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CLARE COUNTY COUNCIL

TII
Bonneagar Iompair Eireann
Transport Infrastructure Ireland

Project Ireland 2040
Building Ireland's Future

SYSTRA

Jacobs

Draft Limerick | Shannon

METROPOLITAN AREA TRANSPORT STRATEGY 2040

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METROPOLITAN AREA TRANSPORT STRATEGY

The Strategy will deliver a **high-quality, accessible, integrated and more sustainable transport network that supports the role of the Limerick-Shannon Metropolitan Area as the major growth engine of the Mid-West Region, an internationally competitive European city region** and main international entry to the Atlantic Corridor.

CONTENTS

01 INTRODUCTION

The Limerick-Shannon Metropolitan Area Transport Strategy will be instrumental in the regeneration and transformation of Limerick City and the wider Limerick-Shannon Metropolitan Area.

Regional Spatial and Economic Strategy for the Southern Region

The National Planning Framework 2040 (NPF) envisages that the Limerick-Shannon Metropolitan Area (LSMA) will become the growth engine of the Mid-West Region with projected growth of at least 50% during the period up to 2040. This projected population, employment and education growth brings with it opportunities for the development of the LSMA.

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

In common with the other regional metropolitan areas of Cork, Galway and Waterford, there is a legacy of car dependency in the LSMA. This has contributed to a wide range of economic, environmental and social issues including longer commutes, declining urban centres, poor public health, reduced air quality and noise pollution.

To mitigate this, land use and transport planning will be far more closely aligned. This will discourage the use of the private car, particularly for short trips, in order to fundamentally change how people move around the LSMA. This requires a more efficient use of valuable street and road space and a prioritisation of walking, cycling and public transport.

The Limerick-Shannon Metropolitan Area Transport Strategy 2040 (LSMATS or the 'Strategy') has been developed by the National Transport Authority in collaboration with Limerick City and County Council, Clare County Council and Transport Infrastructure Ireland (TII). It has also been informed by pre-consultation submissions from a number of stakeholders.

LSMATS represents:

- The transport sector's response to the LSMA's requirements in relation to climate change;
- An integrated transport strategy for walking, cycling, bus, rail and road to support planned growth up to 2040;
- A strategy to facilitate compact growth;
- A framework for the planning, investment and delivery of transport infrastructure and services to guide the LSMA's development up to 2040 in line with the National Planning Framework 2040, National Development Plan 2018-2027 and the Regional Spatial and Economic Strategy for the Southern Region;
- A flexible strategy with the ability to scale up public transport capacity and frequencies as necessary in response to changing circumstances; and
- A framework plan with which other agencies involved in land-use planning, environmental protection and the delivery of other infrastructure and services such as water, housing and community facilities can align their plans and investment priorities.

CURRENT CHALLENGES

There are several challenges across the wider LSMA that were considered in the preparation of this Strategy. In summary, planning and transport policy and investment in the LSMA will need to:

- Support a vibrant and accessible Limerick City Centre and identified regeneration areas, metropolitan urban centres;
- Support a vibrant and accessible Shannon Town, Airport and Freezone;
- Better integrate land use, and transport planning and investment;
- Support increased population, employment and educational densities in accessible centres and along public transport corridors;
- Re-allocate road space to support more walking, cycling and public transport;
- Improve public transport through increased priority and higher frequency services operating with greater speed and journey time reliability with complementary facilities such as Park and Ride;

- Minimise severance created by the River Shannon, railway infrastructure and road network;
- Reduce the impact of transport on the environment, health, wellbeing and safety of residents;
- Maintain and enhance the strategic function of the National road network to cater for the movement of strategic traffic and discourage sprawl;
- Maximise the potential of the existing transport infrastructure including the InterCity rail network, Shannon Airport, the Port of Foynes and Ennis as a connecting hub; and
- The need to achieve efficiency and resilience within Limerick-Shannon Metropolitan Area's transport network across all modes.

Chapter 3 'Study Area and Transport Context' provides further detail on the existing transport infrastructure and services in the LSMA.

VISION AND PRINCIPLES

The proposed Vision for LSMATS is as follows: **The Strategy will deliver a high-quality, accessible, integrated and more sustainable transport network that supports the role of the Limerick-Shannon Metropolitan Area as the major growth engine of the Mid-West Region, an internationally competitive European city region and main international entry to the Atlantic Corridor.**

STRATEGY DEVELOPMENT

Extensive technical analysis has been undertaken to inform the development of LSMATS. A number of supporting technical documents have been prepared which present the work undertaken and the evidence base for its proposed networks and measures.

These are as follows:

- Baseline Conditions & Policy Review Report;
- Demand Analysis Report;
- Transport Options Development Report;
- Transport Modelling Report;
- Advance Consultation Report; and
- Supporting Measures Report.

The strategy is also subject to the provisions of the SEA and AA Directives, and associated national legislation. As such, it is accompanied by an Environmental Report and a Natura Impact Statement.

Further information on the development process is outlined in the 'Strategy Development' chapter.

LSMATS is considered to be a 'live' document and will be subject to a periodic review every 6 years.

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

PRINCIPLE 01

To meet the demand generated by the existing and planned development.

PRINCIPLE 02

To support the future growth of the LSMA through the provision of an efficient transport network;

PRINCIPLE 03

To prioritise sustainable transport to reduce car dependency;

PRINCIPLE 04

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

PRINCIPLE 05

To identify and protect key strategic routes for the movement of freight traffic;

PRINCIPLE 06

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

PRINCIPLE 07

To increase transport capacity where needed to achieve the Strategy outcomes.

STRATEGIC ENVIRONMENTAL ASSESSMENT (SEA) AND APPROPRIATE ASSESSMENT (AA).

LSMATS will provide a framework for future projects which are likely to have a significant effect on the environment, and therefore falls under the scope of the European Directive 2001/42/EC "on the assessment of the effects of certain plans and programmes on the environment" (known as the 'SEA Directive'). The SEA Directive is implemented in Ireland via the European Communities (EC) (Environmental Assessment of Certain Plans and Programmes) Regulations 2003, as amended by the EC (Environmental Assessment of Certain Plans and Programmes) (Amendments) Regulations 2011 (known as the 'SEA Regulations'). The SEA Regulations require an assessment of the likely significant effects of the Strategy on biodiversity, population, human health, fauna, flora, soil, water, air, climatic factors, material assets, cultural heritage including architectural and archaeological heritage, landscape and the interrelationship between the above factors.

In addition to compliance with the SEA Directive, the preparation and implementation of the LSMATS must meet the provisions of the EU Habitats Directive (92/43/EEC) and transposing regulations (European Communities (EC) (Birds and Natural Habitats) Regulations 2011 (S.I. No. 477 of 2011)) (Birds and Natural Habitats Regulations 2011) and an Appropriate Assessment (AA) has been undertaken for the Strategy.

The SEA and AA have been undertaken in parallel with the LSMATS and should be read and considered in parallel with this Strategy. SEOs) set out in the table below.

The SEA has evaluated the provisions of the Strategy for potential significant effects against ten strategic environmental objectives (SEOs) set out in the table below .

SEO	LINKED SEA TOPICS
Protect and enhance quality of life in relation to transport while increasing accessibility to economic, employment and community facilities.	• Population, Socio-economics, Access, and Human Health. • Tourism and Recreation.
Avoid damage to recreation and amenity facilities through construction of new transport infrastructure and support and enhance access for tourism recreation.	• Tourism and Recreation. • Population, Socio-economics, Access, and Human Health. • Land Use and Material Assets.
Prevent damage to, and where appropriate enhance, terrestrial, aquatic and soil biodiversity, particularly EU and national designated sites and protected species.	• Biodiversity, Flora and Fauna. • Landscape and Visual Amenity. • Geology and Soils. • Land Use and Materials.
Safeguard the character and diversity of the Irish landscape and minimise the visual effects on sensitive, designated landscapes and public views.	• Landscape and Visual Amenity. • Cultural Heritage. • Tourism and Recreation. • Population, Socio-economics, Access and Human Health. • Land Use and Materials.
Avoid damage to, and where appropriate enhance, cultural heritage resources and their setting.	• Cultural Heritage. • Landscape and Visual Amenity. • Tourism and Recreation.
Avoid conflicts with geological sites of value. Minimise loss of soil resources and contribute towards the appropriate management of soil resources and quality.	• Geology and Soils. • Biodiversity, Flora and Fauna.
Contribute to the mitigation of air pollution issues as a result of transport and optimise potential benefits from reduction in air pollution.	• Air Quality. • Population, Socio-economics, Access and Health.
Contribute to the mitigation of noise pollution issues as a result of transport and optimise potential benefits from reduction in noise pollution.	• Noise and Vibration. • Population, Socio-economics, Access and Health.
Prevent deterioration of the water quality status of surface water and groundwater bodies as appropriate to the WFD and avoid increasing risks from floods or increasing vulnerability to flood risk.	• Water Environment. • Biodiversity, Flora and Fauna.
Promote the sustainable use of natural resources (including land), encourage energy efficiency, reuse, recycling while encouraging the effective use of existing infrastructure.	• Land Use and Material Assets. • Geology and Soils. • Water Environment.
Minimise contributions to climate change (including greenhouse gas emissions) from construction of new/upgraded transport infrastructure or operation of existing and new transport networks, modal changes or new technologies.	• Climate Change (Mitigation).
To ensure that the resilience to climate change is designed for existing transport network and new network and promote improved environmental resilience to climate change.	• Climate Change (Adaptation). • Population, Socio-economics, Access and Health. • Land Use and Material Assets.

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

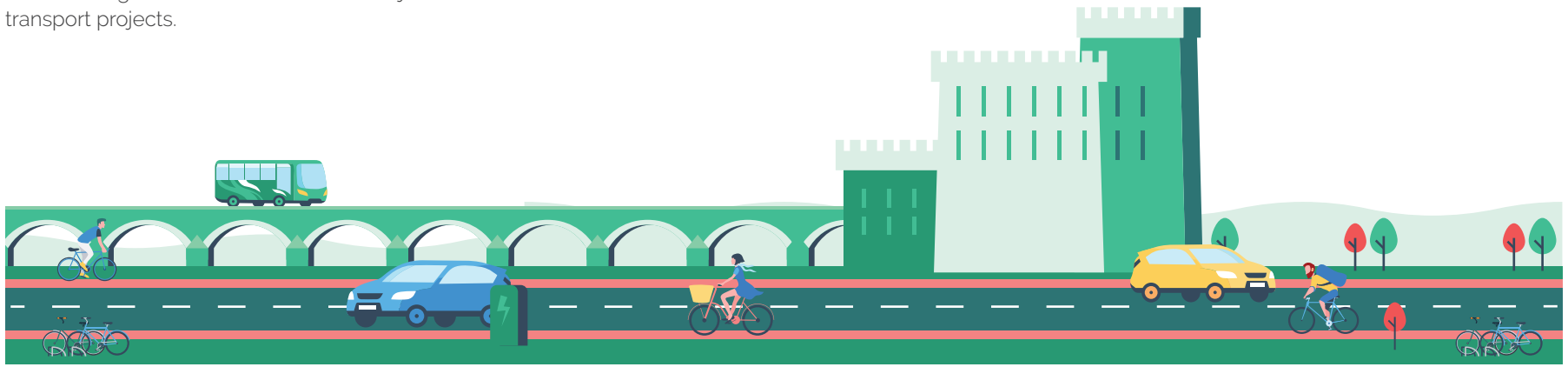
- Baseline and Key Environmental Issues;
- SEA Scope and Methodology;
- Environmental Assessment of Preferred Plan and Alternatives; and
- Monitoring and Alternatives.

The key conclusions of the SEA were that the Strategy would likely have significant beneficial effects against the environmental topics of Population and Health, Air Quality and Climate associated with the measures in the Strategy which would encourage modal shift away from the use of private vehicles and towards public transport, cycling and walking.

Based on information provided in the Strategy document, key potential adverse effects identified are linked to effects on European and National designated nature conservation sites and to flood risk, resulting from the construction of major transport projects.

Through the SEA process, mitigation has been identified to minimise or avoid likely significant adverse effects, and where relevant, mitigation identified through the SEA and AA process has been incorporated into the Strategy. The Stage 2 Appropriate Assessment (AA) Report concludes that there would be no likely significant effects on European designated sites assuming detailed assessment and implementation of mitigation. However, these strategic level assessments do not replace project level consenting requirements, including Environmental Impact Assessments (EIA), AA and Water Framework Directive (WFD) compliance assessments as appropriate.

The SEA Regulations require that the likely significant effects of the implementation of the Strategy are monitored in order to identify an early stage unforeseen adverse effects and to be able to undertake appropriate remedial action. As such, a draft monitoring plan is provided within the SEA Environmental Report.



02 POLICY CONTEXT

Transport investment by the Governmental Department, the National Transport Authority and other agencies, will be identified and prioritised through the Limerick-Shannon Metropolitan Area Transport Strategy.

Regional Spatial and Economic Strategy for the Southern Region

This chapter sets out the prevailing European, national, regional and local policies which inform and interact with LSMATS. They include those directly related to transport, climate change and land-use planning.

LSMATS is currently a non-statutory plan. National Policy Objective 69 of the National Planning Framework (NPF) states that statutory arrangements between spatial and transport planning in the Greater Dublin Area will be extended to other cities. This objective suggests that the LSMATS would assume a statutory footing at some point in the future, as the NPF is rolled out. LSMATS will inform the review of Limerick City and County and Clare County Council's Development Plans.

PLANNING AND POLICY

LSMATS is a regional-level (Tier 2) plan and is directly informed by National Level Tier-1 policies. The most important and recent of these are the National Planning Framework 2040 (NPF) and the National Development Plan 2018-2027 (NDP).

The NPF sets out Ireland's planning policy direction for the next 20 years, while the NDP sets out the investment priorities that will underpin the successful implementation of the NPF up to 2027. A detailed analysis of all policy documents relevant to LSMATS is outlined within the supporting LSMATS Baseline Conditions and Policy Review Report. These include, but are not limited to:

- National Planning Framework 2040;
- National Climate Action Plan 2019;
- National Development Plan 2018-2027;
- National Cycle Policy Framework 2009-2020;
- A Sustainable Transport Future – Smarter Travel;
- Regional Spatial and Economic Strategy for the Southern Region; and
- The County and City Development Plans.

The following sections contain a synopsis of the key documents.

EUROPEAN LEVEL POLICY

TEN-T Network

The TEN-T Network comprises a planned network of roads, railways, airports and water infrastructure across the European Union. There are a number of TEN-T designated routes within the LSMA including the M20 Limerick to Patrickswell and the N69 Limerick to Foynes. TEN-T policy remains key in promoting the free circulation of goods, services and citizens throughout the EU. It is instrumental in boosting economic, social and territorial cohesion between all Member States and their regions, as well as beyond the EU.

NATIONAL LEVEL POLICY

National Climate Action Plan

The Government published the Climate Action Plan in June 2019 in response to the need for Ireland to achieve its 2030 targets for carbon emissions and create a pathway towards achieving a net zero emissions by 2050. The plan states that we are close to a tipping point where the impacts of climate change will sharply worsen. Decarbonisation, therefore, is now a must if the world is to contain the damage and build resilience in the face of such a profound challenge.

Tackling emissions from the Transport sector (accounting for almost 20% of Ireland's greenhouse gases in 2017) is a significant part of the recently published Climate Action Plan. Key objectives relevant to LSMATS include:

- Successful execution of the NPF designed to promote compact, connected and sustainable living;
- Make growth less transport intensive by closer alignment between land use and transport planning, flexible working habits and modal shift to public transport;
- Expansion of walking, cycling and public transport to promote modal shift;
- Accelerating steps to decarbonise the public transport fleet;
- Giving Local Authorities more discretion in designating low emission zones; and
- Developing a strategy for the heavy freight sector..

Other key policy documents in relation to Climate Action include:

- National Mitigation Plan;
- Developing Resilience to Climate Change in the Irish Transport Sector;
- Limerick City and County Council's Climate Adaptation Strategy 2019-2024; and
- Clare Climate Change Adaptation Strategy 2019-2024.

National Planning Framework 2040 (NPF)
The NPF is a strategic development framework that sets out the long-term context for Ireland's physical development and associated progress in economic, social and environmental terms until 2040. Limerick is projected to grow with at least an additional 55,000 people by 2040 to support a minimum population of 145,000.

Key transport growth enablers include:

- Implementation of the Limerick 2030 Plan to revitalise and redevelop Limerick City Centre and Docks;
- Progressing sustainable development of new greenfield areas for housing on supporting public transport corridors;
- Provision of a Citywide public transport network, with enhanced accessibility from the City Centre to the National Technology Park, UL and Shannon Airport;
- Development of a strategic cycleway network with high capacity flagship routes;
- Enhanced road connectivity to Shannon-Foynes Port, including local by-passes; and
- Enhanced regional connectivity through improved average journey times by road from LSMA to Cork and to Waterford.

National Development Plan 2018-2027 (NDP)
The NDP sets out the investment priorities that will underpin the successful implementation of the NPF up to 2027, at which point it will be reviewed and updated.

National Strategic Outcomes (NSO) defined by the NPF, have been incorporated into the NDP with further investment details. Projects relevant to the Strategy are summarised as follows:

NSO 1 – Compact Growth

- Implementation of the Limerick 2030 Regeneration Framework to receive support from the Urban Regeneration and Development Fund to deliver 400 new homes and upgrade 900 homes across the areas of Moyross, Southill, Ballinacurra Weston and St Mary's Park;

NSO 2 – Enhanced Regional Accessibility

- Establish the Atlantic Corridor road network linking Cork, Limerick, Galway and Sligo;
- M20 Cork to Limerick;
- N21 / N69 Limerick to Adare to Foynes; and
- An examination of high-speed rail between Dublin Limerick Junction/Cork to improve connectivity between regional cities.

NSO 4 – Sustainable Mobility

- A commitment to implement BusConnects for all of Ireland's cities;
- Transition urban bus fleet to low emission, including electric buses;
- Complete construction of the National Train Control Centre;
- Delivery of comprehensive cycling and walking network in metropolitan areas;
- Provision of Park and Rides in association with BusConnects; and
- Provide additional charging infrastructure for targeted growth in electric vehicles.

NSO 6 – High-Quality International Connectivity

- Strengthen access to Shannon Foynes Port; and
- Upgrade N21/N69 Limerick.

NSO 8 – Transition to a Low-Carbon and Climate-Resilient Society

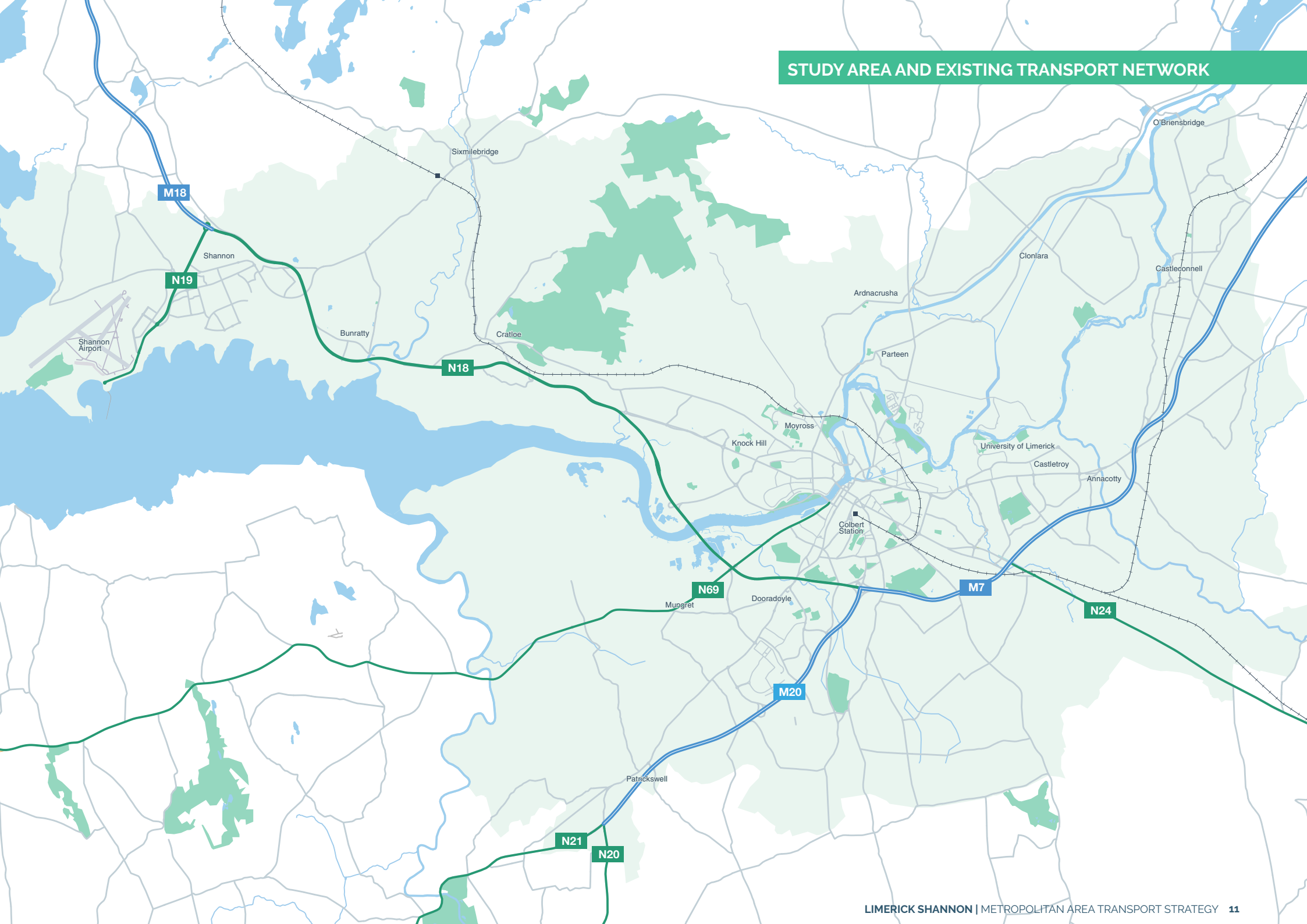
- Sustainable travel measures, including delivery of a comprehensive walking and cycling network for Ireland's cities;
- Transition bus fleet to low emission, including electric buses, with a commitment to no diesel-only buses purchased from July 2019; and
- BusConnects Programme.
- Expansion of Electric Vehicle Charge Points.

National Cycle Policy Framework 2009-2020
The overarching mission of Ireland's first National Cycle Policy Framework 2009-2020 is to create a strong national cycling culture where it is considered the norm. Its vision is that all cities, towns, villages and rural areas will be bicycle friendly to achieve the objective that 10% all trips will be by bike by 2020.

The key objectives of this Framework are to:

- Support the planning, development and design of towns and cities in a cycling and pedestrian friendly way;
- Ensure that the urban road infrastructure (with the exception of motorways) is designed / retrofitted so as to be cyclist-friendly;

STUDY AREA AND EXISTING TRANSPORT NETWORK



- Provide cycling-friendly routes to all schools, adequate cycling parking facilities within schools, and cycling training to all school pupils;
- Ensure proper integration between cycling and public transport;
- Provide secure parking for bikes; and
- Improve the image of cycling and promote cycling using "soft interventions" such as promotional campaigns and events.

A Sustainable Transport Future – Smarter Travel
Limerick City and County was one of Ireland's First Smarter Travel Demonstration Area's 2012-2016. Smarter Travel acknowledges that continued growth in demand for road transport is not sustainable due to the impact on congestion, local air pollution, contribution to climate change and promotion of increasingly sedentary lifestyles. Its main objective is to promote a significant modal shift from private transport to public transport and active modes over the period up to 2020 and to reduce the share of travel demand growth that is car dependent.

This policy sets out clear targets which have informed the preparation of LSMATS including a key target to reduce work-related commuting by car from a current modal share of 65% to 45%, with commuting by alternative sustainable modes rising to 55% by 2020.

REGIONAL LEVEL POLICY

Regional Spatial and Economic Strategy for the Southern Region (RSES)
The final RSES was published in January 2020 by the Southern Regional Assembly.

The RSES is a regional-level framework to ensure improved coordination in planning and development policy across local authority boundaries is underpinned by the NPF and NDP.

As part of each RSES, MASPs for the key cities are required to focus on specific city and metropolitan-wide issues.

Section 6.3.6.4 of the RSES sets out the key priorities for LSMATS as follows:

- Preparation of LSMATS;
- Development of an enhanced citywide public transport system with enhanced accessibility from the City Centre to the National Technology Park, Raheen Industrial Park, UL and Shannon International Airport;
- Improvement of accessibility to the City Centre through effective traffic management, reduced congestion and the improvement of modal choice;
- Development of a strategic metropolitan wide cycle network with high capacity flagship routes catering for a range of journey purposes;
- Maintenance and enhancement of the National roads network, catering for transport demand within the LSMA, for improved inter-urban/ inter-regional connectivity, reduced journey times and improved access to international gateways, including Shannon International Airport and Shannon-Foynes Port;
- The optimal use of the rail network; and
- Both Local Authorities have identified the requirement for the enhancement of Regional and Local roads through the following projects subject to required appraisal, planning and environmental assessment processes:
  - Limerick Northern Distributor Route (LNDR) Regional road project;
  - Improved accessibility to Limerick Southside including the possible provision of a Motorway interchange connection from the M20/M7; and
  - Upgrade of arterial roads from the Motorway network to increase capacity including the provision of public transport infrastructure and Park and Ride, including R527 Dock Road, R445 Dublin Road, including Junction 28 and R527 Tipperary Road.

The following MASP policy objectives are also relevant:

- **1A:** Strengthen the role of the LSMA as an international location of scale, a complement to Dublin and a primary driver of economic and population growth in the Southern Region;
- **1B:** Promote the LSMA as a cohesive Metropolitan Area with: (i) the City Centre as the primary location at the heart; (ii) compact growth and regeneration of Limerick City Centre and suburbs; (iii) compact growth and regeneration of Shannon; and (iv) active land management initiatives to deliver housing and employment locations in a sustainable, infrastructure led manner;
- **2A:** Support the regeneration and continued investment into Limerick City through initiatives such as Limerick 2030 and Limerick Regeneration;
- **3A:** Recognise Shannon as a significant regional strength and employment centre;
- **5A:** Deliver the investment priorities as identified in the NDP for the LSMA;
- **6A:** Prepare LSMATS during the lifetime of this MASP and ensure investment and implementation of LSMATS;

- **6B:** Core Strategies of Local Authority Development Plans will identify the public transport corridors and station nodal points on corridors in the LSMA arising from LSMATS which have potential to support high density development/regeneration;
- **6C:** Achieve the NSOs of the NPF through the sustainable, infrastructure-led regeneration, consolidation and growth; and
- **6D:** Seek sustainable higher densities where practicable at public transport nodes.

