

CORK 2050

REALISING THE
FULL POTENTIAL

CORK'S SUBMISSION TO
THE NATIONAL PLANNING
FRAMEWORK,
MARCH 2017



Cork County Council
Comhairle Contae Chorcaí



Comhairle Cathrach Chorcaí
Cork City Council

Cork 2050

For further information please contact:

Cork County Council and Cork City Council

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Contents

	Foreword	
01	Introduction	6
02	Cork's Strategic Role	12
03	Vision & Strategic Objectives	16
04	Spatial Strategy	20
05	Place-Making Strategy	30
06	Towns, Villages, Rural Areas & Islands	40
07	Economic Growth Strategy	48
08	Transport Strategy for Cork 2050	60
09	Connections - Strategic Infrastructure	74
10	Cost Benefit Narrative	82
11	Cork's Unique Environment - Sustainability	88
12	Implementation	94
13	Environmental Assessment	100

Foreword

Cork 2050 is a Joint Initiative by Cork County Council and Cork City Council, prepared on a 'whole of Cork' basis following extensive consultation: an evidence-based strategic approach that builds on existing capacity to deliver on behalf of Cork, the Region and State.

Cork 2050 will create the circumstances to deliver an additional 120,000 new jobs and approximately 60% population growth to 850,000, and in this context is a roadmap for sustainable growth across all of Cork. The unique capacity of Metropolitan Cork, a plan-led, integrated economy and property market with a strong and vibrant Cork City at its heart, to drive escalated rates of economic and population growth to an international scale of over 500,000 persons, is central to the Cork proposition; however, Cork 2050 recognises the capacity and strategic importance of all the County, including rural communities.

We are satisfied Cork 2050 offers a means of maximising opportunities and of responding to the challenges Ireland will face over the coming decades and which are currently being considered under the *Ireland 2040* initiative. We are further satisfied Cork 2050 presents a considered, evidence-based case for national level strategic policy support for the designation of Metropolitan Cork as the complimentary location to Dublin as an international driver of growth and the location best positioned to drive growth in the Region through collaborative leadership. Uniquely the Cork proposition has the capacity to deliver effective regional development that will endure over the longer term, a proposition that merits a long-term commitment by Government to the alignment of enabling policy initiatives and investment priorities.

We are confident Cork 2050 will deliver on behalf of Cork, the Region and the State and in this context we look forward to the opportunity of working with our community, our collaborators in the Region and Government Agencies.

Sincerely,



Tim Lucey

Chief Executive

Cork County Council



Ann Doherty

Chief Executive

Cork City Council





01 / Introduction

Cork 2050 sets out an ambitious strategic vision for the future growth of Cork focussed on realising the shared goals that readily affect the lives of its people, building on the successes of its communities and wider society.

This Strategy provides the framework for the future sustainable development and prioritisation of strategic infrastructural investment in Cork across key sectors including transport, housing, jobs, education, health, environment, energy and communications.

The Strategy advocates significant growth in Cork to complement national growth trends. It aligns with the emerging overarching strategy of the National Planning Framework, which look to the Regions to release growth pressures on Dublin while ensuring an enduring positive return for the State.

This document, "*Cork 2050: Realising the Full Potential*", is accompanied by a separate Executive Summary.

Cork 2050, The Region & The National Planning Framework

Cork 2050 is a Joint Submission by Cork County Council and Cork City Council to the National Planning Framework (NPF).

The Strategy seeks to maximise the opportunities and address the challenges that Ireland will face over the coming decades, as detailed in the NPF Issues and Choices Paper. It provides a strategic roadmap for a future that takes into consideration health and well-being, community and place-making, economic and population growth, environmental stewardship and sustainability.

The 'whole of Cork' approach will maximise the resource that is Metropolitan Cork, including Cork City, as well as the County Towns, Villages, Rural Areas and Islands by building on strengths and addressing issues that limit opportunities.

Sustainable principles are embedded in all of the actions set out herein with recognition that an adaptable economy is required, and that appropriate skills and education-support infrastructure is crucial. The need to embrace advances in technology cascades through Cork 2050 - a Strategy that places Cork as a 'first mover' internationally.

Cork's proven track record for strategic planning,

consensus building and capacity to deliver the required economic and population growth will make policy support for escalated growth in Cork a 'game changer'. Cork is the 'Right Place at the Right Time' to drive 'Effective Regional Development' for future generations.

Ireland 2040—Our Plan

The Cork 2050 Strategy coincides with the preparation of the National Planning Framework, demonstrating a strategic vision for Cork that is not only crucial for the sustainable growth of Cork, but moreover for the success of the whole of Ireland and the Southern Region.

Many of the principal actions of the Strategy will have been implemented or significantly advanced by 2040. However, the longer horizon of 2050 will ensure Cork is well positioned to maximise gains into the future.

The Strategy is being submitted to the NPF as a cohesive and evidence-based approach to the future development of Cork. Its actions and outcomes align with the core objectives of "*Ireland 2040—Our Plan*", and addresses the challenge of uneven distribution and will make a difference to Ireland's development.

Southern Region

There is a need for national prioritisation of escalated growth in Cork to capture its potential to benefit the Region and State. Harnessing this potential and supporting growth in a sustainable manner will ultimately deliver improved regional performance and cost efficiencies in infrastructural investment. It will complement and relieve growth pressures on Dublin, and support a stronger national economy.

Cork County Council and Cork City Council jointly look forward to working with our Regional Partners in the implementation of “Ireland 2040 – Our Plan”, the Regional Spatial and Economic Strategy and Cork 2050.

The Proposition

“Ireland 2040 - Our Plan” is being prepared in the context of a radically different Ireland in the future. To avoid ‘business-as-usual’, a central message of the Cork 2050 Vision is that:

Cork is today, and will be in 2050, the national asset best placed to deliver for Ireland.

The Cork ‘differential’ is available capacity at a critical time nationally - to relieve pressure on Dublin and drive growth in the Southern Region. Cork is today the best location nationally capable of:

Achieving a critical mass of population within the Metropolitan area with in excess of 500,000 people by 2050.

Creating up to 120,000 jobs over the next 33 years.

Supporting high capacity public transport corridors of a scale that underpins high levels of sustainable economic and population growth (87% of the Metropolitan population living within 1km of public transport services).

Facilitating growth through significant existing infrastructure capacity, supplemented by committed upgrades and a programme of investment up to 2050 (including water, power, transport, ICT).

The unique Cork offer is further distinguished by a globally recognised quality of place and highly productive economy supported by an adaptive learning environment capable of skilling and re-skilling as a platform for growth.

In line with European trends for similar locations, Cork will experience significant growth over the coming years, building on its comparative advantages, capacity and Regional role. In support of the aforementioned, this submission provides an evidence base for the following:

National Policy support for:

- Population growth at an escalated level, to avoid ‘business-as-usual’, with 850,000 people by 2050, a Metropolitan Area of over 500,000, and a vibrant City at its core.
- Cork’s highly productive, diverse, adaptable and strong economy, which retains high levels of inward investment and fosters strong growth in indigenous industry.

Designation of Cork as:

- A complementary location to Dublin with strong international connections.
- The primary driver of economic and population growth in the Southern Region.

Policy commitment and investment in the required infrastructure to support growth to include, *inter alia*:

- A Rapid Transit Corridor (RTC), running from Ballincollig town to the Docklands and Mahon via the City Centre.
- A commuter rail network with through running at Kent Station between the Mallow and Midleton lines; interchange between rail and the RTC and electrification of the rail network serving Mallow, Monard, Midleton and Cobh, and potentially Youghal.
- A high capacity Core Bus Network serving all of the main corridors within the Cork Metropolitan area, including Cork Airport, and connecting with inter-city and rural transport services.
- Strategic road infrastructure required to drive balanced regional economic growth and local assets, to include the Port at Ringaskiddy.
- Enabling works and measures to realise the development of the City Docks and Tivoli.
- Rapid roll out of broadband across the Region to penetrate all urban and rural areas.
- Continued investment in water management and renewable energy.

Support for delivery of a ‘corridor based approach’ to consolidate spatial distribution of people and employment, an exemplar of efficiency in land use.

01 Introduction

Why Cork?

Cork has the physical and environmental capacity to accommodate significant economic and spatial change and has the potential to play a leading role in delivering balanced national socio-economic growth for Ireland.

Supporting the role of Cork through plan-led growth will result in a more balanced form of development across Ireland, relieving development pressure on the eastern part of the Country.

Cork has significant comparative advantages in terms of key assets and capacity, differentiating itself in the national context, and competing with similar Metropolitan Areas in Europe and globally.

Cork 2050 emphasises the need to safeguard and invest in these assets that are critical for the future growth of Cork, the Southern Region and Ireland.

Assets & Capacity

Critical Mass & Land - Ireland's second most populous City and Metropolitan area (c.305,000 people) with development capacity across the entire Metropolitan area.

Economic - Highly productive economy contributing 19% to National GDP with capacity for inward investment and indigenous industry growth across the whole of Cork, with a focus on the Metropolitan area (e.g. agri-tech, bio-pharma, healthcare, education, research, international business services, tourism, renewable energy).

Cork Airport - Ireland's second largest airport. The total employment supported by activities at Cork Airport is estimated to be 4,550 jobs (or 3,980 FTEs), earning a total of €160 million. The contribution to GDP is estimated to be €306 million.

Port of Cork - Tier 1 Port, handling 19% of all seaborne trade in the State and capable of taking Post Panamax Vessels. The relocation of Port of Cork's container terminal business to Ringaskiddy will significantly increase capacity of this international gateway. The Port also has Ireland's only dedicated cruise berth at Cobh, with capacity to increase the number of cruise liners over the coming years.

City Centre Brownfield - Redevelopment capacity with 180ha of Docklands with potential for high density mixed use, waterfront development.

Communications Infrastructure - An important IP routing station, Cork has the lowest latency connection to the US of any European Country and the lowest latency connection to London from Ireland (7.47ms versus 10-11ms for Dublin).

Water Services - Unrivalled water supply with infrastructure to grow the Metropolitan Area by an additional 220,000 people in place now through the River Lee Dam at Inniscarra.

Transport - Cork has defined corridors of transport demand capable of supporting significant levels of population, employment and educational growth in tandem with public transport networks. It is connected to Dublin via hourly rail services and motorway. Important regional connections exist to Limerick (N20), Waterford (N25), Kerry (N22) and Tipperary (M8).

Education - Third level education accommodating c.35,000 students with UCC recognised as in the top 2% of research institutions in the world and CIT responsible for 250 start-up companies in the last 10 years. Cork's second level education facilities are considered some of the best nationally.

Quality of Life, Place and Heritage - An excellent quality of life, affordable living cost and offering choice with relatively low levels of congestion. It is an inclusive place with capacity and a willingness to welcome people to their communities. Cork has the largest non-Irish population in Ireland after Dublin.

Energy - Accounting for c.13% of Ireland's wind energy and supplying c.24% of national energy requirements, Cork is unconstrained by energy supply. Significant natural resources which include natural gas, oil, hydroelectricity, onshore and offshore wind, ocean energy, biomass, geothermal and solar energy. The significant renewable energy potential is a key asset in terms of low carbon transition.

Healthcare - Cork University Hospital is the largest university teaching hospital in Ireland with the only Level 1 Trauma Centre in the Country. It has a supra-regional catchment of 1.2 million people.

Maritime - The second longest shoreline of any County in Ireland with 5 Blue Flag beaches, the second largest natural harbour in the world and an extensive marine environment.

Arts & Culture - The community employed in the arts and cultural sphere in Cork is double that of any other location outside of Dublin. The vibrancy of Cork's arts and cultural life is seen in the richness and diversity of activity from cultural heritage and food to performance and the visual arts, and stretching from the City to North and West Cork.

Cork 2050 Outcomes - Some Highlights



Population Growth - Building on the NPF's recognition of Cork's scale, the population will increase from 542,196 to c.846,423 persons with in excess of 60% of overall population living in the Metropolitan area in 2050.



Adaptable Economy - A resilient and diverse economy creating on average over 3,500 jobs per year (120,000 additional jobs) building on comparative advantages and growing indigenous businesses.



Spatial Consolidation - Increased need for efficiency in land use with between 3,500 and 4,500 people per sq.km in centres along corridors across Cork City and parts of the wider Metropolitan area.



Transportation - Population growth, urbanisation and improved productivity will create strong demand for infrastructure at both the economic and social level. The implementation of Cork 2050 delivers a standout Benefit Cost Ratio (BCR) of 2.4 for transport investment.



Vibrant City Centre - A highly accessible City Centre with brownfield sites regenerated through mixed-use, densified development (e.g. City Docks and Tivoli), continued investment in the public realm, and increased levels of accessibility in a unique waterfront setting.



Towns, Villages, Rural Areas and Islands - Sustainable growth of communities as a key asset, supporting equality of opportunity through digital, social, cultural and economic connectivity.



Education - The talent pool of human capital will be driven by second and third level education. Third level institutes will have significantly more overseas students in an internationalised education environment.



Healthcare - Cork will have a state-of-the-art and expanded healthcare system and be recognised as a leader in healthcare innovation.



People first - Through an attractive environment and access to services, people will continue to enjoy a high quality of life with improved health and well-being. Successful place-making and multicultural readiness will attract investment, talent and visitors. In the future, on average 4,000 people per annum will choose Cork as an inclusive place to live.



A Low Carbon Society - A truly 'sustainable place', Cork will be at the forefront of the low carbon economy. CO₂ emissions will be reduced by 500,000 tonnes through the delivery of public transport. The unique maritime features and green energy opportunities will see the advancement of the 'blue economy'.

Key Challenges

The overarching challenge that Cork faces may be best articulated by the EU's 2013 ESPON Report, *"Second Tier Cities and Territorial Development in Europe: Performance, Policies and Prospects"* that identifies one of Cork's weaknesses as:

"Limited powers and resources at the disposal of local and regional governance actors."

It is acknowledged that the report focused on cities, but the key message applies to the development of all regions in Ireland, cities, metropolitan areas, towns and rural areas.

The above is relevant in the context of investment in the strategic infrastructure required to engineer its own destination. Whilst Cork 2050 sets out an ambitious strategic vision, it is ultimately the ability to implement the Strategy that will deliver growth. Within the above context, Cork faces a number of challenges including:

- The delivery of public transport infrastructure.
- Managing and building economic growth.
- Delivery of compact growth patterns.
- Proactively addressing emerging skills requirements.
- Delivering quality houses in the right places.
- Meeting commercial requirements.
- Maintaining a high quality of life and place.
- Environmental challenges.
- Flood risk management.
- Transitioning to a low carbon future.

Whilst this Strategy addresses the overarching strategic framework for Cork up to 2050 in a holistic manner, it is noted that further detailed Action Plans are required in response to certain challenges.

Sustainable Development

The Cork 2050 Strategy encompasses the three pillars of sustainable development:

- Economic
- Social
- Environmental

These pillars were broadened into key principles and arrived at through collaboration with Cork County Council and Cork City

Council, their elected members, and key stakeholders at an early stage in the process. This approach will allow the overarching aims of sustainable growth and place-making to be achieved.

The sustainable development principles incorporated into Cork 2050 are set out below:

Spatial - Maximise the potential of Cork's urban and rural areas to be successful, sustainable places that support strong, vibrant and healthy communities.

Social - (People / Lifestyle): Facilitate the creation of a built environment with the associated requisite services that respond to the community's needs and support its health, social and cultural well-being.

Economic - Support an environment that enables the building of a strong, responsive and competitive economy that provides opportunity and access for all.

Environment - Ensure the protection and resilience of Cork's natural, built, historic and cultural environment. Proactively adapt to climate change and the transition to a low carbon society.

Mobility and Infrastructure - Co-ordinate development requirements to identify infrastructural investment priorities that support sustainable patterns of growth and of community living.



02 / Cork's Strategic Role

Cork is recognised as a key asset for Ireland in the national context and also the wider European and global context. It is also a key asset for the wider Southern Region.

The ability of Cork to compete in the international arena has been a major part of the economic success of Ireland in recent times. It is recognised that Metropolitan Cork has a critical mass of people, ideas, infrastructure and resources that serves to enhance the prospects for employment opportunities, wealth creation, innovation and knowledge, all of which are major factors of prosperity and competitiveness. Given these characteristics, Cork is uniquely positioned to play a complementary role to Dublin that further enables Ireland to compete on the international stage.

As part of Ireland's national framework for growth it is essential to develop and exploit the strongest assets and most productive resources in order to optimise their contribution to the sustainable growth of Ireland nationally and regionally. Protecting and enhancing the 'whole of Cork' with Metropolitan Cork as a driver of growth in Ireland and the Southern Region requires national and regional policy recognition, as a priority for strategic infrastructural investment, in order to protect its competitiveness and deliver national benefit. In this context, Cork is also uniquely positioned to play a collaborative leadership role, driving growth within the Southern Region.

Metropolitan Cork - International Growth Driver **Cork Connected**

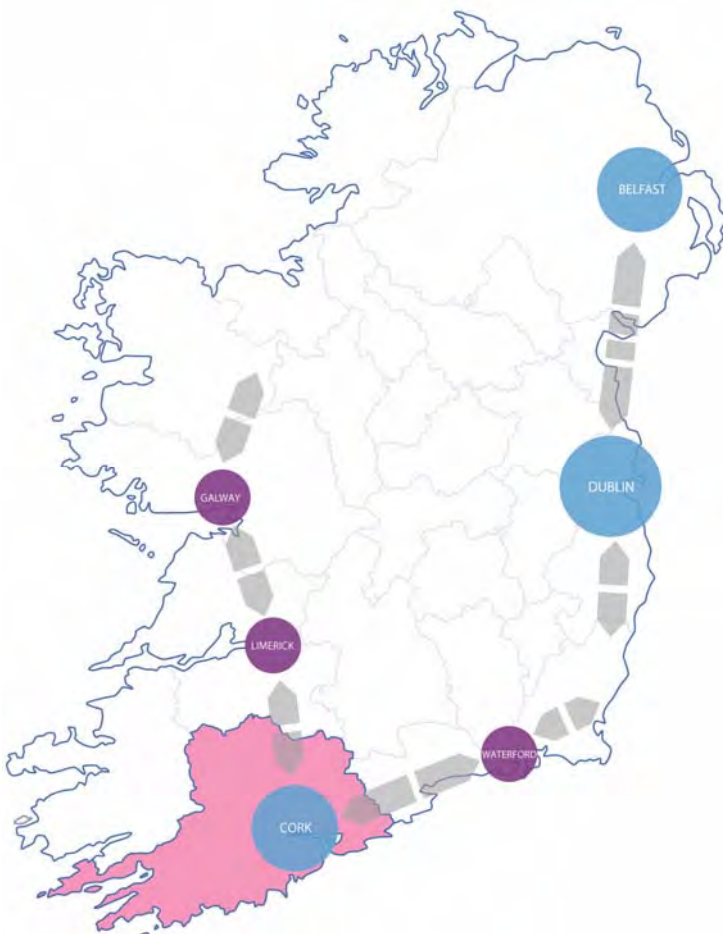
Over the last twenty years Cork has established an enhanced role of national significance and a burgeoning role of international importance. In tandem with Dublin and Belfast, Ireland's 'International Drivers' must be planned for in a way that ensures their international role is supported.

Cork 2050 supports the recognition of Metropolitan Cork as an 'International Driver' for Ireland's economy

A 'step change' is required with regard to the recognition of Cork as an international driver of the Irish economy, and the associated national support for this role going forward. It will result in a more balanced form of development across Ireland, relieving development pressure on the Eastern part of the Country, whilst working collaboratively with Dublin to optimise growth for the benefit of Ireland as a whole.

Cork has developed with an increasingly international culture and global outlook. Protecting and enhancing the role of Cork as an international driver of growth requires national support, including the prioritisation for strategic infrastructural investment, in order to protect its international competitiveness.

Cork International Airport and the Port of Cork are key infrastructural assets providing for global connections with significant capacity for expansion. The low latency connection to the US and UK, and to mainland Europe in the future, place Cork at the crossroads of digital connectivity globally.



National Role Complementary to Dublin

Cork’s profile and ability to compete internationally provides the basis for a complementary role with Dublin at national level. Considerations such as critical mass, location and proven growth potential make it essential to the NPF goal of a more sustainable balance of growth nationally.

It is the go-to place outside of Dublin in terms of economic activity, with proven productive capacity (GVA per capita at €45,000 is well above national average) and the ability to consistently generate job growth (50% all new jobs nationally in Q2 & Q3 2016 in South West Region) and innovation.

The key assets and capacity for growth outlined in this submission are unique strengths that can be national level ‘game changers’.

Southern Region Growth Driver

The Southern Region benefits hugely from the strategic role that Cork, in particular Metropolitan Cork, plays as a primary driver of growth. Cork’s future role rests on the fact that it has significant potential to make an enhanced economic contribution as the primary growth pole for the Southern Region and a complementary centre to Dublin.

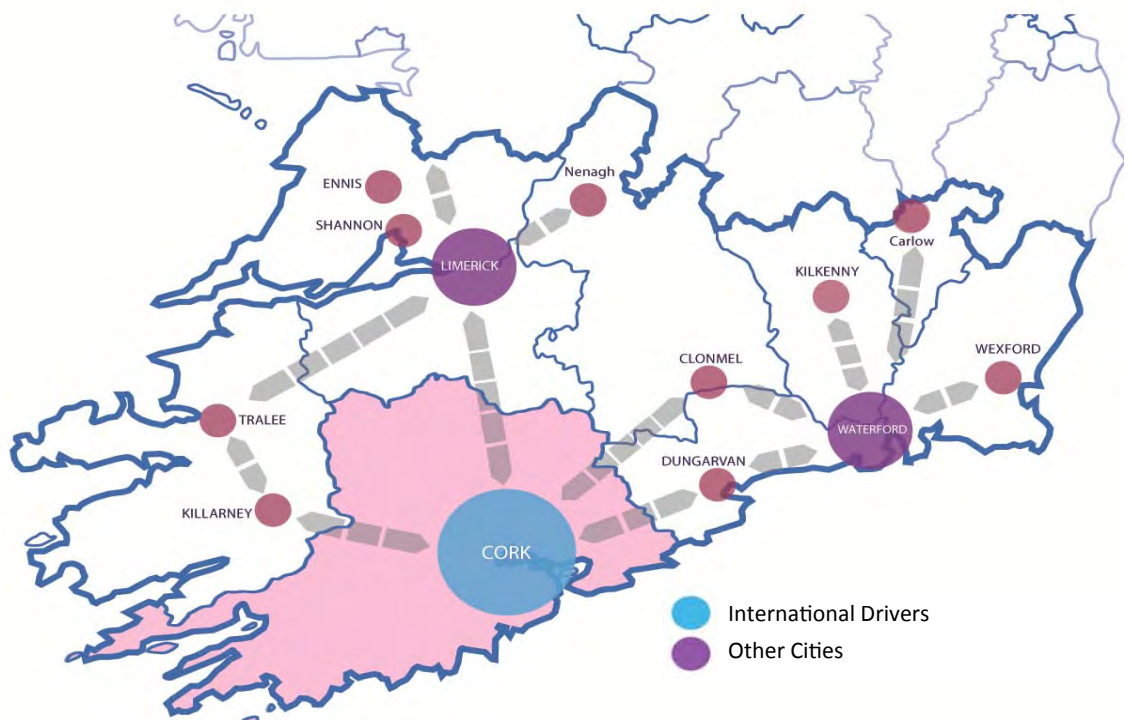
Cork 2050 builds on the strength of Metropolitan Cork as the primary driver of growth in the Southern Region.

The designation of ‘Regional Drivers’ is vital to Ireland’s success and long-term growth strategy. The ‘Regional Drivers’ of Ireland are characterised by those areas that have the largest populations, the best transport connections, digital connectivity, the highest levels of economic activity and the critical mass of key services such as education and health.

The sphere of influence will not only benefit the Region but also areas further afield along the burgeoning Atlantic Economic Corridor to Limerick, Galway and further north to Sligo and Mayo. Connections will be important within the Southern Region, particularly in relation to realising the full potential of economic corridors. Making all parts of the Region accessible will improve the capacity for working together, tourism, access to different levels of services and connecting urban and rural areas.

Cork 2050 recognises that the same level and type of growth cannot occur everywhere and that prioritisation is required. In the context of Cork, and in order to achieve the objectives of effective regional development, there is a need for governmental recognition for its role as the:

Primary ‘Regional Driver’ of the Southern Region and potential to play a collaborative leadership role within the Region.





The Strategy

Cork County Council and Cork City Council have a strong track record of collaborating to plan strategically and co-ordinate development. They have jointly commissioned the Cork 2050 Strategy to identify cross boundary strategic priorities and ensure an integrated approach to sustainable growth.

The aim of the Strategy is to focus on both Cork City and County, but to also recognise and prioritise the strategic regional role played by Metropolitan Cork as defined under the Cork Area Strategic Plan (CASP). In addition, the Strategy focuses on the potential regional benefits of a growing and strongly performing Metropolitan Cork, through its sphere of influence, and also the key strategic role of Cork as a national and international driver.

Cork 2050 applies a 'whole of Cork' approach providing the shared vision and framework for a growth strategy that is right for the people of Cork and the Southern Region. It will inform and guide public policy at the national level while also providing the long term strategic context upon which future statutory City and County Development Plans can emerge.

Engagement Process

An integral element in the preparation of the Cork 2050 Strategy has been the engagement and consultation with key stakeholders.

The process of developing the Cork 2050 Strategy involved a series of engagement events and stakeholder collaboration at different phases of the study process. Stakeholders were engaged early in the process in order to maximise the collaborative potential to ensure that the Strategy was comprehensive, inclusive and effective.

Study Area

Cork is the largest County in Ireland, representing 12% of its landmass, and is characterised by the full range of environments and communities from City Centre to rural towns, villages and its offshore islands. Owing to its strategic regional role the area of 'Metropolitan Cork' is recognised as the key driver of growth for the Region and of the Cork 2050 Strategy. In this context, it is noted that Metropolitan Cork is defined as encompassing both Cork City proper, and the settlements of Ballincollig, Blarney, Carrigaline, Douglas, Glanmire, Glounthane, Carrigtwohill, Midleton and Cobh.

Report Structure

The following sections communicate this integrated Strategy under principle headings of:

- Vision & Strategic Objectives
- Spatial Strategy
- Place-Making Strategy
- A Model for Sustainable Rural Development
- Economic Growth Strategy
- Connections: Strategic Infrastructure
- A Low Carbon Society
- Cost Benefit Narrative
- Implementation
- Environment
- Contribution to National Goals, Policies & Strategies

03 / Vision & Strategic Objectives

Vision for Cork 2050:

‘Cork is today, and will be in 2050, a national asset best placed to deliver growth for Ireland by realising its full potential on behalf of its Communities, the Region and State’

Developing the Cork 2050 Vision

The Cork 2050 Strategy is built on the platform of a clear, long term, consensual Vision. The process of preparing the Cork 2050 Vision provided an opportunity to think about the long-term future of Cork and create a meaningful statement of Cork’s national and regional role in 2050.

It was recognised at an early stage in the process that a successful Vision required participation and engagement and, as such, the Vision for Cork 2050 is considered a ‘shared vision’. It represents a consensus around what stakeholders want Cork to represent in 2050.

The Vision sits within a Strategy grounded in the principles of proper planning and sustainable development that underpin the future and ensure that the overarching aims of sustainable growth and place-making are achieved.



Enabling the Vision - Strategic Objectives

The Strategic Objectives of the Cork 2050 Strategy are directly related to the overarching key sustainable development principles set out in Section 1. Thus, the Strategic Objectives set out hereunder are grouped accordingly.



Spatial Objectives

- SP1 Support the continued growth of Metropolitan Cork in a sustainable manner focussed on Cork City and other established settlements that secures its continued role as the driver of population growth and economic activity.
- SP2 Prioritise the physical consolidation and revitalisation of Cork City including the delivery of strategic brownfield sites.

- SP3 Support the consolidation of growth along high capacity public transport corridors to underpin spatial, social and economic growth.
- SP4 Maintain the diverse mix of settlements that contribute to the attractiveness of Cork as a place to live, work and visit.
- SP5 Enable Cork's rural communities to thrive through the sustainable development of towns, villages, rural areas and islands.

Social Objectives

- SO1 Protect Cork's excellent quality of life offer as a key asset of its society and economy.
- SO2 Support the creation of sustainable, well-designed places and high quality homes which offers choice that meets people's needs.
- SO3 Protect Cork's cultural and historical assets and enhance the contribution made by Cork's cultural heritage to its economy, cultural identity and quality of life.
- SO4 Support the creation of sustainable communities that promote social inclusion, support health and wellbeing, provide access to services and facilities for all users, and establish a strong sense of community.

Economic Objectives

- EC1 Protect and enhance the role of Metropolitan Cork as an international driver of Ireland's economy and the primary economic driver of Cork and the Southern Region.
- EC2 Strengthen the rural economy by utilising technological advances and promoting activity in 'relational space'.
- EC3 Support the continued growth of research and development eco-systems, focussing on innovation and high growth sectors.
- EC4 Support the increased internationalisation of Cork's higher education system, the continued investment in research and innovation, and increased integration with enterprise.
- EC5 Develop skilled human capital that adapts and responds to emerging economic growth trends, including via upskilling and facilitating access to labour markets.

Environmental Objectives

- EN1 Protect Cork's natural environment through the principles of responsible stewardship and facilitate growth within the constraints of environmental protection.
- EN2 Support the transition to a Low Carbon, climate resilient and environmentally sustainable economy.
- EN3 Promote Cork as Ireland's leader in renewable energy production and largely reduce the consumption of fossil fuels by 2050.
- EN4 Protect and enhance Cork's green infrastructure as a key asset capable of delivering a wide range of economic, environmental and quality of life benefits.

Infrastructure Objectives

- IN1 Deliver an integrated, sustainable transport system including the incremental delivery of a Rapid Transit Corridor, running from Ballincollig town to the Docklands and Mahon via the City Centre.
- IN2 Deliver continued investment in the strategic road network to ensure the strategically important traffic movements required to support the national, regional and local economies is maintained and managed effectively.
- IN3 Support the delivery of population and employment growth in a manner that maximises returns on investment for key infrastructure.
- IN4 Support the roll out of high quality communication infrastructure across all areas of Cork.
- IN5 Support the integration of infrastructure with smart technology.

Outcomes

Spatial - The strategy provides the strategic framework for a series of land use management plans and development activities across the Metropolitan area, Cork City, towns, villages, rural areas and islands – future more detailed localised and County wide plans will look to Cork 2050 as a starting point.

Spatial - It establishes an approach to spatial distribution that will have local and regional benefits in terms of co-ordination of land use, connections, infrastructure and service planning – Cork's approach to scale and facilitating growth can be a Regional benchmark underpinned by a clear evidence base.

Spatial - It provides high level measures that will drive the regional ambition for population growth, thereby strengthening the position of the upcoming Regional Spatial and Economic Strategy – as the driver of the Region the Cork Metropolitan area will be the cornerstone of Regional Strategies over the coming decades.

Social - It establishes a group of actions to create inclusive community networks during periods of sustained population growth – achieved through a focus on compact development, quality of place and life, creating sustainable rural communities, providing choices and making places connected.

Social - It provides the strategic land use framework for the delivery of quality housing in the right location, improvements to infrastructure and access to arts, culture, sport and recreation. Through a focused approach to development, the opportunities for balanced live/work lifestyles can flourish, activities will be accessible and creativity encouraged.

Economic - It encourages educational achievement, expansion of facilities and attracting international students – the further collaboration between educational institutes and industry will be central to delivering growth.

Economic - It provides the basis for a package of activities to encourage workforce skill development and attraction – the third level institutes can take forward and target existing and emerging sectors such as next generation ICT, agri-tech, bio-pharma and renewable energy.

Infrastructure - The Strategy sets out a clear set of actions for an integrated transport system – this will be delivered through public transport serving networks of communities; infrastructure upgrades and improvements to the regions connections, east west and north south corridors across the Metropolitan area and facilitating energy efficiency innovation and low carbon emission while also encouraging further use of cycle and walking modes.

Environmental - Provides a range of high level actions in relation to climate change adaptation measures, efficient resource use (e.g. water use), protection of Cork and the regions important biodiversity and ecosystems - Delivered through *inter alia* a focus on renewable energy, efficiency and innovation; improvements to resource recovery and green industry development.

The NPF - Cork in 2040

The Strategic Objectives outlined provide the overarching guidance up to 2050 and it is envisaged that many will be significantly advanced by 2040.

It is accepted, however, that not everything in a Strategy will be fully realised - 'the recursive approach'. A Strategy is an evolving document and Cork 2050 will be continually monitored and updated over the coming years and decades.

Cork 2050 provides the starting point for a future where Cork's capacity will play a fundamental role in the even distribution of people and employment growth for the overall betterment of Ireland by 2040 and beyond.



04 / Spatial Strategy

This section outlines the overarching spatial growth strategy that has been developed in order to achieve the Cork 2050 Vision which is - the majority of growth will be focussed along increased density, public transport corridors in Cork City and Metropolitan Cork, including improved connectivity in County towns, villages and rural areas.

Key directions:

- Metropolitan Cork is the driver of population growth and economic activity.
- Cork City is a focus for significant increases in population and employment (delivery of the City Docks and Tivoli).
- Growth is focused on a corridor based approach in Metropolitan Cork.
- Integration of transport and land use with an excellent public transport system .
- Efficient use of urban space and consolidation of development.
- A sustainable settlement hierarchy.
- Growth of towns, villages, rural areas and islands.

