and destinations, increases the permeability of the built environment, and creates an attractive, safe environment that prompts more people choosing to walk, resulting in a healthier population, a more attractive and sustainable city, and stronger communities.

Much of the focus areas for improvement identified in the Walking Strategy remain relevant and have been adapted here for the purposes of the wider metropolitan area and the longer-term horizon of CMATS:

- Network Development of the primary pedestrian network throughout the city;
- Neighbourhood Infrastructure to enhance neighbourhoods and walking safety;
- Behavioural Change initiatives that promote walking;
- Collaboration between stakeholders;
- Upgrade walking provision in tandem with BusConnects corridor improvements, light rail stations development and Cycle Network Implementation; and
- Upgrading pedestrian improvements in tandem with those proposed for cycling including minimising conflicts in shared spaces areas such as greenways.

Commuter Walking Routes

Within Cork City, the Walking Strategy identified that commuter walking levels vary significantly between the existing six administrative wards, with high levels of walking experienced in the south and south-west and lower levels in the northern and eastern wards of the city.

The South East has the lowest levels of commuter walking, partly attributable to severance caused by the road network, (in particular the N27) and gaps in the walking network from the Marina. Creating a continuous safe, legible and permeable waterfront pedestrian route is a priority. Enhancement of crossing facilities at Albert Quay, Albert Road and Marina Terrace will be required as part of the Docklands development. Further detail on proposed sustainable transport linkages between the Cork City Docks, Tivoli Docks and the City Centre will be developed through their respective Local Area Plan processes.

The Walking Strategy identified a number of strategic walking routes that coincided where the City's employment and education areas overlap. These routes were linked with public transport services to identify areas where investment in pedestrian infrastructure would deliver most benefits to modal shift. The Strategic Routes remain relevant over the lifetime of CMATS particularly in context of planned housing growth on Cork's Northside in the short to medium term, and identified regeneration in other areas.

These Strategic Routes, including their purpose and upgrading proposals, are set out below:

- **Dublin Hill** – to support the planned regeneration of Blackpool and opening of the Blackpool/Kilbarry rail station;
- **Ballyhooly Road** – to support on-going regeneration in the Ballyvolane UEA area and access to increased bus services;
- **Old Youghal Road and Colmcille Avenue** - Upgrade the pedestrian route through Mayfield and connecting into St. Lukes, Dillon's Cross and to the City;
- **Lower Glanmire Road** – to support planned regeneration of Tivoli Docks including new rail station and greenway route to Cork City;
- **Blackrock Road** - Upgrade the pedestrian route along both sides of Blackrock Road to serve the communities on traffic calming, local junction treatment and footpath widening at Ballintemple village;
- **Ringmahon Road** - Upgrade the pedestrian loop at Mahon that serves the local community, links to the amenity routes and also to the Skehard Road towards Douglas;
- **Skehard Road** - provide a strong east-west link from Mahon to both the City Centre and Douglas via the Boreenmanna Road and Well Road respectively;
- **Douglas Road** – provide missing footpaths to support access to substantially increased public transport frequencies;
- **South Douglas Road** – to support existing public transport provision and potential windfall sites;





- **Poluaduff Road** – to support increased public transport provision and local Park and Ride;
- **Togher Road** – to support improved bus provision and housing regeneration at Togher/ Deanrock;
- **Curraheen Road** - Complete the western part of the Curraheen Road to facilitate links between the city, bus, light rail and the proposed Science and Technology Park;
- **Model Farm Road** – improve links between schools, employment centres, CIT and bus / future light rail;
- **Carraigrohan Road** - Upgrade pedestrian facilities as an alternative to the Lee Fields amenity route, to include vehicular speed reduction, segregated cycle facilities and crossing points;
- **Western Road** - traffic calming and speed management to support link between planned expansion of UCC, student accommodation and to create a more inviting link to the city;
- **Strawberry Hill** - Upgrade the pedestrian facility of Strawberry Hill, including opportunities to improve accessibility and safety so as to strengthen the appeal of this link to Sunday's Well and the Mardyke;
- **Blarney Street** - Upgrade the pedestrian infrastructure to provide safe walking facilities, in conjunction with vehicular speed reduction measures to support redevelopment of key sites at Shanakiel within walking distance of the city and the Apple plant;
- **Pophams Road** – tackling pavement parking and improving access to Blackpool shopping centre and employment;
- **Harbour View Road/ Kilmore Road** – further upgrade of pedestrian environment including pedestrian crossings on desire lines, improved layout of development and removal of street clutter to support the on-going regeneration of Knocknaheeny and access to local employment and education sites including Apple and St Mary's Hospital; and
- **Fair Hill** - improvements to the crossing facilities on minor junctions.

Footway widening on these radial routes would serve a dual purpose in terms of improving the pedestrian comfort levels and a self-enforcing reduction in vehicular speeds as many of the carriageways would require further narrowing to facilitate footpath upgrades.

City Centre Accessibility

Pedestrian priority interventions

Pedestrian access to the city centre island is inhibited in some areas by a limited number of pedestrian bridges, substandard crossing facilities and high volumes of vehicular traffic and speeds on approach roads.

The City Centre Movement Strategy has an over-arching objective to prioritise pedestrian, cyclist and public transport movement and reduce through vehicular traffic volumes and speeds.

The Strategy outlines a number of pedestrian interventions including raised speed tables, kerb build outs and zebra crossings many of which are currently being implemented on a phased basis. St Patrick's Street will be closed on a time-restricted basis to private vehicles to facilitate pedestrians, cyclists and public transport users from August 2018.

The Walking Strategy additionally identified a number of 'Gateways' for pedestrian upgrades. These include improvements to the pedestrian environment at the North City/Shandon area and South Terrace. The Evergreen Gateway should be prioritised in light of the growing visitor centres of Elizabeth Fort and Nano Nagle Place.

These Gateway areas lie within a 20-minute walking catchment of the City Centre and will be prioritised for public realm improvements. Consideration should be given to the feasibility of providing diagonal or 'X' crossings at key entry points to the city centre island where pedestrian volumes warrant further intervention.

Consideration of pedestrian comfort levels including an assessment of footway widths, street clutter and an upgrade to the public lighting in these areas will be required to support the planned increase in walking over the lifetime of the Strategy.

Metropolitan Town Centres and Urban Expansion Areas

Within the Metropolitan areas, UAEs are subject to the development of Masterplans by Cork County Council. Areas targeted for pedestrian priority improvements should include the town centres themselves, their adjoining residential areas and schools.

Given the high level of out-commuting experienced in the Metropolitan towns, the enhancement of walking routes to stations on the suburban rail network, and the design and layout of residential development, will be key to promoting safer and higher walking levels as part of linked trips.

New local road links will be provided in some areas to support access to planned UAEs at Ballyvolane, Water Rock, Ballynoe, Blarney/Stoneview and Ballincollig and the planned Monard Strategic Development Zone.

The development of these areas in predominantly greenfield sites offer the opportunity to integrate high quality and pedestrian (and cycling) environment at the outset.

To support sustainable travel, proposed new carriageway layouts and junction geometries will be assessed against Design Manual for Urban Roads and Streets (DMURS) standards and principles to ensure consistency in quality.

District and Neighbourhood Walking Network

The Walking Strategy further identified a series of district and neighbourhood centres of which local improvements to the network and provision of local services within a 20-minute walking catchment should be targeted to support local walking trips and the need to travel longer distances.

These include the southern section of the Cork Docks area, Ballinlough and Beamount and the growing cluster of student accommodation at the Lee Fields.

Age Friendly Town Centres

Changes to age-profiles of the CMA will require that the public realm and transport network will need to adapt to consider the needs of older people, those with mobility, visual or hearing impairments and those with buggies. These include provision of attractive public seating areas particularly within shopping areas and mid-points between residential areas and town centres.

Innovative solutions including providing publicly-accessible toilets, addressing site-specific concerns and enforcement of illegal parking on footpaths will help address some common barriers to walking. Regular audits with a variety of stakeholder groups representing older people, pedestrian groups and those with disabilities are envisaged to identify and address site-specific issues.

Further 'walkability' improvements are envisaged over the lifetime of the Transport Strategy. These include further re-allocation of road space in favour of pedestrians in the city and town centres; quayside areas; matching crossing facilities with pedestrian desire lines; and re-timing of signals to reduce pedestrian wait times. Access between the city centre, Kent Station and the Parnell Place Bus Station will be enhanced through the provision of traffic-free bridges and pedestrian friendly upgrades to the existing walking network.

Improvement in Walking Routes to Schools

There are high levels of car usage for relatively short trips to places of education, particularly for primary schools across the CMA. Walking will become a more attractive choice through the implementation of safe, legible, pleasant walking routes and improvements to the pedestrian and cyclist environment within the immediate vicinity of the school. These could include best practice examples such as the EU-funded 'School Streets' projects in Edinburgh and Hackney, and 'Walking Buses' from designated drop-off areas. Further detail is provided in the 'Supporting Measures' chapter.



EXAMPLE OF WALKING, PUBLIC TRANSPORT AND URBAN REALM IMPROVEMENTS IN DOUGLAS VILLAGE



Wayfinding

Lack of awareness of routes and distances to destinations is often quoted as barrier to walking. Much of Cork's existing way-finding signage system consists of finger posts, that are inconsistently applied, often damaged and primarily aimed at visitors.

An integrated map-based system along the lines of the Legible London system is proposed to provide a wider range of users with a better understanding of the surrounding area, highlighting accurate distances and times to destinations and encourage users to choose their own walking route to their destination.

Improving Permeability

Provide a permeable street network is a key component of supporting more accessible, walkable and cycle friendly environments. However, much of the residential development layout across the CMA in recent decades has tended to favour impermeable, cul-de-sac layouts leading to circuitous routes to local services, schools and public transport stops.

Quality permeability measures and traffic management measures including Home Zones, DIY Streets and traffic filters to restrict rat-running by vehicles and facilitating street play, should be considered in relation to all future developments.

Opportunities to improve permeability to existing developed areas should be sought in conjunction with the implementation of the public transport, pedestrian and cycle network enhancements provided for within CMATS including:

- Provision of direct, high-quality pedestrian connections to high capacity public transport corridors, bus stops and major walking destinations;
- Requiring quality design and pedestrian accessibility audits in planning applications for new residential areas;
- Provision of pedestrian and cycle crossings to link areas that are separated by roads or other physical barriers including the use of countdown signals at appropriate crossings; and
- Planning and design that ensures accessibility for persons with mobility challenges.

The NTA's Permeability Best Practice Guide is available to assist local authorities and other organisations in tackling the issues that impact on permeability providing a basis for addressing the legacy of severance in Irish urban areas.

Local Amenity Routes

The Walking Strategy is proposed to enhance the primary pedestrian network by increasing the permeability to existing and proposed amenity routes by better integrating them into strategic walking routes. Many of these are located in areas immediately adjacent to rivers and are proposed as Greenways in the Cycle Network Plan and include areas north of Ballincollig town centre, areas near the Old Passage line and the Lee Fields.

Minimising conflict between pedestrians and cyclists will become a more pressing concern as the popularity of these areas increase. Where full separation between pedestrian and cyclist movement is not possible, site-specific interventions including traffic calming of adjacent residential streets, low level bicycle rumble strips and considerate walking and cycling campaigns to reduce conflict may be appropriate.



CYCLING



19.5m
annual
cycling trips



Additional **56,000**
daily car trips potentially
transferable to cycling



13,000
cycling trips made in the **AM peak**
period easing congestion



200km
Primary
Cycle Network



150km
Secondary
Cycle Network



60km
Inter-Urban
Cycle Network



140km
Greenway
Network



Expansion
of Bicycle Sharing
Systems



20 mins of activity a day
reduces the risk of heart disease,
type 2 diabetes and some cancers
by at least 20%



Enhanced End-of-Trip
facilities



positive impact
on mental health



Strategy cost estimate
is approximately
€230m
(+BusConnects
cycle elements)

07 CYCLING

The vision for 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.

Cork Metropolitan Cycle Network Plan 2017

Cycling is a low cost, sustainable and growing mode of transport in the Cork Metropolitan Area. The NDP 2018-2027 commits to the delivery of walking and cycling networks for all of Ireland's cities. Translating this at a regional level, the Cork Cycling Network Plan for the CMA and surrounding towns was published in 2017 and forms the basis for much of this chapter.

Additional cycle links have been proposed to align with the CMATS proposed public transport networks including BusConnects and new orbital link roads. These upgraded routes will be characterised by high quality facilities designed to National Cycle Manual standards and in many cases, full or light segregation from other modes. Local traffic calming, junction treatments and lower speed limits will be required in some instances.

Other supporting infrastructure measures to further develop a cycling culture in Cork will include the further roll out of bike share schemes including consideration of dockless bikes, shower and changing facilities, and a significant uplift in residential, visitor and workplace cycle parking.

Cork Metropolitan Cycle Network Plan 2017

The 2017 Metropolitan Cycle Plan is the starting point for the CMATS Cycle Network. The 2017 Plan was devised to increase cycling mode share from its present low base, provide a clear plan for the development of the cycling network to encourage greater levels of cycling trips to work, school, recreation and leisure. The routes outlined in the 2017 Network Plan have largely been retained and updated to include new primary routes. These include future high-quality, segregated routes developed and integrated into the design and development of the Northern Distributor Road and Southern Distributor Road and a new link from Dunkettle to Little Island.

The proposed network was developed on the basis of all of the following:

- Transport and land use proposals set out in the policies and plans for the area;
- Assessment of existing cycling infrastructure within the area;
- Guidelines set out in the National Cycle Manual;
- Agreed targets for mode share; and
- Detailed assessment of travel demand within the area using outputs from the cycling model.

Key priorities for development of the Cycle Network Plan are as follows:

- Designating a coherent network of east-west and north-south cycle routes across the area which will provide access to all major trip generators;
- The first priority in terms of access will be employment areas and third level education followed by schools. These priorities have been established to support proposed modal shift targets. Cycle links to new development areas have also been prioritised;
- Providing the highest possible Level of Service on identified corridors of high demand;
- Identifying and maximising opportunities for high quality greenways;
- Responding to feedback from key stakeholders and the public.

Based on the recommendations within the National Cycle Manual a number of different infrastructure types are proposed at various locations within the network, including:

- Cycle Lanes: Incorporates a dedicated space adjacent to the kerb or car parking and can take the form of mandatory or advisory cycle lanes;
- Mixed Streets: Suitable in low traffic environments where the cyclist shares the road space with motorists;

- Cycling and Bus Lanes: Cycle lanes can be provided alongside the bus lane or cyclists can cycle with the buses within the bus lane;
- Cycle Tracks: Cycle tracks are different from cycle lanes in that they are physically segregated from motorised traffic in some way whether by a barrier or through a level change; and
- Cycle Trails or Greenways: Roads and paths through green areas and parks that are segregated from vehicular roads.

Primary Cycle Network

Primary routes have been designated as such because they experience the highest level of demand. Primary routes are typically direct and provide medium-long radial connections to key destinations across the CMA. These routes are supplemented by secondary and feeder routes which may provide access to residential catchments. Some key primary cycle routes to be improved within the CMA include:

- Segregated routes along the City Docks waterfront areas including the EuroVelo Route 1 from Cork City Centre to Tivoli and Little Island;
- Sallybrook/Glanmire - City Centre via Lower Glanmire Road (see below);
- Model Farm Road to Glasheen Road;
- Old Youghal Road;
- Kinsale Road – Airport;
- Douglas Road;
- Skehard Road;
- Station Road, Carrigtwohill;
- Northern Distributor Road; and
- Southern Distributor Road.

Primary routes are depicted in red on the network map. In some cases, these will be shared with dedicated bus lanes where carriageways are too narrow to accommodate segregated infrastructure.

Secondary Cycle Network

The secondary route network provides connections from residential areas and areas of employment to the primary Network. They comprise of a combination of off-road cycle routes, cycle lanes, shared bus and cycle lanes and traffic-calmed roads. They often run parallel to primary routes, providing an alternative link. Some key secondary routes to be improved include:

- Evergreen Street/Abbey Street/ Douglas Street;
- Lower Pouladuff Road to Togher Road;
- Lee Road and Inniscarra Road; and
- Dublin Hill to Ballyhooly Road.

Secondary routes are depicted in blue on the network map.

Greenway Cycle Network

Greenway networks comprise of traffic free or low-trafficked routes and typically comprise of re-purposed derelict railway lines, routes through parks or alongside rivers. Access to greenways can be supported through filtered permeability from residential or other built up areas. Some key indicative areas for greenways* include:

- A proposed east-west 'Lee to Sea' greenway incorporating the Lee Fields, city quays, the Marina and the Old Passage railway line;

- A Greenway linking City-Tivoli-Glanmire-Little Island- Carrigtwohill and Midleton (Part of the EuroVelo 1 route) with a potential extension to Youghal via the old railway line;
- A route following the Tramore River including Douglas, Tramore Valley Park and Togher;
- Passage West to Carrigaline;
- Curraheen River Greenway;
- Old Bandon/Kinsale Railway incorporating the Chetwynd Viaduct (below);
- Blarney Greenway Route;
- A route between Carrigrohane Road and Tower; and
- Midleton-Ballinacurra- Whitegate*

Additional greenways and/inter-urban routes to those outlined above, may be investigated subject to changes in the proposed population and employment distribution as part of the proposed periodical 5 year CMATS review.

It is noted that that both local authorities are pursuing funding to complete a bridge over the N40 to link Frankfield & Grange with the Tramore Valley Park.

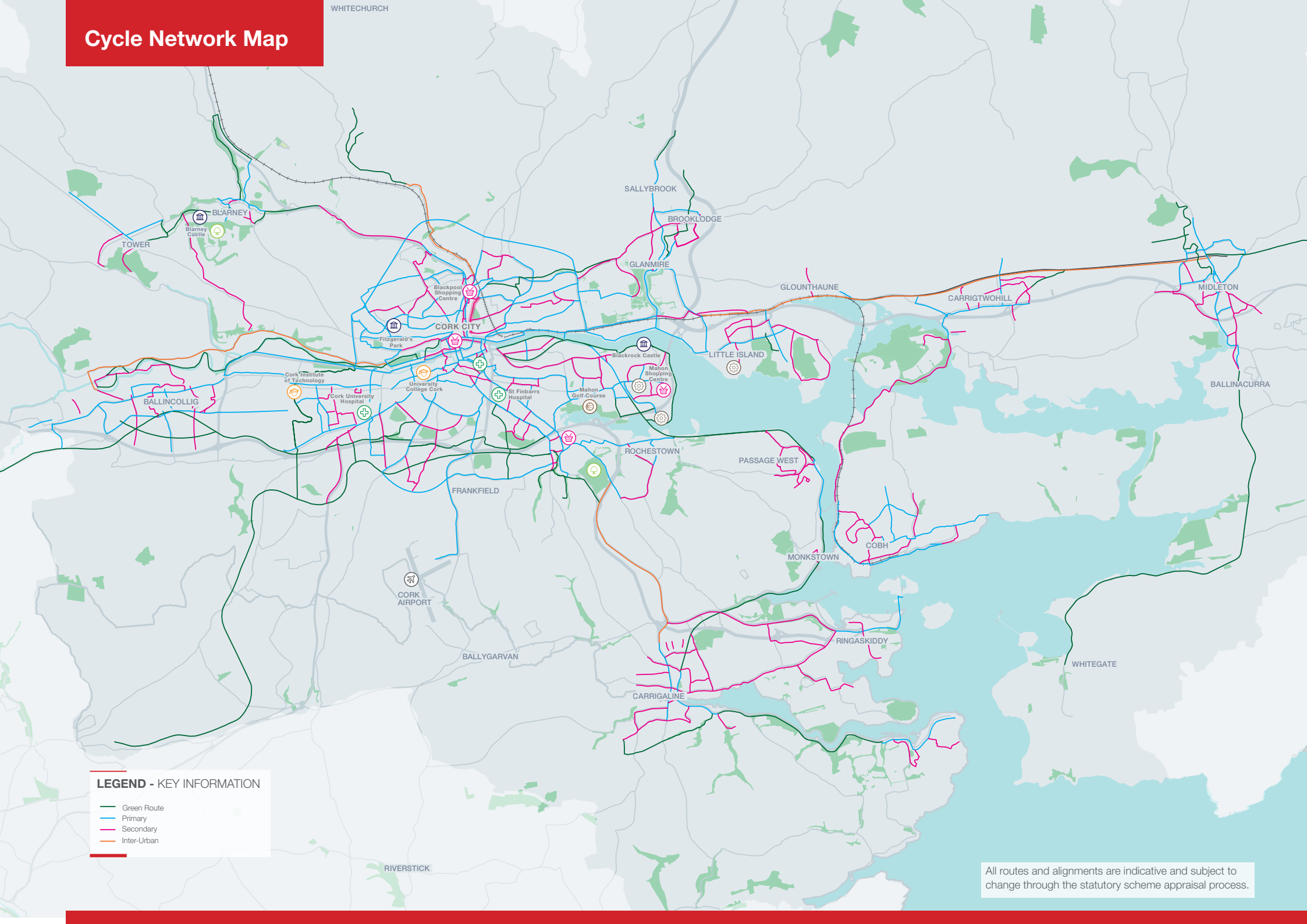
A bridge would support onward connections to the City and Docklands area and will need to be supported by appropriate local traffic calming, dedicated infrastructure measures on the South Douglas Road and potentially, permeability measures through the St Finbarr's Hospital site.