The RSES also identifies a number of National Enablers which are relevant to LSMATS including:

- Implementation of Limerick 2030;
- Identifying infill and regeneration opportunities to intensify housing and employment development throughout inner suburban areas;
- Progressing the sustainable development of new greenfield areas for housing and the development of supporting public transport and infrastructure, such as at Mungret;
- Enhanced road connectivity to Shannon-Foynes Port, including local by-passes;
- Fast-track delivery of the LNDR which is a strategic investment priority for the MASP;
- Enhanced connectivity to Shannon-Foynes Port, including local by-passes;
- Development of a new business park on the north of the city accessible by public transport, linking with Limerick Institute of Technology and Moyross to build on the regeneration progress;
- Supporting an application for the designation and subsequent development of the lands zoned as University in the Clare County Development Plan 2017-2023 as an Economic Strategic Development Zone (SDZ); and
- Creating a sustainable urban design town centre through the development of an Action Area Plan for Shannon Town Centre.

LOCAL LEVEL POLICY

The third tier in the policy hierarchy is local planning, which transposes National and Regional objectives into a local context. The Strategy's proposals will also inform the development of future Development Plans and Local Area Plans under Limerick City and County Council and Clare County Council.

Limerick County Development Plan 2010-2016
The Limerick County Development Plan sets out an overall strategy for the proper planning and sustainable development of County Limerick over a six-year period.

The Plan sets out a vision statement that the Council will adopt a sustainable and balanced approach to development thereby enhancing the lives of people who live in, work in and visit the County, whilst protecting the natural and built environment.

This vision is underpinned by the following relevant core strategic planning policies:

- Provide for an enhanced quality of life for all, based on high quality, sustainable residential, working and recreational environments and transportation networks;
- Facilitate the provision of the County's infrastructure in a sustainable and efficient manner that promotes the social, economic and physical development of the County; and
- Ensure that everybody has the opportunity of obtaining affordable housing, can enjoy safe and accessible environments, have access to employment, education, community and recreational facilities and arts and culture and to promote social inclusion.

Limerick City Development Plan 2010-2016
The Limerick City Development Plan 2010-2016 seeks to "embrace the principle of sustainability and deliver on the growing demand for travel by sustainable forms of transport" and acknowledges that greater integration of land-use and transportation planning is key to achieving this.

The Plan's vision is to create a transport system that offers real choice for its residents and visitors. The availability of choice in transport modes will only serve to help aid social integration, economic growth and environmental sustainability of the City by tackling congestion and an over-dependence on the private car.

This vision for Limerick City will be achieved through the realisation of the following actions:

- Align land-use development around transit nodes including bus stops, rail stations and high-quality cycle and pedestrian infrastructure;
- Provide for both local and strategic Park and Rides;
- Prioritise design for walking and cycling in all new developments;
- Control the provision of on-street and off-street car parking in the City Centre;
- Promote public transport interchange at strategic locations throughout the City; and

- Commence construction of road projects such as the N20 upgrade to Motorway standard and the N21 Adare Bypass.

Limerick City Noise Action Plan 2018-2023
Limerick's Noise Action Plan takes a strategic approach to managing environmental noise from major roads. It aims to:

- Identify appropriate mitigation measures to reduce noise levels where they are potentially harmful;
- Prevent additional members of the community being exposed to undesirable noise levels through robust planning policies; and
- Protect areas which are desirably quiet, or which offer a sense of tranquillity through a process of identification and validation followed by formal designation of 'Quiet Areas'.

Mitigation measures outlined in the Plan include:

- Green Routes;
- Traffic Calming;
- Road Resurfacing; and
- Electric Vehicle Charge Points.

Clare County Development Plan 2017-2023
It is a goal of the County Development Plan to "support strong economic growth and a high quality of life for all residents through the provision of efficient and robust physical infrastructure whilst having regard to environmental responsibilities and complying with National and European Legislation". Volume 1 contains a number of objectives relevant to the Strategy such as:

- Identification of the Limerick Northern Distributor Road (LNDR) including a spur to UL;
- Upgrade of N19 to Shannon Airport;
- Support and facilitate transport linkages to and from Shannon Airport by both public and private service providers; and
- Support the integration of transport services throughout the County in order to create more efficient transport services that meet the needs of a wide range of users.

Clare County Council has identified lands within the Clare Campus of University of Limerick as a Strategic Development Zone (SDZ). The site is zoned within the Clare County Development Plan as University Zone with a number of objectives relevant to the LSMATS set out in the Development Plan including:

- Support and encourage the further expansion of the University of Limerick campus on the north side of the River Shannon;
- To facilitate the development of the Limerick Northern Distributor Road to provide direct access from County Clare to the University;
- To improve footpaths and cycle access to the campus from County Clare; and
- To support and promote the future reopening of the Errina Canal as a functioning piece of waterway infrastructure and facilitating water-borne access to the Clare Campus, and to support and development proposals the University may have to maximise its strategic position adjacent to the River Shannon, River Blackwater and Errina canal, including the reinstatement of the riverside walkway.

Shannon Municipal District – Volume 3(b)
The Shannon Municipal District Plan forms part of the Clare County Development Plan and sets out policy for the proper planning and sustainable development of the settlements and clusters within the Municipal District of Shannon. It sets out transport objectives for each of the settlement clusters, including:

- Deliver an integrated and coherent green infrastructure strategy, encouraging walking and cycling;
- Maximise infrastructural resources, including the Shannon Estuary;
- Actively pursue low-carbon communities; and
- Secure the provision of a dedicated shuttle bus service between Sixmilebridge railway station and Shannon Airport.

Clare Noise Action Plan 2018
Clare County Council publishes a Noise Action Plan every 5 years. It aims to:

- Manage environmental noises from major roads;
- Protect good satisfactory noise environments where they exist; and
- Protect the quality of the future noise environment by acoustical planning.

The Plan aims to improve noise monitoring and noise reduction measures on a specified set of National Roads (by TII) and Regional Roads (by Clare County Council) including the N18, N19, R445 and R463.

Shannon Town and Environs Local Area Plan 2012-2018

The Shannon Town and Environs Local Area Plan sets out the development framework for Shannon and its environs.

Strategic goals which are relevant to the Strategy are summarised as follows:

- Enable the continued growth and development of Shannon International Airport;
- Pursue a low carbon strategy;
- Deliver an integrated and coherent green infrastructure strategy;
- Safeguard a corridor that could facilitate the future provision of a rail link to Shannon Airport;
- Facilitate and encourage the provision of a direct shuttle bus service from Sixmilebridge railway station, via Bunratty, to Shannon Airport (in the absence of the rail link);
- To facilitate the completion of the southern link road and the continuation of the existing Aerospace Road to serve future airport related development lands;
- To encourage a dedicated airport flyer service between Limerick City and Shannon International Airport;
- Support and facilitate linkages and connectivity between the Shannon Free Zone/Smithstown and the town centre;
- Promote and facilitate improved access, parking and circulation arrangements within Shannon town centre;
- Create a vibrant and viable town centre; and
- Deliver an integrated and coherent green infrastructure strategy, encouraging walking and cycling.

Castletroy Local Area Plan

The Castletroy Local Area Plan came into effect in January 2019. The Plan Area encompasses the University of Limerick and the National Technology Park. Of relevance to the formation of this Strategy includes the following:

- An aspiration to create a Park and Ride facility within the Plan Area;
- An objective to create a bus corridor from UL to the City Centre;
- Provision of walking and cycle networks on a number of public roads and some off-road routes including a link between UL to Annacotty along the Banks of the River Shannon and Mulkear;
- Delivery of the Limerick Northern Distributor Road and access points;
- The widening of a number of roads including the R445, Ballysimon Road and Plassey Park Road to provide for improved bus and cycle lanes.
- Upgrade of some link roads and junctions.

Southern Environs LAP

The Southern Environs Local Area Plan 2011-2017 seeks to 'improve the overall quality of life by improving levels of accessibility; reducing dependence on private car transport; reducing the need to travel; encouraging the use of energy efficient forms of transport and alternatives to the private car'. This document has been extended for a further five years, until 2021. The following key messages have been identified:

- Protect the junctions onto the Southern Ring Road by not permitting new access onto these junctions or developments which would effectively rely on these junctions or create traffic levels that would reduce their design life;
- Prohibit frontage development or the creation of new access points along certain sections of road;
- Promote walking, cycling and public transport;
- Protect existing bus lanes and support the development of further quality bus corridors;
- Provision for possible extensions of bus services into new developments; and
- Improve and create additional facilities for pedestrians and cyclists as opportunities arise.

SUMMARY

This Chapter outlined a summary of key National, Regional and Local level plans and policies relevant to the preparation of the Strategy. A more detailed analysis of a wider range of policy is presented in the accompanying Baseline Conditions and Policy Context Report.

Following this review of existing policies, it is evident that there are long-standing objectives across many sectors which aim to reduce car-dependency, promote active travel modes, tackle climate change and increase accessibility, connectivity and social inclusion. These policies have informed and guided the development of the Limerick-Shannon Metropolitan Area Transport Strategy.

03 STUDY AREA & TRANSPORT CONTEXT

The private car is the dominant mode of travel, but there is a strong walking culture already present within the city. Cycling and public transport have a low mode share.

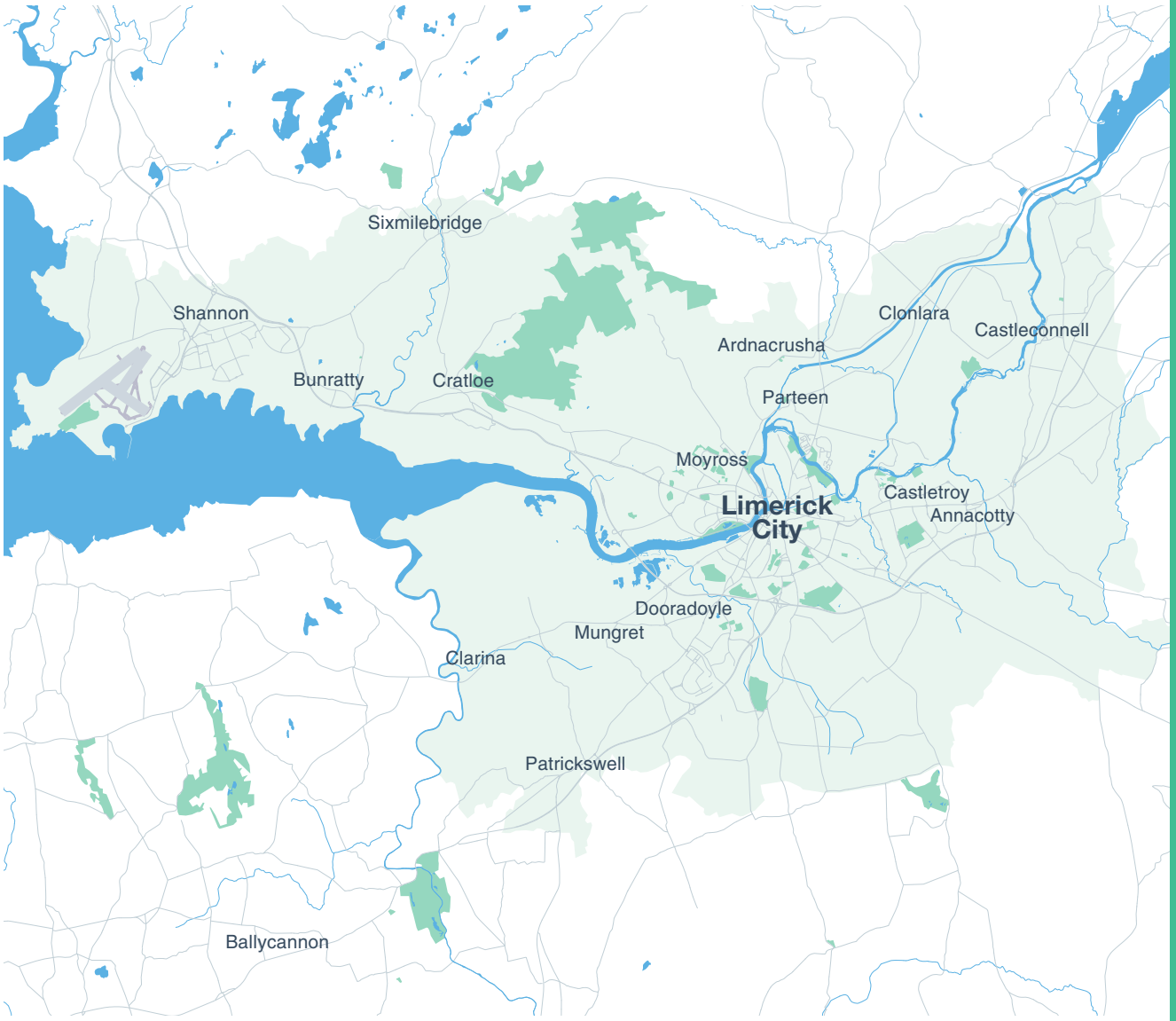
Limerick Metropolitan District Movement Framework Study, 2015

This chapter provides an overview of the existing transport conditions in the LSMA in the context of land-use, transport supply and movement patterns. More detailed analysis can be found in supporting reports. The LSMA includes:

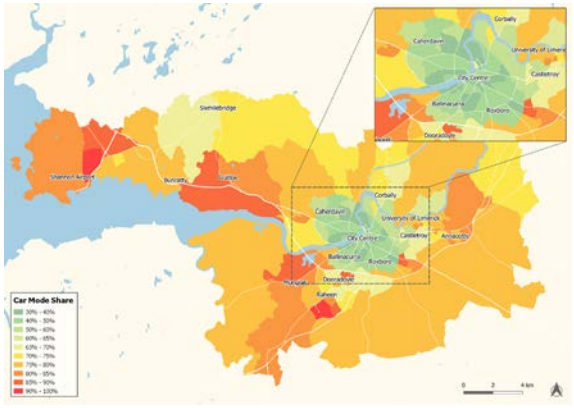
- Limerick City and Suburbs;
- Annacotty;
- Castleconnell;
- Patrickswell;
- Clarina;
- Mungret;
- Ballycannon;
- Shannon;
- Sixmilebridge;
- Ardnacrusha;
- Clonlara;
- Cratloe;
- Bunratty; and
- Parteen.

The LSMA covers 387km2, and has a population of over 132,400 (CSO, 2016). This is made up of approximately 96,800 residents within the Limerick City and Suburbs boundary as defined by the CSO.

Limerick City is the largest urban centre in Ireland's Mid-West Region and the country's third largest city. Shannon is a significant employment centre with assets such as Shannon International Airport and Shannon Free-Zone. Both Limerick City and Shannon are interdependent upon each other, with their complementary functions contributing to a combined strength which is a key economic driver for the Mid-West Region.



LSMA Study Area



LSMA Mode Share

The LSMA is home to four third-level education institutions:

- University of Limerick which is located to the north-east of the Limerick City Centre and has recently announced another campus located in City Centre;
- Limerick Institute of Technology (including Limerick School of Art and Design) which is located to the west of the City Centre;
- Mary Immaculate College to the south side of the City; and
- Shannon College of Hotel Management (part of NUIG) in Shannon.

UL and LIT both have third level facilities in Ennis which attract students from the wider area including the LSMA.

The LSMA is served by:

- InterCity rail services;
- City, regional and Expressway bus/coach and Local Link services; and
- Shannon International Airport (located approximately 20km to the north-west of the City Centre).

Local and Regional Bus Services

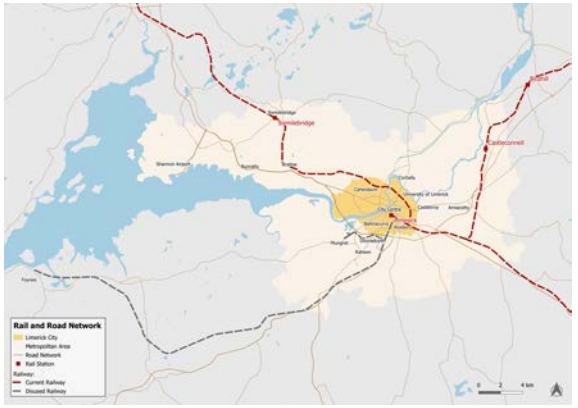
EXISTING DEVELOPMENT PATTERNS

The residential population within the LSMA is concentrated mainly within Limerick City Centre and suburbs while less than 25% is distributed throughout Shannon and the rural areas. The areas with the highest population density of the LSMA are Limerick City Centre, Raheen, Dooradoyle and Shannon town centre.

The distribution of the population within Limerick City extends slightly further east-west than north-south (roughly 10km east-west from Caherdavin to Annacotty and 8km north-south from Corbally to Raheen). Similarly, population distribution in Shannon extends further east-west (roughly 4km) than north-south (less than 1.5km).

Many of the main employment centres are clustered together outside of the City Centre, such as Raheen, National Technology Park and University of Limerick. There are also a number of light industrial parks and out-of-town retail outlets such as Limerick One and Parkway Shopping Centre.

Shannon Airport, Freezone and Town Centre are significant employment centres.



Rail Network

EXISTING LSMA MOVEMENT CONTEXT

There are 415,000 trips originating within the LSMA on average each weekday (over 24 hours). The category 'all other trip purposes' makes up the highest percentage of trips in the morning peak, representing 37% of the total. This is followed by trips to places of education (34%) and commute trips (26%). 'All other trip purposes' refers to shopping, leisure, business and visiting friends or family and represent 51% of all trips over the course of the whole day.

The majority of travel demand is internal for Limerick City and suburbs and Shannon, with 89% and 68% respectively of morning peak trips having both their origins and destinations in these two areas respectively. Almost half of the trips originating from the Metropolitan Area have their destination in Limerick City and suburbs and about 10% in Shannon. Limerick City is the destination for 8% of trips originating in the Mid-West as a whole and Shannon for 2%.

Whilst outside the Study Area, towns such as Ennis, Newport, Ballina and Nenagh have a functional relationship with urban centres in the LSMA due to it being the key economic driver of the Mid-West region.

The Strategy includes a number of proposals to improve connectivity with the wider region beyond the LSMA including bus, rail, cycle and road infrastructure and services to cater for these travel patterns.

LSMA Mode Share

The current limitations of public transport provision in the LSMA are reflected in the low mode share for sustainable travel modes. The overall LSMA mode share for the 24-hour demand is as follows:

- Public transport: 8%;
- Walking: 29%;
- Cycling: 2%; and
- Car: 61%..

CURRENT TRANSPORT PROVISION

Local and Regional Bus Services

The LSMA network, operated mostly by Bus Éireann, offers a reasonably extensive coverage of the City. Most of these services are cross-city radial routes, three of which terminate in the City Centre. Dublin Coach operates two further city bus services.

The frequency of services in Limerick City and suburbs varies across the network and there are only two 'high-frequency' routes (generally every 15 to 20 minutes). These correspond to Route 302 from Caherdavin to City Centre and Route 304 from Ballycummin to UL. The remainder low-frequency bus services have a higher concentration in the south of the city, reflecting the distribution of population.

Limerick City Centre has an extensive one-way traffic system that has a negative impact on public transport operations as bus routes are separated on inward and outward legs.

This can be confusing for infrequent bus passengers and visitors to the City unfamiliar with the bus network. Certain bus routes are also separated due to restricted road widths.

In addition to the city services, there are several regional Bus Éireann services providing links from different settlements within the wider County Limerick to the LSMA as well as from counties Clare, Offaly, Tipperary, Cork, Kerry, Galway, Waterford and Dublin. The Ennis-Shannon-Limerick bus services is of vital important to the commuter corridor. These regional bus services operate from Colbert Station. The bus station is in need of rejuvenation.

Further regional bus services are provided by the private operators CityLink, Dublin Coach, Kelly Travel and Kenneally's Bus Service to Galway, Cork and Dublin. These regional services operate from Arthur's Quay and third level institutions.

In Shannon, only one low-frequency bus service serves the town centre and provides connections to Limerick Colbert Station, Ennis Bus Station, Bunratty, Shannon Airport and infrequent connections to Sixmilebridge. Bus routes operating within Shannon and Environs only provide connections to Shannon Airport and Shannon Industrial Estate

Rail Network

Limerick City has a number of InterCity services providing direct rail connections from Limerick Colbert train station to Ennis and Galway and connections via Limerick Junction to Dublin, Cork, Clonmel, Tralee and Waterford.

Limerick has the highest number of connections from Dublin, most of which are provided via an interchange at Limerick Junction on the Dublin-Cork line.

Castleconnell to the east of the LSMA, has three direct services a day to Limerick Colbert on the Ballybrophy-Limerick line. Other destinations on this line include Nenagh, Cloughjordan and Birdhill in Co. Tipperary.

The plaza around Colbert Station was recently upgraded which enhanced the station environment. However, the station lacks a clear and obvious connecting pedestrian route to the City Centre.

There is no rail line serving Shannon, with the closest station located in Sixmilebridge, approximately 6km east of Shannon town centre. Bus route 343 operated by Bus Éireann provides an infrequent connection between Shannon Town Centre and Sixmilebridge station. It is noted that the Shannon Town and Environs Local Area Plan includes and objective to link Shannon with Sixmilebridge station via a direct shuttle bus in the short-term. A freight rail line between Limerick and Foynes Port has been inactive since 2001.

Cycle Network

The LSMA cycle network has been developed incrementally over many years. The existing network contains many barriers to cycling, both real and perceived, natural and manmade. The primary natural barriers to cycling are the watercourses including the River Shannon, the Abbey River, the Mulkear River, the Ballynaclogh River and the Park Canal.

Of these watercourses, the River Shannon is the principal natural barrier to movement. There are currently 3 vehicular bridges crossing the River Shannon from the west, Caherdavin area. None of these bridges currently provide dedicated cycle facilities. The potential to retrofit these bridges is limited due to their width.

The LSMA also contains a number of physical infrastructural barriers to cycle movement. These include three railway lines, a motorway/dual carriageway on which cycling is prohibited, one-way and circuitous routes, junctions with little or no provision for cyclists, e.g. large diameter, multi-lane roundabouts and high traffic volumes and speeds.

One of the most recent improvements was the public Bike Share Scheme introduced in 2014 and that currently comprises 23 stations and 215 bikes across the City Centre.

There are many Advanced Stop Lines (ASLs) provided throughout the City Centre which are marked beyond the stop line for general traffic to give cyclists some priority at junctions.

The Southern Environs Local Area Plan 2011-2021 sets out a cycling strategy proposal to extend the network. Placing an emphasis on routes to places of education, recreation and shopping areas. Target locations to be linked by the proposal include Raheen, Dooradoyle, the Crescent Shopping Centre and Limerick City. Mungret-Loughmore, which is defined by the LAP as a primary development area, has a partially constructed cycle lane extending along the Regional Road R859 from Quinn's Cross to Mungret Village.

Shannon's cycle network is very limited and lacks consistent cycling infrastructure. There is limited cycle parking and few cycle lanes, the main one being located along the R471, between Shannon Town Centre and Ballycasey Cross. The Shannon Town Green Infrastructure Plan published in 2013 contains proposals on developing the town's cycling infrastructure.

Pedestrian Network

Walking levels and the quality of the pedestrian environment vary considerably across the LSMA. This reflects differing intensities of land use, changing movement and place priorities and community severance caused by physical barriers such as waterways and heavily trafficked vehicular routes.

The quality of the pedestrian environment in the City Centre has improved in recent times following the partial implementation of a public realm strategy and the pedestrianisation of some streets.

The pedestrian network in Shannon and its environs is shaped by the development pattern of both residential and industrial areas, typical of suburban locations. This pattern tends to reduce permeability and requires pedestrians to walk longer distances than necessary to reach their destinations, though permeability around schools has improved in recent years.

Existing pedestrian paths have adequate widths and provide protection from motor vehicles, especially near the Sky Court Shopping Centre and within residential areas.

The overall pedestrian network is often interrupted or limited by main roads, on-street and off-street parking and grass verges. In some cases, pedestrian paths are provided only on one side of the street. There is also a lack of active frontage with many buildings set back from the footpath which can make an area feel unsafe and detract from its attractiveness.

Across the LSMA, cars parked illegally on the footpaths and at dropped kerbs is a recurring issue, reducing sightlines and forcing pedestrians including those with mobility impairments onto the carriageway. Other barriers to walking and access to public transport for people with disabilities and push chairs, include insufficient crossing times at signalised junctions, street clutter and a lack of public seating and toilets.

Recognising the importance of pedestrian movement in meeting the transport requirement of the LSMA, a key objective of the Strategy will be to improve the quality of the pedestrian network and environment to support safer and higher levels of walking and accessibility to services and other forms of transport.

Strategic Road Network

The LSMA is served by an existing well-developed road network. The movement of goods and services to and from the LSMA is supported by the strategic road network comprising:

- M7 Limerick – Dublin (Ten-T Core);
- M20 Limerick – Patrickswell (Ten-T Comprehensive);
- N20 Patrickswell – Cork (Ten-T Comprehensive);
- M18/N18 Limerick – Galway (Ten-T Comprehensive);
- N69 Limerick – Foynes (Ten-T Core);
- N21 Limerick – Tralee (Ten-T Comprehensive);
- N24 Limerick – Waterford;
- N19 Shannon Airport – M18; and
- N18 Shannon – Limerick City (Ten-T Comprehensive).

The N18 is tolled between Junction 2 and Junction 4 on the outskirts of Limerick City. Analysis on tolled traffic growth carried out by TII in 2015 suggests that higher congestion levels in Limerick City results in a transfer of HGV traffic to the N18 Limerick Tunnel. Other studies, however, suggest the diversion of HGV traffic to the City Centre to avoid the toll.

HGV traffic in Limerick shows strong links between the areas of the M7 north and south, the section of the N18 between the M7 and N69, and local roads between City Centre, Dooradoyle, Castletroy and Garryowen. The highest levels of HGV activity take place during the inter-peak period.

Maintaining the capacity of the strategic roads with appropriate levels of service is of critical importance for growing the economy of LSMA.

Whilst there is significant capacity in parts of the strategic road network, there are also high volumes of traffic in certain areas resulting in congestion at pinch-point locations including the Newport (Mackey) Roundabout, Ballysimon and Shannon.

The LSMA lacks a strategic orbital corridor to the north of the city which often results in strategic traffic and HGVs routing through the City Centre including the N18 (Shannon Bridge) and Dublin Road.

The enhancement and management of the road network for the movement of strategic traffic will be an important aspect of the LSMA's future transport system.