Cork - Key Strategic Aspects

The spatial distribution of growth in Cork to 2050 is underpinned by a number of key strategic spatial aspects set out as follows:

- **Metropolitan Cork is the driver of population growth and economic activity:** This Strategy recognises that Metropolitan Cork has a strategic regional role and a significant sphere of influence and, as such, is prioritised as the driver of population growth and economic activity.
- **Cork City:** This Strategy recognises Cork City as a focus for significant increases in both population and employment, particularly the City Docklands and Tivoli. The prioritisation of physical consolidation and densification will enable a city centre outwards process of consolidation and vibrancy.
- **Efficient Use of Urban Space:** This Strategy supports more efficient use of urban land capacity and aims to increase the average density of Cork in those areas that are capable of delivering higher density development, particularly along high capacity transport corridors.
- **A Sustainable Settlement Hierarchy:** This Strategy supports the development of a settlement hierarchy which maximises the opportunities for sustainable development while providing a choice of quality places to residents within Cork City and Cork County.
- **Rural Growth:** This Strategy recognises the importance of and supports sustainable economic growth in the towns, villages, rural areas and islands across Cork.
- **Integration of Transport and Land-use:** This Strategy promotes a spatial distribution that delivers consolidated, compact, quality settlements and reduces trip distances and the need to travel for residents.
- **A Corridor Approach:** This Strategy proposes a corridor and communities approach in the Metropolitan Area of a scale that supports the viability of high capacity public transport, reduces the need to use the strategic road network and creates a place of shorter and fewer trips.

The Scale of Sustainable Growth

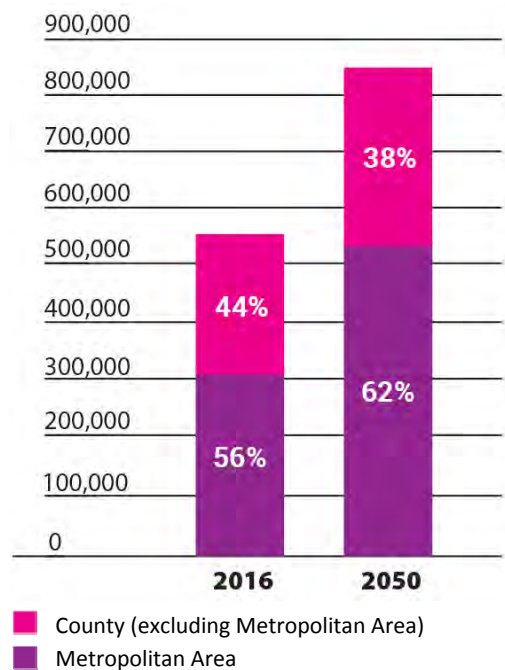
The preferred growth scenario for Cork 2050 has been developed having regard to a number of key assumptions that include, *inter alia*: existing growth trends; future growth projections; capacity for sustainable growth; infrastructural requirements associated with increased growth and relative cost efficiencies; environmental considerations; the need for a step - change in spatial distribution at a national level; and the potential for Cork to realise its existing capacity and growth potential. A summary of the headline growth figures is provided below.

The preferred growth scenario for Cork 2050 is set in the context of a State increase of c. 1 million people by 2040. This growth scenario is considered to be moderate in the context of State growth with an escalated rate of growth focussed on Cork. A number of alternative scenarios were considered, however, the preferred scenario best aligned with the overarching sustainable development principles, vision and strategic objectives of the Strategy.

The preferred scenario assumes an escalated but achievable growth scenario for Cork. It allows for the real population of the Greater Dublin Area to increase significantly from c. 1.9m to c. 2.5m, however, it's proportionate share of the State population remains relatively stable at c. 40%. Comparatively, the percentage of national population residing in Cork increases from 11.4% to 13.6% representing an increase of 304,227 people over the 34 year period to 2050 (c. 8,950 persons per annum). This would see Cork with c.21% of the national population growth.

To deliver on the principles of sustainable growth and to provide for efficiency in capital infrastructure investment, strong growth is focussed in Cork City and Metropolitan Cork while growth in the rest of the County is focussed in established settlement and employment locations. Cork City experiences significant growth and increased densification in line with its physical consolidation. Consolidation also occurs in Metropolitan Cork, albeit focussed in established settlements. Growth in more rural areas is provided for in order to strengthen rural communities and to support rural economic vitality.

The NPF Issues Paper refers to in excess of 200,000 people in an area consisting of the Cork City administrative area (c. 125,622), the Southern and Northern Environs (c. 45,338), Glanmire town (c. 20,518), and Ballincollig town (c. 18,872) which the preferred scenario envisages as having a total population of c. 315,000 people in 2050.



Cork Population Distribution 2016 and 2050

	2016	2050	Population Increase
Cork City Administrative Area	125,622	179,469	53,847
Remainder of Metropolitan Area	179,600	347,760	168,160
Total Metropolitan Cork	305,222	527,229	222,007
County (excluding Metropolitan Area)	236,974	319,194	82,220
Overall Cork Total	542,196	846,423	304,227
State	4,757,976	6,210,000	1,452,024

Whole of Cork A Unique Asset

This Strategy sets out the whole of Cork’s compelling proposition as a place that offers a competitive economy and a high quality of life, alongside a broad choice of lifestyles and locations.

Working to existing strengths and utilising technology will be crucial to delivering growth in the correct manner, with connections along established and new corridors (transport, economic and information), clusters of business and commerce, global interactions and indigenous industry growth all crucial.

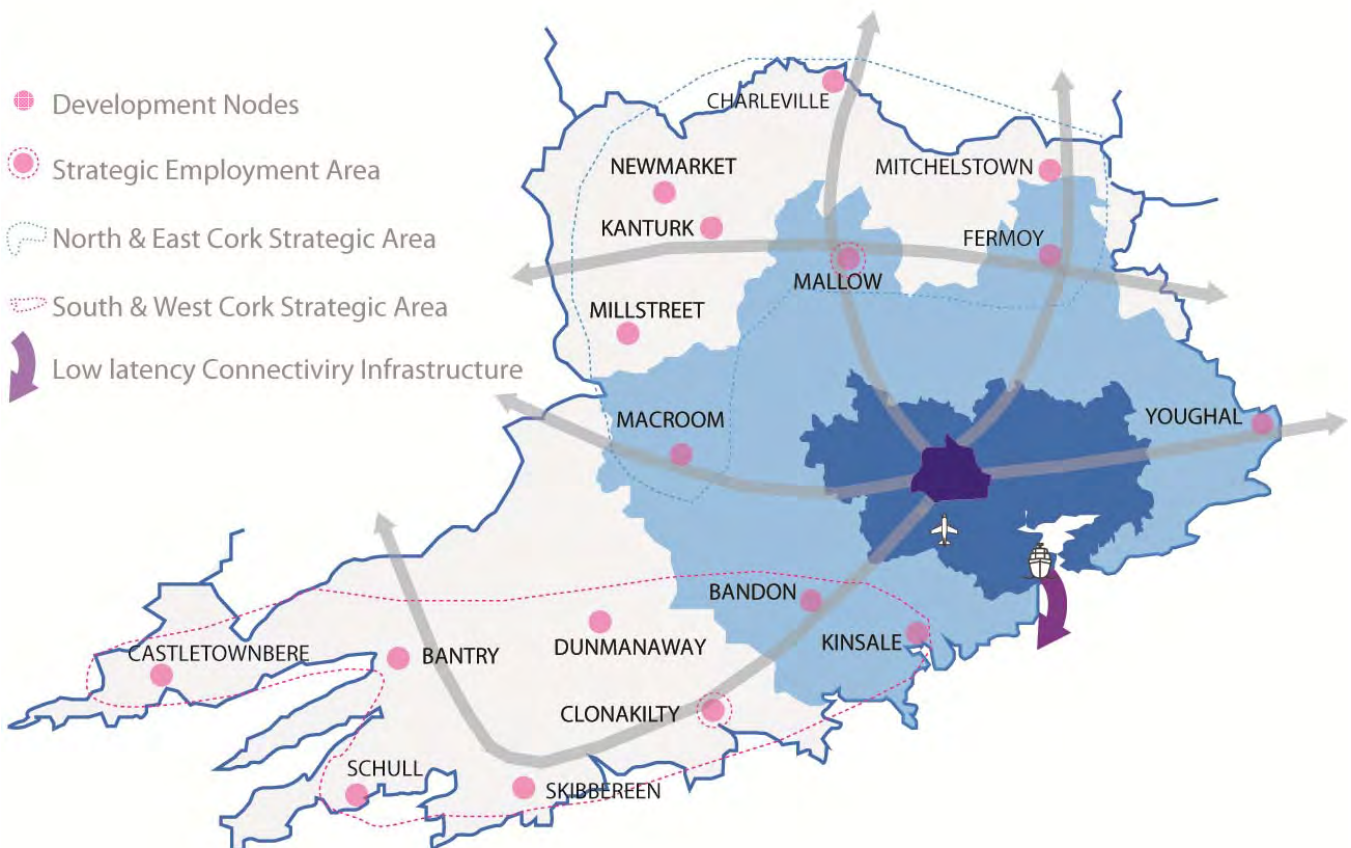
The County towns, villages, rural areas and islands are a significant resource with particular growth potential in areas such as Agriculture & Agri-Tech, Maritime & Energy, Technology and Tourism & Food (sectors identified as future drivers in “Ireland Connected: Trading and Investing in a Dynamic World”). The established settlements will play a key role as development nodes accommodating population increases.

Settlement Strategy

Cork 2050 supports the development of a settlement strategy which maximises the opportunities for sustainable development while providing choice of location to residents within Cork City and County. The headline populations provide for a clear shift in existing spatial distribution patterns throughout Cork with an increased focus on directing future growth towards capacity within Cork City and established key settlements in Metropolitan Cork.

The settlement strategy supports Cork City’s role at the heart of Metropolitan Cork. Preliminary 2016 Census population data indicates an encouraging trend of people returning to live in the City with a 5.4% increase (6,392 people) in population from the previous Census in 2011. The recent population growth in Cork City bucks its overall historical trend of static growth reflecting a commitment to urban growth and a desire to bring a measureable change of trend and culture in favour of urban living.

The Cork 2050 Strategy comes at a pivotal time to support the further enhancement of Cork City with a focus on sustainable levels of growth. Significant population growth is targeted with



an increase from an existing population of 125,622 in 2016 to a population of 179,469 in 2050 (c. 43% increase over a 34 year period). There will be a focus on creating sufficient critical mass in order to sustain improved public transport networks, while still providing a choice of locations for living and working.

Cork City Centre is the historic, cultural, social and commercial heart of Cork.

The City Centre is recognised as having capacity to strengthen its role as a residential and employment base. The Cork 2050 Strategy supports an increase in City Centre living for the period up to 2050 and beyond. A significant component of the strategy to consolidate the City Centre is through tackling under-utilised space and minimising vacancy and dereliction. New development will be built at increased, but sustainable densities, with quality design, creating a spatially compact City form.

There is potential for an enhanced reputation as an 'International Student City' to increase human capital and support the economic growth strategy. There will be a need for further purpose-built and professionally managed student accommodation, thereby making educational institutions more attractive to student's from Ireland and abroad.

The redevelopment of the North and South Docklands is one of the most significant urban regeneration schemes in Ireland and is a project of national/international significance. The Docklands are strategically located immediately adjacent to the established City Centre with a significant attractive waterfront setting for new development.

The Docks offer the opportunity to create a vibrant mixed-use and socially inclusive quarter that has the potential for a large residential community and significant employment.

As brownfield lands, the Docklands represent a significant redevelopment opportunity in the City and the resolution of infrastructural deficits required to realise the potential needs to be advanced. The planned relocation of the Port of Cork from Tivoli enhances the significant opportunity and the potential to create a new vibrant mixed-use quarter. The waterfront location and proximity to transport infrastructure including bus and rail, combined with it's single semi-state ownership, make Tivoli a strategic site for development. There will be a need for specific national policy provision and financial support for relocating incompatible uses, including Seveso establishments, from the Docklands.

Metropolitan Cork's role as a driver of population growth and economic activity through its sphere of influence regionally, nationally, and indeed internationally, will be a major contributing factor to Ireland's long term prosperity.

Rural parts of Metropolitan Cork are experiencing significant urban generated pressure for development and there will be a continual need to protect and manage greenbelts in a sustainable manner. This will deliver efficiencies of service provision and infrastructure investment while protecting sensitive areas. Within Metropolitan Cork, the settlement strategy focusses growth into the City Environs, higher order settlements and Monard.

The North and South Environs will play a significant role in complementing and consolidating the development of the City as important locations for residential growth. The northern environs in particular has significant potential for future quality residential development, serving to rebalance the City.

Growth in the remainder of Metropolitan Cork is focussed on



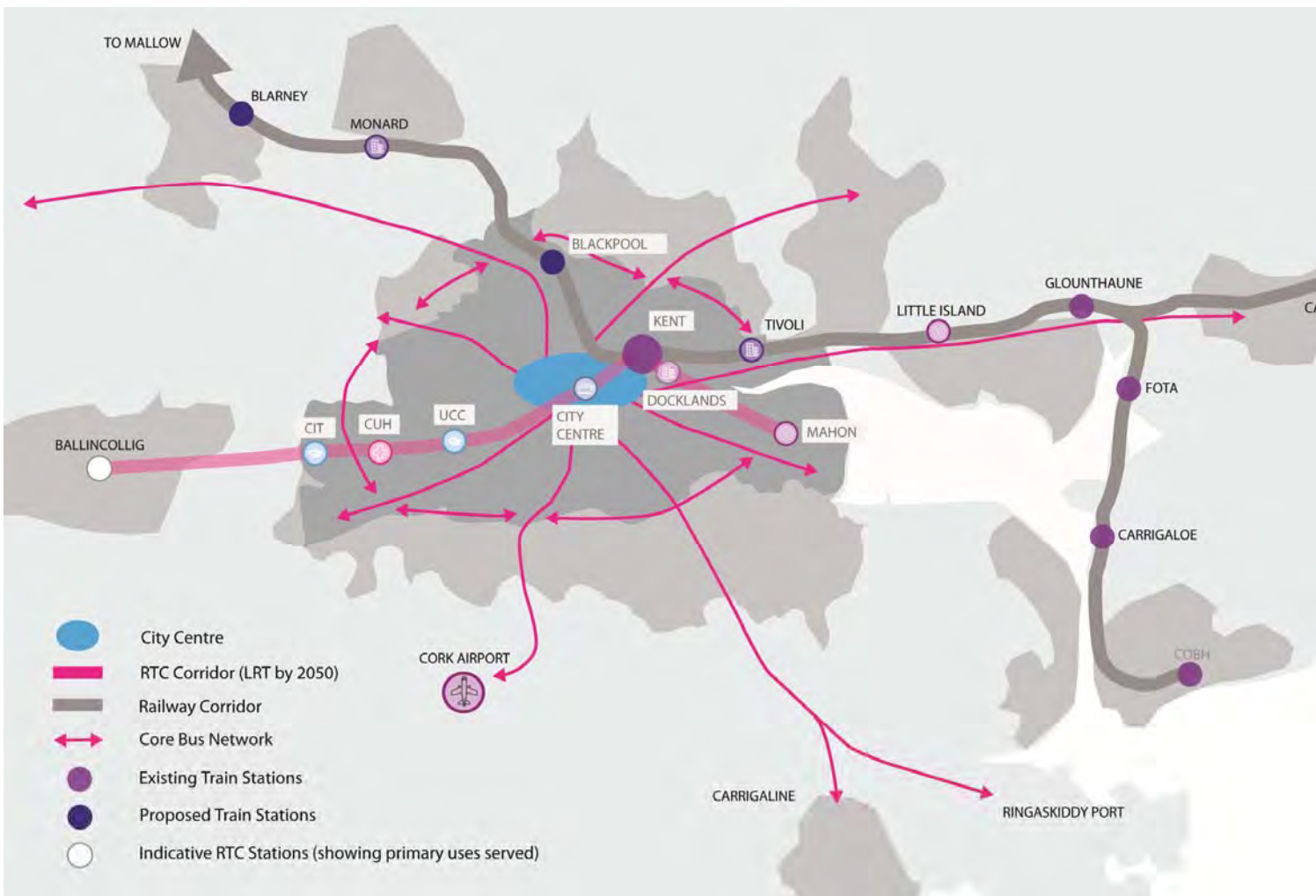
the consolidation of existing key settlements that include Ballincollig, Midleton, Carrigtwohill, Blarney, Carrigaline, Glanmire and Cobh. This approach supports a balanced spatial development pattern within Metropolitan Cork along key corridors in terms of higher densities at appropriate location mixed land uses, and compactness. It will best utilise existing transport infrastructure whilst also developing a critical mass to enable a viable, gradual step up in sustainable mode investment required along these corridors. In Metropolitan Cork, the future growth of the Monard SDZ as a key settlement is recognised .

Outside of Metropolitan Cork, growth is focussed in established settlements. As the largest town outside of Metropolitan Cork and with good road and rail connections and services, Mallow has potential to grow in a sustainable manner. The growth of Youghal, Bandon, Fermoy, Kinsale and Macroom is important in order to ensure a balanced spatial pattern of growth in which critical mass can be reached and potential realised. Clonakilty is the largest settlement within West Cork and is a prominent county town with an extensive rural hinterland and its continued growth is supported.

It is important to strengthen Cork’s rural and island communities to maintain and improve the quality of life and vibrancy of those who live and work there. Future growth is focussed in Cork’s rural town’s and villages (such as Skibbereen, Bantry, Charleville and Kanturk), as the heart of rural communities, making them better places where people can live, work, access services and raise their families in a high quality environment. Enabling a critical mass of population in established towns and villages will ensure that appropriate investment can be made to support the demand for associated services.

Strategic Employment Growth Areas

Spatially, the location of future employment growth is dependent upon a number of factors that are expected to continuously evolve up to 2050. Factors driving the location of employment are multi-layered and include *inter alia* human capital, scale, access to markets and suppliers, proximity to research and innovation and the availability of communications,

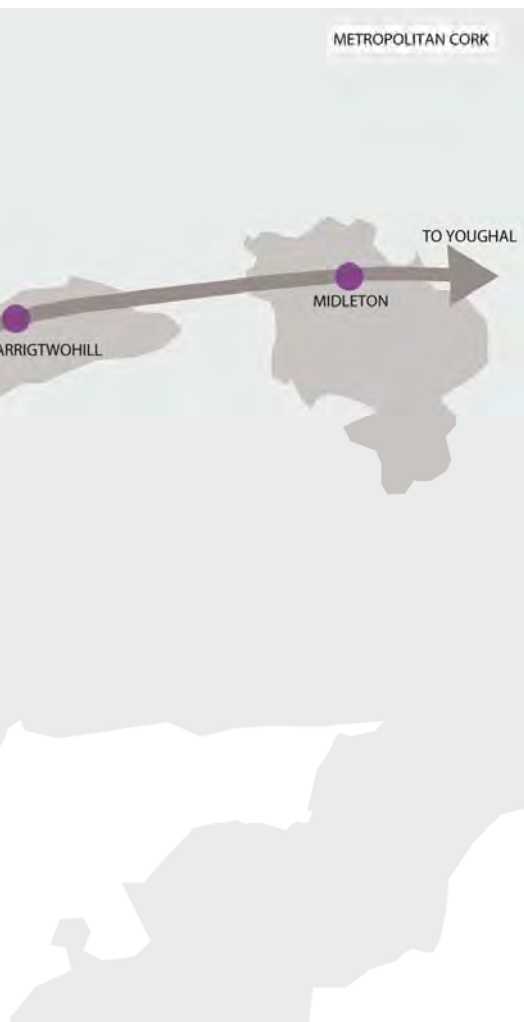


transport, energy and water networks.

The designation of land for employment purposes will not in itself ensure the provision of an appropriate level and mix of employment, with the actual level, mix and location influenced by market forces and industry specific locational requirements.

The continual re-assessment of designated strategic employment areas in light of future market trends is important so as to highlight and respond to any increasing disparities that may prevail. In an internationally competitive marketplace it is a prerequisite that Cork not only take account of existing trends but anticipates future trends and can be ahead of the curve and positioned to take advantage of future opportunities across a range of sectors.

Notwithstanding the above, there is a correlation between large urban areas and economic productivity and as such Metropolitan



Cork is the driver of economic activity for Cork and the Southern Region. Taking into consideration the importance of human capital as a resource, the spatial pattern of employment up to 2050 is mainly focused on the existing urban hierarchy of Cork, as employers are increasingly likely to locate where larger pools of skilled workers exist.

Cork City is recognised for its existing high concentrations of employment activity whilst also having significant capacity for further growth. The development of key strategic employment areas including the City Centre, the Docklands, and other brownfield redevelopment opportunities will realise the evident economic potential that exists. The delivery of the Docklands provides a natural extension of the City Centre and has considerable scope for the provision of high quality modern office space in an attractive mixed-use urban environment. An enhanced critical mass of activity will support the growth of the City Centre's retail and service functions.

In the future Cork will continue to be developed along high capacity public transport corridors. As such, this Strategy supports the growth of strategic employment growth areas located along the Mallow and Middleton / Cobh Rail lines at Mallow, Blackpool, Tivoli, Little Island, Carrigtwohill, Middleton and Cobh. Little Island is identified as a key strategic employment area with significant capacity potential.

Increased employment growth along the proposed Ballincollig-Docklands-Mahon Rapid Transit Corridor is envisaged for Mahon, Ballincollig, the City Centre and the Docklands while also serving the significant employment generating uses at University College Cork, Cork Institute of Technology and Cork University Hospital.

Ballincollig town is recognised as having significant potential for employment growth in both small and large scale industrial and enterprise development. The development of the nearby Cork Science and Innovation Park will bring together researchers, entrepreneurs, academics and technology intensive enterprises to drive innovation.

A number of strategic employment assets exist at Ringaskiddy, Whitegate and Cork International Airport. They have significant comparative advantages and their continued growth is supported. 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. Whitegate has a nationally important role in the energy sector and is a preferred strategic location for expansion in this area. Cork International Airport has significant capacity for growth as a gateway for business and tourism through transatlantic flights routes and its proximity to London and continental Europe.

Mallow and Clonakilty are strategic employment growth centres performing important functions in the North and West of the County respectively. They will attract and facilitate a level and type of employment that supports not only their communities but the wider hinterland. Outside of urban areas, the further development of clusters where natural comparative advantages exist will be advanced, for example in the agri-food, creative, energy, marine and tourism sectors.

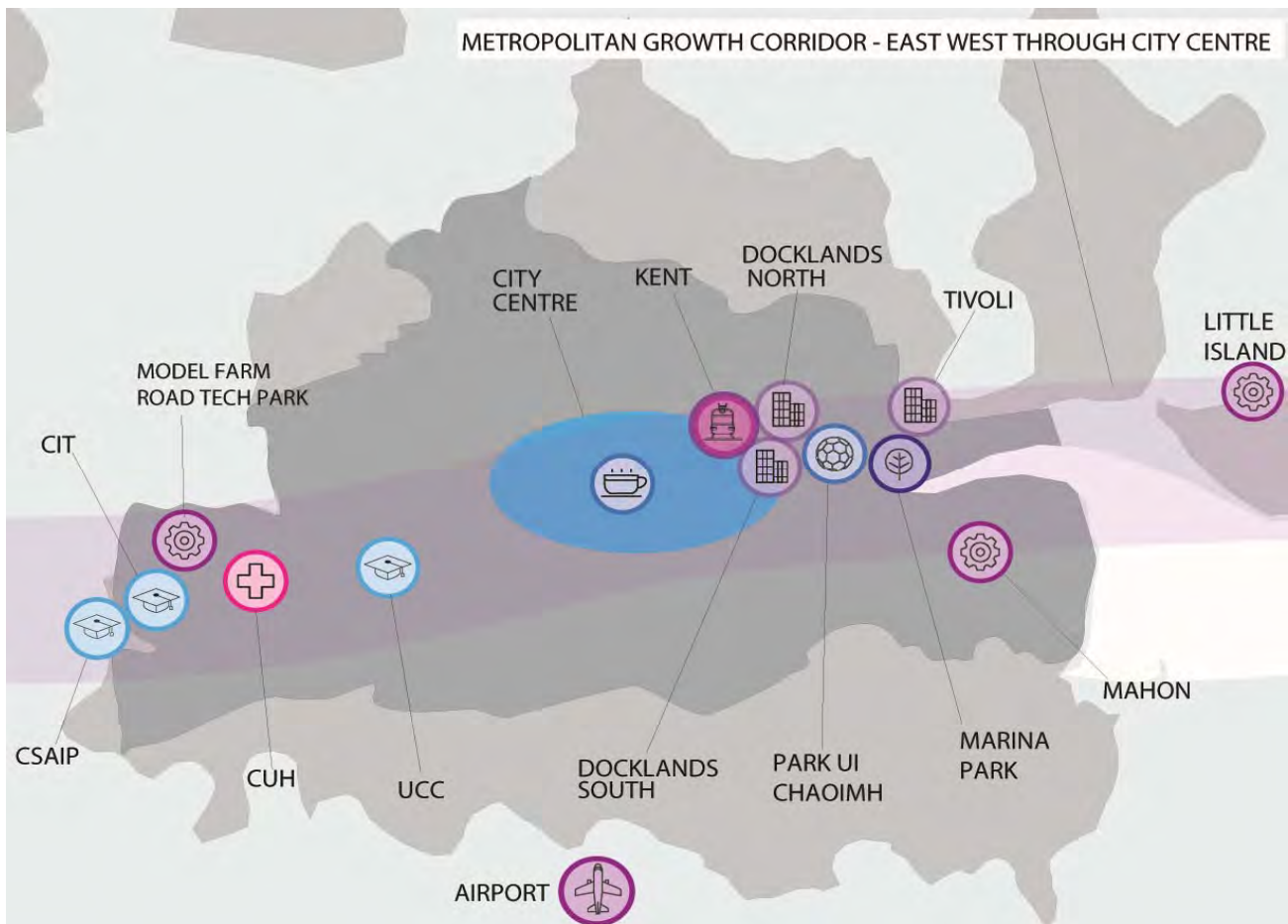
Through an approach which utilises digital connectivity, other technological advances, and the promotion of activity in 'relational space' rather than a focus on geographical proximity, agglomeration, or the rural-urban dynamic, the rural landscape can be redefined by a strong local economy with access to global markets (as well as local) that extend their offering, encourage innovation and create resilience and diversity.

A Spatial Influence - An Integrated Transport System

This Strategy recognises that to reduce emissions from sectors such as transport, and realise the transition to a low carbon economy, it is necessary to address the distances between where people live, work and socialise. The transport sector in Ireland contributes approximately one fifth of total carbon emissions, highlighting the significant importance that the role of an integrated transport system must play in the long term strategy for Cork.

The ability of Cork to attract and support significant future growth in a sustainable manner is in part influenced by the quality of its transport system.

There exists a clear need for an integrated transport system to underpin the spatial, social and economic growth of Cork to 2050. It will build upon efficiencies from consolidated population across the Metropolitan area, while recognising the critical socio-economic role played by the rest of the County. A key



principle underpinning the sustainable growth of Cork is that of consolidating growth along high capacity public transport corridors. There are currently defined corridors of transport demand that have the potential to accommodate significant additional growth in population, employment and education. In order to achieve a better socio-economic balance spatially, it is an aim for the urban structure of Cork to be developed strongly along these corridors, delivering modal shares consistent with national policy Smarter Transport objectives.

Locally, Cork has the potential to be highly sustainable in transport terms with many villages and urban centres within walking and cycling distance of local services especially for education, retail, leisure and social purposes.

A Spatial Influence - A Strategy for Place-Making

The focus of the Cork 2050 Strategy is to deliver a sustainable scale of growth for Cork whilst retaining it's existing place quality assets and high quality of life. This will ensure that growth is facilitated in a manner that creates places that are attractive for living and working and allow for better outcomes, particularly in relation to our health and wellbeing. The Place Strategy set out in Section 5 focuses on retaining and enhancing Cork's quality of life offer and is delivered via five priority areas:

- Health & Wellbeing
- Quality of Place
- Social Sustainability
- Accessibility
- Vibrancy & Activity

The Place Strategy seeks to build on Cork's varied place qualities which range from a vibrant City to scenic coastal areas. The choice and connectivity offered by these communities is a core strength of the national and international offer. The Strategy seeks to utilise the capacity offered by this network of places to accommodate escalated growth in a sustainable way, marrying the benefits of variety and choice with balanced growth within a network of connected places.

A Spatial Influence - The Economic Sectors

The spatial implications and dynamics of the future economy, whilst unclear, are sufficient to identify likely trends in the future roles of Cork City, Metropolitan Cork, and the wider County towns and rural areas.

Cork City - Leadership functions and functions that require profile and position, as well as high value businesses that can support the cost of prime locations, will continue to locate in the City Centre. There will also likely be growth in incubator spaces potentially linked to educational institutions within a central location. Sectors could include business & financial services as well as technology, health education & research and other technical sectors as the City Centre intensifies and densifies and expands into the Docklands as Cork grows.

Service sectors often seek more vibrant locations where employees can benefit from wider amenities, for example food, leisure, and cultural offer. Businesses with high-networking requirements tend to seek opportunities to be part of a rich ecosystem and can encourage cross-fertilisation of ideas between sectors, industries and education. The City will continue as the Regional centre for higher order retail, entertainment and cultural functions, as well as being attractive to business.

Metropolitan Cork - Lower and middle value uses will likely continue to locate beyond prime locations where the cost, profile and access to provisions are more attractive. These will typically consist of manufacturing, storage, industrial and other lower/middle density, lower/middle value functions.

New forms of high-quality mixed business and technology parks with larger office and R&D units, as well as co-location opportunities for education, research, and innovation hubs with shared R&D facilities set within high amenity campus environments, are likely to increase to serve growing demand from scientific, technical and research roles. Employment types will likely include medium density, larger floorplates, that have relatively high networking requirements such as life sciences, technology, energy and agri-tech sectors.

County Towns, Villages, Rural Areas and Islands - Through efficient and effective transport and communications infrastructure, sustainable economic growth will benefit the wider County, supporting the vitality and viability of the County's network of towns and villages. Opportunities to concentrate activity to support public transport and underpin existing centres in the County would form the basis of a polycentric approach to growth in Cork.

The County will likely accommodate medium to lower density activities that require larger premises, that have lower networking needs, specific locational requirements, or that need 'secure' sites. The types of floorspace required are likely to be industrial business parks, standalone development opportunities, such as industrial and lower order manufacturing, as well as integrated mixed-use developments and town centre workspace. Through rural communities utilising the digital

04 Spatial Strategy

economy there will be opportunities for innovation resulting in new types of business (e.g. Ludgate).

Key Actions

Increase population densities along public transport corridors at certain locations to achieve averages of between 3,500 - 4,500 persons per sq. km within a 1km zone.

Provide a supply of land and sites that are responsive to and meet social and economic needs:

- Fast-track flexible office space to meet short-term market demand which is designed to adapt to shifts in ways of doing business over the medium and long term.
- Fast-track the supply of housing in the right locations to meet housing need and offer choice.

Develop the Docklands (City Docks and Tivoli) as a world-class, high density urban quarter supporting successful, mixed use neighbourhoods based on the '5 minute city' concept. Support the continued development of the City Centre as a vibrant centre for a diverse range of economic, social and cultural functions.

Develop Monard SDZ to create a new neighbourhood at a greenfield location served by public transport. There should be specific national policy provision and financial support to give effect to Government Policy and implement the SDZ.

Develop lands in towns and villages designated for growth within the strategic development nodes.

Outcomes

Sphere of Influence - Metropolitan Cork's role as a driver of population growth and economic activity regionally, nationally and indeed, internationally will be reinforced and a major contributing factor to Ireland's long term prosperity.

Population Growth - Building on the NPF's recognition of Cork's scale, population will increase from 542,196 to c. 846,423 with in excess of 60% of overall population living in the Metropolitan area in 2050.

Spatial Consolidation - An increased efficiency in land use will consolidate people and employment along corridors across Cork City and parts of the wider Metropolitan area, with sustainable urban expansions at locations across the County.

Brownfield Development – The 180ha at the City Docks and Tivoli offer the opportunity to create vibrant mixed use and socially inclusive quarters that have the potential for a large residential community and employment.

Greenfield Development – Successful urban extensions are important for orderly development to facilitate growth and expansion opportunities across the Metropolitan Area and County and will be advanced (e.g. Monard SDZ).

Employment Land Use - The designation of land for employment purposes will not in itself ensure the provision of an appropriate level and mix of employment, with the actual level, mix and location influenced by market forces and industry specific locational requirements. The Strategy channels high value sectors towards the denser areas (e.g. City Docks and Tivoli), providing choice of location across the Metropolitan Area while ensuring that indigenous industries and niche sectors can establish in the wider County.

Employment Clusters - Increased employment growth along the proposed Ballincollig-City Centre-Docklands-Mahon Rapid Transit Corridor is targeted while also serving the significant employment generating uses at University College Cork, Cork Institute of Technology and Cork University Hospital. More employment clusters will build on the strength of existing locations such as Little Island, the Airport and Ringaskiddy which is a strategic location for the industrial and pharmaceutical sectors along with important Port related activities.

Wider County Clusters – The network of County towns, villages, rural areas and islands will have reinforced local, county and regional links through infrastructure investment. Importantly clusters of towns and villages will work together and support rural areas and islands to create sustainable places that make significant contributions to economic growth in areas such as agriculture (and agri-tech), tourism, fishing (particularly Casteltownbere), maritime related activity and renewable energy.

Transport Integration - To attract and support significant future growth in a sustainable manner, enhanced transport facilities will be delivered in line with growth so as to maximise the cost benefit.

The NPF - Cork in 2040

Taking a snapshot of 2040, there will be an overall population in Cork of approximately 750,000, with the number of extra jobs between 70,000—80,000. From this, there will be c.40,000 additional people in the Cork City administrative area and another c. 120,000 in the remainder of the Metropolitan area (with the total for the Metropolitan just under 500,000 by 2040). The County area outside the Metropolitan area will have a total population of just under 300,000 (an increase in the region of 55,000).



Measures to support supply and densification: Enhanced Active Land Management

In line with the publication of “*Planning Policy Statement 2015*”, the actions set by “*Construction 2020*” and “*Rebuilding Ireland*” are being progressed to enable planning authorities to dynamically lead and manage the development process to ensure that zoned land actually comes into use as anticipated.

The market may not deliver the land or development in the right place when it is required. It is considered that enhanced measures may be required in Metropolitan Cork to deliver commercial and residential development that is of strategic importance for the sustainable development of Cork and the wider region. It would also support Cork in achieving the right densities, form and sequence of development.