* Subject to compliance with EU habitats and/or Birds Directives



EXAMPLE OF GREENWAY AT CHETWYND VIADUCT

Cycle Network Map



LEGEND - KEY INFORMATION

- Green Route
- Primary
- Secondary
- Inter-Urban

All routes and alignments are indicative and subject to change through the statutory scheme appraisal process.



Inter-urban Network

The Inter-Urban cycle route proposals consists of links between the Metropolitan towns and the Cork City network. These routes will comprise of low trafficked roads and in some cases, off-road facilities along a road verge as is common in Denmark, Germany and Holland. Key parts of the inter-urban network include:

- Middleton to Dunkettle / Lower Glanmire Road (parallel to rail corridor);
- Blackpool to Monard (via Old Mallow Road);
- Utilisation of the N28 from Ringaskiddy to Cork City once M28 motorway is in place; and
- Ballincollig Regional Park to Sundays Well (Via Lee Road).

Feeder Cycle Network

Feeder routes connect with primary and secondary routes and greenways and are typically cycle-friendly advisory routes where traffic calming and management measures allow cyclists and motorists to mix safely. Some key feeder connections from identified in the Plan include:

- Residential streets in Blackrock and Ballintemple to the Old Passage Line-South Docks Greenway;
- A feeder route linking the Ballybrack Valley with the proposed Park and Ride at Carr's Hill and a greenway to Carrigaline;

- Links from Cobh residential areas to primary network;
- Links from residential areas in Passage West and Monkstown to existing Greenway;
- Residential areas in Ballincollig to the River Lee Greenway;
- Residential streets around CIT, CUH, Bishopstown and Model Farm Road; and
- Local links from residential areas in Blarney, Stoneview, Tower and Monard to the proposed Blarney Greenway.

Supporting Measures

Cork City Cycle Hire Scheme and other Bicycle Sharing Schemes.

A public bicycle sharing scheme can be very effective in widening the catchment area of public transport and addressing the 'last kilometre' of a trip. The Cork Share Bike scheme was launched in December 2014 and currently comprises 31 stations and 300 bikes across the City Centre.

The success of the scheme to date suggests significant potential for expansion. Expansion of the scheme will be on an incremental basis with a particular focus on the strategic cycle network, high capacity public transport corridors and stations, and inner suburban areas.



Supplementary funding streams, including site-specific development contributions from large office, student accommodation and other mixed-use development within planned regeneration areas such as the Cork Docklands, will be considered to support incremental expansion and low-car or car free development.

Other bicycle sharing scheme systems including dockless bicycles will also be considered, particularly in areas outside the city centre and inner suburbs where expansion of the existing Cork Bikes scheme is unlikely to be feasible in the short to medium term. These schemes should be supported by a significant uptake in cycle parking provision in district centres, places of education and neighbourhood / local centres.

Cycle Parking

There is widespread evidence of inappropriate cycle parking, with bicycles chained to lamp-posts, balconies, staircases, railings and street signage in urban areas across the CMA, indicating significant unmet demand for formal cycle parking facilities.

To support existing and future demand, a significant uplift in provision of high quality, short stay cycle parking in the city centre, metropolitan town centres, and neighbourhood centres, rail and bus stations, public buildings, shopping areas and workplaces is required.

Development requirements for higher levels of residential and workplace cycle parking will be revised upwards.

Cycle parking hubs in urban centres and rail and bus stations across the CMA can help foster a cycling culture and support linked trips.

Bike Lockers and Hangars

Lack of secure cycle parking is a proven barrier to cycling. Individual bike lockers and shared on-street hangars offer security to bicycle owners and provide an innovative solution to cycle parking requirements particularly where internal storage space is limited.

Wheel Ramps

Access from hillside residential areas to open spaces, shopping areas and greenway routes in many of inner suburban areas of Cork City and Metropolitan towns like Cobh requires cyclists to negotiate steps.

Wheel ramps can help cyclists more easily move bikes up ramps while minimising pedestrian/cyclist conflict in narrow shared areas.

Showers and Changing Facilities

The addition of end-of-trip facilities in workplaces such as showers and changing facilities can significantly enhance the attractiveness of cycling (and running), particularly for longer distances or in inclement weather.

Targeting an uplift in these end-of-trip facilities will be considered by both local authorities when revising statutory Development Plans. Workplaces should also be encouraged to avail of government grants to retrofit premises to facilitate showers and cycle parking or consider contributing to shared facilities.



EXAMPLE OF PROPOSED PRIMARY CYCLE NETWORK

Permeability and Wayfinding

Lack of permeability is a key constraint for cyclists and pedestrians throughout the CMA. Low cost measures such as filtered permeability will be used to unlock access, reduce severance and rat-running and form direct connections to local services and longer distance dedicated cycle routes, including the proposed east-west 'Lee to Sea Greenway'.

Both local authorities should undertake permeability studies within existing built-up to identify short, medium and long-term

opportunities to retro-fit cycling (and walking) permeability and align funding streams with those set aside for local ward level environmental improvements.

Clear and legible cycle route signage is proposed in parallel to the development of the cycle network and can include on-carriageway signage to minimise street clutter. Map-based wayfinding systems should also be considered on the docking stations of bike share schemes as is the case in other European cities.

Promotional Events

The use of cycling promotional material including school and workplace cycling challenges, dedicated cycling apps, regular maintenance and cycle training is supported. To increase the likelihood of their success, promotional events should be closely aligned with physical infrastructure improvements.

The possibility of Cork hosting one-off events such as Car Free Day, EU Mobility Week, Ciclovía and conferences such as POLIS and Velo-City should be actively pursued with Pure Cork.



BUS CONNECTS

BUS PASSENGERS



Carrying
49,000
passengers in
the AM peak
hour

Carrying
85m
passengers
per annum

BUS CORRIDOR PERFORMANCE

Douglas Corridor
AM Peak Bus frequency
3 mins
Patronage
1,700



Summerhill North
Corridor AM Peak
Bus frequency
3 mins
Patronage
2,061

BUS NETWORK & VEHICLES

200km
of cross city
routes

50km
orbital routes

150km
radial routes



100km
of bus lanes and
bus priority measures



220 double deck bus
fleet required



6 Strategic
Park & Ride
sites



CONNECTING CITY & SUBURB



Connecting with **Cork Suburban Rail Network at Kent Station**, with Cork Light Rail and Park and Ride Network and providing **interchange between radial and orbital bus services**



4,800
passengers interchanging
between Cross City, Radial
and Orbital bus services in
AM peak hour



COST ESTIMATE



Strategy cost
estimate is
approximately
€545m



08 BUS CONNECTS

Cork BusConnects will comprise the delivery of **crucial bus corridors, enhanced services, cashless fares and account-based ticketing.**

National Development Plan 2018-2027

Buses are an extremely efficient mode of transport and will remain the work horse of the public transport system in Cork. Their flexibility means that routes and frequencies can be adapted to support phases of new development or as circumstances dictate. Buses will also provide an increasingly important interchange service between the InterCity, suburban rail and light rail stations and the Park and Ride network.

Enhancing the bus network is consistent with the National Development Plan 2018-2027 which envisages a significantly enhanced BusConnects service for Cork by 2027. This Strategy envisages that the realigned bus network will carry around 45 million passengers per annum and 32,000 passengers during the AM morning peak. The proposed bus network has been developed and refined in an iterative manner taking into account corridor travel demand on a radial, cross city and orbital basis and pinch point analysis work.

The BusConnects Network

The enhanced BusConnects network will comprise of a significantly increased bus network, bus priority and around 220 new double decker vehicles. In total, the network will comprise of 200km of cross-city routes, 50km of orbital routes and 150km of radial routes and will provide interchange with the Cork Suburban Rail Network, Light Rail network and the

proposed Park and Ride services located around the Strategic Road Network. The BusConnects network and proposed frequencies are set out in the following paragraphs.

Core Radial Bus Network

The following outlines the Core Radial Bus Network, which has been developed based upon the six guiding principles that underpinned the “initial idealised” network. The Core Radial Bus Network connects the external corridors to the City Centre and has been refined to pair Cross-City travel demand to maximise the utilisation of the bus services on these corridors. A significant improvement in the frequency of bus services on these radial routes is also proposed.

The Core Radial Bus Network is set out below, including indicative frequencies in the peak travel periods:

1. Dublin-Hill – Togher - 15 minutes;
2. Ballyvolane – Donnybrook - 10 minutes;
3. Mayfield – Bishopstown - 10 minutes;
4. Glanmire – Ballincollig - 10 minutes;
5. Mahon – Apple - 10 minutes;
6. Mahon – Blarney / Tower - 10 minutes;
7. Rochestown – Apple - 10 minutes;
8. Grange – Ballincollig (via City Centre): 15 minutes; and
9. Frankfield – Faranree - 20 minutes.

Orbital Bus Network

Four high frequency orbital services are proposed to serve a multiple of key destinations outside of the City Centre including Little Island and CIT. The upgraded orbital network will cover approximately 50km of services providing additional connectivity, support Urban Expansion Areas and interchange with radial bus services. The four orbital routes and proposed frequencies are as follows;

- Northern Inner Orbital Route; 10-minutes
- Northern Outer Orbital Route; 15-minutes;
- Southern Inner Orbital Route; 10-minutes;
- Southern Outer Orbital Route; 15 minutes;

The Northern Orbital Inner Route will serve the north side of Cork City serving Little Island, Tivoli Docks, Mayfield, Blackpool and Knocknaheeny before crossing the River Lee to reach Model Farm Road and CIT.

The Northern Outer Orbital Route will provide a variation on the same route, providing connectivity with new residential development at the Ballyvokane UAE and Old Whitechurch Road. This route will utilise the proposed Cork Northern Distributor Road (NDR) which is required to be multi-modal to cater for bus movements as well as segregated cycle and pedestrian infrastructure.



EXAMPLE OF POSSIBLE OPTION FOR DOUGLAS ROAD WITH BUS PRIORITY AND FOOTPATH

There are two proposed orbital services for the south side of the city. The Inner Southern Orbital will run from Little Island, through the Jack Lynch Tunnel providing a much needed public transport alternative to the N40, serving Mahon, Turners Cross, Cork University Hospital and Cork Institute of Technology.

The Outer Southern Orbital will run from the Rochestown Road (near Harty's Quay), to Garyduff, Maryborough Hill, Grange Road (via the proposed East-West road link), Pouladuff (via potential local distributor routes), Togher Road, Sarsfield Road and Cork University Hospital. The Outer Southern Orbital route will not cross or interact with the N40 between Mahon and CIT thereby maximising service efficiency through avoidance of delays. Transfer with radial routes at designated interchange points will provide a greater choice of destinations and accessibility.

Cross City Network

A 200km Core Radial Bus network has been refined to pair cross-city travel demand to maximise the utilisation of the core bus services. In order to effectively and efficiently route the cross-city services through Cork City Centre, a number of guiding principles were applied:

- Align with Cork City Centre Movement Strategy where feasible;
- Target key interchange locations; and
- Minimise divided services on one-way sections or routes where possible.

A future review of the one-way systems that inhibit bus movement and connectivity outside of the scope of the Movement Strategy is proposed. This will include a review of the key locations including the South Mall, George's Quay and Anglesea Street.

Key interchange locations were chosen due to their ability to accommodate large number of public transport services either through bus lanes or full bus priority. The key interchange locations are as follows:

- St. Patrick's Street – 4 bus routes;
- MacCurtain Street – 3 bus routes;
- Grand Parade / South Mall – 3 bus routes; and
- Parnell Place Bus Station – 3 bus routes.

Supporting Radial Bus Services

In order to ensure comprehensive network coverage, additional supporting radial bus services will be developed. These supporting services typically have lower frequencies than the Core Radial Bus Network, but cater for a wider catchment across Metropolitan area. This includes strategic employment pharmaceutical cluster at Ringaskiddy which will now be served by a new bus service going via Carrigaline to Cork City as well benefiting from higher frequency on the existing Ringaskiddy-Monkstown-Douglas-City route.

The radial bus services will provide further opportunities for interchange to Suburban Rail, Light Rail and other bus services on the Core Bus Network.

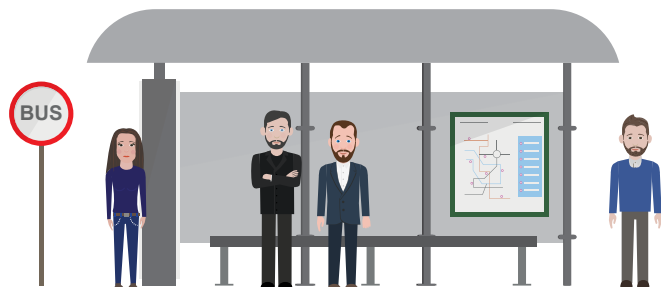
The proposed radial bus routes, and indicative frequencies, are as follows:

- Glanmire – City Centre: 20-minute frequency;
- Cork Airport – Kent Station: 20-minute frequency;
- Pouladuff – City Centre: 30-minute frequency;
- Apple campus – City Centre: 30-minute frequency;
- Ringaskiddy – Passage West – City Centre: 20-minute frequency;
- Ringaskiddy – Carrigaline – City Centre: 20 min minute frequency; and
- Midleton – City Centre: 10-minute frequency.

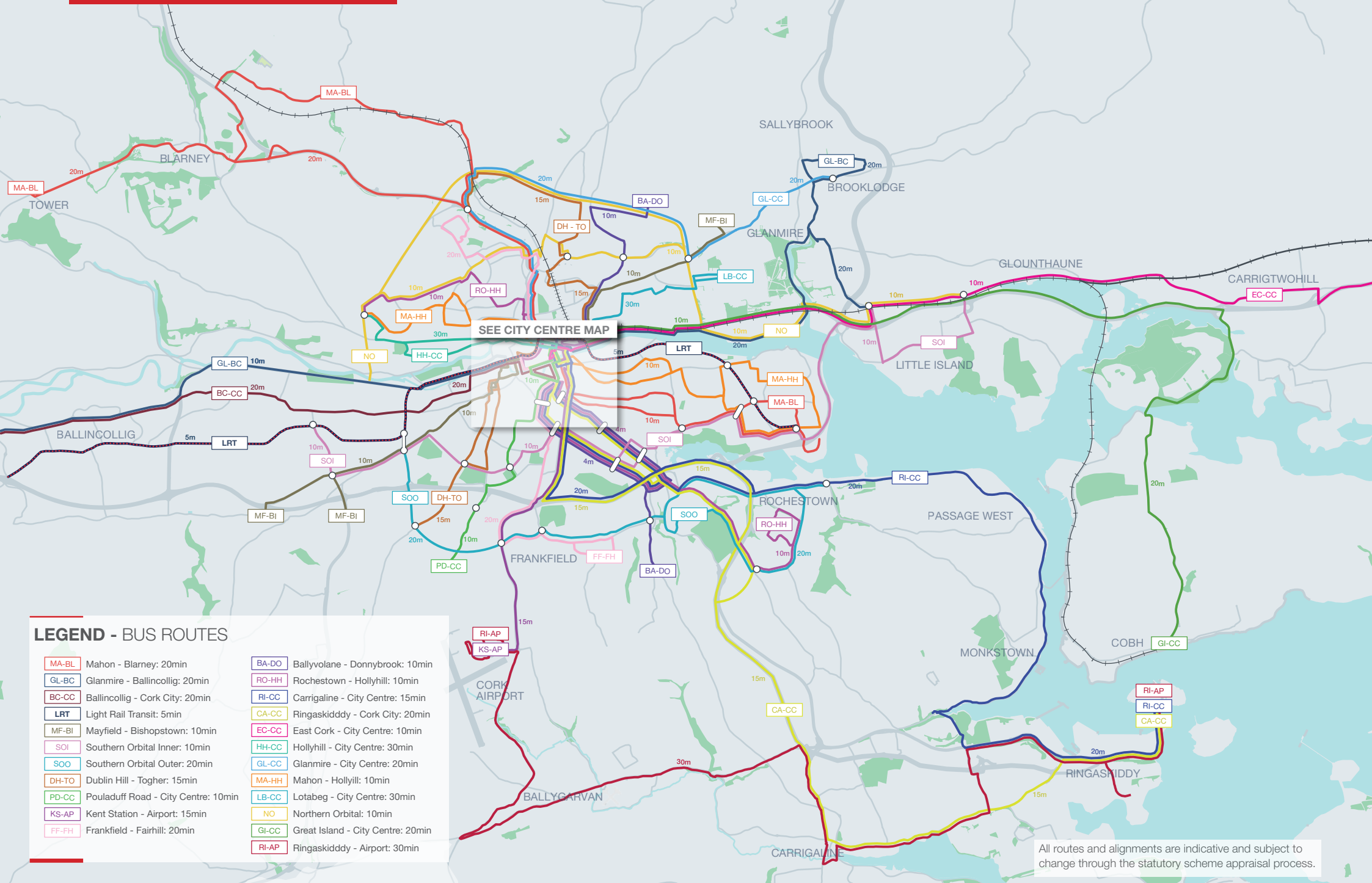
Supporting Measures

The new core bus network in Cork will be significantly upgraded to BusConnects standards to include:

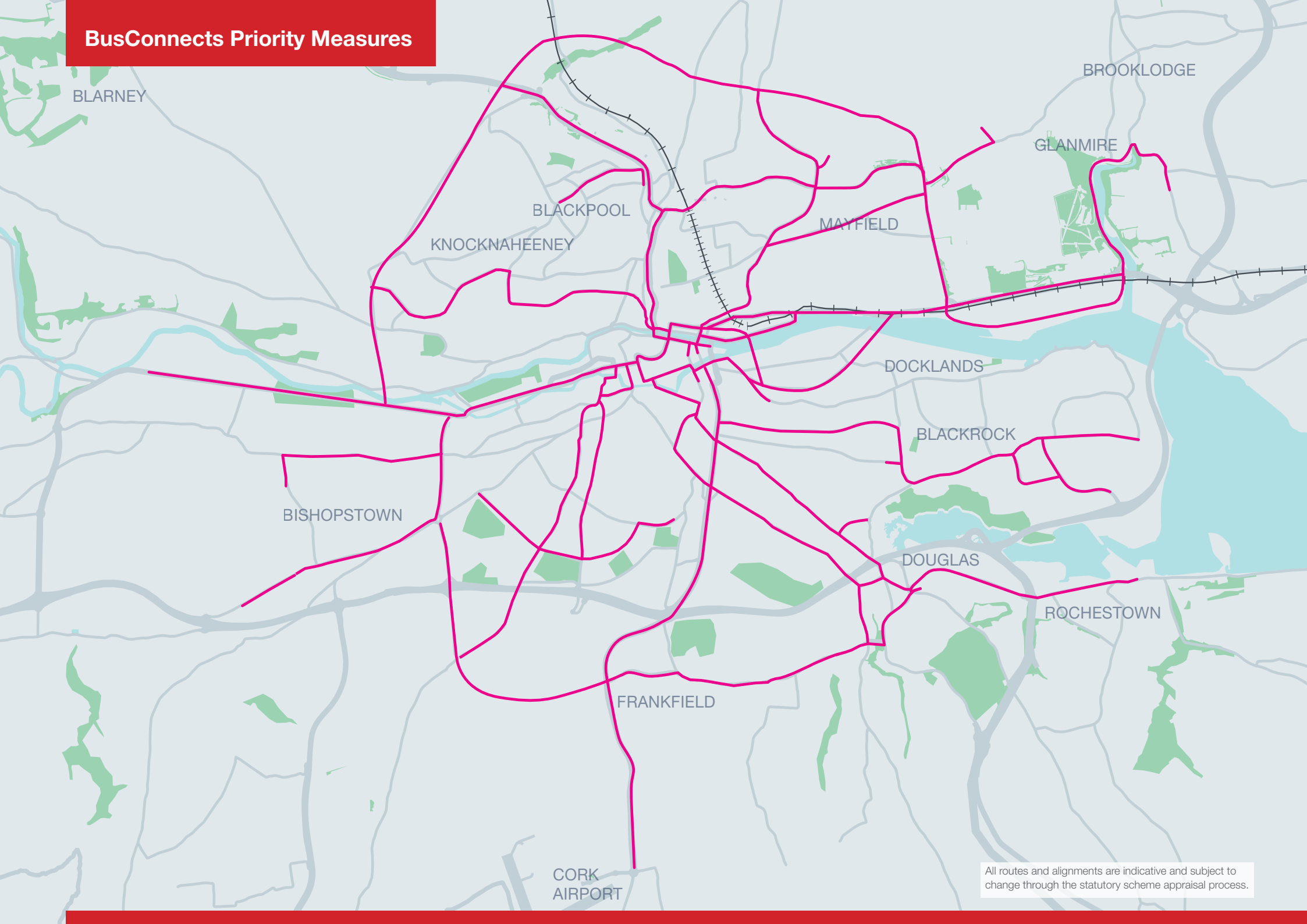
- More Real Time Passenger Information (RTPI) along bus corridors;
- Real Time integration of on-board Automatic Vehicle Location (AVL) with Intelligent Traffic Systems (ITS) to prioritise public transport movements at signalised junctions.
- Provision of new footpaths to access reconfigured bus stops;
- Significant expansion of bus shelter provision particularly where connecting or interchange services are provided;
- Smart ticketing to enable integration with other modes of transport including bicycle shared systems, car clubs and parking facilities;



BusConnects Route Map



BusConnects Priority Measures



All routes and alignments are indicative and subject to change through the statutory scheme appraisal process.



EXAMPLE OF INBOUND BUS LANE ON SUMMERHILL NORTH

The existing bus priority measures through Cork City are particularly limited with 14km of bus lanes currently being provided. The proposed bus priority measures include approximately 100km of new bus lanes, representing an increase in bus lanes by a factor of 700%.

The extent of the proposed bus lanes aligns with the proposed Core Bus Network, ensuring efficient, reliable and frequent services can be accommodated.

For identified key bus routes, the objective, in principle, is to provide bus priority in each direction, where practicable. On some parts of the National Road Network, further investigation, analysis and agreement with TII will be required, to determine the optimal bus priority outcomes.

In some areas of the network, measures including the removal of some on-street car parking and the compulsory purchase of some private land will be required to

facilitate bus priority lanes and footpaths to provide access to the bus network itself. Bus gates, protected laybys and bus priority at signalised junctions will be further considered as a means of prioritising bus services above general traffic.

These implementation measures will lead to a significant improvement in punctuality and bus journey time reliability. Some key arterial routes will be served by multiple bus routes - for example under the Strategy, the Douglas Road corridor will be served by a bus approximately every 3 minutes in the peak travel periods.

In the north of the city, new services to serve Urban Expansion Areas will similarly see increased frequencies on the Summerhill North corridor. Greater levels of connectivity will be provided with the new rail station at Blackpool offering onward rail services to employment centres at Cork City, Little island and Carrigtwohill.

Ballincollig to Mahon Light Rail Corridor

A later section of this Strategy sets out proposals for a light rail scheme extending from Ballincollig to Mahon, serving CIT, CUH, UCC, Kent Station, Docklands and Mahon Point.

In advance of the development of this light rail corridor, and to allow the development consolidation to support its delivery, it is intended to serve this route with a high frequency bus service and to develop bus priority measures along the route to enable a high level of performance in advance of its transition to light rail.

However, during the early period of the Strategy, it is intended to identify and protect an alignment for the light rail scheme, allowing development consolidation along the corridor.



SUBURBAN RAIL

PASSENGERS

Catering for up to
2,500
passengers
per direction
per hour

16m
passengers
per annum



JOURNEY TIMES AND DISTANCE

25 mins
from Midleton to
Kent Station

12mins
from Blarney to
Kent Station

25mins
from Cobh to
Kent Station

50mins
from Midleton /
Cobh to Mallow



62km
of suburban rail network between
Midleton, Cobh and Mallow



RAIL NETWORK & VEHICLES



8 new stations
plus improvements to Cobh,
Mallow and Kent Stations.



**62km suburban
rail network**
between Midleton, Cobh and Mallow.



10 km
of dual track to Midleton.



22
new two-car
trains required



Electrification
of suburban rail network.



CONNECTING CITY & SUBURB



Connecting with Cork Light Rail
Network at Kent Station and the
Cork suburban bus network



>3,000
passengers
interchanging between
Rail, Bus and Luas at
Kent Station in AM Peak.

4,000
2-way through-
running through
Kent in AM
peak hour



COST ESTIMATE



Strategy cost
estimate is
approximately
€274m





09 SUBURBAN RAIL

A Cork Transport Strategy is being finalised by the relevant Local Authorities in partnership with the NTA which includes proposals for **enhancements to the commuter rail service in Cork including additional stations and rail fleet.**

National Development Plan 2018-2027

The rail network provides direct and reliable access to Cork City Centre from a significant portion of its east and northern Metropolitan Cork catchment area. This Strategy proposes to maximise opportunities offered by the existing suburban rail network to support the travel needs across the CMA. Maximising the potential of the rail corridor will support better integration of land use planning and public transport.

This approach is consistent with Cork County Council's adopted planning policy framework to intensify residential and commercial activity at Cobh, Midleton, Carrigwohill and, in part, provides justification for new greenfield development at the UAs of Blarney/Stoneview, Waterrock and Monard. The provision of new train stations at Blackpool and Tivoli is consistent with Cork City's Council's Development Plan objective to significantly intensify development around these locations.

A key element of this Strategy will be to enable through services at Kent Station. This will increase connectivity between the Mallow - Cork lines and the Midleton/Cobh - Cork lines without the need to change platforms at Kent Station. The availability of an existing passing platform at Kent Station means that this objective can be achieved relatively quickly within the short term.

InterCity Services

The Cork-Dublin rail corridor is the top performing InterCity service in the State in terms of patronage. Anecdotal evidence suggests that the seating areas are over capacity, particularly at the morning peak between Limerick Junction and Heuston. The National Development Plan and 2016 Rail Review Report proposes number of relevant improvements to this line including the following:

- Examination of opportunities for improvements in journey times and investment in high-speed rail between Belfast, Dublin, Limerick-Junction and Cork;
- Electrification of the rail line once the current InterCity carriages outlive their useful life - estimated by the mid-2020s; and
- Improving InterCity journey time between Dublin and Cork to least at 2 hours.

The Strategy notes that the Cork 2050 document suggests that a rail journey time of under 1.5 hours is desirable. In terms of CMATS however, the over-riding priority is to ensure that the provision of additional suburban rail stations and services will not preclude the ability of Irish Rail to increase the speed or frequency on the existing InterCity line.

Suburban Rail Network

The over-arching objective of the enhanced suburban rail services is to maximise development opportunities offered by the existing railway line in order to support a greater level of coordination between land use and transport planning. The consolidation of development within an easily walkable and cycleable catchment area of existing and proposed stations is critical to the success (or otherwise) of this Strategy.

Continued investment in the rail network is required to ensure steady state operations and that services continue to operate efficiently. In order to provide the enhanced level of service identified by the Strategy, the development principles and supporting infrastructure set out in the following sections are required.

Consolidation of Land Uses Around the Existing Rail Corridor

There is available capacity on the Cork railway suburban corridor that will be harnessed in the short term to support future population and employment growth within Metropolitan Cork and to provide a much more frequent and viable service. Within Cork City, there are a number of advanced planning proposals to support a much greater intensity and variety of uses around brownfield land within easy walking distance of Kent Station.

Proposed Suburban Rail



10 min frequency

Blarney/Stoneview

P&R

Support Strategic Development Zone

Monard

Support future development. Park & Ride to accommodate traffic from N20 on suburban rail

Support Development Intensification



Blackpool/Kilbarry

Kent Station

5 min frequency

Tivoli

Dunkettle

P&R

Little Island

Support future development of Tivoli Docks

P&R to accommodate traffic from N25 and M8 on Suburban Rail

Glounthaune

10 min frequency

Carrigtwohill West

Carrigtwohill

Dual track to Midleton

Water Rock

Midleton

Support Future Development

Improve Signal operations

Fota

10 min frequency

Carrigaloe

Ballynoe

Rushbrooke

Cobh

Key Station Interchange

- Through running of suburban services at 10min frequency
- New platform on southern side of station
- Interchange with Light Rail Transit and core bus services
- Improve signal operations



LEGEND - KEY INFORMATION



Existing Train Stations



Proposed Train Stations



Rail Corridor



Park & Ride Station

Future-proofing the ability of Kent Station and its environs to support significantly enhanced multi-modal accessibility

from walking, cycling, BusConnects and light rail will be a critical consideration for the City Council when assessing development proposals in the short to medium term.

Future-proofing the ability of Kent Station and its environs to support significantly enhanced multi-modal accessibility from walking, cycling, BusConnects and light rail will be a critical consideration for the City Council when assessing development proposals in the short to medium term.

Outside of Cork City, the Strategy fully supports the strategic direction of Cork County Council's adopted planning frameworks to significantly intensify and consolidate future housing, employment and educational development within the immediate catchment area of Cobh, Midleton, and Carrigtwohill stations. More modest housing growth is anticipated at Glounthane and Little Island, with the latter location likely to experience further employment growth for uses not compatible with high density urban living.

The consolidation of activity within a 1km catchment boundary of existing stations along the railway catchment will create better linkages with the town centres and stations, support the viability of the rail corridor and provide a strong justification for the enhancement of existing services.

The provision of high quality walking, cycling, local bus services and (where appropriate) the enhancement of Park and Rail facilities to support commuters from a much wider catchment area is of paramount importance.

Though outside the scope of CMATS, the Strategy notes a relatively high level of out-commuting from the Mallow area and Cork County Council's intention to consolidate future housing development within the town's development boundary.

This consolidation will further support the viability of the railway corridor as will proposals to potentially include Mallow rail station within a future Metropolitan Cork fare structure. Platform improvements may also be required at Mallow station to mitigate the projected increase in suburban rail services impacting on the Inter-City Services between Cork, Kerry and Dublin.

New Railway Stations

To support sustainable growth along an enhanced railway corridor; new railway stations are proposed at the following locations to align with strategic land use planning objectives of both Cork City Council and Cork County Council:

▪ Midleton / Cobh- Cork Line:

- Tivoli Docks;
- Dunkettle;
- Water Rock;
- Ballynoe; and
- Carrigtwohill West.

▪ Mallow-Cork Line:

- Blackpool / Kilbarry;
- Monard; and
- Blarney / Stoneview.

These stations will support primarily residential-led mixed use development covering both brownfield land within Cork City and Metropolitan towns and identified greenfield sites in UAs. To ensure that rail becomes an attractive and logical mode of travel for a growing commuter belt, railway stations should be developed in tandem with the first phase of residential development and in place before substantial occupation.

The quality of design and layout of new development will be critical to support access by walking, cycling and public transport. The provision of a new rail station with Park and Rail facilities near Dunkettle should be expedited to support the Glanmire UAE at Ballinglanna where a significant housing development has recently been approved by An Bord Pleanála. This Park and Ride could potentially be supported by bus services to Cork City Centre, Mahon and Little Island, in advance of a rail station. The Strategy also leaves open the possibility of a further station at Carrigtwohill West to support a future significant commercial or hi-tech industrial development.

Supporting Infrastructure

The enhanced Cork Suburban Rail services will require the following supporting infrastructure:

Station Enhancements and Improvements

Improvements to stations are required as part of the Strategy to enable the efficient and effective operation of the proposed rail services. The quality, appearance, cleanliness and security of stations is an important for rail passenger satisfaction. At a minimum, all new stations should be fully wheelchair accessible, be equipped with upgraded smart ticketing facilities, have comfortable waiting areas and provide accurate real time information for both trains and supporting buses. In line with best practice, secure and sheltered cycling parking will be provided as near as possible to the station entrance without impacting on pedestrian comfort levels. The provision of bicycle sharing schemes to support linked trips is also required.

The recent reorientation of Kent Station will **facilitate a more seamless interchange between Rail, Light Rail and BusConnects**, as well as improved pedestrian and cycle access to City Centre and South Docklands.

Kent Station

A new platform is proposed for Kent Station to utilise the existing passing loop to the south. This platform will provide access to three parallel lines through Kent Station and allow cross city services between Mallow and Midleton and Cobh to run efficiently without impacting on the Inter-City service.

The recent reorientation of Kent Station will facilitate a more seamless interchange between Rail, Light Rail and BusConnects, as well as improved pedestrian and cycle access to City Centre and South Docklands. A significant improvement to the legibility and way-finding signage around the station is proposed to facilitate visitors alighting at Kent Station.

Cobh Station

A second platform is needed at Cobh Station to cater for the projected increase in train numbers required to provide the enhanced level of service proposed under the Strategy.

Passing Loops

To avoid impacting on the Inter-City rail services between Cork and Dublin, passing loops are likely to be required at all suburban stations on the Mallow Line at:

- Blackpool/Kilbarry;
- Monard station; and
- Blarney/Stoneview.

Bypass loops will enable suburban trains to stop at the new stations without impacting on the efficient operation of the Inter-City rail service.

Double Track to Midleton

To accommodate the increase in rail services to/from Midleton, the existing single track between Glounthaune and Midleton will be required to be upgraded to a double track*. There is currently a 2km long section of double track at Carrigtwohill that can be extended.

Signalling Improvements

Signalling improvements will be required to facilitate the increased services and avoid delays and conflicts on the line interactions. In particular signal improvements will be required at Kent Station, Mallow Station, Glounthaune Junction, and proposed bypass loops.

Signal Control Centre

Iarnród Éireann currently operates a Centralised Traffic Control Centre in Connolly Station, which controls much of the rail network in Ireland - including the Cork suburban network.

The NDP commits to completing a new National Train Control Centre over the lifetime of the plan. This will be required to cater for immediate and future control requirements of the rail network.

Electrification or Alternatively Fuelled of the Suburban Rail Network

CMATS supports the electrification of rail services that would result in higher performance, lower maintenance costs, lower energy costs and reduced emissions. The lower air and noise emissions are critical to support residential amenity of new development consolidated around the railway corridor. The NDP commits to the electrification of suburban rail lines in Dublin under the DART Expansion Programme by 2027. A similar commitment for the Cork Suburban rail network would be likely to take place over the latter half of the Strategy.

An alternative to the full electrification of the suburban rail network could be to examine the feasibility of a fleet upgrade to hydrogen and/or battery power trains. While providing similar benefits to a standard electrification network this type of electric train does not require the significant network wide retrofitting of electrification infrastructure such as power supply, bridge alterations, etc.

This has the potential to save significant costs on the electrification of the suburban rail network. Hydrogen powered trains are about to be passenger tested in the Netherlands, Germany and the UK.

* Subject to compliance with EU habitats and/or Birds Directives



EXAMPLE OF MULTI-MODAL INTERCHANGE AT KENT STATION WITH BRIDGE ACCESS TO THE SOUTH DOCS



LIGHT RAIL

PASSENGERS

Carrying
46million
passengers
per annum

11,400
passengers per
direction per hour at
2 min headway

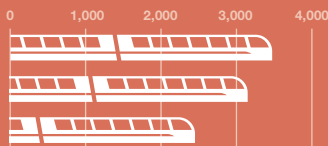
or
4,600
passengers per
direction per hour at
5 min headway

AM Peak Hour Passengers

Cork Light Rail 2040

Dublin Luas Green Line 2012

Dublin Luas Red Line 2012



JOURNEY TIMES AND DISTANCE

27mins
from Ballincollig
to St. Patrick's
Street

20mins
from Mahon Point
to St. Patrick's
Street

47mins
from Ballincollig
to Mahon
Point

BUS NETWORK & VEHICLES

25 stops
along the route.
Similar Light Rail vehicle to Dublin Luas fleet.

**17km Light
Rail Network**
between Ballincollig Cork City
Centre, Kent Station, Cork
Docklands and Mahon Point.

27 trams
required for 5 minute frequency

CONNECTING CITY & SUBURB

Connecting with Cork Suburban
Rail Network at Kent Station, with
Cork Light Rail Network and providing
interchange between radial and
orbital bus services

>3,200
passengers interchange
to/from Light Rail in am
peak hour.

COST ESTIMATE

Strategy cost estimate
is approximately
€1bn



10 LIGHT RAIL

Key future growth enablers for Cork include: The development of a much **enhanced Citywide public transport system** to incorporate subject to further analysis, proposals for an east-west corridor from Mahon, through the City Centre to Ballincollig.

National Planning Framework 2040

LRT Development Process



LRT and Advance Bus Route Alignment Study



Safeguarding of Route



Running of high-frequency East West Bus Route



Realisation of LRT

The development of an east-west mass transit, rapid transport corridor has been a long-term objective for the CMA articulated by the joint Cork Area Strategic Plan (CASP) and a number of statutory development plans and local area plans of both local authorities.

The commitment to examining the feasibility of such a route is confirmed by the publication of both the National Planning Framework (NPF) 2040 and the National Development Plan 2018-2027 and a recent upsurge in planning developments and interest in key sites along the corridor has provided further momentum to determining the feasibility of such a route.

Following detailed analysis of projected travel demand within the CMA, this Strategy has determined that the East-West Transit Corridor is best served through the provision of a new Light Rail Transit (LRT) tram system. This analysis marks a departure from previous proposals for a lower capacity Bus Rapid transport (BRT) system to reflect the more ambitious growth targets of the NPF and the requirement to future-proof such a route up to and beyond, the 2040 horizon year.

The LRT will be preceded by a high-frequency bus service between Mahon and Ballincollig. This will be delivered in the short-term to underpin higher development densities along the corridor including the regeneration of the Cork City Docks.