Regional and Local Road Network

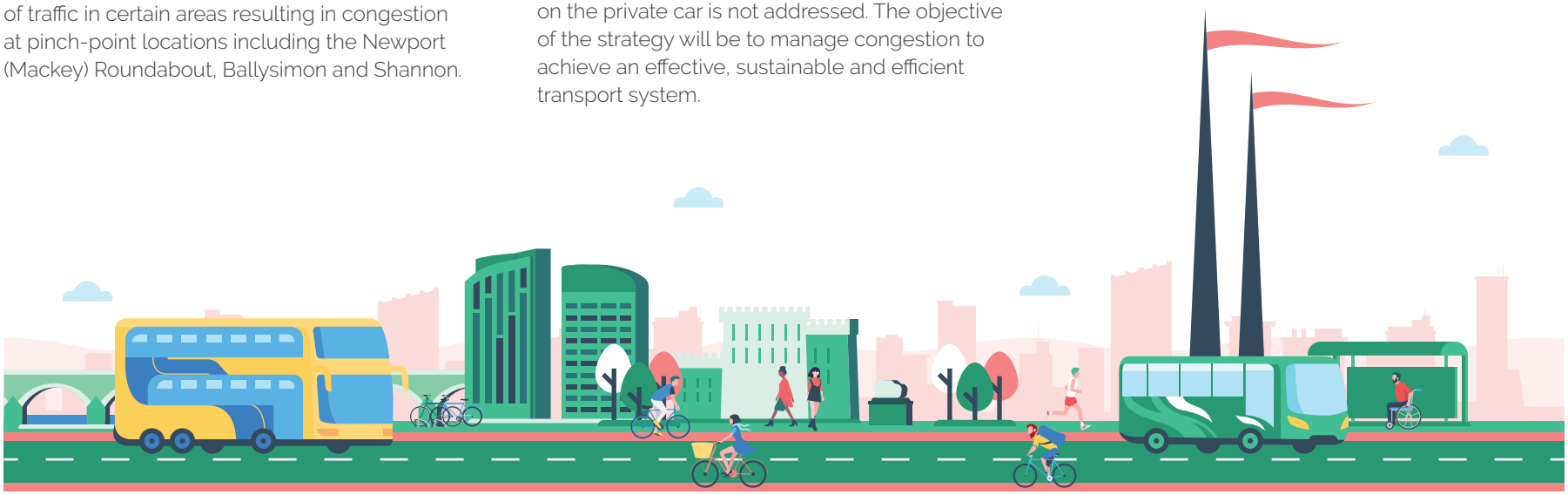
The local road network provides access to local services and links communities. The current local road network has evolved over many years but remains unsuitable for the efficient movement of people and goods.

Congestion is experienced during peak periods within the City Centre and on radial routes. Traffic congestion and delays will inevitably rise with future growth if the current dependence within the LSMA on the private car is not addressed. The objective of the strategy will be to manage congestion to achieve an effective, sustainable and efficient transport system.

RECENT IMPROVEMENTS

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

- Construction of the N18 Limerick Tunnel;
- Improvements to the transport infrastructure and bus routes in Limerick, such as Ballinacurra Road;
- Redevelopment of Colbert Station Plaza;
- Development of the Limerick Smarter Travel walk and cycleway from UL to City Centre;
- Improvements to the cycle network from Mungret to Raheen;
- Development of the Rhebogue Neighbourhood Greenway;
- Implementation of Limerick Public Bicycle Sharing Scheme (BSS);
- N19 Airport Access Scheme; and
- River Walk in Shannon.




Coca-Cola
zero

04 LAND USE

The target is for at least 40% of all new housing to be delivered within the existing built-up areas of cities, towns and villages on infill and/or brownfield sites.

National Planning Framework 2040

It is acknowledged that the historic pattern of development across the LSMA has contributed to high rates of car-dependency. In order to ensure projected population and employment growth happens in a sustainable manner, it is critical that land use and transport planning are closely aligned. Integrated transport and land use planning can reduce the need to travel by car and support the functioning of a connected, sustainable transport system.

The NPF provides a policy on renewing and developing existing settlements and infill brownfield sites, rather than continuous expansion and sprawl of cities and towns into the countryside, at the expense of town centres and smaller villages. It sets a target of at least 40% of future housing development to be within and close to the existing 'footprint' of built-up areas.

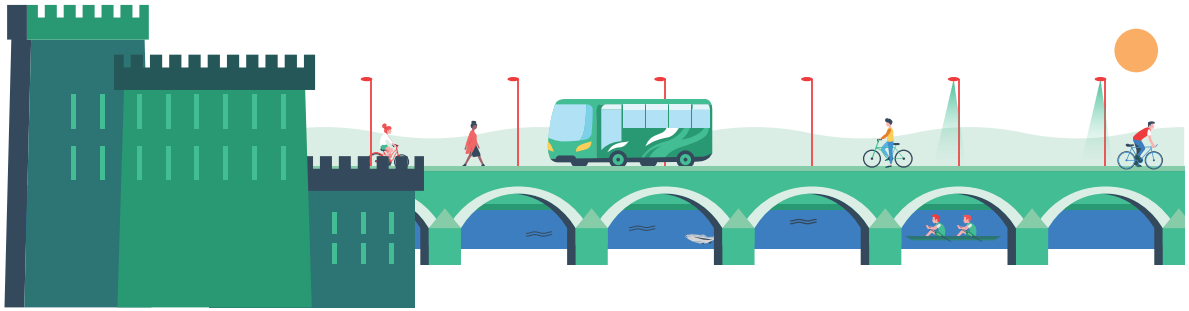
The 2040 LSMATS land use scenario was developed by the National Transport Authority in collaboration with both Local Authorities.

NATIONAL GROWTH

The NPF estimates that the population of Ireland will increase by approximately 1 million people by 2040 with a requirement of an additional 600,000 jobs and a minimum of 500,000 additional homes. The NPF recognises the role that Limerick and the other regional cites of Cork, Galway and Waterford have to play in providing a counter-weight to Dublin and assigned a minimum population growth forecast of 50-60% to each regional city.

NPF National Policy Objectives

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



The key NPOs relevant to the development of LSMATS include:

- **NPO 1b:** Southern Region population growth of between 340,000-380,000 to 2040 (target population of almost 2 million);
- **NPO 1c:** 225,000 additional people in employment in the Southern Region (880,000 in total);
- **NPO 2a:** A target of 50% of future population and employment growth will be focused in the existing five cities and their suburbs;
- **NPO 3a:** The NPF sets a target for at least 40% of all new housing to be delivered nationally within the existing built-up areas of cities, towns and villages on infill and/or brownfield sites;
- **NPO 3b:** Deliver at least half (50%) of all new homes that are targeted in the five Cities and suburbs of Dublin, Cork, Limerick, Galway and Waterford, within their existing built-up footprints;
- **NPO 9:** Settlements outside of 'City and Suburbs' may be identified for significant (i.e. 30% or more) rates of population growth at regional and local planning stages. The NPF makes reference to the fact that these settlements may lie within the commuter catchment of the city or areas that have potential for high sustainable mode shares. This would align with settlements along the existing rail line and future high capacity transport corridors in the LSMA;
- **NPO 27:** Ensure the integration of safe and convenient alternatives to the car into the design of our communities, by prioritising walking and cycling accessibility to both existing and proposed developments, and integrating physical activity facilities for all ages;

- **NPO 68:** MASPs may enable up to 20% of the phased population growth targeted in the principal City and Suburban area, to be accommodated in the wider Metropolitan Area i.e. outside the city and suburbs, in addition to growth identified for the Metropolitan area. The NPF states that this should be subject to any relocated growth being in the form of compact development, such as infill or a sustainable urban extension and/or being served by high capacity public transport and/or related to significant employment provision; and
- **NPO 69:** Statutory arrangements between spatial planning and transport planning in the Greater Dublin Area will be extended to other cities.

REGIONAL GROWTH

The NPF 2040 is translated at a regional level, metropolitan and local level through the production of the RSES, MASP and the Development Plans and Local Area Plans of both Limerick City and County Council and Clare County Council.

RSES Regional Policy Objectives

RSES objectives, underpinned by the NPF, provide a strong framework for LSMATS to shape the distribution of growth targets integrating land use and transport planning. Goal 2 of RSES is: Excellent Connectivity and Sustainable Mobility, which aims to achieve successful integration between land use and transport planning, achieving sustainable higher densities and appropriate uses at nodes serviced by public transport networks.

RSES Policy Objective 10 outlines objectives around Compact Growth in Metropolitan Areas:

- Prioritisation of housing and employment in locations within and contiguous to existing city footprints where it can be served by high-quality public transport, walking and cycling networks;
- Partnership with the Land Development Agency to progress housing and employment delivery in urban centres, focusing on co-ordinating and developing large, strategically located publicly owned land banks, reducing vacancy and increasing regeneration of key sites; and
- Creation of continually updated data bases identifying brownfield, infill sites, regeneration areas and masterplanning and infrastructure packages to enable progress towards achieving compact growth targets. Through active land management initiatives, identify strategic locations for residential growth.

The Limerick Shannon MASP Policy Objective 14 supports an application for the designation and subsequent development of the South Clare Economic/ UL proposed Strategic Development Zone (SDZ), subject to the provision of the Planning Act and all environmental considerations.

The RSES describes this has an exemplar project enabling an early win in the balanced regional development strategy set out in the NPF.

LSMATS LAND USE OUTCOMES

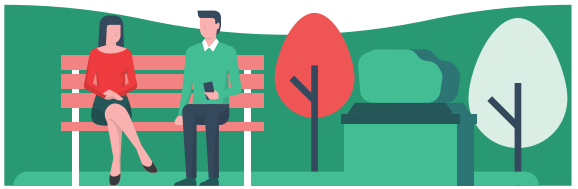
LSMATS aims to service the needs of the existing population and supports the delivery of the 2040 population growth target for the LSMA and attendant jobs and education growth.

The LSMA will be a national driver of population growth and economic activity over the lifetime of LSMATS, particularly for the Mid-West Region.

To support the compact growth aspiration of the NPF, Limerick City Centre will become the focus for significant regeneration opportunities at brownfield locations that include:

- The Opera Site;
- The Georgian Quarter;
- Former Cleeves Site;
- Irish Town;
- A state-owned landbank south of Colbert Station;
- Kings Island;
- UL City Centre at old Dunnes Stores site;
- Docklands development; and
- Arthur's Quay development.

In terms of employment and education, LSMATS supports development along its identified high capacity public transport corridors, to serve University of Limerick, University Hospital Limerick, LIT, Dooradoyle, Mary Immaculate College, the National Technology Park, Shannon Free Zone and Shannon Airport.



LSMATS LAND-USE PRIORITIES

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

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

This will entail the implementation of Public Transport Oriented Development (TOD) principles. TOD may be defined as development which is consolidated around existing or planned rail stations and/or along high-frequency bus corridors at a magnitude and density that provides a critical mass to support the viability of high capacity public transport.

TOD and the consolidation of activity within these catchment areas promotes:

- Local, regional and national connectivity;
- A modal shift toward sustainable travel;
- Critical mass to support the viability of public transport corridors; and
- Safeguarding of the strategic function of the National road network.

LSMATS will provide the opportunity to integrate new mixed-use development at appropriate densities with high capacity public transport infrastructure in conjunction with more attractive walking and cycling networks and public realm improvements.

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

Guided by the principles of the NPF, land use planning in the LSMA will be guided by the following objectives:

- To deliver consolidated development in a manner that can avail of existing transport infrastructure and services, and nearby amenities and facilities, in line with the principles of Public Transport Oriented Development. The objective of this approach is to deliver a critical mass of growth in population and employment which can support the transition to and sequencing of investment to higher capacity public transport infrastructure and services;
- To increase densities in future residential and employment developments. This measure can contribute to a more compact urban footprint that brings more people closer to their destinations and to public transport services;
- Prioritise mixed-use development which reduces the need to travel. This includes ensuring areas are developed in tandem with the delivery of schools, shops and other community services to enable people to choose more sustainable modes of transport such as walking and cycling;
- All new development areas will be fully permeable for pedestrians and cyclists and opportunities to improve permeability for these modes in existing developed areas will be sought. The principle of filtered permeability, whereby through private car traffic is discouraged, will apply; and
- The layout of new developments will prioritise walking and cycling and enable the efficient provision of public transport services.

05 STRATEGY DEVELOPMENT

Key Growth Enabler for LSMA: Provision of a citywide public transport network, with enhanced accessibility from the City Centre to the National Technology Park, UL and Shannon International Airport.

Regional Spatial and Economic Strategy for the Southern Region

LSMATS has been developed by the NTA in collaboration with Limerick City and County Council, Clare County Council and TII.

DEVELOPING THE STRATEGY

LSMATS was developed in an iterative manner to provide a transport network to underpin the ambitious population and employment growth envisaged for Limerick, Shannon and Environs under the NPF to 2040 and beyond.

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

- Review and establish relevant policy and guidance;
- Establish the baseline transport conditions;
- Identify key challenges to be addressed, in consultation with key stakeholders;
- Develop network options based on guiding principles;
- Testing the transport network options with future land use scenarios set by the local authorities;
- Identification of preferred transport strategy; and
- Publication of the draft Strategy for public consultation. Feedback during the consultation will inform the subsequent finalisation of LSMATS.

PUBLIC TRANSPORT NETWORK

Development of an Indicative Overall Public Transport Network

The provision of a significantly enhanced public transport network within the LSMA was a key priority for the Strategy. To help in the early development and assessment of options, six guiding principles were set out that are inherent in all successful public transport networks:

- Provision of sufficient capacity to cater for demand;
- Suitable frequency to attract and service demand;
- High average speeds to offer a quality service and reliability of journey times;
- Direct services to minimise journey times and increase network legibility;
- High level of network coverage to ensure the wider LSMA population has access to high quality public transport services; and
- Providing seamless interchange between modes to enhance accessibility and integration.

The adoption of the principles outlined above will result in an attractive, public transport service that produces a realistic alternative to the private car.

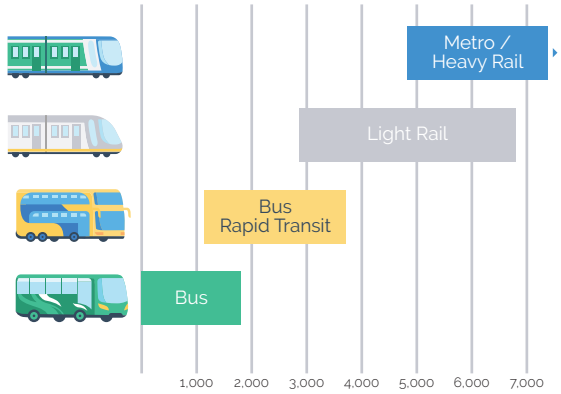
Key strategic public transport corridors and supporting public transport services for the wider LSMA were identified, underpinned by these principles.

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

Corridor Specific Public Transport Network Options

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

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



Source: UITP Conference 2009. Public Transport Making the Right Mobility Choices

This approach gives an appropriately scaled public transport network that has the flexibility and scalability to adapt to changes in travel demand levels and distribution. Based on the radial demand and the orbital demand, the proposed route, service type, service frequency and level of priority was developed for each corridor.

The future public transport network structure will have a number of components that will best provide for future public transport demand within the LSMA:

- **Rail Network:** Improvements to the existing rail corridors;
- **Core Bus Network:** A comprehensive network of high frequency bus services providing radial services to other corridors and orbital services across the network;
- **Public Transport Integration:** Provision for interchange opportunities together with information provision and revised fare structures; and
- **Supporting Measures:** Further measures to support the delivery of an effective public transport system including: parking management, Park and Ride facilities, demand management measures, mobility management plans and behavioural change programmes

CYCLE NETWORK

The development of the Cycle Network will be fundamentally based on the proposals contained within the Limerick Metropolitan Cycle Network Study and the Shannon Town and Environs LAP 2012-2018 with additional planning work required to deliver a full LSMA cycle network.

WALKING NETWORK

The Walking Network focused on the existing Limerick Municipal District Movement Framework, Shannon and Environs Local Area Plan and Development Plans and Local Area Plans from both Local Authorities. These plans were reviewed to ensure integration and alignment with the proposals for the cycle, public transport and road network.

ROAD NETWORK

A review of the Road Network demand, which includes road network travel demand from beyond the LSMA, was undertaken to determine the requirement for road network improvements. National, Regional and city road networks were considered. A review of currently proposed road network infrastructure was undertaken and aligned to policy and demand needs within the LSMA. The road network was also reviewed with the aim of aligning road network provision with public transport, walking and cycling provision.

STRATEGY OUTCOMES

The network approach as outlined above can best serve the current and future land-use trend in the LSMA. It would represent an integrated public transport network offering residents of, and visitors to, the LSMA end-to-end access to high-quality services plus the ability to conveniently access more destinations than the existing network would allow.

The Strategy Outcomes include:

- A scalable transport network framework to better manage the increased demand for travel resulting from significant population growth
- Prioritised public transport, walking and cycling in urban areas across the Limerick-Shannon Metropolitan Area
- Enhanced social inclusion through the provision of a more equitable transport system and wider public transport accessibility to areas of deprivation;
- A safer transport network where investment is priority-focussed and evidence-based
- Improved public health and wellbeing by promoting more physical activity in, either as walking and cycling trips in their own right or as part of linked trips with public transport
- Reduced transport-related emissions through a provision of a cleaner, greener public transport fleet, a modal shift to walking and cycling, a reduction in private car use and a shift towards low emission vehicles
- A robust economic case for transport investment in the LSMA.

WALKING

56m annual walking trips

31% increase in walking trips between 2016 and 2040, 37,300 extra daily trips

35% increase in footfall on O'Connell Street

Improved **accessibility** to Public Transport

Enhanced **Wayfinding** System

57km of greenways

46,000 walking trips made in the AM peak period

Age-Friendly Town Centres

Safer Routes to School

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

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

06 WALKING

Encouraging walking and cycling, linked to easier access for a broad range of ages and abilities, will ensure liveliness and interaction on streets, thereby increasing vibrancy and improving commercial and retail activity.

Design Manual for Urban Roads and Streets 2019

All journeys begin and end by walking irrespective of other modes used. Everyone is a pedestrian at some point in their day. Though often undervalued, walking links all modes of transport and is therefore critical to achieving the aims of the Strategy. The pedestrian environment must be safe, accessible, interesting and attractive for pedestrians of all ages and abilities.

EXISTING NETWORK AND OPPORTUNITIES

Walking has been proven to bring significant social, economic, environmental, and health and well-being benefits to society.

Despite these benefits, a range of barriers to walking are evident throughout the LSMA. These include, but are not limited to:

- Obstacles to movement such as street clutter and parked vehicles on footpaths;
- The one-way traffic system in Limerick City Centre, which encourages higher traffic speeds;
- Inconsistent provision and quality of footpaths, particularly in metropolitan town and village centres;
- Cul-de-sacs and a lack of permeability;
- Lack of safe crossing opportunities;
- Ribbon-based development; and
- Lack of pedestrian priority across local junctions.

There is significant opportunity to capitalise on recent momentum and recent proposals. These include:

- National and regional compact growth objectives to increase density and activity within existing built-up areas;
- The 'Great Streets' proposals transformation of O'Connell Street, Catherine Street and Henry Street;
- Recent upgrades to Shannon Town Centre park and trails;
- Proposed World Class Waterfront Project including proposed new structures over the River Shannon and Abbey River;
- Limerick Pedestrian Network;
- The superblock and traffic management concept advocated by Liveable Limerick; and
- The Walkable Neighbourhood Map recently published by LCCC.

KEY OUTCOMES FOR WALKING

The key outcomes for walking are as follows:

- An increase in mode share for all trips, particularly for short journeys;
- An increase in linked-trips with public transport, cycling and other forms of micro-mobility;
- A fully accessible, safe, and attractive pedestrian environment suitable for all ages and abilities;
- All new and retrofitted schemes will be designed in accordance with the overarching principles set out in DMURS; and
- A higher standard of urban design that prioritises safer and more efficient pedestrian movement over that of the private car.

LSMATS WALKING NETWORK

The overarching principles and objectives identified in documents such as the Limerick Metropolitan District Movement Framework and Shannon and Environs Local Area Plan 2012-2018 have been integrated with this Strategy.

OBJECTIVE WK1

Improvements to the Pedestrian Environment

It is the intention of the NTA and the local authorities to:

- Develop a primary pedestrian network throughout Limerick City, Shannon and other Metropolitan towns;
- Retrofit neighbourhood infrastructure to enhance walkability and increase the attractiveness of walking such as permeability and passive surveillance;
- Lower traffic speeds to improve pedestrian safety in residential areas;
- Improve junctions and pedestrian crossings through measures such as pedestrian countdowns, longer crossing times and crossings that align with desire lines; and
- Only invest in schemes that are of sufficient standard to meet the objectives of the Plan.


SLOW

Limerick City
Whilst Limerick City Centre's historic core is compact, pedestrian access is inhibited in some areas by a limited number of pedestrian bridges over the River Shannon, substandard crossing facilities, wide multi-lane one-way streets and high volumes of vehicular traffic and speeds on approach roads. Limerick City Centre has significant potential to enhance its walkability due to its favourable flat topography and recent public realm improvements including pedestrian priority areas and improved crossing facilities.

Considerable growth within Limerick City Centre is envisaged up to 2040. It is understood that a number of projects such as the Digital District, Opera Site, Cleeve's Site, redevelopment of Arthur's Quay and Living Georgian City Project will be progressed over the lifetime of the Strategy. These developments will attract increased pedestrian activity across the City meaning that an uplift in the quality of the pedestrian environment is required.

Walkability improvements envisaged for the City Centre over the lifetime of the Strategy include:

- O'Connell St. Improvements;
- Re-allocation of road space to prioritise pedestrian movement;
- Key junction improvements to prioritise pedestrian connectivity and permeability;
- Matching crossing facilities with pedestrian desire lines;
- Removal of street clutter;
- Improvements to the city-wide wayfinding network;
- Enforcement of illegal parking on footpaths;
- Undertake regular Walkability Audits with a variety of stakeholder groups;
- World Class Waterfront Project including a new pedestrian/cycle bridge over the River Shannon;
- Enhanced connectivity between the City Centre and Colbert Station; and
- Adequate provision of publicly-accessible toilets, lighting and seating.

In 2019, the redesign of O'Connell St. was approved by Limerick City and County Council, which will provide for a much-enhanced pedestrian environment on the street.

In 2015, Limerick City and County Council published the Design and Public Realm Code for the Limerick Regeneration Areas to complement the Regeneration Framework Implementation Plan. It provides guidance on design of streetscape and street permeability with a focus on Southill, Ballinacurra Weston, St. Mary's Park and King's Island, and Moyross.

Strategic Walking Routes
The following routes connect residential areas to key areas of employment and third-level education in Limerick City Centre and suburbs.

It is envisaged that these will be upgraded in tandem with BusConnects and enhance the pedestrian (and cycle) network to enable greater levels of walking commuter trips or as part of linked-trips with public transport.

OBJECTIVE WK2

Limerick City Strategic Pedestrian Projects
It is the intention of the NTA and the local authorities to:

- Upgrade the quality of the pedestrian environment in Limerick City Centre.
- Secure improvements to the walking network in tandem with the implementation of BusConnects to prioritise multi-modal travel.
- Realise the potential of the World Class Waterfront Project.

The routes include, but are not limited to:

- **St. Nessan's Road –** UHL, Dooradoyle and Ballinacurra Crescent Shopping Centre;
- **Ennis Road;**
- **LIT / Old Cratloe Road Area –** Thomond Park / Moyross;
- **University of Limerick Area –** R445 Dublin Road and Plassey Park Road / Castletroy / Annacotty;
- **Ballycummin Road –** Raheen Business Park;
- **Corbally Road / Athlunkard Avenue –** Kings Island;
- **Canal Route –** connecting Shannon Fields to UL and the City Centre;
- **Rhebogue Neighborhood Greenway;**
- **Shannon town centre to Shannon Free Zone;**
- **Childers Road;** and
- **R527 Ballysimon Road.**

New Pedestrian Bridge/World Class Waterfront Project
Limerick City and County Council have secured funding for a World Class Waterfront Project which proposes to transform the quayside of Limerick City. A new pedestrian/cycle bridge over the River Shannon is proposed as an element of this Project, as well as bridges over the Abbey River.

Metropolitan Town Centres
Given the high level of out-commuting experienced in the Metropolitan towns, walking should be promoted as part of linked trips with public transport. The pedestrian environment around bus stops and train station should be improved in Cratloe, Shannon, Sixmilebridge and other metropolitan town and village centres. These will be undertaken in tandem with land use proposals that consolidate village centres, strengthen their place function and reduce the ribbon-development patterns evident in villages like Clarina and Patrickswell. LAP objectives for the pedestrian environment for Castleconnell, Askeaton, Castletroy and Patrickswell are supported by LSMATS.

OBJECTIVE WK3

Metropolitan Town and Village Centres
It is the intention of the NTA and the local authorities to:

- Complete the improvements to the pedestrian environment set out in the Shannon Town and Environs LAP; and
- Complement the consolidation of development around existing LSMA town and village centres with public realm improvements that facilitate a greater level of safer walking trips.

Shannon
Until relatively recently, the pedestrian network in Shannon and its environs has been shaped by development layouts that have favoured movement by private vehicles over the pedestrian, which has resulted in an unattractive environment. Wayfinding in Shannon can be confusing due to an unclear hierarchy of streets, a lack of active frontage and visual cues such as landmarks and gateways.

The challenges for Shannon into the future include the need to reform and recreate pedestrian linkages between existing and new development, such as the Shannon Free Zone and residential areas, by improving:

- Legibility;
- Permeability; and
- Connectivity.

Shannon Town and Environs Local Area Plan proposes a Placemaking Framework which seeks to address these issues through the creation of a central square and a series of key nodes and routes. Clare County Council recently transformed the existing Shannon park woodlands and the adjacent Rineanna Park into a flagship Town Park. Further improvements in line with the LAP are envisaged over the lifetime of the Strategy.

Sixmilebridge
Sixmilebridge has a compact town centre, however, the pedestrian environment is of mixed quality and car dominated. The focus will be on improving the connection between the train station and the town centre. Streetscape improvements, and infill development with active frontage and improved connectivity for pedestrians across the river should be undertaken to improve overall north-south connectivity.

Bunratty
Bunratty village centre is located off the N18, along the Local Old Bunratty Road. The village is a major tourist destination within the LSMA due to the Bunratty Castle and Folk Park. Roadstone Wood Quarry is also located along this road, resulting in HGV traffic routing through the town.

To accommodate the projected visitor numbers, the public realm along the Old Bunratty Road needs improvement including the upgrade of footpaths and crossing facilities.

Cratloe
The pedestrian environment in Cratloe is challenging due to the dispersed, sprawling nature of services and residential areas along the R462, and as a result lacks sense of place. The focus should be on strengthening the village centre between Wood Road and Cratloe Cross and improving the streetscape in this area would improve pedestrian safety and comfort, create a sense of place and enhance connectivity to public transport.

Ardnacrusha
The focus for pedestrian improvements should be on creating a village centre and strengthening walking connections and permeability between residential areas, retail and community facilities.

Clonlara
The village of Clonlara has developed over time along a crossroads, resulting in linear development. The focus should be to consolidate development around the village centre, strengthen the gateways on the approach into the village and improve the junction geometry at the intersection of Springfield and Church Fields to calm traffic and improve the pedestrian environment.

Parteen
The focus for improving the pedestrian environment in Parteen should be to consolidate land use around a village centre. Improvement to walking conditions and permeability between the national school, Scoil an Phairtin, and surrounding residential estates should be strengthened.