An understanding of Cork’s housing market areas, land ownership, land values, land and development supply, demand for land and development, and the viability of development is required to actively engage with the development process. Measures could include:

- Greater involvement in the direct delivery of units or floorspace into the market by, or on behalf of, the Cork Local Authorities where the supply would be of strategic importance.
- The combined use of zoning and compulsory purchase powers to deliver development land, either into the market or to be taken forward for development, on behalf of the Local Authorities.

Additional powers may be required for the Cork Local Authorities to raise funds and invest in land and development, for example project seed capital. Related measures could include greater flexibility for the Cork Local Authorities to jointly borrow funds for development on foot of future income. These measures in turn could be expanded to incentivise and kick-start developments of strategic importance.

Together this suite of enhanced powers, in addition to existing powers, could, if required, provide the Cork Local Authorities with greater ability to ensure provision of development in the right place at the right time to support sustained growth.

05 / Place - Making Strategy

Cork 2050 will create a person-focussed place that offers a strong economy, but not at the expense of Cork's high quality of life, social cohesion, and well-being. The Place Strategy is delivered via five priority areas (1) Health & Well-being; (2) Quality of Place; (3) Social Sustainability; (4) Accessibility; and (5) Vibrancy & Activity.

Place-Making Principles:

- Consolidation at a scale appropriate to Cork.
- Coordination and integration of land use and transport.
- Mixed use and vibrant places, with the City Centre as the 'healthy heart' of the Region.
- High-quality, person-centered building and urban design.
- Create conditions for the arts to flourish, promote unique cultural assets and encourage creativity.
- Community specific and community sensitive form of development, and supporting the creation of successful neighbourhoods.
- Focus on creating quality public space and public realm with enhanced recreational activity.
- Build resilience, flexibility, energy efficiency and adaptability into Cork's varied places.

Place Making

Cork is unique nationally as a place that is highly productive and competitive, but also one that offers a high quality of life. The focus of this Strategy is to deliver a sustainable scale of growth for Cork whilst retaining its high quality of life. The strategy rests on a holistic vision as a place that realises its full potential but not at the expense of its social and cultural development.

The Place Strategy focuses on retaining and enhancing Cork's Quality of Life Offer, and is delivered via five priority areas:

- Health & Wellbeing.
- Quality of Place.
- Social Sustainability.
- Accessibility.
- Vibrancy & Activity.

The success of the strategy for growth is dependent on presenting a compelling economic, social and quality of life proposition that attracts talent and retains local people. Therefore, retaining the advantage as a place that successfully fuses quality of life with a dynamic economy is crucial. It is a unique selling point that helps differentiate Cork from other locations nationally and internationally.

To 2050, Cork will not only generate growth but has the space and places to accommodate this growth in sustainable, high quality, accessible locations for both businesses and residents. It is well positioned to deliver on its potential as it offers a choice and variety of place types, alongside a vibrant, robust and cohesive social structure. It can absorb growth whilst retaining its unique identity and community resilience.

Cork's places and spaces can retain their quality and uniqueness, whilst also adapting to an emerging 4th generation economy, increased migration, and a changing climate.

Cork must create the conditions to grow and develop as a 21st Century place whilst also ensuring that basic expectations are met, such as:

- Housing that is affordable.
- Clean water.
- Sustainable energy.
- Water management and flooding.
- Affordable and efficient movement.
- Telecommunications.
- Pollution-free air.

The Place Strategy is expressed spatially within a Sustainable Place Framework. This Framework seeks to provide for the appropriate development of the whole of Cork, whilst recognising and prioritising the strategic regional role played by Metropolitan Cork, with a vibrant Cork City at its heart.

Sustainable Place Framework

The Sustainable Place Framework will structure the pattern of development to 2050 so that social and business space is available in the right location at the right time, within the context of the Spatial Strategy. This will support sustainable growth within Cork’s polycentric, mixed use spatial model.

The Framework identifies spatial opportunities to accommodate heightened levels of growth whilst providing a sustainable and high quality choice to residents as to where they live and work.

The whole of Cork has a role to play in supporting growth with each area fulfilling its potential. The Spatial Strategy seeks to build on Cork’s varied place qualities which range from a vibrant European City, to County towns and villages, to coastal areas. The Strategy seeks to marry the benefits of variety and choice with balanced growth within a network of connected places.

A Living City - The City offers a mosaic of quarters, comprising of residential suburbs, commercial areas, waterfront living, and the vibrant social and cultural life of a European City with a unique landscape setting.

Cork’s Metropolitan Engine - A well-functioning and energising place providing residential, employment, health, business, political, educational, commercial and transport functions driving the region.

Main Town’s and Villages - Providing vibrancy and choice, Cork’s strong network of towns and villages must be supported and continually renewed as they in turn support and energise their surrounding rural hinterlands.

Rural Areas and Islands - The variety and choice of environments and natural settings within the County is second to none nationally. This is notable in the context of Cork also offering the benefits of a vibrant European City and strong Metropolitan Area.

The Place Framework, within the context of the Spatial Strategy seeks to maximise the potential and meet the social, economic and cultural needs of the whole of Cork, whilst channelling the majority of growth to locations within Cork City and Metropolitan Cork.



The Strategy prioritises a revitalised and reinvigorated Cork City for higher density living, and higher density, high value jobs. The high capacity transport corridors needed to support this scale of growth will be delivered incrementally in line with growth and intensification of the City.



Targeted growth will occur in Metropolitan Cork which has significant capacity in its existing built form and along corridors linking the City Centre with the remainder of the Metropolitan Area. The towns of Ballincollig, Blarney, Carrigaline, Carrigtwohill, Cobh, Glanmire, Midleton, Passage West and Monard present opportunities as well as a rich historical, sporting, recreational and cultural offer, as well as tourist destinations of regional and national importance.



Main towns and villages must be supported to grow sustainably in a way that maximises their individual potential and releases their capacity within a balanced spatial structure.



The rich tapestry of rural areas and islands must be supported in a way that meets each communities varying needs, including the Gaeltacht population, within a strong overall spatial framework. Cork’s approach to development in rural areas can guide development over the long term, and serve as an exemplar for Ireland by responding to each places’ uniqueness and valuable contribution to vibrancy, identity and place quality.

The Right Development in the Right Place

Ireland and Cork have become more urbanised, and globally this trend appears set to continue. The Spatial Strategy seeks to accommodate the trend of increasingly urban-led growth, by channelling appropriate levels of development to locations that have the capacity, primarily Cork City, Metropolitan Cork and to a lesser extent urban locations outside the Metropolitan Area.

Place Making Principles

- Densification and intensification appropriate to Cork
- Coordination and integration of land use and transport
- Mixed use and vibrant places
- High-quality, person-centred building and urban design
- Community specific and community sensitive form of development
- Focus on creating quality public space and public realm
- Build resilience, flexibility and adaptability into Cork's varied places

Existing densities in Cork are relatively low by international standards, as with Ireland generally. The development of Cork City, Metropolitan Cork and the County towns and larger urban centres along growth corridors can be consolidated to levels that are appropriate for Cork.

This strategy would, over the 30+ years, see densities increase in Cork City, primarily through brownfield regeneration, and across sustainable locations in the wider Metropolitan area. This is a reasonable approach required to support high capacity public transport, that is in line with comparator cities such as Aarhus, that have succeeded in marrying growth and quality of life.

Delivery is dependent on achieving the right development in the right locations, supported by sustainable transport. It is also dependent on being of a high quality and following a design-led approach that delivers world-class built environments that support mixed and vibrant communities in Cork.

Cork has the potential to deliver consolidation by developing a model for urban densification unique to Cork.

Cork: A Living City

Cork City is the 'Healthy Heart' of the wider Cork area. It is by far the largest commercial area outside of Dublin and has an important national and international role in the provision of services and facilities. Residents and visitors favour historic cities with a unique identity and public realm, which offers people a good quality of life.

Over time the City Centre will become an 'experiential environment'.

It is not clear how retailing and commercial activity will evolve to 2050, but more retail will be carried out remotely. A shopfront is not the essential retail infrastructure for every business that it once was. However, people will always desire to mingle and socialise, and businesses will always benefit from close physical proximity and profile of presence.

Cork will build over the long term on the 'healthy heart' approach and over time, expand on emerging concepts such as the 'mindful city' that target the growing appreciation of the impact of our physical environment on our health and wellbeing.

The City should continue to focus on its physical and spatial development. Developing, refining, enhancing and communicating the varied identities of the City Quarters, led by a dedicated 'champion' should be taken on with a view to maximising the potential of these areas street by street.

Improving Health & Wellbeing

Cork must maintain its current quality of life offer, whilst meeting evolving expectations. Meeting these expectations is an intrinsic part of the economic as well as social offer that Cork will present into the future. Surveys show that there is a high level of satisfaction amongst residents of Cork.

Lifestyle - Expectations are changing with the built environment influencing how easily we can have the lifestyle we choose. Poorly designed, low density development can inhibit walking and cycling and induce car use. Therefore, considering health and wellbeing as a core principle in the design of our spaces will provide a valuable legacy to Cork and Ireland to 2040 and beyond.

In this context, Cork 2050 takes a person-focussed perspective that needs to be reflected in policies and approaches to the design of our built environment. Other considerations that affect health and wellbeing include transport, water services, character

and visual amenity, sustainable energy and habitat management. Policies are themselves changing, from smarter water management in the context of climate change, to smarter travel and increasing emphasis on sustainable, healthy modes.

A shift of emphasis in planning policy and sectoral policies is needed to align with the latest thinking in health and wellbeing.

The basis for this shift is already in place, from the consideration of health in planning legislation, to that of wellbeing in the Cork City and Cork County Development Plans.

This shift in policy must be based on an evidence-based approach as to how place-based policies can support Health & Wellbeing for future generations. Research and data on the relationship of health & wellbeing to national, regional and local spatial policy is required, set within the direction provided by *'Healthy Ireland: A Framework for Improved Health & Wellbeing'*. Cork is well advanced in aligning spatial and sectoral policy in this regard, reflected in its designation by the World Health Organisation as a Healthy City as part of the WHO Healthy Cities Programme.

An Ageing population - Health and wellbeing are particularly relevant in the context of an ageing population. The design of buildings and the public realm will be required to adapt to accommodate the needs of an ageing population over time, for example in relation to mobility and the provision of health services in the home. Cork 2050 acknowledges the increasingly active aged population and the importance of ensuring Cork is an adaptive place and 'life-long proofed' that facilitates all stages of life. Health and wellbeing will become a more important consideration in design as more people live longer and their needs and expectations change. Our spaces, facilities and supply of accommodation for older people will also change, which in turn will require the efficient use of the existing building stock.

There are also significant implications for the provision of services for an ageing population, particularly in less accessible locations. Service provision is increasingly becoming mobile where possible. Over time there is significant potential for the delivery of services remotely. This will be enabled by advances in technology and digital connectivity.

Social Infrastructure: Sport - Cork is known for its strong sporting traditions, with a wealth of clubs operating throughout the City and County dedicated to differing sporting traditions. The level of growth set out in this strategy makes it imperative that

existing provision is protected and additional facilities rolled out alongside development, and as with education and health infrastructure, to embed this into the design of communities and places in a way that reflects the cultural importance to Cork.

Social Infrastructure: Health - There is a strong cluster of health infrastructure in Cork, for example Mercy Hospital and Cork University Hospital, the largest University teaching hospital and the only Level 1 trauma centre in Ireland.

Cork provides critical healthcare services for the Southern Region, as well as medical teaching and specialist emergency care nationally. Cork University Hospital primarily treats patients from the Cork and Kerry area, as well as tertiary referrals for most of the Southern Region, serving a population of over 1,175,000.

Healthcare provision is undergoing structural change through reconfiguration of assets and services. Despite the long term shift toward providing care in or close to the home, significant expansion of services will be required to facilitate the growth of Cork. These structural changes will have spatial, economic and environmental implications requiring strong policy alignment and investment.

Metropolitan Cork's strategic air and road connectivity make it the prime location for expansion of healthcare in the national context, primarily as a complement to Dublin for national based services.

Identity & Culture - Cork's unique, and varied place quality and identity will be retained. Cork is one of the largest multi-cultural locations outside of Dublin and an attractive place for diverse cultures. It needs to make space for cultures both in terms of physical space but also social space, for example through cultural events and programmes. As one of the more diverse places nationally, Cork has the potential to play a significant role in the development of national integration policy.

Quality of Place

A vibrant, high quality and attractive environment, as part of a compelling overall quality of life proposition, can enhance Cork's competitive advantage when coupled with a dynamic economic environment. Cork has a distinct advantage in this regard from the variety of places it offers, from Cork City, to unique towns and villages, to rural areas and islands. Cork 2050 acknowledges the importance of place quality to residents and visitors, but

05 Place - Making Strategy

also to businesses in attracting and retaining talent and increasing efficiency and productivity. Capital and talent are mobile and attractive, safe, vibrant places encourage investment.

Quality of place must be protected and enhanced hand-in-hand with development.

Spaces for People - Whilst the economy, technology and the environment will change many aspects of the way we live, a number of core human needs remain constant, for leisure, social interaction, public realm, and health.

Cork will remain at the forefront nationally and internationally in offering 21st Century quality of life and place attributes such as advanced digital connectivity and healthy places that facilitate wellbeing.

Design - The design of buildings and the broader built environment must provide for places that embody and enable a quality of life that is flexible to accommodate differing and evolving lifestyles to 2050. Cork 2050 acknowledges that whilst dynamic, quality places offer a permanency to be enjoyed lifelong .

Sustainability must also be at the root of design, and carefully resolved with the varied visual aesthetic and character of Cork's built and natural environment. Energy generation and efficiency, water and waste management, bio-diversity and habitat, safety and security, and increasingly, the growing of food must be considered in the approach to building and space design in Cork.

Housing: Sustainability, Affordability and Quality - Over the course of the Cork 2050 Strategy between 125,000 and 150,000 dwellings could be required to accommodate growth. This is dependent on a range of factors, for example household size and composition, stock obsolescence, and vacancy levels. Current low supply must, and is, being addressed.

Housing supply is required in line with population change as well as market demand. Housing affordability is of strategic importance to maintaining Cork's quality of life offer and its cost competitiveness.

A mix of housing types and sizes at a variety of sustainable locations will be consistently required up to 2050 and beyond for Cork.

Housing mix will reflect demand and demographic change. It is expected that over time this will mean a larger proportion of smaller dwellings. However, an appropriate mix that supports choice and sustainable vibrant communities is essential in promoting sustainable and socially inclusive places.

Environment - There is a growing consensus in relation to the value of Green Infrastructure, as well as leisure, recreational cultural assets as defining elements of the attractiveness and competitiveness of our cities, towns and rural areas. A core part of successful place making will be retaining and expanding Cork's assets, noting their unique form and topography, and providing the recreational infrastructure that a growing Cork will require to meet needs and expectation and retain Cork's quality of life and quality of place, such as Tramore Valley Park, the new Marina Park adjacent to Paírc Uí Chaoimh, Lee Fields to Ballincollig Park, and the Cork Harbour Greenway.



Cork's wealth of natural assets will be protected as Cork grows. A fuller understanding of the wider economic and social value of natural assets and recreational spaces, including the marine and riverine environments, is required. Natural assets can be seen as Green Infrastructure, providing ecosystem services, as well as being socially and economically valuable in their own right.

Our changing climate will impact places differently, with water management particularly challenging. Adaptation, particularly in social and economic growth areas, will be of critical importance to Cork in the future.

Place Making: Technology Integration - Digital connectivity is increasingly required and expected, much the same as water or electricity. Equality of connectivity across Cork should be prioritised, particularly as hyper-connectivity becomes a feature of technological development.

Technology will have an increasingly important role to play in how we manage, use and interact with places.

The right technology can be used to enhance the user experience from navigation, to information, to augmented reality. It can be used to better understand users, visitors and target markets, as well as placing and communicating the Cork Brand.

A Socially Sustainable Place

Economic growth cannot be delivered at the cost of equity and opportunity for all people. There are clear spatial expressions of deprivation in Cork and there is an important response to be coordinated with other sectors such as health and social care.

Diversity - Continuing to be a socially sustainable, fair, and equitable place is at the core of the 2050 Strategy and essential in achieving Cork's growth potential. Social sustainability, cohesiveness, stability and safety will be important currency into the future. As the population increases, Cork will continue to support increasing diversity and equality of opportunity through maintaining affordability and ensuring equality of access.

This is particularly important in the context of growth driven by increased migration. Cork will remain a flexible place that enables local people to travel and return, and which also welcomes people in. Cork has significant and successful experience of migration, with the largest international population outside of Dublin. This equips Cork with a social and institutional multi-cultural readiness for inward migration over the coming decades. Cork's scale is a significant strength in this regard, being sufficiently large to accommodate inward migration, but small enough to inhibit alienation.

The Cork Healthy Cities initiative states that social exclusion can occur on a number of grounds including social status, language and culture. Nationally, Cork has one of the largest populations of residents born abroad. Strong, migration-led growth has implications for integration. This is an important factor to be managed to avoid the amplifying aspects of spatial deprivation. Interventions in relation to skills, education, language, affordable accommodation, access to employment, and physical and digital connectivity are critical to success.

Skills City/Research Region - A key challenge for strongly performing regions is ensuring all residents are equipped to participate in the emerging local, national and international economy. This is particularly relevant in an ageing population. Enabling the skilling and re-skilling of Cork's residents over time is an important factor in tackling worklessness and deprivation.

Cork has been a seat of learning for over a thousand years. Cork

City has a strong cluster of over 50 tertiary educational facilities and was awarded the UNESCO 'Learning City' designation in 2015. Consciously developing as a City of learning, education and research will be a defining factor and strategic growth driver for Cork. Third level facilities should continue to be embedded into the physical fabric and woven into the social and cultural fabric of Cork. The capacity of the City Centre and Docklands to accommodate additional growth in this regard is notable, for example the location of the Tyndall National Institute and the expansion of UCC at North Mall Campus.

Social Infrastructure: Education - There are currently 344 primary schools in Cork with capacity for over 61,000 pupils and 87 post-primary schools with capacity for almost 45,000 pupils. Population growth will generate significant demand for primary and secondary school places. Whilst the long term need for school places depends on a range of factors from fertility to household size, up to 79,000 school places could be required in Cork up to 2050. Co-locating the provision of school places with residential development is a core part of the Place Strategy.

It is estimated that 65% of children starting primary school in 2017 will be employed in sectors not yet emerged. It is clear from the potential growth in pupils outlined above that these children must be continually provided with the skills needed to future-proof the workforce. In line with national education and skills strategies, success in key economic sectors will require continual reinvestment in the education system and skills base in Cork.

Adapting or supplementing education in Cork to ensure that evolving needs are met should be a priority in future proofing existing employment sectors and targeting potential growth sectors.

Cork's key education assets include University College Cork (UCC) and Cork Institute of Technology (CIT) that combined have over 35,000 students enrolled. Whilst the UCC campus has capacity for additional floorspace, this is outstripped by its floorspace needs. For both CIT and UCC, the Cork Science and Innovation Park could provide for c. 11,000 students and employees over a 25 year period. Alongside additional third level space in the City Centre, the Cork Docklands and Ringaskiddy campus will make an important contribution to the third level education needs in Cork. However, a supply of flexible space to cater for needs as they evolve will be required.

The Cork Brand - Developing and communicating Cork's unique identity and 'brand' is essential to generating the growth that Cork proposes. The "*Cork Brand Book*" and emerging branding

05 Place - Making Strategy

efforts are critical to communicating nationally and internationally, the place, economic, environmental and social life available in Cork, and crucially, delivering the compelling economic and quality of life proposition on offer. Cork City and Cork County Councils, working in partnership with public and private sector stakeholders, have jointly commissioned development of a place marketing strategy to market and promote Cork as a location for investment across key target markets.

Vibrancy & Activity

Cork will be known for its varied and vibrant communities, offering a high quality of life, equality of opportunity, and the opportunity to pursue diverse interests and ambitions. Cork 2050 seeks to ensure that space and opportunity is provided for the social and cultural infrastructure that Cork requires.

Retailing & Commercial Activity - Cork City Centre is, and will continue as the primary higher order retailing centre in the Southern Region. The wider Metropolitan area will continue to play an important local and sub-regional role in terms of retail, with County towns, and other towns and villages across the County providing essential goods and services within their respective catchments.

Long term retail floorspace requirements to 2050 are not clear as they are dependent on a range of factors from household expenditure, to floorspace turnover and consumer behaviour. The sector is also continuing to undergo significant structural change, driven as always by change in technology and preferences.

Over time it is expected that the experiential aspects of Cork's City Centre and town centres will become increasingly important. Cork has an opportunity to be a frontrunner in understanding these emerging changes and the impacts and opportunities in its public spaces. Foresight and proactive management of the retail offering will ensure that Cork remains at the forefront of the retail landscape in Ireland.

Cork Arts, Culture & Tourism - Supporting public art, and making space for the arts and cultural activity as part of the fabric of our spaces and places has a valuable if underutilised potential to invigorate and enliven the public realm and develop the experiential environment. Cork 2050 supports the placing of Cork's vibrant arts and cultural life at the heart of Cork's social life and public realm. The Strategy supports capitalising on Cork's heritage, character, cultural offer (e.g. festivals and events), and the maritime heritage of Cork City, Cork Harbour and the wider Metropolitan Area, which has significant benefit

for local people as well as enhancing the heritage, cultural and urban tourism potential of Cork.

A Framework for Collaboration, an agreement between the Arts Council and County & City Management Association, focuses on creating arts experiences in public space. Expanding on measures such as this and supporting Cork's vibrant arts and cultural life contributes to the rich and diverse nature of Cork City, the wider Metropolitan Area, and County towns, villages, rural areas and islands.

Enabling access to, and engagement with, the arts enhances the vibrancy of a place and its wellbeing.

Accessibility

Cork 2050 seeks to reduce the need to move by locating housing, employment, education and services and facilities close to each other. The planning and delivery of land use and infrastructure will be coordinated to facilitate the continued shift to sustainable modes of transport. The approach prioritises walking and cycling, followed by high capacity public transport along growth corridors. This allows for corridors to be intensified and consolidated over time.

Cork offers relatively low commuting times to work and education compared to Dublin and other Metropolitan Areas internationally. This is a valuable attribute in terms of quality of life and cost competitiveness. The 2050 Strategy seeks to capitalise on this and ensure that commuting times do not erode the quality of life that Cork offers as the population and economy grow.

The Spatial, Place and Transport Strategies are integrated so as to significantly increase the share of journeys that can be made by public transport delivered through a phased introduction of transport improvements. Achieving this in a cost-effective way will help to maintain Cork's competitive advantage nationally and internationally.

Key Actions

The following sets out the key actions to deliver the Place Strategy for Cork City and Metropolitan Cork:

- Focus on sustainable, design-led intensification and densification along high capacity transport corridors traversing the City and the broader Metropolitan Area.
- Develop a City of successful neighbourhoods based on best

practice internationally, such as the '5-minute City', to promote quality of life, health and wellbeing. This will include the retrofitting of existing neighbourhoods to ensure an equitable quality of life across the City and Metropolitan Area.

- Support a vibrant and diverse City Centre as the 'Healthy Heart' of the Southern Region.
- Delivery of Docklands on a phased basis as a key game-changer within the City, to create new sustainable, efficient places with strong identities and place qualities.
- Delivery of Tivoli and other brownfield redevelopment opportunities to ensure flexibility to accommodate the right development in the right place at the right time as required in the future.
- Provide housing at greenfield locations across Metropolitan Cork including Monard SDZ.
- Significantly increasing the population in third level education within Cork City and wider Metropolitan Cork.
- Provide suitable housing in the right locations at the right time, that is affordable and appropriate to the needs of all residents, be they prospective home owners or renters. Promote efficiency of the housing stock, including downsizing and decreasing vacancy levels in the City (to c. 5-7%).
- Third level education and research & innovation environment to be embedded in the physical and social fabric of Cork.
- Expansion of healthcare infrastructure within the Metropolitan Area to serve escalated population in Cork and the Southern Region.
- Experiential Environment: shift in focus from functional commercial environment to an exceptionally high quality experiential environment, focussing on leisure, experience and culture, including development and enhancement of City Quarters, the Waterfront and Cork Harbour.
- Exploiting under-utilised and brownfield land, vacant units, and above-shop space; exploiting all opportunities for use of above-first floor uses which can achieve intensification in a way that is sensitive to existing built form and character.
- Improving accessibility and ease of movement into and within the City and wider Metropolitan Area, including through park and ride facilities at key nodes and extensive public transport services throughout Metropolitan Cork and County.
- Being Ireland's no. 1 tourist destination.

Outcomes

People first - Through an attractive environment and access to services, people will continue to enjoy a high quality of life with improved health and well-being. Successful placemaking will attract investment, talent and visitors. In the future, on average 4,000 people per annum will choose Cork as an inclusive place to live.

Vibrant City Centre - A highly accessible City Centre with brownfield sites regenerated through mixed-use densified development (e.g. City Docks and Tivoli), continued investment in the public realm and increased levels of accessibility in a unique waterfront setting.

Quality of life - Cork's places and spaces can retain their quality and uniqueness, whilst also adapting to an emerging 4th generation economy, increased migration, and a changing climate.

Sustainable Place Framework – The Framework identifies spatial opportunities to accommodate heightened levels of growth whilst providing a sustainable and high quality choice to residents as to where they live and work, including at greenfield locations.

A Living City - The City will offer a mosaic of quarters, as well as residential suburbs, waterfront living, and the vibrant social and cultural life of a European City, with a unique landscape setting. Over time, the City Centre will become an experiential environment - enhancing the experience.

Health and Wellbeing - A shift of emphasis in planning policy and sectoral policies will constantly sense check planning and development proposals against maintaining quality of place and life as they work hand in hand.

Technologically Advanced - Technology will be increasingly utilised to manage, use and interact with places.

Arts - Access to, and engagement with the arts is promoted to enhance the vibrancy of a place and its wellbeing.

Reaction and Amenity – There will be a focus on creating quality public space and public realm across the entire County with significant investment required in the Metropolitan Area (e.g. Tramore Valley Park, Marina Park, Lee Fields to Ballincollig Regional Park and the Cork Harbour Greenway).

The NPF - Cork in 2040

In 2040, Cork will be known for its equitable living, working and playing environment, offering a high quality of life and the opportunity to pursue diverse interest and ambitions.

Commuting times, housing costs and livings costs will be kept in-check to deliver a high quality, healthy and attractive environment. There will be choice, improved health and wellbeing, time for leisure, family and community.

The people of a place are crucial to success and while often referred to as 'human capital' in economic terms, there is a need to appreciate the characteristics of this resource in the first instance. Cork people are known for their outgoing nature, ambition, sporting accomplishments, pride in place and knowledge and this Strategy seeks to capitalise on these attributes. On a global level Cork's quality of place will continue to be a unique selling point.

Keeping people in the area and facilitating population growth will create the conditions for overall sustainable growth in 2040 and beyond.





06 / Towns, Villages, Rural Areas & Islands

The 2050 Strategy develops Cork's compelling proposition as a place that offers both a competitive economy and a high quality of life, alongside a broad choice of lifestyles and locations. This choice and quality is dependent on enhancing the towns, villages, rural areas and islands that Cork offers.

It puts forward an integrated approach which seeks to maximise the opportunities from the strengths of each individual area, and endeavours to create a cohesive, integrated, mutually reinforcing whole of County approach—the 'Cork Proposition'. These areas collaborate with and deliver for the whole of Cork and indeed the Southern Region and Ireland as a whole, and result in:

- Enhancement through variable access to services for all rural communities and improvement of transport infrastructure to ensure social and economic connectivity across the whole of Cork.
- Improvement in the demographic structure of areas which are declining or have an ageing population, and strengthen cultural vibrancy.
- Provision of a life-style alternative to those who do not wish to live in larger urban centres.
- Creation of economic opportunity in towns, villages, rural areas and islands through the stabilisation of the primary production industries, agriculture, tourism, and the creation of added-value enterprises associated with these industries, including small & medium enterprises.
- Reduction in environmental outputs from within towns, villages, rural areas and islands through walking, cycling and using public transport and strengthening the natural environment (e.g. enhancement of the environmental quality through the active pursuit of dereliction, promotion and support of the re-use of obsolete buildings and sites for residential purposes).

Developing a 'whole of Cork' approach

As part of the 'whole of Cork' approach this section of Cork 2050 considers towns, villages, rural areas and islands in more detail to set a strategic direction that maximises potential while protecting the unique qualities of place and life.

A 'Toolkit' is provided which can be adapted and supplemented on a case by case basis under the following structure:

- Position
- Enable
- Action

For this study, the exercise is high level but more localised studies tailored to each place will be required. At all levels, place profiling is central to the process as it provides the starting point for areas to set ambitions and goals for the future. As part of this strategy the focus is on the economy, place and population and does not go down to individual area level. Tools and methods are outlined that can be used as part of further planning, economic and social studies.

A central overriding consideration both today and in

the future will be how we connect some places and influence global markets, and respond positively to interactions with larger urbanised areas. There is a need to appreciate the changing environment within which people will live, work, do business and interact socially.

Relational Proximity

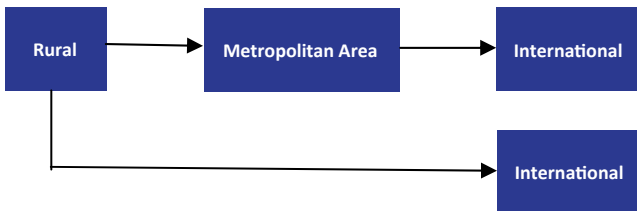
Crucial to the Strategy is the consideration of 'relational proximity'. Historically, the further away from large urban centres the less their influence. This has had a negative effect on the prosperity of some more remote areas. Whilst physical proximity to large urban areas will remain a central influence in Cork's development, 'relational proximity' will become increasingly important to some activities, provided that certain (infrastructural and human capital) preconditions are met.

It is the direct relationships between local communities and local businesses with other locations globally that is becoming increasingly important.

In supporting the sustainable development of towns, villages, rural areas and islands, the Cork 2050 Strategy embraces many of the principles of relational proximity, including utilising technological advances and promoting activity in ‘relational space’ rather than focussing solely on geographical proximity or agglomeration.

This approach enables communities to generate stronger, sustainable local economies with fuller access to regional, national and global markets. This extends their offering, encourages innovation and creates resilience.

The approach also supports sustainable communities in expanding their options for integrating directly with the national and global economy, as the urban/rural dichotomy is not sufficient to realise the potential of local economies. However, the approach does not seek to by-pass urban centres but instead maintains and builds on existing links to create a stronger place, communities and regional economy.



A Vision for Cork’s Towns, Villages, Rural Areas & Islands

Supporting the long term development of these areas requires a ‘Vision’ that balances the needs of local communities with a sustainable and diversified 21st Century economy.

The Health & Wellbeing of communities must be maintained; there is a continual need to embrace change by enabling and facilitating the communities in Cork’s towns, villages, rural areas and islands.

Cork 2050 seeks to protect the variety of places in Cork and provide for their varying economic potential. This reflects the direction provided by the Commission for the Economic Development of Rural Areas, the Charter for Rural Ireland and “*Realising Our Rural Potential: Action Plan for Rural Development*”.

Positioning - Economy, Place & Population

Cork hosts the most productive economy nationally and the largest economy outside of Dublin, and the extensive rural areas, islands, towns and villages of Cork make a fundamental contribution to this. The productive capacity of these areas is evident in the strength of the more established sectors of agriculture and food, as well as emerging strengths in research, science and technology outside of Metropolitan Cork.

The success of these sectors is based on the significant underlying assets and human capital within the towns, villages, rural areas and islands throughout North, South and West Cork. These sectors offer potential for continued growth into the future, particularly in the export-orientated sectors targeted by the 2050 Strategy, and in this way to drive local small and medium enterprises, sustainable economic diversification and indigenous growth.

Agriculture & Food

Cork has the most people employed in agriculture in the Country. A number of indigenous enterprises operating in international markets have developed outside of Metropolitan Cork from this base. These include Dairygold (a global agri-food co-operative from North Cork, an example of how Cork can help develop the Munster Agri-Cluster being promoted via the South West Action Plan for Jobs structures) and Midleton Distillery (a distillery from East Cork housing globally renowned drinks brands). Ballymaloe House in East Cork is another enterprise with a national and international profile and straddles both the food and tourism sectors. Together these enterprises complement West Cork’s growing reputation for artisan food and offer significant potential to link throughout the Region.

Cork has the research and innovation capacity, particularly in dairy research, to build upon its agricultural strengths and take advantage of increasing demand for food products globally. Teagasc Moorepark Animal & Grassland Research & Innovation Centre (linked to UCC and Tyndall) in Fermoy continues to play a pivotal role in the development of the Irish dairy industry as the focal point of milk production research, and is linked to UCC’s Food Industry Training Unit. The value of this can be seen in the presence of Danone and Kerry Foods in Cork who together produce c.8% of the world’s infant formula.

Agri-Tech

Cork is also well positioned to take advantage of opportunities in the agri-tech, agri-engineering and agri-science sectors, which is estimated to be worth €250m in exports to the Irish economy. In the context of climate change; growing demand for food globally; increased agricultural efficiency, automation and 'smart' farms; and changing farm sizes, these sectors offer significant growth potential which Cork is well equipped to deliver. Cork is well-placed to be a national centre of excellence in agri-tech, building on existing strengths in agricultural technology, research and education.

Technology

Ludgate Hub in West Cork is Ireland's first rural digital hub, and a national exemplar of how more rural areas can take advantage of national broadband rollout. Ludgate has a national and international profile and with high speed digital connectivity, space for local enterprise, and a collaborative and creative rural work environment, it is a hotspot for technology start-ups and entrepreneurs.

Ludgate is an example of infrastructure that could be commonplace in Cork, and indeed nationally, and enable communities to engage with the digital economy and provide opportunities for innovation and new types of business to evolve. To maximise the potential of digital connectivity in Cork's towns, villages, rural areas, and islands, supports for the uptake of, and engagement in technology are required. This could potentially be through a digital strategy, to include digital profiling of areas to support their engagement with digital technology to maximise economic and employment benefits.