Achieving Compact Growth

The provision of LRT system will be a focal point to enable the growth of population, employment health and education uses as envisaged by the NPF 2040. The LRT system is a key enabler in CMATS. The LRT is required to:

- Unlock strategic development areas in its catchment area including the Cork City Docks, Curraheen, Ballincollig and Mahon;
- Maximise the development potential of windfall sites;
- Provide greater certainty for future planning and development, to pursue higher densities required to meet NPF population and employment targets for Cork City;
- Underpin the planned expansion of University College Cork (UCC), Cork Institute of Technology (CIT) and Cork University Hospital (CUH).
- Enable car-free and low car development within its catchment in line with recent changes to government policy outlined in the NPF and Sustainable Apartment guidelines;
- Reduce reliance on the N40 in particular, for short trips within the Metropolitan Area;

The LRT route will serve a wide range of existing and future destinations including employment, institutional and retail uses, facilitate modal shift away from the private car for short trips and free up capacity on arterial roads for bus services.

The LRT will link with a strategic Park and Ride station near Ballincollig to reduce cross-city trips. The LRT will also facilitate greater levels of walking and cycling as part of linked trips with public transport and reduce transport related noise and emissions.

Proposed Route

The topography and distribution of existing trip generators and attractors, combined with the proposed development opportunity areas within Cork City and its suburbs, indicate the desirability for a linear route from Ballincollig in the west to Mahon in the east, via Cork City Centre. The following locations are required to be within the catchment area of the future light-rail system:

- Ballincollig;
- The proposed Cork Science and Innovation Park (CSIP);
- Cork Institute of Technology (CIT);
- Cork University Hospital (CUH);
- University College Cork (UCC);
- Cork City Centre;
- Kent Station / Cork North Docklands;
- Cork South Docklands; and
- Mahon.

Measures will not be introduced in isolation but only after due consideration of the impacts on access and movement across the City and suburbs and in parallel with the introduction of necessary appropriate alternatives to service affected traffic movements.



EXAMPLE OF LIGHT RAIL SHARING SPACE
WITH GREENWAY AT BLACKROCK BRIDGE

Light Rail Route Alignment

Proposed Light Rail - Washington Street



Kent Station Interchange

- Interchange with inter-urban and suburban rail
- New bridge from Kent Station to South Docklands

Provide access to City Centre

Support Future Development of Cork Docklands

Support Development and Expansion of tertiary education corridor

Support Future Development

Support Future Development

Park & Ride
to accommodate traffic from N22 on Light Rail

Proposed Light Rail sharing with Greenway



LEGEND - KEY INFORMATION

- Light Rail Transit (LRT)
- LRT Stop
- Park & Ride Station
- Train Station

All routes and alignments are indicative and subject to change through the statutory scheme appraisal process.



EXAMPLE OF LIGHT RAIL ON WASHINGTON STREET

‘The Cork Transport Strategy will evaluate **the potential of a Bus Rapid Transit or Light Rail corridor to serve the increased population growth** as envisaged by the National Planning Framework.’

National Development Plan 2018-2027

Determination of the final LRT route alignment at the earliest possible stage is required to inform the review of the current Cork City Development Plan in early 2019. The final alignment is needed to maximise the ability to provide appropriate densities for development sites along the route and to avoid conflict with emerging development proposals.

In the absence of an alternative route, an alignment immediately adjacent to the existing Old Passage West Line greenway is proposed by CMATS to overcome the steep topographical constraint created by the escarpment. This should not preclude the development of alternative alignment options through a required feasibility study. Should the feasibility study confirm this route, the LRT alignment should take all necessary measures to ensure that the greenway retains its current attractiveness for pedestrians and cyclists, including consideration of widening the existing pathway to maintain comfortable passing widths.

Application of appropriate safeguards to the agreed final route and the application of appropriate development densities to ensure the long-term feasibility of the route by the relevant local authority will be required.

Stations and Frequency

Approximately 25 stations will be required to serve this high level route between Ballincollig and Mahon Point, providing an estimated total journey time of 47 minutes.

These stations will serve a catchment area of all existing and proposed key adjoining development areas and provide interchange with InterCity and suburban rail services at Kent station plus proposed Bus Connects services.

A station to serve a dedicated strategic Park and Ride facility to the west of Ballincollig town centre and UAE is proposed to facilitate commuters arriving from the N22.

To serve predicted level of passenger demand to 2040, a total of 27 tram vehicles providing an initial frequency of light rail trains running at a headway of every 5 minutes is proposed, with an hourly capacity of 4,600pax/hr/dlr. This level of service provides medium to long term capacity resilience and can be revised upwards (or downwards) depending on the stage of the development cycle.

LRT Design and other considerations

The following outlines some of the infrastructural key challenges to be addressed in the design of the LRT system. The following list is not intended to be exhaustive but provides some high-level considerations for the LRT:

- Maximising connectivity to existing centres of activity and future growth areas through a clear and legible local walking, cycling and bus network. Providing safe pedestrian links to proposed Park and Ride stations;
- Maximising opportunities to provide higher densities along the final route alignment;
- Provision of a dedicated bridge crossing of the River Lee to provide access between Kent Station and Cork South Docklands;
- Maximising opportunities to provide car-free and low-car development within 1km catchment of the corridor;
- Consideration of the impact on the streetscape and public realm of Cork City from power supply cables and feeder pillars at the earliest design of the LRT route and alignment;

- Consideration of constraints offered by potential relocation of underground services, impact of waterways and basements under the city centre streets;
- Consideration of tram turning radii within the constrained Cork City street network; and
- Provision of depot(s) for housing, and on-going management and maintenance of the LRT trams.

Delivery of the LRT

This light rail scheme is planned for delivery, subject to the necessary development consolidation, to support the appraisal, planning and design for provision of such a high capacity corridor in the latter period of the period of the Strategy as envisaged by the NDP.

However, the LRT should be delivered earlier should it become apparent that the appropriate development densities will be achieved sooner than anticipated. A potentially early delivery time frame underlines the importance of undertaking the route feasibility process to be undertaken at the earliest possible stage.

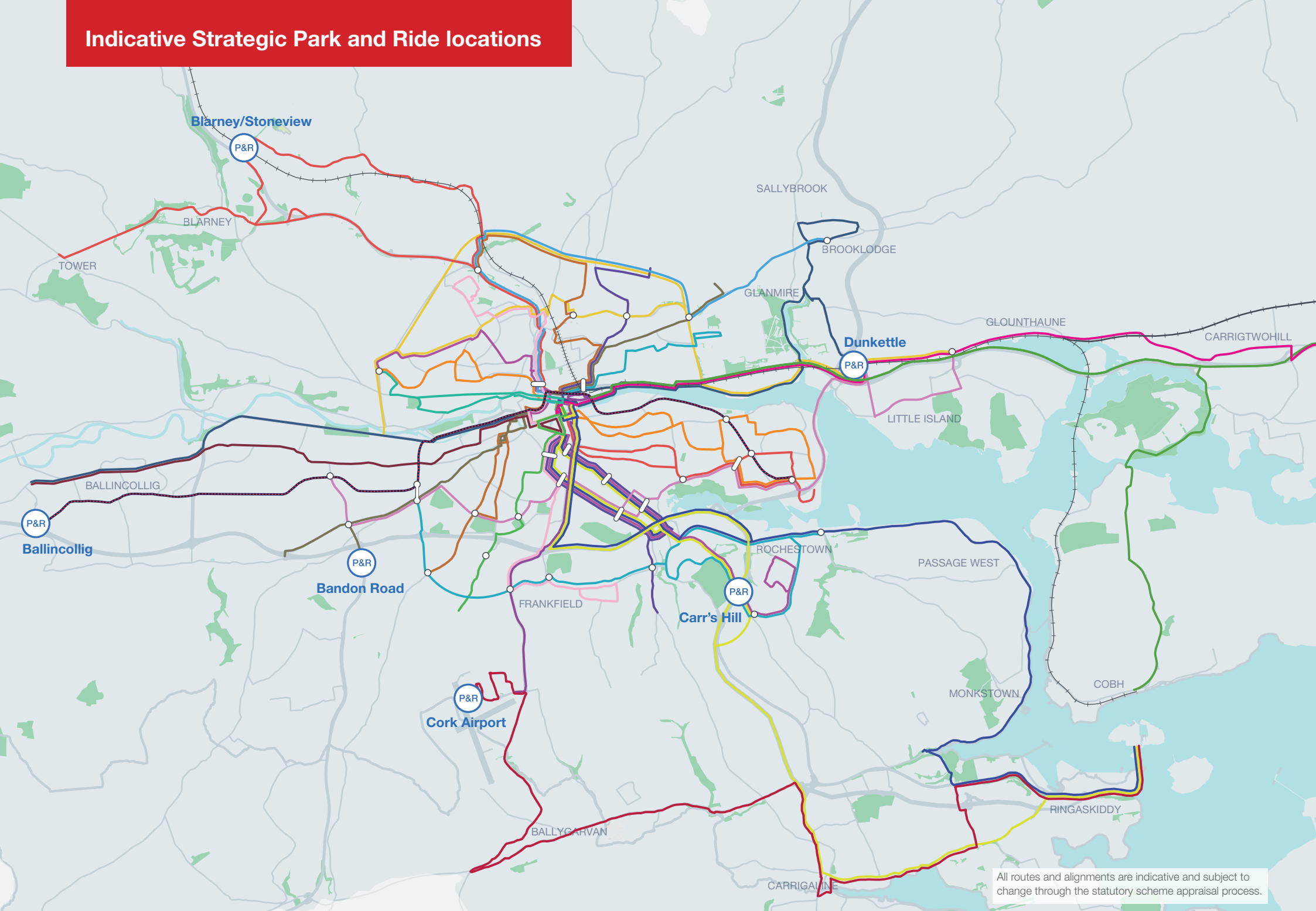
Advance Bus Provision

In advance of the development of the LRT, and to allow the development consolidation to support its delivery, this route will be served with a high frequency bus service with bus priority measures to enable a high level of performance in advance of its transition to light rail. During the early period of the Strategy, it is intended to identify and protect an alignment for the light rail scheme, allowing development consolidation along the corridor.



EXAMPLE OF BUS CORRIDOR PROVISION ON WASHINGTON STREET, IN ADVANCE OF LIGHT RAIL

Indicative Strategic Park and Ride locations





11 PARKING

There should generally be **no car parking requirement for new development in or near the centres of the five cities**, and a significantly reduced requirement in the inner suburbs.

National Planning Framework 2040

Park and Ride

Strategic Park and Ride

Cork has a high proportion of motorised trips that originate outside the city centre and other strategic employment areas that contribute to local congestion, noise and air pollution.

Park and Ride (PnR) involves the provision of high capacity, car parking facilities at designated public transport interchanges to provide onward access to the City Centre and other key destinations via high frequency public transport, walking or cycling.

Park and Ride can deliver the following benefits to the Cork Metropolitan Area:

- Support economic vitality by improving overall accessibility to the City Centre area;
- Reduce road traffic congestion on radial routes;
- Increasing the attractiveness of the City Centre to visitors and shoppers;
- Meet shortfalls in urban parking capacity;
- Increase the effective catchment area of the public transport network;
- Transfer commuting trips from private car to public transport;
- Improve access for those living on the city edge and in low density suburbs; and
- Maximise public transport patronage.

Park and Ride as a component of the CMATS is a means of increasing the accessibility of the transport network to a population that might not otherwise access by walking, cycling or bus transfer.

At present, Cork has limited Park and Ride services with the existing Black Ash facility near the Kinsale Road interchange operating below capacity. A number of strategic PnR facilities are therefore proposed to address the obvious short-comings in recent provision. Strategic PnR facilities will be expected to cater for between 400-600 car parking spaces and in all cases, be serviced by reliable, high frequency public transport including the suburban rail corridor, BusConnects and/or light rail system.

Quality local walking and cycling networks will be required to support safe and reliable interchange services and adjoining employment and residential uses. Indicative locations for high capacity, strategic park and Ride (PnR) facilities are proposed at:

- Dunkettle – catchment for M8 and N25. Will be supported by suburban rail and BusConnects;
- Carrs Hill / M28 – BusConnects service to serve the Carrigaline catchment area and potentially the pharma sector at Ringskiddy;
- Cork Airport – to serve Kinsale catchment and local employment sites;

- Bandon Road Roundabout (N40) (BusConnects);
- Blarney/Stoneview (rail based) – supports southbound M20 traffic and UAE catchment; and
- Ballincollig/Woodberry (light rail) – supports Maglin UAE, Ballincollig town centre, local employers and eastbound commuters from the N22.

The above represent indicative locations only and are subject to further investigation. In the majority of cases, strategic Park and Rides will be related to the delivery of the BusConnects network and require bus priority measures to be implemented in advance of the opening of the facility.

In all cases, strategic Park and Ride/Rail facilities will provide ancillary services including sheltered waiting areas, refreshments and real time information boards. The provision of electric vehicle charging points to suit a variety of different charging speeds to support the transition to low emission vehicles and e-bikes will be considered in the design and development of each of the facilities.

Local Mobility Hubs

The strategic park and rides will be complemented by a number of smaller, local facilities sometimes known as 'mobility hubs' in a European city context.

Local mobility hubs may include formalising existing surface or multi-storey car parks at locations including Little Island, Mahon, Pouladuff Road, Carrigrohane Road and Blackpool. These hubs may potentially take the form of multi-storey car parks or basement car-parking in some circumstances.

Typically, a local mobility hub will be supported by frequent public transport, quality walking and cycling networks within a catchment area of 500-600m and include supplementary facilities including public transport stops, high capacity cycle parking, bicycle sharing systems dedicated car club spaces, carpooling spaces, electric charging facilities for cars and taxi drop-off facilities. Local mobility hubs typically support lower residential parking from new development areas but can potentially support some limited destination parking in areas where on-street parking has been re-purposed to support public transport or local public realm improvements.

Site specific locations and suitable capacities for mobility hubs should be determined through the Local Area Plan (LAP) or Masterplanning process.

Park and Ride Viability

The phased implementation of strategic Park and Ride sites and mobility hub facilities will be accompanied by a phased reduction in the availability of on-street spaces within Cork City Centre and Metropolitan town centres. To ensure the long-term viability of both PnR and mobility hubs, both local authorities should consider agreements to reserve spaces to developers of, for example, city and

metropolitan town centre hotels, office blocks, educational facilities and new residential areas at the earliest possible stage of the planning application process. The provision of these shared parking facilities will significantly reduce land-take and cost for the development of individual off-street parking facilities and are proven to be effective in prioritising sustainable modes for short trips.

The provision of PnR/mobility hubs will be accompanied by a comprehensive on-street parking management structure in residential areas outside of existing controlled parking zones. Both local authorities will be able to apply more restrictive off-street car parking practices in their respective Development Plans and local planning frameworks. Park and Ride facilities will be required to be open at off-peak times to support event parking at sports stadia and festivals, supported by the provision of more flexible local bus and coach services offering direct routes to the event. Opportunities to further maximise their potential will be identified through Workplace Travel Plans, School Travel Plans and Access and Mobility Plans for new residential development.

Parking Management

The availability and price of parking are major determinants of the relative attractiveness of the private car versus sustainable transport options and an extremely effective demand management tool. Parking management measures can include pricing, supply and enforcement controls. Parking restraint can also be applied as a fiscal measure alongside land use planning measures.

Parking for New Development

The following outlines the proposed approach to parking for new development:

- Direct high-density residential land use and high-trip generating uses including employment and retail to areas that are currently, or will be, served by high frequency transport services;
- Set maximum parking standards across the CMA taking into account accessibility to public transport and/or access to local services including education and employment; and
- Set out car-free or low car standards in development areas within an 800m walking catchment area of Cork city centre and/or of quality public transport.

The application of low-car or car-free development is an increasingly common tool to facilitate higher density development and prioritise sustainable transport. Restrictions are usually placed on the occupants of the new development to apply for on-street parking permits to mitigate local parking stress.

Alternatives to private car ownership are made available including provision of car club bays and membership, public transport cards and increasingly, provision of and membership of cycle hire schemes.

On-Street Parking

There will be a general reduction in on-street parking levels in city and town centres over the lifetime of the Strategy to accommodate a wide range of sustainable transport measures including bus priority, laybys, safer crossing facilities, seating, contra-flow cycle lanes, bicycle share schemes and cycle parking.

Additional on-street spaces will be re-purposed to support flood management schemes and public realm improvements including street trees, wider footpaths and recreational facilities.

Where on-street parking is provided to support the economic functions of town centres, the emphasis will be on supporting a quick turnover of spaces to ensure that spaces are readily available for those businesses that rely upon them.

In residential areas, the objectives will be to discourage commuter parking that contribute to parking stress and unsafe parking practices immediately outside paid parking zones, and to free-up kerbside space by providing alternatives to private car ownership.

Cork City Council operates a pay parking system for the payment of on-street parking. The availability and pricing structure for on-street parking within the CMA should be reviewed alongside CMATS implementation with a view to moving towards a smarter, more user friendly system that facilitates a quicker turnover of spaces.

The proposed approach to on-street parking is as follows:

- Undertake comprehensive rolling reviews of the available kerbside space in town centres to understand how the space is being used and assess against existing and future needs, including bus and light rail implementation;

- Employ performance-based smart parking pricing systems in town centres to ensure that spaces are used efficiently but are readily available for non-commuting purposes including shoppers. Pricing should be set to reach a target maximum of 85% occupancy to reduce search traffic, congestion and emissions;
- Extend coverage of parking zones controls across the CMA to safeguard spaces for residents, tackle illegal parking and to discourage commuter and other forms of long-stay parking. Consider gradual increases for the price of permits, particularly in areas where off-street parking options are readily available; and
- Provide alternatives to private car ownership including providing more designated on-street bays for car clubs, bike share systems and similar measures.