South Clare Economic/ University of Limerick Strategic Development Zone (SDZ)
The RSES contains an objective to support the designation and subsequent development of the lands north of University of Limerick, subject to the provisions of the Planning Act and other considerations as the South Clare Economic SDZ. LSMATS proposes that an Area Based Transport Strategy should be carried out for the SDZ to ensure the creation of permeable and walkable neighbourhoods from the outset that minimise car use.

Patrickswell
Patrickswell Village Renewal Scheme was developed in 2016 and consisted of proposals to upgrade the public realm, remodel the layout of the Main St. to improve traffic management and provide a safe walking environment for pedestrians. Patrickswell LAP has an objective to retrofit and safeguard the permeability of residential and amenity areas to each other and the town centre. LSMATS supports this objective to achieve increased permeability. It also contains an objective to implement an off-road footpath and cycleway along the River Barnakyle.

Annacotty
As part of improvements to the wider UL area, the pedestrian environment in Annacotty will be enhanced.

Clarina
The focus for Clarina will be to discourage further dispersed linear development, as a means of ensuring future residents live within walking distance of services.

Castleconnell
In accordance with the Castleconnell LAP (extended to 2023), the focus for Castleconnell is to enhance its natural and built environment, consolidate development around the village core and improve pedestrian linkages between the village and train station.

Local Amenity Routes
Amenity routes provide a linkage between and improve access to areas of public open space and recreational amenities.

Local amenity routes normally cater for both pedestrians and cyclists. Minimising conflict between pedestrians and cyclists will become a more pressing concern as the popularity of these areas increase. Where full segregation between pedestrian and cyclist movement is not possible, site-specific interventions including traffic calming of adjacent residential streets, low level bicycle rumble strips and considerate walking and cycling campaigns to reduce conflict may be appropriate. Shared pavements for pedestrians and cyclists are often not an appropriate response and cause conflict between a range of users, particularly in a constrained environment.

Limerick's waterfront location combined with its greenways and many green spaces offers considerable opportunities to create green-blue corridors throughout the city and suburbs connecting these areas.

The benefits of green-blue corridors are multi-faceted including:

- Promote positive health and wellbeing;
- Improve air quality;
- Protect and increase urban biodiversity;
- Enhance access to nature; and
- Contribute to flood management.

Amenity walks within and through Castletroy offer significant potential for tourism development, particularly along the River Shannon, Groody and Mulcair. An objective of the Castletroy Local Area Plan states that the Council will seek to ensure that every new residential unit in new housing estates is located within 100m walking distance of a pocket park/ play lot, small park, or local park.

OBJECTIVE WK4

Leisure and Recreation Routes
It is the intention of the NTA and the local authorities to:

- Upgrade walking facilities linking green spaces, the River Shannon and other recreational areas to create green-blue corridors to promote positive physical and mental well-being.

Shannon and Environs Local Area Plan identifies four looped walks which connect the town centre to the leisure centre, various parks and woodlands, Shannon Free Zone and so on:

- Estuary Trail West;
- Slí Na Mara Trail;
- Estuary Trail East; and
- Free Zone Estuary Trail.

SUPPORTING MEASURES

Attractive, interesting and accessible street environments encourage people to walk. The following sections outline supporting measures to create these environments, with more details provided in the 'Supporting Measures' chapter.

OBJECTIVE WK5

Supporting Measures for Walking

It is the intention of the NTA and the local authorities to:

- Enhance the existing wayfinding system and legibility of Limerick City and key destinations across the LSMA;
- Ensure pedestrian infrastructure is inclusive and accessible for all individuals using Universal Design principles and collaboration between a diverse range of stakeholders; and
- Continue to implement behavioural change initiatives that promote walking provided through workplaces and schools, e.g. Smarter Travel, and initiatives such as Safe Routes to School and School Streets.

Accessibility and Universal Design

The accessibility of the public realm for all individuals is essential. The principles of Universal Design will be followed in the implementation of public realm and streetscape improvements.

Universal Design is the design of an environment so that it can be accessed, understood and used to the greatest extent possible by all people regardless of their age, size, ability or disability; including physical, cognitive and sensory.

Age-Friendly Towns

Both Clare County Council and Limerick City and Country Council are members of Age-Friendly Ireland and have adopted their own Age-Friendly Strategies.

This includes the adaptation of the built environment and transport network to respond to the needs of our ageing population. Anticipated changes to the age-profiles across the LSMA will require the adaptation of public realm and transport networks to consider the varied needs of older people, including those with reduced mobility and/or cognitive, visual or hearing impairments and those with buggies.

Measures include the adequate provision of public seating, wayfinding infrastructure and tactile paving.

Walking Routes to Schools

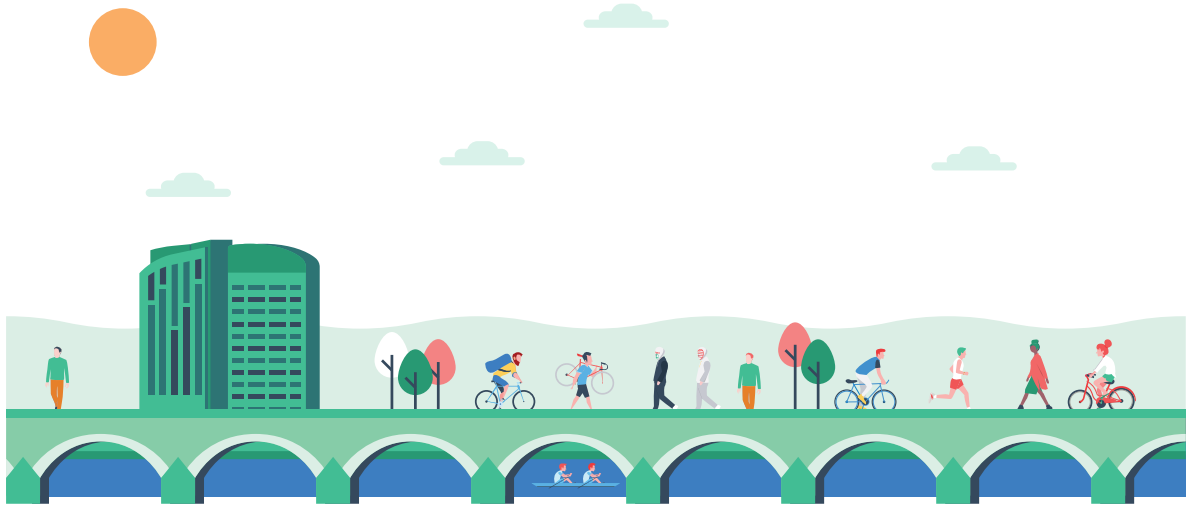
There are high levels of car usage for relatively short trips to places of education, particularly among primary school students. Walking will become a safer and more attractive choice through the creation of safe, legible and pleasant walking routes within the immediate vicinity of schools.

Further detail in relation to measures for school travel is provided in the 'Supporting Measures' chapter.

Wayfinding

Lack of awareness of routes and distances to destinations is often cities as a barrier to walking.

A Walkable Neighbourhood Map of Limerick City was launched by Limerick City and County Council in 2019. It presents key locations and points of interests within the City Centre, designed to resemble a traditional public transport map.




Raheen
Bus Éireann

Future iterations of wayfinding signage in Limerick (and the LSMA more generally) should use the walking times and legibility exhibited in the map as a template.

Permeability

A permeable street network is a key component of supporting more walkable environments. Much of the residential development layout across the LSMA in recent decades has favoured impermeable, cul-de-sac layouts leading to circuitous routes to local services, schools and public transport stops.

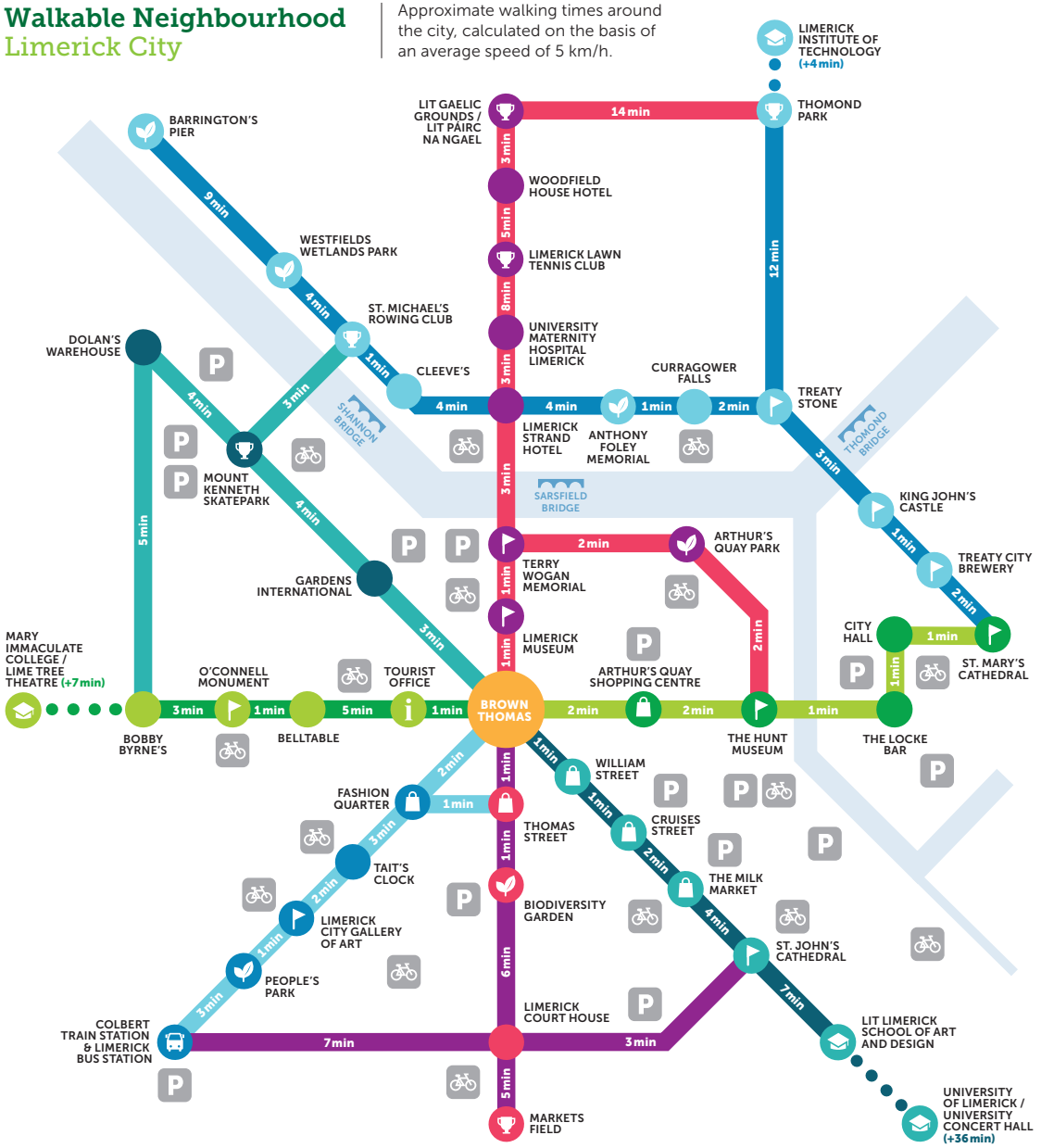
Measures to improve permeability for pedestrians include:

- Opening walled boundaries/cul-de-sacs;
- Traffic filters to restrict rat-running by vehicles whilst facilitating street play;
- DIY Streets;
- Requiring quality design and pedestrian accessibility audits in planning applications for new residential areas;
- Provision of pedestrian and cycle crossings to link areas that are separated by roads or other physical barriers; and
- Planning and design that ensures accessibility for persons with mobility challenges.

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

Walkable Neighbourhood
Limerick City

Approximate walking times around the city, calculated on the basis of an average speed of 5 km/h.



Created by Rian MacGiobhuin © Limerick City and County Council

CYCLING

9m
annual
cycling trips

6,200
cycling trips made in the AM peak period easing congestion

46km Primary Cycle Network

41km Secondary Cycle Network

40km Feeder Cycle Network

57km Greenway Network

Positive impact on **mental** health

Expansion of **Bicycle Sharing** Systems

Enhanced End-of-Trip **facilities**

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

Strategy cost estimate is approximately
€69m
(+BusConnects cycle elements)

07 CYCLING

The vision of a Cycle Network Study for the Limerick Metropolitan Area is to develop a consistent, clear and continuous network of urban and suburban cycle networks throughout the Limerick Metropolitan Area to ensure cycling becomes a realistic choice as a mode of transport.

Limerick Metropolitan Cycle Network Study 2016

The vision for Shannon town is that it will become a bicycle-friendly town. Cycling will become a normal way to get about, especially for short trips. Cycling will be promoted to cater for commuting, recreational, tourist and competitive cyclists.

Shannon and Environs Local Area Plan 20112-2018

Cycling is a low cost, sustainable and growing mode of transport. Limerick City has a lot of untapped potential to significantly enhance its cycling offer and culture with its flat topography, compact design and the fact that a journey from the City Centre to the urban edge can be undertaken in less than 30 minutes.

The NDP commits to the delivery of cycle networks for all of Ireland's cities. Translating this at a regional level, the Limerick Metropolitan Cycle Network Study and the Shannon Town and Environs Local Area Plan form the basis of LSMA cycle network. Additional proposals will align with BusConnects schemes, the LNDR and Park and Rides.

High-quality infrastructure and supporting measures are required to cultivate a cycling culture in the LSMA, and to give all individuals the choice to cycle, including:

- Identification of Primary, Secondary, Inter-Urban, Feeder and Greenway Routes, and Quiet Ways;
- Facilities designed to National Cycle Manual standards including cycle parking;
- Full or light segregation from other modes to ensure safety and comfort for all road users;
- Local traffic calming, lower speed limits and junction treatments, particularly at complex junctions in an urban context; and
- Integration with pedestrian environments is central areas.

LSMATS CYCLE NETWORK

Limerick Metropolitan Cycle Network Study

The Limerick Metropolitan Cycle Network Study sets out the envisaged cycling network for the LMA and forms the basis of the delivery of the Cycle Network. The Study is an important component of Limerick City and County Council's vision of developing a cycling culture within the LMA.

The Study has been developed in keeping with the important Smarter Travel objectives, i.e. 10% of all trips will be by bike (including linked trips with public transport).

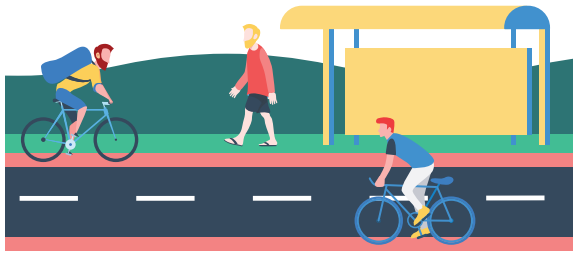
Key Aims of the Study

- Identify a cycle network that provides continuous and coherent routes between the main trip generators and attractors;
- Achieve a quality of service level B or greater in each primary corridor;
- Achieve a quality of service level B and no less than a level C of service in secondary routes; and
- Provide a quality of service B in feeder routes.

High-Capacity Corridors

This Study identified three Economic Corridors, namely the Transverse; North Western; and the South Eastern. The main trip generators along these corridors include:

- University Hospital Limerick;
- University of Limerick;
- The Crescent Shopping Centre;
- Residential areas in Dooradoyle, Castletroy, Ballinacurra and Monaleen;
- Limerick Institute of Technology;
- Mary Immaculate College;
- Limerick School of Art and Design; and
- National Technology Park.



OBJECTIVE CC1

Develop a Comprehensive Strategic Cycling Network

It is the intention of the NTA and the local authorities to:

- Build upon the existing Limerick Metropolitan Cycle Network Study and Shannon and Environs Local Area Plan to deliver a comprehensive cycle network for the LSMA, in a manner consistent with the National Cycle Manual;
- To deliver an integrated, fully connected high-quality cycle network linking all major origins and destinations within the LSMA;
- Develop an Inter-Urban network connecting Limerick City and Metropolitan town centres;
- Identify local opportunities for permeability and feeder routes to improve links to the primary, secondary and greenway network and enhance the attractiveness of cycling for short trips
- Maintain and enhance existing infrastructure to a high standard.

The Cycle Network Study forms the basis of LSMATS' cycle network with some additional routes that have been identified since the Study was published.

Primary Cycle Network

Defined Primary Routes correspond to those experiencing the highest level of demand. Primary Routes are typically direct and provide medium-long radial connections to key destinations. These routes are supplemented by secondary and feeder routes which provide access to residential catchments and local facilities/services.

Primary Radial Routes

- Mungret to City Centre along R510, R526, Ballinacurra Rd, South Circular Road and Henry Street;
- Ballysimon Road (R527) diverting onto the Old Ballysimon Road in the eastern section;
- City Centre to University of Limerick and National Technology Park along Dublin Road, Old Dublin Road and Plassey Park Road;
- City Centre to Westbury and Ardnacrusha along Corbally Road (R463);
- Caherdavin Cross to Sarsfield Bridge via Cratloe Road, Sexton St., High Road, Bellefield Gardens and Clancy's Strand; and
- Ennis Road to Sarsfield bridge.

Primary Orbital Routes

- Childers Road; and
- LNDR.

Segregated cycle lanes are the most desirable infrastructure for Primary Routes in terms of safety and comfort.

Secondary Cycle Network

Secondary Routes connect residential, commercial and employment areas to the Primary Network. They often run in parallel to Primary Routes, providing an alternative link. Secondary Routes are a combination of off-road cycle routes, cycle lanes, shared bus and cycle lanes and traffic-calmed roads.

Key Secondary Routes identified by the Limerick Metropolitan Cycle Network Study include:

- Fr. Russell Road from R510 to St. Nessan's Road;
- Dooradoyle Road from M20 to the Ballykeefe Roundabout;
- Dock Road via Ashbourne Avenue to Rosbrien Road;
- Hyde Road from Childers Road to City Centre;
- City Centre to Southill via Roxboro Road;
- Kilmallock Road and Greenhill Road from the M7 to City Centre;
- Ballysimon Road;
- Groody Roundabout via Dublin Road;
- Groody Link Road (L5173);
- Rhebogue Road;
- Pa Healy Road;
- Thomond Bridge to Athlunkard Street;
- Shelbourne Road;
- Knockalisheen Road; and
- R464 Parteen Road.

Greenway Cycle Network

Greenway Networks correspond to traffic free or low-trafficked routes and typically comprise of repurposed derelict railway lines, routes through parks or alongside rivers. As many of these routes are quite rural and nature-focussed, they can serve both an amenity and commuter function. The Greenway Network proposed for LSMA has been developed on the basis of an existing network of Greenway routes and the upgrade of existing paths to provide a comprehensive cycling network. Proposed Greenway Routes include:

- Extension of the Shannon Fields Greenway to UL along the banks of River Shannon to the NTP and Annacotty;

- Limerick City Centre to Patrickswell along or adjacent to the disused Limerick to Foynes Railway. Whilst this line is not currently in use, it is an objective of the Strategy to investigate its reinstatement;
- Potential to link this with the Great Southern Greenway which connects Rathkeale to Tralee, Co. Kerry via Abbeyfeale and Newcastle West (towns which experience a high proportion of out-commuting to LSMA);
- Limerick Docks route parallel to the N69;
- Consideration of the disused Irish Cement railway from N69 (Mungret) to Rosbrien as an alternative to the above route; and
- City Centre to Bunratty adjacent to the River Shannon.

Inter-Urban Network
The Inter-Urban Cycle Network connects the Metropolitan towns to Limerick City. Key Inter-Urban Routes proposed by LSMATS include:

- Limerick City Centre to Shannon;
- Limerick City Centre and Shannon to other settlements in the Metropolitan Area including Patrickswell, Bunratty and Sixmilebridge.

Additional Greenways and Inter-Urban Routes to those outlined above may be investigated subject to changes in the proposed population and employment distribution as part of the proposed periodical 5-year LSMATS review.

Feeder Cycle Network
Feeder Routes connect local zones with Primary and Secondary Routes and Greenways. Under adequate traffic calming and management measures, Feeder Routes allow cyclists and motorists to be mixed safely.

Key Feeder Routes identified by the Study include:

- Granville Park;
- St. Patricks Road;
- Mill Road;
- Island Road;
- Meelick Road;
- Redgate Road;
- Moyross Access Road
- O'Donoghue Avenue.

Quietways
Quietways are largely continuous and convenient cycle routes on lower trafficked routes such as backstreets. Ideally, they are direct and easy to follow for those who would prefer to cycle on quieter, calmer routes. A network of Quietways should be identified in the short- to medium-term of the Plan. Signposting of these routes will help integrate them into the wider cycle network for general use.

Shannon Cycle Network
Shannon presents significant potential to develop a high-quality, comprehensive cycle network with its relatively compact centre, wide road carriageways and the 4km of existing cycle routes.

Shannon's LAP contains objectives to significantly improve pedestrian and cycle connectivity between the town centre, industrial areas, Shannon Airport, outlying suburban areas as well as longer-distance routes to Ennis and Sixmilebridge.

Key objectives for cycling set by the LAP include:

- Install on- and off-road cycle routes emanating from an orbital route around the town centre;
- Carry out improvement works at junctions to promote the movement of cyclists including the installation of advanced stop lines at traffic signals;
- Increase provision of cycle parking;
- Implement a wayfinding strategy along routes to areas of strategic importance in the town;
- Install traffic calming where necessary to create a safer environment for cyclists;
- Encourage and promote the uptake of cycle training, bicycle maintenance classes and road safety education in schools and workplaces; and
- Ensure proper maintenance of cycle infrastructure and facilities.

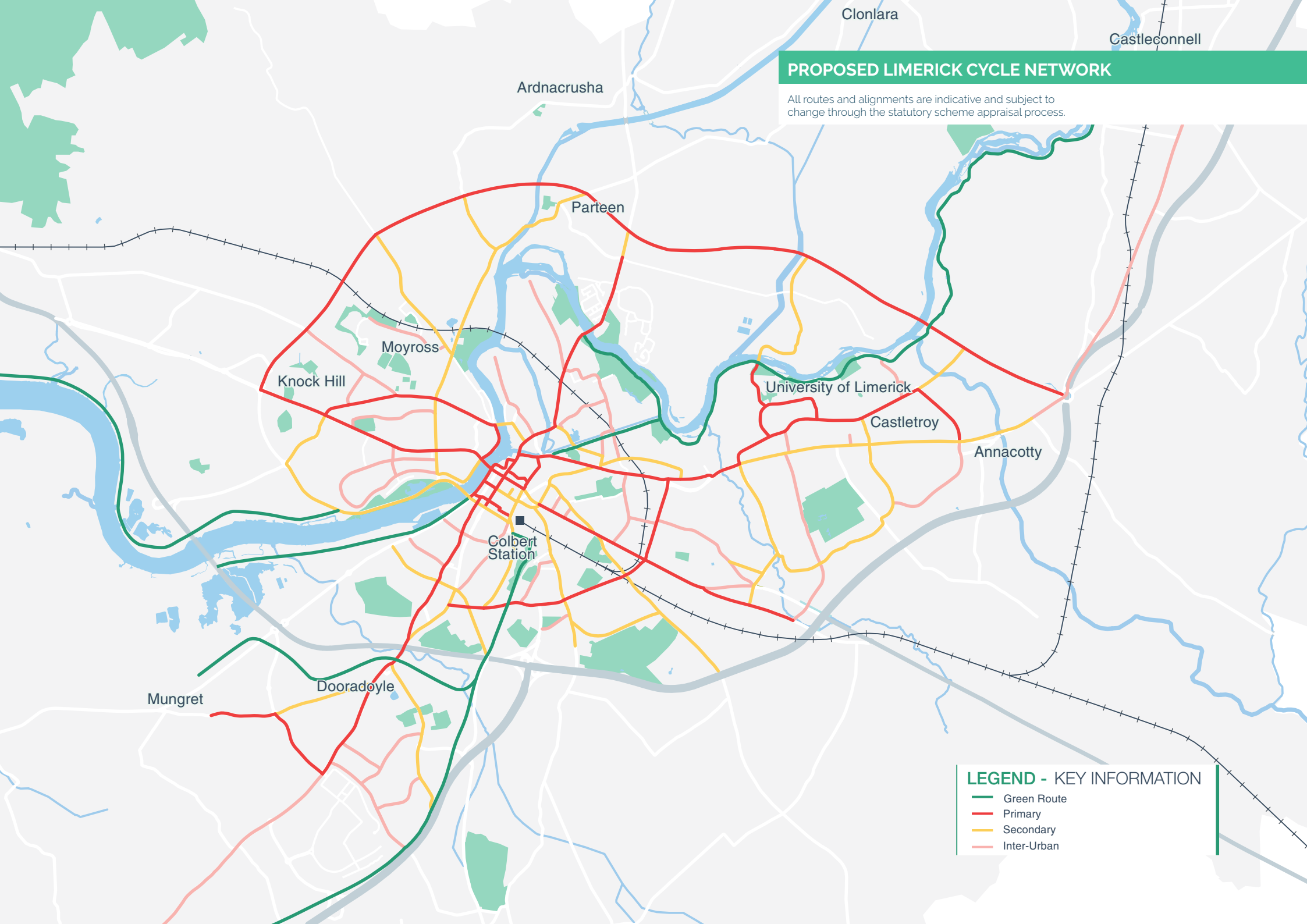
Clare County Council recently transformed the existing Shannon Town Park and the adjacent Rineanna Park into a flagship Town Park. This work also included a new Toucan pedestrian/cycle crossing on Bóthar Linne. It is understood that this park will connect with cycle routes in the future.

SUPPORTING MEASURES

LSMATS recommends a number of supporting measures to complement the proposed Cycle Network. Further measures are outlined in the 'Supporting Measures' chapter.

Bicycle Sharing Schemes (BSS)
Public Bicycle Sharing Schemes (BSS) can contribute positively in widening the public transport catchment area and addressing the 'last-mile' of a trip while also facilitating a wide range of trips in full within the city.

A BSS was launched in Limerick in 2014 and comprises 23 stations and 215 bikes across the City Centre. Ensuring that the scheme is in good working order, and expanding the scheme where feasible, is an objective of this Strategy.


Clonlara
Castleconnell
PROPOSED LIMERICK CYCLE NETWORK
All routes and alignments are indicative and subject to change through the statutory scheme appraisal process.
Ardnacrusha
Parteen
Moyross
Knock Hill
University of Limerick
Castletroy
Annacotty
Colbert Station
Dooradoyle
Mungret
LEGEND - KEY INFORMATION
Green Route
Primary
Secondary
Inter-Urban

In areas outside the City Centre and inner suburban areas where the expansion of the existing Limerick BSS is unlikely to be feasible in the short to medium term, other models including dockless bikes should be considered. These schemes should be supported by a significant uptake in cycle parking provision in district centres, places of education and neighbourhood centres.