Tourism

Tourism remains an essential complement to the economy of Cork's towns, villages, rural areas and islands. Nationally and regionally significant attractions outside of Metropolitan Cork include Kinsale (including Charles Fort and harbour cruises); Midleton Distillery; the Blackwater Valley; Doneraile House & Park, and West Cork (including Mizen Head, Bantry and Skibbereen). Alongside a rich programme of food, film and music festivals these tourism assets contribute to Cork's c.1.4 million visitors annually.

The towns, villages, and rural areas of East and North Cork form part of Ireland's Ancient East, whilst those of West Cork form part of the Wild Atlantic Way. This makes Cork Ireland's southern entry point to both of the nation's flagship tourism concepts, guiding and feeding visitors along the Wild Atlantic Way into Kerry and Limerick, and into Ireland's Ancient East via

Tipperary and Waterford. This highlights the unique role Cork plays in the functioning of Ireland and the Southern Region's tourism industry.



The Port of Cork has Ireland's only dedicated cruise berth at Cobh with capacity to increase the numbers of cruise liners over the coming years. It is a crucial part of the overall tourism offer and will continue to play a key role over the coming decades.

Cork is well positioned to take advantage of a growing middle class globally and the associated increase in tourism expected. This growth has the potential to bring increased demand as new opportunities to be a first-mover in enhancing visitor experience in Cork, for example in relation to digital currencies, data security and biometrics.

Marine & Fisheries

The Government projects that by 2020 Ireland's marine economy could grow from €3.4 billion to €6.4 billion turnover. Cork has the longest coastline in the Southern Region, numerous ports and related infrastructure, as well as an extensive marine environment. Cork's assets and infrastructure have significant potential to support the development of ocean and off-shore energy and facilitate new jobs in the wave and tidal industry (for example at the Castletownbere / Bere Island port facilities).

Castletownbere also remains home to one of Ireland's most important fishing fleets and Ireland's largest whitefish fleet. Although smaller than Agri-food, aquaculture also offers long term potential in Cork, with a thriving shellfish industry in West Cork.

These assets, embedded knowledge and infrastructure, offer significant potential for local communities to benefit from engaging with maritime related industries. Cork can lead the

way in expanding Ireland's blue economy, and also potentially play an important role nationally in developing Ireland's emerging marine spatial planning regime.

Energy & Forestry

Being the County with the largest land area in the Country, Cork offers significant potential in land-based energy generation, particularly forestry, bio-fuels and wind.

Cork has the largest installed and committed wind energy generation capacity nationally, with farms concentrated in the Derrynasaggart Mountains, the Boggeragh Mountains, and south of Dunmanway. Cork has significant additional wind resources and potential to expand its wind energy generation capabilities in ways that benefit local communities.

Cork has the highest forest cover levels in Ireland, almost 50% more than the next highest (Donegal). This key asset supports a strong private and public forestry products industry. The Irish forestry industry makes a significant and growing contribution to the Irish economy, estimated to be €2.3billion, and includes value from recreational use and corresponding visitor numbers.

Energy sources such as these offer significant potential to diversify communities' economic base and tackle energy poverty. Ownership of and involvement in sustainable energy generation is a key opportunity to support the resilience and self-sufficiency of local communities.

Population

The Strategy sets out population growth for the towns, villages, rural areas and islands which is provided in greater detail in the Spatial Strategy section of this study. These areas will experience growth at sustainable levels with distribution focused around a hierarchy of settlements. Established growth nodes are the focus for concentrations of population with c. 82,220 additional people living in the towns, villages, rural areas and islands by 2050. The population increase is in line with recent growth and required to ensure that these areas are sustained, vibrant and attractive to young and old alike.

A core aim of Cork 2050 is to ensure that the population is focused and clustered to create a sense of community, a real strength of the towns, villages, rural areas and islands.

Place

There is a need to focus on maintaining and improving quality of life and the environment, with the goal of helping communities compete for new economic growth and better serve residents, businesses, and visitors. Good quality, appropriately located

residential neighbourhoods with homes appropriate for a range of income levels and family types will allow people to live near their place of work. Vibrant commercial areas within towns will be important for local entertainment, retail services and a focus for community activities.

Open space, parks and recreation are important to everyone's physical and mental health. Places for people to gather can raise property values and attract new residents. Communities, in collaboration with the Local Authority, should seek to improve the existing public realm and create new open spaces. The Strategy proposes improved infrastructure for walking and cycling which can bring great benefits for locals and visitors and improve health and wellbeing.

Over the period up to 2050 it will be important to maintain features that make places special (e.g. natural landscapes, gathering places, streetscapes, public art and historic structure) as they contribute to a sense of identity and attract visitors.

Enabling

The below outlines some key considerations that will assist in enabling sustainable growth and communities.

Sustainable Community Development

These towns, villages, rural areas and islands, and their associated economic sectors, are an essential socio-economic asset and critical part of the unique selling point of Cork. Alongside their rich cultural heritage, identity, cost-competitiveness, and quality of life, this provides for an attractive and compelling proposition, which can be utilised in a sustainable way.

The 2050 Strategy seeks to ensure that these areas fulfil their potential and maximise their capacity to drive sustainable growth for the 'whole of Cork', the Southern Region and the State. Crucially, maximising economic potential will support the development of dynamic, vibrant and sustainable communities across Cork and the wider region.

What is a Sustainable Community? Flexible Typologies

An Enterprise Model for the sustainable development of Cork's communities must first provide an understanding of the variety of towns, villages, islands and rural areas outside of Metropolitan Cork and how they function in contemporary Ireland. It must acknowledge the full range of differences between these areas, including differences in the choices available to and expectations of communities, today and into the future. Understanding and

acknowledging these differences, in particular between rural and urban areas, is a first step in enabling the whole of Cork and Ireland to develop to its full potential.

A Framework for 'Place Profiling'

Understanding these differences, and how issues and opportunities differ across Cork's towns, villages, rural areas and islands can be achieved through 'Place Profiling'. Some of the indicators which could be used to identify the range of community typologies in Cork and nationally are set out below:

- Demographic Structure
- Deprivation Index
- Vibrancy of Community
- Services availability
- Proximity
- Enterprise & Industry
- Environment
- Housing
- Security

Understanding the differences is the first step in developing appropriate, targeted and adaptive policy responses and supports which can enable communities to take advantage of relevant opportunities and fulfil their potential.

Overleaf are examples of four places in Cork which perform well for different reasons. Their successes are driven by their individual characteristics, working to their strengths, taking advantage of opportunities and dealing with weaknesses. Through the 'Place Profiling' approach other towns, villages, rural areas and islands can develop actions which will enable a focused plan to be put in place that communities and public bodies can implement. A cohesive plan is a prerequisite to obtaining funding, the delivery of services, and gaining support.

An 'Enterprise' Model for Community Development

There is a need to recognise urban - rural relationships whilst recognising that communities can develop in a manner that embeds greater self-sufficiency through direct engagement in the regional, national and international economy.

An 'Enterprise Model' for sustainable community development enables communities to engage more effectively with regional, national and international economies.

Such a model can enable a greater proportion of communities' needs to be met via community enterprise, whereby services are made viable by supporting greater local engagement in provision. The key factors upon which to develop this approach and the policies for the sustainable development of Cork's town, village, rural and island communities include:

- Sustainability
- Accessibility
- Facilitating & Enabling
- Climate Change Mitigation

High level enabling

This Strategy sets out actions which apply across all parts of the County. These actions are high level enabling measures which can then be supplemented at a local level through the use of the tools outlined above (e.g. place profiling).

Key Actions

In order for these outcomes to be achieved the following will be required:

- The rapid roll-out of high-quality affordable broadband. This is a priority for the delivery of social as well as economic benefit in these areas (impacts on outcomes 1,4 and 5 overleaf).
- The provision of legal, administrative and financial support to local communities to provide services for themselves which would not be provided by the State or the commercial sector (impacts on outcomes 1 and 4 overleaf).
- The use of modern technology and the adoption of appropriate legal and administrative mechanisms to maximise the use of public and private transport in these areas and to minimise the single-person use of private transport (impacts on outcomes 1, 4 and 5 overleaf).
- The active development of policies, strategies and programmes which will promote the two-way flow of benefit between major urban centres and rural hinterlands (impacts on outcomes 1 and 4 overleaf).
- The development of flexible approaches to the provision of water & waste-water services in towns, villages, rural areas and islands so that they become open to sustainable residential development (impacts on outcomes 1,2,3,4 & 5 overleaf).
- The adoption of policies regarding residential development in these areas which will allow specific responses to the specific demographic trends in each area (impacts on outcome 2 overleaf).
- The establishment of local enterprise zones which will

Successful Places: High Level Profiling



Skibbereen - The town provides an example of a place that has taken an opportunity in the form of the Ludgate project which is described as a beacon of innovation for rural Ireland. In addition, Skibbereen can inspire the country as an extraordinary example of a place at the forefront of digital development. With connections to West Cork the initiative has been spearheaded by a group of forward thinking entrepreneurs, digital ambassadors and local business owners. It is a digitally and physically connected place (N71).



Clonakilty - Although always considered to be one of Ireland’s most picturesque towns, Clonakilty suffered from car dominance in the town centre. A structural weakness of how the place functioned, it was addressed through a collaborative approach between the Local Authority, traders and the local community. Reducing car dominance has resulted in a more attractive and healthier environment thereby improving well - being, recognised through by the 2017 Great Town Award.



Castletownbere —The port of Castletownbere is the largest white fish port in Ireland with European fishing boats using the new deep water berth in the inner harbour. With a local fleet of sixty fishing boats it keeps the local fish factories supplied with many different types of fish. The €40 million deep water quay built in 2011 facilities cargo ships, navy ships and cruise liners. This national level asset is a strength that can leverage growth in new industries that build upon the asset.



Youghal - It is a bustling and beautiful town that is considered one of the most popular tourist destinations in Ireland. A historic walled seaport town it is an Irish Heritage Port due to its many historic buildings, monuments and ancient town walls. It has a 5km blue flag beach and many other activities available to visitors e.g. fishing in the River Blackwater, golf and sailing. These key assets are important to attracting visitors and underpinning a strong tourism offer.

facilitate appropriately-scaled enterprises within these areas and the adoption of positive policies regarding the provision of small-scale local enterprise (impacts on outcomes 4 and 5 below)

- The enhancement of the environmental quality of smaller settlements through the active pursuit of dereliction and the active promotion and support of the re-use of obsolete buildings and sites for residential purposes (impacts on outcomes 3 and 5 below).
- The active development of global markets for appropriate SMEs and not staying dependent on the local market alone (Impacts on outcome 4 below).

Outcomes

Cork’s towns, villages, rural areas and islands should be seen as areas with potential and a positive future which can be built on more than their role as service areas for urban settlements.

The NPF Issues Paper’s move away from the term ‘balanced

regional development to ‘effective regional development’ is welcomed. This approach articulates that it is not about making up for an imbalance but rather encouraging development that can make a difference.

Cork 2050’s approach enhances the social, economic and environmental status of towns, villages, rural areas and islands and results in:

1. Enhancement through variable access to services for all rural communities.
2. Improvement in the demographic structure of those areas which are declining or have an ageing population, and strengthening cultural vibrancy.
3. Provision of a residential life-style alternative to those who do not wish to live in larger settlements.
4. Creation of economic opportunity in towns, villages, rural areas and islands through the stabilisation of the primary production industries, tourism, and the creation of added-value enterprises associated with these industries, including small & medium enterprises, through:

- its servicing of urban populations both proximate and remote through the sustainable use of its natural and cultural assets.
 - the creation of local centres of enterprise and employment with a global as well as a local reach.
 - the encouragement of small-scale indigenous enterprise.
 - capitalising on the creativity and entrepreneurship of the rural population.
5. Reduction in environmental outputs from within towns, villages, rural areas and islands, and strengthening the natural environment.

The Enterprise Model for Community Development provides a structured approach to realising the national level goal of effective regional development. It provides for an approach which will draw out each areas response to creating a bona fides sustainable place that contributes locally, regionally and nationally and importantly makes a difference.

Cork 2050 puts forward an integrated approach which seeks to maximise the opportunities from the strengths of each individual area and endeavours to create a cohesive, integrated mutually reinforcing whole of County approach—the 'Cork Proposition'. These areas collaborate with and deliver for the whole of Cork and indeed the Southern Region and Ireland as a whole.

The NPF - Cork in 2040

By 2040 Cork will be an exemplar for rural regeneration and increased prosperity in towns, villages, rural areas and islands. It will be a place known for:

- Being Ireland's no. 1 tourist destination.
- Having connections with international markets driven by the roll out of broadband.
- Having a diverse economy driven by primary production and embracing innovations.
- It will have drivers within the strategic areas such as Castletownbere from a fishing and port perspective, Skibbereen being a leading light nationally in the technology area and places such as Clonakilty and Mallow driving economic growth.
- Providing the appropriate levels of services through towns and villages networking to deliver essential support at the level required.
- A sense of community, a real strength of the towns, villages, rural areas and islands.
- Having a demographic profile with a low dependency ratio.



07 / Economic Growth Strategy

Key Messages: The Cork 2050 Economic Strategy positions Cork to build on its economic strengths so as to remain highly productive and competitive in the short term, and equip it to adapt to and drive emerging structural changes in the global economy over the longer term. The focus is on creating the conditions for a competitive, productive, resilient and adaptable economy to drive growth within the Southern Region and act as a complement to the national economy and that of Dublin.

Target Growth Sectors: Pharma, Bio-Pharma, Life Sciences & Healthcare; Energy & Maritime; Agriculture & Food & Agri/Tech; Financial & Business Services & Fintech; Leisure & Tourism; Technology & Research; and Education. These target sectors will drive growth in a broad-based, balanced regional economy.

5 pillars of Intervention: 1. People – Skills / Research / Education. 2. Economic Conditions – Floorspace / Quality of Life / Housing. 3. Connectivity – ICT / Global Connectivity. 4. Business Development – Innovation / Entrepreneurialism. 5. Organisational – Governance / Promotion & Marketing

Scale of Opportunity: 120,000 additional jobs by 2050

Introduction

Nationally Cork is by far the largest economy outside of Dublin and is a leader internationally in key sectors. Ireland and the Southern Region benefit hugely from the strategic economic contribution that Cork, in particular Metropolitan Cork, makes as the primary economic driver nationally outside of Dublin.

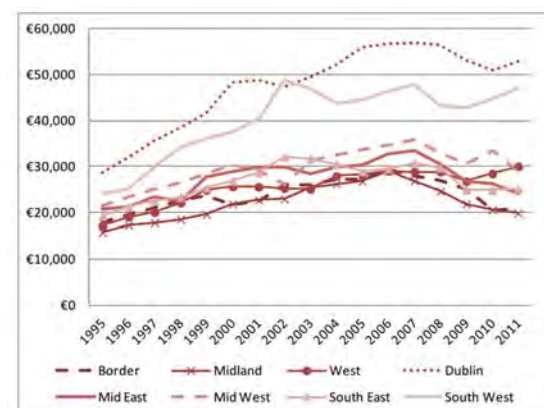
For Ireland Cork is the realistic candidate to play an enhanced economic role nationally as a complement to Dublin, and a leading collaborative role with the Southern Region. Achieving this requires building on Cork's strengths, particularly its productivity and capacity to deliver growth. It also requires a step-change in the functionality and value of the Cork economy, by recalibrating existing strengths to develop the sectors that have the potential to deliver sustained, higher value output for Ireland in the context of disruption arising from emerging changes globally, primarily technological and environmental.

Cork 2050 sets a strategic direction for the future Cork economy to support and complement the emerging NPF and Southern Regional Spatial & Economic Strategy framework. It offers an integrated, cross-sectoral strategy which creates the conditions for a competitive, resilient, and adaptable economy for Cork, the Southern Region and Ireland.

Cork's Economic Contribution

Productivity — GVA (real) per capita in the South West (driven primarily by Cork) and Dublin is above €45,000, compared to sub-€30,000 in all other regions. Nationally Cork and Dublin are growing quickly and appear to be on distinct growth trajectories (see below illustration). Crucially, this high level of productivity has been persistent over the last 20 years, driven by Cork's export sectors.

Based on GDP data Cork is the most productive metropolitan area in the Country. Furthermore, in 2012 Ireland was one of only three EU countries



CSO: Regional GVA

where the national capital did not record the highest level of GDP per person employed.

Business Growth - Cork's productivity is reflected in its strong business environment, being home to 11% of Irish businesses (over 26,000), double that of any other Irish metropolitan area outside of Dublin. In respect of the ratio of businesses to residents (1:4.5), Cork outperforms all other metropolitan areas. This activity is not only large foreign multinationals but predominantly micro, small & medium enterprises.

SMEs - Cork has over one-third (35%) of all SME's in the Southern Region (or twice the number of Limerick and Waterford combined). Outside of Dublin, Cork had the largest number of new business formations nationally (12%), three times that of the next location (Galway, at 4%) which indicates a burgeoning indigenous business ecosystem.

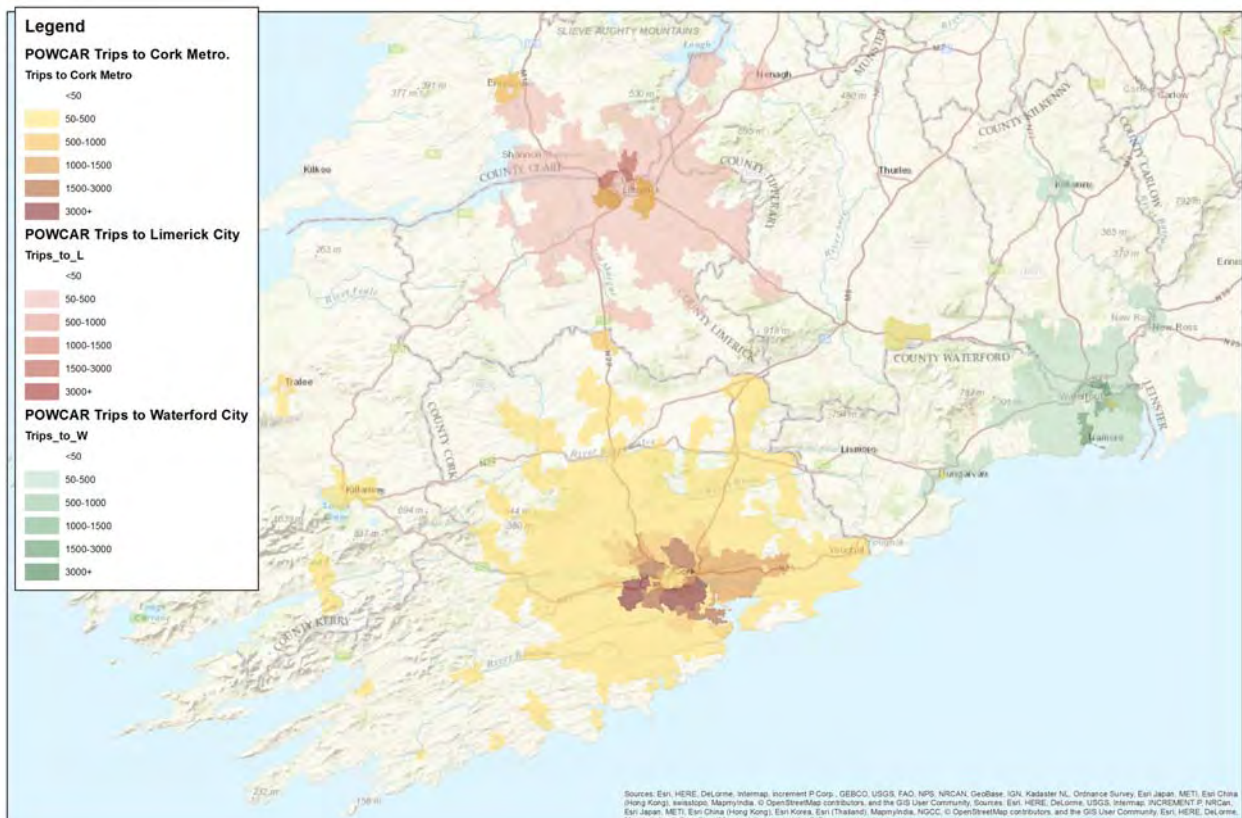
Employment - Cork's vibrant business environment is reflected in the level of employment characteristic of its recovery. The Cork and Kerry area has the lowest unemployment rate of Irish regions (6.4%), well below Dublin (7.5%) and the national average (8%). This indicates that Cork, as the primary economic driver of the Southern Region, is not just undergoing a balance sheet recovery but creating real jobs and businesses.

There are almost 3 times the number of people employed in Cork as in Limerick, and almost 5 times the number employed in Waterford.

Regional Interactions - The scale of Cork's economic influence in the Southern Region is seen in the economic activity between cities and smaller settlements. Metropolitan Cork interacts with settlements (see below illustration) as far away as Limerick, Waterford and Ennis, however, there is minimal such interaction between Limerick and Waterford for example. Cork is the economic cornerstone of the Southern Region, driving activity and collaborating with settlements of all sizes.

Sectoral Strengths - The broad range of sectors and industries in Cork enhances robustness and resilience nationally and regionally. The breadth of Cork's strength in this regard is seen in the scale of employment across each sector; within the Southern Region Cork hosts the most jobs in each sector (with the exception of mining) and hosts over one-third of all jobs in each sector (with the exception of agriculture and mining at 26% and 13% of all jobs respectively).

This balance of sectoral activity provides resilience which helps support the specialisation that Cork offers. Location Quotient analysis shows that in the regional and national context Cork has



real strengths particularly in pharmaceuticals; computers & related activities; defence activities; utilities; medical instruments & supplies; plastics; chemical products; and office administrative and business related activities, consistent with the specialisations identified in South West Action Plan for Jobs.

Business Clusters - The broader qualitative aspects of Cork's sectoral specialisms, in particular its economic clusters, are key to understanding the strength of its economy. Clusters are geographic concentrations of interconnected companies, specialised suppliers, service providers and associated institutions in a particular field. They are the spatial expression of economic relationship between businesses, and give rise to greater efficiency, competition and productivity. Cork's main cluster strengths are in pharmaceuticals & healthcare, computers & technology (including a strong emerging cyber security cluster) and business & international financial services. These have grown from the large number of globally prominent businesses based in Cork which also make it stand out nationally and internationally. In the last decade the companies at the core of these clusters have seen significant growth, particularly in higher value sectors and have the potential to be the primary growth drivers of Cork's economy over the long term.

Firms located within successful clusters tend to achieve increased productivity as a result of heightened competition.

A Research & Development Ecosystem - Cork has a world-class R&D ecosystem in specific areas which helps to future-proof the economy. The institutions involved have a track-record of working with industry to transform ideas and research into marketable products. These institutions focus on high growth sectors aligned with Cork's industrial strengths across related areas such as ICT and computers, nano-technology and medical instruments, and renewable energy generation. The adaptive potential of this symbiotic relationship between research and industry is key to building Cork's future economy.

There are over 1,200 PhD students in third and fourth level institutions in Cork, the highest per capita nationally. UCC has a range of research institutes across numerous spheres, with specialisms in microbiome, environmental research, and social science, as well as strengths in business & law, physical sciences & engineering and ocean sciences. UCC also has the highest research income per academic nationally. CIT's research focus is in bio-analysis & bio-control, embedded systems, and photonics, as well as strengths in areas from health to art & design to computing. This breadth and depth of research capacity is critical to driving growth, development and innovation in the target sectors identified in this Strategy.

The NIMBUS centre, Tyndall National Institute, Teagasc Moorepark and Cork University Hospital (as the largest university teaching hospital in Ireland) develop products for the electronics, energy, agricultural science, communications, health, and agri-food markets. Cork Science & Innovation Park (CSAIP) and the Docklands will provide capacity for thousands of employees, researchers and students over the coming decades, and provide strategic growth capacity for Cork's R&D ecosystem.

Cork Harbour has significant potential for the servicing and research/development of marine based technologies and the wider Blue Economy.

Focused on Cork Harbour, Cork offers nationally and internationally significant marine-related specialisms and research & development entities. These include: the Irish Marine Energy Cluster (IMERC); the Centre for Marine & Renewable Energy (MaREI); Tyndall's International Energy Research Centre (IERC); the National Maritime College of Ireland (NMCI); the Lir National Ocean Test Facility; and Energy Cork. This ecosystem offers world class marine technology research and testing infrastructure focussed on enabling commercial development of these technologies, including marine-based energy generation.

Cork Tomorrow: Key Trends

Cork's economic growth is indicative of a business environment that is responsive to global demand. Global trade is critical to Ireland's continued success, from indigenous SMEs to large multinationals; Cork must remain responsive to changing international environments.

There is significant uncertainty inherent to long term forecasting or projections. The 2050 Strategy focuses on responding to strategic trends driving change nationally and globally over the shorter (c.2025) and the longer term (c.2040, 2050 and beyond). These trends include ongoing economic uncertainty among Ireland and Cork's main trading partners, as well as rapidly evolving structural changes in the global economy driven primarily by technological, social and climate change.

Whilst the short to medium term outlook is generally conservative and Cork and Ireland are facing significant uncertainty, there are also significant opportunities which Cork is well positioned to exploit.

The challenge for Cork, as with other economies in Ireland and globally over the coming decades-

is to be equipped to adapt to changes but also to be a driving force in generating change.

Outlook: Short Term Trends (2025) - Foreign Direct Investment has remained robust, driven primarily by global demand, in particular from Ireland's and Cork's principal trading partners. The ESRI's medium-term growth projections for the major economies that are Cork's key export markets show World GDP remaining over 3.3% p.a. to 2025; US GDP remaining over 1.9%; UK GDP over 2.0%; and Euro Area GDP remaining over 1.1%. For the US, this is a significantly lower growth rate than experienced over the last 35 years. Indebtedness, high unemployment and an ageing labour force reduce forecasts in the Eurozone. For the UK, uncertainty over Brexit impacts on growth forecasts. Despite these factors the ESRI gives medium-term growth projections for the Irish economy of c.3% per annum to 2025. This bodes well for the Southern Region on account of Cork's traded sectors and export-orientated economy.

Brexit - Although uncertainty persists the impact on Ireland will likely be particularly significant, and will be seen in trade, migration, the movement of finance, and FDI. The UK remains one of Ireland and Cork's most important trading partners, and Brexit will likely constrict trade between Ireland and the UK by c.20%, however the impact would vary from sector to sector.

Of particular relevance to Cork and the Southern Region is the impact on the pharmaceutical industry, which represent a large share of overall Irish exports to the UK. The ESRI have stated that other sectors such as agriculture, food & beverages and basic metals are individually more dependent on exports to the UK and so the impacts could be more severe.

Outlook: Longer Term Trends (2040/2050) - Despite uncertainty there are clear underlying trends or global 'megatrends' generating structural changes in the global economy. Cork must respond, and is well-positioned to adapt to risks and take advantage of emerging opportunities. Just as Cork's economy was reinvented in response to the restructuring of manufacturing in the 1980's, it will have to consciously adapt again and reinvent its economy over the coming decades. It is this ability to adapt in a targeted way, building on its existing strengths, that forms the basis of Cork's long-term economic development strategy.

These changes are emerging from a range of sources, but particularly from rapid advances in technology, climate change adaptation, globalisation, social changes, and the energy sector:

- Emerging technological advances include *inter alia* Artificial Intelligence, the Internet of Things, 3D printing & manufacturing, Big Data, Cobotics, Smart City Regions, the

Sharing Economy, Digital Currencies, Wearable and Implantable Technologies, Advanced Materials, and Nano-technology. These advances are bringing deep societal and economic shifts. Businesses increasingly have the ability to automate complicated tasks and reduce production costs. As technological advances have always done, some jobs will become obsolete while entirely new industries will be created.

- There are also broader changes occurring, from the shift to renewable energy and the associated implications for buildings, transport and industry, to ageing populations and the treatment and management of disease. There will be significant changes to resource ownership, global demand for resources, as well as the democratisation of manufacturing and energy generation. In developed countries there will be an increasing value on ideas, design, and information.

As internet penetration increases even the most remote places will have the ability to enter global markets.

These changes have the potential to fundamentally alter how we live and work, and disrupt established economies. What this future looks like is not yet clear, but it will bring challenges and also opportunities. Cork must continue to position its economy and equip its labour force to lead this change and to create rather than react to opportunities as they arise.

Whilst it is critical for Cork to be a leader in these changes, it must also have in place the foundations for economic stability: social, political, economic and environmental stability, cost-effectiveness, and resilience are important currency moving into an uncertain future. Cork 2050 is a framework for stability.

The Opportunity: Cork's Future Economy

The starting point for success is to play to current strengths, for example technology, life sciences and business services. Cork must continue to build on and invest in its strategic assets and key sectoral strengths that are capable of responding to demands arising from long-term, world-wide challenges and opportunities particularly in health, energy, technology, finance, food, leisure.

The way forward for Cork is to not only equip itself to adapt to the emerging future, but to equip itself to create that future.

The current sectors that Cork is strong in, such as pharmaceuticals & healthcare will fundamentally change in the decades to come in ways that are not yet understood. For example, the pharmaceuticals industry is already moving from manufacturing high volume generic medicines, to a small volume of medicines personalised to each patient. In the energy sector the shift from centralised, fossil-fuel based systems to decentralised, sustainable energy systems is well under way. In the future our energy system may be fully integrated internationally, decentralised, and renewable. The oil reserves in Cork will still be required for ongoing fuel needs and security of supply. Cork's food sector has moved rapidly into agri-tech - in the future food production may be highly automated and closer to food manufacturing.

A New Economic Focus for Cork - Cork 2050 is a 30+ year strategy focussed on setting the strategic direction for the Cork economy. Continuing to focus on high growth, high value export-orientated sectors that offer the opportunity to generate both jobs and GVA growth is critical.

Cork's strengths, and those of Ireland, are in sectors that depend on knowledge, research, ideas and creativity interlinked with highly skilled workers, technology and advanced manufacturing. To be successful the targeted sectors must reflect the trajectory of major global trends and harness their potential in a locally, regionally and nationally relevant way.

Set out below are the seven sectors that will form the long-term focus of Cork's economy to 2050, and the global, macro trends which these sectors will grow and develop into:

Pharma, Bio-Pharma, Healthcare & Life Sciences: Advances in medicine and medical care; scientific breakthroughs; technological change; ageing population, living longer; increasingly health conscious population; global population growth; treatment of global diseases; and emergence of new illnesses.

Energy & Maritime: Shift towards renewable energy; climate change; peak oil; technological advances in energy generation; carbon crediting; increased trade & marine-based movement; exploitation of Cork's natural and sustainable energy resources; social attitudes and demand; and increased demands made on ocean resources.

Agriculture & Food and Agri-Tech: Increased demand for food globally; production efficiencies; advances in food science capabilities; advances in agricultural technology; greater health and food quality awareness; food security; local and global population growth; and climate change.

Financial & Business Services & FinTech: Increased connectivity; changing markets and trade patterns; globalisation; increased economic and financial interdependence; changing regulatory environment; advances in technology; financial instability; digital currencies; changing financial instruments; derived demand from growth in other sectors; and changes within EU and Eurozone.

Leisure & Tourism: Increased travel globally; growing middle class; increasing local and global population; changing demands and expectations; increasing demand for 'experiences'; increased business travel; more active lifestyles; and increased connectivity and accessibility.

Technology & Research: Rapid technological change; improved research and scientific capabilities; increasing technology reliance; greater scientific and technological power; climate change; increasing competition; increasingly limited resources; and innovation.

Education: Growth in middle class globally; changing demands of an advanced economy; global competition; regional specialisation; increasing importance of research and innovation; and social and cultural development.

Through investment and support, and building on the opportunities emerging from these trends, the identified sectors can form the cornerstone of Cork's economy over the short, medium and long-term.

Cork must be a first-mover in responding to and capitalising on these trends.

A Broad-based Economy - Growth in these target sectors will bring wider benefits across the economy, partly through supply chains and a growing population. Built around its seven target sectors, the overall economy will continue to be broad-based with domestically-focused and other internationally-focused sectors continuing to form an integral part. More domestic-focused markets such as construction, retail, health, and education are critical in providing a broad, balanced, functioning and inclusive economy. This also has implications for education and training provision in Cork. Using this approach Cork is well-positioned to create a balanced, fair and adaptable economy that is resilient and sustainable over the long term.

A Strategy for Change

In the short term Cork's economy (including the target sectors) requires a range of measures to be implemented to exploit capacity and fulfil potential, as well as to keep Cork at the

forefront of its specialisms globally. However, over the medium to long term, to achieve the economic vision that underpins Cork's national role, a step-change is required in the functionality and value of the economy.

An Integrated Cross-Sectoral Strategy - To secure long-term growth Cork must create the conditions for its future economy to grow and develop. This requires a cross-sectoral, integrated strategy that combines mutually reinforcing interventions in the economy, place development, infrastructure and leadership spheres, thereby bringing together a range of factors needed to continue to build a competitive, resilient and adaptable economy.

The Cork 2050 objectives are rooted in the nature of Cork, linking future direction and interventions within existing assets, strengths, institutional and business base. The approach to long-term planning and implementation must take the next step and seek to integrate all institutional efforts, including taking advantage of the emerging regional economic and spatial planning structures. In return Cork can deliver the share of jobs growth and population envisaged nationally.

To achieve this the approach to intervention is organised under the five pillars set out below. These are the key planes along which interventions will be targeted and are cross-cutting spatially and sectorally. The correct interventions across these areas will directly influence the actions and outcomes outlined in the implementation section of this document.

- People
- Economic Conditions
- Connectivity
- Business Development
- Organisational

People

Skills - Soft assets, in particular human capital and skills, will increasingly drive growth alongside the facilities and institutions needed to put innovation and ideas into effect.

Cork's aim is to attract and develop people who have the best skills nationally and internationally in its target sectors.

