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Project Ireland 2040
Building Ireland's Future

Jacobs

SYSTRA

Revised Draft Limerick | Shannon

METROPOLITAN AREA TRANSPORT STRATEGY 2040

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METROPOLITAN AREA TRANSPORT STRATEGY

This Strategy sets out the framework for the delivery of the **transport system required to further the development of the Limerick Shannon Metropolitan Area as a hub of cultural and social development and regeneration; as the economic core for the Mid-West; as an environmentally sustainable and unified metropolitan unit; as a place where people of all ages can travel conveniently and safely; and a place that attracts people, jobs** and activity from all over Ireland and beyond.

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PART A | BACKGROUND TO LSMATS

01 A VISION FOR TRANSPORT IN THE LIMERICK SHANNON METROPOLITAN AREA

The LSMATS starts a new era for transport in the Limerick Shannon Metropolitan Area.

This Strategy sets out the framework for the delivery of the transport system required to further the development of the Limerick Shannon Metropolitan Area as;

- a hub of cultural and social development and regeneration;
- the economic core for the Mid-West; as an environmentally sustainable and unified metropolitan unit;
- a place where people of all ages can travel conveniently and safely; and
- a place that attracts people, jobs and activity from all over Ireland and beyond.

The implementation of the LSMATS by the National Transport Authority, Transport Infrastructure Ireland, Limerick City and County Council and Clare County Council will transform this city-region.

02 THE PILLARS OF THE LSMATS

The function of the LSMATS is to provide a long-term strategic planning framework for the integrated development of transport infrastructure and services for the Limerick Shannon Metropolitan Area (LSMA). It is a cross-county Metropolitan scale document which sets out the policies and objectives of the NTA, Limerick City and County Council, Clare County Council and Transport Infrastructure Ireland at a level appropriate to that scale.

Many of the details of transport infrastructure or services are most appropriately dealt with at a more localised level and as such, this Report, where applicable, refers to more detailed programmes and projects which will be brought forward by the NTA and other agencies at a future date.

With this strategic function in mind, the LSMATS comprises the transport planning response to a range of challenges across several areas of national, regional and local government. These are presented here as eight pillars.

These pillars were then translated into Strategic Transport Objectives against which the strategy is measured and appraised.

2.1 THE PILLARS OF THE LSMATS

2.1.1 Climate Change and Reducing Emissions

In terms of the requirement to reduce emissions from transport by 50% by 2030, there are two main actions required, namely:

- Increased use of public transport, walking and cycling; and
- Conversion of the transport fleet to zero emissions vehicles

The core function of the LSMATS is to meet the first objective, and this Report sets out the scale and the strategic-level detail of the investment required to facilitate a reduction in the use of the private car in the LSMA over the period to 2040.

While the conversion of the national transport fleet to low and zero-emissions vehicles is primarily a matter for national level policy and investment programmes, rather than a single metropolitan transport strategy, the LSMATS will promote and facilitate this change. All urban public transport vehicles will be zero-emissions by 2035, with this transformation already underway. The NTA are committed to this on a national basis.

In relation to the private car fleet, the LSMATS commits the local authorities to facilitate the roll-out of electric cars through the provision of on-street public charging points where demand requires them.
However, simply transitioning the car fleet to electric vehicles is insufficient to deliver a sustainable transport system and a key focus of the Strategy is to facilitate increased use of other modes in order to meet environmental, economic and social objectives related to emissions, congestion and car-dependency.

In relation to goods vehicles, the freight sector will be required to contribute to the overall carbon reduction goal. The LSMATS, insofar as its remit extends, facilitates this by the promotion of rail freight, the introduction of revised delivery arrangements and by seeking to reduce the effects of congestion generally.

The proposals in the LSMATS also facilitate and support the recently established Decarbonisation Zone in Limerick City by providing alternatives to the private car.

2.1.2 A Unified Limerick | Shannon Metropolitan Area

It is vital that the interdependency between Limerick and Shannon is strongly supported by the LSMATS. This new Metropolitan Area, as defined in the Regional Spatial and Economic Strategy (RSES) for the Southern Area, needs to be planned on a unified basis and the objectives of Clare County Council and Limerick City and County Council need to be aligned accordingly.

While the focus of investment in transport will be on the City and, in particular the City Centre, as the location where the demand for travel will be greatest, the role of Shannon is critical to the economic well-being of Limerick and County Clare, both as a national centre of employment, and as the international gateway to the Mid-West.
The LSMATS aims to significantly improve the

quality of the public transport connections between Shannon and Limerick and to target specific improvements to achieve this aim, as well as facilitating car travel between the two centres. There are many other settlements within the LSMA, as well as significant rural areas. The roles of all of these places will be protected and enhanced by the transport proposals set out in the LSMATS.

2.1.3 Revitalisation of Limerick City Centre

Limerick City Centre is the prime hub of economic, social and cultural activity for the Mid-West. It is defined in large part by its Georgian architectural heritage in Newtown Pery, and by the medieval parts centred on King John's Castle and St. Mary's Cathedral. The development of the LSMATS has been underpinned by the core aim to transport as many people as possible into the City Centre by sustainable modes in order to facilitate its growth, its revitalisation and the maintenance of its pre-eminent role in the region.

There are two distinct but interrelated overarching objectives for Limerick City Centre, which the LSMATS must support. The first relates to the redevelopment of several derelict and under-utilised sites of significant scale in the City Centre. The second is the requirement for the protection and enhancement of its built heritage and the public realm. In meeting the first objective, the LSMATS will serve and make possible the redevelopment of the lands at Colbert Station; the Opera Site; the Cleeves site; the Hanging Gardens, and the multitude of under-utilised and derelict sites in the City Centre by significantly increasing the capacity of the transport network to bring workers, shoppers, and visitors into the City. In relation to the second objective, the LSMATS, by transforming the streets of the City Centre itself, through significant investment in pedestrian and cycle infrastructure, and by addressing the dominance of motor vehicles, will facilitate the protection and enhancement of its built heritage and the public realm. Thus, making the City Centre a far more attractive place for people and families to live in, to work in and to visit.

2.1.4 Transit Oriented Development

The LSMATS proposes a comprehensive public transport network across the LSMA and a high-quality cycle network which will support Transit-Oriented Development to emerge at key points where accessibility is maximised. This will allow for the close integration of housing development and other land uses with sustainable transport provision.

Appropriate locations for higher density housing would therefore include Colbert Station and potential suburban nodes at Moyross, Parkway and other points along the public transport network. Such an approach would have the benefit of reducing the need for land to be zoned in locations that are not planned to be served by high-capacity public transport. This would be in accordance with Regional Policy Objective 10 of the Regional Spatial and Economic Strategy for the Southern Region seeks to achieve compact growth in Metropolitan Areas where development can be served by public transport, walking and cycling.

2.1.5 Reducing Social Disadvantage

Limerick Regeneration is a multi-agency, cross-sectoral programme to address social disadvantage in four areas of the City. Transport is but one element that can contribute to this, but it is an important one.

The key issue here is access to employment and services and how best to reduce the sense of physical isolation through transport interventions.

The core measures that the NTA can bring to disadvantaged areas under the auspices of the LSMATS, in conjunction with Limerick City and County Council, are as follows:

- Improved frequency of public transport services to regeneration areas;
- The provision of safe and secure cycling facilities;
- The provision of pedestrian linkages to surrounding areas;
- Public realm improvements; and
- Reducing the need to own a car.

It is the view of the NTA that the provision of better physical connections via transport, between the regeneration areas and the City Centre, areas of employment, further education and other locations within the Metropolitan Area will help overcome some of the most serious aspects of deprivation related to accessibility and social mobility. The implementation of the LSMATS and the application of its principles at the local level, by the NTA and Limerick City and County Council will deliver the sustainable transport elements of the regeneration programme.

In addition, the LSMATS frames the on-going investment in transport links to Shannon and the Metropolitan Towns as well as the Local Link programme. Combined, these investments can address some of the transport disadvantage experienced across the LSMA, including the rural areas.

2.1.6 Transformation of the Urban Environment

The urban environment in Limerick, Shannon and the Metropolitan towns and villages is dominated by the requirements to serve movement by private car. There are few, if any, true refuges for pedestrians and cyclists, and there is an absence of coherent priority for public transport. Public open spaces and places to relax and sit down are lacking.

This has a disproportionate adverse impact on those with mobility impairments, the elderly and the socially disadvantaged. The manner in which the urban realm is set out and designed is a key indicator of the social, cultural and environmental health of a city or town. While actions are underway to address some of these issues, the LSMA does not currently present a healthy image in this regard. The LSMATS can play a key role in changing this image in 3 ways:

- Reducing car dominance;
- Improving the public realm; and
- Managing the movement of Heavy Goods Vehicles.

2.1.7 Universal Access

Through the investment in public transport infrastructure and vehicles and in improvement of the urban environment, the NTA is committed to implementing a Universal Design approach. Transport is aimed at serving all sectors of society and people's access to opportunities to work, get an education or partake in other activities should not be compromised by the design of the transport environment or transport vehicles.

The LSMATS is underpinned by the on-going work of the NTA in improving the interface between the transport system and persons with physical and intellectual disabilities, in particular the following:

- Commitment to sustained engagement with representative groups throughout the implementation of our plans and programmes;
- Ensuring transport information is provided in a range of accessible formats;
- Designing transport infrastructure and facilities according to best practice in terms of universal access;
- Conversion of the public transport fleet and taxi fleet to be fully physically accessible.

2.1.8 Economic, Social and Cultural Development

The LSMATS seeks to respond to the economic, social and cultural requirements of the LSMA in the following ways:

- Facilitating jobs growth: the LSMATS proposes a step-change in the capacity of the public transport and active travel network, which is an essential element in the promotion of agglomeration in Limerick and Shannon. It will facilitate a far more intensive City Centre meeting the travel demand generated by those living, working and visiting. It also seeks to provide for a much closer link between the City and Shannon Airport and Free Zone, while ensuring that adequate alternatives are provided to suburban employment sites such as the National Technology Park and Raheen to allow them to grow in a sustainable manner;

- Providing schoolchildren with feasible and safe alternatives to the private car is essential: the funding of school streets, school zones and other measures will be expanded under the LSMATS and the Safe Routes to School Programme, building on the work done to date nationally;
- Facilitating expansion of the 3rd Level Education sector: the LSMATS will direct investment towards major 3rd level institutions such as UL and LIT to allow them to develop in a sustainable manner and ensure that their future growth is not constrained by transport;
- Effective service of the night-time economy through the expansion of late-night public transport services and improvements to the taxi system, including facilitation of new technologies; and
- The overall improvements to the transport system in the LSMA will make trips to a whole range of cultural and tourist attractions easier, in particular museums, venues and theatres in Limerick City, and major sports events in the Gaelic Grounds and Thomond Park. Enhanced connections will also be provided to Bunratty

2.2 LSMATS STRATEGIC TRANSPORT OBJECTIVES

To achieve the transport vision for the LSMA based on the above 8 pillars, we require a number of strategic objectives which translate these overarching considerations into on-the-ground transport measures.

These objectives are required in order that the performance of the LSMATS can be appropriately appraised against specifically transport-related indicators (see adjacent figure).

The Strategic Transport Objectives of the LSMATS are as follows:

1. To prioritise investment in sustainable transport in order to reduce the reliance on the private car;
2. To provide a high level of public transport connectivity to key destinations;
3. To facilitate higher density housing a part of Transit-Oriented Developments at key points of high public transport accessibility;
4. To deliver a fully accessible and inclusive transport system;
5. To identify and protect key strategic routes for the movement of freight traffic and to improve access to Shannon-Foynes Port and Shannon Airport;
6. To improve road safety, public health and personal security; and
7. To minimise the impact of motorised traffic in urban centres.