OBJECTIVE CC2

Bicycle Sharing Schemes

It is the intention of the NTA and the local authorities to:

- Maintain the Limerick City Bicycle Sharing Scheme and expand the service where feasible based on identified potential patterns of demand; and
- Consider the feasibility of Dockless BSS in more peripheral areas across the LSMA.

Short-Stay Cycle Parking

To support existing and future demand for cycling, a significant uplift in provision of high quality, secure, short-stay cycle parking in the City Centre, metropolitan town centres, schools, rail and bus stations, public buildings, shopping areas and workplaces is required.

OBJECTIVE CC3

Cycle Parking

It is the intention of the NTA and the local authorities to:

- Deliver high-quality on-street bicycle parking; secure sheltered public bicycle parking; and to ensure that sheltered and secure bicycle parking is provided as part of any development proposals in line with the standards set out in the National Cycle Manual as a minimum.

Long-Stay Cycle Parking

Lack of secure cycle parking can reduce the attractiveness of cycling as an everyday travel option. Individual bike lockers, cycle hubs and shared on-street hangars offer security to cyclists and provide an innovative solution to cycle parking requirements for longer periods of time, particularly where internal storage space is limited.

Secure, long-stay cycle parking should be provided in Colbert Station and other key transport nodes across the LSMA. Development management requirements for higher levels of residential and workplace cycle parking will also be revised upwards. Provision of cycle parking hubs in these strategic locations is a key component in promoting cycling culture and facilitating linked trips across LSMA.

End-of-Trip Facilities

Providing end-of-trip facilities at workplaces such as showers, changing rooms and lockers can significantly increase the attractiveness of cycling particularly for longer distances or inclement weather.

The uplift in these end-of-trip facilities is a target that must be considered by Local Authorities when revising statutory Development Plans. Workplaces should also be encouraged to avail of government grants to retrofit premises or consider contributing to shared facilities.

OBJECTIVE CC4

End-of-Trip Facilities

It is the intention of the NTA and the local authorities to:

- Ensure the provision of end-of-trip supporting facilities such as showers and lockers in new developments.

Behavioural Change and Promotion

Promotional events and marketing campaigns can be an effective behavioural change tool, including:

- Smarter Travel Workplaces and Campuses;
- Limerick School Cycle Bus;
- Green Schools Travel Module;
- Regular 'Dr Bike' maintenance. One-off events such as Car-Free Day, EU Mobility Week, Cyclovia and other conferences such as POLIS and Velo-city;
- Cycle training provided in schools, workplaces and community centres; and
- Dedicated cycling apps to crowdsource data to suggest improvements to the cycling environment.

OBJECTIVE CC5

Behavioural Change and Promotion

It is the intention of the NTA and the local authorities to:

- Prioritise investment in improving cycling routes to schools; and
- Foster a cycling culture through promotional events and behavioural change initiatives.


PROPOSED SHANNON CYCLE NETWORK
All routes and alignments are indicative and subject to change through the statutory scheme appraisal process.
Sixmilebridge
Shannon
Shannon Airport
Bunratty
Cratloe
LEGEND - KEY INFORMATION
Green Route
Primary
Secondary
Inter-Urban

BUS CONNECTS

Bus Passengers

Carrying **19,500** passengers in the AM peak hour

Carrying **52m** passengers per annum

Bus Corridor Performance

O'Connell Street	Sarsfield Bridge
1 bus per minute	**1 bus** per minute
2450 passengers	**1750** passengers

Bus Network & Vehicles

85km of bus lanes and bus priority measures

140 new buses required

4 Strategic Park & Ride sites

137km of cross city routes

28km orbital routes

66km radial routes

Connecting City & Metropolitan Centres

Connecting with Colbert Station, UL, Shannon Town Centre, Park and Ride Network and providing interchange between radial and orbital bus services

3,123 passengers interchanging between Radial, Cross City and Orbital Bus and Rail Services.

Cost Estimate

Strategy cost estimate is approximately **€405m**

08 BUS CONNECTS

Delivery of the full BusConnects Programme for all of Ireland's cities (inclusive of ticketing systems, bus corridors, additional capacity, new bus stops and bus shelters etc.) is proposed for delivery during the period to 2027.

National Development Plan 2018-2027

Buses are an extremely efficient mode of transport and will be the basis of the public transport system serving LSMA. The LSMA can only grow in a sustainable way if the role of public transport is strengthened. The flexibility of buses means that routes and frequencies can be quickly adapted to support phases of new development or as circumstances dictate. Buses will also perform an increasingly important role as Park and Ride facilities are developed.

The NPF identifies the provision of a citywide public transport network, with enhanced accessibility from the City Centre to the National Technology Park, UL and Shannon Airport, as a key enabler for Limerick. It is also consistent with the Climate Action Plan, NDP and RSES which envisage a significantly enhanced bus service in Limerick by 2027.

For the purposes of assessing the Strategy, an indicative future bus network for 2040 has been developed and refined in an iterative manner taking into account corridor travel demand analysis work.

The final bus network that will be implemented in the short-medium term will require more detailed service planning and may differ from that assumed in the LSMATS due to, inter alia, detailed operational requirements and changing local traffic considerations.

BUS NETWORK PRINCIPLES

BusConnects Limerick has been devised based on the following 6 principles:

- Capacity;
- Frequency;
- Speed;
- Directness;
- Coverage; and
- Interchange.

BUSCONNECTS LIMERICK

The BusConnects Limerick programme will provide a reliable, high-frequency public transport service to improve connectivity of Limerick City and suburbs. The enhanced service will represent a significant upgrade on the existing system and will comprise of a more comprehensive network, bus priority and new fleet. It will serve all key destinations and provide interchange with the rail network and proposed Park and Ride services.

Main Spine Routes

Main Spine Routes connect outer neighbourhoods and suburban areas to the City Centre and will be developed to pair Cross-City travel demand to maximise the utilisation of the bus services.

OBJECTIVE BC1

BusConnects Limerick

It is the intention of the NTA and the local authorities to develop and deliver the BusConnects Limerick Programme. This will consist of:

- A 'branch and spine' network;
- Orbital routes;
- Additional Radial routes;
- Significantly increased bus priority;
- Increased capacity and frequency;
- Conversion of public transport fleet to zero carbon alternatives; and
- Improvements to fares, ticketing and interchange services and infrastructure.

The proposed frequency for these routes is 10-minutes all day, with higher frequencies at peak hours and the potential for higher all-day frequencies as demand increases over the Strategy period.

Supporting Radial Routes

Supporting radial Routes will provide additional coverage to the Spine Routes at a lower-frequency to areas where demand for travel does not warrant high-frequency services.

Orbital Routes

The indicative Orbital Bus Network comprises an initial two high frequency orbital services that are proposed to serve a number of key destinations outside of the City Centre including UL and LIT.


Shannon Airport
Bus Éireann
BUS LANE

The upgraded orbital network will provide additional connectivity and interchange with radial bus services.

Northern Orbital
A future Northern Orbital Route will serve the north side of Limerick City and be introduced on the proposed Limerick Northern Distributor Road (LNDR) in the medium to long term, where it is proposed to have full bus priority.

Southern Orbital
The Southern Orbital Route will serve the south side of Limerick City including Ballinacurra, Ballysimon, Garryowen and UL.

Colbert Station
Colbert Station is Limerick's main bus and train station. Improvements to bus stops at the front of the Station will be required to enhance interchange.

OBJECTIVE BC2

Bus Only Link at Colbert Station
It is the intention of the NTA, Bus Éireann and the local authorities to examine the feasibility of a bus-only link behind Colbert Station on Roxboro Road.

LSMATS proposes a bus only link at the back of Colbert Station on Roxboro Road. This would significantly improve permeability and connectivity of Colbert Station for regional and local buses as there is only one access point via Parnell St./Hyde Road at present. Further discussion of Colbert Station is included in the Rail chapter.

Bus Priority – Limerick Core Bus Corridors
Prioritising bus services above general traffic is critical to the delivery of an efficient, frequent and reliable bus system and will be an integral part of the overall BusConnects programme.

The proposed increase in bus capacity and services will benefit a significant proportion of Limerick's population but maximum benefit will not accrue if bus priority is not implemented in full as buses will be held up in general traffic.

The extent of the proposed bus priority measures aligns with the emerging demand patterns, ensuring efficient, reliable and frequent services can be accommodated. The objective for identified Main Spine Routes, in principle, is to provide end-to-end bus priority in each direction. On some parts of the National road network, further investigation, analysis and agreement with TII will be required to determine the optimal bus priority outcomes.

OBJECTIVE BC3

Bus Priority
It is the intention of the NTA, Bus Eireann and the local authorities to:

- Provide Bus Priority through the reallocation of road space from the private car, Advance Bus Signalisation, bus gates and acquisition of land to accommodate bus lanes here required.
- Provide Bus Priority within Limerick City Centre and Sarsfield Bridge through reallocation of space from general traffic lanes.

In some areas of the network, the existing carriageway is constrained by pinch-points and on-street parking. In order to provide bus priority, measures will need to be taken including: the removal of on-street car parking, general traffic lanes and one-way traffic systems; Intelligent Transportation System (ITS), such as bus gates and Advanced Bus Signalisation; and the acquisition of land.

O'Connell Street Improvements
In 2019, a scheme to redesign O'Connell Street was approved by Limerick City and County Council.

As part of that approved scheme, the potential for full two-way bus priority was incorporated into the design and planning. O'Connell Street is the preferred option for Limerick's main public transport spine for both services and for bus priority measures. LSMATS proposes that O'Connell St. will be a two-way public transport only corridor for the following reasons:

- O'Connell Street provides the most direct routeing for cross city bus services linking the key suburban commercial and residential areas with the City Centre core;
- Routeing along O'Connell Street will serve the central area most effectively in terms of delivering the maximum numbers of people directly to their final retail and employment destinations on O'Connell Street and its environs; and
- O'Connell Street provides for easier traffic management, whilst still allowing cars to access the City Centre.

Sarsfield Bridge
As part of the BusConnects Network and City Centre traffic management, Sarsfield Bridge is proposed to provide for two-way bus priority, cycling and walking only.

Thomand Bridge and Shannon Bridge
It will be important to ensure that buses travelling to and from Limerick City Centre will not be subject to undue delay on Thomand and Shannon Bridges. While both of these links are physically constrained and there is no proposal at present to remove general traffic from them, there is potential to introduce priority signals or other similar measures on the approaches which would allow buses to gain a degree of priority in advance of general traffic. Such measures would facilitate both efficient bus operations and general traffic flow.

SHANNON BUS SERVICES

Connectivity to Shannon will be significantly improved over the lifetime of the Strategy. Existing bus services will be enhanced with some new additional services, including:

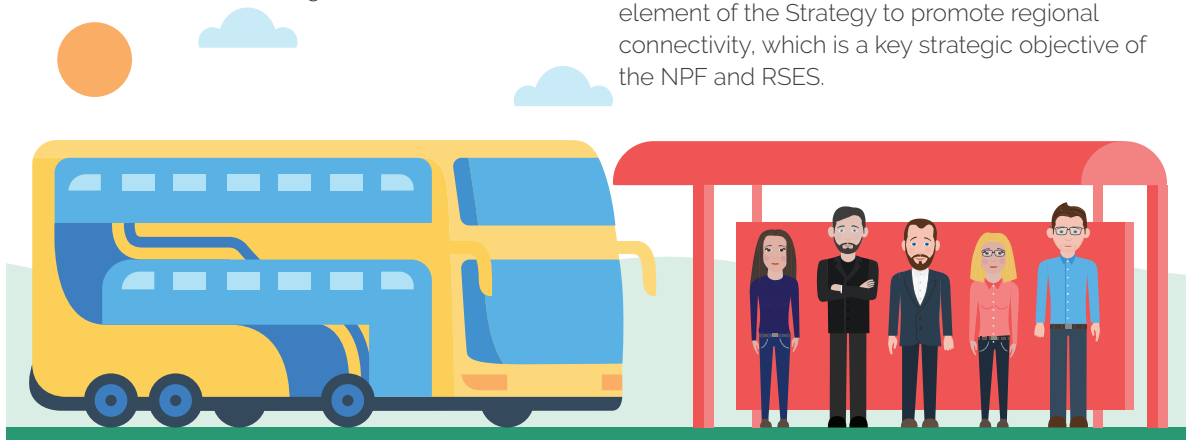
- Limerick City Centre – Shannon Town Centre – Shannon Free Zone – Shannon Airport (Express service);
- Limerick City Centre – Cratloe – Bunratty – Shannon Town Centre – Shannon Free Zone – Shannon Airport;
- Sixmilebridge railway station – Shannon (Shuttle service);
- Shannon – Ennis; and
- The potential for enhanced direct services from Shannon to Cork and Galway will be examined.

OBJECTIVE BC4

Shannon Bus Connectivity
It is the intention of the NTA and the local authorities to improve local and regional bus connectivity to Shannon town centre, employment areas and Airport.

REGIONAL BUS NETWORK

Regional bus services provide an important element of the Strategy to promote regional connectivity, which is a key strategic objective of the NPF and RSES.



It is proposed to continually improve the existing network of regional services, with a view to expanding on service frequency to meet the growing demand as required.

OBJECTIVE BC5

Regional Bus Networks
It is the intention of the NTA and the local authorities to maintain and enhance regional bus networks.

Traffic management plans for the towns will have to accommodate and support through movement of regional buses.

METROPOLITAN BUS NETWORK

Bus priority should be provided at identified pinch-points in Metropolitan towns to ensure the efficient operation of bus services and reliable journey times. Bus priority between Sixmilebridge train station and Shannon, for example, could be considered.

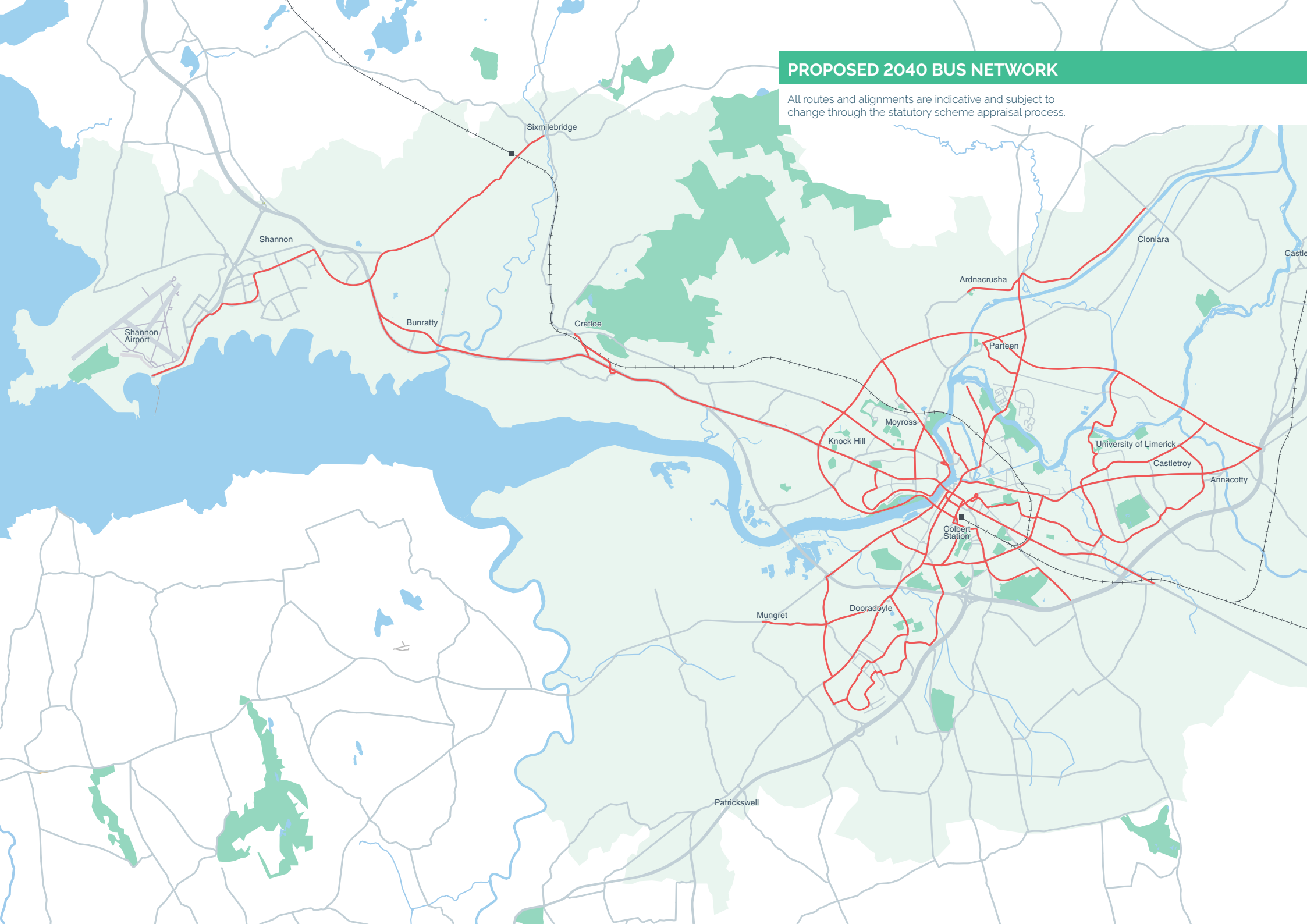
LOCAL LINK

To complement the proposed bus network and local metropolitan town services, the National Transport Authority runs a service known as Local Link.

The aim of Local Link is to address rural social exclusion and integrate bus services where possible with existing routes. Door-to-door routes are a particular feature of Local Link services which offer a great service to those with reduced mobility and/ or have no access to public transport in rural areas. There are Local Link services operating throughout the Limerick-Shannon Metropolitan Area and beyond.

PROPOSED 2040 BUS NETWORK

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



OBJECTIVE BC6

Local Link Services

It is the intention of the NTA and the local authorities to maintain and enhance Local Link services where required.

OBJECTIVE BC7

Coach Management Strategy

It is the intention of the NTA and the local authorities to produce a Coach Management Strategy to support growing visitor numbers.

COACHES

Coaches bring many visitors to Limerick City and surrounding metropolitan areas including Shannon, Bunratty Castle and Folk Park and along the route of the Wild Atlantic Way. To ensure that the LSMA can facilitate a growing number of visitors, the following is proposed:

- Assessment of the existing operations of coach services' alighting and boarding arrangement to improve existing conditions; and
- Formulation of an integrated Coach Management Strategy to support traffic management measures, parking and set-down areas at key destinations.

SUPPORTING MEASURES

The new Bus Network in Limerick will be significantly upgraded to BusConnects standards.

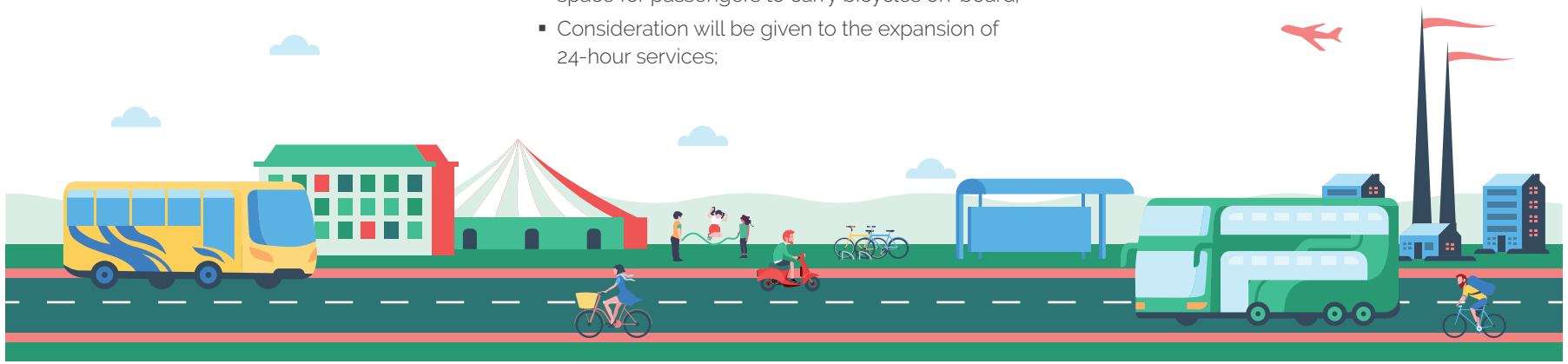
The regional bus network will similarly be upgraded to include measures such as:

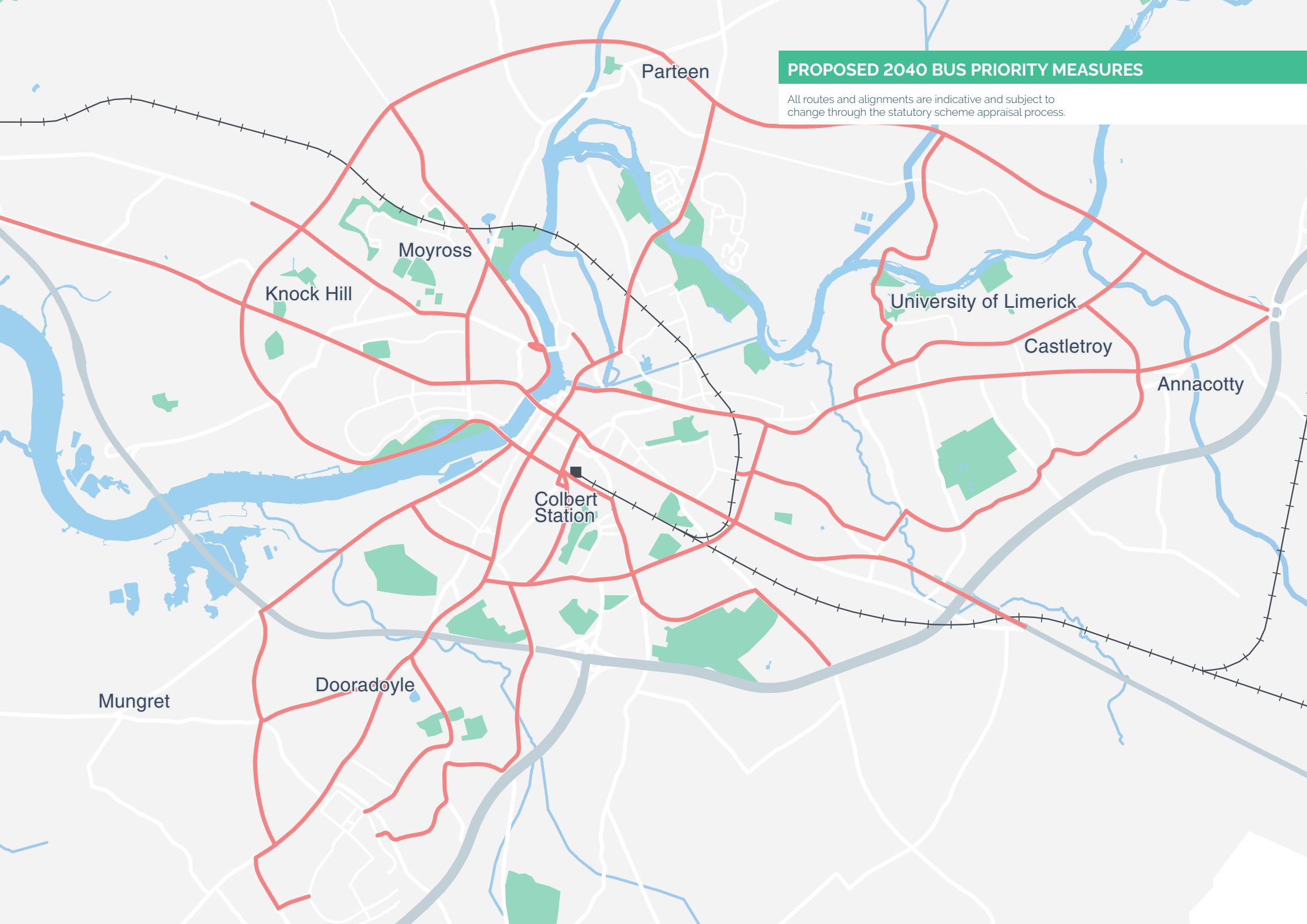
- Expanded Real Time Passenger Information (RTPI);
- Real time integration of on-board Automatic Vehicle Location (AVL) with Intelligent Transport Systems (ITS) to prioritise public transport movements at signalised junctions;
- Walking network upgrades to and around bus stops to ensure pedestrian comfort, safety and accessibility;
- Consideration will be given to the provision of space for passengers to carry bicycles on-board;
- Consideration will be given to the expansion of 24-hour services;
- Smart ticketing to enable integration with other modes of transport and reduce delays;
- Transition to a fully accessible bus fleet;
- Transition of LSMA's bus fleet to zero-carbon fuel sources and other low emissions technologies including electric buses; and
- A standardised style of bus stop sign, pole and information panel, with a consistent branding and livery.

OBJECTIVE BC8

Supporting Measures

It is the intention of the NTA and the local authorities to deliver supporting measures to complement the implementation of BusConnects Limerick and improved regional services.




PROPOSED 2040 BUS PRIORITY MEASURES
All routes and alignments are indicative and subject to change through the statutory scheme appraisal process.
Parteen
Moyross
Knock Hill
University of Limerick
Castletroy
Annacotty
Colbert Station
Dooradoyle
Mungret


2713
COMMUTER

09 RAIL

The Dublin to Limerick Junction/Cork rail lines are subject to an examination to move to higher speeds and/or electrification leading to improved connectivity and journey times to regional cities.

Regional Spatial and Economic Strategy for the Southern Region

LSMATS proposes to maximise opportunities offered by the existing rail network to enhance regional connectivity. Maximising the potential of the rail corridor will support better integration of land use planning and public transport.

The LSMA's existing rail network provides access to Limerick City Centre at Colbert Station from Dublin, Ennis and Nenagh. Limerick Junction is an important regional asset interconnecting the Dublin, Cork, Limerick, Galway and Waterford rail corridors.

INTERCITY SERVICES

Limerick City has a number of InterCity services providing direct rail connections from Colbert Station to Ennis and Galway and connections via Limerick Junction to Dublin, Cork, Clonmel, Tralee and Waterford.

Limerick has the highest number of connections from Dublin, most of which are provided at Limerick Junction on the Dublin-Cork line.

As identified in the NDP, RSES and Iarnród Éireann's 2016 Rail Review Report, the Dublin-Limerick Junction/Cork rail lines are subject to an examination to move to higher speeds leading to improved connectivity to regional cities through improved rail journey times.

The RSES states that an evaluation of the economic benefits of high-speed rail for the Dublin-Belfast, Dublin-Limerick Junction and Dublin-Cork lines against improvements to existing line speeds will be carried out against relevant appraisal processes and value-for-money tests.

A study of the potential expansion of the Western Rail Corridor is currently underway as part of the NDP commitment.

OBJECTIVE RL1

InterCity Services

It is the intention of the NTA and the local authorities to work in collaboration with Iarnród Éireann and other relevant stakeholders to:

- Improve InterCity services, particularly journey times between Dublin, Limerick Junction and Cork.