Cork should seek to build on the opportunities presented by the Regional Skills Forum. Expanding sector specific partnerships between industry and skills providers In the context of the

"South West Action Plan for Jobs, 2015-2017", will improve the responsiveness of the national and regional labour market and strengthen the skill supply pool for Cork, particularly in target sectors such as science, technology, engineering and mathematics (STEM).

There are a range of opportunities to keep Cork at the forefront of skills and training nationally. In the short term it requires a clear understanding of what is, and what skills will be required by industry, particularly in target sectors. This will involve continual scoping of emerging needs and requirements, improved cooperation and coordination between skills providers and industry, as well as improvements and additions within training, education and learning.

Research Focus - Producing future-proofed skillsets requires education and research facilities set within a wider ecosystem of specialist, innovative institutions working together. It also requires closer cooperation between Cork's third and fourth level institutions and industry and enterprise, including in the commercialisation of R&D.

To succeed in the emerging global economy Cork must have the capacity to be first in developing the technologies, processes and ideas that generate change globally within its target sectors.

Cork is known for its collaborative environment, referred to as Cork's 'two degrees of separation'. This is highly attractive as it provides unparalleled access to leaders in their field and can engender a deepening culture of collaboration.

It is research entities, in particular UCC and CIT, alongside industry with a presence in Cork, that are best placed to understand current and emerging skills requirements, and how these can be delivered in practice. This dynamic can be facilitated and coordinated on behalf of the whole of Cork by institutional leadership.

Education - Delivering skills and the ability to adapt and innovate starts within primary and secondary level education. The primary and secondary education system can help to develop a culture of innovation that is aligned with economic and social needs. Working with central government, the education offer can chart a future for an adaptive education system, to ensure younger generations are equipped and educated for a changing world.

A Changing Labour Market - It will be important to equip local people and newcomers with the skills needed to engage with

and have a stake in Cork's economy. With the right cross-sectoral support from a range of agencies, human capital resource can be maximised and its potential to improve labour market participation harnessed.

Age Range - This is particularly relevant as the age profile of Cork, of Ireland, and much of the developed world changes. Cork has an opportunity to lead by reskilling, retraining and remaining equipped to engage fully in the economy. This is particularly relevant in the context of rapid technological changes.

Economic Conditions

At the heart of the Cork 2050 Strategy is the creation of the right conditions for economic growth and development. These conditions are multifaceted and include:

- Demand for commercial floorspace is expected to continue into the future, and whilst there is a significant quantum of space permitted and in the pipeline, Cork needs immediate delivery of completed floorspace onto the market, particularly in Metropolitan Cork.
- A sustainable supply of affordable housing (a central consideration for companies of scale).
- A high quality of life - protecting this compelling offer is a critical factor in Cork's future success.
- A quality environment offering a choice of attractive and pleasant places, equipped with a variety of recreational, entertainment, cultural and sporting facilities is a requisite complement to a competitive economy in Cork. Cork Harbour, coastline and waterfront are important assets which enhance Cork's environment and support its economic offer, with the Harbour being of particular economic value as a liveable, workable Harbour.
- A 'Flexible Spaces' offer with high digital connectivity that will allow Cork to be receptive to the needs of the future economy.



Connectivity

Successful economies have the physical and digital infrastructure to facilitate trade and business and move goods, services and people quickly, efficiently and in environmentally sustainable ways. Cork offers the inter-regional links—particularly to Limerick and Waterford—as well as the national and global connections to sustain existing markets and develop new ones.

ICT - Businesses and consumers expect digital connectivity which is rapidly evolving (for example the emergence of hyper connectivity) as are consumer expectations.

Enabling the whole of Cork to connect digitally, to access regional and global markets quickly, reliably and efficiently and to position Cork ahead of the curve will be increasingly important to Cork's compelling business offer.

Equality of access in turn ensures that Cork has the capacity to utilise all of its spatial choice and human capital. One example of how Cork is leading the way nationally is the Hibernia Express Connection and the Cork Internet Exchange. This infrastructure means Cork has one of the fastest and most secure connections to mainland Europe and the US in the world. This gives companies in Cork that are engaged in established industries, such as finance, and burgeoning specialist industry clusters that require exceptional speed, reliability and security, such as cyber security, a distinct advantage nationally and internationally. This cutting-edge infrastructure gives business the platform to grow, and in turn positions Cork as a leader in the field.

Movement and Global Connectivity - Traditional infrastructure such as Cork's inter-urban road and rail services, as well as the Airport and Port, underpin Cork's growth potential. Of particular relevance to the development of Cork are strategic road and rail improvements connecting Cork Airport, the Port of Cork, and strategically important business clusters within Metropolitan Cork, both regionally and nationally. There is a need for improved regional connectivity, particularly with Limerick, Waterford and Kerry.

Considering the capital cost of providing these key economic assets, the significant benefit nationally is the opportunity to develop essential infrastructure prior to or alongside growth. This presents a significant cost-benefit profile and public exchequer return as well as enabling the capacity of such infrastructure to be maximised.

Business Development

Creating new business and re-gearing existing enterprises will be required.

Innovation - Exposure to global challenges and opportunities and responding to local issues are fertile grounds for triggering innovative approaches and ideas in Cork. Maximising the exposure and opportunities for Cork's innovators to respond to these issues within a culture of collaboration and support is critical to expanding the innovation capacity.



'Cork Innovates' is a collaborative engagement that seeks to increase awareness of innovative activities and enterprise creation in Cork. It acts as a liaison point that presents Cork's story and shares projects, opportunities and other developments associated with innovation and entrepreneurship in the SME sector to local, national and international audiences.

Cork needs to expand efforts to help find, de-risk and drive the science and technology innovations' that will help grow the economy.

Entrepreneurialism - Over 12% of new Irish start-ups are in Cork, second nationally only to Dublin and 3 times the level in Galway. Building on the work of stakeholders such as the Cork Local Enterprise Offices, Cork 2050 seeks to capitalise on this and ignite Cork's entrepreneurial spirit and engender an entrepreneurial environment and start-up culture in Cork.

By supporting human capital through education, mentoring, networking support, and removing barriers at crucial phases of the business cycle, Cork 2050 seeks to support a new generation of entrepreneurial individuals and micro, small & medium enterprises, particularly in the Cork 2050 target sectors. Cork can augment its business environment to foster a start-up

culture and support indigenous growth.

People and relationships are key to entrepreneurial success; Cork 2050 seeks to propagate Cork's culture of collaboration and ensure Cork is known as an entrepreneurial environment that encourages, connects and enables entrepreneurs through business networks primed to meet their needs. This cultural shift is needed in schools as much as high growth potential tech start-ups and social entrepreneurs.

Entrepreneur and business support networks are needed to support commercialisation of spin-offs and start-ups emerging from research and third level, where business experience and skills are needed, for example IMERC's Entrepreneur Ship, as well as for entrepreneurs coming to Cork from abroad.

Commercialisation - Central to this is having the research institutions, strong industries, and the technical understanding and supports to translate ideas into effective products and processes. The jump from concept to product to commercialisation is critical in capturing added value and achieving a return on the research costs. Frameworks will be continually required for the provision of business training and support network to start-ups and developing companies.

Competitiveness - Cork is highly competitive, but global competition is intense. An essential component of retaining competitiveness is cost, both in terms of direct costs to businesses, such as floorspace, but also in terms of indirect costs such as congestion. Keeping costs down and supporting ease of doing business are important factors in maintaining Cork's appeal and comparative advantage.

Cork is today and will remain, through co-ordinated planning and investment, more cost competitive than Dublin and other globally competing locations taking account of direct and indirect costs.

Edinburgh—A benchmarking exercise was carried out at the start of the Cork 2050 process with Edinburgh one of the locations selected. Subsequently the NPF Issues Paper identified Edinburgh for comparative purposes with Cork. Based on a vibrant economy, Edinburgh is one of the fastest growing Regions in the UK. It is the second largest City Region in Scotland and is considered a bustling hub of history, tourism, business and education.

Edinburgh's plan to realise accelerated growth involves a three pronged strategy that comprises of (a) building on existing strengths in the areas of knowledge, culture and technology (b) taking greater control of decision making power and (c) investing in infrastructure supported by both the UK and Scottish governments.

Organisational

Governance - Local and regional leadership has a valuable role to play in scoping the potential impacts and implications for Cork from global trends, particularly in relation to rapid technological change and environmental change. Continually improving Cork's understanding of the risks and opportunities is essential to equipping Cork to respond. This will equip local and regional leadership to deliver 'institutional recognition' of these emerging risks and opportunities.

Co-ordination - Cork has a strong track record in relation to strategic planning, and has for many years focused on the relational aspects of its development. Sectoral stakeholders work closely to maximise Cork's potential. These efforts need to be expanded, particularly in relation to the scoping of strategic issues and targeting of capabilities. This has the potential to significantly enhance the functionality and potential of Cork.

Promotion & Marketing - Cork should continue to convey a unified message as set out in the Cork Brand Management Project being developed with local partners. The Cork Brand is based on its established brand pillars relating to economy, quality of life, education and visitors .

Conveying the message in the correct way to the target audience that Cork offers the right mix for success is essential to generate business and connect Cork with national and international markets and talent pools.

It is particularly important for accessing new markets, including Europe and Asia, which takes on new and immediate relevance in the context of Brexit and changes in the US. Having the identity and effective message and apparatus for delivery is critical for Cork on the world stage.

The Scale of the Opportunity

Potential Overall Employment Growth - The economic development scenario indicates employment growth of up to approximately 120,000 additional jobs by 2050. This should be considered as an escalated growth scenario where implementation of the Cork 2050 Economic Strategy receives appropriate national and regional level policy support and investment in the context of robust growth nationally and globally. This is the scale of growth that Cork should target to support a sustained contribution to national growth and perform at the international level consistently.

Year	Employment
2016	220,132
2022	234,864
2028	254,121
2034	271,155
2040	289,922
2046	312,579
2050	341,659

Sectoral analysis sees stronger growth in professional, scientific and technical activities, ICT, finance & business services, accommodation & food, education, and manufacturing, and to a lesser extent agriculture. These are the main export orientated sectors targeted by the Strategy and aligned with long-term international growth drivers.

Education, health & social care, and water & electricity also show strong growth, primarily from secondary, domestic derived demand (education will benefit from international attractiveness).

Targets - Medium and long term employment levels are provided for the purpose of outlining trends and the success or not across all sectors of the economy will be dependent on Cork's ability to *inter alia* adapt in line with global shifts, provide the requisite human capital and maintain a high quality of place.

Long-term forecasts and projections of sectoral growth are influenced by a very wide range of factors from fluctuating demand, to social and political instability, to technological and environmental change. To 2040 and beyond to 2050, the focus should be on identifying and aligning with the underlying trends, and monitoring and adapting to change. This approach should consider the components of demographic change as well as the drivers of economic growth.

On the demographic side of the equation, long term trends indicate that as people live healthier lives for longer that the retirement age will rise. It is also expected that the nature of work will continue to evolve, with more people working part-time whilst studying for greater proportions of their lives. Changes in the availability, value and the level of automation in work processes also has implications for the introduction of a living wage.

On the economic front, analysis of recent trends in sectoral

growth gives an indication of future growth over the short term. However longer term forecasts should be seen as an indicator and not a detailed year-by-year forecast. This is particularly relevant in the context of fundamental structural changes in advanced Western economies, and the likelihood of deep rooted change in the nature of each sector. How these influences will play out to 2050 is not known, however there are evident trends and drivers of change.

As an example, it is expected that increasingly sophisticated automation of complex tasks will reduce the need for administrative roles. However businesses will also consider the costs of such improvements alongside the availability of labour and the flexibility labour provides to the overall business. Similarly in the retail sector whilst online shopping and potential automation of product delivery would be expected to reduce the need for sales roles, customers' desire for a retail 'experience' and assistance by staff could counteract this trend. These are simple examples of the emerging trends in each sector.

Longer term forecasts are useful for indicating likely future growth in sectors over time for the purposes of informing high level spatial and economic policy. Underpinned by an effective and integrated strategy for escalated growth, this enables a picture to be painted of the likely scale of future employment growth as above.

These targets take account of factors that include current economic trends, localised sectoral strengths, quality of life, place and connectivity. The Strategy focuses on creating the conditions that will allow Cork to adapt to change. Set out below are actions aimed at delivering the conditions for growth, grouped under the five pillars of intervention.

Actions - 5 pillars of Intervention:

All opportunities should be pursued and it is recognised that they may not all be realised. In order to provide a platform for growth, development and adaptation the Strategy sets out initial actions to be explored as set out below.

People – Skills / Research / Education

- Assist in identifying and delivering necessary skills across Cork.
- Support provision of skills in Cork to support the Southern Region economy.
- Targeted supports for re-skilling & re-training.
- Identify, map and promote the supply of and demand for skills across Cork.
- Continued support for innovation and research in the health

sector.

Economic Conditions – Floorspace / Quality of Life / Housing

- Support the fast-tracking of commercial floorspace in Metropolitan Cork.
- Support the fast-tracking of housing delivery in Metropolitan Cork.
- Assist in delivery of strategically important sites and developments.
- Assist in developing supports for communities outside of Metropolitan Cork.
- Assist in developing the national marine spatial planning regime.
- Promote investment in energy generation, particularly around Cork Harbour.
- Explore the potential impact on City and Town centres from changes in retailing.

Connectivity – ICT / Global Connectivity

- Ensuring provision of infrastructure investment to support key industry clusters.
- Encourage expansion of Tier 1 digital connectivity to mainland Europe.
- Supporting reorganisation of Port of Cork facilities and an increase in the numbers of cruise liners as a crucial part of the tourism offer.
- Supporting access to Cork International Airport and its future expansion, as required.

Business Development – Innovation / Entrepreneurialism

- Support the enterprise development of new technologies.
- Encourage provision of facilities for business to arts enterprises.
- Promote delivery of Cork Science & Innovation Park.
- Targeted support for fin-tech enterprises.
- Support growth of emerging cyber security cluster.

Organisational – Governance / Promotion & Marketing

- Enhance institutional and industry recognition of implications arising from global mega-trends.
- Scope and monitor risks to and opportunities from social, political, economic and technological disruption to Cork economy.

The NPF - Cork in 2040

Cork will have a resilient and diverse economy that creates on average over 3,500 jobs per year building on comparative advantages and growing indigenous businesses.

- Just under 300,000 jobs in total in the whole of Cork.
- Sectoral analysis sees stronger growth in professional, scientific and technical activities, ICT, finance & business services, accommodation & food, education, and manufacturing.
- The renewable energy sector will be a major contributor to economic growth centred around Corks Strategic Energy Zone.
- More automated agriculture production will result in higher productivity. It will be enabled by the agri-tech industry, a significant employer in its own right.
- Growth is more consistent and less cyclical despite global economy disruption, a reflection of the resilient and broad based economy.
- Cork is a hub for high value service jobs in areas such as fin-tech.



08 / Transport Strategy for Cork 2050

Cork 2050 Transport Strategy Objective

The objective of the Cork 2050 Transport Strategy is the delivery of a sustainable transport network and supporting policies that underpin the spatial, social and economic expansion of Cork to 2050 that facilitates the transition to a low carbon and climate resilient economy. The Transport Strategy achieves the following:

- Consolidates growth within Metropolitan Cork along key corridors in terms of delivering higher densities, mixed land uses and compactness. This will make best use of existing transport infrastructure whilst developing a critical mass of population to support a step up in sustainable mode investment along these corridors over time.
- Supports the critical socio-economic role played by Cork City and County.
- Facilitates the prioritisation of investment in public transport, walking and cycling networks and recognises the importance of the strategic road network in supporting the growth of the national and regional economies.
- Promotes people's health, happiness, and well-being through place-making strategies which employ a multi-faceted approach to the planning, design and management of public spaces.

Context

A well performing transport system is essential to the functioning of society and the economy. Failure to deliver an efficient transport network that supports sustainable travel acts as a barrier to economic growth, reduces quality of life and has a negative impact on the environment.

Cork has significant advantages in terms of existing strategic transport infrastructure for freight and passenger traffic. It is the only Metropolitan Area outside of Dublin with both air and sea ports, offering strong international connections which make it an ideal location for foreign direct investment and export led businesses. Cork benefits from current strong transport connections to Dublin by way of motorway infrastructure, hourly rail services and frequent express bus services. Locally, Cork has the potential to be sustainable in transport terms with many villages and urban centres supporting short local trips within walking and cycling distance, especially for education, retail, leisure and social purposes.

Cork currently has defined corridors of transport demand which if supported with the right sustainable

policies and transport interventions to generate more sustainable travel patterns, could accommodate significant additional growth in population, employment and education along these corridors delivering sustainable mode shares consistent with smarter travel targets thereby contributing towards reducing the environmental impact of transport. Crucially, Cork has areas available for consolidated growth, such as Docklands, Tivoli, City Environs and Ballincollig Town, which can be developed over time in a sustainable manner that can make best use of existing infrastructure through, for example, the allocation of road space for sustainable modes such as walking, cycling and public transport.

Evidence suggests that further investment in Cork's transport infrastructure is needed and the viability of sustainable transport schemes is interdependent on well located consolidated growth that will add critical mass to enable sustainable travel to grow to levels required to have substantive beneficial impact on Ireland's climate change obligations.

Existing Transport Characteristics of Cork

An evaluation of Census 2011 data on the effectiveness of the existing transport network and services was undertaken and can be summarised as follows:

- Only 7% of journeys to work in Cork City are undertaken by public transport, whereas in the Metropolitan area, the equivalent figure is 3% and in the County area only 1%.
- Approximately 90% of trips to work in the Metropolitan area are by car.
- 15% of the population travel to work by walking or cycling in Cork City.
- 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 the N40.
- The highest concentration of public transport trips tends to be from suburbs of Cork City and Metropolitan Area towns to Cork City Centre.
- 73% of all travel to work and school trips in the study area are less than 30 minutes, with an additional 18% of trips in the 30 to 45-minute journey time range. Journeys in the 30 to 45-minute journey time bracket are of importance as they represent one of the key target demand groups for targeting and encouraging a shift to public transport.
- There is a reliance on strategic roads such as the N28 (connecting with Ringaskiddy), N27 (connecting with Cork Airport), N40, M8, N25 and N20. Maintaining the capacity of the roads with optimal levels of service is of critical importance for growing the economy of Cork.

Recent Transport Improvements in Cork

Much work has been done to improve the operation of transport in Cork since the Census in 2011, including;

- Cork City Centre Movement Strategy - 2012.
- Douglas LUTS - 2012.
- Transport Corridor Studies – 2014-2017.
- Cork City Walking Strategy - 2013.
- Cork Cycle Network Plan - 2016.
- N40 Demand management study (underway, TII).
- Dunkettle Interchange EIS.

- M28 Route Option and EIS preparation.
- Numerous Greenway studies.

The NTA has provided in the region of €5-7m per year for sustainable mode investment including several walk, cycle and bus priority measures since 2011. There have seen significant improvements in cycling infrastructure in the city centre with the introduction of with-flow and contra-flow cycling facilities. There is approximately 100km of cycling infrastructure in the Cork Metropolitan area. The Coke Zero bike scheme has also been a very positive addition to cycling infrastructure in the City, with over 20,000 trips undertaken per month using the scheme. There are in excess of 9,200 members and since the introduction of the scheme there have been 550,000 trips taken (to the end of 2016). The facilities that have been implemented with limited funding to date are of a very good standard and will form the basis for further improvements to the sustainable modes network into the future.

There has also been significant investment in bus priority measures termed the 'Cork Green Routes', which has provided protection for buses from general increases in traffic congestion on key radial corridors to Cork City Centre e.g. Ballincollig Town to the City Centre. The above investments in walking, cycling and bus infrastructure have resulted in increases in the share of sustainable mode trips in the Cork Metropolitan Area. For example, there has been a positive increase in bus patronage with over 12 million trips undertaken on Cork City services last year; a 25% increase in bus patronage in the last 3 years; and with growth levels higher than other regional cities.

Key Issues Affecting Sustainable Transport Use in Cork

There are barriers to overcome to realise a sustainable future transport network that can support future growth in a balanced and equitable manner. These barriers include the current poor perception of public transport and a relatively high proportion of trips by private car. Some existing development patterns are multi-centred resulting in dispersed travel movements that are difficult to serve effectively by sustainable modes of travel. Nonetheless, the success of initiatives such as the Cork City bike scheme, cycle priority schemes, real time passenger information for buses, Leap integrated smartcard ticketing and the reintroduction of commuter rail services to Midleton demonstrates the ability of Cork to respond positively to sustainable transport schemes and initiatives.

Infrastructure and network related issues

- The current rail service offers very limited coverage of the Cork Metropolitan Area, in terms of stop locations along its corridor.
- The road infrastructure, and extensive one-way systems on several bus routes, increases bus travel distances and travel times.
- The travel distribution patterns indicate a dispersed travel pattern in Cork, which is difficult to serve by public transport.

Service/ Management related issues

- Many trips to work and education in the Cork Metropolitan Area are under 30 minutes. Thus, bus and rail frequencies and journey times are not sufficiently high to represent an attractive alternative to car use for most journeys.
- The outer suburban bus services are more complicated and bespoke than their city counterparts. Less regular users of public transport find it difficult to understand how available services can accommodate their travel needs, which acts as a barrier to their use.

Land use/ development related issues

The following land use related issues are not supportive of public transport use and provision:

- 53% of the Metropolitan area population resides in rural areas or small villages outside of the largest eight towns.
- There are relatively low densities of development in the main towns within the Metropolitan area and the car oriented nature of development in these areas.
- High levels of car parking provision throughout the Cork area.
- High quality road network outside Cork City, which has resulted in unsustainable/ dispersed settlement patterns away from Cork City and the encouragement of private car use.
- Car oriented development, which discourages public transport use. In some parts of the Metropolitan Area, there is a considerable amount of development built around cul-de-sacs, both residential and business estates. Cul-de-sacs are difficult for public transport services to access and has a negative impact on public transport use.
- Given the very high car mode share for journeys to work within the Metropolitan Area, it is evident that there are very high levels of private non-residential (PNR) car parking. However, some progress has been made in the last few

years with the introduction of maximum parking standards.

Recommended Cork Transport Strategy to Support Growth to 2050

Having considered the baseline characteristics of travel within Cork as well as the main barriers to public transport and sustainable modes participation, the following strategic priorities for future transportation in Cork have been developed:

- Priority 1: Ensure investment in transport makes best use of existing infrastructure.
- Priority 2: Reduce urban congestion through:
 - * Improved and expanded public transport capacity;
 - * Improved and expanded walking and cycling infrastructure; and
 - * The use of ITS to improve efficiency and sustainability of the transport network.
- Priority 3: Ensure effective integration between transport and land-use through delivering consolidated development that provides higher density, a balanced mixed of land uses, compact settlements to reduce trip distances and of a magnitude that supports the viability of high capacity public transport and that reduces the need to use the strategic road network.
- Priority 4: To 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.
- Priority 5: To place greater emphasis on network permeability within Place-Making Strategies leading to the creation of healthier places connected by attractive routes to support walking and cycling, particularly for the short distance trips undertaken in the City and within key towns in the Metropolitan and County area to schools, services and places of employment.
- Priority 6: The provision of high frequency public transport services with improved priority to increase competitiveness with the car and provide for mode shift away from the private car.
- Priority 7: Maximise the value of the road network through targeted investments that:
 - * Improve connections to Cork Airport and Port of Cork.
 - * That enhance the efficiency of the existing road

network particularly through increased use of ITS applications.

- * Support national and regional spatial planning priorities.
- * Provide access to large scale employment areas.
- * Address critical safety issues.
- Priority 8: The provision of an effectively managed strategic road network to enhance connectivity thereby supporting national, regional and local economies; and
- Priority 9: To embrace new technologies which enhance connectivity for people and the economy whilst reducing the need to travel and which make a significant contribution towards a low carbon society.

The Transport Strategy for Cork 2050 seeks to deliver on the above priorities. The Strategy comprises a mix of strategic transport initiatives, policies and infrastructure which will maximise the benefit from transport investment and will enable Cork to compete internationally for investment and to support significant sustainable growth in population and employment over the next 30+ years. The recommendations for public transport and road based travel in Cork are shown in Maps 1 and 2 over, and Maps 3 and 4 on the following page.

Policies and Initiatives

Active Modes

Develop sustainable communities throughout Cork City and County, with an emphasis on sustainable transport modes (walking, cycling and public transport) to reduce car dependency. This will be achieved through adopting consistent approaches to local area planning which prioritises development opportunities that support sustainable travel.

Consolidation of Growth along Key Transport Corridors to Promote Sustainable Transport

Consolidation of growth along high capacity public transport corridors to include the Mallow and Midleton / Cobh Rail lines and the proposed Ballincollig-City Centre-Docklands-Mahon Rapid Transit Corridor (RTC). These corridors will support significant levels of growth in population, employment and education at a mix, density, concentration and compactness which will significantly influence sustainable transport movement along these corridors and which will economically justify investment in major public transport infrastructure.

Land use Policies Supportive of reducing Travel Distances

Land use policies will minimise the requirement to travel longer distances, particularly during peak times. This will 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.

Demand Management Strategies

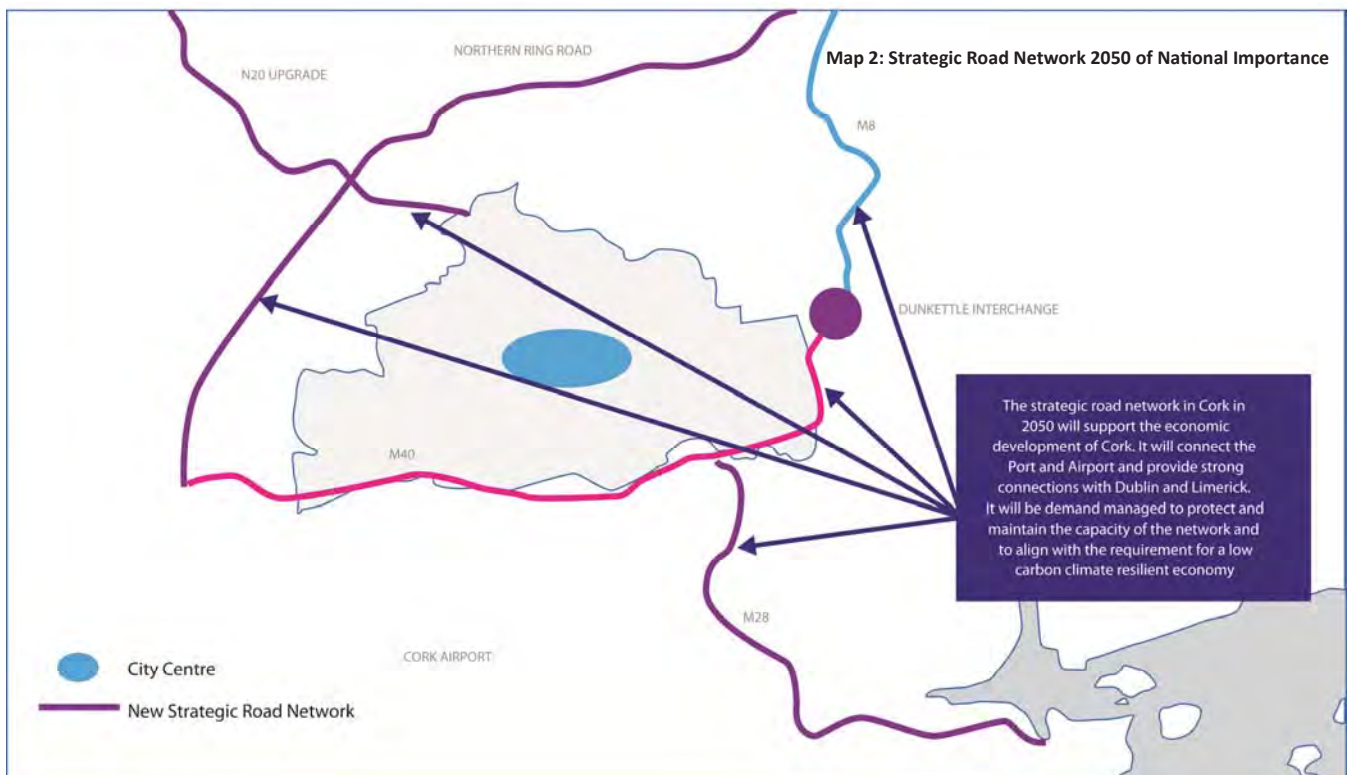
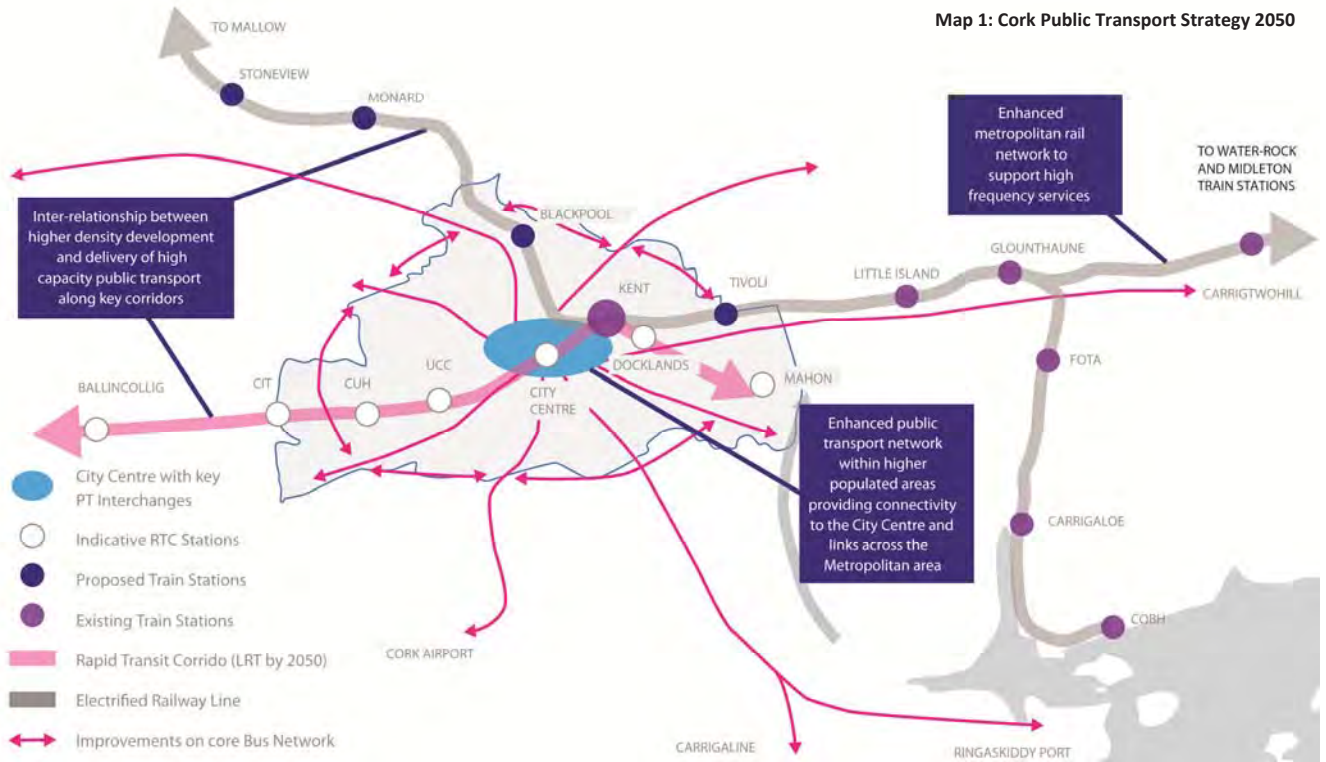
Strategic demand management to play a crucial role in delivering sustainable transport for Cork to 2050. This will involve delivering the following key policies:

- Demand management of the strategic road network to protect its operational efficiency, to prolong its lifespan and to ensure that it retains sufficient capacity to fulfil its strategic functions, including freight movement. Corresponding improvements to public transport services and routes must be provided in tandem with any demand management measures in order to provide modal choice.
- Road Management Strategies to examine the most appropriate allocation and use of road space.
- Travel Demand Management Promotional Measures, encompassing Workplace Travel Planning, School Travel Planning and Personalised Travel Planning.
- Setting maximum parking standards for all new developments, with the level of parking provision applied linked to public transport capacity and accessibility.
- Expansion of on-street parking controls, and charging structures, that seek to reduce commuter parking and which contribute to greater parking turnover for non-commuting purposes and to manage the car mode share in a manner that is consistent with the Department of Transport, Tourism and Sports (DTTAS) smarter travel targets.
- Parking charges at out-of-town retail centres, to reduce congestion at these locations and to encourage sustainable mode use.