Part B of this Report sets out the Strategy to meet these objectives. The remaining chapters of Part A describe the study area context; the requirements of the LSMATS in terms of other government policies; and the manner in which the LSMATS was developed.

LSMATS Vision

Pillars of the LSMATS

Strategic Transport Objectives

- To prioritise investment in sustainable transport in order to reduce the reliance on the private car;
- To provide a high level of public transport connectivity to key destinations;
- To facilitate higher density housing a part of Transit-Oriented Developments at key points of high public transport accessibility;
- To deliver a fully accessible and inclusive transport system;
- To identify and protect key strategic routes for the movement of freight traffic and to improve access to Shannon-Foynes Port and Shannon Airport;
- To improve road safety, public health and personal security; and
- To minimise the impact of motorised traffic in urban centres.

03 STUDY AREA 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

The LSMA includes:

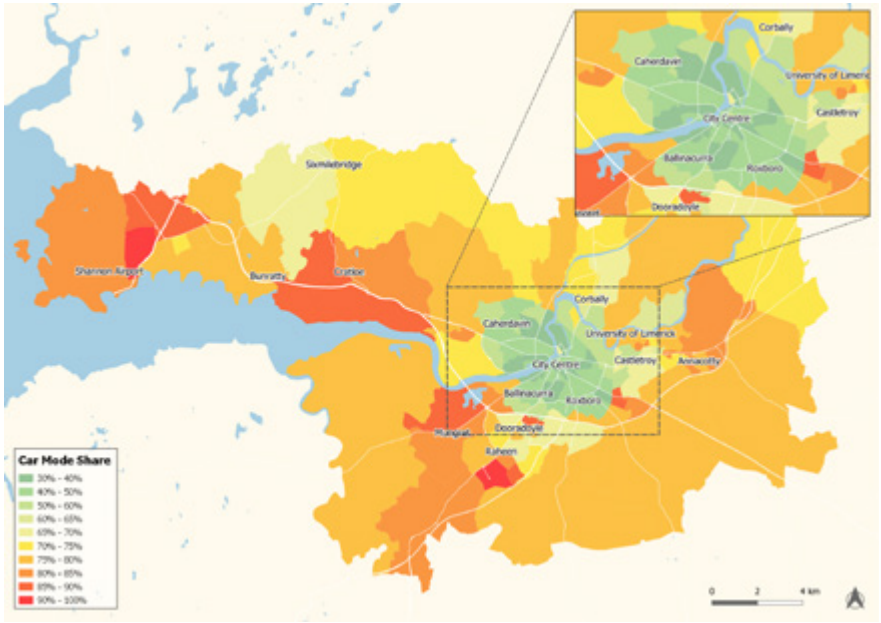
- Limerick City and Suburbs;
- Annacotty;
- Castleconnell;
- Patrickswell;
- Clarina;
- Mungret;
- Meelick/Ballycannon;
- Shannon;
- Sixmilebridge;
- Ardnacrusha;
- Clonlara;
- Cratloe;
- Bunratty; and
- Parteen.

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

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

LSMA Study Area



LSMA Mode Share

Local and Regional Bus Services

- University of Limerick (UL) which is located to the north-east of Limerick City Centre, and has recently announced another campus located in the City Centre and plan to expand their northern campus further, as part of the proposed South Clare Economic SDZ;
- Technological University of the Shannon (formerly LIT) (including Limerick School of Art and Design) which is located to the west of the City Centre;
- Mary Immaculate College (MIC) to the south side of the City; and
- Shannon College of Hotel Management (part of NUIG) in Shannon.

LIT has third level facilities in Ennis which attracts 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).

3.1 EXISTING DEVELOPMENT PATTERNS

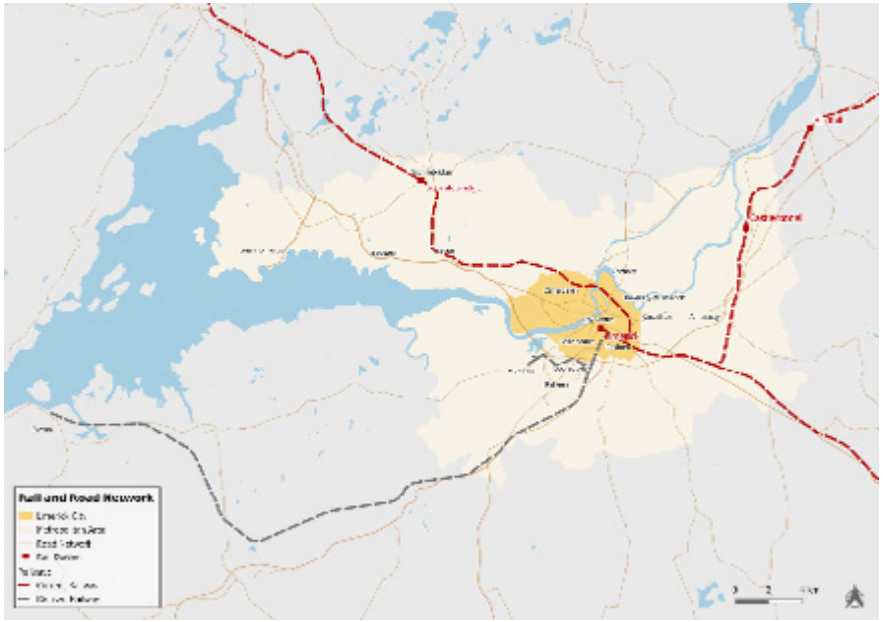
The residential population within the LSMA is concentrated mainly within Limerick City Centre and suburbs while less than 25% is distributed throughout Shannon, other towns, villages and rural areas.

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 Parkway Shopping Centre. Shannon Airport, Free Zone and Town Centre are significant employment centres.

3.2 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 to/from work trips (26%). 'All other trip purposes' refers to shopping, leisure, business and visiting friends or family and represents 51% of all trips over the course of the whole day.



Rail Network

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, Tipperary Town 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.

3.2.1 LSMA Mode Share

The current limitations of public transport and cycling 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: 4%;
- Walking: 23%;
- Cycling: 3%; and
- Car: 70%.

3.3 CURRENT TRANSPORT PROVISION

3.3.1 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 are 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.

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 provide connections to Shannon Airport and Shannon Industrial Estate.

Rural transport services are provided by the NTA across the LSMA as part of the Local Link Limerick-Clare service.

3.3.2 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.

3.3.3 Cycle Network

The existing network contains many barriers to cycling, both real and perceived, natural and built. 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 built 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 (LAP) 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. There are also on-road cycle lanes on parts of the R458 to Ennis. The Shannon Town Green Infrastructure Plan published in 2013 contains proposals on developing the town's cycling infrastructure.

Euro Velo-Route 1 passes through parts of the LSMA at Sixmilebridge, Meelick and into Limerick City on regional and local roads, including Condell Road.

3.3.4 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 reduce 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.

3.3.5 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.

3.3.6 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.

3.4 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.

04 POLICY REVIEW

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

Limerick must meet the challenge of becoming a beacon city in Ireland by achieving real behavioural change in terms of perception and use of sustainable transport.

Limerick Metropolitan District Movement Study 2015

4.1 INTRODUCTION

In preparing the LSMATS, the NTA took into account a vast array of policies, guidelines, plans and programmes of a large number of international, national, regional and local government bodies and agencies. These included the UN Sustainable Development Goals, the Climate Action Plan 2021 and recent climate action legislation.

This chapter focuses on a key input into the Transport Strategy – the Climate Action and Low Carbon Development (Amendment) Act 2021, which sets out emissions reduction targets on a statutory basis. Detail is also provided on the two primary statutory policy documents which, from a policy and integrated planning perspective, have most directly framed the Strategy:

- Project Ireland 2040; and
- The Eastern and Midland Regional Assembly's Regional and Economic Strategy.

LSMATS is required by legislation to be consistent with these plans and a close iterative relationship is required between them.

Other policy documents are listed at the end of this section.

4.2 CLIMATE ACTION LEGISLATION

In July 2021 the Climate Action and Low Carbon Development (Amendment) Act 2021 was signed into law.

This Act establishes the following national climate objective:

"The State shall, so as to reduce the extent of further global warming, pursue and achieve, by no later than the end of the year 2050, the transition to a climate resilient, biodiversity rich, environmentally sustainable and climate neutral economy."

To achieve that objective the Act sets out a number of actions. These include:

- The preparation of an annual update to the Climate Action Plan 2019;
- The preparation, not less frequently than once every 5 years, of a national long term climate action strategy (referred to as a 'national long term climate action strategy);
- The establishment of carbon budgets, aligned with the achievement of the national climate objective, for consecutive five year periods;
- The preparation of "sectoral emissions ceilings" which establish the maximum amount of greenhouse gas emissions that are permitted in different sectors of the economy during the five year period of a carbon budget;
- The preparation of "local authority climate action plans" covering periods of five years, which are required to specify the mitigation measures and the adaption measures to be adopted by the relevant local authority in relation to climate matters; and
- An obligation that public bodies must take account of Climate Action Plans in the performance of their functions.

The Act provides that the first two five-year carbon budgets should equate to a total reduction of 51% over the period to 2030, relative to a baseline of 2018. While that overall target has not yet been disaggregated into sectorial targets, it is understood that the transport sector will be required to achieve this 51% reduction in full.

NPF National Strategic Outcomes

1. Compact Growth
2. Enhanced Regional Accessibility
3. Strengthened Rural Economies and Communities
4. Sustainable Mobility
5. A Strong Economy supported by Enterprise, Innovation and Skills
6. High-Quality International Connectivity
7. Enhanced Amenity and Heritage
8. Transition to a Low Carbon and Climate Resilient Society
9. Sustainable Management of Water, Waste and other Environmental Resources Access to Quality Education and Health
10. Services

NDP Strategic Investment Priorities

1. Housing and Sustainable Development
2. National Road Network
3. Rural Development
4. Environmental Sustainable Public Transport
5. Enterprise, Skills and Innovation Capacity
6. Airports and Ports
7. Culture, Heritage and Sport
8. Climate Action
9. Water Infrastructure
10. Education, Health and Childcare

This is a highly significant and challenging target, which will fundamentally guide and direct transport provision and use in Ireland over the next decade. Achieving this target will require a major transformation in transport patterns, focused on increasing travel by sustainable modes and reducing travel by petrol/diesel powered vehicles.

4.3 CLIMATE ACTION PLAN 2021

The Climate Action Plan 2021 (Government of Ireland 2021b) sets out at a National Level how Ireland is to halve its emissions by 2030 (51% reduction) and reach net zero no later than 2050.

The Climate Action Plan is a road map to delivering Ireland's climate ambition and there are 475 actions identified that extend to all sectors of the economy aiming to transform Ireland to a low carbon nation over the next three decades.

With regards to modal shift the Climate Action Plan 2021 sets out that:
'The proposed pathway in transport is focussed on accelerating the electrification of road transport, the use of biofuels, and a modal shift to transport modes with lower energy consumption (e.g. public and active transport)'

Promoting more sustainable travel modes is seen as critical for climate policy. It offers an opportunity to 'improve our health, boost the quality of our lives, meet the need of our growing urban centres and connect our rural, urban and suburban communities'.