Dual-Track from Limerick Colbert - Limerick Junction

While substantially outside the LSMA Study Area, in order to enhance national and regional connectivity, a key strategic objective of the NPF, a dual-track between Colbert Station and Limerick Junction is proposed.

The existing single-track leads to increased waiting time and regular delays. This would improve journey times and enable an increase in the frequency of services and connections.

This should be undertaken in conjunction with wider InterCity frequency improvements to align with Cork/ Dublin services and timetables. Potential consideration and appraisal for new stations and Park and Ride at Oola and Pallas Green New could be progressed over the lifetime of the Strategy.

OBJECTIVE RL2

Dual Track from Limerick Colbert to Limerick Junction

It is the intention of the NTA, Iarnród Eireann and both local authorities to work in collaboration to:

- Investigate the feasibility of providing a dual-track between Limerick Colbert and Limerick Junction to facilitate improved national and regional connectivity.

Rail-Based Park and Ride

The potential for a new railway station at Ballysimon will be explored in tandem with a strategic Park and Ride. This may enhance sustainable connectivity from the south and east of the LSMA and wider region and would cater for both bus-based and rail-based onward travel to the City Centre. Increased rail frequency would be required in order to ensure the quality of the rail-based Park and Ride service.

OBJECTIVE RL3

Rail-Based Park and Ride

It is the intention of the NTA and the local authorities to work in collaboration with Iarnród Éireann and other relevant stakeholders to:

- Investigate the potential for a new station to support the Park and Ride at Ballysimon.

LSMA AND SUBURBAN RAIL NETWORK

The over-arching objective of the LSMA's rail network is to maximise development opportunities offered by the existing railway corridors in order to support a greater level of coordination between land use and transport planning

As part of the Strategy development process, a suburban and metropolitan rail system was considered, including: new train stations within Limerick City, LSMA and wider Limerick and Clare County areas; dual-tracking of rail lines between Limerick Colbert, Limerick Junction Nenagh, and Ennis; and a new rail line spur to Shannon Town and Shannon Airport.

The assessment highlighted that the proposed land use growth and distribution does not support the provision of a significantly improved sub-urban and metropolitan area rail network, within the lifetime of the Strategy. The lack of Transit Oriented Development (TOD) around the proposed train stations, coupled with a lack of competitive journey times against bus-based proposals resulted in low patronage levels. The assessment highlighted that bus based public transport linkage between Limerick Colbert and Shannon Airport would have an 84% occupancy, whereas a rail-based linkage would have lower patronage and a 24% occupancy.

For any significant increase in rail provision and services, a focussed approach to land use distribution and consolidation is required. It is recommended that over the lifetime of the Strategy, the land use distribution be re-examined to achieve the necessary critical mass in the context of rail-based TOD.

OBJECTIVE RL4

Suburban Rail Network

It is the intention of the NTA and the local authorities to work in collaboration with Iarnród Éireann and other relevant stakeholders to:

- Promote the consolidation of development around stations.

COLBERT STATION

Colbert Station is the primary terminal for public transport services in Limerick City, located just off Parnell St./ Hyde Road approximately 15-mins' walk from the City Centre. This station is served by Intercity and Regional rail, bus services and some city bus services, offering opportunities for interchange.

The station building itself requires updating and a scheme was developed in 2014 by Irish Rail and the NTA in order to significantly improve the station building and environs, in line with the Limerick 2030 Economic and Spatial Plan.

OBJECTIVE RL5

Colbert Station Redevelopment

It is the intention of the NTA and the local authorities to work in collaboration with Iarnród Éireann and other relevant stakeholders to:

- Complete the redevelopment of Colbert rail and bus station to provide a more attractive, secure and comfortable experience for passengers, in line with the project developed by Irish Rail and the NTA; and
- Examine the feasibility of a bus-only link behind Colbert Station on Roxboro Road and enhanced improved pedestrian, cycle and bus connectivity to the City Centre.

Phase 1 of this project involved the removal of the car park to the front and the development of a public plaza and bike station.

In addition to the issues around the building and environs, Colbert Station also lacks a clear and obvious connection with the City Centre. Pedestrian crossing facilities at the most obvious route in the vicinity – Shannon St./ Parnell St. – are underdeveloped and cycle facilities, while improving, are not provided in a continuous manner to the City Centre.

At present, there is also only one access point for buses to Colbert Station via Parnell St./ Hyde Road.

The recent announcement by the Land Development Agency and Limerick City and County Council to masterplan and develop over 100acres of State-owned land around Colbert Station envisages a largely low-car mixed use TOD. Enhanced bus, pedestrian and cycle connections will inform this process.


FEELING LOST?
YOU ARE NOT ALONE

RAIL FREIGHT

A rail freight line between Limerick and the Port of Foynes has been inactive since 2001. The adopted RSES proposes an investigation of the possible reinstatement of this line to link Ireland's deepest port to the national rail network. It also recognises the potential to develop Limerick Junction for rail freight logistics. LSMATS supports the RSES objective to develop a Regional Freight Strategy.

OBJECTIVE RL6

Rail-Based Freight

It is the intention of the NTA, Iarnród Eireann, the Southern Regional Assembly and other relevant stakeholders to:

- Investigate the potential for rail freight in support of the proposed Regional Freight Strategy, including the reinstatement of the line between Limerick and the Port of Foynes.

More detail on freight is provided in Chapter 13 Freight, Delivery and Servicing.

SUPPORTING INFRASTRUCTURE

Station Enhancements and Upgrades

Station Enhancements and Upgrades Improvements and upgrades to existing stations will be considered over the lifetime of the Strategy to enable the efficient and effective operation of rail services. This includes improvements to the accessibility of Sixmilebridge station as outlined in the Walking Chapter.

The quality, appearance, cleanliness, security and accessibility of stations is important for rail passenger satisfaction. Improvements include:

- Fully accessible for those with reduced mobility, wheelchairs, or buggies;
- Be equipped with smart ticketing facilities;
- Provide comfortable, sheltered waiting areas for passengers;
- Provide accurate Real Time Passenger Information (RTPI) for both trains and connecting buses; and
- Provide secure, sheltered and conveniently located cycle parking in line with the National Cycle Manual.

Signalling improvements

Signalling improvements will be required to facilitate increased services and avoid potential delays and conflicts.

Whilst outside the scope of the Study Area, signal improvements will be required at Limerick Junction if the frequency of InterCity services increase over the lifetime of the Strategy.

Signal Control Centre

Iarnród Éireann currently operates a Centralised Traffic Control Centre in Connolly Station, which controls much of the rail network in Ireland. The NDP commits to completing a new National Train Control Centre over the lifetime of the Strategy. This will be required to cater for immediate and future control requirements of the rail network.

OBJECTIVE RL7

Supporting Rail Infrastructure

It is the intention of the NTA, Iarnród Eireann and other relevant stakeholders to:

- Enhance the attractiveness and efficiency of LSMA rail services through improvements to Sixmilebridge and Castleconnell stations, signalling improvements and completing the National Train Control Centre.

Ballycar Flood Management

At present, flooding frequently closes the Limerick-Ennis line at Ballycar causing severe disruption to the LSMA Rail Network. Iarnród Éireann are currently investigating a technical solution to alleviate this flooding.

OBJECTIVE RL8

Flood Management at Ballycar

It is the intention of the NTA and the local authorities to work in collaboration with Iarnród Éireann and other relevant stakeholders to:

- Resolve the localised flooding issue on the Limerick-Ennis line at Ballycar.

ELECTRIFICATION AND/OR ALTERNATIVE FUELLING OF THE RAIL NETWORK

Action 92 of the recently published Climate Action Plan 2019 is to commence the transition to hybrid trains to allow extended electrification of rail services. LSMATS supports this action that would result in higher performance, lower maintenance costs, lower energy costs and reduced emissions. The lower air and noise emissions are critical to support residential amenity of new development consolidated around the railway corridor.

OBJECTIVE RL9

Electrification and Alternative Fuelling

It is the intention of the NTA and the local authorities to work in collaboration with Iarnród Éireann and other relevant stakeholders to:

- Progress the electrification of the Rail Network in line with the Climate Action Plan 2019; and
- Investigate the potential for alternatively fuelled trains.

The NDP commits to the electrification of suburban rail lines in Dublin under the DART Expansion Programme by 2027. A similar commitment for the LSMA Rail Network would be likely to take place over the latter half of the Strategy.

An alternative to the full electrification of the rail network could be to examine the feasibility of a fleet upgrade to battery and / or hybrid trains. While providing similar benefits to a standard electrification network, this type of electric train does not require the significant network wide retrofitting of electrification infrastructure such as power supply and bridge alterations that would normally be required and thus, save significant costs on the electrification of the rail network.

RAIL LINES AND GREENWAYS

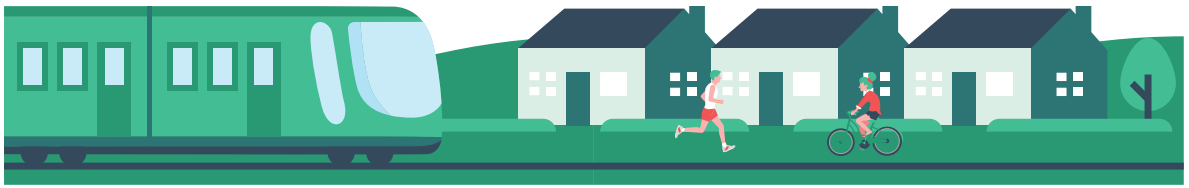
LSMATS supports the development of greenway provision to provide connectivity with Limerick City with Metropolitan Town centres and settlements in North Cork, Tipperary, Clare and Kerry via the Great Southern Trail.

OBJECTIVE RL10

Rail Lines and Greenways

It is the intention of the NTA and the local authorities to work in collaboration with Iarnród Éireann and other relevant stakeholders to:

- Examine the feasibility of the provision of new greenways either within disused rail lines or immediately adjacent to existing or proposed rail corridors.



ROADS AND STREETS

Regional & Distributor
Roads to provide a **multi-modal** function

A new multi-modal
Northern
Distributor Road

Limerick
City Traffic Management Plan

HGV
restrictions in Limerick City

M20
Cork - Limerick Road

M21/N69
Foynes - Limerick Road

M7/N18
Limerick City Bypass

N18/N19
Interchange Upgrade and Improved Bus Connectivity to Shannon

Public Realm Upgrades
for Limerick City

Pedestrian Enhancement
of all Metropolitan Centres

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

Strategy cost estimate is approximately
€290m

10 ROAD AND STREETS

Street networks should be designed to maximise connectivity between destinations to promote higher levels of permeability and legibility for all users, in particular more sustainable forms of transport.

Design Manual for Urban Roads and Streets

The planning system must ensure that the strategic traffic function of National Roads is maintained by limiting the extent of development that would give rise to the generation of short trip traffic on National Roads.

Spatial Planning and National Roads

The LSMA has an existing well-developed network of National, Regional and Local roads and streets. The road network refers to not only the carriageway itself but other highway infrastructure including bridges, the Shannon Tunnel, footpaths, cycleways, signage, markings and traffic signals.

ALTERNATIVE APPROACH TO CAR-BASED TRAVEL

The LSMA road network will continue to carry a significant number of journeys made by people and goods. Given the nature of existing travel patterns in the LSMA, the provision of any new road capacity will need to strike a balance between enabling the LSMA to achieve its growth potential whilst ensuring that any additional road capacity does not attract more private car trips nor enable inappropriate development patterns.

Areas of significant future growth will need to be primarily served by public transport, walking and cycling. In line with the NPF's objective to achieve Compact Growth, the Strategy seeks to deliver on strategic development priorities for the distribution of a more compact settlement pattern based on ensuring effective integration between transport and land-use.

This will provide a long-term sustainable economic, environmental and social case for reliable public transport, permeable, high-quality walking and cycling routes and an inclusive, people-centred public realm. A key principle of the Strategy therefore is to prioritise the provision of reliable and efficient public transport and enhanced walking and cycling routes to minimise the need to travel by car. This will be underpinned by appropriate land use decisions by both Local Authorities that maximise opportunities for sustainable travel.

OBJECTIVE RS1

Road and Street Network

It is the intention of the NTA, TII and the local authorities to:

- Maintain, manage and operate the existing road infrastructure in a more efficient manner;
- Manage the road network to discourage through-traffic in built-up areas; and
- Prioritise the placemaking functions of the urban street network in line with the hierarchy outlined in DMURS.

Supporting Sustainable Mobility

The dispersed nature of development and the location of key destinations relative to housing within the LSMA presents a significant challenge in reducing the need to travel by private car.

The LSMA's road network will support sustainable travel to overcome these challenges in the following manner:

- Implementation of the proposed BusConnects and Park and Ride networks will reduce the demand on National roads and improve regional connectivity, particularly for those travelling from areas which are not well-served by public transport;
- Local access to the strategic road network will be managed and restricted to protect the function of National roads and to discourage use by local car traffic for short trips;
- Implementation of demand management measures;
- Urban roads and streets will be designed to facilitate more walking and cycling; and
- Street networks within inner urban areas and neighbourhoods will emphasise their 'place' function and enhance the liveability of these areas.

It should be emphasised that the nature of roads and streets will alter in line with changing demands as one travels through different parts of the LSMA. All routes, for example, will become less car-oriented in terms of their functions, design and usage as one travels towards the city where provision for public transport, walking and cycling becomes more important.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OBJECTIVE RS2 SUPPORTING SUSTAINABLE MOBILITY

It is the intention of the NTA, TII and the local authorities to:

- Better manage the road network to protect the function of the strategic road network and to minimise use of the private car for short journeys;
- Reallocate road space in Limerick City and Shannon to prioritise walking, cycling and public transport use; and
- Prioritise the placemaking functions of the urban street network in line with the hierarchy outlined in DMURS.

PRINCIPLES FOR THE PROVISION OF NEW ROADS WITHIN THE LSMA

LSMATS proposes a limited number of new road-based projects required to facilitate the sustainable movement of people, goods and services, and to complement sustainable travel and traffic management objectives.

Aligned with recent changes in national transport, climate and land policies, the following principles will be applied to any new roads in the LSMA:

- All road schemes will be developed in accordance with the NPF's Compact Growth objective and Government's Investment Priorities included in the NPF and NDP;
- Regional and Local roads must ensure that the capacity and function of National Roads for strategic traffic is maintained in accordance with the NPF's objective to Enhance Regional Accessibility. Local traffic will be diverted to appropriate routes and minimising access points onto the National Road network;
- Apart from Motorway or express road proposals, all new road schemes will be designed to provide a safe and appropriate arrangements to facilitate walking, cycling and public transport provision; and
- New road schemes must demonstrate that alternative solutions, such as public transport provision, traffic management or demand management measures, cannot effectively and satisfactorily address the circumstances prompting the road proposal or are not applicable/ appropriate.

The following sections identify proposed infrastructure improvements for the National, Regional and Local road networks within the LSMA, that are required for the delivery of the LSMATS. The alignment and form of all National road proposals will be determined in line with TII's Project Appraisal Guidelines (PAG) and DTTaS guidance for scheme appraisal including a Route Options Assessment and Business Case.

The following proposals are subject to compliance with EU Habitats and/ or Birds Directives.

OBJECTIVE RS3 PRINCIPLES FOR THE PROVISION OF NEW ROADS

It is the intention of the NTA, TII and the local authorities that:

- Subject to the feasibility and environmental assessment process, new roads, where provided, will be developed in accordance with the principles and objectives outlined in this chapter.

NATIONAL ROAD NETWORK

Ireland's National roads play a key role within its overall transport system and in its economic, social and physical development. National roads provide strategic connectivity between the country's main centres of population and employment, and key international gateways such as ports and airports.

The focus will be on maintaining the investment already made, to protect existing National road assets and to keep them safe and fit for purpose by applying appropriate corridor management practices. Associated with this, a decrease in car dependency for orbital trips is required if the levels of congestion are to be reduced on the strategically important N18, M7 and other National roads in the wider region.

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

- The primary function of a National Road is to cater for strategic traffic;

- Strategic traffic, in the context of National Roads, is primarily comprised of inter-urban and inter-regional traffic, whether HGV, car, public transport bus services or other public service vehicles, which contributes to socio-economic development, the transportation of goods and products, especially traffic to/ from the main ports and airports, both freight and passenger related;
- Secondary local functions should not be encouraged, or planned for, on National roads in the LSMA;
- Brownfield development in areas served by existing or proposed public transport and TOD will be prioritised for zoning;
- Secondary local function traffic on National roads can be tolerated insofar as it does not impact on the primary function, which is to cater for strategic traffic; and
- If existing secondary functions impact on the primary function of National roads, then demand management measures will be employed to mitigate this impact.

These measures will serve to discourage the inappropriate use of the National road network by local car traffic, to increase the attractiveness of public transport alternatives and to render investment in such public transport improvements more economically viable.

Without these interventions, the LSMA will continue to experience increasing congestion and private car use which put at risk any substantial investment already made on the national roads of strategic importance.

OBJECTIVE RS4

National Roads

It is the intention of the NTA, TII and the local authorities to:

- Retain and protect the strategic function of the National Road network;
- Complete the appraisal process and deliver the N/M20 Cork to Limerick Road Improvement Scheme;
- Reduce peak time congestion on the N18/N19 network at Shannon; and
- Construct the N69/M21 Foynes to Limerick Road (including Adare Bypass) to TEN-T standard.

M7/N18

The M7/N18 Limerick City Bypass is of key strategic important to the Strategy as it provides strategic linkage between the M7 Dublin, N24 Waterford, N/M20 Cork, N21 Tralee, N69 Port of Foynes, N18 Galway and N19 Shannon. Use of the Shannon tunnel involves the payment of a toll which provides a level of demand management on the M7/N18.

The mainline carriageway of the M7/N18 operates within capacity throughout the day, however, there is recognition of localised congestion on the grade separated junctions with this road, in particular: Mackey (Newport) Roundabout, Ballysimon Interchange and Dock Road Interchange.

Ensuring that this localised junction congestion does not impact on the strategic function of the M7/N18 road is of importance to the Strategy, and improvements to junctions on this route are provided for in the LSMATS.

N/M20 Cork to Limerick

The provision of a dedicated National road/ Motorway to improve connectivity between Ireland's second and third largest cities, is consistent with the NPF's National Strategic Outcome 2, to provide Enhanced Regional Accessibility.

The NDP identifies the M20 Cork - Limerick Road to be delivered by 2027, subject to appraisal, planning and procurement. The N20 Cork - Limerick Road is part of the Ten-T Comprehensive Network.

The solution for the N/M20 corridor will be identified through the N/M20 Cork to Limerick Road Improvement Scheme appraisal process and the development of a business case for the Scheme.

N18/N19 Shannon

The N18 provides connectivity between Limerick and Galway, with the N19 providing connectivity between the N18 and Shannon Airport. The N18 and N19 carriageways operated within capacity, however, there is recognition of peak-time traffic congestion at the N18/N19 grade separated junction. L-SMATS proposes a number of proposals that would assist in reducing this demand including promoting compact growth in the Shannon Town Centre area (reducing the need to travel to work), a significantly enhanced public transport network from Limerick City and Metropolitan Towns, and Smarter Travel initiatives that would look to spread traffic over a longer period thereby reducing peak time congestion.

The upgrade of the relevant N18/ N19 junctions to include measures to reduce stacking on the ramps is recommended. These may include ITS and smart traffic signalling, however, all options will need to be assessed.


PROPOSED ROAD NETWORK 2040
All routes and alignments are indicative and subject to change through the statutory scheme appraisal process.
Parteen
Moyross
Knock Hill
N18
University of Limerick
Castletroy
Annacotty
Colbert Station
N69
Mungret
Dooradoyle
M7
N24
M20
LEGEND - KEY INFORMATION
Motorway
National Roads
Northern Distributor Road
Other Roads
New Roads
Junction Improvement
Northern Distributor Road
Toll
HGV Restrictions
Re-Classified to Regional Road

There are four road access points from the N18 northbound to the Shannon area within the space of 3.5km. This could present the opportunity to provide a dedicated public transport only access from the N18 northbound to Shannon, promoting public transport usage and improving journey times. The upgrade of the N19 serving Shannon Airport is required.

M21/N69 Foynes to Limerick Road (including Adare Bypass)

The proposed Foynes to Limerick Road is 35km in length and includes a by-pass of Adare, will connect the Port of Foynes to the Motorway Network to the south-west of Limerick City at Attyflin at Junction 5 on the M20/N21 near Patrickswell.

Enhancing the road connectivity to Shannon-Foynes Port is identified as a key growth enabler in the NPF and the NDP. The upgrade of the road is considered a key element to support the expansion of the Port of Foynes as outlined in the Government's National Ports Policy and the NPF. Foynes is designated as a Core Port under EU regulations (Trans European Network TEN-T). The TEN-T regulations require high-quality road connectivity thus improving journey time reliability and safety for all road users.

The road will assist in removing through traffic (particularly HGV and other freight vehicles) from villages and towns including those outside the LSMA at Adare. A planning application was lodged with An Bord Pleanála in December 2019 and is supported by LSMATS. The proposed realignment of the N69 to connect with the M20 and the declassification of the existing N69 to Regional road status will result in the reassignment of traffic onto the M20 between Patrickswell and the M7.

REGIONAL AND LOCAL ROADS

Requirements

The Regional Road network is required to cater for the following:

- Provide high-quality walking and cycling connections;
- Provide access and priority for public transport routes; orbital and radial;
- Restrict the movement of through-traffic across Limerick City Centre; and
- Facilitate the removal of local traffic from the strategic road network.

In order to achieve these requirements, the (approximate) cross-section of these roads should allocate space equally for walking, cycling, public transport and car traffic. The following sections outline additional regional and local road infrastructure and improvements for the LSMA.

Limerick Northern Distributor Road

The Limerick Northern Distributor Road (LNDR) is a policy objective of both Local Authorities, supported most recently by its inclusion as a National Enabler in the adopted RSES. Historically, the need for the Scheme was identified in the Limerick Planning, Land Use and Transport Study. Phase 1 of the LNDR from Coonagh to Knockalisheen is currently under construction.

OBJECTIVE RS5

Limerick Northern Distributor Road

- Deliver the LNDR, subject to appraisal and environmental assessment, in line with its functions and characteristics as set out in the LSMATS

The LNDR is assumed to have the following functions:

- To support bus, cycling and pedestrian priority measures in the Metropolitan Area by accommodating private vehicle trips accessing residential areas and employment destinations in urban Limerick, UL and other services;
- Provide direct connectivity for the private car and public transport from Shannon and UL, the NTP and the SDZ;
- Provide for potential bespoke bus services from Galway and Shannon Town and International Airport to UL, SDZ and the NTP;
- Provide an additional access point for traffic and potential public transport from the M7 to UL and the NTP without the use of the Dublin Road and Plassey Park Road; and
- Provide multi-modal connectivity to cater for demand from Clare and Galway to UL and the NTP.

Subject to the appraisal outcomes, it is assumed to have the following characteristics:

- 60kph speed limit;
- Single carriageway with provision for car in both directions;
- Provision for bus priority in both directions;
- Provision for pedestrians and cyclists in both directions;
- Full provision for cyclists and pedestrians at all junctions;
- At grade junctions; and
- Accesses into Plassey, UL, SDZ, Corbally, Parteen and Moyross.
- Access onto M7 at J28;

In terms of land use planning policy, although the LNDR will be a Regional route, it will be treated in a similar way to National roads and the Spatial Planning and National Roads Guidelines will be applied to potential changes to land use policy on this corridor. With the exception of the proposed SDZ in South Clare and the growth of a small number of settlements in line with the County Core Strategies and RSES, according to the principles of proper planning and sustainable development, the implementation of the LSMATS would not support any significant development along the LNDR, and its strategic functions (as set out above) will be protected.

Childers Road – Golf Links Road
A requirement for a link road from the Childers Road to Golf Links Road via Bloodmill Road and Groody Road has been identified in order to serve new development areas in this location and in order to provide for an additional public transport route from the city centre towards Monaleen and onwards towards Annacotty.

This public transport route would require a new bus-only link from Garryowen onto Childers Road. Parts of this link will be delivered in the short term, subject to further planning and appraisal, with the remaining sections (including the bus-only link) to be progressed in later phases of the strategy.

Junction Improvements
Junction improvements are proposed to improve traffic flow, provide for public transport and, in some instances, the pedestrian environment. These may include the upgrade of junctions to include Intelligent Traffic Systems (ITS) or smart traffic signalling.

City Centre Traffic Management
Much of Limerick City Centre is dominated by private cars. Over the lifetime of this Strategy, there will be a reduction of car travel to the City Centre. This shift in focus is in line with recognition of the impacts that motorised traffic and carbon emissions have on the environment and people's quality of life.

The City's street network will be reviewed with the aim of prioritising space for public transport, walking and cycling provision with the intention of creating a more attractive and vibrant experience for residents and visitors and improving air and noise quality.

Local access will still be facilitated with designated driving routes into the City and off-street carparks. Public transport will be given priority on a number of routes in the form of bus lanes, time-restricted bus gates or Advance Bus Signalling at junctions. The introduction of a congestion charge to enter the City Centre will be considered during the lifetime of the Strategy in line with public transport improvements to support this prioritisation.

OBJECTIVE RS6

Traffic Management in Limerick City and Metropolitan Centres
It is the intention of the NTA and the local authorities to:

- Manage the road network to discourage through-traffic in built-up areas;
- Prioritise the placemaking functions of the urban street network in line with the hierarchy outlined in DMURS;
- Undertake public realm improvements in Metropolitan town and village centres; and
- Provide bus priority.

Metropolitan Towns
It is envisaged that over the lifetime of the Strategy, improvements to the road network within the Metropolitan towns will largely consist of streetscape and public realm enhancements, previously discussed in the 'Walking' chapter.

The focus for these areas will generally be to overcome the challenges posed by a legacy of dispersed development and poorly defined centres. Objectives for these areas should be developed through individual Local Transport Plans (LTPs). Metropolitan towns in the Study Area include:

- Patrickswell;
- Castleconnell;
- Shannon;
- Sixmilebridge;
- Ardnascrusha;
- Clonlara;
- Cratloe;
- Ballycannan;
- Bunratty; and
- Parteen.


PENNEYS

11 PARKING

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

National Planning Framework 2040

There is a long-established link between the availability, provision and price of parking and relative attractiveness of the private car relative to sustainable transport options. Judicious management of parking should be used as an effective demand management tool to discourage private car journeys particularly for shorter trips across the LSMA. For longer journeys, the emphasis will be on discouraging through trips in urban areas through the provision of Park and Ride facilities and reliable interchange with walking, cycling and public transport provision.

STRATEGIC PARK AND RIDE

Park and Ride (PnR) entails the provision of high-capacity car parking facilities at designated public transport interchanges on the approach roads to Limerick City (and potentially Shannon). Park and Rides are a key component of LSMATS and are a means of increasing the catchment of the transport network to those that might not otherwise have access via walking, cycling or public transport.