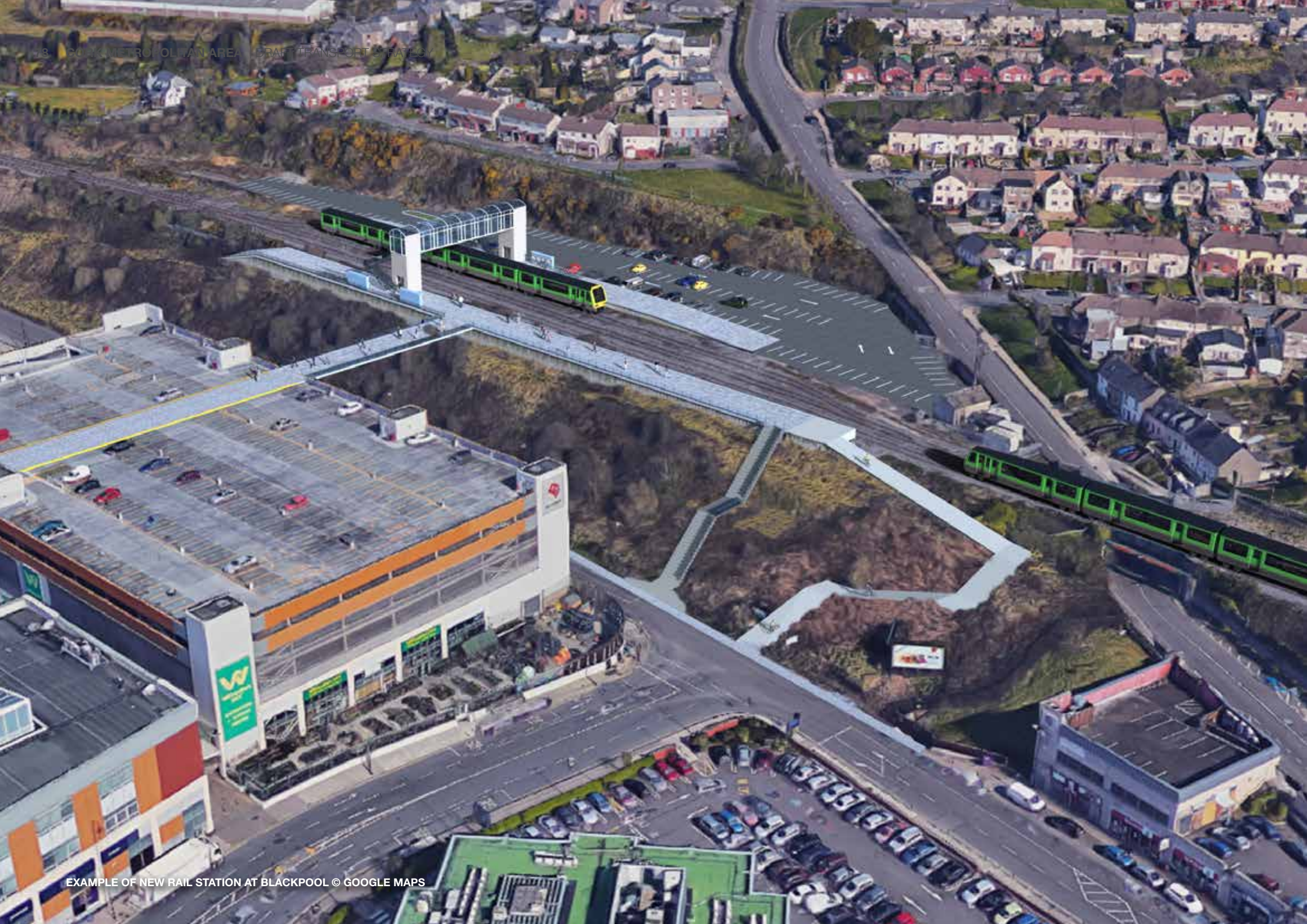
Off-Street Parking

The main objective of the off-street parking measures is to free-up kerbside space within the city and town centres and to support a viable, public transport system. The approach is as follows:

- Implement a string of high capacity long-stay strategic Park and Rides facilities outside of the main approach roads to the city, serviced by appropriate high-frequency bus and light rail and walking and cycling networks;
- Examine the case for smaller, local Park and Rides (Mobility hubs) in areas proposed to be served by public transport, walking and cycling networks;

- Introduce parking charges at out-of-town retail centres, to reduce local congestion associated with these developments;
- Examine the case for a workplace parking levy in order to ring-fence funding for rapid public transport provision taking a lead from Nottingham's levy to support light rail; and
- Support the phased, long term reduction of car parking through the use of mandatory, target -based Workplace Travel Plans for new development and area-based travel planning for clusters of existing places of education and employment.







12 PUBLIC TRANSPORT INTERCHANGE & INTEGRATION

The National Development Plan will deliver a public transport network that will provide **high-quality passenger interchange points, which facilitate convenient transfer between efficient and integrated public transport services.**

National Development Plan 2040

Modern transport infrastructure must be accompanied by an efficient, integrated and appropriate network of transport services. Focusing specifically on public transport, that network needs to:

- Provide appropriate coverage of the region;
- Increase opportunities to transfer between modes and services;
- Provide fast and convenient access to major travel destinations throughout the region;
- Be easily understood to both local and visiting passengers;
- Deliver reliable and predictable journey times;
- Charge simple, affordable fares which enable transfers between services without unnecessary penalty;
- Provide easy-to-use cashless payment systems, where feasible;
- Be accompanied by comprehensive information, both during and prior to the journey; and
- Provide comfortable and convenient journeys to the maximum number of passengers.

Interchange

Interchange between modes and public transport (PT) services is essential to the success of the Strategy. Interchange will allow for the widening of the public transport coverage, enabling improved access to key destinations.

The proposed public transport network provides significant improvements for interchange between modes and services through the following:

- Orbital services interchanging with radial services;
- Bus services interchanging with heavy and light rail services;
- Active modes interchanging with PT services; and
- Car interchanging with PT services as P&R.

Stops and Shelters

The design and positioning of light rail and bus stops, shelters and information systems are important features of an effective public transport system. It is intended that:

- A consistent design will be applied to key stop locations, in particular at busy stops or interchange locations;
- At key locations or busy stops, shelters will be provided;

- For key stops on Core Radial and Orbital routes comprehensive information signing including real-time service information will be provided;
- For all stops through the CMA including less busy stops a standardised style of bus stop sign, pole and information panel, with a consistent branding and style, will be used throughout the CMA; and
- There will be a rationalisation of bus stop poles and sharing of nearby bus stops between operators.

Interchange Locations

- At key interchange locations, the design of the stop, shelter and information panels are important. The following outlines requirements at interchanges:
- Need to identify that user is at an interchange location;
- Need to strengthen the concept of transfer between routes as part of new network proposals;
- Need to guide walking trips between stops at interchange;
- Need to provide a continuity of branding and livery for interchange legibility; and
- Need to differentiate interchange areas from non-interchange stops.



Integrated Ticketing

Integrated ticketing and smartcard technology offers a convenient way to pay public transport fares. Smart ticketing allows for responsive fare structures to be implemented to simplify use and offer better value for money. Leap offers significant discounts on cash fares and facilitates daily and weekly capping.

One of the goals of CMATS is to deliver an integrated transport system that is interconnected to allow people and goods to move efficiently throughout the CMA and to provide access with a variety of modes for people. Promotion of Leap in Cork will help to inform existing and potential passengers of the benefits of using Leap.

There are opportunities to extend the range of payment options and integrated ticketing measures over the lifetime of the Strategy, to incorporate the latest developments in account-based ticketing technology, potentially allowing use of credit / debit cards or mobile devices as a convenient means of payment. This will also allow integration with other transport payments such as parking facilities and bicycle hire.

Public Transport Fares

To ensure that public transport fares are attractive and customer friendly, the broad principle for transit fares should include a system that is:

- Easy to use and understand;
- Regionally integrated;
- Designed to provide price incentives for more frequent use; and
- Affordably priced to make transit an attractive alternative to the private car.

The ongoing improvements to public transport fares being implemented by the NTA will be continued within the lifetime of CMATS. A fares structure review will be undertaken to ensure that the CMATS networks are supported in a manner that encourages increased public transport use and provides for appropriate cost recovery. It is intended that a simplified fare structure will be put in place in the CMA, potentially a flat fare or a zone-based fare system, allowing multiple journeys by different modes for a single fare.

Small Public Service Vehicles

Taxis provide an important transport service offering door-to-door trips and can supplement a public transport system. Taxis offer the ability to complete one-off trips that are difficult to provide for efficiently by other modes. Ensuring that taxi operations are provided for, for example, by providing appropriate waiting areas at public transport termini.

The increasing use of smartphone app-based providing real time taxi services is likely to result in kerbside space being freed up as waiting bays are no longer required to the same level as was previously required.

Good practice in efficient kerbside management for example - dual use of delivery bays and taxi through time restrictions - to support both the day and night time economy as appropriate will be promoted. Other priorities for small public service vehicles include:

- Incentivise conversion of taxis to low emission vehicles;
- Ensure that all taxis and hackney fleet are fully wheelchair accessible throughout the timeframe of the Plan;
- Improve the integration of small public service vehicles into the overall public transport network through better interchange opportunities and information provision; and
- Encourage the provision of local hackney services in areas where conventional taxi and hackney services are generally unavailable.



ROADS



50km
of National Road
network
improvements



Dunkettle
Interchange Upgrade
completed by
2022



M28
Cork - Ringaskiddy
completion
2028



N27
Cork Airport
Dedicated public
transport corridor



Cork North
Ring Road
2035



N40
Demand
Management
to maintain
capacity



70km
of Regional Road
improvements



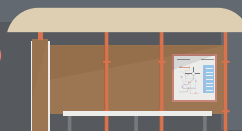
A new multi-modal
**Northern
& Southern
Distributor
Road**



HGV
restrictions
in Cork City



Regional & Distributor
Roads to provide a multi-modal function



City Centre
**Movement
Strategy**



Accessibility
improvements in
Cork Docks area



ITS & UTC
Intelligent Transport Systems
& Improvements to Urban
Traffic Control



Strategy cost
estimate is
approximately
€1.39bn



13 ROADS

National roads play a key role within Ireland's overall transport system and in the country's economic, social and physical development.

Spatial Planning and National Roads.

The Cork Metropolitan Area has an extensive network of national, regional and local roads and streets. The road network includes not only the carriageway itself but other highway infrastructure including bridges, the Jack Lynch Tunnel, footpaths, signposting, markings, traffic signals and sophisticated traffic management systems. The street network, particularly within Cork's urban areas, are public spaces in their own right, providing a focus for economic, social and cultural activity.

The first priority for road investment in the Strategy will be to maintain, renew, manage and operate the existing road infrastructure in a more efficient manner. Other priorities reflect a need to provide multi-modal travel particularly on new roads within urban areas; increasing the liveability and place-making functions of the urban street network; and to manage the network to discourage through traffic in built up areas.

CMATS proposes a limited number of new road-based projects required to facilitate the sustainable movement of people, goods and services, and to complement public transport, walking, cycling and traffic management objectives. This includes a new east-west link on the northern side of Cork City in the short-medium term required to facilitate orbital bus and active travel movements and to reduce travel through the city centre and N40 South Ring Road by HGVs and private vehicles.

Alternative Approach to Car Based Travel

The CMA road network will continue to carry a significant number of journeys made by people and goods. Given the nature of existing travel patterns in Cork, the provision of any new road capacity will need to strike a balance between enabling the CMA to achieve its growth potential and ensuring that any additional road capacity does not simply attract more private car trips.

In line with the NPF's Compact Growth objective, CMATS seeks to deliver on strategic development priorities for the distribution of a more compact settlement pattern based on ensuring effective integration between transport and land-use through the delivery of Public Transport Orientated Development (PTOD). This will provide a sustainable economic, environmental and social case for reliable public transport, permeable, high quality safe walking and cycling routes and a people-centred public realm.

This approach represents a marked departure from the traditional models of transport planning over recent decades, where the provision of new road capacity solely for the private car was paramount.

CMATS instead prioritises the provision of reliable and efficient public transport and enhanced walking and cycling routes to minimise the need to travel by car.

Improvements to the public transport and active travel network, as outlined in the earlier chapters must be prioritised to achieve compact growth. This must be under-pinned by appropriate land use decisions at local authority level that maximise opportunities for sustainable travel and directs future development to existing or planned higher capacity public transport corridors.

Developing the Road Network to Support Sustainable Travel

The national road network provides strategic transport links between the Country's main centres of population and employment, including key international gateways such as the main ports and airports, and to provide access between all regions.

In Cork the strategic road network supports the movement of goods and essential services including public transport, freight and logistics movements to markets and provides direct access to the relocated Port of Cork at Ringaskiddy and Cork International Airport. Local access to the strategic network will be managed and discouraged to minimise local trips.

For Cork to grow sustainably as forecast, its street network must facilitate more walking and cycling. Its arterial routes must also prioritise the movement of buses.

Within Cork City Centre, metropolitan centres and inner neighbourhoods, streets will have more of a place function and will require a greater emphasis on liveability, motor traffic restraint and traffic calming. New roads will be required in some cases to unlock housing and commercial development and to support local access in planned growth areas. New developments will therefore, be served by existing and/ or planned public transport and designed to maximise connectivity to local networks and services.

As discussed in Chapter 11, a network of strategic Park and Ride facilities will be provided to minimise impact on the arterial road network, and city neighbourhoods and to incentivise long-stay parking for commuters and shoppers.

Principles for Provision of New Roads within the Cork Metropolitan Area

Recent changes in national transport policy seek to significantly increase in the use of public transport, cycling and walking and a reduction in the growth in private car travel. To translate these objectives at CMATS level, the following principles will be applied;

- New road schemes will be developed in accordance with the principles of Smart, Compact, Growth as set out in NSO1 (Compact Growth) of the NPF;
- New road schemes will support CMATS objectives of enhancing sustainable transport capacity and connectivity;
- New non-national roads should ensure that strategic capacity and safety of National Roads for strategic traffic is maintained in accordance with NSO2

(Enhanced Regional Accessibility) of NPF by diverting local traffic to appropriate routes;

- Apart from motorway or express road proposals; all new road schemes will be designed to provide safe and appropriate arrangements to facilitate walking, cycling and public transport provision; and
- New road schemes must demonstrate that alternative solutions, such as public transport provision, traffic management or demand management measures, cannot effectively and satisfactorily address the circumstances prompting the road proposal or are not applicable or appropriate.

Requirements of National Road Network

The following outlines the requirements for the planning and development of National Roads within the CMA in the context of supporting the sustainable transport objectives of CMATS and in full alignment with the definitions and principles set out by the Government's Spatial Planning and National Roads:

- The primary function of National Roads is to cater for strategic traffic;
- Strategic traffic, in the context of national roads, is primarily comprised of inter-urban and inter-regional traffic, whether HGV, car, public transport bus services or other public service vehicles, which contributes to socio-economic development, the transportation of goods and products, especially traffic to/from the main ports and airports, both freight and passenger related;

- Secondary local functions should not be encouraged, or planned for, on National Roads in the CMA;
- National Roads are not to be developed, or planned, to support the continued urban expansion through zoning of residential land uses adjacent or along National Road corridors;
- Alternative compact sustainable and public transport orientated corridors will be prioritised for zoning;
- Secondary local function traffic on National Roads can be tolerated insofar as it does not impact on the primary function, which is to cater for strategic traffic; and
- If secondary functions impact on the primary function of National Roads, then demand management measures will be employed to mitigate this impact.

Proposed National Road Network Measures

Within the Cork Metropolitan Area, there will be a focus on maintaining the investment already made, to protect national road assets and to keep them safe and fit for purpose through appropriate corridor management practices. Associated with this, and to reduce congestion on the strategically important N40 and other national routes in the outer Metropolitan Area, a reduction in car dependency for orbital trips is required.

The extensive nature of development and the wide distribution of employment destinations in the Metropolitan area, presents a particular challenge to the provision of alternative choices to the private car.



The provision of high quality public transport choices associated with the introduction of complementary travel demand management measures, such as parking restrictions, ramp metering and potentially multi-point tolling, will be required to meet current and future metropolitan travel demand.

This combined approach would serve to discourage the inappropriate use of the national roads network by car, to increase the attractiveness of public transport alternatives and to render investment in such public transport improvements, more economically viable. Without such interventions, car use in the CMA will remain high and congestion may continue to increase, putting at risk the substantial investments already made in the N40 and national roads of strategic importance.

The following sections identify proposed infrastructure improvements for the national road network within the CMA, that are required for the delivery of the CMATS. The alignment and form of all National Road proposals will be determined in line with TII Project Appraisal Guidelines (PAG) and DTTaS guidance for scheme appraisal including a Route Options Assessment and Business Case. The following measures are subject to compliance with EU habitats and/or Birds Directives.

N40 South Ring Road

The use of the N40 as a local access route by the private car to the various commercial and retail developments in close proximity to this national artery is unsustainable.

A coherent approach to the management of travel demand on the N40 corridor and connecting roads, combined with the provision of alternative transport modes, development of identified alternative complementary routes and targeted traffic management measures, are required to ensure that the N40 fulfils its primary intended purpose, as a national road which caters for predominantly non-local trips of high economic value.

The TII Demand Management Study identified a number of proposals under the following broad headings.

- Integrated Land use and Transportation
- Targeted Upgrades;
- Smart Motorway Interventions;
- Alternative Complementary Routes; and
- Fiscal Measures.

Measures such as those outlined above can have a positive impact on managing future demand on the N40, notwithstanding the complexity of the overall road network in the CMA and the limited alternatives to the Jack Lynch Tunnel. The rollout of public transport, land use policy and traffic management measures will be prioritised in the short-medium term. The potential need for the introduction of fiscal measures will continue to be assessed over the lifetime of the Strategy. Measures will not be introduced in isolation but only after due consideration of the impacts on access and movement across the City and suburbs and in parallel with the introduction of necessary appropriate alternatives to service affected traffic movements.

The upgrade of the N40 South Ring Road to motorway status is one of the key recommendations of the study, primarily to limit its use to motorised vehicles and to remove the small number of cyclists, pedestrians and slow moving vehicles in the interests of road safety.

Transport Infrastructure Ireland (TII) will undertake traffic management and improvement studies focussed on the N40 to assess current capacity constraints and to identify potential future improvements to the operational safety of this key strategic route. These projects include the:

- N40 TEN-T Feasibility Study; and
- N40 Dunkettle ITS Feasibility Study.

In addition to the upgrading of the N40 South Ring Road to motorway status, a number of local road improvements have been identified in CMATS. These will assist in providing alternative complementary routes to the N40 while also improving local accessibility, orbital bus services and supporting permeability for all transport users.

Dunkettle Interchange Upgrade

The Dunkettle Interchange Upgrade to a free-flow, grade separated interchange received planning permission in May 2013. It will alleviate the existing bottle neck and congestion at the intersection of the M8/N8, N40 and N25.

A contractor has been appointed by Transport Infrastructure Ireland to progress the design and implementation of the project. The upgraded junction is expected to be fully operational by 2023.



M28 Cork – Ringaskiddy

The importance of improving strategic road access to the Ringaskiddy Port is of national economic priority and was reiterated in the recently published NDP. The proposed upgrade of the N28 (to become the M28) is a long-term strategic objective for both Cork City and County Councils and a mainstay of regional planning frameworks including the Southwest Regional Planning Guidelines, the Cork Area Strategic Plan (CASP) and the Cork County Development Plan. The M28 will serve a number of strategic purposes including enabling the relocation of the Port of Cork's activities from the City Docks to Ringaskiddy and providing Ringaskiddy Port with the capacity to handle increased freight activity associated with Brexit. The N28 is identified as a part of the Ten-T Core network.

N27 Cork – Cork Airport

Cork Airport is part of the EU TEN-T Core network which is served by the N27. The N27 between the Kinsale Road Interchange and Cork Airport is currently a single carriageway road, with a northbound bus lane at the northern end approaching the Kinsale Road Interchange. A two-way continuous bus lane is proposed under CMATS to improve public transport priority between Cork Airport and Cork City Centre.

N22, N25, N27, N71

TII will engage in corridor management of the N22, N25, N27 and N71 for maintenance, renewal and improvement to achieve appropriate levels of service within the context of providing value for money and in line with Government Programmes,

such as the NDP 2018-2027. Within the metropolitan area, there will be a focus on improvements and maintenance of the following routes:

- N22 - Ovens to Ballyvourney;
- N25 - From its junction with the M8 at Dunkettle to Middleton to provide a higher level of service for strategic traffic on the route;
- N27; and
- N71.

N/M20 Cork – Limerick

Cork and Limerick are Ireland's second and third largest cities located in the southwest and mid-west respectively. An opportunity exists to provide better connectivity between the two cities by improving the quality of the transport network which will also address road safety issues associated with the existing N20 route and provide for safer, efficient and shorter journeys. The provision of the M20 is also in line with the NPF's National Strategic Outcome 2, to provide for Enhanced Regional Accessibility.

The NDP 2018-2027 identifies the M20 Cork - Limerick road to be delivered by 2027, subject to appraisal, planning and procurement, with a 2016 estimated cost of approximately €900million. The N20 Cork - Limerick is part of the Ten-T Comprehensive network.

The solution for the N20 corridor will be identified through the N/M20 Cork to Limerick Road Improvement Scheme appraisal process and the development of a business case for the scheme. While included in the NDP, the M20 Cork - Limerick road falls outside of the scope of CMATS due to its inter-regional function.

