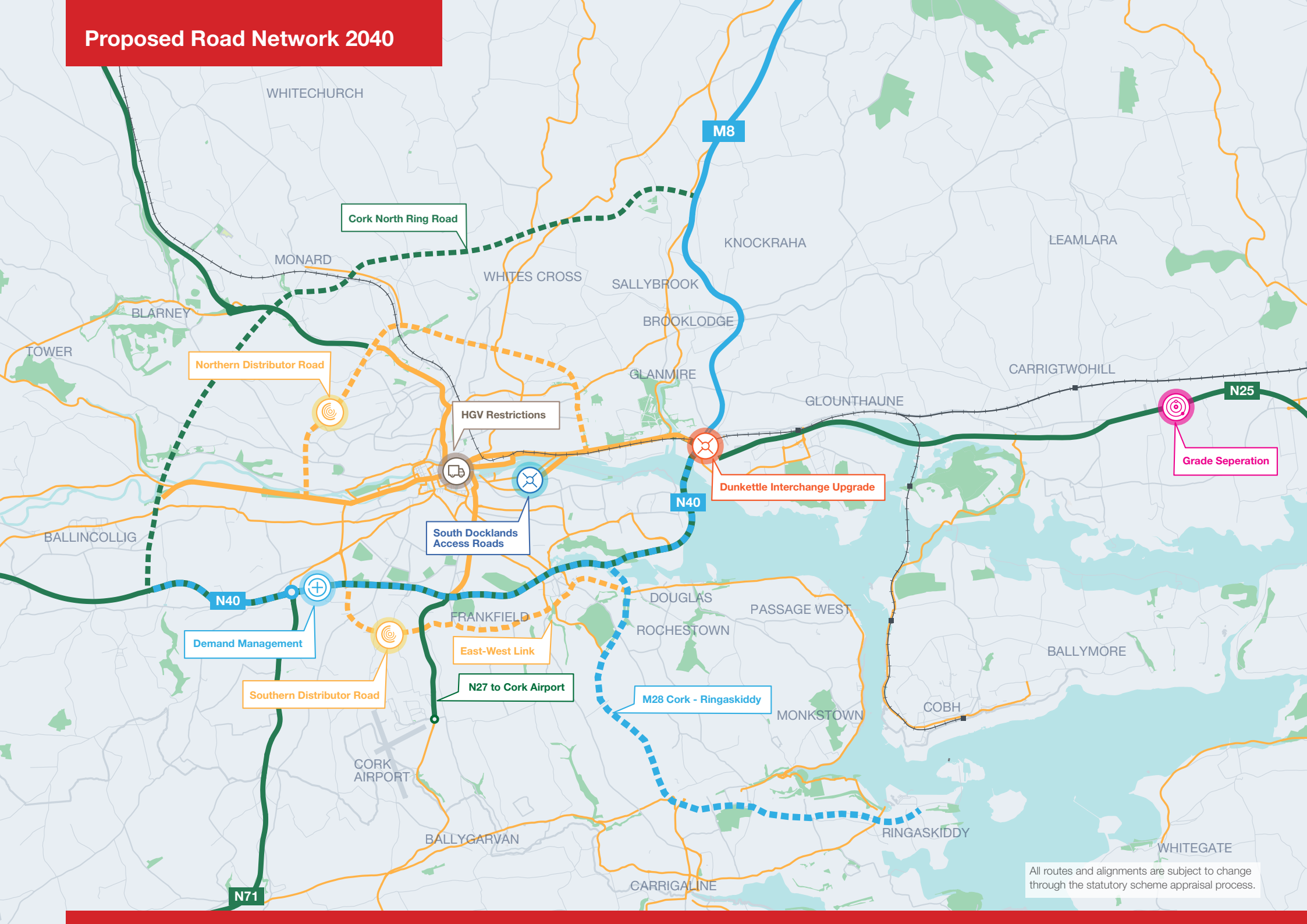
Proposed Road Network 2040



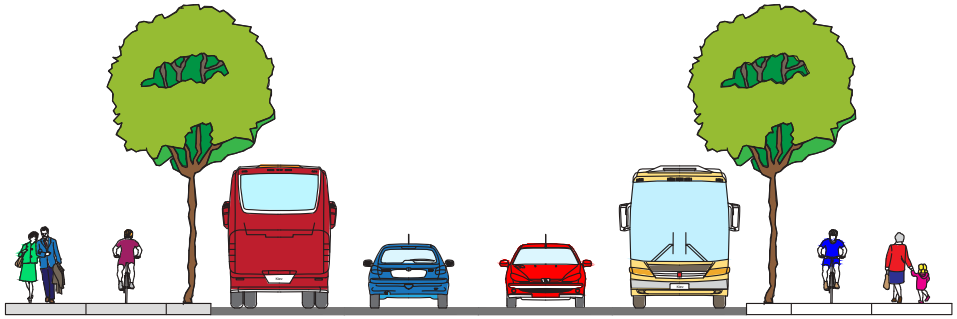
Requirements of Regional and Local Road Network

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;
- Support lower speeds and facilitate the concept of legibility using the design principles of the Design Manual for Urban Roads and Streets;
- 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 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 with the potential to also link to the N71 via Lehanaghmore and Spur Hill. The SDR could also provide enhanced connectivity to Cork Airport with a potential secondary access point. 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 UAEs 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

Over the liftetime of the Strategy, there will be a reduction of car travel to the City Centre island in line with increasing recognition of the impacts of motorised traffic and carbon emissions on the environment and people's health. 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.

The introduction of a congestion charge to enter the City Centre will be considered during the lifetime of the Strategy in line with public transport improvements. Congestion charges are a useful demand management measure that help to reduce air and noise pollution and free-up space for pedestrians, cyclists and public transport.

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.

EXAMPLE OF DUNKETTLE INTERCHANGE UPGRADE


douglas

CCMS as part of CMATS
The CCMS will be implemented as part of CMATS, modified as necessary to take account of the CMATS proposals. Overall, CMATS will significantly increase the level of public transport provision and priority above and beyond that proposed as part of the CCMS.

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, walking and cycling 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;
- Examine the potential for rail freight movement;
- 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 such as electric vehicles or cargo bikes, where appropriate.

Both the Climate Action Plan and RSES support the need to develop a freight strategy to accelerate the decarbonisation of the freight sector, integrate smart technologies in logistics management and reinforce the important role that the strategic rail and road (including TEN-T) network play in efficiently moving freight. CMATS supports the development of this strategy in recognition of the need to decarbonise freight and the inter-regional nature of the inter-regional nature of some goods vehicle movements, especially as a result of increased activity to and from the Port and Cork Airport as well as increased development throughout the CMA.