The key targets to meet the emissions reduction include:

- Proved for an additional 500,000 daily public transport and active travel journeys;
- Develop the required infrastructural, regulatory, engagement, planning, innovation and financial supports for improved system, travel, vehicle and demand efficiencies; and
- Reduce Internal Combustion Engine (ICE) kilometres by c. 10% compared to present day levels.

ICE reduction measures include:

- Reallocating road space from the private car to prioritise walking, cycling and public transport;
- Enhancing permeability for active travel; and
- Delivering safer walking and cycling routes to encourage greater uptake of active travel

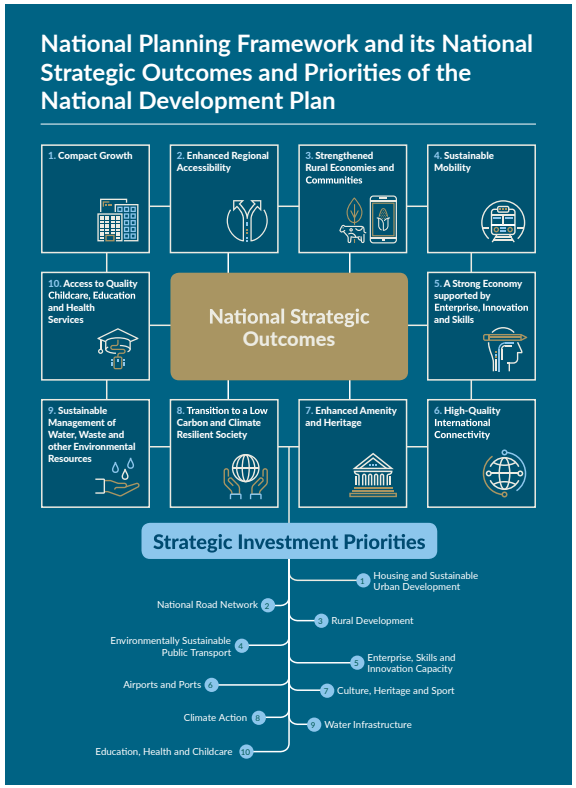
LSMATS supports a number of transport specific Measures identified in the Climate Action Plan to deliver its targets, including the following major projects:

- BusConnects
- Connecting Ireland
- Expanding rail services and infrastructure in, and around, major urban centres
- A significant increase in our walking and cycling investments

4.4 PROJECT IRELAND 2040

4.4.1 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. These are set out under a number of National Strategic Outcomes and Priorities.



Limerick is projected to grow with at least an additional 55,000 people by 2040 to support a minimum population of 145,000.

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 NTA 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 cities of Cork, Galway and Waterford have to play in providing a counterweight 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 regional cities.

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.

4.4.2 National Development Plan 2021-2030 (NDP)

The NDP sets out the investment priorities that will underpin the successful implementation of the NPF up to 2030, 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, Southhill, Ballinacurra Weston and St Mary's Park;

NSO 2 – Enhanced Regional Accessibility

- Establish the Atlantic Economic Corridor road network linking Cork, Limerick, Galway and Sligo;
- M20 Cork to Limerick;
- N21 / N69 Limerick to Adare to Foynes;
- N24/M24 Limerick to Waterford; and
- An examination of high-speed rail between Dublin Limerick Junction/Cork to improve connectivity between regional cities.

NSO 3 – Strengthened Rural Economies and Communities

- Greenways Strategy;
- Active Travel in towns and villages; and
- "Connecting Ireland" public transport programme.

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.

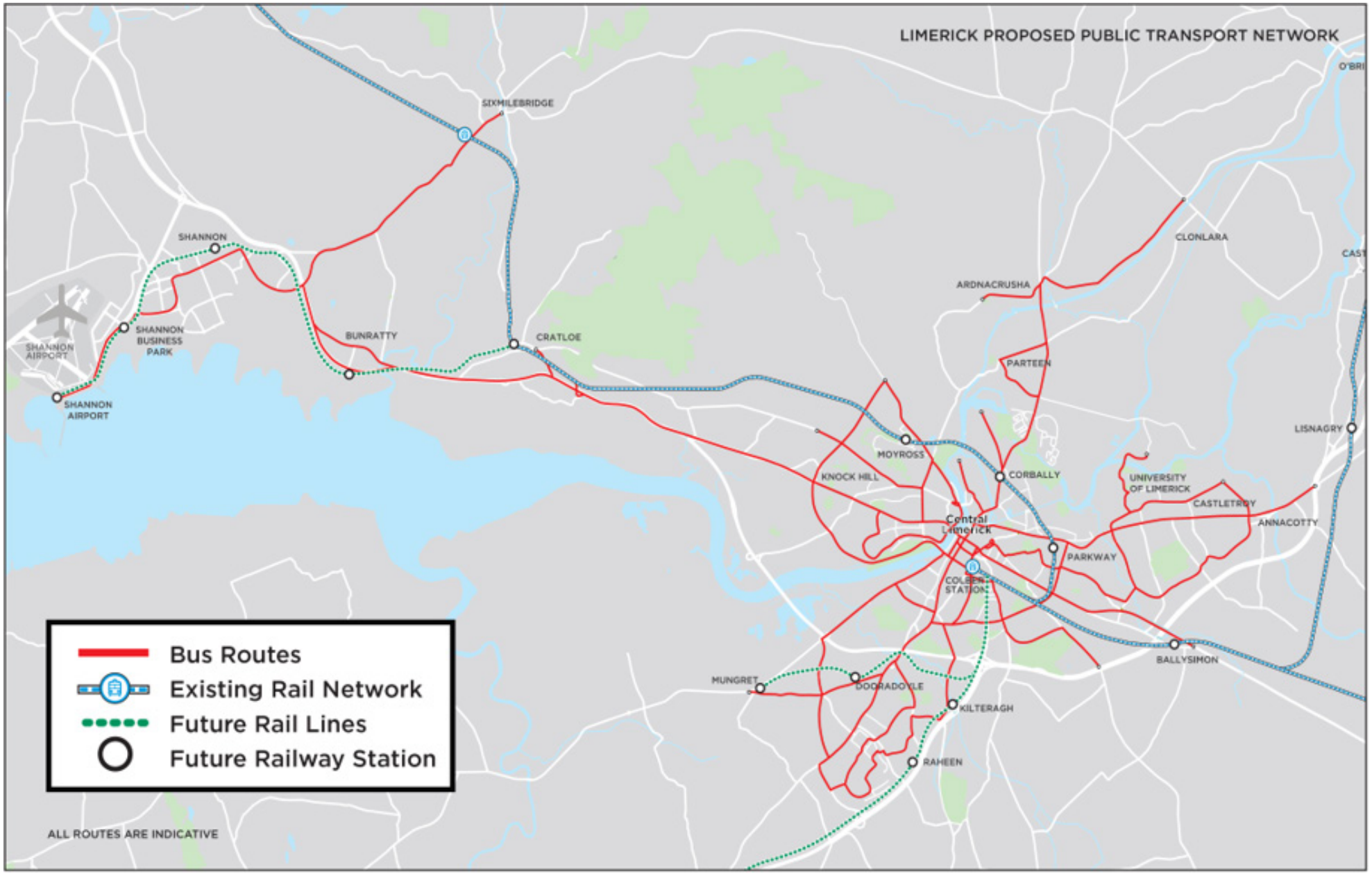
NSO 8 – Transition to a Low-Carbon and Climate-Resilient Society

- 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;
- BusConnects Programme; and
- Expansion of Electric Vehicle Charge Points.

4.5 REGIONAL SPATIAL AND ECONOMIC STRATEGY

Under the Planning Acts, the Regional Spatial and Economic Strategy (RSES) addresses, inter alia, the following matters:

- Government policies or objectives related to population targets;
- Enabling job creation;
- Proposals for augmenting the economic performance of the region;
- The location of employment, industrial, commercial and retail development;
- The location of housing; and
- The provision of transportation, including public transportation.


LIMERICK PROPOSED PUBLIC TRANSPORT NETWORK
SIXMILEBRIDGE
SHANNON
SHANNON AIRPORT
SHANNON BUSINESS PARK
SHANNON AIRPORT
BUNRATTY
CRATLOE
CLONLARA
ARDNACRUSHA
PARTEEN
LISNAGRY
MOYROSS
KNOCK HILL
CORBALLY
UNIVERSITY OF LIMERICK
CASTLETROY
ANNACOTTY
Central Limerick
PARKWAY
COLBERT STATION
BALLYSIMON
MUNGRET
DOORADOYLE
KILTERAGH
RAHEEN
Bus Routes
Existing Rail Network
Future Rail Lines
Future Railway Station
ALL ROUTES ARE INDICATIVE

Regional Spatial And Economic Strategy
Regional Strategic Outcomes

ECONOMIC OPPORTUNITY
- A Strong Economy supported by Enterprise & Innovation
- Improve Education, Skills & Social Inclusion
- Global City Region
- Enhance Regional Connectivity
- Collaboration Platform

HEALTHY PLACEMAKING
- Sustainable Settlement Patterns
- Compact Growth & Urban Regeneration
- Rural Communities
- Healthy Communities
- Creative Places

CLIMATE ACTION
- Integrated Transport & Land Use
- Sustainable Management of Water, Waste and other Environmental Resources
- Build Climate Resilience
- Support the Transition to Low Carbon and Clean Energy
- Enhanced Green Infrastructure
- Biodiversity & Natural Heritage

The final RSES was published in January 2020 by the Southern Regional Assembly (SRA). The NTA worked closely with the SRA in the development of the RSES in order to ensure that land use and transport planning in the SRA and LSMA are aligned at the regional and metropolitan level and that the objectives of both organisations are consistent with each other.

This liaison continues in the implementation of both the RSES and LSMATS.

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. The LSMATS is based on the many objectives of the RSES and MASP as a whole. The following section sets out only those of most relevance.

4.5.1 Regional Growth

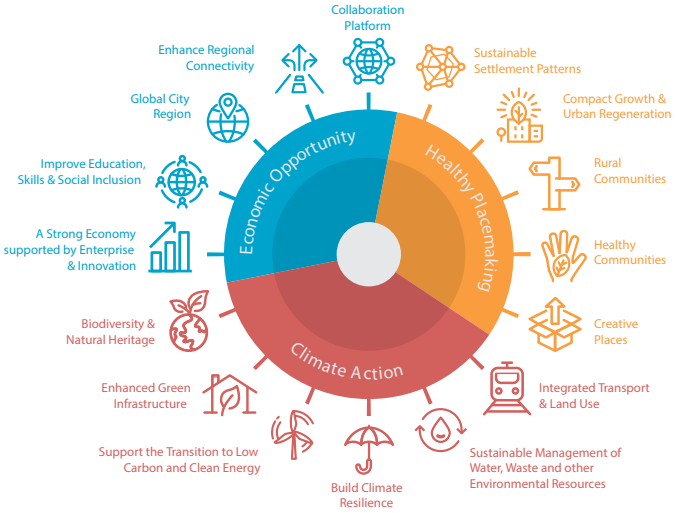
The NPF 2040 is translated at a regional level through the Regional Spatial and Economic Strategy (RSES) for the Southern Region and the Metropolitan Area Strategic Plan (MASP). The LSMATS must be consistent, as far as practicable, with the regional objectives set out in the RSES and MASP and will play a significant role in their implementation.

In order to ensure this consistency and to facilitate close integration between land use planning and transport planning a close and iterative relationship between the NTA and Southern Regional Assembly has been established.