Cork North Ring Road (CNRR)

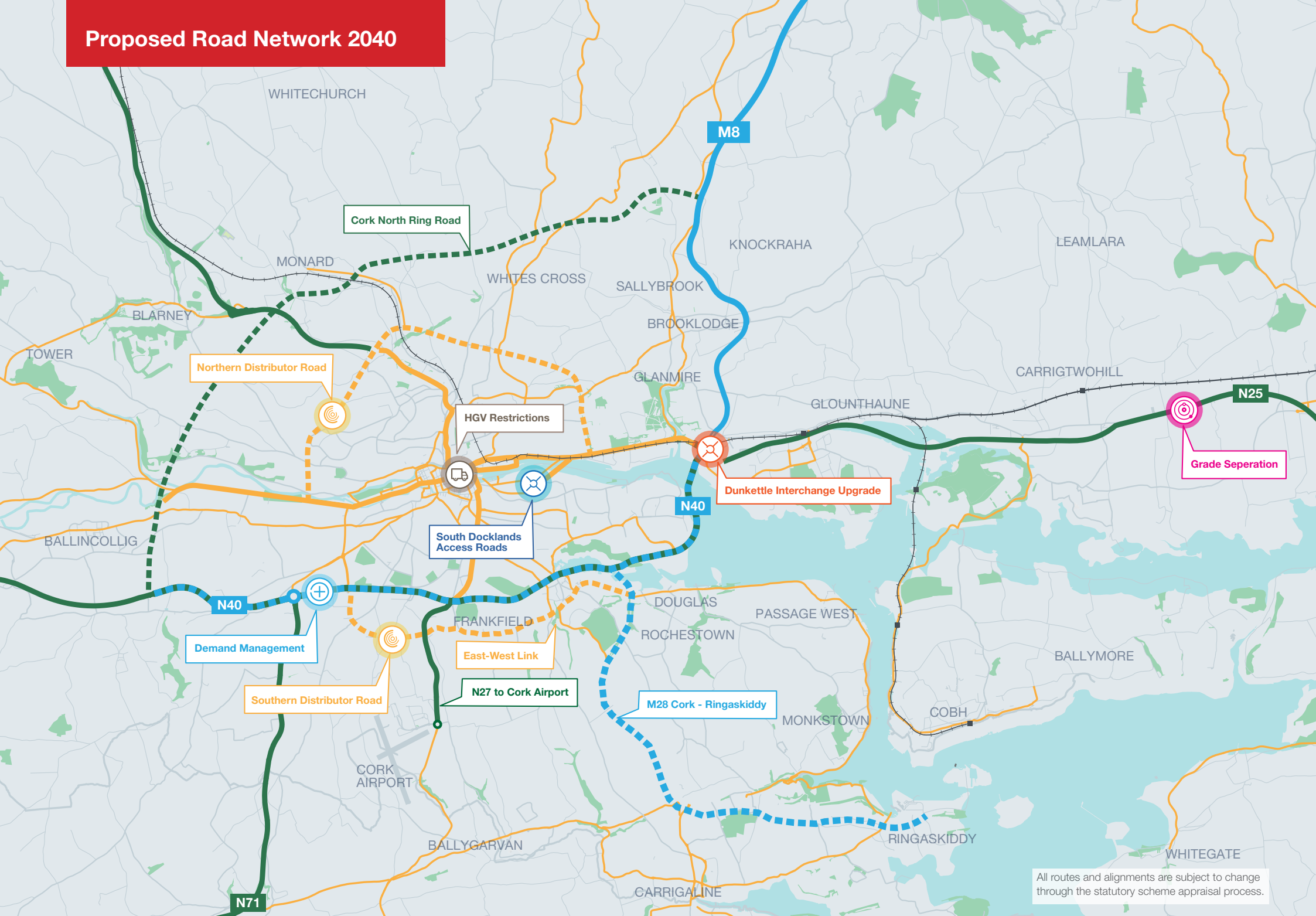
As part of the N/M20 Cork to Limerick Road Improvement Scheme, TII will examine the inclusion of the Cork North Ring Road (CNRR) linking the N20 to Dunkettle Interchange. The NDP indicates that the CNRR is a complementary but independent scheme to the N/M20 corridor scheme. However, its requirements, scale (based on demand levels) and justification will be considered and assessed as part of the appraisal process for the overall M20 scheme. Whilst it is envisaged that the CNRR would not be delivered in advance of the substantive public transport elements of the Strategy. The appraisal process for the N/M20 Scheme will consider implementation and delivery in great detail.

This approach is in accordance with the NPF's National Strategic Objectives for Compact Growth. In line with the NDP, the requirement for the CNRR will be determined in accordance with DTTAS Guidance for scheme appraisal and TII Project Appraisal Guidelines for National Roads (PAG) including a Route Options Assessment and Business Case. This Assessment should include the examination of a potential link from the N22 to the M8 and if required, designed in such a fashion that prioritises and safeguards the strategic traffic function of the route.

Subject to the appraisal outcomes of the N/M20 Cork to Limerick Road Improvement Scheme, it is expected that the CNRR project will be planned for implementation during the latter period of the Strategy. The finalisation of a route corridor and its protection from development intrusion is an objective of CMATS to allow for changing circumstances including potentially an earlier project delivery requirement.



Proposed Road Network 2040



All routes and alignments are subject to change through the statutory scheme appraisal process.

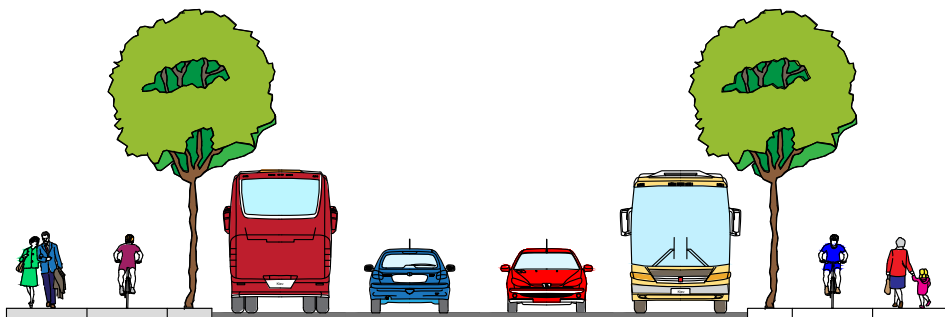
Requirements of Regional and Local Road Network

Any additional regional road network provision needs to support a multi-modal function, catering for public transport, walking and cycling in addition to private motorised traffic. The regional road network provision is required to cater for the following:

- Provide access to 'open-up' planned development lands;
- Provide walking and cycling linkages;
- Provide access and priority to public transport routes;
- Cater for orbital public transport provision;
- Facilitate the removal of through traffic from Cork City Centre; and
- Facilitate the removal of local traffic from strategic road routes.

To achieve these principles, the cross section of these roads should cater equally for walking, cycling, public transport and car traffic as follows:

- Footpath and Cycle lane provision – approximately 33% of cross section;
- Bus lane and priority provision – approximately 33% of cross section; and
- Road traffic lane – approximately 33% of cross section.



TYPICAL CROSS-SECTION OF PROPOSED DISTRIBUTOR ROADS

Regional and Local Roads

The following outlines the additional regional road network provisions for CMATS.

The Cork Northern Distributor Road

CMATS requires additional road network infrastructure on the north side of Cork City to cater for access to planned development lands, provide walking and cycling linkages, access to radial public transport routes, orbital public transport provision, and the removal of some strategic traffic from Cork City Centre. This new road will be in the form of a distributor road referred to as the Cork Northern Distributor Road (CNDR). This is distinct from the Cork North Ring Road (CNRR) outlined above, the case for which will be examined by Transport Infrastructure Ireland.

The Cork Northern Distributor Road is a short-term objective and considered to be a 'critical enabler' for CMATS as it:

- Creates opportunities for sustainable development of existing land banks in the Northern Cork Metropolitan area including Monard SDZ and the Ballyvollane Urban Expansion Area;
- Facilitates the rollout of sustainable transport measures including public transport services for the North Cork Metropolitan City area;
- Facilitates the introduction of a HGV ban within the City Centre;
- Serves the requirements of local traffic demand in the northern CMA; and
- Allows for the downgrading of national routes entering Cork City, which can therefore allow for the prioritisation of sustainable modes on these routes.

An indicative cross-section of the CNDR is provided below.

The Cork Northern Distributor Road will provide for orbital movement for bus, pedestrian, cycle and some strategic and general traffic and reduce reliance on radial routes through the city centre. CMATS proposes that the NDR would provide connectivity at its western end to join the existing N22. To achieve this, the link would need to address several topographical and environmental considerations including the River Lee and its associated floodplain, the requirement for a new bridge and a desire to avoid severing the Lee Fields parklands.

Further assessment of the final alignment will be needed to address these concerns and the requirement to provide orbital connectivity between Cork's Northside and key destinations including CUH, CIT, Blackpool and Tivoli Docks.

Southern Distributor Road

The N40 is the focus for a significant proportion of east-west trips in the Cork City- South Environs area. The over-reliance on the N40 for private vehicle trips allied to limited sustainable transport connectivity has resulted in significant congestion at several pinch-points including Douglas Village and the Kinsale Road Roundabout.

To address the significant shortfall in local connectivity in the Southern Environs area, CMATS has identified the requirement for a more comprehensive, multi-modal Southern Distributor Road (SDR).

The SDR will necessitate the upgrade of the existing route and the creation of a new road link between Rochestown and Sarsfield Road, via the Carrigaline Road, Grange Road and Airport Road, and a proposed new link between the N27 and Sarsfield Road. The road will ultimately provide the basis for the Southern Outer Orbital bus route connecting Rochestown with CIT whilst also enabling interchange with radial bus routes.

As with the Cork Northern Distributor Road, the SDR will provide dedicated walking and cycling infrastructure and support planned residential development in the South Environs area. The SDR will support local transport access facilitating a reduction in the N40's use for local trips and its upgrade to motorway status. It is anticipated that the SDR would be developed on an incremental basis.

Whitegate and Marino Point

The R624 (Cobh Road to Marino Point) and the R630 (Midleton to Whitegate) road network will require safeguarding in their function and form to facilitate existing and future port related uses.

County Cork Urban Expansion Area Road Proposals

The provision of additional road network infrastructure within the UAs in Cork County is required to support the development of these areas. Local road network improvements in these areas will be designed to effectively accommodate all modes of transport.

The over-arching objective of these roads is to reduce through traffic and to facilitate walking, cycling, public transport access and public realm improvements in town and village centres. Similarly, improvements to the road network at Little Island should be designed with the intention of prioritising walking and cycling access particularly between the railway station / bus services and employment destinations / residential areas.

The following UEAs will require local access and / or public realm improvements:

- Midleton;
- Carrigtwohill;
- Great Island including Belvelly new bridge (potentially bus only);
- Carrigaline;
- Ballincollig;
- Dunkettle / Ballinglanna;
- Monard; and
- Stoneview.

City Centre Traffic Management

The road network within the City will be reviewed with the aim of prioritising road space for public transport, walking and cycling provision. Within CMATS, it is intended to create a more attractive experience in the city centre, while enhancing facilities for pedestrians and cyclists, prioritising public transport, whilst still allowing access into off-street car parks and designating driving routes into the city.

City Centre Movement Strategy

The Cork City Centre Movement Strategy (CCMS) outlines objectives to; improve the vibrancy of Cork City Centre; to promote sustained economic growth; to deliver a much more attractive environment for shoppers, visitors and tourists; and to help encourage sustained inward investment. Traffic management measures will be important to manage the flow of vehicles into the city centre area.

CCMS objectives included the identification of a street hierarchy within the city centre to clearly identify the main routes into and through the city centre; to maintain accessibility to the city centre off-street car parks; and to manage access for deliveries.

A key objective is to deliver a more efficient public transport system and to improve the reliability of existing bus services. The objectives also relate to pedestrians and cyclists where streets will be developed to provide a more pleasant and attractive shopping experience and a traffic management system that encourages cycling in the city centre.

CCMS as part of CMATS

The CCMS will be implemented in full as part of CMATS. However, CMATS will significantly increase the level of public transport provision and priority above and beyond that proposed as part of the CCMS.



EXAMPLE OF DUNKETTLE INTERCHANGE UPGRADE



This includes continuous bus lanes and bus priority on all key public transport approaches to the City Centre, as well as increased bus lanes and priority though the City Centre including the adoption of bus priority measures on St. Patrick's Street.

The route alignment of the proposed Light Rail Transit (LRT) line will have a significant impact on traffic management proposals within the City Centre. It is envisaged that the sections of the LRT alignment may also be shared with buses in some of the constrained areas of the city, particularly Western Road, Washington Street, St. Patrick Street and MacCurtain Street.

Cork Docklands and Tivoli Docks Bridge and Road Infrastructure

Improved road and bridge connectivity to Cork's North, South and Tivoli Docks is required to support the development of these areas. The road and bridge network infrastructure will need to provide for multi-modal priority and prioritise movements for pedestrians, cycling and public transport particularly in locations closer to the city centre and Kent Station.

A more detailed analysis as part of the Local Area Plan (LAP) process is underway to determine the appropriate level and phasing of bridge infrastructure.

Docklands Bridge Infrastructure

Cork City Council have proposed the following infrastructure projects to connect the North and South Docklands area while providing access to marine traffic:

- South Docklands Eastern Gateway Bridge;
- Water Street Bridge; and
- Mill Road Bridge.

The Mill Road Bridge will be required to provide direct public transport access to Kent Station. The Eastern Gateway Bridge will provide a key multi-modal access to the South Docks which currently only has access from Victoria Road.

Further analysis is required to refine the actual bridge layouts and locations in each case.

South Docklands Road Infrastructure

The key roads within the South Docklands area are Centre Park Road and Monahan's Road. Both roads will need to be upgraded to accommodate increased demand by public transport, walking and cycling.

Bus lanes are proposed for Monahan's Road and segregated light rail transit is proposed on Centre Park Road. Discreet access points will be required from Monahan's Road. The number and form of these arrangements will be determined as part of the LAP process.

North Docklands Road Infrastructure

It has been proposed to realign Horgan's Quay in the North Docklands area to remove car traffic from the quays and open-up quayside frontage for development. The re-aligned road will better tie-in with the new link to the reoriented Kent Station on Alfred Street and a proposed bridge near Mill Road to link directly to Kent Station.

Tivoli Access

Improved access to cater for public transport, pedestrians, cyclists and general traffic is required to develop the Tivoli Docks site as a new urban district, following the relocation of Port of Cork to Ringaskiddy.

A more detailed analysis as part of the LAP process will be required to determine the appropriate level of transport infrastructure required including a potential eastern access.

Heavy Good Vehicles (HGVs)
and freight represent a key
economic driver, moving
goods throughout the CMA
and nationwide.





14 FREIGHT, DELIVERY & SERVICING

The efficient movement of goods is vital to our competitiveness and economic welfare. **65% of our GDP is based on the export of goods and services** whereas the EU-25 average is 30%.

Smarter Travel - A Sustainable Transport Future

To meet NPF 2040 projections for Cork, construction of new homes, offices, social infrastructure and places of education will require more movement of HGVs and lorries. Ireland is an export-led economy, and that is reflected in increased demand for the development of improved access routes to the Port of Cork- particularly in light of Brexit.

Finally, at a city and metropolitan town scale, there will be a greater level of delivery and servicing activity and waste management due to economic activity and changes in shopping habits.

While presenting challenges in terms of increased trips, safety, congestion, air and noise pollution, the clustering of activities allied to an improvement in the strategic transport infrastructure offers the possibility of innovative approaches to mitigate impact of freight activity in Cork. Over-arching objectives for the management of freight movement include:

- Re-directing the through movement of freight from densely populated areas and unsuitable local roads to the strategic road network;
- Examining the feasibility of consolidation centres and break-bulk facilities outside of the national road network in the medium term, to facilitate smaller vehicles delivering to the city centre;

- Requiring area-based construction, and delivery and servicing plans as part of new development with a view to consolidating deliveries where practical;
- Re-timing freight trips to out-of-hours wherever practicable; and
- Ensuring that delivery, servicing and waste management trips are made as green and quiet as possible through the use of zero or low emission vehicles where appropriate.

Port of Cork Relocation

The relocation of the Port of Cork's industries and container terminal from the City and Tivoli Docks area to Ringaskiddy is a long-standing objective for the region. The relocation of port-related activity from the city quays will be the first step in freeing up significant tracts of strategic brownfield development land to facilitate the sustainable growth of Cork City along suburban rail and light rail corridors. The relocation of the Port of Cork, coupled with the upgrade to the N28 to motorway standard (M28) will reduce some localised HGV impacts within the city and reinforce the transfer of strategic freight to the National Road Network.

As noted in the previous chapter, the R624 (Cobh Road to Marino Point) and the R630 (Midleton to Whitegate) will require safeguarding in their function and form to facilitate potential future expansion of the Port of cork's activities in the Lower Harbour Area.

Heavy Good Vehicles

Heavy Good Vehicles (HGVs) and freight represent a key economic driver, moving goods throughout the CMA and nationwide. Increased construction activity will lead to an increase in the amount of construction materials for example. HGV movement can also have significant impacts on traffic operations, noise, air pollution and the safety of other road users, particularly within urban environments.

HGV management proposals include:

- Implementation of HGV restrictions within the boundary created by the N40 South Ring Road and proposed Northern Distributor Road;
- HGV restrictions with Cork City Centre. The manner of implementation, enforcement, HGV access routes and extent of scheme should be determined at a later stage between TII, the NTA, stakeholders from the freight industry and Cork City Council; and
- Mobility management planning at key freight locations such as the Port of Cork to reduce the HGV impact on the road network during peak periods.

The restriction of HGVs from Cork City Centre will improve the environment for active modes and will improve safety, while the regulation of delivery times can help off-set local traffic congestion.



The implementation of designated 'lorry routes' on the national road network at designated times of the day will help mitigate delays and conflict with other modes.

Whilst road user charging on the strategic road network may be considered appropriate to discourage short trips, local traffic, careful consideration should be given to charging arrangements for HGVs.

Construction and Logistics Centres (CLCs)

The development of shared construction and logistics centres (CLCs) is a recent trend in European cities projected to receive significant increases in population and construction activity in future years.

CLCs are typically set-up near strategic development sites on sites adjacent to the strategic road network to minimise travelling distances for construction materials. Developers are often required to sign up to shared CLC centres as part of the development management process. Trips to and from construction sites are minimised as HGVs with less than 80% occupancy will be held until fully occupied and trips to construction sites can only take place through the use of a booking system. The levels of development assigned to designated areas across the CMA would appear to justify the need for a number of construction and logistics centres.

The River Lee has long facilitated the movement and storage of freight and construction materials and offers an obvious opportunity to reduce the need and length for motorised trips on the road network.

Rail based freight movement is also a possibility in the future but would likely necessitate a new link between the relocated Port of Cork in Marino Point and the Cork Suburban Rail network.

Delivery and Servicing

Cork has a number of significant regeneration and employment areas that will lead to an increase in delivery and servicing needs. Taking one example, the Cork Metropolitan Area has a deserved reputation as an international quality food hub and its businesses and restaurants receive a large number of deliveries across the day to distribute fresh produce.