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, 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;
- HGV restrictions in metropolitan town centres will be considered; 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 (SUMPs) 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.

Event Travel Plans should also be considered for large trip-generating events such as match days and concerts, etc. to mitigate any negative impacts on the surrounding area and road network.

Built Environment Measures

Urban Design and Place-making

There has 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, places of interest, accessibility to public transport, activity, a low noise and air polluted environment, and provision of essential services and recreational facilities. Greening is also an indicator of a healthy city with trees and green spaces providing multiple benefits for the environment and people's health and wellbeing such as a reducing air pollution.

Universal design and Age-Friendly design features such as tactile paving, dropped kerbs, street furniture, legible wayfinding signage, permeable streets and public lighting should be included in public realm improvement schemes to ensure the accessibility of the outdoor environment for all individuals. Other measures to ensure a positive perception of comfort and safety can be effectively achieved through good urban design principles such as active ground floor uses and mixed-use developments providing activity and passive surveillance.

CMATS supports the principles of Healthy Streets and Universal Design.

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

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.

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';
- Establishment of a School 'Cycle Bus' as in the case in Galway and Limerick;
- 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.

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

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.

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 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. MaaS transport solutions have a transformative potential in promoting sustainable mobility.

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. Carpooling databases and apps are also becoming more popular as a useful tool to facilitate carpooling for commuters. 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, autonomous vehicles are not considered as a substitute for walking, cycling and public transport. There are a number of outstanding legislative, legal and technical issues in relation to autonomous vehicles and their impact on active travel and public transport.