PnRs can deliver the following benefits to the LSMA:

- Transfer commuting trips from private car to sustainable and active travel;
- Support economic vitality by improving overall accessibility to Limerick City Centre and other key destinations;
- Reduce road traffic congestion on radial routes;
- Increase attractiveness of the City Centre to visitors and shoppers;
- Meet shortfalls in urban centre parking capacity and facilitate the reduction in on-street parking;
- Maximise public transport patronage by increasing the effective catchment area of the public transport network; and
- Improve access for those living in regional towns and villages and in rural areas.

At present, there are no dedicated, permanent Park and Ride facilities within the LSMA. The Strategy will address this shortfall. Strategic PnRs will be expected to cater for between 400-600 car parking spaces and in all cases, be supported by reliable, high-frequency bus services and a potential new rail station at Ballysimon.

Indicative locations for Park and Rides are proposed at:

- M7: Newport Roundabout;
- M20/N21: Raheen;
- N18: Ennis Road; and
- N24: Ballysimon (rail and bus).

The above represents indicative locations only and are subject to further investigation. In most cases, strategic Park and Rides will be related to the delivery of the BusConnects network and require bus priority measures to be implemented in advance of the opening of the facility. Park and Rides at Corbally and along the N69 will be considered as potential additional facilities if the demand arises.

Park and Ride facilities will be required to be open at off-peak times to support event parking at sports stadia and festivals, supported by the provision of more flexible local bus and coach services offering direct routes to the event. Opportunities to further maximise their potential will be identified through Workplace Travel Plans, School Travel Plans and Access and Mobility Plans for new residential development.

All Park and Ride/Rail facilities will be expected to provide ancillary services including:

- Real Time Passenger Information (RTPI);
- Sheltered waiting areas; and
- Electric Vehicle Charging Points (EVCPs).
- Dedicated cycle hub facilities for long-stay cycle parking.

The provision of EVCPs to suit a variety of different charging speeds to support the transition to low emission vehicles and e-bikes will be considered in the design and development of each of the facilities.

It is intended that all PnR facilities will be accessible by quality walking, cycling and public transport to ensure that onward trips can be taken by sustainable transport.

Interchange
Park and Rides will provide opportunities for interchange between modes and widen the catchment for public transport services, enhancing accessibility to key destinations. Improved sustainable connectivity and interchange opportunities from the Metropolitan Area to the wider region will strengthen the functional relationship between these areas. This is particularly pertinent for rural or low-density areas where it is not feasible to provide high-frequency public transport services.

Park and Ride Implementation
The phased implementation of Park and Rides will be accompanied by a phased reduction in the availability of on-street parking and the delivery of BusConnects Limerick and bus priority measures.

To ensure the long-term viability of PnRs, it is recommended that both Local Authorities seek to:

- Reserve spaces for developers of, for example, city and metropolitan town centre hotels, office blocks, educational facilities and new residential areas at the earliest possible stage of the planning application process; and
- Implement a comprehensive on-street parking management structure with robust enforcement in residential areas outside of existing controlled parking zones to deter overspill into neighbouring areas.

These measures will enhance the success of Park and Rides and benefit both developers and Local Authorities. They will allow Local Authorities to apply more stringent off-street parking practices in their respective Development Plans, Local Area Plans and other policies. They will also significantly reduce land-take and cost for the development of individual off-street parking. A Park and Ride Strategy will be prepared for the LSMA as recommended in the Climate Action Plan.

OBJECTIVE PK1

Strategic Park and Rides
Implement a network of strategic Park and Ride facilities, served by high-frequency bus services, and walking and cycling networks.

MOBILITY HUBS

The concept of Mobility Hubs is relatively new to European cities but is gaining traction particularly in new regeneration areas planned around mass public transit systems (Public Transit Oriented Development). Mobility Hubs are a means to support the transition of the traditional predict and provide parking model to one that facilitates a reduction in car parking standards in regeneration sites through Mobility as a Service (MaaS) systems and active travel.

In the context of the LSMA, mobility hubs will be encouraged in regeneration areas or central areas where high-density housing is planned, such as the LDA Colbert Station lands to contribute to sustainable transport mode share targets and reduce the reliance on the private car particularly for short-trips.

The application of mobility hubs is consistent with the NPF and the Section 28 Sustainable Urban Housing Guidelines which seeks to minimise or wholly reduce car parking in central areas or those well served by public transport.

Characteristics of Mobility Hubs::

- Consolidated car parking areas that predominately cater for long-stay residential use;
- Provide a focal point in the transport network that seamlessly integrates different modes of transport to maximise first mile-last mile connectivity with high-frequency public transport and high-quality walking and cycling networks;
- Supporting Mobility as a Service (MaaS) systems including car-sharing, car-clubs, bike sharing systems, cargo bikes and Electric Vehicle Charging Points (EVCPs);
- Places of intensification that contribute positively to the vitality of their surroundings by wrapping the parking area with apartments, roof-top facilities such as playgrounds and active ground-floor uses such as local shopping facilities and restaurants; and
- Provide drop-off/pick-up centres and concierge services to minimise the movement of delivery vehicles.

OBJECTIVE PK2

Mobility Hubs
Determine the feasibility of mobility hubs to support Transit Orientated Development and low car regeneration sites.

PARKING MANAGEMENT

As noted above, the availability and price of parking are major determinants of the relative attractiveness of the private car relative to sustainable transport options and are therefore an effective demand management tool. Effective management seeks to control the availability and price of parking.

Parking enforcement is also vital to ensure that footpaths, bus lanes and cycle lanes are not blocked by parked cars as this can be a barrier to movement for pedestrians and cyclists, especially those with disabilities.

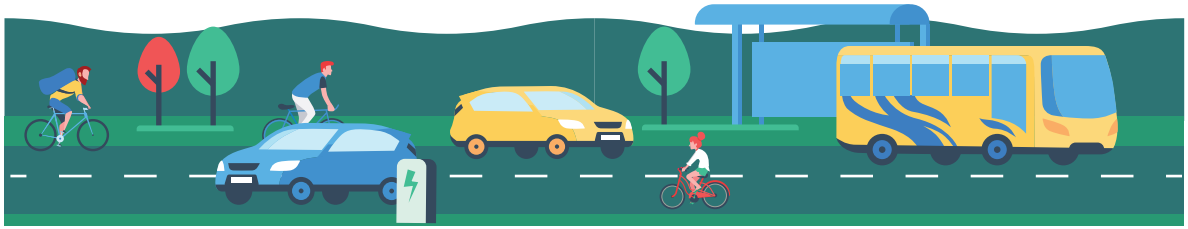
Parking for New Development

The NPF sets objectives that there should be no car parking requirements for new developments in or near the centre of the five cities, and significantly reduced requirements in the inner suburbs.
The NPF also states that universal standards for car parking should be replaced by site-specific performance-based criteria.

The application of low-car or car-free development is an increasingly common tool to facilitate higher density development and prioritise sustainable transport.

Restrictions are usually placed on the occupants of the new development to apply for on-street parking permits to mitigate local parking stress. Alternatives to private car ownership will be made available including provision of car club bays, public transport cards and expansion of cycle hire schemes and membership. Guiding principles for parking in new developments for the LSMA include:

- Maximum parking standards must be applied by both LA's and updated in the forthcoming Development Plans as necessary;
- The temporary oversupply of car parking during the early phases of development will be restricted. Local mobility hubs could be utilised to provide for the phased implementation of new development parking in some circumstances;
- Employers should be encouraged to limit or eliminate the availability of free parking;
- Direct high-density residential land use and high-trip generating uses including employment, education and retail to areas that are currently, or will be, served by high frequency transport services; and
- Set out car-free or low car standards in development areas within an 800m walking catchment area of Limerick City Centre and/or of quality public transport.



OBJECTIVE PK3

Parking Management

It is the intention of the NTA and the local authorities to better manage parking in the following ways:

- Implement maximum car parking standards for all new developments;
- Seek car-free and low car development in central and accessible areas;
- Repurpose car parking areas to support bus priority, cycle lanes, footpath widening, street trees and placemaking features;
- Support the gradual reduction of long-stay on-street parking in urban centres;
- Support the redevelopment of off-street parking for higher value uses including residential and employment; and
- Examine the case for a Workplace Parking Levy and charges on internet shopping deliveries and out-of-town shopping centres.

On-Street Parking

There are significant and often competing demands for kerbside spaces in Limerick City Centre, Shannon and other metropolitan town centres.

These include but are not limited to:

- Long and short-term parking;
- Loading and unloading facilities;
- Bus priority and ease of boarding measures;
- Taxi ranks;
- A desire to increase footpath widths and dedicated cycle infrastructure;
- Flood management measures; and
- Parklets, street trees and furniture.

To mediate this demand, a gradual reduction in on-street parking levels in urban centres over the lifetime of this Strategy will be required.

Limerick City and County Council currently operates a dual on-street parking payment system that incorporates disposable parking discs and an e-parking payment system. On-street parking in Limerick City is one of the cheapest in Ireland. The availability and pricing structure for on-street parking within the LSMA will be reviewed alongside the implementation of LSMATS with a view to moving towards a smarter system that facilitates a quicker turnover of spaces which facilitates the economic functions of town centres and provision of Electric Vehicle Charge Points (ECVPs).

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

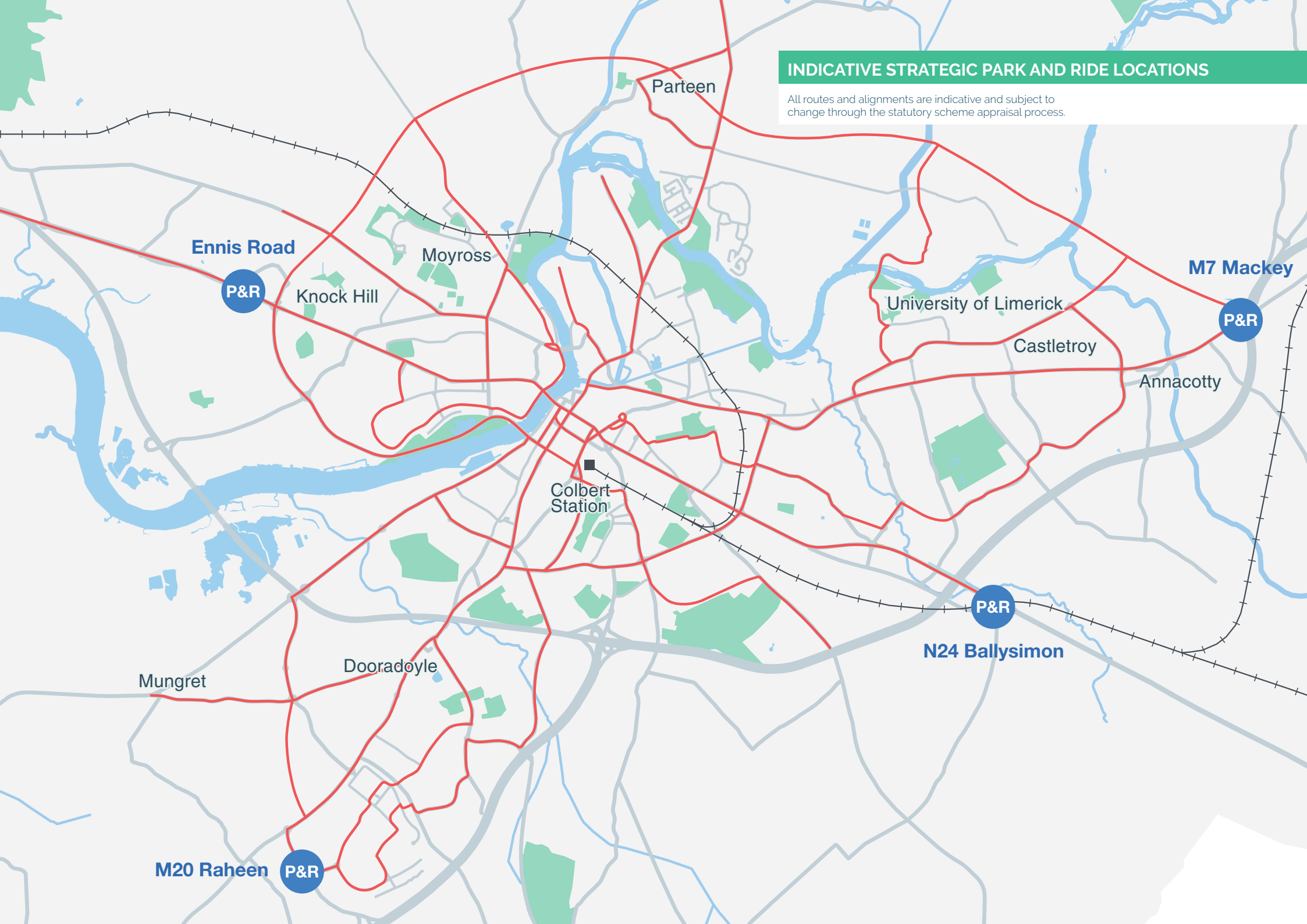
The proposed approach to on-street parking is as follows:

- Undertake comprehensive rolling reviews of the available kerbside space in town centres to understand how the space is being used and assess against existing and future needs, including implementation of BusConnects;
- Employ performance-based smart parking pricing systems in town centres to ensure that spaces are used efficiently but are readily available for non-commuting purposes including shoppers. Pricing should be set to reach a target maximum of 85% occupancy to reduce search traffic, congestion and emissions;
- Extend coverage of parking zones controls across the LSMA to safeguard spaces for residents, tackle illegal parking and to discourage commuter and other forms of long-stay parking.
- Consider gradual increases for the price of permits, particularly in areas where off-street parking options are readily available; and
- Provide alternatives to private car ownership including re-purposing more on-street space for car clubs, bike share systems and similar measures.

Off-Street Parking

The main objective of the off-street parking measures is to free-up kerbside space within urban centres and to support a viable, public transport system. The proposed approach will require coordination at a local and national level and includes the following:

- Implement a network of high capacity long-stay strategic Park and Ride facilities outside of the main approach roads to the city, serviced by appropriate high-frequency bus services, walking and cycling networks;
- Examine the case for Mobility Hubs in regeneration areas proposed to be served by public transport, walking and cycling networks;
- Introduce parking charges at out-of-town retail centres, to reduce local congestion associated with these developments;
- Examine the case for a Workplace Parking Levy (WPL) as is the case in Nottingham, to reduce congestion and ring-fence funding for sustainable transport provision;
- Support the phased, long term reduction of car parking through the use of mandatory, target-based Mobility Management Plans for new development and area-based travel planning for clusters of existing places of education and employment; and
- Undertake a review of parking in Shannon Town with a view to developing a Parking Management Strategy.


INDICATIVE STRATEGIC PARK AND RIDE LOCATIONS
All routes and alignments are indicative and subject to change through the statutory scheme appraisal process.
Parteen
Ennis Road
P&R
Knock Hill
Moyross
M7 Mackey
P&R
University of Limerick
Castletroy
Annacotty
Colbert Station
P&R
N24 Ballysimon
Dooradoyle
Mungret
M20 Raheen
P&R


SHANNON

12 FREIGHT, DELIVERING AND SERVICING

We will set a target aimed at reducing the environmental impact of freight while at the same time improving efficiency in the movement of goods and promoting economic competitiveness.

Smarter Travel: A New Transport Policy for Ireland 2009-2020

To meet NPF growth projections, construction of new homes, offices and schools will result in the increased movement of freight. There will also be a greater level of delivery and servicing activity and waste management. While presenting challenges in terms of safety, congestion, air and noise pollution, the clustering of activities - allied to an improvement in the strategic transport infrastructure - offers the possibility of innovative approaches to mitigate the impact of freight activity.

Both the Climate Action Plan and RSES support the need to develop a Regional Freight Strategy to accelerate the decarbonisation of the freight sector; integrate smart technologies in logistics management and reinforce the important role that the strategic rail and road (including TEN-T) network play in efficiently moving freight.

LSMATS supports the development of this Strategy in recognition of the need to decarbonise freight and the inter-regional nature of freight movements, especially as a result of increased activity to and from the Port of Foynes and Shannon Airport as well as increased development throughout the LSMA. It is also a key objective of the NPF and RSES to improve access to the Shannon Foynes Port and Shannon Airport.

HEAVY GOOD VEHICLES (HGVS)

HGVs play an integral role in moving goods throughout the LSMA and nationwide. HGV movement can have significant impacts on traffic operations, noise, air pollution and the safety of other road users, particularly within urban environments.

The central area of Limerick City is unsuitable for heavy goods traffic and should be restricted to only those vehicles of a suitable size with an origin or destination in the centre. LSMATS proposes further consideration of restriction of the movement of HGV within the area bounded by the N18, M7 South Ring Road and proposed LNDR.

According to the Limerick HGV Study 2015, banning HGVs from the City Centre from 07:00 to 19:00 would contribute to the creation of a safe and friendly environment for cyclists and pedestrians through the recovery of street space and the reduction of conflicts between modes. The implementation of designated 'lorry routes' on National roads at designated times of the day will also help reduce through traffic and mitigate delays and conflict with other modes.

In addition, regulating delivery times by limiting them to off-peak periods would contribute to off-setting local traffic congestion. This could also bring additional benefits to freight operators in terms of reductions on travel times and operating costs.

OBJECTIVE FDS1

HGV Restrictions

It is the intention of the NTA and the local authorities to:

- Identify specific lorry routes and/or time restrictions, to reduce peak-time HGV movements through Limerick City and neighbourhoods.

HGV management proposals include:

- Implementation of HGV restrictions within the area bounded by N18/M7 South Ring Road and the LNDR. The manner of implementation, enforcement, access routes and extent of scheme should be determined at a later stage between TII, the NTA, stakeholders from the freight industry and the Local Authorities; and
- Mobility management planning at key freight locations such as the Port of Foynes and Shannon Airport.

CONSTRUCTION AND LOGISTICS CENTRES (CLCS)

Shared construction and logistics centres (CLCs) are a recent trend in European cities projected to receive significant increases in population and construction activity in future years.

CLCs are typically set-up near strategic development areas on sites adjacent to the strategic road network to minimise travelling distances for construction materials. Developers are often required to sign up to shared CLCs as part of the development management process.

Trips to and from construction sites are minimised as HGVs with less than 80% occupancy are held until fully occupied and trips to construction sites are controlled using a booking system. The levels of development assigned to designated areas across the LSMA would appear to justify the need for a number of CLCs.

OBJECTIVE FDS2

Local Freight Management

It is the intention of the NTA and the local authorities to:

- Examine the feasibility of consolidation centres and break-bulk facilities outside of the National Road network in the medium-term, to facilitate smaller vehicles delivering to Limerick City Centre.

RAIL-BASED FREIGHT

A freight line between Limerick and Port of Foynes has been inactive since 2001. The RSES proposes an investigation into the feasibility of designating Limerick Junction as a regional logistics hub.

LSMATS is supportive of further investigation into the feasibility of rail freight. Further consideration between linking the Tier 1 Ports of Cork and Foynes and the Tier 2 Port of Rosslare by rail is recommended over the lifetime of the Strategy.

OBJECTIVE FDS3

Rail Freight

It is the intention of the NTA and the local authorities, in conjunction with Irish Rail and Shannon Foynes Port Company, to:

- Investigate the feasibility of rail freight from the Port of Foynes to Limerick and further afield over the lifetime of the Strategy.

FREIGHT STRATEGY

Both the Climate Action Plan and RSES propose the development of a Regional Freight Strategy to accelerate the decarbonisation of the freight sector, integrate smart technologies in logistics management and reinforce the important role that the strategic rail and road (including TEN-T) network play in efficiently moving freight. LSMATS supports the development of this strategy in recognition of the inter-regional nature of freight and HGV movements, especially as a result of increased activity to and from the Port of Foynes, Shannon Airport and industrial areas as well as increased development throughout the LSMA.

OBJECTIVE FDS4

Regional Freight Strategy

It is the intention of the NTA, Southern Regional Assembly and the local authorities to:

- Support the development of a Regional Freight Strategy to accelerate the decarbonisation of the freight sector, integrate smart technologies in logistics management and reinforce the important role that the strategic rail and road network play in efficiently moving freight.

DELIVERY AND SERVICING STRATEGY

Limerick has a number of significant regeneration and employment areas that will lead to an increase in delivery and servicing needs. Personal delivery and waste management services will also exponentially increase as more people live in the LSMA.

Objectives to manage this increase in delivery and servicing include:

- Examination of the case for urban or micro-consolidation centres within Limerick City to reduce the number of last-mile trips being made by motorised vehicles, e.g. examining the case for cargo bikes or small electric vans delivering to restaurants and shops;
- Examination of the feasibility of out-of-hours delivery and servicing through the use of low-noise vehicles like Electric Vehicles (EVs) and changes to planning conditions where appropriate;
- Examination of the feasibility of using smaller and non-motorised vehicles for delivery and servicing to reduce noise and air pollution and enable more street space to be given to pedestrians and cyclists;
- To minimise empty return trips by taking inspiration from innovative practices such as the Utrecht Cargohopper and Gothenburg's Stadleveransen city delivery system; and
- To support the placement of local 'Click and Collect' facilities at rail stations, new residential developments and Park and Ride facilities, to reduce the amount of individual personal deliveries to workplaces and homes where the recipient is often absent.

OBJECTIVE FDS5

Delivery and Servicing Strategy

It is the intention of the NTA and the local authorities to:

- Reduce the amount of 'last mile trips' being made by motorised vehicles;
- Facilitate the transition to zero-emission delivery vehicles such as cargo bikes, solar powered and electric vehicles; and
- Support local 'Click and Collect facilities where appropriate to minimise trips to individual homes and workplaces.


Lár na Cathrach
City Centre
Iarsmalann Hunt
The Hunt Museum
Siúlán Cois Abhann
Riverside Walk

13 SUPPORTING MEASURES

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

Design Manual for Urban Roads and Streets, 2019

LSMATS will provide a significantly enhanced transport system that supports the future growth of the LSMA, promotes more sustainable travel, reduces dependency on the private car, and contributes to lessening the transport impacts on climate change.

The role of supporting measures is to complement any infrastructure investment. The full benefits of the significant investment that will be delivered under LSMATS cannot be achieved through the provision of infrastructure alone and must be combined with the implementation of measures that support the best use of that infrastructure.

The LSMATS's supporting measures will be essential to the creation of physical, social and cultural environments where walking, cycling and public transport are attractive, practical and logical alternatives to the private car.

LOCAL TRANSPORT PLANS (LTPS)

Local Authorities should seek to translate the overarching outcomes and objectives of LSMATS through the use of area specific Local Transport at city or Metropolitan town centre level.

These Plans should set ambitious targets that enable a significant shift in active and sustainable mode shares and the reduction in private car trips in the short- to medium-term.

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

OBJECTIVE SM1

Local Transport Plans

It is the intention of the NTA and the local authorities to:

- Develop Local Transport Plans to translate LSMATS at city or Metropolitan town centre level.

ENNIS TRANSPORT HUB

Ennis is the County Town of Clare and, as such, is an important origin and destination for trips to and from the LSMA. It is an objective of Clare County Council to develop the town as a bus and rail connecting hub for the County and surrounding areas. The planning and design of transport infrastructure and services within the LSMA will take account of the demand for travel to and from Ennis.

The LSMATS will facilitate and promote enhanced services between Ennis and Shannon and Limerick, supporting its role as a mobility hub for County Clare.

OBJECTIVE SM2

Ennis as a Mobility Hub

It is the intention of the NTA and the local authorities to:

- Support Ennis as a mobility hub for County Clare.

WALKING AND CYCLING OFFICER

The appointment of a dedicated Walking and Cycling Officer (similar to that of Dublin City Council) should be considered within both two Local Authorities. The person who is appointed to this role should preferably be trained in behavioural change and have a working knowledge of design. Their role could include responsibility to:

- Coordinate a forum of relevant stakeholders to raise local issues relating to active travel;
- Hold a variety of promotional events to raise the profile of active travel in all metropolitan urban centres; and
- Be actively involved in the early-stages of public realm schemes, road projects and other proposals that may impact on the pedestrian and cyclist environment.

OBJECTIVE SM3

Walking and Cycling Officers

It is the intention of the NTA and the local authorities to:

- Appoint a dedicated Walking and Cycling Officer within each Local Authority.

BUILT ENVIRONMENT MEASURES

The design of the built environment plays a critical role in determining the number of people walking, cycling and using public transport.

Urban Design and Place-Making

There has been a shift in focus in recent years to re-examine the role of our streets as places in their own right that support a wider range of functions than simply routes to facilitate the through movement of traffic. Quality urban design that prioritises walking and cycling use for all ages and abilities is critical to enhancing a sense of place.

As noted in the Walking Chapter, the quality of design and layout of new developments will be required to support the physical infrastructure improvements outlined in this Strategy. These include safe, accessible permeable street and residential layouts that maximise the attractiveness of walking, cycling and access to public transport trips. Addressing the perception of safety and security is a high-priority for LSMATS to achieve its active and sustainable model share targets. Streets, buildings and places of interest must be safe, attractive, inclusive and accessible to all. Quality landscaping, tactile paving, play facilities and non-intrusive security measures including lighting, ground floor activity, and passive surveillance are therefore important place considerations.

The accessibility of the public realm for all individuals is also essential. The principles of Universal Design and Age-Friendly design will be followed in the implementation of public realm and streetscape interventions including access to public transport.

Pedestrian and Cycle Wayfinding

Wayfinding, or legibility, relates to the ease of how people orientate themselves in a space and navigate from place to place.

The Design Manual for Urban Roads and Streets (DMURS) provides guidance on wayfinding. There are several wayfinding techniques including visual cues such as landmarks, surface treatments, lighting, sight lines, and, where appropriate, signage. It is important that wayfinding techniques do not contribute to street clutter.

There are a variety of signage typologies present throughout Limerick City. A consistent wayfinding system along the lines of the Legible London system should be employed, alongside the delivery of LSMATS walking and cycle networks. This will benefit locals and visitors alike.

OBJECTIVE SM4

Legibility and Wayfinding

It is the intention of the NTA and the local authorities to:

- Ensure high-quality public realm and streetscape design that is attractive, comfortable and accessible for all individuals; and
- Enhance the wayfinding systems in Limerick and other key destinations throughout the LSMA.

BEHAVIOURAL CHANGE

A shift toward more sustainable modes of travel will need to be supported at a local level through behavioural change initiatives. Tailored programmes and awareness-raising campaigns can have an influence on an individual's mobility choices, particularly when paired with high-quality infrastructure.

Typically, an effective behavioural change programme comprises a highly personalised approach to make people reflect on their existing travel behaviour, inform them of all their option and educate them on the social, health, economic and environmental benefits of choosing sustainable and active transport.

Travel Planning

In 2012, Limerick City and County was selected as a Smarter Travel Area and the local authorities were awarded €9m for a 5-year programme. Smarter Travel works in partnership with a wide range of stakeholders to develop travel plans and to promote events such as Bike Week, BeSPOKE Cycling Festival and European Mobility Week.