4.5.2 RSES Regional Policy Objectives

In addition to setting out Regional Strategic Outcomes (RSOs), which are aligned with the National Strategic Outcomes (NSOs) in the NPF, the RSES also identifies regional assets, opportunities and pressures and provides appropriate policy responses in the form of Regional Policy Objectives (RPOs).

These RPOs, underpinned by the NPF, provide a strong framework for the 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 Regional Policy Objective (RPO) 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

STUDY AREA AND EXISTING TRANSPORT NETWORK


IN VOGUE
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OPEN
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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.

Chapter 6 of the RSES addresses the role of transport networks to improve the sustainable movement of people and goods. Chapter 6 acknowledges that transport has a major impact on quality of life, community interaction, economic prosperity and environmental quality, as well as the distribution of population, employment, education, socio-economic and cultural uses.

Within Chapter 6 there are a number of RSES Policy Objectives which LSMATS promotes and/or is consistent with, including:

- RPO 151 Integration of Land Use and Transport;
- RPO 152 Local Planning Objectives;
- RPO 157 Local Transport Plans;
- RPO 159 Role of Transport in Enabling Access for All;
- RPO 160 Smart and Sustainable Mobility;
- RPO 161 Smart Mobility;
- RPO 162 Multi-Modal Travel Integration;
- RPO 163 Sustainable Mobility Targets;
- RPO 164 Metropolitan Area Transport Strategies;
- RPO 165 Higher Densities;
- RPO 166 Investment in Strategic Inter Regional Multi-Modal Connectivity to Metropolitan Areas and Economic Corridors;
- RPO 167 National Road Projects;
- RPO 168 Investment in Regional and Local Roads;
- RPO 169 Strategic Road Network Improvement Priorities;
- RPO 170 Rail;
- RPO 171 Bus;
- RPO 172 Rural Transport;
- RPO 173 Tourism Corridors; and
- RPO 174 Walking and Cycling.

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

- Preparation of the 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;
- 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 through;
  - Delivery of the Government's current and proposed national road network improvement schemes;
  - implementation of appropriate demand management measures;
  - M20 Limerick to Cork and the possible enhancement of the N24 between Limerick and Waterford;
  - enhanced road connectivity to Shannon-Foynes Port and maintenance of transport connectivity to Shannon International Airport
  - 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.
- The optimal use of the rail network; and
- Development of a strategic metropolitan wide cycle network with high capacity flagship routes catering for a range of journey purposes.

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 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 Technological University of the Shannon 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.

4.6 OTHER POLICIES

The following policies and plans have also been taken into account in a number of ways in preparing the LSMATS. They have assisted in crafting the strategy's aims and objectives, provided direction in terms of future land use patterns, set out overarching government policies, and provided detailed guidance on how best to deliver the transport strategy.

4.6.1 International/European

- Transforming our world: the 2030 Agenda for Sustainable Development (UN, 2015);
- The Paris Agreement (UN);
- Smart and Sustainable Mobility Strategy – putting European transport on track for the future (European Commission, 2020);
- European Union (EU) Green Deal (European Commission, 2019);
- Trans-European Transport Network – TEN-T (European Commission, 2019)
- European Union White Paper, Roadmap to a Single European Transport Area – Towards a Competitive and Resource efficient Transport System (European Commission, 2011);
- Habitats Directive (The Council of the European

Communities, 1992);

- SEA Directive (Council of the European Union, 2001)
- WHO Global Road Safety Performance Targets (WHO, 2016);
- Safe Use of Micromobility devices in Urban Areas (European Platform on Sustainable Urban Mobility Plans, 2021).

4.6.2 National

Policies and Plans

- Draft National Investment Framework for Transport in Ireland (Dept. of Transport, 2021)
- Five Cities Demand Management Study (Dept. of Transport);
- Smarter Travel – A sustainable Transport Future (Department of Transport, Tourism and Sport, 2009);
- The White Paper: Ireland's Transition to a Low Carbon Energy Future 2015-2030 (Department of Environment, Climate and Communications, 2020);
- National Adaption Framework 2018 (DECC, 2018) accompanied with Sectorial Adaption Plan for Transport Infrastructure 2019 (DoT, 2019);
- National Mitigation Plan (Government of Ireland, 2017);
- The Sustainable Development Goals National Implementation Plan 2018-2020 (Government of Ireland, 2018);
- Investing in Our Transport Future – Strategic Investment Framework for Investment in Land Transport (DTTaS, 2015);
- Rebuilding Ireland: Action Plan for Housing and Homelessness (Government of Ireland, 2016) and Housing for All – a New Housing Plan for Ireland (Department of Housing, Local Government and Heritage, 2021);
- Climate Action Plan: To Tackle Climate Breakdown (Government of Ireland, 2019)
- Interim Climate Actions (Government of Ireland 2021)

Guidance

- Sustainable Residential Development in Urban Areas (Department of Environment, Heritage and Local Government), 2009);
- Guidelines for Planning Authorities on Sustainable Urban Housing: Design Standards for New Apartments (Department of Housing, Local Government and Heritage, 2020);
- Urban Design Manual: A Best Practice Guide;
- Design Manual for Urban Roads and Streets (Government of Ireland, 2019);
- Permeability: A Best Practice Guide (NTA);
- Spatial Planning and National Roads: Guidelines for Planning Authorities (TII);
- Achieving Effective Workplace Travel Plans: Guidance for Local Authorities (NTA);
- National Cycle Policy Framework (DTTaS, 2009);
- National Cycle Manual (NTA, 2011);
- National Disability Authority's Code of Practice on Accessibility of Public Services and Information Provided by Public Bodies;
- Building for Everyone: A Universal Design Approach, National Disability Authority
- Technical Guidance Document M of the Building Control Regulations 2010

4.6.3 Regional

- Mid-West Area Strategic Plan 2012-2030
- Mid-West Area Strategic Plan: Public Transport Feasibility Study 2012

4.6.4 Local

- Limerick County Development Plan 2010-2016
- Limerick City Development Plan 2010-2016
- Limerick Docklands Framework Strategy 2018
- Limerick City Noise Action Plan 2018-2023
- Limerick Metropolitan District Movement Framework Study 2015
- Clare County Development Plan 2017-2023
- Tipperary
- County Development Plans
- Shannon Municipal District Plan – Volume 3(b) – Clare County Development Plan
- Clare Noise Action Plan 2018
- Shannon Town and Environs Local Area Plan 2012-2018 (extended to 2023
- Emerging Plans for Shannon including the Shannon Town Centre Masterplan and the Shannon Mobility Plan;
- Castletroy Local Area Plan
- Southern Environs LAP

A detailed analysis of all policy documents relevant to LSMATS is outlined within the supporting LSMATS Baseline Conditions and Policy Review Report.

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 Transport Infrastructure Ireland.

5.1 DEVELOPING THE STRATEGY

LSMATS was developed in an iterative manner in order to provide a transport network which supports the population and employment growth planned for Limerick, Shannon and Environs under the NPF to 2040. The approach applied in developing the LSMATS 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 stages of LSMATS.

5.2 PUBLIC TRANSPORT NETWORK

5.2.1 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, an 'idealised' public transport network was developed, based on six guiding principles 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.

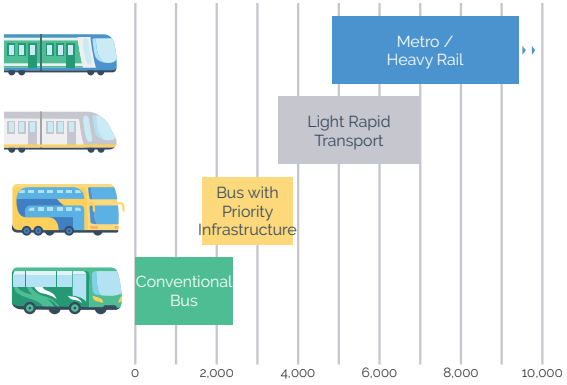
Once a high-level indicative network was identified, more detailed analysis and specific considerations for the public transport network were considered at a corridor level.

5.2.2 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.

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.



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

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.

5.3 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.

5.4 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.

5.5 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.

5.6 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.

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; and
- A robust economic case for transport investment in the LSMA.

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

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

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


Oifig Fáilte
TOURIST
Siúlán Cois Abhann
RIVERSIDE WALK
Siúlán Cois Abhann
RIVERSIDE WALK
Oiléan an Rí
KING'S ISLAND

06 PUBLIC CONSULTATION

The NTA recognises that it is imperative for the Strategy to be developed in a collaborative and informed manner and is committed to ensuring this continues through the lifecycle of the Strategy and its implementation.

LSMATS Public Consultation Report

6.1 PUBLICATION OF DRAFT LSMATS

The Public Consultation period on the Draft Limerick Shannon Metropolitan Area Transport Strategy (the draft Strategy) initially ran from the 2nd September to the 16th October 2020 but was extended until the 30th October 2020.

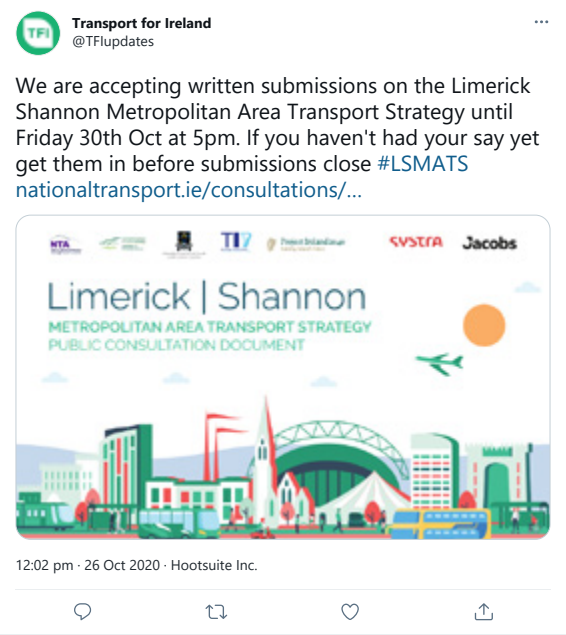
The extension reflected the difficulties presented by restrictions placed on public gatherings and travel during the Covid-19 pandemic and conflicts with the consultation period on the Limerick City and County Development Plan. This time extension allowed for greater participation from stakeholders and the wider public.

Throughout this period, members of the public, relevant respondents and interested parties were invited to share their views and opinions on the draft Strategy, its associated supporting documents and the Strategic Environmental Assessment (SEA) Environmental Report and Appropriate Assessment (AA) Natura Impact Report

6.2 LAUNCH OF DRAFT LSMATS

The draft Strategy was launched on 2nd September 2020 by means of virtual events for the media and for elected representatives of Limerick and Clare.

Following the consultation launch, the draft Strategy and supporting documents were made available to download from the NTA's website and a range of communication tools were used to generate awareness and interest through the consultation period.



Sample tweet from the Transport for Ireland Twitter account

In addition to the launch events, the Project Team took part in a number of virtual events over the course of the public consultation period to publicise the draft Strategy and to enable Elected Members, stakeholders and interested members of the public to make more informed submissions.

6.3 FEEDBACK RECEIVED

A total of 112 submissions were received and following a review of all feedback, a number of key themes emerged as follows:

- Vision and Ambition of the draft Strategy;
- Covid-19 Impacts;
- Environment and Climate Change;
- Mode Share and Targets;
- Delivery
- The Modelling Process;
- Social Inclusion;
- Accessibility;
- Travel to Schools; and
- Consultation and Engagement.

All written feedback received during the public consultation process has been acknowledged, recorded and summarised in the separate LSMATS Consultation Report.

The NTA has listened to the queries received and the views expressed by respondents throughout the consultation period.