Personal delivery and waste management services will also exponentially increase as more people live in the CMA, creating more congestion and air / noise pollution unless carefully managed. To off-set this, it is intended to:

- Examine the feasibility of strategic consolidation centres and break-bulk facilities in proximity to the national road network in the medium term to facilitate smaller, lower emission vehicles delivering to the city centre;

- Examine the case for urban or micro-consolidation centres within Cork City to reduce the number of last mile trips being made by motorised vehicles e.g. examining the case for cargo bikes or small electric vans delivering to restaurants and shops;
- Require robust Delivery and Servicing plans as part of an overarching Mobility Plan through the development management process;
- Examine the feasibility of out-of-hours delivery and servicing through the use of low-noise vehicles and changes to planning conditions where appropriate;
- Minimise empty return trips by taking inspiration from innovative practices such as the Utrecht Cargohopper and Gothenburg's Stadleveransen city delivery system; and
- Support the placement of local 'Click and Collect' facilities at rail stations, new residential developments and Park and Ride facilities, to reduce the amount of individual personal deliveries to workplaces and homes where the recipient is often absent.









15 SUPPORTING MEASURES

A number of sustainable transport projects will be delivered over the period to 2027, **to provide additional sustainable travel options to complement increased capacity and faster higher quality public transport in the cities.**

National Development Plan, 2018-2027

Role of Supporting Measures within CMATS

A key principle for CMATS is to reduce dependency on the private car within the CMA while increasing the attractiveness of sustainable transport options. Another fundamental principle of the Strategy is to support the future growth of the CMA through the provision of an efficient transport network. Supporting measures have an important role to play in providing a future transport network that matches up to these principles. The full benefits of the significant investment that will be delivered under CMATS cannot be achieved through the provision of infrastructure alone and must be combined with the implementation of measures that support best use of that infrastructure.

The Strategy's supporting measures will be essential to the creation of physical, social and cultural environments where walking, cycling and public transport are attractive, practical and logical alternatives to the private car. It will take a wide range of supportive initiatives to:

- Create communities that support sustainable transport;
- Improve public awareness and educate users on available options to help them make the best choices;
- Prioritise sustainable transportation options; and
- Improve end to end trip facilities and integration.

Local Transport Plans (LTPs)

Both local authorities should seek to translate the overarching outcomes and objectives through the use of area specific Local Transport (Implementation) Plans - sometimes referred to as Sustainable Urban Mobility Plans (SUMP) at city or Metropolitan town centre level.

These Plans should set ambitious and realistic targets to prioritise active and sustainable transport mode shares that reduce local private motor trips over the short, medium and long term. Cork County Council are currently progressing a LTIP at Little Island and envisage future LTPs for Carrigaline, Ringaskiddy, Midleton and other urban settlements.

Built Environment Measures Urban Design and Place-making

There is been a change in emphasis in recent years to re-examine the role of our streets as places in their own right that support a wider range of functions than simply to facilitate the through movement of traffic. Quality urban design is critical to a sense of place and prioritises local walking, cycling and public transport for users of all abilities. Apart from street design, significant improvements to the quality of design and layout of new development through the development management process will be required to support the physical infrastructure improvements outlined in this Strategy.

A quality built environment and street network (sometimes referred to as 'Healthy Streets') typically encompasses a wide range of indicators including traffic calmed pedestrian and cycle environments, that includes safe street crossings, greenery, places of interest, accessibility to public transport, activity, a low noise and low polluted environment, and provision of essential services and recreational facilities.

Additional mobility / age friendly urban design features usually includes tactile paving, priority over local junctions, dropped kerbs, street and park furniture such as rest benches, legible pedestrian signage and well-lit walking areas. Further security measures can be very effectively achieved through good urban design principles such as ground floor uses and mixed use environments providing activity and passive surveillance.

Pedestrian and Cycle Wayfinding

Wayfinding, or legibility, relates to how people can find their way around an area. For pedestrians and cyclists this is of particular importance as they are more likely to move through an area if the route is clear, logical and easy to follow. There are several wayfinding techniques including architectural clues, surface treatments, lighting, sight lines, and where appropriate, signage. The Design Manual for Roads and Streets (DMURS) provides guidance on wayfinding and is expected to be revised in the short term.

Quality wayfinding techniques should be employed alongside the delivery of the improved walking and cycling networks. As outlined in the Walking section, the implementation of a quality wayfinding techniques should not contribute to street clutter. The replacement of the existing finger post signage employed in Cork should be replaced by a smart, consistent wayfinding system along the lines of the Legible London system to benefit locals and visitors alike.

Behavioural Change Programmes

A primary focus of this Strategy is to facilitate a move to more sustainable forms of travel by advocating for much better integration of land use and transport and set out the physical infrastructure to enable the region to do so. However, this will need to be supported at local level through behavioural change initiatives (sometimes referred to as 'soft measures').

Typically, effective behavioural change programmes comprise of a highly personalised approach aimed at engaging a group of people, making them think about their travel choices, providing them with full information, and encouraging and incentivising the use of alternatives. The over-arching aim is to encourage people out of their private cars onto public transport and/or promoting the use of active modes where feasible to do so.

There are a number of existing behavioural change initiatives across the CMA supported by the NTA and other sources. These include the following:

- Green Schools Travel;
- Workplace Travel programmes/ Mobility Management Plans;

- UCC's Commuter Plan as part of its Green Camus initiative;
- Transport and Mobility Forum's 'Mix Your Mode' supported through the EU's BATTERI programme; and
- A number of workplaces including Cork City Council and businesses in the bio-pharma cluster at Ringaskiddy are members of the NTA's Smarter Workplace Programme.

The Strategy supports the extension of the above programmes to cover more places of education, shopping centres, hospitals, and residential travel programmes as new housing development comes forward. Provision of dedicated cycling (and walking) officers as the case in Dublin City Council should be considered for both local authorities in tandem with improvements to the pedestrian and cyclist network.

Workplace Travel Plans

Workplace Travel Plans, also known as Mobility Management Plans, comprise a package of measures to promote / support sustainable travel patterns. The Smarter Travel Workplaces Programme, managed by the NTA, engages with larger employers in the CMA in the development and implementation of Workplace Travel Plans. The Cork City and County Development Plans include for Travel Plan requirements for new developments.

Workplace travel planning provides the opportunity to communicate the implementation of CMATS and to promote the benefits of the Strategy directly with a large number of commuters. The continuation and expansion of workplace travel planning in the CMA will play an

important role in delivering the behavioural change that is required to achieve the full benefits of CMATS.

Smarter Travel Campus

Smarter Travel Campus is a behavioural change programme encompassing actions to encourage and support third level students and staff to walk, cycle, take public transport or carshare on the commute to campus. Smarter Travel Campus is a hands-on programme managed by the NTA working with Third Level Institutions to implement campus travel plans. For example, UCC is an active Smarter Travel Campus Partner Campus for a number of years and engage in initiatives during the year to promote smarter travel.

The Smarter Travel Campus programme can act as a supporting measure for CMATS by providing the opportunity to communicate the implementation of CMATS and to promote the benefits of the Strategy directly with the CMA's third level population, particularly including those attending and working in the large third level institutions, UCC, CIT, St. John's Central College and the College of Commerce.

Walking and Cycling Officer

London and Manchester have recently appointed Walking and Cycling Commissioners to act as a conduit between local authorities and key stakeholder groups. At a minimum, the appointment of a dedicated walking and cycling officer (similar to that of Dublin City Council) should be considered to coordinate promotional events between relevant stakeholder groups and to raise the profile of both modes.

The availability of free private parking at key destinations has a significant impact on the relative attractiveness of the private car versus sustainable transport options.

School Travel Strategy

Improving the quality and extent of school travel planning across the CMA is of critical importance to the achievement of modal shift, the improvement of public health and reducing the impact of car-based journeys to school / linked trips to school and work. In simple terms, far too many children are driven relatively short distances to school.

Associated negative impacts relating to this include the loss of opportunities to incorporate an element of active travel into the journey to school, congestion and other public health and safety concerns relating to the vehicular impact of school drop-off and collection. Recent school building programmes have resulted in many new schools being built on greenfield sites at the edge of new development areas, remote from existing residential catchments, with a resultant high level of dependence on car-based accessibility. In many cases, attempts to incorporate active travel from the outset are undermined by a lack of adequate design provision for walking and cycling on the surrounding road network, access arrangement and internal school campus layout.

There are a number of land use planning and transport planning considerations relevant to the provision of new schools and the retrospective provision of walking and cycling infrastructure within the catchment of existing schools:

- The appropriate siting of schools. New schools must be better integrated into existing or planned new development areas so as to optimise walking and cycling catchments;
- Mandatory Travel Surveys and Travel Plans for each school in the CMA;



- Review and targeted improvements to walking and cycling conditions in the vicinity of existing schools;
- Identification of drop off areas for parents and school buses within walking distance of the school to facilitate Park and Stride campaigns or 'Walking Buses';
- Review of school opening and closing times including consideration of staggered times in areas where there is a concentration of schools;
- Review of bus routes, services and times to serve schools with high car mode shares;
- Implementation of vehicle-restricted areas in the immediate vicinity of schools;
- Implementation of 'No idling' areas in the immediate vicinity of schools to reduce emissions created by stationary vehicles with engines running; and
- A significant uplift in cycle parking provision in primary and secondary schools.

CMATS recommends the further investigation of this topic through a comprehensive Cork Metropolitan Area School Travel Strategy.

As outlined in Chapter 6 (Walking), there are a number of best practice examples in the field of school travel planning, including Edinburgh's 'School Streets' programme and Hackney Council's 'Safer Routes to School' where lessons can be applied in Cork.

Green Schools Programme Travel Module

Travel is the fourth theme of the Green-Schools programme under which schools prepare action plans to promote and increase the number of students walking, cycling, scooting, using public transport or carpooling on the way to school. The NTA works with An Taisce to oversee a school travel module as part of the Green Schools programme. The NTA has published a Toolkit for School Travel that presents a set of measures for use by schools to promote ways of reducing car use on the trip to and from school.

There is potential to extend the Green Schools Programme to all schools in the CMA providing the opportunity to communicate the implementation of CMATS and to promote the benefits of the Strategy directly with the school population.

Urban design that creates a **visually appealing urban environment** is often very conducive to encouraging walking, cycling and public transport.



Real Time Passenger Information Systems

Real Time Passenger Information (RTPI) provides accurate information on actual departure and arrival times, enabling passengers to more efficiently plan their trips and the public transport operator to maintain or improve performance. The NTA is currently providing a RTPI service for bus passengers in Cork City. RTPI signs are located where they will provide information to the greatest number of bus passengers and to include as many main routes as possible. All Bus Éireann stops are included on the website, smartphone Apps and SMS phone services.

Electronic RTPI boards providing countdown information for public transport services in the immediate vicinity of large employers and third level educational campuses at a minimum, should be increased significantly as part of Travel Plan implementation.

Marketing / Information Campaigns

Information provision and appropriate marketing are important factors that can encourage people to use sustainable modes. In delivering sustainable transport improvements consideration should be given to branding, marketing, advertising and using smart, creative, cost-efficient campaigns targeted at increasing and maintaining sustainable transport demand. Information campaigns should be an integral part of CMATS delivery. This could include for example, branding buses with key destinations on the route depicted on the side, front-loading public transport and walking and cycling information on visitor information packs ahead of directions for destinations by car.



Embracing Technology for Sustainable Transport

Technological advancements offer an opportunity to respond to some of the issues outlined in the Strategy and will become more prevalent over the lifetime of the Strategy. Virtual parking and advanced booking of loading bays can assist companies make deliveries on time, reducing congestion and conflict. Autonomous vehicles, or driverless cars, could potentially provide an opportunity to improve safety, with cars programmed to obey traffic regulations and speed limits and geofencing preventing them from entering certain spaces. Driverless cars could potentially free up kerbside space as the requirement for on-street residential and long-stay parking is no longer required.

Mobility as a Service

Mobility as a Service (MaaS) is a concept to usually applied as an alternative to owning a private car to support urban living. The concept typically involves the use of technology to support a mobility system encompassing public transport, cycle hire, car clubs and taxis.

Transport services can typically be paid on a subscription basis or on a Pay-As-You-Go basis like the Leap card or London's Oyster card. The Leap card in Dublin for example, supports the use of Luas, bus, DART and in more recent times, the Dublin Bike Sharing Scheme and the GoCar car club scheme. MaaS will also be a useful tool in land use planning to support car free or low car developments near public transport hubs and provide access to a car without owning one when needed.

Smarter Mobility

The application of Intelligent Transport Systems (ITS) to the transport network will increase the efficiency of its operation. ITS represents the evolution of traffic management from a static unresponsive activity to a dynamic responsive activity that can adapt to the ever-changing traffic conditions as they are presented in real time. This is facilitated through the rapid collation and analysis of performance data which allows for swift informed decision making.



Smart Mobility measures could include:

- Expanding the Urban Traffic Control;
- Application of Variable Speed Limits;
- Installation of a Bus Priority System;
- Use of dynamic parking systems; and
- Smart delivery and servicing systems - including pre-booking of delivery bays.

Car Clubs

Car clubs are a growing area in Ireland with the long-established GoCar that operates nationwide, recently being joined by the YUKO car club in Dublin. Car clubs can be an important tool in facilitating car-free or low-car development in urban areas, providing access to a car for residents without the on-going expense of owning one.

There is credible evidence to suggest that the increased availability of car clubs leads to a reduction of private car ownership. A recent survey undertaken in London (Carplus, 2016) suggests that 10.5 private cars are removed from London's roads for each car club vehicle, due to the users disposing of their own private cars.



Furthermore, a third of round-trip car club members reported that they would have bought a private car had they not joined a car club meaning a deferred purchase of a further 22 cars per car club vehicle.

Vehicles operated by car clubs also tend to be greener than private cars as vehicles are updated more frequently. Recent developments in the car club market in Europe, including the availability of point-to-point electric car clubs (such as the Autolib in Paris) and one-way or 'floating' car clubs such as the DriveNow and Zipcar Flex, mean that these options are likely to become more prominent in Ireland in the short to medium term and can play a role in facilitating lower private car ownership.

Dynamic Parking Systems or Virtual Loading Bay Systems

To support a more efficient use of kerbside space, urban areas in Europe have begun trialling smart technology including dynamic on-street parking models and virtual loading bays, recouping costs by charging for vehicles to use this service.

This technology can be investigated further in Ireland to minimise conflict for competing demands for limited road space and to reduce search traffic and local congestion.

Autonomous Vehicles

Autonomous Vehicles (AVs), or driverless cars, may potentially provide an opportunity to improve safety, with cars programmed to obey traffic regulations and speed limits and geofencing preventing them from entering certain spaces. Driverless cars could potentially free up kerbside space as the demand for on-street residential and long-stay parking is no longer needed. However, the likely benefits or dis-benefits of AVs on active travel, public transport and safety are yet to be determined.

Though outside of the scope of this Strategy, both the NTA and local authorities will need to assess, legislate and monitor benefits presented by the advent of shared use Autonomous Vehicles likely to present themselves in the first half of the Strategy timeframe. This assessment will need to measure their relevance against over-arching objectives to promote more active travel, promote equitable transport and to reduce congestion, pollution and street clutter.





16 IMPLEMENTATION

The success of the National Planning Framework depends on its policy reflection and **programme delivery** at national, regional and local level.

National Planning Framework 2040

Costs and Funding

The overall cost of the Strategy is approximately €3.55 billion (2018 prices), and its delivery will be subject to the availability of funding. It is acknowledged that each of the major elements of CMATS will require to be appraised individually on its own merits, in terms of feasibility, design, planning, approval and funding. Business cases will be required for each of the major infrastructure proposals included in the Strategy, in line with the requirements of the Public Spending Code and the Common Appraisal Framework.

Phased Implementation

A phased implementation plan has been developed that incrementally builds the transport infrastructure, services and investment over time to align with the continued growth of the CMA. The implementation plan has disaggregated the strategy implementation timeframe into:

- Short Term: 1-5 years;
- Medium Term: 5-10 years; and
- Long Term: 10-20 years.

CMATS however is intended to be scalable, flexible and future-proofed enough to meet changes in population and employment growth. Any changes in the proposed land use distribution however, must be consistent with the principle of Public Transit Oriented Development (PTOD). CMATS is a live document, subject to periodic review.

In the event of population and employment growth earlier than anticipated than specific forms of public transport infrastructure will need to be brought forward as required for example, the light rail transit (LRT) or provision of specific Park and Ride facilities. The scalability of the public transport infrastructure means that planned frequencies can also be revised upwards to meet growing demand. Examples of this include:

- Light Rail frequency moving from a planned 5-minute headway to 2 minutes;
- Cork Suburban rail running every 5 minutes;
- Increase in the frequency of Bus Connects services; and
- Provision of high quality pedestrian and cycling infrastructure in advance of Docklands development.

Suburban Rail

Short Term:

- Provide through running of suburban rail services through Kent Station between East Cork and Mallow.
- Include Mallow within Leap Card discount range to promote commuting trips by rail.
- Develop new stations in tandem with land use, and provide passing loops and platform improvements as required.
- Undertake Review of Suburban Rail Network to determine level of upgrades and new stations required.

Medium Term:

- Increase the number of commuter services to 3 trains per hour between both Midleton and Cobh, and Kent Station, subject to sufficient demand/usage.
- Increase the number of through running services to Mallow to align with increase in suburban rail services.
- An additional platform at Kent Station will be required on the outer shunt line to facilitate increased through running services, without impacting on the operation of the Inter-City services.
- Signalling improvements are likely to be required at Glounthaune Junction and at Kent Station.
- Develop new stations in tandem with land use, and provide passing loops and platform improvements as required.

Long Term:

- Further increase the number of commuter services up to 6 trains per hour between both Midleton and Cobh, and Kent Station.
- Increase the number of through running services to Mallow up to 6 trains per hour to align with increase in suburban rail services.
- In order to meet this service increase, a double track between Glounthaune and Midleton is required. In the long term the completion of all stations and associated infrastructure such as passing loops, platform improvements, etc. is required.
- Long term consideration for the electrification of commuter rail lines between Mallow, Cobh and Midleton.

Light Rail

Short Term:

- The identification and protection of an alignment for the light rail scheme, allowing development consolidation along the corridor.
- Design, planning and implementation of interim high frequency bus service route and bus corridor priority measures along alignment of Light Rail is required to serve the East-West Corridor Demand in the Short to Medium Term.
- Provision of walking, cycling, public transport bridge near Mill Road to link Cork South Docks and Kent Station to support development.

Medium to Long Term:

- Design, planning and implementation of the Light Rail Transit along the East-West Corridor.
- There is potential for the phased implementation of the Light Rail system with Kent Station, Pairc Uí Chaoimh, and Cork Institute of Technology as potential phased termination points.
- The phased increase of service frequency and capacity can also be delivered, depending on the level of land use development and intensification, and associated light rail costs.

Bus Network

Short Term:

Further develop, design and implement BusConnects network for Cork based on CMATS network.

Prioritisation of the following bus network corridors in the short term:

- East-West interim bus corridor following Light Rail corridor alignment;
- Douglas Road and South Douglas Road Corridor;
- N20 Mallow Road Corridor;
- Summerhill North / Ballyhooly Road Corridor;
- Hollyhill (Apple Campus) to City Centre; and
- Dunkettle to City Centre

Medium Term:

- Completion of Cork based BusConnects network, including bus radial, cross-city and orbital bus services, priority measures and supporting measures.

Long Term:

- On-going operation and optimisation of the bus network routes and priority measures.

Cycling Network

Short to Medium Term:

- Development and completion of the primary and inter-city cycle network, including the flagship 'Lee to Sea Greenway' from Ballincollig to Crosshaven.
- Align implementation of the cycling network with the implementation of the BusConnects network.
- Feeder network and permeability review to be undertaken and implemented.
- Further cycle network implementation aligned with new development opportunities and traffic calming.

Long Term:

- Completion of secondary and Greenway cycle network.