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.

Waterborne Transport

Waterborne transport may perform a role for facilitating certain movements and support of the Strategy. It is envisaged that these will come forward and be delivered on a commercial basis.


Timberland

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 Strategy's timeline is cognisant of the NDP, and aligned with the RSES. The implementation plan has disaggregated the strategy implementation timeframe into:

- Short Term: 1-7 years;
- Medium Term: 7-12 years; and
- Long Term: 12-20 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.

Appropriate oversight arrangements will be put in place for periodic monitoring of the progress on the Strategy's outcomes such as integration of land use distribution and sustainable transport provision, mode share, and air quality.

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; and
- 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; and
- 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; and
- 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; and
- 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 Úi Chaoimh, and Cork Institute of Technology as potential phased termination points; and
- 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.

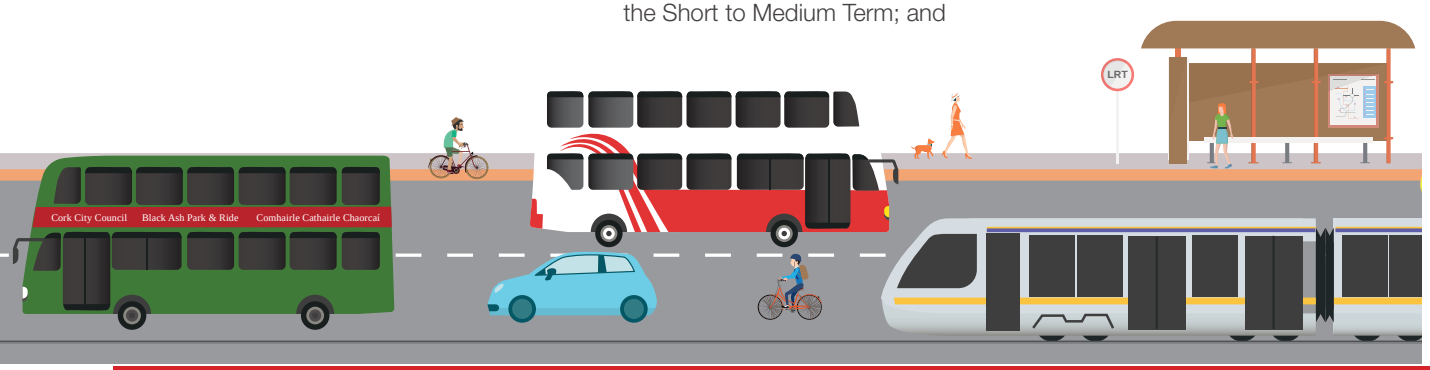
Cycling Network

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;
- Audit of cycling infrastructure throughout Cork City involving all relevant stakeholders;
- Align implementation of the cycling network with the implementation of the BusConnects network;
- Feeder network and permeability review to be undertaken and implemented; and
- 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;
- Walkability audit of Cork City involving all relevant stakeholders;
- 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; and
- 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.

CMATS is designed to be scalable to meet changes in population and employment growth as needs arise as well as availability of funding. Appropriate oversight arrangement will be put in place for periodic monitoring reports of delivery and progress.

	SHORT TERM	MEDIUM TERM	LONG TERM
Timeframe	**UP TO 2026**	**UP TO 2031**	**UP TO 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 Alignement 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	■	■	
Apprasial 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	■	■	■


R & H HALL

17 ENVIRONMENTAL PROTECTION AND MANAGEMENT

Regulatory Framework for Environmental Protection and Management

In implementing this Strategy, the Authority will cumulatively contribute towards – in combination with other users and bodies - the achievement of the objectives of the regulatory framework for environmental protection and management, including compliance with EU Directives - including the Habitats Directive (92/43/EEC, as amended), the Birds Directive (2009/147/EC), the Environmental Impact Assessment Directive (2011/92/EU, as amended by 2014/52/EC) and the Strategic Environmental Assessment Directive (2001/42/EC) – and relevant transposing Regulations.