CLAYTON HOTEL

The feedback received was considered and the Strategy reviewed and updated to incorporate this feedback where appropriate in the following ways:

- Changes to the structure of the report;
- Incorporation of additional policy documents into the policy review, including the 2021 Climate Action Plan;
- Incorporation of Covid-19 considerations and a new chapter on same;
- A comprehensive assessment of the potential for a commuter rail network to serve Limerick and Shannon;
- The use of the updated NTA Mid-West Regional Transport Model to reappraise the LSMATS in its entirety;
- The application of the new Cycle Propensity Tool to assess more accurately the potential for cycling;
- A new LSMATS vision, new pillar and associated new objective;
- A restructured and augmented chapter on Land Use, Regeneration and Schools;
- Changes related to the Limerick Northern Distributor Road; and"
- Greater detail on the forecast Strategy Outcomes

As such, it is the view of the NTA that this revised draft, and the process that the NTA undertook in crafting it, has fully considered the views expressed during public consultation.

Moreover, the level of analysis undertaken throughout 2021 means that the policies and objectives of the revised Draft LSMATS have now been subject to full appraisal for a second time and are therefore particularly robust.

Finally, the revised Draft LSMATS fully reflects latest Government policies and objectives which have emerged since the publication of the first draft as they relate to transport investment priorities.

07 COVID-19

The first draft of the Limerick Shannon Metropolitan Area Transport Strategy was finalised for publication in early March 2020 as the impacts of Covid-19 were beginning to be realised in Ireland.

The challenges for transport during this period remain. The NTA responded to these challenges across the country by maintaining a high frequency of public transport services when the permitted capacity was reduced, and continued to facilitate the safe on-going management of travel demand in line with Government guidelines and advice. At all stages, the health of staff and passengers was of paramount importance in the decision-making process.

Across our towns and cities, including Limerick, the NTA distributed significant funding to develop temporary schemes to facilitate travel during the period of social distancing, via extended footpaths; enhanced cycling facilities; increased space at bus stops etc. These measures have helped people to travel safely.

There has been a lot of debate about how Covid-19 will permanently alter our way of life; that it may lead to a reduction in the daytime population of our large towns and cities as technology facilitates working from home; that the trend towards online retailing will accelerate and that online teaching will become a significant part of school and college life. At this point in time, there continues to be a large degree of uncertainty as to how the pandemic will affect our travel patterns, or indeed our settlement arrangements, in the long-term.

It is our intention, however, to continue to plan for an environmentally sustainable future in relation to transport. As such, the LSMATS will provide the transport system to serve the NPF objectives in relation to consolidation of our towns and cities; will promote public transport as a major contributor to a zero-carbon transport system; and will meet the increased demand for safe and attractive walking and cycling infrastructure.

In relation to the appropriateness and viability of the LSMATS in the context of a post-Covid world, during the period since the publication of the first draft, the NTA developed an alternative future demand scenario which tests the robustness of the Authority's projects, plans and programmes. This approach provides a spectrum of potential transport patterns against which the Strategy can be validated. The appraisal of the alternative future demand is based on a reduced demand for travel according to the following:

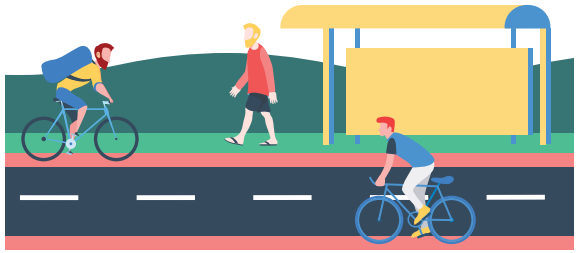
- 25% reduction in Travel to Work among professional/office workers;
- 20% reduction in domestic business-to-business trips for professional workers;
- 25% reduction in international business travel;
- 10% reduction in travel to secondary school;
- 25% reduction in travel to 3rd level education;
- 10% increase in trips to Food retail; and
- 20% reduction in trips to Non-Food retail.

The NTA is satisfied that the above robust approach fully accounts for the potential long-term impacts of the Covid-19 pandemic in line with the best information available at present. The results of this alternative future demand test, as applied to the LSMATS, are set out in the accompanying Modelling Report.

The analysis shows that in a scenario where there is a reduced demand for travel, there is still a requirement for investment in sustainable transport infrastructure, in particular bus priority, cycling facilities and an improved walking environment.

In terms of the implementation of the LSMATS, travel patterns and trends are constantly monitored by the NTA and our partner agencies, and this information will be used as an input into the planning and design of major transport investment schemes provided for in LSMATS.

As the immediate transport impacts of Covid-19 through 2020 and 2021 settle into medium and long-term impacts, the NTA will respond and ensure our monitoring and analysis remains up to date.



PART B | THE STRATEGY

WALKING

59m annual walking trips

33% Walking Mode Share*

159% increase in walking trips to city centre between 2016 and 2040

47.5% increase in footfall on O'Connell Street

44,000 walking trips made in the AM peak period

*This is the 2040 target for the LSMA, rather than the modelled outcome.

Improved **accessibility** to Public Transport

Enhanced **Wayfinding** System

Lower **Speed Limits** in town centres and in Limerick City Centre

57km of greenways

Narrower **Carriageways** and junctions

Universal Design

Safer Routes to School

More Pedestrian areas and links

Reduced Waiting times at pedestrian crossings

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

08 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.

The NTA is currently beginning to roll out a highly ambitious programme for the development of pedestrian infrastructure nationally. Active Travel teams are being established within the local authorities to develop and implement projects in this area. These resources will be funded via the NTA and will be charged with the implementation of improvements to the pedestrian offer in the LSMA. This new structure will complement and augment the existing grants programme which the NTA administer in the regional cities.

8.1 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.

8.2 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.

8.3 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.

8.3.1 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.


SLOW

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
- Remove unnecessary signage, advertising and other obstacles which impede pedestrian movement.

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.

8.3.2 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.

MEASURE 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, including the pedestrianisation of selected City Centre streets;
- Secure improvements to the walking network in tandem with the implementation of BusConnects to prioritise multi-modal travel; and
- 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 Neighbourhood Greenway;
- Shannon town centre to Shannon Free Zone;
- Childers Road;
- R527 Ballysimon Road;
- Limerick – Corbally – Parteen;
- Shannon – Clonmoney – Newmarket-on-Fergus; and
- LSMA to Ennis.

8.3.3 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.

8.3.4 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 emerging Shannon Town Centre Masterplan and Shannon Mobility Plan will seek to address these issues.

8.3.5 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.

MEASURE 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.

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.

8.3.6 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.

8.3.7 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 and towards the visitor centre needs improvement including the upgrade of footpaths and crossing facilities.

8.3.8 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.

8.3.9 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. The quality of the pedestrian linkages towards Shannonbanks and Westbury will also be improved.

8.3.10 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..

8.3.11 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. The quality of the pedestrian links westwards towards the northwest of the city and eastwards towards Shannonbanks and Westbury will also be improved.

8.3.12 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 Assessment should be carried out for the proposed SDZ to ensure the creation of permeable and walkable neighbourhoods from the outset that minimise car use.

8.3.13 Patrickswell

Patrickswell Village Renewal Scheme was developed in 2016 and consisted of proposals to upgrade the public realm, remodel the layout of the Main Street 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

8.3.14 Annacotty

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

8.3.15 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.

8.3.16 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.

8.3.17 Local Amenity and Rural 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 City and County Council have commenced the preparation of a study examining the potential for Greenways and Blueways. Limerick's waterfront location combined with its 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.

Throughout the rural parts of the LSMA, there may be potential to facilitate and promote greater levels of walking through the upgrading of existing footpaths and by the provision of new footpaths, in particular to connect residential areas to amenities and services which may be outside of built-up areas.

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

At the project level for all local amenity and rural routes, full Appropriate Assessments will be carried out and will seek to ensure that each project will not adversely affect the integrity of a European site or sites and that each stage of the AA process is undertaken in full, according to the Habitats Directive and all transposing legislation.

MEASURE WK4

Local Amenity and Rural 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, including progressing the redevelopment of the Black Bridge in Limerick and crossings of the River Blackwater; and
- Provide and / or improve footpaths on rural roads where demand for pedestrian movement is identified.

8.4 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.

8.4.1 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.

8.4.2 Age-Friendly Towns

Population ageing continues at an increasing pace, which presents a myriad of opportunities and challenges when responding to the varied needs of our ageing population in terms of supporting their continued independence, health and well-being, social connectedness, and safety.

Anticipated changes to the age-profiles across the LSMA will require the adaptation of public realm and transport networks to ensure they are accessible for all ages and abilities, including those with reduced mobility and/or cognitive, visual or hearing impairments and those with buggies. Both Clare County Council and Limerick City and Country Council are members of Age-Friendly Ireland and have adopted their own Age-Friendly Strategies, which include objectives for the adaptation of the built environment and transport network.

Age-Friendly improvements to the public realm include the adequate provision of public seating, wayfinding infrastructure, public toilets, pedestrian crossings, and tactile paving. Further objectives in relation to universal and inclusive design are outlined in the 'Urban Design and Place-Making' Chapter.

8.4.3 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 'Land Use, Regeneration and Schools' Chapter.

8.4.4 Wayfinding

Lack of awareness of routes and distances to destinations can be a barrier to walking, not only for tourists or visitors, but also for those with autism or dementia.

MEASURE WK5

Supporting Measures for Walking

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

- Develop and implement a pedestrian wayfinding system for Limerick City Centre and Shannon;
- Ensure pedestrian infrastructure is inclusive and accessible for all individuals of all abilities and ages using Universal Design principles and collaboration between a diverse range of stakeholders;
- Deliver permeability projects throughout urban areas which reduce the distance required to travel on foot to key destinations and to public transport services. In select locations, a package of permeability projects will be developed as part of local area plans or masterplans;
- Undertake walkability audits at locations where demand for pedestrian activity is high and where deficiencies in the network have been identified; 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.


Raheen
Bus Éireann

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. The map displays walking times between each stop.

8.4.5 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.