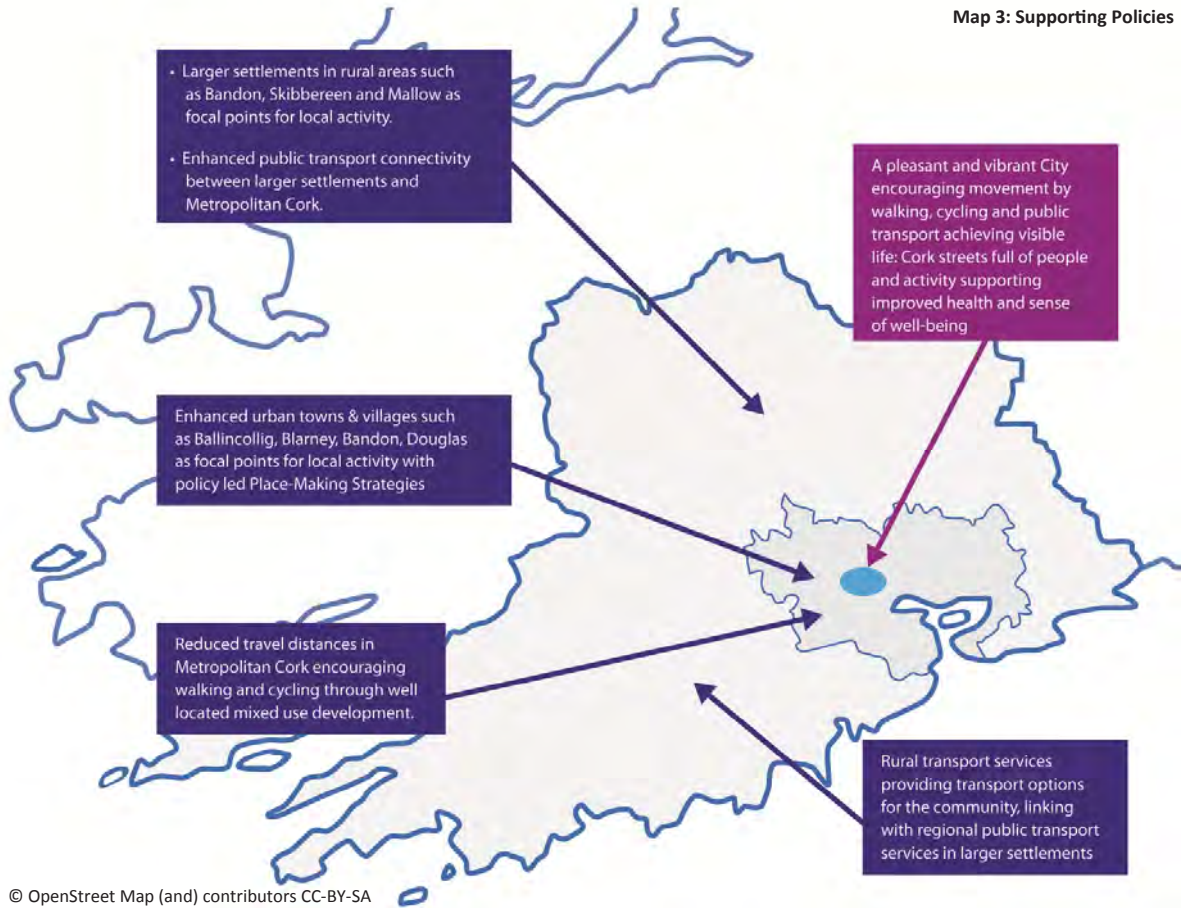
Public Transport

Rapid Transit Corridor

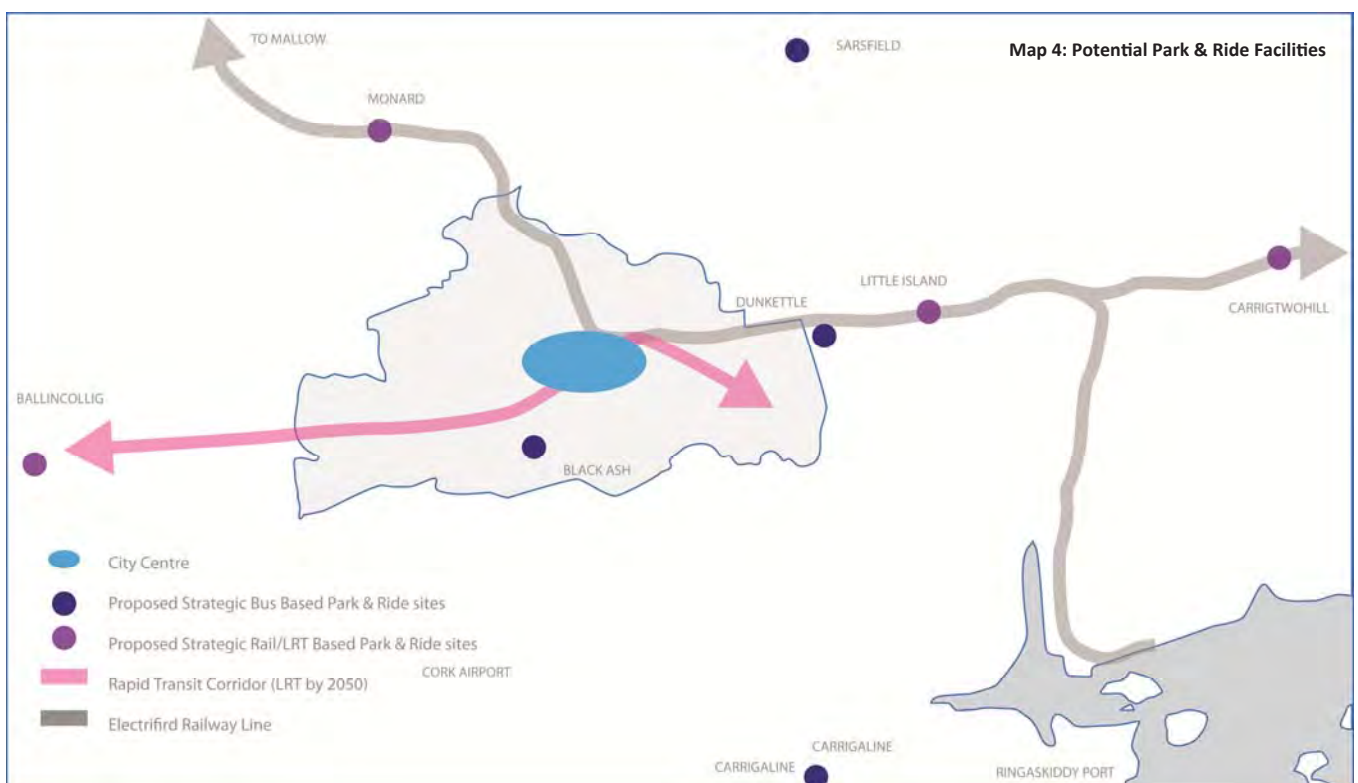
As mentioned, to support consolidation of growth, a Rapid Transit Corridor (RTC), running from Ballincollig town to Docklands and Mahon via the City Centre with key interchange provided at Kent Station (to provide onward rail connectivity) will be developed, as recommended by the “Cork Area Transit Study – 2009”.



Map 3: Supporting Policies



Map 4: Potential Park & Ride Facilities



The RTC will be delivered incrementally both in terms of its phasing and its passenger carrying capacity. The passenger capacity increase will be linked to higher levels of growth which will be targeted for the corridor. To support the requirements for passenger capacity increases the RTC will transition from a bus based corridor to a Light Rail Transit (LRT) System over time.

To facilitate this transition, public transport priority measures will need to be introduced in the short-term along the full length of the corridor to provide end to end running for the public transport vehicles operating along it and which do not preclude the transition to LRT at a later date.

National Rail Network

The rail network within Cork is of national significance and must be protected and enhanced. The rail connectivity between Cork and Dublin should be improved with a journey time target of 1.5 hours operating at a frequency of one hour.

Regional and Commuter Rail

To further support the consolidation of growth along high capacity public transport corridors, the following improvements are required on the regional and commuter rail network serving Cork:

- **Through running** at Kent Station between the Mallow and Midleton lines;
- **Interchange** between the rail lines and the RTC line at Kent Station; and
- **Electrification** of the rail network serving Mallow, Midleton and Cobh, delivering high frequency commuter rail services with additional stations located at Blackpool, Tivoli, Stoneview, Water-rock and Monard along these rail corridors.
 - * Electrification can significantly reduce operating and maintenance costs, whilst providing a more reliable operation, and in cases can reduce journey times on routes with high stopping requirements;
 - * Electrification of rail lines has substantial environmental benefits;
 - * Electrification of the Cork commuter network would be in line with national policy for rail infrastructure upgrades, such as the proposed electrification of the Greater Dublin area rail network as part of the DART Expansion scheme.

Electrification will allow consideration for the possibility of linking the LRT to the commuter rail network at a later date.



Core Bus Network

A Core Bus Network will be implemented in Cork, providing an enhanced and reconfigured bus network serving all the main corridors entering the City and operating within the Metropolitan Area and connecting with inter-city and rural transport services. The bus network will continue to be the most important public transport mode, carrying the greatest number of public transport passengers within Cork and is the most flexible mode in terms of its implementation and ability to adapt and be improved in the medium to long term, responding to the future growth of Cork.

To ensure an efficient, reliable and effective bus system, it is intended, as part of the Strategy, to develop the Core Bus network to achieve, as far as practicable, continuous priority for bus movement on the portions of the Core Bus Network within the Metropolitan Area. This will mean enhanced bus lane provision on strategic corridors, removing delays on the bus network and enabling the bus to provide a faster alternative to car traffic along key commuter routes, making bus transport a more attractive alternative for road users.

Bus priority measures will be implemented to protect buses from general traffic congestion and will be supported by the implementation of further City Centre, urban and town centre traffic management measures to improve accessibility to urban centres by sustainable modes whilst maintaining access. Traffic management measures will be introduced to support the movement of sustainable modes in all towns within the Metropolitan Area and larger settlements in County Cork.

Key employment destinations not served by the high capacity rail or RTC corridors, such as Ringaskiddy, will be served recognising its unique location and importance as one of the main employment destinations in the Region and State. Additionally, enhanced public transport connectivity to the Airport from Ballyvolane, via the City Centre providing interchange with the RTC will be provided.

Public Transport Integration

Public transport integration measures which will support public transport legibility, operation and use including:

- Expansion of **ticketing** and the LEAP card products.
 - * Simple, affordable fares which enable transfers between services without unnecessary penalty.
 - * Provide easy-to-use cashless payment systems, where feasible.
 - * Rationalisation of fare structures across the Metropolitan area to prevent anomalies of relatively high fares to nearby locations.
- Increased opportunities to **transfer** between modes and services:
 - * Comprehensive information, both during and prior to the journey.
 - * High quality public transport interchanges and hubs:
 - Kent Station.
 - Merchant's Quay bus station.
 - Patrick's Street.
 - * High quality bus stops and bus shelters with RTPI (Real Time Passenger Information).
- Strategic **Park and Ride** facilities along high capacity rail, RTC and bus corridors:
 - * Park and Ride facilities to be provided at key strategic locations to allow for more dispersed commuters to access the public transport network.
 - * Pending roll out/enhancement of BRT interim Park and Ride locations may also be required.
- Park and Ride provision provides the opportunity at the ends of each of the high capacity public transport corridors to give greater connectivity to the wider County area and provide ease of movement for people living in more rural areas to access the Metropolitan area by public transport. These facilities also support the principle of limiting the use of private cars for trips into the urban Metropolitan area, that will be served by high quality public transport. Further analysis is required on the most appropriate locations for park and ride facilities in Cork, however some suggested locations are detailed below:
 - * Potential major rail based park and ride sites may include Midleton, Charleville, Ballincollig (providing access to the RTC line), Monard (providing access from the Northern Relief Road to the rail line), Little Island and Carrigtwohill.
 - * Potential major bus based park and ride sites may include Sarsfield (on the M8), Dunkettle (providing access from the M8 and N25), Carrigaline (on the N28) and the further expansion of the successful Black Ash site on the N27.
- Expansion of **Real-time Passenger Information** and Passenger Information:
 - * Provide and further develop passenger assistive information, such as easy to use journey planners, fare information, high quality route maps and comprehensive route timetables, and make these conveniently available across print and electronic channels.

- Expansion of the **Rural Transport** Programme and enhanced local transport integration:
 - * Identify areas across Cork County where local transport could improve mobility for the population and enhance the level of service that people living in rural areas derive from public transport overall.
 - * Improve the integration of local transport services into the overall public transport network, through better interchange opportunities and information provision.
 - * Ensure a greater level of co-ordination between local transport services and longer distance scheduled bus and rail services.
 - * Ensure a greater level of co-ordination between local transport services and other transport related services such as hospital and medical transport services.
- Improve footpaths by widening them where appropriate, resurfacing where necessary and by removing unnecessary poles, signs, advertising and other clutter, particularly in Cork City Centre and other urban centres.
- Revise road junction layouts, where appropriate, to provide dedicated pedestrian crossings, reduce pedestrian crossing distances, provide more direct pedestrian routes, and reduce the speed of turning traffic.
- Reduce waiting time for pedestrians at crossings in Cork City Centre and other urban centres.
- Deliver better pedestrian information and wayfinding signage in urban centres to support tourism.
- Where appropriate, seek the introduction of lower speed limits on residential streets.

Strategy Proposals for Cycling

Delivery of the Cork Cycle Network Plan 2016:

- The network is intended to provide a quality of service sufficient to attract new cyclists, as well as catering for the increasing numbers of existing cyclists.
- This network will comprise primary routes, which will cater for the highest levels of cycling demand, supported by secondary routes and feeder routes which are forecast to have lower levels of cycling demand.
- The Network Plan also proposes a number of Greenways – fully segregated off-road routes along, for example, rivers and disused railway lines. In the case of the built-up area, these Greenways will also perform a vital commuter function and will effectively form a significant part of the primary network.
- The Cycle Network will establish connections to the cycle network for the main towns across the Metropolitan area.
- The network will provide a safe cycling environment, with cycling routes developed as segregated facilities, with cyclists separated from vehicular traffic through the use of kerb separators or by having the cycleway at a higher level than the road carriageway.
- Complementing these facilities will be a corresponding level of priority given to cycle movements at road junctions.

Strategy Proposals for Walking

Delivery of the Cork Walking Strategy 2013:

- Provide a safer, more comfortable and more convenient walking environment for those with mobility, visual and hearing impairments, and for those using buggies and prams.

Strategy Proposals for Technology

Cork to be at the forefront of technological advances through understanding its impact on the way people access services, the impact this has on mobility, and its application to supporting the delivery of sustainable transport measures and the management of travel.

This will be achieved through monitoring technological advances and their impacts on travel behaviour and transport provision and stress testing future plans prior to implementation. It is likely to be a very different world in 2050 and the strategy must be adaptable to consider the potential for new forms of transport, advanced digital connectivity, ITS solutions, new fuel technologies (electric, CNG), and automated transport solutions such as self-driving cars.

One example of how technological advancement can contribute to traffic mobility in Cork is Port of Cork's recent implementation of an integrated IT access management system that has improved access for hauliers at the terminal gate in Tivoli. The new system helps to support terminal efficiency and modernise the container collection and delivery process at the terminal, leading to reduced impacts on the surrounding road network.

Strategic Roads of National Importance

The Strategy recognises the importance of the strategic road network in supporting the growth of the national and regional economies. Cork has excellent access to Dublin through the M8 and can now focus on the enhancement of inter-regional connectivity across the South-west region.

Cork Metropolitan Roads: The Transport Strategy provides for the following key strategic road infrastructural proposals within the Cork Metropolitan area, which are considered of national

importance:

- The upgrade of Dunkettle Interchange connecting the M8, N40 and N25.
- M28 connecting Ringaskiddy Port to the N40.
- Northern Ring Road providing access to the Northern City environs and relieving pressure off the N40 and Dunkettle Interchange.
- Improvements to the N27 connecting Cork Airport to the N40.
- Eastern Gateway Bridge and a second multi-modal bridge (within Cork City Dockland’s area).

Cork Inter-Regional Roads: The Transport Strategy provides for the following key strategic inter-regional road infrastructural proposals within the wider Cork County area, which are considered of national importance:

- M20 strategic road improvement linking Cork to Limerick.
- N22 strategic road improvement linking Cork to Kerry (Killarney).
- N25 strategic road improvement from Carrigtwohill to Youghal.
- N71 strategic road improvement from Cork via West Cork to Kerry.
- N72 strategic road improvement from Kerry via Mallow and Fermoy to Waterford.
- N73 strategic road improvement from Mallow to Mitchelstown linking to the M8.

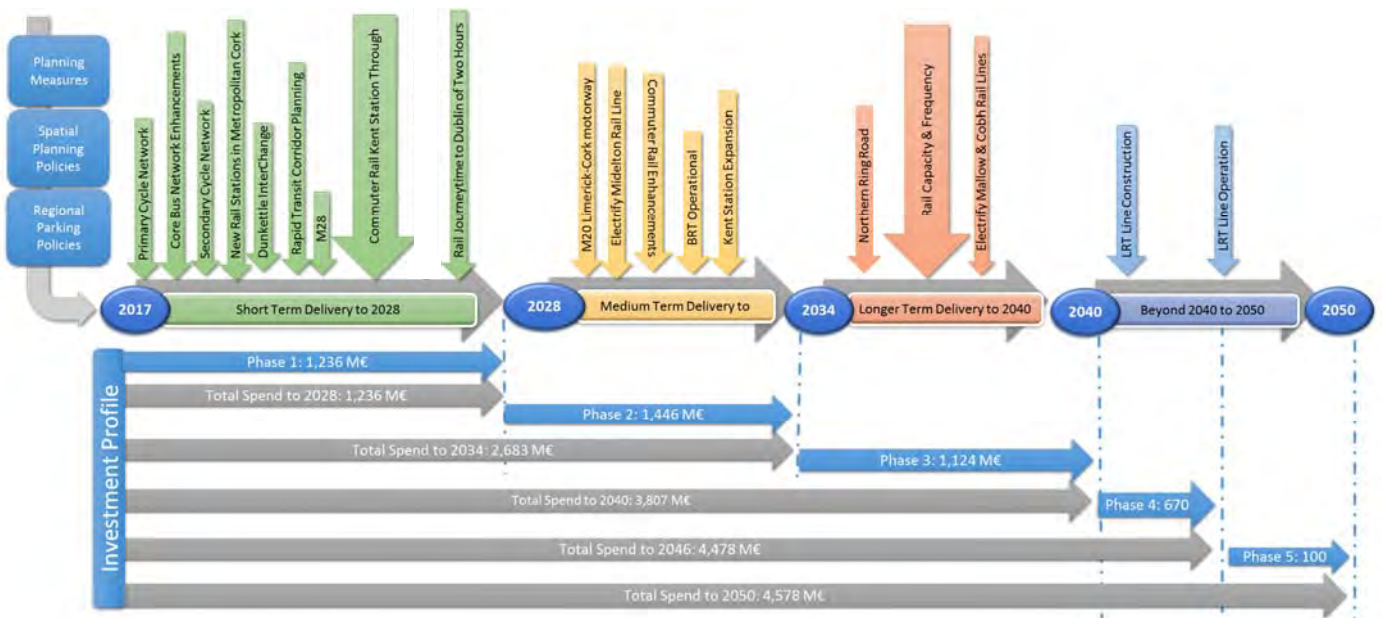
Costing and Phasing for delivery of the Cork Transport Strategy

It is important that capital spending on new infrastructure is sequenced in a way that is affordable and equitable, while taking account of Ireland’s climate change obligations. The phasing will make best use of existing infrastructure and ensure new development can be supported by the timely provision of social infrastructure. The phased implementation of the Cork Transport Strategy measures will facilitate the sustainable and balanced population and employment growth envisaged for Cork. The public transport investment within the Metropolitan area will allow Cork to drive economic growth within the Southern Region and nationally.

The Figure below outlines the expenditure profile for Cork across the five stages of delivery from now up to 2050. The demographic and economic profile aligns with proposed public transport investment over the period. It is envisaged that the transport strategy will cost **€4.58 billion** to deliver up to 2050. The full breakdown of schemes and their associated costs are detailed in the Table over.

Economic and Environmental Benefits of the Transport Strategy

An economic and environmental appraisal of the preferred strategy was undertaken with a view to determining the wider economic benefits associated with implementation of the strategy. The transport assessment has utilised the National Transport Authority’s South West Regional Model and associated toolkit to assess the impact of the proposed strategy.



An important objective of the Cork Transport Strategy 2050 is to ensure that the transport provision and the facilitation of the target levels of population and employment growth in the region will be done in such a way as to ensure the creation of a low carbon climate in an affordable and equitable manner.

Economic Benefits

An assessment of estimated transport user benefits for the transport strategy was carried out as part of the transport modelling exercise. This provides a high-level indication of whether the proposed investment required for the Strategy is worthwhile.

Scheme	Capital Expenditure
Cork Luas (LRT)	868
Cork BRT (to be replaced by LRT after 2040)	287
Rail Upgrade (New Stations, Electrification and Kent Upgrade)	375
Cork Bus Network	703
Primary Cycle Network	13
Secondary Cycle Network	66
National Roads (M28, Dunkettle Interchange, NRR and M20)	1,521
Regional and Local Roads (N22, Docklands etc.)	506
Park and Ride	100
Demand Management	50
Integration & ITS	20
Contingency + Other Projects	70
Total	4,578

The purpose of this assessment is to provide an initial high level indication of the performance of the package of strategy infrastructure schemes, i.e. do the benefits of implementing the Strategy exceed the costs. It is undertaken at a level of detail that is appropriate for this stage of transport strategy development:

- Cost estimates for the proposals are developed based on cost outturns for similar projects rather than detailed design.
- Benefits are forecast based on outputs from the transport modelling assessment of the proposals which use broad assumptions regarding scheme operation and

design.

The **Benefit to Cost Ratio (BCR)** for the Strategy is forecast to be **2.4** representing high value for money.

Scheme	€ '000
Present Value of Transport User Benefits	29,202,762
Present Value of Strategy Costs	12,026,303
Net Present Value	17,176,460
Transport User Benefit to Cost Ratio	2.4 : 1

This figure only accounts for direct transport benefits, predominately travel time savings, and does not include the wider economic benefits that will be delivered through the Strategy. It indicates that the Strategy is economically beneficial from a regional and national perspective, and provides confirmation of the overall economic justification for its implementation.

This BCR compares very favourably to the one achieved for the Greater Dublin Area (GDA) Transport Strategy 2016-2035.

Cork has the time available over the next 30 years to manage the step changes in population growth forecast over this time and the ability to secure identified high capacity public transport corridors well in advance of the growth taking place.

Cork can derive a high BCR by placing growth in the right locations from now to deliver consolidated development that provides higher density, a balanced mixed of land uses, compact settlements to reduce trip distances and of a magnitude that supports the viability of high capacity public transport and that reduces the need to use private car for travel.

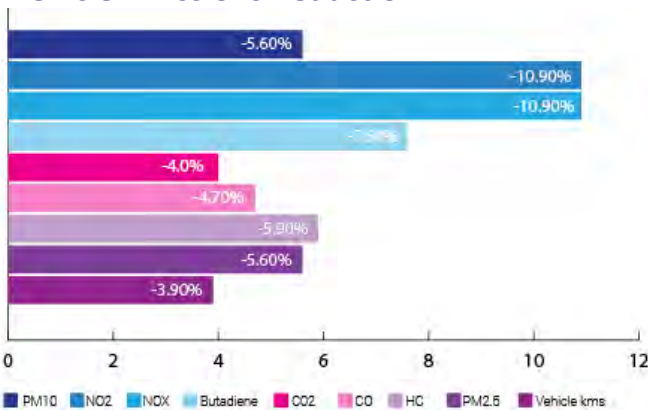
The approach that will be adopted spatially to drive growth (during the period when public transport needs are emerging rather than afterwards) into corridors, with clustered development areas, will maximise efficiency and result in a higher benefit relative to the implementation costs.

Environmental Benefits

An assessment of the estimated transport emissions resulting from the transport strategy, was undertaken as part of the transport modelling exercise. This provides a high level indication of the environmental impact of the Strategy.

Harmful transport emissions reduce by a variety of amounts in the Strategy compared to the Do Minimum scenario, all in the region of 4-11%. One of the key outcomes of the improved public transport network is the substantial reduction in CO2 emissions. They are seen to reduce by almost 500,000 tonnes (a reduction of 4%).

Vehicle Emissions Reduction:



Conclusion and Key Benefits of the Strategy

The Transport Strategy will build upon efficiencies arising from consolidating growth within Metropolitan Cork along key corridors, making best use of existing transport infrastructure, whilst developing a critical mass of development enabling an economically viable step up in sustainable mode investment along these corridors over time.

Cork Strategy 2050 Mobility Goals

- **300,000** growth in population travelling more sustainably.
- **6 times** the people using public transport in 2050 compared to today.
- **330,000** daily public transport trips compared to the approximately 50,000 in Metropolitan Cork today.
- **87%** of Cork Metropolitan area population (~480,000) will live within 1km of public transport services.
- **300,000** people (circa 65%) will live within 1km of the Rail and Rapid Transit corridors.
- **380,000** Daily Walking and Cycling trips.
- **55%** of commuters will travel to work by sustainable modes in Cork City.
- **31%** reduction in car mode share in Cork Metropolitan area.
- **67%** reduction in traffic congestion when comparing the Strategy 2050 to situation without the strategy (i.e.

where existing public transport services remain in 2050).

- **€29 billion** in transport user benefits over the 30 year appraisal period.
- **2.4 to 1** benefit to cost ratio.
- **500,000** tonne reduction in CO2 emissions.

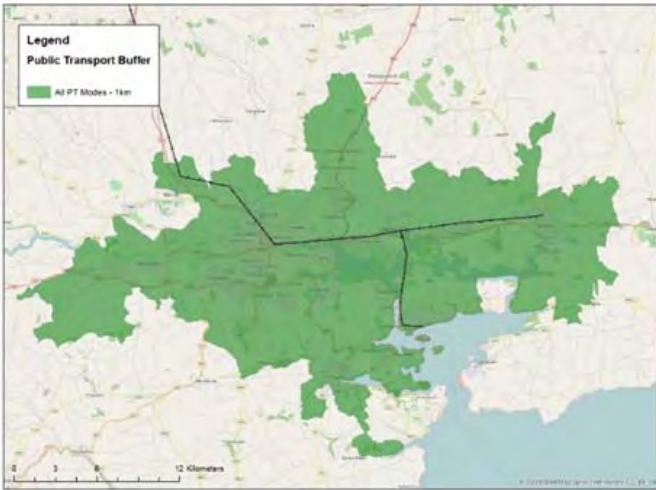


Cork City mode share:

- 27% Walking
- 3% Cycling
- 45% Car
- 25% Public Transport

The Cork Transport Strategy 2050 will support:

- **Health and Wellbeing improvements:**
 - * Reduced absenteeism & enhanced employee wellbeing due to lower commute times and a more active lifestyle.
 - * Compactness of development delivering shorter travel distances and improved accessibility supporting the greater number of people over the age of 65.
- **Increased capacity for economic growth within the region and nationally:**
 - * Sequencing of infrastructure and spatial development closely aligned.
 - * Delivering densities along key corridors supportive of high capacity public transport (>4,000-4,500 per sq. km) in areas such as Docklands, Tivoli, Ballincollig town and Cork Science and Innovation Park.
 - * The investment in transport infrastructure improvements in Cork will cater for future demand growth, support competitiveness and economic growth for the South West Region and nationally.
 - * Improved access to Cork Airport and Port of Cork.
- **Mobility management facilitated by technological advancements:**
 - * Improved freight and road traffic management.
 - * Greater use of ITS to maintain the efficiency of the transport network.
 - * Increased use of alternative fuels use in transport such as Compressed Natural Gas (CNG).
 - * Increased workplace, educational and personal travel planning.



- **Air Quality and Environmental improvements:**

- * Reduced vehicle emissions due to reductions in road travel times and distance, increased walking and cycling and the electrification of the commuter rail network.

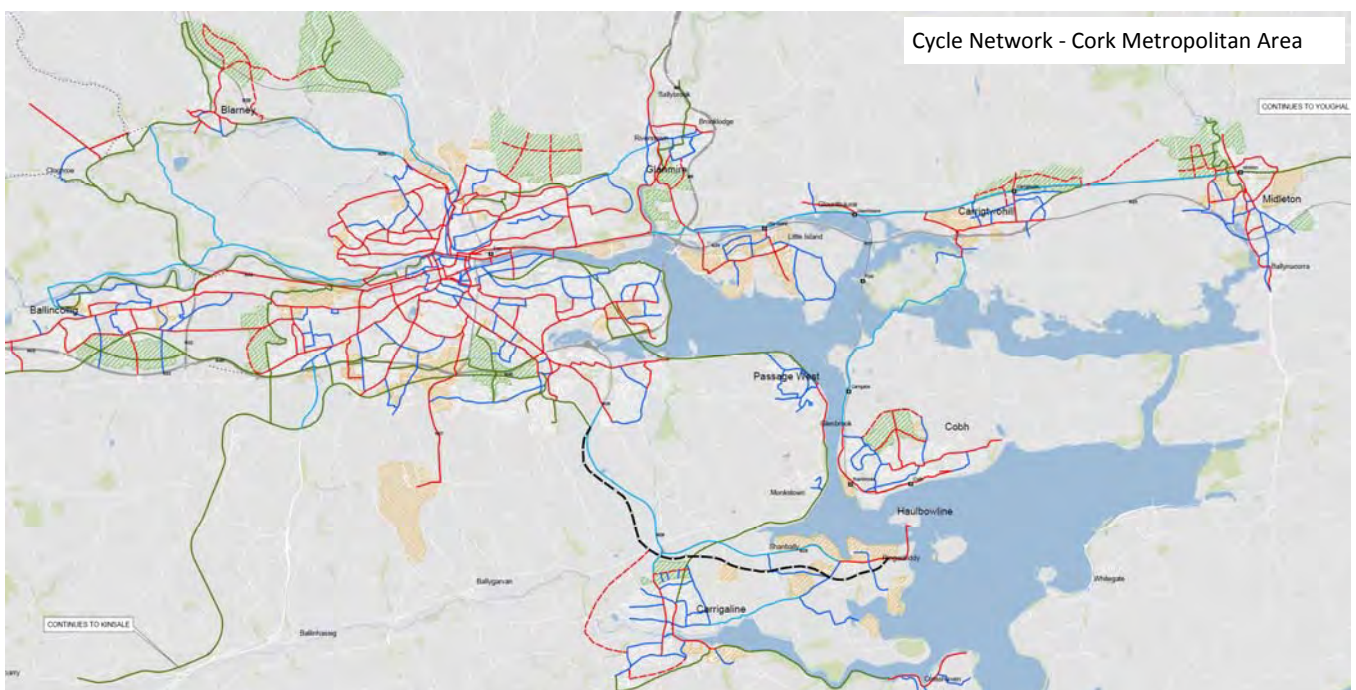
- **The support of local and international tourism within Cork:**

- * Improvement of way-finding and city access through the enhancement of public transport provision;
- * The implementation of Cycle greenways.

Aarhus - A benchmarking exercise was carried out at the start of the Cork 2050 process with Aarhus in Denmark one of the locations selected. Subsequently the NPF Issues Paper identified Aarhus for comparative purposes with Cork.

The benchmarking exercise highlighted Aarhus as a place where spatial distribution and public transport are fully integrated and also being delivered along corridors in association with development. Planning for the future the following sets out their core plans:

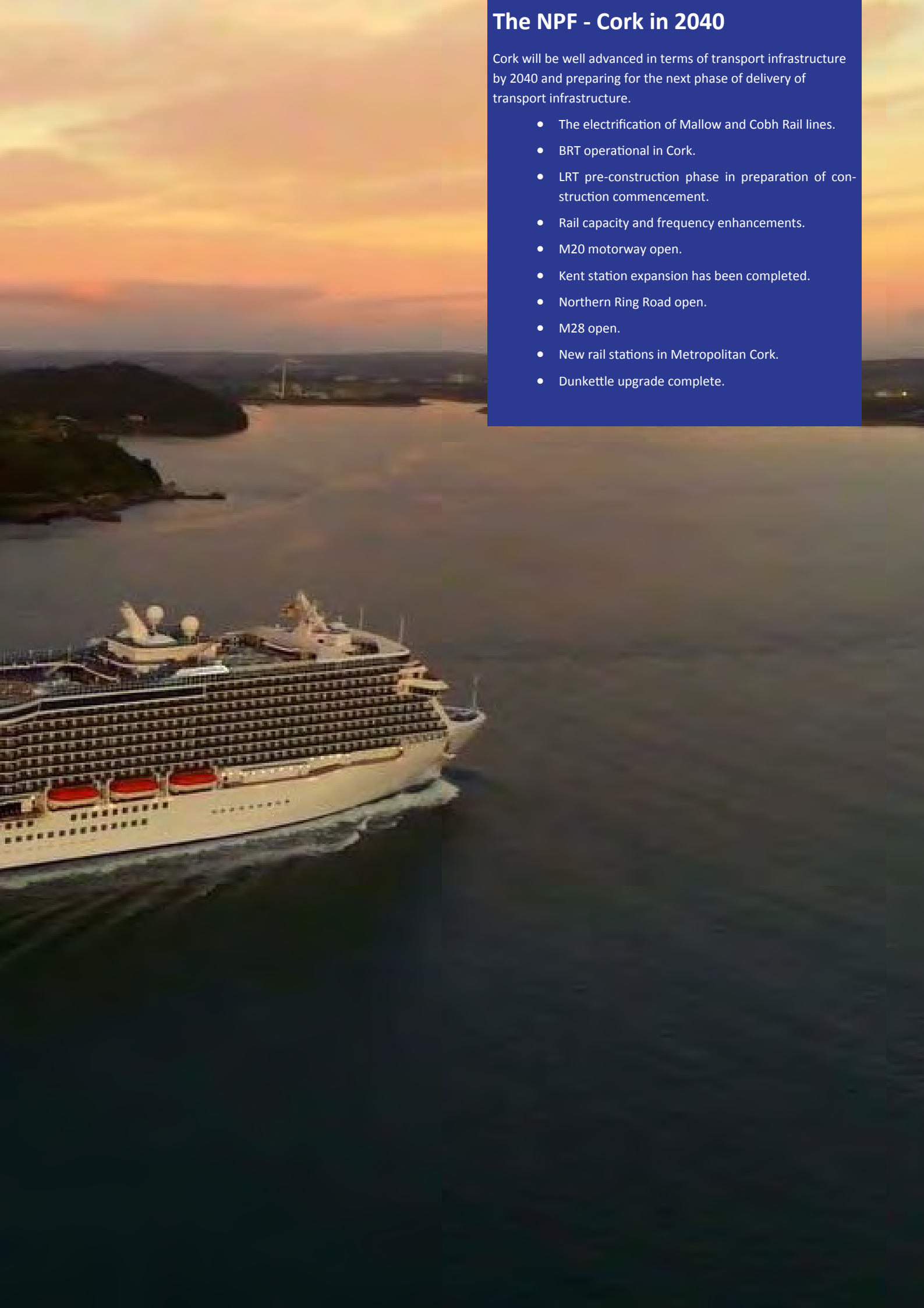
- Combined tram / train system under construction to open in 2017.
- 103 km of existing heavy rail converted and 12km new double track provided.
- Bus priority lanes along the main corridor converted into Light Rail.