The NTA continues to operate the Smarter Travel Workplaces and Campuses behavioural change programme. This provides support and resources to places of work and education to promote shift toward more sustainable work-related travel patterns. A large number of workplaces and campuses in the LSMA actively engage with these programmes.

The continuation and expansion of Smarter Travel in the LSMA is recommended to play an important role in delivering the behavioural change that is required to achieve the full benefits of LSMATS. It also provides a platform to communicate the implementation of LSMATS and to promote the benefits of the Strategy directly with a large number of people.

Workplace Travel Planning

Workplace travel planning comprises a package of measures aimed at enabling and promoting sustainable travel patterns to and from places of work and reducing single-occupancy car journeys.

Given the projected employment growth across the LSMA by the NPF and RSES, LSMATS recommends the requirement for Mobility Management Plans/ Workplace Travel Plans. Close collaboration between the Local Authorities and workplace clusters at the Raheen Industrial Park, National Technology Park and the wider Shannon Town Centre and employment areas is recommended for the robust implementation of Workplace Travel Plans.

School Travel Planning
Improving the quality and extent of school travel planning across the LSMA is of critical importance to the reduction of the social, health and environmental impacts of car-based journeys to school on public health, the environment and congestion.

In simple terms, far too many children are driven relatively short distances to school. Many schools are now located on greenfield sites at the edge of new development areas, remote from existing residential catchments, with a resultant high level of dependence on car-based accessibility. In many cases, attempts to incorporate active travel are undermined by a lack of adequate design provision for walking and cycling and readily available parking. In order to address some of these issues, the NTA has overseen the Travel Module of An Taisce's Green Schools Programme since its inception in 2008. Measures which would improve travel to school include:

- Better integration of new schools into existing or planned new development areas to optimise walking and cycling catchments;
- Mandatory School Travel Plans;
- NTA's Universal Walkability Audits to be undertaken to identify areas for improvement around the school gates;
- Safer Routes to School programmes that includes targeted infrastructural improvements to facilitate initiatives such as the Limerick Cycle School Bus, Walking Buses and Park and Stride drop-off areas within walking distance of the school;
- Facilitate 'No Idling' zones and 'School Streets' programmes to improve local air quality, public health, safety and incorporate informal play;
- Further support to the Limerick School Bus initiative;
- Safe Routes to School;
- Continued roll-out and expansion of the Green Schools Travel Module;
- Cycle training carried out in schools can give children the skills and confidence to cycle to school; and
- An uplift in cycle parking provision.

LSMATS recommends the further investigation of this topic through a comprehensive School Travel Strategy for the LSMA.

Marketing Campaigns
Marketing campaigns are an effective tool to raise awareness and encourage people to travel by sustainable modes. The NTA undertakes such campaigns under the "Transport for Ireland" brand.

In delivering sustainable transport improvements, consideration should be given to branding, marketing, and advertising using smart, creative, cost-efficient campaigns targeted at increasing and maintaining sustainable transport demand. Information campaigns be an integral part of LSMATS delivery.

OBJECTIVE SM5

Behavioural Change and Smarter Travel
It is the intention of the NTA and the local authorities to:

- Continue to implement behavioural change initiatives and marketing campaigns to support LSMATS objectives.

TECHNOLOGY FOR SUSTAINABLE TRANSPORT

Technological advancements offer transformative potential to respond to some of the issues outlined in the Strategy and will become more prevalent over the lifetime of LSMATS. Some established and emerging technologies in the transport industry relevant to LSMATS are outlined below.

Mobility as a Service (MaaS)
Mobility as a Service (MaaS) is a concept which involves the use of technology to support integration and multi-modal travel. It represents the transition away from depending on personally-owned transport to a model based on mobility provided as a service. MaaS usually takes the form of a unified gateway/ online account which provides access to the user to public transport, cycle hire, car clubs and taxis at the click of a button. MaaS will also be a useful tool in land use planning to support car free or low car developments near public transport hubs and provide access to a car without owning one when needed.

Intelligent Transport Systems
The application of Intelligent Transport Systems (ITS) to the transport system will increase the efficiency of its operation. ITS represents the evolution of traffic management from a static unresponsive activity to a dynamic responsive activity that can adapt to the ever-changing traffic conditions in real time.

ITS allows for rapid response to real-time conditions. Applications of ITS include:

- Application of Variable Speed Limits;
- Use of dynamic parking systems;
- Advanced Bus Signalisation; and
- Smart delivery and servicing systems, such as the pre-booking of delivery bays.

Car Clubs

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

There is credible evidence to suggest that the increased availability of car clubs leads to a reduction of private car ownership. A recent survey undertaken by Steer Davies Gleave in London (Carplus, 2016) suggests that 10.5 private cars are removed from London's roads for each car club vehicle as users' dispose of their cars. Furthermore, a third of round-trip car club members reported that they would have bought a private car had they not joined a car club meaning a deferred purchase of a further 22 cars per car club vehicle.

At present, there are eight GoCars operating in Limerick City Centre, including one located in Colbert Station. LSMATS envisages an uplift in the provision of car clubs, particularly as part of mobility hubs in high-density residential development or a high-concentration of employment or commercial uses. Further consideration should be given to one-way or 'floating' car clubs such as the DriveNow or Zipcar Flex.

Dynamic Parking Systems/ Virtual Loading Bay Systems

To support a more efficient use of kerbside space, urban areas in Europe have begun trialling smart technology including dynamic on-street parking models and virtual loading bays recouping costs by charging for vehicles to use this service. This technology can be investigated further in Ireland to minimise conflict for competing demands for limited road space and to reduce search traffic and local congestion.

Virtual parking and advanced booking of loading bays can assist companies make deliveries on time, reducing congestion and conflict.

Electric Vehicles (EVs)

The use of EVs is expected to grow significantly in the coming years. The NPF, in line with Ireland's Climate Action Plan and Climate Mitigation Plan, envisages the progressive shift towards EVs and hybrid traction systems for private vehicles and public transport fleets. The RSES and the Shannon Town and Environs LAP 2012-2018 also foresee the increase of EVs on roads as part of their smarter travel strategies.

This expected increase in the use of EVs must be supported by the development of public charging infrastructure. The ESB currently provides 1,100 public charging points in Ireland, with less than 15 points located within the LSMA. The Strategy envisages an uplift in the number of EVCPs across the LSMA to include slow-charge, medium change and fast-charge facilities primarily replacing existing parking spaces.

EVS, however, are not a panacea to alleviating congestion or the pressing issue of reallocating private car storage space for sustainable transport and biodiversity. The initial focus for lower emission vehicles should be for 'necessary' trips such as public transport, public authority fleets, private hire vehicles, delivery and servicing and waste collection.

Autonomous Vehicles (AVs)

Autonomous Vehicles (AVs), or driverless cars, may potentially provide an opportunity to improve safety, with cars programmed to obey traffic regulations and speed limits and geofencing preventing them from entering certain spaces. Driverless cars could potentially free up kerbside space as the demand for on-street residential and long-stay parking is no longer needed. However, AVs are not considered as a substitute for walking, cycling and public transport. There are a number of outstanding legislative, legal and technical issues in relation to AVs and their impact on active travel and public transport.

Though outside of the scope of this Strategy, both the NTA and Local Authorities will need to assess, legislate and monitor benefits (or otherwise) presented by the advent of shared use AVs likely to present themselves over the lifetime of the Strategy.

OBJECTIVE SM6

Technology for Sustainable Transport

It is the intention of the NTA and the local authorities to:

- Investigate the potential for Mobility as a Service (MaaS) systems to facilitate sustainable transport;
- Examine the case for innovation and increased provision of car clubs to reduce the need for private car ownership;
- Investigate the feasibility of dynamic parking and loading systems;
- Facilitate the transition to Electric Vehicles and other low emission vehicles; and
- Monitor the evolution of Autonomous Vehicles; assess the benefits (or otherwise) of their likely impact on street space, public transport provision, legislation requirements, and the desirability of prioritising Active Travel.

This assessment will need to measure their relevance against over-arching objectives to promote more active travel, promote equitable transport, employment, and to reduce congestion, pollution and street clutter.

SMART TICKETING

At present, there are two options to pay on-board Limerick city buses: cash or Transport for Ireland's Leap Card. However, two routes are operated by Dublin Coach, on which it is possible to pay by cash only. Available smartphone apps in Ireland such as Transport for Ireland (TfI) Leap Top Up, TfI Journey Time and TfI Cycle Planner do not offer the option for contactless payment.

However, the NTA recently invested €3.6 million in the development of a new mobile ticketing app for Bus Éireann routes that will allow users to search for ticket options, purchase them and present them for validation when travelling.

One of the goals of LSMATS is to deliver an integrated transport system to allow people and goods to move efficiently and seamlessly throughout the LSMA across all modes. Integrated ticketing and smartcard technology will play an integral role in achieving this.

There are many benefits of integrated ticketing, including:

- Convenient way to pay fares;
- Contributes to seamless travel across different public transport modes from bus, rail, bike share schemes to car share schemes, improving dwell and travel times;
- Smart ticketing and 'pay as you go' modality allow for responsive fare structures to be implemented to offer better value for money; and
- Contactless payment allows transport operators to reduce operational costs related to paper tickets printing and issuance and cash handling.

Example of Smart Ticketing include:

- **Contactless payments** using debit cards, credit cards, Google Pay, Apple Pay, NFC-based smartphone apps; and
- **Smart cards** are cards that contain a chip that can safely store information such as available and used credit and subscriptions rights; plus, they enable the application of different types of discounts to regular users, e.g. Oyster Card in London, Carte Navigo in Paris.

Over the lifetime of the Strategy, it is envisaged that cashless fares with smarter ticketing and subscription-based, Mobility-as-a-Service (MaaS) will become increasingly more prevalent.

OBJECTIVE SM7

Smart Ticketing

It is the intention of the NTA and the local authorities to:

- Upgrade and integrate the ticketing system across public transport in tandem with BusConnects Limerick; and
- Investigate the possibility of integrating Leap card with other transport modes such as Limerick Bikes and Car Clubs.

PUBLIC TRANSPORT FARES

The broad principle for public transit fares is that the system should be:

- Easy to use and understand;
- Designed to provide price incentives for more frequent use;
- Regionally integrated with as many modes of transport as possible; and
- Affordably priced to make public transit an attractive alternative to the private car.

A zone-based fare structure is currently available in Limerick city and suburbs on public transport services provided by Bus Éireann.

The on-going changes to public transport fares being implemented by the NTA will be continued within the lifetime of LSMATS.

A fare structure review will be undertaken to ensure that the LSMATS networks are supported in a manner that encourages increased public transport use and provides for appropriate cost recovery. It is intended that a further simplified fare structure will be put in place in the LSMA, potentially a flat fare or a zone-based system, allowing multiple journeys by different modes for a single fare.

Other structures that could be considered during the lifetime of LSMATS:

- **Subscription-Based Fare Structure** reward frequent users by providing them with a pass for unlimited trips, zones and modes for the duration of the subscription. For instance, the Citymapper Pass, in combination with a multi-modal mobility app, provides a subscription-based service to all residents of London. Run by the private sector, the contactless card can be used across different transport services within TfL and other local operators within the London's Oyster/contactless zone.
- **Multi-Modal Fare Structure** is currently applied in Dublin through the Leap 90 discount. Transport users using more than one mode within 90 minutes after their first tag-on get an automatic fare discount on the subsequent trip legs. For instance, an adult travelling by bus up to Dublin City Centre and boarding the Luas within the following 90 minutes receives a discount of €1.00 on the Luas fare. The Luas card in Dublin can also be used to access GoCars and the BSS.

OBJECTIVE SM8

Public Transport Fares

It is the intention of the NTA and the local authorities to:

- Review the public transport fare structure in tandem with the implementation of BusConnects Limerick.

SMALL PUBLIC SERVICE VEHICLES

Taxis provide an important transport service offering door-to-door trips and can supplement a public transport system. Taxis offer the ability to complete one-off trips that may be difficult to provide for efficiently by other modes. LSMATS recommends the following for small public service vehicles:

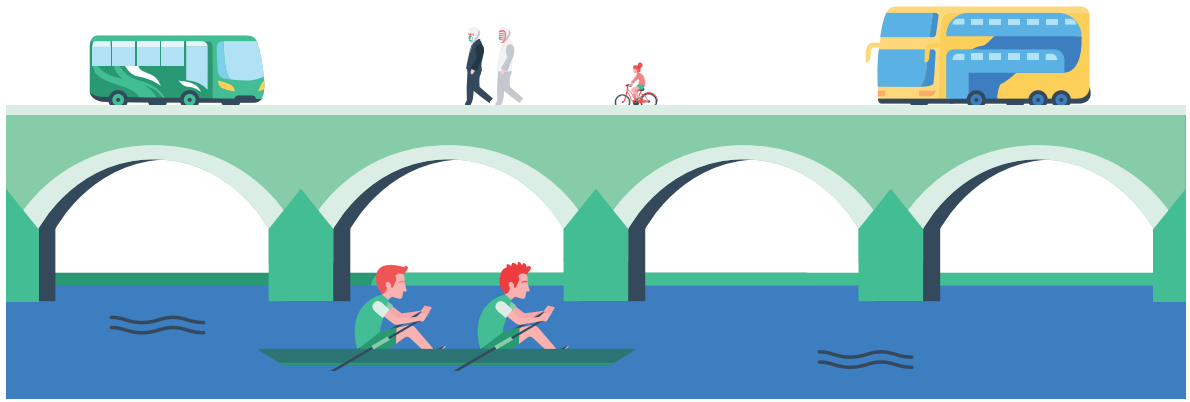
- Implement good practice in efficient kerbside management such as dual use of delivery bays and taxi ranks through time-restrictions to support both the day- and night-time economy. This is particularly pertinent given the increased use of smartphone apps;
- Prioritise taxis for conversion to low emission vehicles;
- Ensure all taxis are fully wheelchair accessible;
- Improve the integration of small public service vehicles into the overall public transport network through better interchange opportunities and information provision; and
- Encourage the provision of local hackney services in areas where conventional taxi services are generally unavailable.

OBJECTIVE SM9

Small Public Service Vehicles

It is the intention of the NTA and the local authorities to:

- Investigate the growing use of smartphone technology to consider the need for permanent taxi ranks;
- Prioritise the conversion of public service vehicles to low or zero emission technology;
- Provide better integration with the public transport network; and
- Ensure that new public service vehicles are fully accessible.




BRIDGE SURGERY

14 IMPLEMENTATION

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

National Planning Framework 2040

LSMATS is intended to be scalable, flexible and future-proofed enough to meet changes in population and employment growth. It is a live document, subject to periodic review every 6 years. To achieve the optimum results from LSMATS, Limerick City and County Council and Clare County Council will work in collaboration with the National Transport Authority, Transport Infrastructure Ireland, the Southern Regional Assembly and other key stakeholders to:

- Deliver on the necessary land-use consolidation to achieve compact growth and critical mass;
- Secure capital investment under the NDP and other forms of investment;
- Implement LSMATS' transport network, supporting measures and demand management measures; and
- Monitor and review progress.

COSTS AND FUNDING

The delivery of LSMATS will be subject to the availability of funding. It is acknowledged that each of the major elements of LSMATS will be appraised individually on its own merits, in terms of feasibility, design, planning, approval and funding. Business cases will be required for each of the major infrastructure proposals included in the Strategy, in line with the requirements of the Public Spending Code and the Common Appraisal Framework.

PHASED IMPLEMENTATION

A phased implementation plan has been devised to incrementally realise the transport infrastructure, services and investment over time to align with the projected growth of the LSMA. The Strategy's timeline is cognisant of the NDP and aligned with that of the RSES. The plan has disaggregated the strategy implementation in to three timeframes:

- Short-Term: 1-6 years (up to 2026);
- Medium-Term: 7-11 years (up to 2031); and
- Long-Term: 13-20 years (to 2040).

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

In the event of population and employment growth earlier than anticipated, specific elements of public transport infrastructure will need to be brought forward as required. The scalability of the public transport infrastructure means that planned frequencies can also be revised upwards to meet growing demand.

PEDESTRIAN NETWORK

Short- to Medium-Term

- Delivery of measures proposed by the Limerick Metropolitan District Movement Framework;
- Improvements to the Walking Network aligned with the implementation of BusConnects Limerick and the Cycle Network;
- Area-wide walkability and permeability audits to inform site-specific improvements; and
- Ongoing maintenance, upgrade and renewal of footpaths, public realm and other pedestrian infrastructure.

Long-Term

- Ongoing maintenance and renewal of footpaths, public realm and full realisation of the Walking Network proposals.

CYCLE NETWORK

Short- to Medium-Term

- Development and completion of the Primary and Secondary Cycle Network;
- Development of Feeder Network and Quietways;
- Implementation of the Cycle Network in line with the delivery of BusConnects bus priority measures; and
- Further implementation of the network in line with new development opportunities and traffic calming

Long-Term

- Completion of Inter-urban and Greenway Cycle Networks; and
- Ongoing maintenance of cycle infrastructure.

BUS NETWORK

Short-Term

- Further develop, design and implement the BusConnects service network and bus priority measures for Limerick based on the LSMATS proposals;
- Deliver bus priority from Plassey to Raheen via the City Centre; and
- Improve regional services from Shannon Airport to Limerick, Cork and Galway.

IMPLEMENTATION PLAN

TIMEFRAME		SHORT TERM (UP TO 2026)	MEDIUM TERM (UP TO 2031)	LONG TERM (UP TO 2040)
WALKING	Upgrades and Improvements to Pedestrian Infrastructure	■	■	■
CYCLING	Primary Network	■	■	■
	Secondary Network	■	■	■
	Feeder Network	■	■	■
	Inter-Urban		■	■
	Greenway		■	■
BUS	BusConnects Implementation	■	■	
	Wider Bus Network Improvements	■	■	
RAIL	Dual-track between Limerick Colbert and Limerick Junction		■	
	Existing Station Upgrades and Improvements	■	■	
	Electrification of Rail			■
	Investigate Potential New Stations			■
	Implement Upgrade at Ballycar	■		
PARKING	Delivery of Park and Ride facilities	■	■	■
	Implementation of Parking Management Measures	■	■	
ROADS AND STREETS	Development of a City Centre Traffic Management Strategy	■		
	Junction Improvements	■	■	
	Limerick Northern Distributor Road (LNDR)	■	■	
	M21/N69 Foynes to Limerick Road (including Adare Bypass)	■	■	
	Delivery of N19	■		
	Design and Planning of N/M20	■		
	Progress and Delivery of N/M20		■	
	Progress and Delivery of LSMA National and Regional Road Scheme		■	■
FREIGHT	Preparation of a Regional Freight Strategy	■		
	Preparation of a Local Freight Strategy	■		
OTHER SUPPORTING MEASURES	Demand Management Measures	■	■	■
	Integration Measures	■	■	■
	Intelligent Transport Systems (ITS)	■	■	■

Medium-Term

- Completion of BusConnects Limerick bus priority measures.

Long-Term

- Ongoing operation and optimisation of the BusConnects network and priority measures.

RAIL NETWORK

Short-Term

- Review to examine the improvements in journey times and investment in high-speed rail between Belfast, Dublin, Limerick Junction and Cork;
- Examine the feasibility of a dual-track between Limerick Colbert Station and Limerick Junction; and
- Design and implement the upgrade of Ballycar rail line to alleviate flooding.

Medium-Long Term

- Implementation of dual track between Limerick Colbert and Limerick Junction; and
- Investigate opportunities for Public Transit Oriented Development along Metropolitan rail lines.

Long-Term

- Electrification of rail lines; and
- Investigate the potential for new stations including a station to support the Park and Ride at Ballysimon.

ROAD NETWORK

Short-Term

- Identify junction improvements required to improve facilities for public transport, walking and cycling;
- Development of a City Centre Traffic Management Strategy by NTA and Limerick City and County Council;
- Deliver public transport priority measures in line with the implementation of BusConnects;
- Delivery of the Limerick Northern Distributor Road;
- Design and Planning for the LSMA National Road Schemes (M21/N69, N19, M18/N19 junction and N/M20); and
- Delivery of N19.

Medium-Term

- Ongoing review, monitoring and implementation of National Road network demand management measures;
- Complete the delivery of the LNDR; and
- Progress and delivery of LSMA National Road Schemes (M21/N69 and N/M20).

Long-Term

- Ongoing review, monitoring and implementation of National Road network demand management measures;
- Ongoing development of the regional road network to provide sustainable access to development lands; and
- Progress and delivery of LSMA National Road Schemes.

PARKING

Short-Medium Term

- Design, planning and land acquisition for all strategic Park and Rides;
- Reduction in on-street parking;
- Implement parking zones across the LSMA;
- Development of Mobility Hubs in regeneration areas;
- Continue to deliver Park and Ride facilities in tandem with the implementation of BusConnects; and
- Continue to reduce on-street parking.

Long-Term

- Delivery of all Park and Rides.

FREIGHT

Short-Term

- Preparation of a Regional Freight Strategy that encompasses the Tier 1 Ports of Cork and Foynes-Shannon and the Tier 2 Port of Rosslare; and
- Develop a local freight strategy to better manage HGV movements in Limerick City.

FUNDING AND OPERATIONAL COSTS

Aside from capital investment the implementation of the Strategy will incur on-going operational costs. A significant proportion of capital investment will require Exchequer funding from Central Government, however other sources of supplementary funding will be required. These are likely to include but not be limited to:

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

STRATEGY OUTCOMES

Future Growth

132k population 2016

206k population 2040

Daily Demand For Travel

416k 2016

580k 2040

AM Peak Mode Share 2016 - 2040

- 61.1% 2016 / 51.8% 2040
- 28.9% 2016 / 31% 2040
- 7.9% 2016 / 13% 2040
- 2.1% 2016 / 4.2% 2040

Safety & Environmental

Over a 30 year strategy period

Reduction in **9.3** Fatal Casualties

Reduction in **36.4** Serious Casualties

Reduction in **764.3** Slight Casualities

Environmental: **37,572** tonnes pa reduction in vehicular emissions

Accessibility And Social Inclusion

Bus Connects Catchment

72.6% of population

72.7% of jobs

Social Inclusion: **up to 6.2%** increase in PT mode share for disadvantaged and very disadvantaged areas

Economy & Cost Estimate

Present Value of Costs: €1.1bn
Present Value of Benefits: €3.2bn
Net Present Value: €2.1bn

Benefit to Cost Ratio: 2.8

Total Strategy Cost Estimate **€1.4bn**

15 STRATEGY OUTCOMES

The successful implementation of the Strategy's proposals will result in overwhelmingly positive outcomes for the Limerick-Shannon Metropolitan Area, providing long-term economic, social and environmental benefits to the region. LSMATS addresses the existing transport challenges outlined in the introductory chapters.

It should be noted that the modal targets presented here for walking, cycling and public transport use are the result of a strategic modelling process and not envisaged as ceilings or targets. Further revisions upwards to the sustainable mode shares are expected through the review process as infrastructure is improved and demand management measures are adopted by both Local Authorities.

The key outcomes for LSMATS are aligned with the six guiding principles of the Strategy which were identified at the beginning of the Strategy development process.

PRINCIPLE 01

To meet the demand generated by the existing and planned development.
The LSMATS has been prepared based on the land use forecasts set out in the NPF, RSES and Development Plans. As such, the demand generated for the strategy's development and assessment takes into account all existing and proposed development as provided for by these policy documents.

PRINCIPLE 02

To support the future growth of the LSMA through the provision of an efficient transport network.
LSMATS has been developed to promote a much closer integration of land use and transport planning and future-proof the Metropolitan Area. The Strategy's guiding land use policies alongside the proposed significant improvements to the pedestrian, cycle, bus, rail and road networks will enable the projected population and employment growth for the LSMA.

PRINCIPLE 03

To prioritise active and sustainable transport and reduce car dependency within the LSMA.
Implementation of LSMATS will result in a step-change in public transport provision and builds upon existing walking and cycling strategies adopted by both Local Authorities. This prioritisation of sustainable modes and the decarbonisation of the public transport fleet is in line with the growing recognition of the negative impacts of motorised vehicles and carbon emissions on the environment and people's health and wellbeing. The need for private car ownership (and dependency) will be greatly reduced through the adoption of demand management and supporting measures including car clubs and Mobility as a Service (MaaS).

PRINCIPLE 04

To provide a high level of public transport connectivity to key destinations within high demand corridors.
BusConnects Limerick will provide end-to-end radial and orbital connectivity between Limerick City Centre and suburbs. The network's key corridors will encompass catchment areas of high trip attractors and generators of all key education and employment hubs from the Shannon Airport, Freezone and Town, National Technology Park, University of Limerick, Mary Immaculate College, Limerick Institute of Technology, City Centre, University Hospital Limerick and Raheen.

PRINCIPLE 05

To identify and protect key strategic routes for the movement of freight traffic to the Port of Foynes, Shannon Airport and industrial areas.
The movement of freight-related traffic will be made more efficient over the lifetime of the Strategy through the implementation of an HGV restriction zone in Limerick City and the designation of Lorry Routes. The removal of HGVs from the City Centre and built-up areas will also significantly improve the pedestrian environment by reducing noise and air pollution and risk of conflict. LSMATS also supports the development of a Regional Freight Strategy.

PRINCIPLE 06

To enhance the public realm through traffic management and transport interventions.
There will be a gradual transfer of kerbside space and other areas currently dominated by cars for use by pedestrians and cyclists. This will facilitate public realm enhancements in line with Design Manual for Urban Roads and Streets and the National Cycle Manual guidance. Public realm will be accessible, attractive, safe and interesting for all ages and abilities.

PRINCIPLE 07

To increase transport capacity where needed to achieve the strategy outcomes.
Implementation of LSMATS will result in significantly upgraded transport network and capacity to realise future population and employment growth projections. The Strategy directs sustainable transport infrastructure to where it is most needed, to complement land-use projects outlined in the NPF, NDP, RSES and future growth scenarios set out by Limerick City and County Council and Clare County Council.

LIST OF ACRONYMS

AA	Appropriate Assessment
AV	Autonomous Vehicles
BSS	Bicycle Share Scheme
CLC	Construction Logistics Centre
CSO	Central Statistics Office
DMURS	Design Manual for Urban Roads and Streets
DTTaS	Department for Transport Tourism and Sport
EU	European Union
EV	Electric Vehicle
EVCP	Electric Vehicle Charging Point
HGV	Heavy Goods Vehicle
ITS	Intelligent Transport System
LIT	Limerick Institute of Technology
LNDR	Limerick Northern Distributor Road
LSMA	Limerick Shannon Metropolitan Area
LSMATS	Limerick Shannon Metropolitan Area Transport Strategy
MaaS	Mobility as a Service
MASP	Metropolitan Area Strategic Plan
NDP	National Development Plan
NPF	National Planning Framework
NPO	National Policy Objective
NSO	National Strategic Objective
NTA	National Transport Authority
NTP	National Technology Park
TOD	Transit Orientated Development
RSES	Regional Spatial and Economic Strategy
RTPI	Real Time Passenger Information
SEA	Strategic Environmental Assessment
TII	Transport Infrastructure Ireland
UL	University of Limerick