Lower-Level Decision Making

Lower levels of decision making and environmental assessment should consider the sensitivities identified in Section 4 of the SEA Environmental Report, including the following:

- Special Areas of Conservation and Special Protection Areas;
- Features of the landscape that provide linkages/connectivity to designated sites (e.g. watercourses, areas of semi-natural habitat such as linear woodlands etc);
- Salmonid waters;
- Shellfish waters;
- Freshwater pearl mussel catchments;
- Natural Heritage Areas and proposed Natural Heritage Areas;
- Areas likely to contain a habitat listed in Annex 1 of the Habitats Directive;
- Un-designated sites of importance to wintering or breeding bird species of conservation concern;
- Entries to the Record of Monuments and Places and Zones of Archaeological Potential;
- Entries to the Record of Protected Structures;
- Architectural Conservation Areas; and
- Relevant landscape designations.

Corridor and Route Selection Process for Relevant New Infrastructure

The following Corridor and Route Selection Process will be undertaken for relevant new infrastructure:

Stage 1 – Route Corridor Identification, Evaluation and Selection

- Environmental constraints (including those identified in Section 4 of the SEA Environmental Report) and opportunities (such as existing linear infrastructure) will assist in the identification of possible route corridor options;
- Potentially feasible corridors within which infrastructure could be accommodated will be identified and these corridors assessed. The selection of the preferred route corridor will avoid constraints and meet opportunities to the optimum extent, as advised by the relevant specialists; and
- In addition to the constraints identified above, site-specific field data may be required to identify the most appropriate corridors.

Stage 2 – Route Identification, Evaluation and Selection

- Potentially feasible routes within the preferred corridor will be identified and assessed. The selection of preferred routes will avoid constraints and meet opportunities to the optimum extent, as advised by the relevant specialists, taking into account project level information and potential mitigation measures that are readily achievable;
- In addition to the constraints identified above, site specific field data may be required to identify the most appropriate routes; and
- In addition to environmental considerations, the identification of route corridors and the refinement of route lines is likely to be informed by other considerations.

Appropriate Assessment

All projects and plans arising from this Strategy will be screened for the need to undertake Appropriate Assessment under Article 6 of the Habitats Directive. A plan or project will only be authorised after the competent authority has ascertained, based on scientific evidence, Screening for Appropriate Assessment, and subsequent Appropriate Assessment where necessary, that:

1. The plan or project will not give rise to significant adverse direct, indirect or secondary effects on the integrity of any European site (either individually or in combination with other plans or projects); or
2. The plan or project will have significant adverse effects on the integrity of any European site (that does not host a priority natural habitat type/and or a priority species) but there are no alternative solutions and the plan or project must nevertheless be carried out for imperative reasons of overriding public interest, including those of a social or economic nature. In this case, it will be a requirement to follow procedures set out in legislation and agree and undertake all compensatory measures necessary to ensure the protection of the overall coherence of Natura 2000; or
3. The plan or project will have a significant adverse effect on the integrity of any European site (that hosts a natural habitat type and/or a priority species) but there are no alternative solutions and the plan or project must nevertheless be carried out for imperative reasons for overriding public interest, restricted to reasons of human health or public safety, to beneficial consequences of primary importance for the environment or, further to an opinion from the Commission, to other imperative reasons of overriding public interest. In this case, it will be a requirement to follow procedures set out in legislation and agree and undertake all compensatory measures necessary to ensure the protection of the overall coherence of Natura 2000.

Protection of European Sites

No plans or projects giving rise to significant cumulative, direct, indirect or secondary impacts on European sites arising from their size or scale, land take, proximity, resource requirements, emissions (disposal to land, water or air), transportation requirements, duration of construction, operation, decommissioning or from any other effects shall be permitted on the basis of this Strategy (either individually or in combination with other plans or projects[2]).

[2] Except as provided for in Article 6 (4) of the Habitats Directive, viz. There must be:
a) No alternative solution available;
b) Imperative reasons of overriding public interest for the plan / programme / strategy / project etc. to proceed; and
c) Adequate compensatory measures in place.