The NPF - Cork in 2040

Cork will be well advanced in terms of transport infrastructure by 2040 and preparing for the next phase of delivery of transport infrastructure.

- The electrification of Mallow and Cobh Rail lines.
- BRT operational in Cork.
- LRT pre-construction phase in preparation of construction commencement.
- Rail capacity and frequency enhancements.
- M20 motorway open.
- Kent station expansion has been completed.
- Northern Ring Road open.
- M28 open.
- New rail stations in Metropolitan Cork.
- Dunkettle upgrade complete.



09 / Connections - Strategic Infrastructure

KEY MESSAGES:

Water Supply & Waste Water

- Cork has sufficient water supply capacity in place to accommodate growth to 2050, and offers excellent potential to avail of existing infrastructure.
- Cork is very well provided for in terms of waste water capacity, and can meet additional capacity requirements to 2050 without major investment and upgrading.

Energy

- Cork is of strategic national importance to Ireland's energy supply over the long term, and offers nationally significant potential to continue to lead the shift to sustainable and renewable energy nationally, as a net energy exporter.
- Whilst Cork offers significant potential for a variety of land and marine-based energy generation, Cork Harbour is of particular significance in Cork's energy landscape.
- Cork is well placed to capitalise on its supply of natural gas and electricity and reduce the fossil-fuel dependency of its built environment.

Communications

- Cork offers intercontinental Tier 1 digital connectivity to the US and UK for Ireland and the Southern Region, which is planned to be extended to the European mainland.

Strategic Infrastructure Needs - Water

Water supply, waste water treatment, energy supply and communication infrastructure are all critical components of a sustainable, productive, resilient and competitive economy, be it local or national. These are the building blocks on which Cork needs to secure its future, which in turn will support the continued wider economic development of the nation.



Fundamental to supporting social and economic growth is the delivery of key infrastructure where and when it is needed.

The Advent of Irish Water - The Water Services Act of 2013 established Irish Water with the responsibility for the provision of public water services for Ireland. Irish Water's key objectives are for the protection of human health through the provision of a high quality and secure water supply whilst adhering to the EU Water Framework Directive.

Water Supply

Analysis was carried out to identify the current capacity in potable water provision encompassing Cork County and Cork City. The analysis was based on the capacity of individual plants in terms of

Population Equivalent (PE). A per capita consumption rate of 125l/person/day was used for domestic demand and commercial/industrial loading was estimated using AER (Annual Environmental Report) reports for the various Waste Water Treatment Plants in the areas of interest compared to residing population figures as per the 2011 population census. The following table presents current capacity in terms of PE and the expected required capacity in 2050. These capacity figures do not account for water loss through leakages but clearly show that existing water supply is adequate to provide for future population targets including industrial/commercial needs up to 2050.

Location	PE Capacity 2016	PE 2050 (PE required based on target population)
County	475,544	185,246
Cork Metro	924,000	717,200

Benchmarking - In comparison to other Counties, Cork benefits from having significant natural resources with substantial water abstraction infrastructure already in place. The hydroelectric dam on the River Lee at Inniscarra, provides Cork City and the rest of Metropolitan Cork with more than adequate potable water supply to meet projected future needs. Through committed Irish Water improvement works, this plant alone can be expanded to cater for an additional 220,000 persons. The River Lee provides the most cost effective source of potable water in the Region, and with other works in conservation, water production and security of supply, both the City and the Metropolitan area are well catered for up to and including the targeted 2050 population estimates.

Committed Schemes

Irish Water has committed to reducing water leakage and the replacement of lead services nationally, as part of its mandate to ensure that communities have clean safe drinking water.

In Cork City, a €15.8 million upgrade of water mains (27km of old corroded water mains) is now underway, which will improve reliability of supply and reduce leakage in the city by approximately 18 million litres per week (equates to approximately 20,000 persons). A significant upgrade and replacement of water mains in Mallow, Kinsale, Laharan Cross to Abbeys Well, Glantane to Lombardstown, Macroom and Doneraile have also been completed.

Irish Water will invest a further €30 million to upgrade drinking water quality and supply in Cork in the coming years (2017-2021). Planned schemes include:

Scheme	Cost €m	Programme
Upgrade of Lee Road Water Treatment Plant	5	Programmed
Wilton to Lee Road Trunk Main	2.5	Programmed
Shanakiel Rising Main	2.5	Programmed
Cape Clear Water Scheme	2.5	Programmed
Skibbereen Regional Water Supply Project	12	Programmed
Inniscarra Water Treatment Plant Phase 2 upgrade	6	Programmed

These schemes are already programmed and, upon their completion, will facilitate future development in the areas outlined.

The Cork Metropolitan Area is supplied by three reservoirs; Inniscarra WTP, Lee Road WTP and Glashaboy WTP. The following table outlines the current production capacity (shown as Phase 1) for each of the individual plants and presents future upgrades proposed as part of Irish Water’s strategic intent for Cork. Phase 2 for instance covers the current period of 2017-2021 with capital investment already ear-marked. Future phases will be progressed as required to facilitate growth in the area.

Scheme	Lee Road WTP	Inniscarra WTP	Glashaboy WTP	Combine
Phase 1	40 MLD	90 MLD	16 MLD	146 MLD
Phase 2	40 MLD	110 MLD	16 MLD	166 MLD
Phase 3	40 MLD	140 MLD	16 MLD	196 MLD
Phase 4	40 MLD	170 MLD	16 MLD	226 MLD
Phase 5	40 MLD	200 MLD	16 MLD	256 MLD
Phase 6	60 MLD	200 MLD	16 MLD	276 MLD
Phase 7	80 MLD	200 MLD	16 MLD	296 MLD

As indicated in the Table above Inniscarra WTP, Lee Road WTP and Glashaboy WTP have the potential to produce up to 296ML per day(+2.3m PE).

Key Issues - The following are some of the key issues facing Cork in terms of potable water supply:

- Protection of existing sources (sustainable and environmentally friendly abstraction).

- Completion of trunk mains to ensure a security of supply.
- Continued investment in water abstraction infrastructure.
- Development of new sources such as bored wells.
- Continuation of the lead services replacement scheme.
- Continuation of rehabilitation schemes to minimise water leakage.

The above issues are similar to those faced by every County, however when compared to the capital expenditure requirements in other areas, the cost benefit ratio in Cork is very favourable. Taking the example of the cost to supply Dublin with water from the Shannon (170km of pipeline providing up to 330 million litres of water per day), the price tag of €1.2 billion puts the level of investment required in Cork into context.

Conclusion - Cork is well provisioned for future growth in terms of water supply with a clear roadmap of projects that will be required to sustain the level of population increase envisioned up to and beyond 2050.

Waste Water: Analysis

Analysis was carried out to identify the current capacity in waste water treatment services encompassing Cork County, Cork City and the Metropolitan Area. This was based on the treatment capacity of individual plants in terms of PE.

The overall investment required to cater for 2050 population targets is of the order of €400 million. The costings provided are based on a general rate per PE which includes an element of wastewater networks, treatment, contract and non-contract costs such as land acquisition.

Location	Current Capacity PE	Required Capacity to 2050 PE	Required Capacity Increase PE	€0-10m	€10-50m	€50-100m
County	103,132	163,926	62,279	78.6	43	0
Metro & City	561,900	817,200	257,300	3	95	245

Benchmarking - Cork benefits from having significant infrastructure already in place, with the capacity to upgrade available in many instances. The Cork Main Drainage Scheme has seen the development of a Wastewater Treatment Plant at Carrigrenan, Little Island, which has been designed to accommodate flows from Cork City, Tramore Valley, Glounthaune, Glanmire and the Little Island areas. The plant accommodates existing flows and has been designed on a modular basis to allow expansion as necessary over the next 20 years.

The Lower Harbour Main Drainage Scheme estimated to cost in the region of €97m represents another significant investment in the Cork Area and will see the separation of storm and foul for the lower harbour towns of Cobh, Carrigaline, Ringaskiddy, Passage West, Monkstown and Crosshaven. The construction of a state-of-the-art treatment facility at Shanbally (65,000PE) has already been completed and is now taking raw effluent from the towns of Carrigaline and Ringaskiddy. It is worth noting that the Shanbally Plant uses a significant advancement in technology (The Nereda Process) resulting in capacity increases as well as extensive nitrogen removal.

The same technology has been used to upgrade the Clonakilty Waste Water Treatment Plant (20,500PE) and the Carrigtohill WWTP (30,000PE). In a similar light a number of smaller schemes throughout the county have either been completed, Riverstick WWTP (1,000PE) as an example, or are in the process of being designed for construction.



Clonakilty Waste Water Treatment Plant

Waste Water Capacity

In general, waste water provision in Cork County has been well served to date and is benefiting from continued investment by Irish Water to achieve compliance with EU Regulations.

In the Metropolitan Area, the Carrigrenan Waste Water Treatment Plant has adequate physical capacity to cater for continued growth in population numbers being served. It is limited due to the lack of tertiary treatment and by its outfall to the inner harbour, a SAC designated area. The option of developing an outfall to the outer harbour (approximately 9km) would allow this plant to operate to its full potential and cater for the enlargement of the satellite towns of Ballincollig, Blarney, Glanmire, Ballyvolane and Monard SDZ.

Emerging Technologies

Cork is pioneering the use of new technologies in the treatment of waste water. The Nereda Process (advanced nutrient removal technology (AGS), implemented in a number of areas around the County, benefits from reduced land requirements to construct, reduced energy costs to operate, whilst producing a higher quality of effluent. The Nereda treatment process will consistently produce high-quality treated wastewater which can be safely discharged into sensitive environments. This process is being proposed for the Ringsend WWTP in Dublin which outfalls to the Inner Dublin Harbour SAC and is currently awaiting a decision from An Bord Pleanála.

Real-time information systems will allow individual plants, both water treatment plants and waste water treatment plants, to maximise their capacity through on-going monitoring of the abstraction/receiving source in terms of water level and water quality. The provision of on-site storage and the connection of foul sewer networks would facilitate the management of waste water treatment and disposal dependent on real-time conditions resulting in increases in capacity.

The use of sewage sludge to generate sustainable energy (estimated at 15% electrical conversion efficiency from a standard Anaerobic Digestion (AD) plant) would allow WWTP's to operate from their own by-product. Increased energy recovery from sludge offers a significant mechanism for net carbon reduction within a carbon intensive industry (Palmer 2010).

Key Issues - One of the key issues affecting the future development of the Cork Metropolitan Area is the lack of tertiary treatment in Carrigrenan. A number of options are available to address this, including an outfall to the outer

harbour (estimated to be 9km in length and costing in the region of €130m). A cost benefit analysis of this option compared to the provision of on-site tertiary treatment (€30m to treat a ceiling population level that still outfalls to the SAC), or the use of emerging technologies such as AGS (Aerobic Granular Sludge) as proposed for the upgrade of the Ringsend WWTP in Dublin, would need to be undertaken, influenced by the future needs of the Cork Metropolitan Area in terms of population.

Although well advanced in terms of meeting EU Regulations continued investment by Irish Water is required to address the numerous minor plants serving villages and some towns throughout the County.

Conclusion - Cork in general is well provided for in the treatment of waste water with cost effective engineering solutions available to facilitate future growth. Additional investment to meet requirements to 2050 are expected to be in the order of €400m.

Strategic Infrastructure Needs - Energy

Energy Supply

The Supply/Demand index is a measure of medium-to-long-term energy security of the whole energy system. The Government's energy policy framework "*Delivering a Sustainable Energy Future for Ireland*", places the sustainability of energy supply at the heart of Irish energy policy objectives. Diversifying the fuel mix enhances energy security, particularly where there is an over-reliance on a single fuel source (the transport sector has a 97% reliance on oil based products). In this regard, transport is the least secure energy sector, being almost entirely dependent on oil based products, and has the greatest need of increased fuel diversity. Diversification of the electricity generation fuel mix by increasing indigenous renewable electricity production will reduce the demand for imported fossil fuels and the associated exposure to their variations in price.

Electricity suppliers in Cork include ESB, Bord Gais, Airtricity and a significant number of other operators primarily in wind energy. Ervia, as the commercial semi-state body responsible for the delivery of Ireland's national gas and water infrastructure, is actively exploring means to improve the supply/demand index for the country whilst facilitating Ireland meeting its greenhouse gas targets. Unique to Cork, and of global significance, is the opportunity to provide carbon neutral electricity generation by means of carbon capture and storage (CCS), using the Kinsale Head Gas Field, when it finishes being a productive well. The location of the Whitegate and Aghada gas fuelled power stations

connected to this field through existing transmission lines affords an opportunity for power generation in Cork to be 100% carbon free. In terms of attracting foreign direct investment (FDI) to the Cork area this would be a significant plus, as more and more international companies look for opportunities to reduce their carbon footprint. Ervia are further exploring the option of conversion from Natural Gas to Hydrogen along similar lines to The H21 Leeds City Gate Project in the UK.

Gas Network Ireland owns and operates over 13,500km of transmission and distribution network nationwide, with the Kinsale Head Gas Field, Seven Heads Gas Field and the Corrib Gas Field providing an indigenous supply of natural gas to the network. The Inch entry point, located in Cork, connects the Kinsale and Seven Heads gas fields and the Kinsale storage facility to the onshore network. The Irish system has three compressor stations, Beattock and Brighthouse Bay in southwest Scotland, and Middleton near Cork. The Kinsale Storage Facility is used to store imported gas during the summer months which is subsequently used when needed during the winter. The development of Biomethane (Bioenergy) from the waste/agricultural sector will feed directly to the gas network further reducing our dependence on imports. Gas Network Ireland are actively promoting the development of this technology in the Cork Region which generates the following benefits:

- Greenhouse gas emission savings.
- Improves soil, water and air quality.
- Boosts rural economy.
- Diversifies farm income.
- Carbon negative.
- Sustainable and indigenous.
- Compatible with existing transmission network.

Managing Energy Demand

Many of the opportunities for addressing energy costs focus on the demand management aspects of the energy equation, rather than energy supply. Whilst much of Cork's potential in relation to energy lies in generation and supply, demand management offers significant potential for reducing Cork and Ireland's energy needs.

Demand-Side Management (DSM) includes peak demand reduction through tariff incentives, smart metering, behavioural changes and energy storage (still at research stage). The governments central commitment, (*"Ireland's National Energy Efficiency Action Plan"* (NEEAP) is to a national energy-savings target of 20% across the whole economy by 2020. A higher target of 33% efficiency savings is set for the public sector,

recognising its role as a leader and exemplar in energy efficiency. Demand management also offers significant potential for job creation, improvements in living standards, and environmental protection, as well as opportunities for investment.

Transportation, building heating and cooling, industry and energy generation are the main energy consuming sectors. The proportions of total energy use in Ireland between Heat, Transport and Electricity are broadly equal (33.1%, 34.5% and 32.4% respectively).

The Cork 2050 Strategy is cognisant of the significant impact that transportation has on energy consumption and emissions. A core intervention at the heart of the Strategy is reducing distances travelled as well as the need to travel. Ensuring higher density, mixed use development is a key enabling measure in this regard. The Strategy also places significant emphasis on supporting public transport use. The Transportation Strategy provides for the electrification of commuter rail services in line with national policy. This builds on other measures in place in Cork's public transport services. Spatial consolidation, the shift to public transport and shift to sustainable and renewable energy reduce the demand for fossil fuel consumption and would see a substantial reduction in CO₂ emissions; compared to the 'Do Minimum' scenario, decreased consumption of fossil fuels from the transport sector in Cork would reduce emissions by almost 500,000 tonnes (a reduction of 4%).

The Strategy is also cognisant that the planning and design of the built environment has a significant impact on the consumption of energy. Poor design and poor energy efficiency 'builds in' high energy consumption to the built environment over the long term. Improving energy efficiency requirements, through increased design and construction standards, reduces energy consumption, and offers the potential to make future buildings net energy producers. The Place-Making Strategy supports the design of buildings and the built environment generally, to maximise energy efficiency and minimise energy consumption. Existing measures such as the *"Energy Performance of Buildings Directive"* are a significant complement to planning policy measures in this regard. So too are measures which support improvements to the energy efficiency of existing building stock, including the energy efficiency retrofitting of houses and businesses, which in turn supports indigenous business and employment.

Ireland's progress towards achieving its renewable energy 2020 targets has been mixed; good progress has been made in the electricity sector (25.3% with a 40% target), but meeting the heat and transport sector targets still presents a significant challenge to policy makers. The overall progress towards the 2020 16% target for renewable energy is 9.1%.

Benchmarking - Cork County Council became the first Local Authority in Ireland to receive ISO50001 accreditation for its whole of service energy management system, which has considerable positive implications for energy saving and carbon emissions long-term. Cork County Council through this achievement is 4% ahead of its NEEAP target of 33% by 2020 having saved 4 million kilowatt hours (KWh) of energy to date.

Key Issues - Currently, Cork leads the way in helping Ireland achieve its greenhouse gas emissions targets as set by the EU relating to energy production. The key challenges that face the county are mainly related to the development of alternative energy sources to replace the non-renewable gas reserves currently being used.

An increase in population and economic demand will consequently require more energy. Additional capacity will have to be generated through renewables and backed up with current infrastructure, if national targets on GHG emissions are to be met.

In the transport sector, progress has already been made to position Cork as a hub and leader for low-carbon transport. Various initiatives have been developed to encourage the use of low-carbon transport options, for example Cork's Drive4Zero, the successful Cork Bikes Scheme, as well as proposals to deploy green bus technology in Cork. Such schemes, including the electrifying of commuter rail lines will have to be further developed and funded in order to facilitate the sustainable development of Cork.

Nationally, Cork and particularly Cork City, has a relatively high proportion of its space heating needs met through gas and electricity. This highlights that Cork is well-positioned to appropriately reduce the consumption of fossil fuels in favour of natural gas and sustainable energy through electricity.

Conclusion - Cork is home to significant research and development facilities in the energy sector. It is also a net exporter of energy to the national grid and has the unique potential to generate carbon neutral electricity, with the successful exploitation of the Kinsale Gas Head (Carbon Capture & Storage) and continued development of renewable energy sources.

Strategic Infrastructure Needs - Communications

Digital connectivity is a basic enabling utility. Alongside power and clean water, it should be seen as an essential minimum requirement for every home, business and government in order

to enable the provision and consumption of services in a digital world.

Fast, secure, high capacity and reliable digital connectivity will become increasingly important as an economic platform to access markets, be they local, regional, national or international. Failure to deliver information and communications technology which meets contemporary expectations will be a barrier to economic growth at every level of the economy. It will also hinder innovation, reduce competitiveness, and impede the attraction of investment and talent.

It will also reduce quality of life and have a significant impact on the quality of access to an increasing array of public and private services and facilities, as well as employment opportunities delivered digitally. Failure to deliver ICT to 2050, will reduce the capacity of Cork's labour force to engage with national and global markets, and have significant implications for social engagement.

Broadband Rollout - Cork is relatively well equipped with hard communications infrastructure. The rollout of the National Broadband Plan is due to be completed between 2020 and 2025. Once in place, with incremental improvements, this infrastructure is expected to meet demands nationally for the coming decades. However, due to the lead in time, and whilst Cork is well-progressed in the roll-out of the National Broadband Plan, early delivery of digital connectivity is essential to support growth.

Furthermore, Cork and Ireland should already be looking to the longer-term to future-proof local, regional, national and international connectivity. Whilst it is not yet clear what communications connectivity is needed for our economy and society in 2040 or 2050, keeping up with and keeping ahead of competitor locations internationally is essential. Cork, as a high-growth potential area, should be identified for accelerated broadband rollout.

Digital connectivity is critical to supporting established businesses and to facilitate future economic activity. The need is particularly acute in communities outside of Metropolitan Cork, which have significant capacity to adapt to emerging economic opportunities as well as in the tourism, agri-tech, food and beverage, and marine sectors.

Benchmarking - Whilst broadband rollout continues, a prime example of how Cork is pushing the boundaries to offer nationally significant and world-class global connectivity is provided by the Hibernia Express International subsea fibre cable. The Point of Presence is located at Cork Internet Exchange, Ringaskiddy and connects Cork to the UK and North

America.

This Tier 1 connectivity provides the lowest latency to the US and UK from Europe, and is faster than that provided in London. The connection significantly enhances the Southern Region and Cork's value proposition as a location for data-intensive businesses in the tech sector. Additional connectivity from Cork directly to Continental Europe is currently being progressed and should be accelerated.

Data-intensive business opportunities - The advantage provided by this infrastructure is highly attractive to a range of data-centric sectors such as financial services, data management and cyber security. This provides SME's and FDI companies in Cork and the Southern Region with a competitive advantage in terms of speed, bandwidth capacity and price. It also incentivises existing businesses to develop and expand, and for new businesses to locate in Cork.

This in turn can provide the necessary business case for ICT infrastructure providers, such as Eir, to meet the specific requirements of niche customers, be they data centres or large multi-nationals such as Apple in Cork. Cork offers significant potential in this regard, as it offers the international digital connectivity via the Hibernia Express cable, as well as the water supply for cooling and power around Cork Harbour.

Equity of Connectivity - Digital connectivity is essential for all of Cork's communities to engage fully with the global digital economy. Whilst accelerating the rollout of digital hard infrastructure is a basic requirement, communities must be equipped to engage with technology. This in turn will enhance the business case for the roll-out of further infrastructure in less populated areas. In this way, both the hard and soft aspects of digital connectivity must be enhanced to maximise the effectiveness of the technology and harness the full potential of Cork's human capital.

A step-change in digital connectivity will ensure that coverage extends to the most remote and least populated, but also asset rich towns, villages, rural areas and islands. This will ensure equality of access, as well as maximising Cork's human capital and ensuring that there is not a 'digital divide' socially in Cork. There is also potential to explore other ways for delivering digital connectivity in these areas, for example through community efforts.

Cork can be a leader nationally in ensuring all parts of the community can engage fully with the opportunities digital connectivity provides. The capacity to take advantage of the potential that ICT infrastructure provides will be increasingly important to communities and local indigenous business in

Cork's towns, villages, rural areas and islands socially, economically and in terms of accessing services. One way to achieve this is via a digital audit of communities and rollout of local digital engagement strategies to meet bespoke needs. However, significant differences in quality of coverage remain and investment is required to balance access and commercial advantage.

Cork Testbed - Whilst we do not have a clear picture of future requirements, we know that the volume and speed of data required will increase exponentially as technology and digital connectivity is further integrated into daily life, for example through Big Data, the Internet of Things, as well as changes in media are delivered. We also know that more and more services will be provided remotely and digitally, including services from business, healthcare, and government in the form of E-Governance.

Cork's size and potential make it a national opportunity to be a testbed or demonstrator of improvements in Ireland's information and communications technology and infrastructure, for example 5-G technology. As an environment for driving forward-facing solutions to support growth and take advantage of opportunities in the digital age, this is an excellent opportunity for Cork and Ireland.

Being at the forefront of integrating cutting edge ICT into society and the economy, and also developing a reputation nationally and internationally for this, is important in enhancing Cork's attractiveness as a tech location. This is important for attracting and retaining talent, and meeting contemporary expectations.



10 / Cost Benefit Narrative

KEY POINT: For Ireland, Cork offers the best and most cost-efficient use of limited exchequer resources to achieve sustainable and effective regional growth.

As strong growth in the Irish economy continues, the increased capital investment available must be targeted into the infrastructure that provides the best all-round return for Ireland today and for our shared future tomorrow.

There is a need to make choices between competing social, economic and infrastructural priorities. Cork 2050 enables prudent and informed decisions which make better use of limited resources and which will deliver more equitable and balanced growth for Ireland.

The NPF, as the spatial expression of national sectoral policy, is the key co-ordinating factor to realise the opportunity to invest in the places that offer the potential to deliver the most for Ireland and its regions.

Resilient Economic Platform

Building a growing but adaptable and resilient economy with which to fund investment in public services is key to Cork's sustainable development.

The Cork 2050 Strategy reflects a mindfulness of the uncertain economic outlook, in particular the short to medium term challenges presented by Brexit, as well as longer term challenges such as equipping Ireland to grow in the context of disruption from technological change and a changing climate. The Strategy seeks to realign Cork's economy and equip its labour force to lead in these changes and to create, rather than react to opportunities as they arise.

The Strategy also reflects a mindfulness of the cost implications of the above changes. Factoring in future costs now, particularly in relation to water management, achieving greater labour market responsiveness, and ageing, alongside prudent planning and preparation, will equip Cork to create the conditions for growth, respond to change, and build its resilience. Investing prior to growth, and building in adaptive capacity now, will increase certainty for investors and provide for a better long-term capital return.

National investment is required to enable Cork to deliver for Ireland on its growth potential; its latent capacity; its competitiveness; its capacity to reskill; its entrepreneurialism; and its adaptive ability so as to remain ahead of the curve internationally for investment and opportunities.

Cost Effective Regional Development

One of Ireland's key challenges is protecting the gains in competitiveness achieved in recent years, whilst ensuring that the benefits of growth are transmitted more fairly and more widely.

Cork's competitiveness, heightened productivity, and high value added make it the prime opportunity nationally to deliver more effective regional development in a cost effective way. Escalated rates of sustainable growth in Cork promises the most efficient return on exchequer investment whilst instilling competitiveness, increasing living standards, and driving growth in the Southern Region.

However, growth in Cork is not for growth's sake; it presents an opportunity for Ireland to grow and develop in a plan-led, sustainable, future-proofed way whilst achieving balance between economic, social, environmental and cultural objectives, and underpinning social cohesiveness and competitiveness. This cascades through the Strategy which seeks to develop Cork into high growth sectors, but not at the expense of its quality of life and social sustainability.

In this context, the unique benefit that Cork offers is the opportunity to invest prior to growth and to release significant latent capacity and growth

potential with value for money investment. This will deliver greater efficiency and effectiveness of investment and greater return than retrofitting after growth.

The Cork 2050 Strategy seeks to communicate Cork’s compelling rationale for prioritisation between competing policy choices on the basis of efficiency and value for money. A key point is appreciating not only the costs, but the better return, and the whole of life benefits that investment in Cork can bring for Ireland.

The Cork 2050 Strategy focuses on strategic infrastructure investment that will give demonstrable economic and social returns. The capital spending required by Cork 2050 will help deliver sustainable growth, stability, and more effective regional development with which to support national competitiveness. This can be achieved by unlocking latent potential and capacity and in that way provide an overall better return on limited national capital investment.

Value for Money: Sustainable Spending

The level of investment in strategic infrastructure (transportation and water) required to facilitate the identified growth potential in Cork to 2050 is in the order of **€5,092 M**.

The below represents the total investment in strategic transport and water infrastructure required in Cork over c.33 years to support the targeted level of growth of c.300,000 people and c.120,000 jobs.

Cost Benefit

There is significant potential in Cork to capitalise on latent capacity in existing infrastructure, particularly in relation to water services infrastructure, as well as to achieve greater efficiencies in the use of committed infrastructure, particularly transportation infrastructure. Cork’s capacity for growth based on existing and already committed infrastructure investment means that the relatively modest additional costs set out above can provide a significantly better return to the exchequer over time.

Set out below are details of capacity already in place to support the envisaged level of growth alongside details of the additional investment required.

Transportation

The national road improvements proposed, specifically the M28, Dunkettle Interchange, Northern Ring Road and M20, together would cost in the region of €1,521 M (c.33%) of the total €4,579M forecast spend.

Strategic Investment	€ M
Transportation	
Public Transport	2,412
Road Network	2,027
System Management & Other	140
- Total Transportation Infrastructure	4,579
Water Services	
Potable Water	55
Waste Water	457.6
- Total Water Infrastructure	512.6
- Overall Total Strategic Infrastructure	5,091.6

In terms of the level of growth achievable in Cork, and taking account of the level of strategic transportation investment required, the return on investment and level of efficiency provided is significant.

Transport: Benefit to Cost Ratio

An assessment of estimated transport user benefits provides a high-level indication of whether the proposed investment required for the Strategy is worthwhile.

The purpose of the assessment is to provide an initial high level indication of the performance of the package of infrastructure schemes proposed i.e. do the benefits of implementing the Strategy exceed the costs. It is undertaken at a level of detail that is appropriate for this stage of transport strategy development in terms of:

- Cost estimates for the proposals are developed based on cost outturns for similar projects rather than detailed design.
- Benefits are forecast based on outputs from the transport modelling assessment of the proposals which use broad assumptions regarding scheme operation and design.

The Benefit to Cost Ratio (BCR) for the transport element of the Strategy is forecast to be 2.4, which represents high value for money.

This figure accounts for direct transport benefits, predominately travel time savings, and does not include the wider economic benefits that will be delivered through the Strategy. It indicates that the Strategy is economically beneficial from a regional and national perspective, and provides confirmation of the overall economic justification for its implementation.

This BCR compares very favourably to the one achieved for the Greater Dublin Area (GDA) Transport Strategy 2016-2035.

Water Infrastructure

In comparison to other Counties, Cork benefits from having significant water infrastructure already in place upon which it can grow.

With regard to potable water, sufficient treatment capacity is already in place to accommodate the overall level of growth in population and jobs envisaged in the Strategy. Potable water sourced from Cork’s three largest treatment plants is perhaps the most cost effective use of a natural resource in the Country as the capacity in these plants is sufficient, without significant investment other than maintenance and modernisation works, to cater for targeted growth in Cork City and wider Metropolitan Area beyond 2050 (up to 1.2m people).

The water services investment set out above relates to upgrading of water quality and supply, reducing leakages and other improvements to supply.

In relation to wastewater, over two-thirds of the total capacity required to support the population and jobs growth to 2050 is already in place in Cork. The largest proportion of this investment (c.€135 M or c.30%) would be from providing a new outfall to the outer Harbour if this was required instead of tertiary treatment of current capacity.

When viewed over a 30+ year period the level of water services investment required in Cork to 2050 is by no means prohibitive and would be in-line with current annual expenditure.

Whole of Life Benefits: High Level Analysis

The costs above should be seen in terms of the wider social, economic and environmental benefits within the context of the overall growth potential identified in Cork.

Transportation

As a high level indication of the environmental impact of the Strategy, it is expected that harmful transport emissions will reduce by between 4-11% in the Strategy compared to the ‘Do Minimum’. One of the key outcomes of the improved public transport network is the substantial reduction in CO₂ emissions which would reduce by almost 500,000 tonnes (or c.4%).

Against the ‘Do minimum’ scenario the Strategy would also deliver a reduction in road congestion by over two-thirds, (67%) as well as a 129% increase in public transport trips and an 11% increase in cycling trips. These improvements demonstrate that Cork can grow whilst retaining its quality of life and enabling healthier lifestyles.

Benefit to Cost Ratio	€ M
Present Value of Transport User Benefits	29,203
Present Value of Strategy Costs	11,506
Net Present Value	17,696
Transport User Benefit to Cost Ratio	2.5 : 1



Dublin has been unable to match the level of growth in activity with the necessary investment in public transport required to stem the reliance on trips by private car. Cork’s unique selling point nationally is that it has the scale to grow, but also the opportunity over the 30+ year period of the Strategy to manage the step changes in population and job growth forecast and the ability to deliver identified high capacity public transport corridors well in advance of the growth taking place.

Water Services

Cork has pioneered the use of new technology in waste water treatment in a number of plants. With further investment in plants serving major towns, both inland and coastal, Cork has the potential to significantly improve water quality with relatively minimal additional investment. Marine sports and leisure, angling and other water based sports will not only benefit local people but will also add to the attractiveness of Cork as a tourist destination benefiting the wider economy.

The provision of a high quality and secure water supply is one of the key objectives of Irish Water (IW). Coupled with this is our national requirement to adhere to the EU Water Framework Directive which seeks to protect aquatic ecology and habitats, drinking water resources and bathing water. Failure to comply with this Directive will and has, resulted in significant fines being made on National Government. In the long term paying penalties is not sustainable and the cost to public health and wellbeing from having contaminated watercourses and estuaries would be substantial. To promote Ireland as a centre for aquaculture, marine tourism—and as a clean environment—the Strategy supports continued investment in Cork's strong and burgeoning research and innovation ecosystem.





11 / Cork's Unique Environment: Sustainability

With the right investment and through a coordinated approach, Cork has the potential to not only become a low carbon place but to be a leader in sustainable and renewable energy generation and supply. Underpinning this is a recognition of and response to the environmental challenges facing not only Cork but Ireland generally.

Supporting increased and sustainable growth over the lifetime of the Strategy will require strategic investment decisions in relation to critical services such as water, wastewater, energy and transport; at the same time Cork's environmental resources must be managed and enhanced for their significance to Cork's strong sense of place and quality of life offer.

Decoupling Growth and Carbon Use

To develop sustainably Cork must decouple population and economic growth from carbon usage, whilst building into its environment, its places and its economy the resilience to respond to a changing climate.

Cork 2050 is an integrated strategy that actively drives adaptation to a low carbon, sustainable future through a plan-led approach that aligns spatial and sectoral policy. In line with the *"National Climate Change Adaptation Framework"*, Cork 2050 delivers a vision for growth that:

- Repositions Cork's economy to benefit from the opportunities arising from a low carbon economy, and to be resilient in the face of climate change.
- Better coordinates land use and infrastructure investment.
- Reduces the environmental impact of development and supports sustainable management of Cork's 'green' assets.

Development and Land Use Change

Spatial - The Cork 2050 strategy promotes less dispersed growth, and focusses development into higher density, mixed use locations along high capacity public transport corridors in Cork City and Metropolitan Cork. These areas are located away from the more environmentally sensitive parts of Cork

to the north west and west and areas at risk from flooding. This ensures the efficient use of land, minimises soil sealing, retains open Greenbelt areas, and maintains Cork's varied habitats.

Movement and Air Quality - Air quality is generally good in Cork. Transport is one of the main sources of carbon and air pollution and this Strategy will provide an associated reduction in energy usage and carbon consumption, reducing CO2 emissions by c.500k tonnes. This will be achieved by reducing the need to travel and better integrating housing, employment and education development with an enhanced public transport network. It is also realised by increasing sustainable transport mode share, as well as extending the electrification of the rail network, enabling it to be powered by sustainable energy sources.