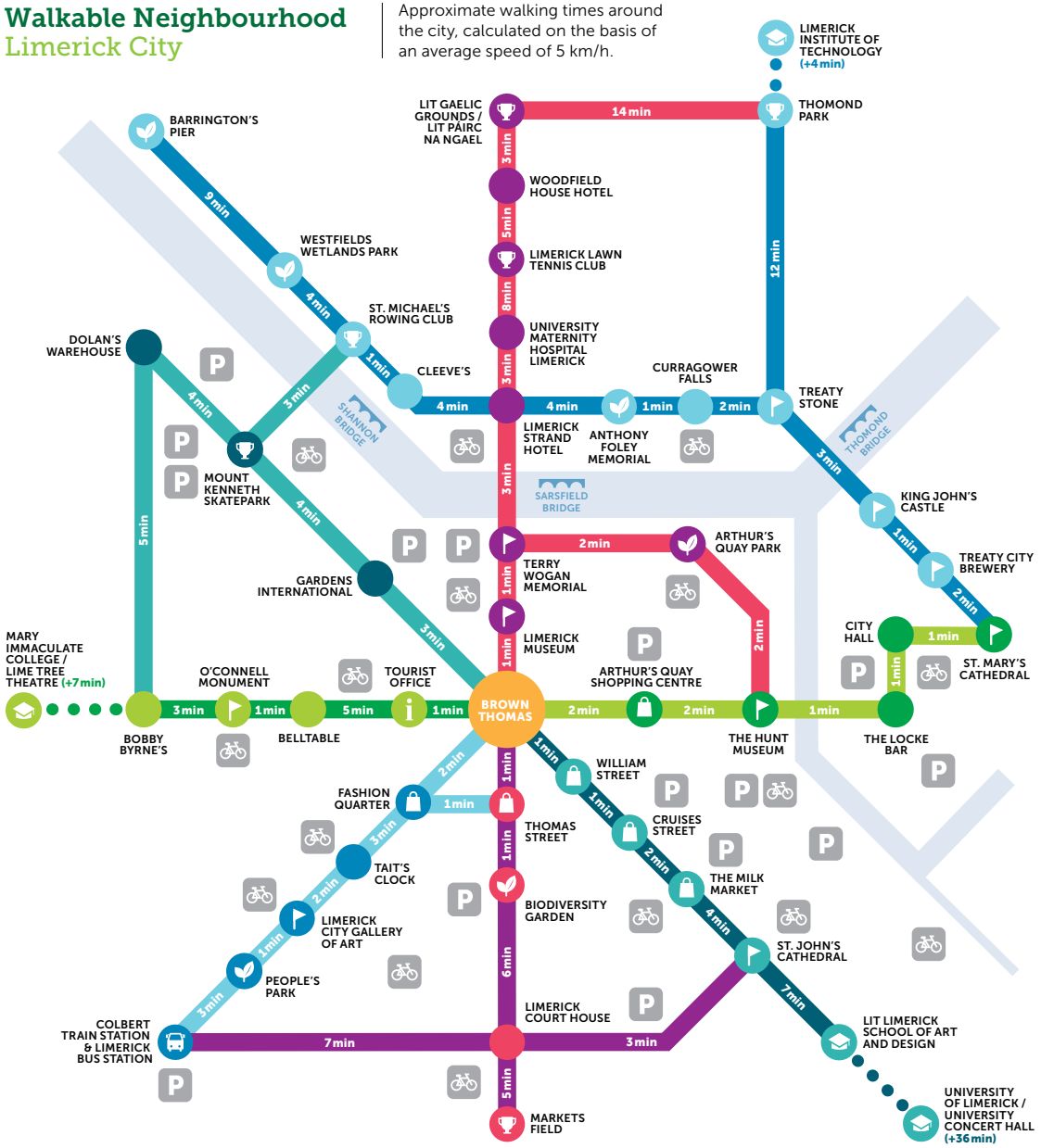
Measures to improve permeability for pedestrians include:

- 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.



CYCLING

28.2m
annual
cycling trips

10-15%
Cycling
Mode Share*

Over
27,000
cycling trips made in the AM peak period easing congestion

*This is the 2040 target for the LSMA, rather than the modelled outcome.

41km Primary
Cycle Network

45km Secondary
Cycle Network

41km Feeder
Cycle Network

61km 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
€70m
(+BusConnects cycle elements)

09 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.

In essence, practically all journeys within Limerick City and Suburbs and within the Metropolitan towns will be suitable for cycling once the infrastructure is in place.

The NTA is currently beginning to roll out a highly ambitious programme for the development of cycling infrastructure nationally. Active Travel teams are being established within the local authorities to develop and implement projects in this area. These resources will be funded via the NTA and will be charged with the implementation of the cycle network for the LSMA. This new structure will complement and augment the existing grants programme which the NTA administer in the regional cities.

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.

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 in central areas.

It should be noted that the alignment details set out in the following sections are indicative and are subject to further development as the design and planning processes for individual projects progress.

9.1 LSMATS CYCLE NETWORK

9.1.1 Limerick Metropolitan Cycle Network Study

The Limerick Metropolitan Cycle Network Study sets out the envisaged cycling network for the Limerick Metropolitan Area (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).

9.1.2 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 on secondary routes; and
- Provide a quality of service B on feeder routes.

9.1.3 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;
- Technological University of the Shannon;
- Mary Immaculate College;
- Limerick School of Art and Design; and
- National Technology Park.

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

9.1.4 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 Street, High Road, Bellefield Gardens and Clancy's Strand; and
- Ennis Road to Sarsfield bridge.

MEASURE 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, Shannon, the Metropolitan town centres and Ennis;
- Develop a high-quality cycle network within the Metropolitan Towns of the LSMA;
- 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;
- Cooperate with An Garda Síochána in relation to the enforcement road traffic laws as they apply to cycle tracks and lanes.

Primary Orbital Routes

- Childers Road.

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

9.1.5 Shannon River Crossing

The bridges across the Shannon are a significant constraint on cycling and a major source of severance. Thomond Bridge and Sarsfield Bridge are narrow, heavily trafficked and hostile environments for pedestrians and cyclists.

As part of the LSMATS, the NTA and Limerick City and County Council intend to remove private car traffic from Sarsfield Bridge, permitting only buses, taxis cyclists and pedestrians. As part of this project, and linked to the provision of the primary cycle route from Technological University of the Shannon to the City Centre, currently in the design and planning stage, a high level of cycle provision will be sought on Sarsfield Bridge.

The NTA and Limerick City and County Council will also seek to provide a new pedestrian and cycle bridge across the River Shannon at a point along Clancy's Strand, subject to Appropriate Assessment and any subsequent mitigation requirements in the context of NHA and SAC designations.

In addition, the NTA and Limerick City and County Council will seek to provide permanent cycle infrastructure on Shannon Bridge, including at the roundabout junction with Bishop's Quay / Dock Road.

MEASURE CC2

Shannon River Crossing

It is the intention of the NTA and Limerick City and County Council to:

- Provide significantly enhanced cycle infrastructure across the River Shannon in Limerick City Centre, via the upgrading of existing bridges and the provision of a new crossing dedicated to pedestrians and cyclists; and
- At the project level, a full Appropriate Assessment will be carried out and will seek to ensure that the project will not adversely affect the integrity of a European site or sites and that each stage of the AA process is undertaken in full according to the Habitats Directive and all transposing legislation.

9.1.6 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.

9.1.7 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.

9.1.8 Inter-Urban Network

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

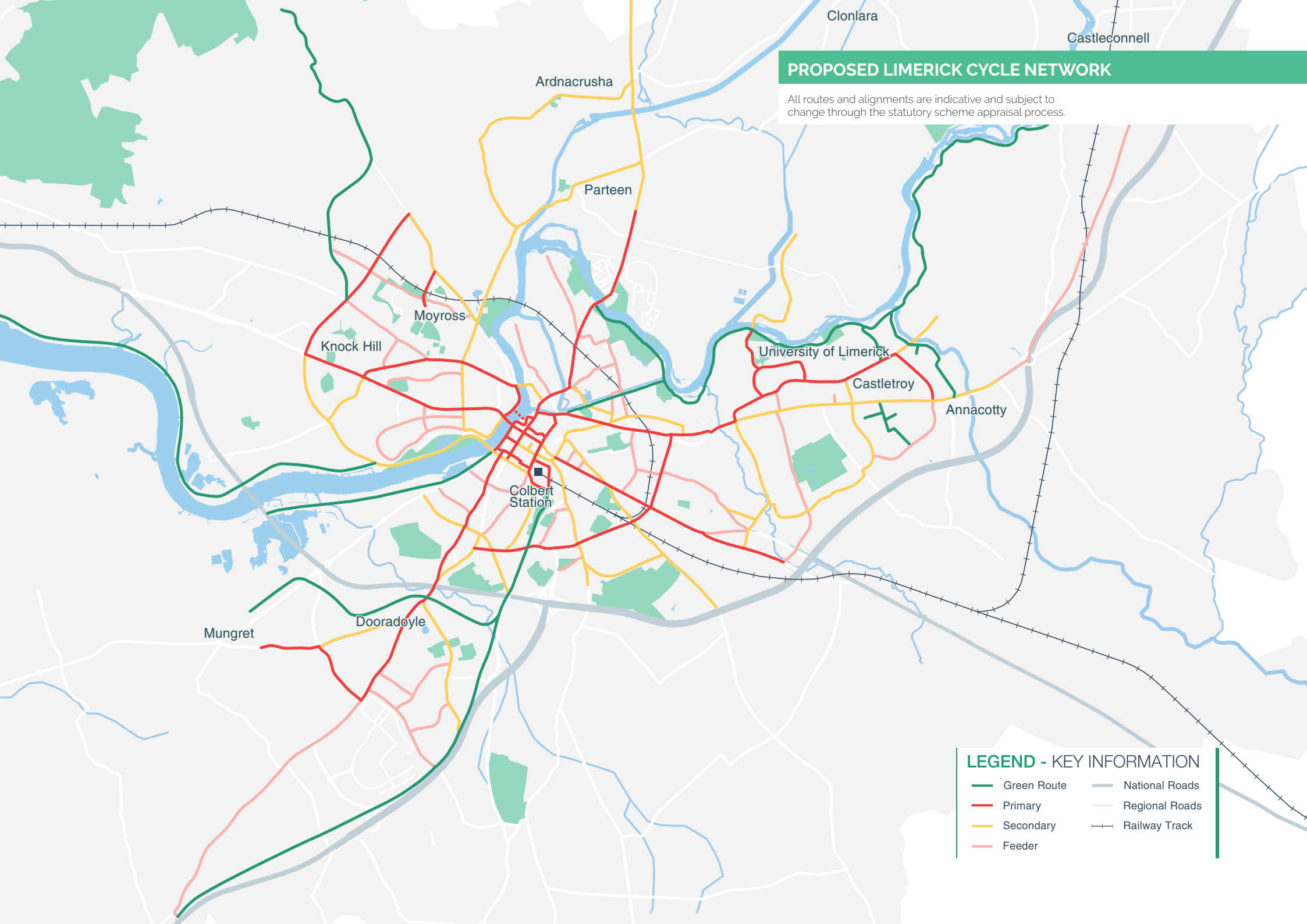
- Limerick City Centre to Shannon; and
- Limerick City Centre and Shannon to other settlements in the Metropolitan Area including Patrickswell, Bunratty and Sixmilebridge.

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 periodic LSMATS review.

9.1.9 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; and
- O'Donoghue Avenue.


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
Feeder
National Roads
Regional Roads
Railway Track

9.1.10 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.

9.1.11 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-road 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.

The emerging Shannon Town Centre Masterplan and Shannon Mobility Plan will also seek to address these issues.

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 na Linne. It is understood that this park will connect with cycle routes in the future.

The use of the existing pathways in Shannon for cycle greenways is also provided for by the LSMATS.

9.2 SUPPORTING MEASURES

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

9.2.1 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. 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.

MEASURE CC3

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 a Dockless Bicycle Sharing Scheme in Limerick and Shannon.

9.2.2 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.

9.2.3 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.


PROPOSED SHANNON CYCLE NETWORK
All routes and alignments are indicative and subject to change through the statutory scheme appraisal process.
Sixmilebridge
To Ennis
via Newmarket on Fergus
Shannon
To Sixmilebridge
Shannon
Airport
Bunratty
Cratloe
To Bunratty
LEGEND - KEY INFORMATION
Green Route
Primary
Secondary
Feeder
National Roads
Regional Roads
Railway Track


Coca-Cola
zero

Provision of cycle parking hubs in these strategic locations is a key component in promoting cycling culture and facilitating linked trips across the LSMA.

MEASURE CC4

Long-Stay 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.

9.2.4 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 incentives to retrofit premises or consider contributing to shared facilities.

MEASURE CC5

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.

9.2.5 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.

MEASURE CC6

Behavioural Change and Promotion

It is the intention of the NTA and the local authorities to continue to foster a cycling culture in the LSMA through promotional events and behavioural change initiatives as part of the NTA's Smarter Travel Workplaces and Campuses and the An Taisce / NTA Green Schools Travel Programmes.