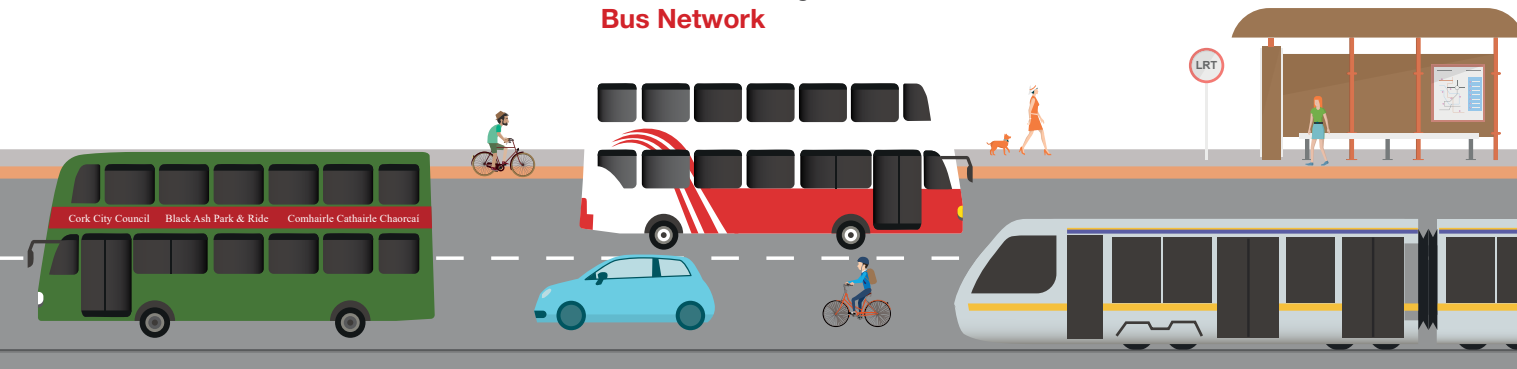
Walking Network

Short to Medium Term:

- Completion of the Cork Walking Strategy recommendations.
- Align implementation of improvements to the walking network with the implementation of the BusConnects network.
- Ongoing maintenance and renewal of footpaths, urban realm improvements and walking network provision.
- A CMA-wide programme of improvement of walking access to public transport.

Long Term:

- Ongoing maintenance and renewal of footpaths, urban realm and walking network provision.



Parking

Short term

- Design, Planning and Land acquisition for all strategic Park and Rides;
- Prioritise Park and Ride at Dunkettle;
- Implement residential parking zones across city and metro towns; and
- Development of Mobility Hubs in regeneration areas.

Medium Term

- Delivery of all BusConnects Park and Ride Facilities; and
- Implement parking zones in new residential areas.

Long term

- Delivery of all remaining Park and Ride sites.

Road Network

Short Term:

- Completion of the Dunkettle Interchange Upgrade to remove significant bottleneck on strategic network;
- Completion of the Cork City Centre Movement Strategy (CCMS), with a view to further developing the public transport priority measures outlined within CMATS;
- Ongoing development of the regional road network to provide sustainable access to development lands;
- Appraisal and development of both Northern and Southern Distributor Roads; and
- Appraisal of Northern Ring Road (NRR) as part of N/M20 Cork-Limerick Road.

Medium Term:

- Completion of the M28 Cork – Ringaskiddy Motorway to provide improved access to Port of Cork and industry in Ringaskiddy;
- Ongoing review, monitoring and implementation of National Road network demand management measures. Provision of bridge access for walking, cycling, public transport and traffic access to Cork South Docklands to support development. Ongoing development of the regional road network to provide sustainable access to development lands;
- Completion of Northern Distributor Road;
- Completion of Southern Distributor Road;
- Ongoing review, monitoring and implementation of National Road network demand management measures; and
- Ongoing development of the regional road network to provide sustainable access to development lands.

Long Term:

- Provision of Cork North Ring Road (CNRR);
- Ongoing review, monitoring and implementation of National Road network demand management measures; and
- Ongoing development of the regional road network to provide sustainable access to development lands.

Funding and Operational Costs

Aside from capital investment the implementation of the Strategy will incur and on-going operational costs. A significant proportion of capital investment will require Exchequer funding from Central Government, however other sources of supplementary funding will be required.

These are likely to include but not be limited to;

- Loans from the European Investment Bank (EIB) to fund feasibility and start-up costs for public transport;
- Development contributions for strategic public transport infrastructure based on floorspace;
- Site-specific development contributions- for example for footpath widening, real time information boards or extension to the Cycle Hire Scheme; and
- Future levies imposed for congestion, safety or air quality reasons- e.g. workplace parking levies, road user charging, parking zones, or parking levies on out-of-town shopping centres.

A phased implementation plan has been developed that incrementally builds the transport infrastructure, services and investment over time to align with the continued growth of the CMA.

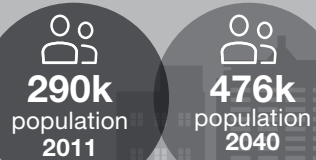
	SHORT TERM	MEDIUM TERM	LONG TERM
Timeframe	2026	2031	2040
Cork Suburban Rail Network			
Through Running at Kent Station			
Increase service frequency to 3tph from Midleton and Cobh			
Kent Station Platform Improvements			
Bypass loops at new stations on line north of Kent Station			
Mallow platform improvements			
Cobh platform improvements			
New Rail Stations (as required by land use development)			
Dual Track to Midleton			
Increase service frequency to 6tph from Midleton and Cobh			
Electrification			
Purchase of Rolling Stock			
Light Rail			
Route Alignment Reservationand Interim Bus route			
Interim Bus Service O&M			
Planning and Design of LRT			
Construction and Implementation of LRT			
Bus			
Bus Network Implementation			
Park & Ride			
New Park & Ride Sites			
Cycling			
Primary Network			
Secondary Network			
Feeder Network			
Inter Urban			
Greenways			
Walking			
Footpaths and Walking Provision			
Road Network			
North & Southern Distributor Roads Appraisal			
Delivery of both NDR & SDR			
Appraisal of Northern Ring Road (NRR)			
Delivery of NRR			
Dunkettle Interchange			
M28 Cork to Ringaskiddy Motorway			
M20 Cork to Limerick			
Delivery of Cork Distributor Roads			
N27			
N40 Demand Management			
Docklands and Tivoli Road Network and Bridges			
Regional Roads			
Operation and Maintanance			
Parking Management			
Integration & ITS			



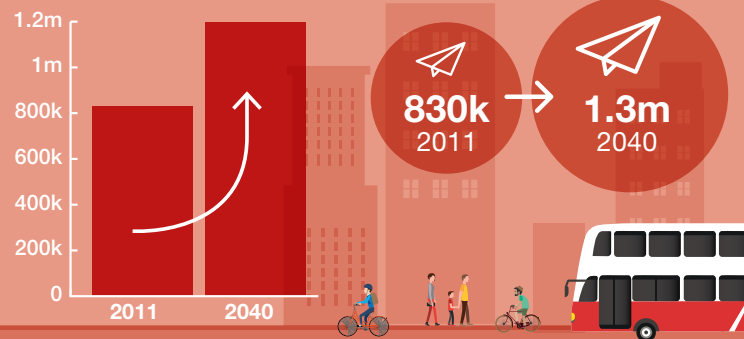


STRATEGY OUTCOMES

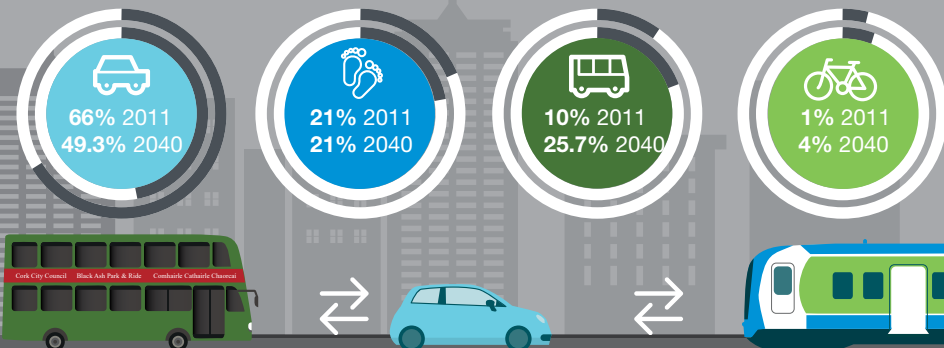
FUTURE GROWTH



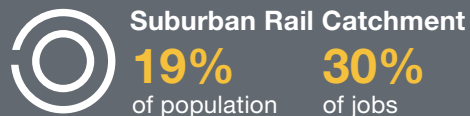
DAILY DEMAND FOR TRAVEL



AM PEAK MODE SHARE 2011 - 2040



ACCESSIBILITY AND SOCIAL INCLUSION



SAFETY & ENVIRONMENTAL

Over a 30 year strategy period



Environmental:
46,000 tonnes pa reduction in vehicular emissions

ECONOMY & COST ESTIMATE



17 STRATEGY OUTCOMES

This Strategy will deliver an accessible, integrated transport network that enables the sustainable growth of the Cork Metropolitan Area as a dynamic, connected, and internationally competitive European city region as envisaged by the National Planning Framework 2040.

National Planning Framework 2040

The Cork Metropolitan Area Transport Strategy 2040 (CMATS) will result in several positive social, economic and environmental outcomes. At a national level, CMATS complements and supports the implementation of the National Planning Framework. At a metropolitan area level, CMATS addresses the transport and land use challenges set out in Chapter 3 as well as adhering to the six guiding principles set out in the Introduction to this report.

The challenge of implementation will now be addressed by the Cork City Council and Cork County Council, working in conjunction with the National Transport Authority, Transport Infrastructure Ireland and other key stakeholders, to deliver on the necessary land use consolidation, securing capital investment under the National Development Plan, and the implementation of CMATS' transport infrastructure, supporting measures and demand management measures, to enable the full benefits of CMATS to be achieved.

National and Regional Level Outcomes

CMATS will complement and deliver upon the strategic direction given by Government policy as it relates to national spatial planning, as presented in the National Planning Framework (NPF) and capital investment priorities as presented in the National Development Plan (NDP).

Consistency with the National Planning Framework 2040

CMATS complements the three key National Policy Objectives for structuring growth in Ireland:

- **NPO 1** Growing Our regions;
- **NPO 2** Building Stronger Regions: Accessible Centres of Scale; and
- **NPO 3** Compact, Smart, Sustainable Growth.

This will be achieved, primarily through the integration of Land Use and Transport planning and investment underpinning the CMATS, against the assumed scale and distribution of growth in the Cork Metropolitan Area (CMA) up to the year 2040. Under the provisions of the NPF and its associated Regional Spatial and Economic Strategy (RSES) for the Southern Region and Cork Metropolitan Area Strategic Plan (MASP), Cork is intended to become a city region of scale and the key driver for economic activity in the Southern Region. Population and employment growth will be directed to locations that are accessible to high quality public transport and accessible at the local level through the provision of a high quality walking and cycling environment.

It is therefore intended that the CMA will benefit from a greater level of urban consolidation, coupled with a step-change in the potential for, provision and use of sustainable modes of transport.

The development of lands, including brownfield sites in central and other accessible locations within the CMA's urban areas will be optimised for housing and employment to meet planned growth targets.

On this basis, under the land use assumptions of CMATS, approximately one third of the CMA's expected population growth and 60% of employment growth would be located within the local catchment of CMATS proposed light rail corridor, whilst also including the two largest 3rd level campuses, UCC and CIT, as well as the College of Commerce and St John's College.

Almost one fifth (19%) of CMA's expected population growth and 30% of employment growth would be located within the local catchment of the CMATS suburban rail network, with associated growth consolidation envisaged at a number of existing urban centres and future development areas on the network, including Midleton, Cobh, Blarney/Stoneview, Monard, Blackpool, the Kent Station area, Tivoli and Carrigtwohill.

CMATS' bus offer would be delivered in the form of a significantly enhanced network or BusConnects, comprising a comprehensive network of high frequency bus services with dedicated bus priority measures, providing radial and orbital services connecting key residential,

employment, educational, retail, health and leisure locations, whilst also providing for high levels of connectivity between bus services and inter-connectivity with rail and light rail services.

Consistency with the NDP 2018-2027

In regards to the promotion of sustainable mobility, the need to prepare transport strategies to guide investment plans is articulated in the NDP, with a particular emphasis on public transport, walking, cycling and park & ride. The NDP also places an emphasis on provision for improved regional accessibility between urban centres, through investment in the national road and rail network and the protection of existing assets.

CMATS and its implementation, complements and supports these priorities of the NDP. In the CMATS' translation of these priorities into the key project investment principles and associated measures, the implementation of the CMATS will produce a benefit cost ratio of approximately 2.5:1 – a highly significant return on a proposed 3.5 billion investments in the metropolitan area and the wider regional and national economy.

Supports other Government Guidelines

In accordance with the Government's Strategic Planning and National Roads guidelines, investment in the CMAs National Road network will seek to cater primarily for strategic movement of goods and people, enhancing connectivity between regional centres of scale,

improving inter-regional connectivity and accessibility at a national level, to key international gateways of high economic importance, including air and sea ports. CMATS and the complementary land use policies underpinning it, will seek to support the Guideline's objectives through a package of traffic management and demand management measures, and the provision of viable alternative options for local, non-strategic trip making.

The implementation of CMATS will be guided by the over-arching principles and road layout geometries envisaged by the Design Manual for Urban Roads and Streets, whereby the needs of pedestrians, cyclists and public transport users will be prioritised, as appropriate, over that of the private car.

Appropriate maximum car parking standards and criteria for their application will be devised as part of a package of complementary measures, for a range of land uses, including residential, as recommended in the recently published Section 28 Sustainable Urban Housing Guidelines.

CMATS and its implementation, in conjunction with complementary land use policies, will mitigate the need for car use and car ownership through the provision of viable alternative options and through a reduction in the need to travel, supported by investment in walking, cycling and public transport and a range of transport demand management measures, consistent with the Smarter Travel targets for urban areas.

Addressing the Transport Challenges of the CMA

Chapter 3 of the CMATS identified a number of key transport challenges, arising largely as a legacy of historic land use policies and development patterns that resulted, by default, in a high level of car dependency.

The conclusion drawn was that unless the legacy of these historic pattern was addressed, the CMA would continue to experience high levels of car-dependency, with a resultant negative impact on congestion and its associated economic, social and environmental cost. The attractiveness of the CMA as a region to live, work, visit, play and invest in, would, as a result be negatively impacted by the continuation of these patterns and their associated land use policies.

CMATS also recognises the opportunities afforded to the CMA, arising from high level spatial planning objectives and associated population growth projections outlined in the NPF 2040 and proposed capital investment in the NDP 2018-2027, to consolidate future projected growth in the CMA within established urban centres and around high quality, high capacity public transport corridors.

These opportunities are given further credence by the complementary support in current government policies and guidelines including Smarter Travel and the new Sustainable Urban Housing Guidelines, which support car restraint in areas served, or planned to be served, by public transport.



These policies are supported to a substantial extent within the CMA by the statutory development plans and local area plans, which support the provision of new housing and employment on existing accessible brownfield lands and greenfield lands within the local catchment of existing or planned stations on the Cork Suburban Rail network.

CMATS therefore takes cognisance of the challenges and opportunities outlined above, and identifies six guiding principles used to address these issues. These are identified in the sections below.

Guiding Principles

CMATS was formulated to be consistent with six identified guiding principles. The principles and their consistency with the Strategy Outcomes are summarised in the following paragraphs.

Principle 1 – To support the future growth of the CMA through the provision of an efficient transport network.

Implementation of CMATS will result in improvements to the road, suburban rail, light rail, pedestrian and cycle network. These improvements are targeted in parts of the Metropolitan Area that are planned for future housing, employment and educational growth. The efficiency of the existing and future strategic road network will be protected through the minimisation of local traffic and restriction of local access routes to the National Road Network.

Principle 2 – To prioritise sustainable transport and reduce car dependency within the CMA.

Implementation of CMATS will result in a step-change in public transport provision and builds upon existing walking and cycling strategies adopted in the Metropolitan Area. The need for private car ownership (and dependency) will be reduced through the adoption of demand management and supporting measures including car clubs and Mobility as a Service (MaaS).

Principle 3 – To provide a high level of public transport connectivity to key destinations within high demand corridors.

The implementation of the east-west light rail system will cover approximately a third of the projected CMA population and around 60% of its future jobs. It will also encompass the catchment area of high trip attractors and generators of all key research and third level institutions between Ballincollig and Mahon including the proposed Science and Technology Park at Curraheen, UCC, CIT/Nimbus, College of Commerce and St. John's College.

The enhancement of the Cork Suburban Rail corridor will serve existing and future growth areas identified in the core strategies of both Cork City Council and Cork County Council. BusConnects will provide radial and orbital connectivity between the city centre, its suburban areas and key destinations including CUH and centres of education.

Principle 4 – To identify and protect key strategic routes for the movement of freight and services including the provision of a high level of freight access to the Port of Cork.

Committed National Development Plan 2018-2027 projects such as the M28 Cork to Ringaskiddy and Dunkettle Interchange will be realised over the first period of the Strategy. CMATS also proposes the inclusion of a new Cork North Distributor Road (CNDR) and an upgraded N40 to support strategic and freight traffic.

The Strategy proposes to protect the alignment of a future Cork North Ring Road and the strategic function of roads such as the Midleton to Whitegate and the R624 to support potential increase in freight traffic to Marino Point.

Principle 5 – To enhance the public realm through traffic management and transport interventions. CMATS endorses and builds upon the Cork City Centre Movement Strategy that seeks to managed and restrict through traffic in the city centre. Further public realm improvements to the city centre, its suburban areas, Metropolitan town centres, Urban Expansion Areas and connections to public transport stops will be realised through the adoption of the Design Manual for Urban Roads and Streets principles.

Principle 6 – To increase public transport capacity and frequencies where needed to achieve the strategy outcomes.

Implementation of CMATS will result in a significantly upgraded transport network and capacity to realise future housing, population and educational growth projections. The Strategy directs sustainable transport infrastructure to where it is most needed, to complement land use projections outlined in the National Planning Framework and future growth scenarios outlined by the relevant Core Strategies of both Local Authorities.



List of Acronyms

AA	Appropriate Assessment	HGV	Heavy Goods Vehicle
AV	Automated Vehicle	ITS	Intelligent Transport System
BSS	Bicycle Sharing Scheme	MaaS	Mobility as a Service
CASP	Cork Area Strategic Plan	MASP	Metropolitan Area Strategic Plan
CCMS	City Centre Movement Strategy	NPO	National Policy Objective
CIT	Cork Institute of Technology	NSO	National Strategic Outcome
CLC	Construction Logistics Centre	NTA	National Transport Authority
CMA	Cork Metropolitan Area	PAG	Project Appraisal Guidelines
CMATS	Cork Metropolitan Area Transport Strategy (the Strategy)	PT	Public Transport
CNDR	Cork Northern Distributor Road	PTOD	Public Transport Oriented Development
CNRR	Cork North Ring Road	RSES	Regional Spatial and Economic Strategy
CSIP	Cork Science and Innovation Park	RTPI	Real Time Passenger Information
CSO	Central Statistics Office	SEA	Strategic Environmental Assessment
CUH	Cork University Hospital	SFILT	Strategic Framework for Investment in Landside Transport
DMURS	Design Manual for Urban Roads and Streets	SWRM	South West Regional Model
DTTaS	Department for Transport, Tourism and Sport	TII	Transport Infrastructure Ireland
EU	European Union	UCC	University College Cork
EV	Electric Vehicle	UEA	Urban Expansion Area
EVCP	Electric Vehicle Charging Point		