Cork's Sustainable Energy Economy - Cork 2050 will initiate a shift towards responsible environmental management and adaptation to climate change along with transition to a competitive, low carbon, climate resilient and environmentally-aligned economy. The Economic Strategy repositions Cork's economy to take advantage of growth in sustainable and renewable energy generation systems and increased demand, whilst the Infrastructure Chapter supports a sustainable, secure supply of energy and increased energy efficiency. This will be achieved by supporting Cork's renewable energy research and development ecosystem and targeting the marine and energy

industry as one of Cork's key growth sectors into the future.

Cork's energy system will shift from being almost exclusively centralised, to increasingly decentralised and democratised. Households, communities and businesses will be participants in renewable energy generation and distribution. This provides an opportunity for residents and businesses to take advantage of and engage with the economic opportunities arising from the shift to renewable energy and Cork's emerging competitive, low carbon green economy. This requires support and coordination at local, regional and national levels.

The above changes represent a particular opportunity to enhance the resilience of rural communities, especially from local ownership of renewable energy. The Strategy supports tackling fuel poverty and increasing opportunities for rural communities to reduce energy costs and increase energy self-sufficiency as part of the wider diversification of the rural economy and rural development.

A Low Carbon Future

Cork consumes c.13% of Ireland's energy output but provides c.24% of Ireland's energy end use requirements. This supply is primarily from wind farms, conventional fossil fuels, and hydro electric plants, with solar farm development in the pipeline. This makes Cork a net energy exporter and national hub of energy supply, and highlights that it is a leader in making the national transition to renewable energy a reality.

Meeting Ireland's European and global renewable energy and climate change commitments, whilst maintaining a secure energy supply (as set out in Chapter 9), requires a significant reduction in fossil-fuel demand and decoupling socio-economic growth from carbon usage. To achieve this, in line with '*Ireland's Transition to a Low Carbon Energy Future 2015-2030*', increased capacity for sustainable and renewable energy generation, improved energy efficiency, accelerated diversification of supply, and transformation of Ireland's energy system is required.

Cork has a number of renewable energy assets that offer significant growth potential. These include:

- Hydro - Large scale hydro-electricity generation since the 1950's at the Lee Hydro schemes; the Inniscarra and Carrigadrohid power stations have a combined capacity of 27MW.
- Wind - Cork has the largest installed and committed wind energy generation capacity in the Country which is over 13% of Ireland's wind energy capacity. Considerable onshore and

offshore wind energy generation capacity exists in Cork.

- Wave and Tidal - Cork has significant potential for the generation of wave and tidal energy; the Marine and Energy Research Cluster Ireland (iMERC) promotes Cork as a maritime energy research and development hub. UCC's Hydraulics & Maritime Research Centre (HMRC) is a centre of excellence for ocean renewables and coastal engineering, and houses the National Ocean Test Facility which researches wave energy. These bodies form the bedrock of Cork and Ireland's renewable energy R&D ecosystem going forward.
- Gas - Ireland's sole gas storage facility is located at Kinsale. The Inch entry point in Cork connects the Kinsale and Seven Heads gas fields and the Kinsale storage facility to Ireland's gas network. Kinsale also has long term potential for gas storage and carbon capture facilities.
- Forestry - Cork has the highest forest cover levels in Ireland, almost 50% more than the next highest (Donegal). This key asset supports a strong private and public forest products industry and plays an important carbon management ecosystem services function. With the largest land area in the Country Cork also offers significant potential in terms of land based energy, including bio-fuels.

Strategic Low Carbon Energy Infrastructure - Cork can be a leader nationally in sustainable energy, from solar and biomass, to wind, wave and tidal. Realising the potential of Cork's assets requires continued investment from the public and private sectors. Spatial and sectoral policy must be aligned to provide future-proofed strategic infrastructure decisions and delivery. This requires greater clarity/certainty for investors and communities regarding the type, scale and location of renewable energy infrastructure across Cork's terrestrial and marine environment. Additional direction and support will provide the framework to prioritise sustainable energy generation and meet our international targets.

Energy Security

Ireland has one of the highest levels of dependence on imported energy in the EU. Cork's role in supporting Ireland's energy supply and energy security is of strategic national importance, primarily due to the Whitegate Refinery, Ireland's sole refinery. Over the medium term Ireland's mix of non-renewables will move away from peat and coal to lower carbon fossil fuels such as natural gas, which will remain important elements of Ireland's energy supply to c.2035. As a result both Whitegate and Cork, in particular Cork Harbour will continue to play a unique role supporting Ireland's transition from a primarily fossil fuel based

system to a sustainable and renewable one. The Cork 2050 Strategy is cognisant of and supports this dynamic.

Cork Harbour & Whitegate - As Ireland's only oil refinery, Whitegate provides approximately 40% of all national petroleum needs. No other location nationally has the capacity or transport infrastructure to refine or store the level of fuel imports Ireland currently requires. In addition, 90% of the oil reserves held in Ireland are stored in Whitegate and elsewhere in Cork such as Whiddy Island Oil Trans-shipment Terminal and Irish Strategic Oil Reserve, in Bantry. Alongside Cork Harbour, Whiddy Island has a potential role in relation to future output from offshore oil- fields in Irish coastal waters. It should be noted that Whitegate provides c.50% of the Port of Cork's traffic. The Whitegate area is also the location for three gas-fired power stations.

This makes Whitegate the lynchpin of Ireland's energy security over the short to medium term. This places Cork and specifically Cork Harbour at the heart of Irish energy supply, as well as Cork being a leader in Ireland's sustainable energy supply. This should be seen in the context of the closure of a number of European refineries since 2008, which offers potential for Whitegate to become more prominent in the supply of processed oil to Europe.

This brings into focus the wider energy assets and potential in Cork. In particular, Cork Harbour offers tidal and wave energy potential, as well as having the cluster of services, infrastructure, research, knowledge, businesses, and port facilities related supporting Cork's energy industry that have the potential to serve an expanded energy industry into the future. There is a need to plan and coordinate existing marine and terrestrial energy activities as well as the opportunity to develop the economic potential of Cork Harbour, to include the broader energy resource potential from land-based energy such as bio-fuels and wind in the harbour area.

This requires advancing marine spatial planning alongside terrestrial planning, as well as exploration of Cork and Cork Harbour's economic potential as a hub for the energy and marine industries, potentially in the context of the Southern Region RSES. The Cork 2050 Economic Strategy centred highlights the potential and broader significance of Cork Harbour regionally and nationally as a hub for marine development and energy research and generation.

Emerging Technologies - With continued investment in Research & Development, Cork has the potential to become a world leader in the use of renewable energy whilst significantly

contributing to Ireland's GHG emission targets.

- Biogas from the agri and waste industry.
- Carbon capture & storage.
- Continued use & development of hydro power generation.
- Continued development of wind and Solar PV.
- The use of tidal and wave-rider technology (coastal energy).

All of these technologies, are either in use or are at practical demonstration phase within the Cork Region.

As an example, Solar PV, which is particularly suitable to Ireland's southern counties, has the potential for rapid deployment to help meet Ireland's 40% renewable electricity target for 2020 and to diversify Ireland's onshore renewable energy sources. In this area alone applications for up to 5,500MW of grid connections have been applied for nationally, the majority of these being in the south.

The Governments target of 40% of electricity to come from renewable energy sources by 2020 is predominantly being met by wind. By its nature this source of renewable energy is variable which presents a range of operational challenges for the power system. This variability must be managed to ensure demand for electricity is met at all times.

Cork has the opportunity to lead the way in the integration of non-synchronous renewable generation by promoting continued research in the fields of carbon capture and storage (Kinsale Storage Facility), smart storage systems using the existing transmission grid and the further development of alternative renewable sources such as tidal and bioenergy. It has been long acknowledged that Cork has the potential to be a world leader in the energy sector and to that end Energy Cork was formed in 2012.

Energy Cork is an industry-driven cluster pursuing coordinated actions to strengthen enterprise and employment within the energy sector in the Cork region. Supported by Cork City Council and Cork County Council through their respective Economic Development Funds, Energy Cork was conceived by Cork Chamber with a view to building on the unique opportunities for the region to secure competitive advantage in the energy sector.

Marine Spatial Planning

There is significant cross-over between energy generation and management of the marine environment in Cork. Cork Harbour is of particular significance as a location that plays a vital role nationally in terms of energy supply, as well as offering significant potential for expansion of tidal, wave and offshore and onshore wind energy. There are also broader marine and terrestrial considerations within and around Cork Harbour relating to defence, research, port infrastructure and operation, industry, and the related clusters of companies that support Cork's energy industry.

Marine spatial planning is essential to the effective management and utilisation of the marine environment including exploitation of energy resources. It requires coordination and potential integration with terrestrial planning. Cork has an array of energy, transport, tourism, habitats, landscapes, and economic assets that impact on both the marine and terrestrial environments, particularly around Cork Harbour, and the potential to expand which requires coordination and development. This takes on additional significance in the context of the emerging RSES, that presents an opportunity not only for regional spatial planning but also elevating and maximising the economic and social potential of Cork's terrestrial and marine environments.

Water Management

Sustainable spatial growth enables better servicing of development with water services, sewerage and flood management infrastructure as Cork grows. With the right investment Cork has significant capacity for growth in terms of water infrastructure whilst managing environmental impact. In particular for Cork, protection of existing sources, especially sustainable and environmentally friendly abstraction and sustainable flood risk management is key.

Cork 2050 supports advances in technology to improve water management and reduce environmental impact. Cork is pioneering the use of new technologies in water supply and waste water solutions such as the Nereda Process which produces treated wastewater which can be safely discharged into sensitive environments. Cork can also be a leader in converting sewerage waste to energy, as well as smarter management of existing water infrastructure to maximise its capacity to function in the context of climate change impacts such as reduced assimilative and abstractive capacity of water bodies.

Environmental Assets: Green Infrastructure & Ecosystem Services

The Cork 2050 Strategy approaches strategic environmental management using Green & Blue Infrastructure and Ecosystems Services as the overarching framework to guide spatial planning and highlight the contribution that Cork's environment, habitats and landscapes make to Cork's development.

Green Infrastructure - Cork 2050 offers an opportunity to connect the urban and rural landscapes, designated sites and other habitats in Cork, to develop a more coherent structure between habitats and natural environments. This connectivity, and the creation of appropriate linkages between natural areas within and around Cork, supports a more strategic ecological approach to spatial planning and environmental management.

Ecosystem Services - Underpinning the concept of Green Infrastructure is the recognition of the role of ecosystems. The ecosystem services concept highlights how a healthy, functioning and resilient environment sustains socio-economic development and human wellbeing, and that the environment, society and the economy must be aligned and mutually supporting.

As an economic asset, the Government estimates that our biodiversity is worth over €2.5 billion per annum and contributes to economic performance in a range of ways. As a social asset, our natural environment plays an equally important role in our well-being, as the quality place within which we live.

Cork has a diverse range of ecosystem types, including marine, freshwater and terrestrial ecosystems. Understanding the range, quality, diversity and fundamental value of the ecosystems and Green Infrastructure that sustain Cork is critical. Enhancing the functionality of these resources through effective planning, prudent management and sustainable utilisation of these assets is critical to the long term success of the Cork 2050 Strategy.

Landscape - Cork's ecosystems and Green Infrastructure are also the diverse landscapes which contribute to the environmental quality, character and setting of Cork City and County. These range from the mountains and peatlands in the west of the County, to the river corridors and lakes that traverse Cork, to the significant coastal, marine and island habitats, and the attractive setting and streetscapes of Cork City.

The townscapes, landscapes and seascapes of Cork are arguably its most significant environmental resource. They embody the interplay of historical activity and the natural environment over millennia, whilst telling the story of Cork, and contributing hugely to local sense of place, identity, and quality of life for residents and visitors.

The distinctiveness and attractiveness of Cork and its variety and choice of settings and environments, are essential ingredients in Cork's compelling offer to retain and attract talent, and investment. Continuing to plan, manage and sustainably utilise this resource in the context of increased growth has been a central consideration of the Cork 2050 Strategy.

Cultural Heritage

Cultural heritage is a resource that plays a key role not only in identity and landscape but also as an economic driver for regeneration and the creative economy. Cultural heritage in terms of Cork's monuments, sites, traditions, transmitted knowledge and expressions of human creativity are stimulants of innovation potential in a wide range of traditional and new industries. It is also a major contributor to social cohesion and a conduit for engagement which brings communities and young people together to engage with Cork's environment and identity.

Cork has one of the largest numbers of national monuments in the Country, and the largest number of protected structures outside of Dublin. Cork's Cultural heritage includes significant archaeological sites and landscapes, often around the foothills and uplands, whilst the City retains a medieval street pattern. The underwater, marine and industrial archaeology and associated tourism potential is also significant. At a smaller scale, the contribution of vernacular architecture and features ranging from farm buildings, shop fronts, walls and gates all contribute to creating a local sense of place and distinctive landscape character.

The archaeological and architectural heritage of Cork is a non-replaceable, finite resource. Both tell Cork's story and contribute to landscape character and sense of place. From an environmental standpoint, the embodied energy of Cork's existing buildings is one of the most compelling arguments for preserving them. Maintaining and reusing existing structures also contribute to reducing urban sprawl, prolonging the physical service-life of buildings and building parts and supporting waste-avoidance.

Image & Identity

Ireland's international image is that of a 'green' place; this is of strategic importance to attracting investment and talent.

However the spatial pattern of development in parts of the country alongside water quality issues at a European level have the potential to damage Ireland's image in this regard.

Promoting the qualities and dealing with these issues is essential for Cork and Ireland's long term success.



12 / Implementation

The key to Cork's success will be implementation. This Strategy seeks to bring together many of the plans, initiatives, ideas and interventions that currently exist, develop new approaches to help unlock potential and provide the strategic guidance to allow a series of actions to come forward. There will be a need up to 2050 to ensure that the opportunities are weaved together so as to create a sustainable place influenced by change.

Key areas of change:

- Significant but sustainable population growth with high levels of migration.
- Focused development along public transport corridors across Metropolitan Cork and the City proper.
- Employment balance shifting over the long term towards industries that are driven by technology, innovation, connectivity and entrepreneurialism.
- Constant adaption of the human capital skill base to meet new industries and advances in technology.
- Manufacturing, processing and administration will undergo dramatic changes.
- The level of sustainability a place can create will heavily influence development options.
- The drive for sustainability will need to come from the people of a place and not be solely driven by Government.
- To be globally competitive a business as usual approach needs to be avoided.

This section seeks to provide a high level implementation strategy focusing on critical actions that will be required so as to embrace change and deliver on the guiding principles set out in this Strategy.

The Cork 2050 Strategy provides strategic guidance and macro level actions (see overleaf) that will need to be implemented over the next 30 years and beyond. It is acknowledged that not all actions will be realised and new actions will emerge over. Therefore, it is important that the actions are viewed as 'catalysts' or 'gamechangers' that individually and cumulatively will drive sustainable growth.

Monitoring the actions and strategic outcomes

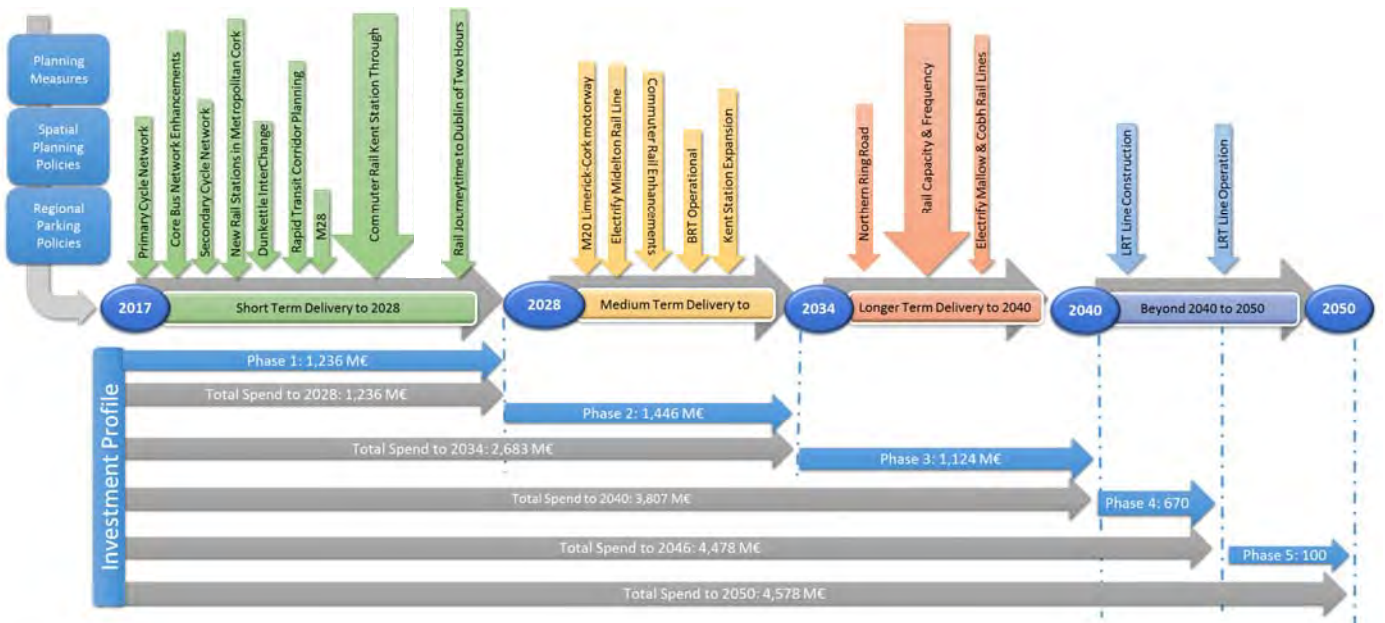
Recognising the recursive nature of Strategy development and implementation, there will be a need to establish a monitoring and reporting process to check on progress in delivering the Strategy actions

and progress on achieving the Strategic goals. This information will support the prioritisation of the infrastructure delivery and the monitoring and reporting should consist of:

- Annual Update Report to provide advice on the progress and delivery of the actions in the Strategy and will be reported to Cork City Council and Cork County Council.
- Outcomes Report every 3 years to provide detailed reporting against the Outcomes in the Strategy and recommendations or changes in the infrastructure priorities, if required.
- Review of the Strategy every 5 years or as required to update and revise if necessary.

Phasing

A core part of the Strategy is the integration of land use and infrastructure investment, the phasing of which will be closely aligned. The diagram below gives a high level indication of the delivery of essential infrastructure to 2050.



Principle Actions

- Deliver public transport corridors across Metropolitan Cork in the form of BRT and LRT.
- Increase population densities along public transport corridors to between 3,500 - 4,500 persons per sq. km at appropriate nodes within a 1km zone.
- Fast-track the supply of housing in the right locations to meet housing need.
- Fast-track flexible office space to meet short term market demand which is designed to adapt to shifts in ways of doing business over the medium and long term.
- Support the creation of attractive, person-focused environments and places throughout Cork.
- Enable creation of a socially sustainable, fair and open social environment.
- Provide a supply of land and sites that is responsive to and meets social and economic needs.
- Develop the Docklands (South & North Docks and Tivoli) in a high density, mixed use manner.
- Support the development of Cork City as the 'healthy heart' of Cork and the Southern Region.
- Deliver improvements to the Port of Cork.
- Enable the development of town, village, rural and island communities and diversification of the rural economy.
- Roll out broadband across the whole of Cork.
- Create a Strategic National Energy Zone centred on Cork Harbour, and develop Marine Spatial Planning in Cork.
- Expand facilities for enterprise and innovation, including enhanced collaboration and networking ability.
- Facilitate the development of healthcare facilities, including facilities to support innovation in the healthcare sector.
- Facilitate expansion of Third and Fourth Level Education Facilities for Cork and the wider region, at appropriate locations that respond to the need for increased research, enterprise, and innovation capacity.
- Facilitate improved skills training to meet Cork's economic needs, including improved access to reskilling and retraining for the whole of Cork.
- Invest in local infrastructure (water services, roads, cycling etc.) and the public realm of Cork City, County Towns and Villages, focussing on improving health and wellbeing.
- Develop key roads infrastructure, particularly the Dunkettle Interchange, M20, M28 and Northern Ring Road with demand management measures if necessary.
- Improve Regional linkages and connectivity both in terms of movement and digitally.
- Improve transport connectivity to Cork Airport and as required expand the capacity of the Airport.
- Facilitate renewable energy generation in Cork and improvements in energy efficiency, and the shift to a Low Carbon society.
- Enhance infrastructure and facilities for Cork's arts and cultural environment.
- Continue to invest in water infrastructure to cater for growth and the impact of climate change, including increased use of technology to maximise the capacity of water infrastructure investment.
- Develop and expand Cork's Green Infrastructure and Eco-System services network.
- Communicate Cork's identity and brand image nationally and internationally.
- Continue a collaborative approach to planning and delivering Cork's growth and development.

Strategic Outcomes

- A sustainable place.
- Globally connected economic corridors and clusters.
- Transition to a low carbon environment.
- Greater efficiency in land use.
- Improved health and wellbeing within communities.
- Integrated public transport system.
- Robust and resilient environment.
- A premier location for global commerce, business and investment.
- Densification at appropriate nodes along growth corridors.
- An inclusive and diverse place.
- Self sufficient and connected rural areas.
- Increased levels of competitiveness and productivity.
- Flexible and adaptable development framework.
- Diverse and resilient, whole of Cork economy.
- Connected regionally, nationally and internationally.
- Culture of collaboration and entrepreneurialism.
- Choice of attractive and unique places.
- Improved urban form and pleasant public realm.
- Homes delivered in the right place and that meet people's needs.
- Easily accessible and well connected.
- Alignment with regional and national policies.

Aligned to Guiding Principles

Spatial: Maximise the potential of Cork's urban and rural areas to be successful, sustainable places that support strong, vibrant and healthy communities.

Social (People / Lifestyle): Facilitate the creation of a built environment with the associated services that respond to the community's needs and support its health, social and cultural well-being.

Economic: Support an environment that enables the building of a strong, responsive and competitive economy that provides opportunity and access for all.

Environment: Ensure the protection and resilience of Cork's natural, built, historic and cultural environment. Proactively adapt to climate change and the transition to a low carbon society.

Mobility and Infrastructure: Co-ordinate development requirements to identify infrastructural investment priorities that support sustainable patterns of growth and of community living.

Funding

The integration of infrastructure and land use is at the core of this Strategy. This allows for a tangible link to funding arrangements with the investment decisions needed today to maximise the cost benefit and benefits in terms of whole life costs.

National level Investment - The Cork 2050 Strategy will require significant infrastructural investment by the Government if it is to deliver in a timely manner. This document outlines headline costs and there will need to be a clear commitment at national level to deliver the 'game changers' in terms of infrastructure.

Enterprise Model - As set out in Chapter 6 an Enterprise Model supports businesses that have the main aim of creating community benefits rather than generating profit for stakeholders. Such enterprises trade in the market of providing goods and services locally. The model seeks to tackle important social (for example social inclusion) and environmental matters with any profits made put back into the business or community. This has the circular effect of providing jobs, services and wider community benefits. This model can generate change and help the transition to a more resilient and sustainable economy.

The NPF - Cork in 2040

Cork will be an enabled place, equipped within a national and regional framework, to deliver for Cork, the Southern Region and Ireland.

Progress toward the Cork 2050 Vision and Strategic Objectives will be well advanced. Results will have been achieved through Cork's culture of collaboration and the commitment and involvement of stakeholders in implementing the Strategy. Guided by standing implementation and review structures focused on delivery and guided by comprehensive monitoring and review of progress and direction.

Review of the National Planning Framework will be underway, with Cork actively engaging to scope future risks and reviewing progress in delivering the population and migration increase, dynamic jobs market and investment for Cork, the Southern Region and Ireland.

The review of the NPF will present another timely opportunity to review strategic outcomes, guiding principles and Vision against future perspective and outlooks.



ERECTED BY THE CORPORATION OF CORK
IN 1825 BY
DANIEL VINCENT OSULLIVAN ESQ. MAYOR
AND M.J. MURPHY ESQ. B.E. CITY ENGINEER
30 TOWNSEND ST. LONDON E.C.4

ENGLISH MARKET CORK

Wilson Dines Jewellers
JEWELLERS

No Dogs Allowed
Except Guide Dogs

13 / Environmental Assessment

The Cork 2050 strategy promotes the sustainable management and responsible stewardship of Cork’s environment in the context of the adaptation to and mitigation of climate change and the shift to a sustainable energy future. The Strategy also promotes the protection and supports the resilience of natural, social, cultural and economic assets, and patterns of growth that minimise economic, social and environmental inefficiencies.

The core objective is to align and integrate Cork’s social and economic growth with the management of its environment. This will ensure that Cork is resilient in the face of risks, and positioned to take advantage of opportunities, emerging from structural changes in our society and our economy generated by climate change and the transition to a low carbon future.

Introduction

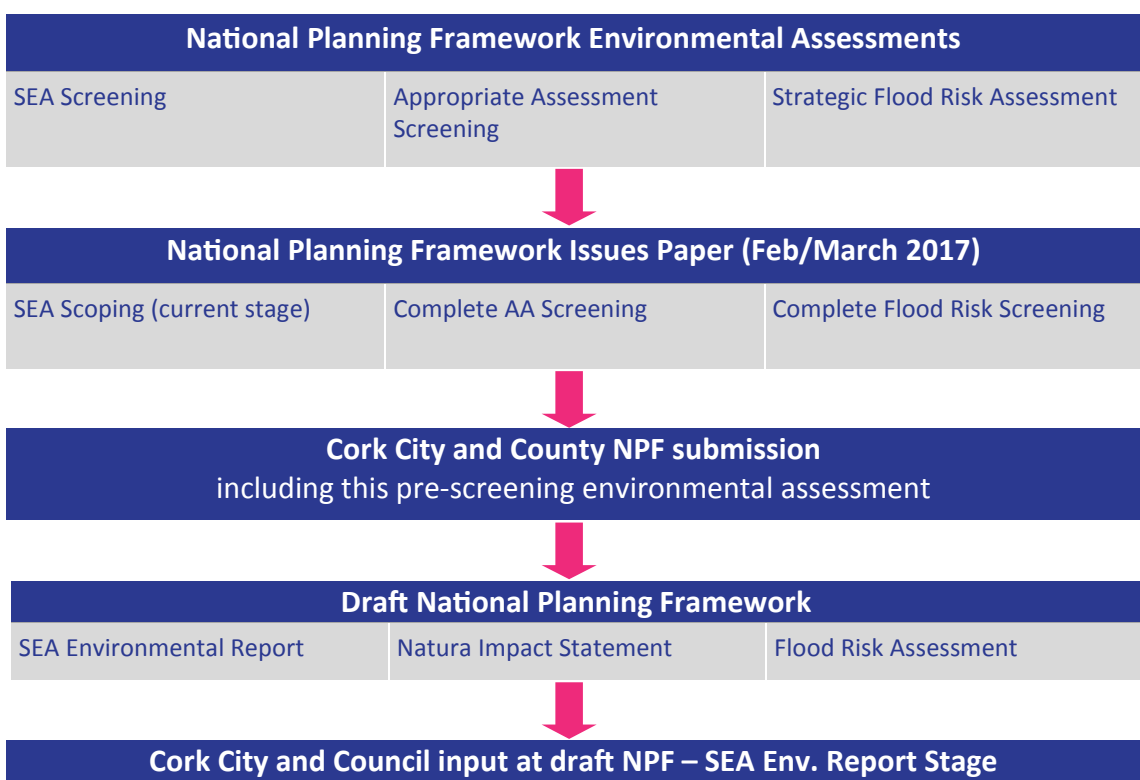
Central to the process of developing the Cork 2050 Strategy has been the consideration of potential strategic impacts on Cork’s environment.

To support the Cork 2050 Strategy a Strategic Environmental Assessment (SEA) and Appropriate Assessment (AA) Pre-Screening Exercise has been carried out. The SEA and AA Pre-Screening Exercise has been undertaken as a parallel process in tandem with the strategy development process to ensure that potential strategic environmental impacts are considered and responded to appropriately.

Relationship to the NPF

The figure below shows the relationship between the NPF, the statutory environmental assessments being prepared as part of the NPF process, and the environmental Pre-Screening Exercise for Cork 2050.

The NPF Issues & Choices Consultation Paper and accompanying SEA Scoping Report have informed the Cork 2050 pre-screening and accompanying commentary. As the NPF will undergo further assessment under the Strategic Environmental



Assessment Directive and Habitats Directive Assessment, this submission aims to contribute to these processes, through commenting and highlighting the environmental context of Cork.

Overall Approach and Methodology

The assessment focussed on statutory environmental requirements relating to the Water Framework Directive, Habitats Directive Assessment and key policy drivers including the National Landscape Strategy and National Biodiversity Action Plan (draft) in relation to the assessment of potential environmental impacts associated with the core elements of the Cork 2050 Strategy.

In addition to baseline analysis and analysis of strategic ecosystem services, a preliminary environmental sensitivity assessment was also undertaken. This ranked the sensitivity of biodiversity, water protection, population, soil and geology designations throughout Cork and enabled an overall environmental sensitivity profile for Cork to be developed.

The assessment also incorporated analysis of international good practice and benchmarking against comparator areas which informed the strategy and accompanying implementation strategy. The assessment process highlighted the strategic environmental resources present in Cork and identified at a strategic level the environmental opportunities and constraints present.

Key Trends

The assessment process closely informed the development of the Cork 2050 Strategy which seeks to ensure that Cork develops in a sustainable way and within the capacity of the natural environment. This has influenced the spatial strategy which focuses growth within the less environmentally sensitive areas along higher density corridors served by high capacity public transport within Cork City and the Metropolitan Area.

The assessment identified key trends and other factors influencing the long term growth and development of Cork. These have been responded to and incorporated into the Cork 2050 Strategy and are highlighted below:

Climate change - The transition to a low carbon, climate resilient and environmentally sustainable place is the primary environmental trend facing Ireland. Adapting to climate change and planning for environmental infrastructure that can support Cork's capacity to respond to increased flood risk and more

extreme weather events will be critical to a sustainable and resilient future for Cork.

Ecosystem Services, and Green & Blue Infrastructure - The overarching environmental framework introduced by the NPF is that of developing Ireland's Green and Blue Infrastructure and Ecosystem Services network. Cork has a diverse range of ecosystem types, including marine, freshwater and terrestrial ecosystems.

Cork 2050 and the NPF provide an opportunity to better connect landscapes, habitats, and designated sites in order to develop a more robust and resilient structure between important habitats and natural environments in Cork and the wider Southern Region.

Green growth - This concept is becoming increasingly important as it relates to economic growth that promotes social well-being and reduces inequalities whilst not exposing future generations to significant environmental and ecological risks. This approach supports:

- Recognition of benefit of decarbonising economy
- Explicit links between health and environmental quality
- Equity of access to resources
- Valuing ecosystem services
- Wellbeing of human health & the environment
- Fair social & employment structures

Water Management - This is particularly pertinent in terms of the Cork 2050 growth scenarios having regard to maintaining water quality, water supplies and managing flood risk.

Regard was had to the variable provision of existing tertiary treatment, Water Framework Protected areas, and the assimilative capacity for rivers, lakes and groundwater for both abstraction and wastewater discharges.

Particular regard was had to the qualifying interests associated with the Natura 2000 network within Cork and along its extensive coastline that are identified as sensitive to abstraction and discharge pressures and/or pollution. Many of these areas are wetlands and also sensitive to nutrient inputs and discharges. The assimilative capacity of these receiving bodies and how existing and proposed wastewater and water supply would address these issues is critical.

Landscapes, Seascapes and Streetscapes - Cork has significant assets in this regard which contribute to an attractive environment. This in turn contributes to the quality of life and attractiveness of Cork for residents and visitors. Retaining and enhancing Cork's landscapes, seascapes and streetscapes through an evidence based policy structure is important to avoid homogenisation of this resource and loss of local character.

Urban Regeneration - Urban regeneration, reuse of brownfield lands, and re-use of buildings is particularly pertinent to Cork City Centre and some town centres in Cork County. Related to this is the facilitating increased growth within existing settlements and enhancing town centre living and services. This is critical in terms of supporting the viability of existing settlements and avoiding soil sealing and resultant risks in relation to surface run off.

Linking Habitats - Facilitating linkages between designated habitats and corridors and stepping stones between, for example Cork Harbour, River Lee and Blackwater with wetlands and wider ecological connectivity is essential to habitat sustainability.

Food Security - Maintaining a supply of high quality, viable agricultural land will become increasingly important in the context of food security globally. Robust agricultural production and strong agricultural areas, and planning that avoids urban sprawl and soil sealing which reduces agricultural capacities and increases surface water run off is essential.

Underpinning the assessment is a recognition of the environmental challenges and opportunities presented to not only Cork but Ireland generally. The wider approach of the Cork 2050 Strategy in this regard is one of responsible stewardship and sustainable management and efficient use of environmental resources. The aim of Cork 2050 is to enhance and manage Cork's environment as Cork grows into the future, including protecting the contribution Cork's environment makes to the strong sense of place and quality of life for residents and visitors.

Conclusion

The Cork 2050 Strategy forms the basis for Cork City and Cork County's submission to the National Planning Framework consultation. Through the development of the Strategy, environmental resources and their sustainable management has informed the preparation process. Through the ongoing iterative process, key environmental issues and themes were raised within the Project Team and feedback and amendments to proposals were provided.

In particular for the demographics, transport and utilities infrastructure, environmental opportunities and constraints were highlighted at a strategic level. The purpose of highlighting the consistency between the Cork 2050 Strategy and the existing statutory planning framework is to demonstrate existing planning support for the strategy, in light of more detailed environmental assessments that were undertaken as part of the County and City Development Plan preparation.

This Cork 2050 submission is non-statutory and aims to support a longer term accelerated, sustainable growth for Cork City and Cork County. As the NPF is progressed and becomes a statutory framework it will be incorporated throughout the planning hierarchy and be subject to appropriate level environmental assessments including SEA and Appropriate Assessment.



GVA

SYSTRA

Jack Sheehan
Associates

Minogue &
Associates

MHL