9.2.6 Person Mobility Vehicles

Micro-mobility refers to personal vehicles such as bikes and scooters, including electric and dockless models. Micro-mobility has emerged in recent years as a model of shared personal transport in cities across the globe.

Micro-mobility is particularly convenient for short trips and can present an effective solution to first and last-mile journeys, supporting a more integrated transport network that focuses on public transport and active mobility intermodal trips.

Given that around 50% of all trips in Ireland are 6km or less (Source: CSO National Travel Survey 2016), there is undeniable potential for micro-mobility to enable more convenient and more flexible local mobility.

Legislation is due to be approved to regulate the use of e-scooters in public places in Ireland. The use of e-scooters and emerging personal mobility modes of travel will be facilitated and promoted during the lifetime of LSMATS, once this legislation is passed.

MEASURE CC7

Micro Mobility

It is the intention of the NTA and local authorities to facilitate and promote the use of scooters, e-scooters and emerging personal mobility modes of travel, once legislation regularising their use is passed. This includes exploring a scooter rental scheme for Limerick City.

9.2.7 Cycling Usage

The relatively flat topography and the geographic size of the Limerick and Shannon urban areas provides very favourable conditions for a high level of cycling within the metropolitan area.

The cycle infrastructure proposed under this Strategy will deliver a comprehensive and safe network of cycling routes serving all of the key areas and destinations, and with the capacity for large volumes of cyclists. With that infrastructure in place, the level of usage will be determined by the willingness to use cycling instead of other modes, in particular the car mode.

Following the build-out of the cycling network infrastructure, behavioural change measures and promotion will become very important tools in growing the level of cycle usage. In addition, the implementation of demand management measures may be required to support higher levels of uptake.

BUS

Bus Passengers

400% increase in City Bus Capacity

156% increase in AM Peak Bus passengers between 2016 & 2040

Bus Corridor Performance

O'Connell Street **3 buses** every 2 minutes

Sarsfield Bridge **3 buses** every 2 minutes

Average Bus Journey Times to City Centre **reduce by 59%** in the AM peak

Bus Network & Vehicles

85km of bus lanes and bus priority measures

200 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

5,800 passengers interchanging daily between Radial, Cross City and Orbital Bus and Rail Services.

Cost Estimate

Strategy cost estimate is approximately **€483m**

10 BUS

Over the lifetime of this NDP, there will be significant progress made on delivering BusConnects with the construction of Core Bus Corridors expected to be substantially complete in all five cities by 2030.

National Development Plan 2021-2030,

10.1 INTRODUCTION

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 2030.

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.

10.2 BUS NETWORK PRINCIPLES

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

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

10.3 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.

There are two main elements to BusConnects, namely:

1. Bus Priority in the form of bus lanes, bus gates, bus-only links and other measures; and
2. Changes to the bus service network to deliver greater frequency and more efficient operations.

10.4 BUS PRIORITY

In terms of bus priority, indicative alignments for corridors where it is intended buses can travel without delay are set out in the Proposed 2040 Bus Priority Measures map,

MEASURE 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:

- Changes to the service network to include:
  - A 'branch and spine' network;
  - Orbital routes;
  - Additional Radial routes;
  - Increased capacity and frequency; and
  - Demand Responsive Transport in locations where public transport patronage is low.
- Greater levels of bus priority leading to shorter journey times and greater reliability, as follows:
  - Continuous bus lanes on main radials where practicable;
  - Bus gates in certain locations whereby only public transport vehicles and cyclists will be allowed on certain parts of the road network;
  - Other traffic management arrangements which provide bus priority; and
  - New bus-only links.
- Improvements to fleet and other elements to include:
  - Conversion of public transport fleet to zero carbon vehicles; and
  - Improvements to fares, ticketing and interchange services and infrastructure.

10.4.2 Potential Schemes

10.4.2.1 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 Street will be a two-way public transport only corridor for the following reasons:

- O'Connell Street provides the most direct routeing for bus services linking the key suburban commercial and residential areas with the City Centre core. The increased demand for travel into Limerick City Centre arising out of the consolidation of development on central sites is best served by taking this route;
- 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
- The O'Connell Street option provides for more efficient traffic management, whilst still allowing cars to access parts of 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, taxis, cycling and walking only.

MEASURE BC2

O'Connell Street

It is the intention of the NTA and Limerick City and County Council to remove general traffic from O'Connell Street in order to eliminate delays to bus services, and to facilitate the redevelopment of Limerick City Centre by maximising accessibility to the core.

Thomond 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 Thomond and Shannon Bridges.

MEASURE BC3

Sarsfield Bridge

It is the intention of the NTA and Limerick City and County Council examine the feasibility of removing general traffic from Sarsfield Bridge in order to reduce delays to strategic bus services from Clare, including Shannon Airport. and North West Limerick City.

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.

MEASURE BC4

Thomond Bridge and Shannon Bridge

It is the intention of the NTA ad Limerick City and County Council to examine the feasibility of providing priority for bus services using Thomond and Shannon Bridge.

10.4.2.2 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.

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 Street/ Hyde Road at present. Further discussion of Colbert Station is included in the 'Rail' Chapter.

MEASURE BC5

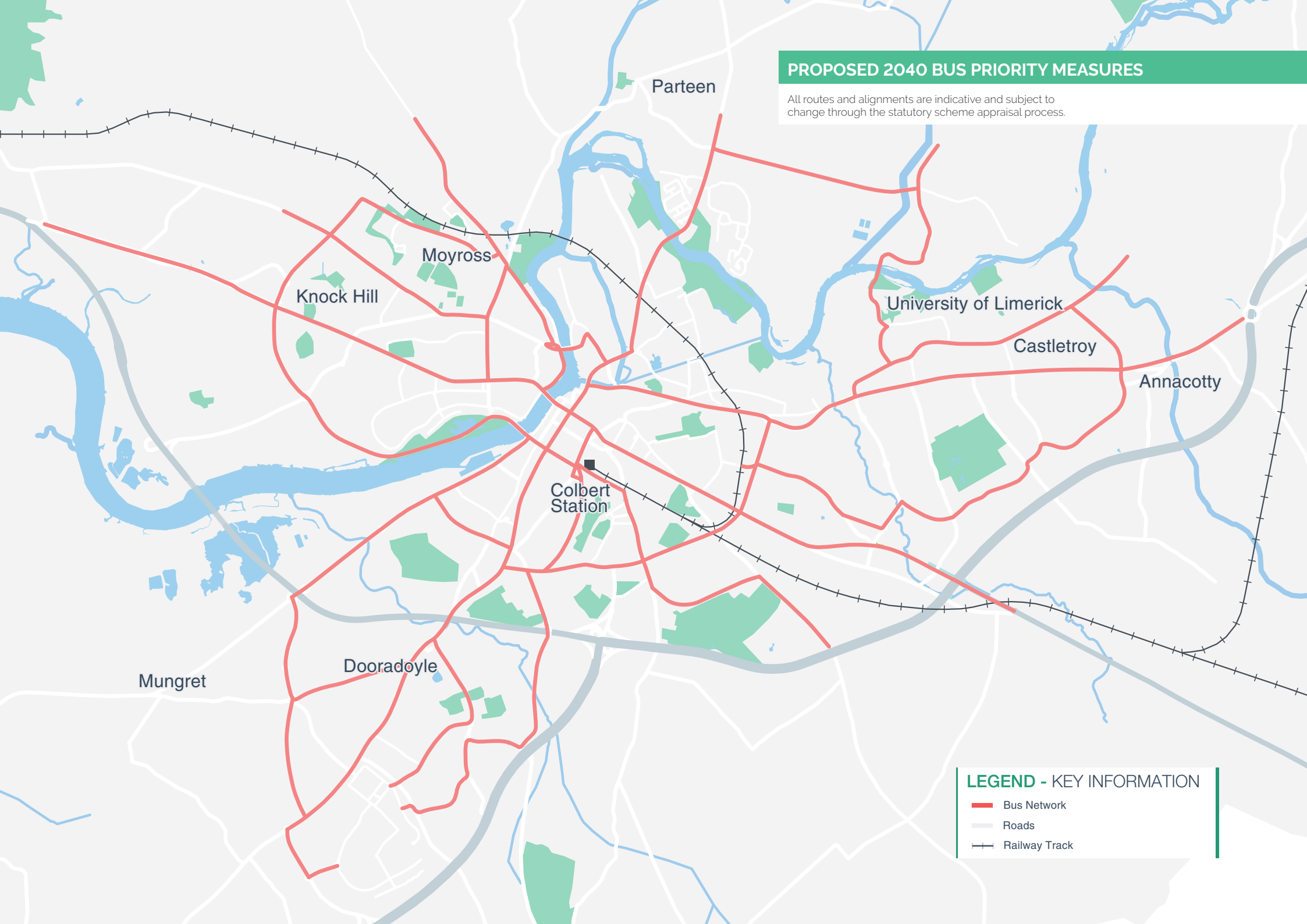
Bus Only Link at Colbert Station

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.

10.5 BUS SERVICES

10.5.1 Short Term Network

A potential short-term bus network that could be delivered for Limerick City and Suburbs over the coming years as BusConnects is implemented is shown. This is subject to detailed local assessment of demand, operational matters, infrastructural requirements and engagement with bus operators and local communities.


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
LEGEND - KEY INFORMATION
Bus Network
Roads
Railway Track

MEASURE BC6

Short-Term Bus Network Review
It is the intention of the NTA, Bus Éireann and the local authorities to undertake a review and implement changes to the Limerick Metropolitan Bus Service Network as part of BusConnects Limerick in order to maximise the effectiveness and efficiency of the city's public transport system.

10.5.2 Future Bus Service Network

While the network review to be undertaken as part of BusConnects Limerick will focus on the short-term and be based primarily on existing travel patterns, there will be a need to continuously monitor travel patterns over the lifetime of the LSMATS and further amend the bus network to serve changes transport demand.

The full potential long-term LSMA service network is shown on the Proposed 2040 Bus Network map. The route alignments are indicative and are subject to further development as the design and planning processes for further network changes progresses.

MEASURE BC7

Bus Service Network Monitoring and Review
It is the intention of the NTA, Bus Éireann to continually monitor the demand for bus services in the LSMA throughout the lifetime of the LSMATS and enhance or amend the service network as appropriate.

10.5.2.1 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.

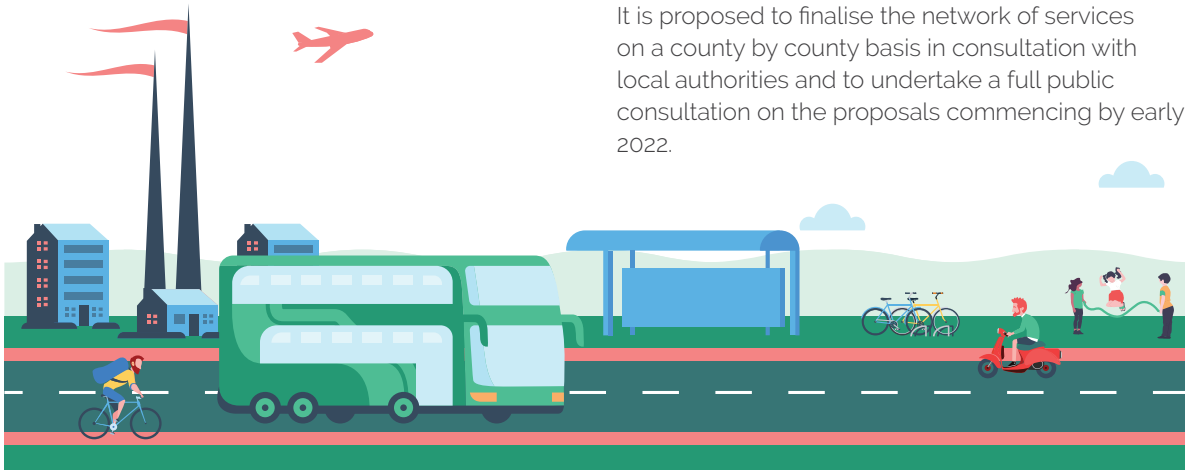
The proposed frequency for these routes is 10-minutes all day, with higher frequencies at peak hours and the potential for higher all-day frequencies as demand increases over the Strategy period.