Climate Change, Emissions and Energy

As identified in the SEA Environmental Report that accompanies this Strategy, the Strategy facilitates sustainable mobility and associated positive effects, including those relating to:

- Reductions in greenhouse gas emissions and associated achievement of legally binding targets;
- Reductions in emissions to air and associated achievement of air quality objectives, thereby contributing towards improvement or air quality and protection of human health;
- Reductions in consumption of non-renewable energy sources and achievement of legally binding renewable energy targets; and
- Energy security.

In implementing the Strategy, the Authority will support relevant provisions contained in the Draft National Energy and Climate Plan (when adopted), the Cork County and City Council Climate Adaptation Strategies, the Climate Action Plan (2019), National Climate Change Adaptation Framework (2018), the National Mitigation Plan (2017) and the Department of Transport, Tourism and Sport's 2017 "Adaptation Planning – Developing Resilience to Climate Change in the Irish Transport Sector".

The implementation of the Strategy will incorporate relevant targets and actions arising from the sectoral adaptation plan for transport that will be prepared to comply the requirements of the Climate Action and Low Carbon Development Act 2015.

Cognisant of the imperative to reduce emissions the Authority will seek to ensure primacy for transport options that provide for unit reductions in carbon emissions. This can most effectively be done by promoting public transport, walking and cycling, and by actively seeking to reduce car use in circumstances where alternative options are available.

During the preparation and/or review of policies and plans relating to climate charge, carbon emissions and energy usage, the Authority will seek to integrate Strategy objectives, as appropriate.

Other SEA Recommendations

In implementing the Strategy, the Authority will ensure that the mitigation measures included in Table 9.3 of the SEA Environmental Report are complied with.

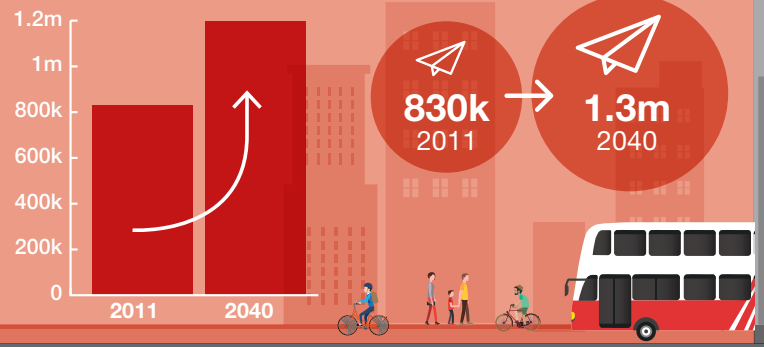
STRATEGY OUTCOMES

FUTURE GROWTH

290k population **2011**

476k population **2040**

DAILY DEMAND FOR TRAVEL



830k 2011 → **1.3m** 2040

AM PEAK MODE SHARE 2011 - 2040

66% 2011 **49.3%** 2040

21% 2011 **21%** 2040

10% 2011 **25.7%** 2040

1% 2011 **4%** 2040

ACCESSIBILITY AND SOCIAL INCLUSION

Suburban Rail Catchment

19% of population **30%** of jobs

Light Rail Catchment

32% of population **60%** of jobs

Social Inclusion:

up to 10.9%

increase in PT mode share for disadvantaged and very disadvantaged areas

SAFETY & ENVIRONMENTAL

Over a 30 year strategy period

Reduction in 15 fatal casualties

Reduction in 68 serious casualties

Reduction in 1,700 slight casualties

Environmental:

46,000 tonnes pa reduction in **vehicular emissions**

ECONOMY & COST ESTIMATE

Present Value of Costs: **€2.3bn**

Present Value of Benefits: **€5.7bn**

Net Present Value: **€3.7bn**

Benefit to Cost Ratio: 2.48

Total Strategy **Cost Estimate**

€3.5bn

18 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.

It will also provide 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 CMA's 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. There is potential for further increases in modal shift to active and sustainable modes through softer mobility and behavioural changes which are not captured by the transport model used to measure the Strategy outcomes.

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 were 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.