10.5.2.2 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.

10.5.2.3 Orbital Routes

The indicative Orbital Bus Network envisages two high frequency orbital services (initially) that are proposed to serve a number of key destinations outside of the City Centre including UL and TUS. The upgraded orbital network will provide additional connectivity and interchange with radial bus services.



10.5.2.4 Southern Orbital

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

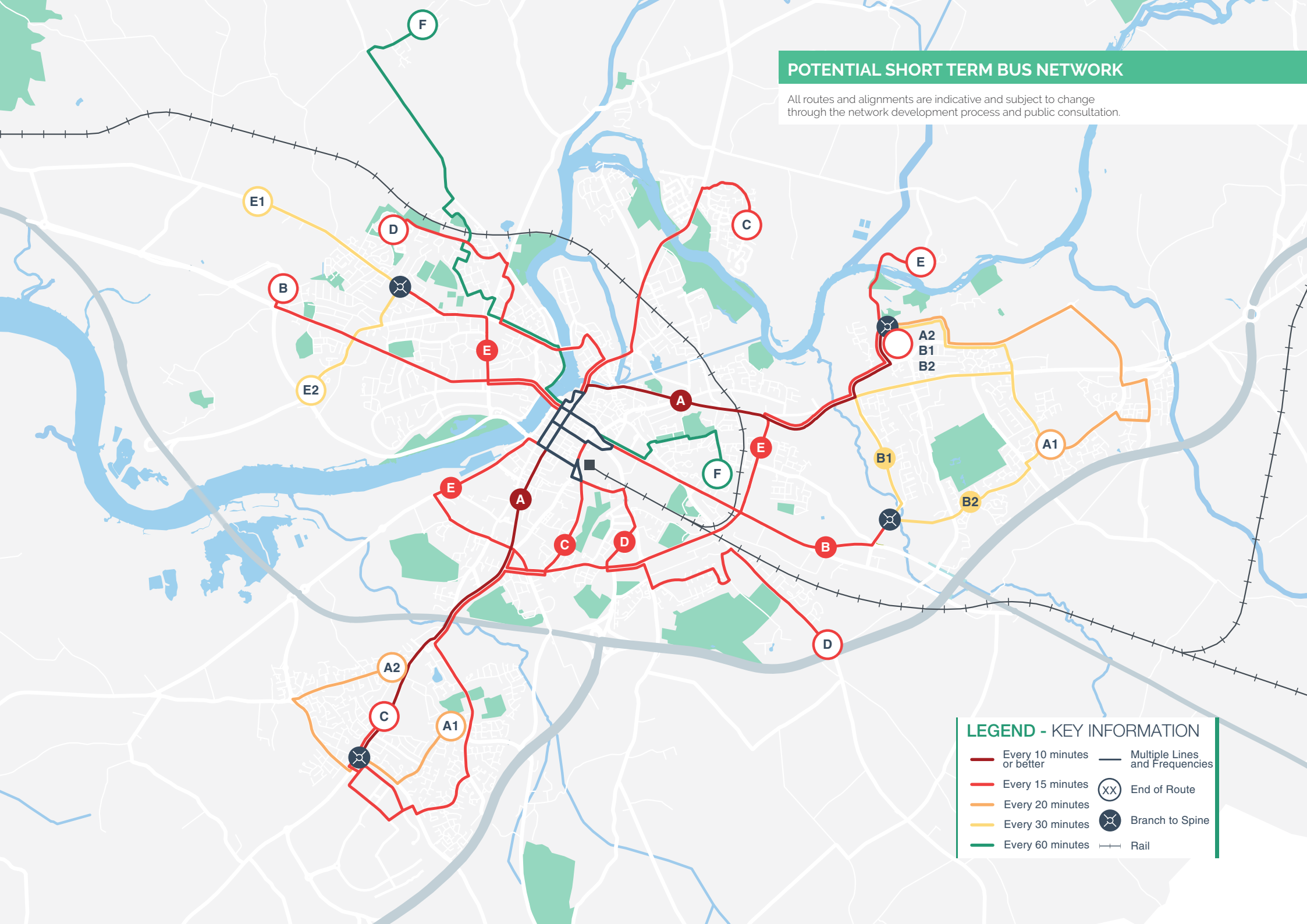
10.5.2.5 Northern Orbital

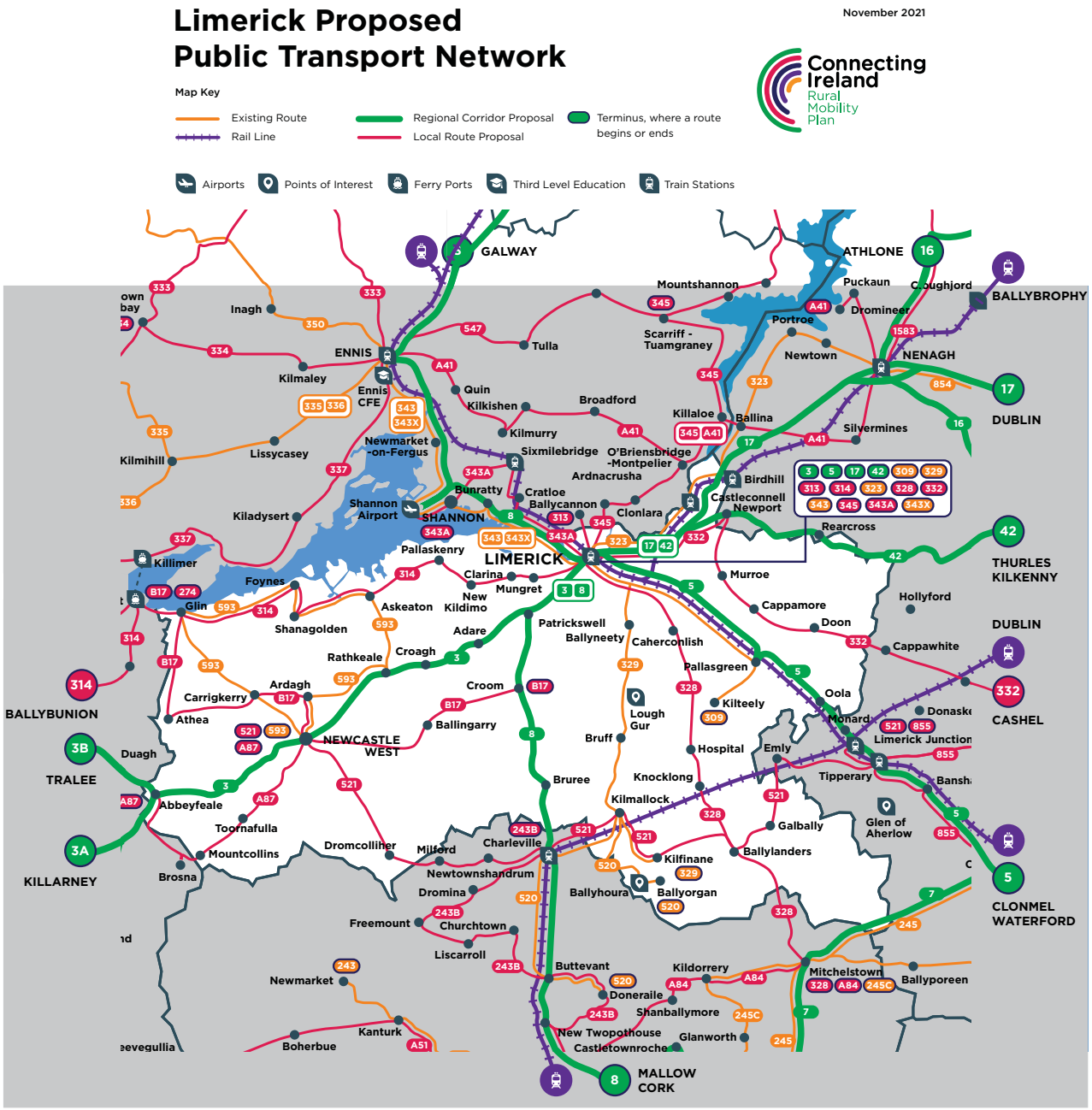
There is potential to establish a northern orbital service in the medium term which would serve the north side of Limerick City, including Moyross, King's Island and Corbally. This service would terminate in UL via the northern campus. The nature of the road network between Corbally and UL, and the potential for local upgrading, will be a factor in the detailed arrangements for this service.

10.6 CONNECTING IRELAND

Connecting Ireland is the NTA's programme to address the gaps in connections to local and regional centres in rural Ireland, to allow for the access to local services without the need for a car and to provide to option of more sustainable transport across the region.

It is proposed to finalise the network of services on a county by county basis in consultation with local authorities and to undertake a full public consultation on the proposals commencing by early 2022.


POTENTIAL SHORT TERM BUS NETWORK
All routes and alignments are indicative and subject to change through the network development process and public consultation.
F
E1
D
C
B
E
E2
A
E
A2
B1
B2
A1
F
E
A
C
D
B
D
A2
C
A1
LEGEND - KEY INFORMATION
Every 10 minutes or better
Every 15 minutes
Every 20 minutes
Every 30 minutes
Every 60 minutes
Multiple Lines and Frequencies
XX
End of Route
Branch to Spine
Rail



Over the lifetime of the strategy, and in order to ensure that an effective alternative to the private car can be offered in rural parts of the LMA for all trip purposes, the NTA will undertake further service improvements after the initial rollout of Connecting Ireland has been completed, where demand is identified and/or where analysis of travel patterns shows a persistently high dependency on the private car.

Over time, it is expected that the services provided under Connecting Ireland will grow and expand to address the need to transition a significant proportion of car journeys to public transport in order to reduce greenhouse gas emissions.

10.6.1 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. Under the Connecting Ireland programme, the NTA propose to continually improve the existing network of regional services, with a view to expanding on service frequency to meet the growing demand as required.

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

MEASURE BC8

Regional Bus Networks

It is the intention of the NTA and the local authorities to maintain and enhance regional bus networks in line with the emerging "Connecting Ireland" programme.

10.7 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.

As part of the improvement to Shannon's bus services, the potential for better integration of these services with flight times to and from Shannon Airport will be taken into account.

MEASURE BC9

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.

10.8 LOCAL LINK AND DEMAND RESPONSIVE TRANSPORT

10.8.1 Local Link

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

MEASURE BC10

Local Link Services

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

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.

10.8.2 Demand Responsive Transport

There are some isolated locations within Limerick City and Suburbs, and in the peri-urban fringes where the demand for transport is so low that it is challenging to justify the provision of regular timetabled services. The NTA, in reviewing the service network for the metropolitan area will identify these locations and, where applicable, propose a tailored, more efficient service which responds directly to changing demands throughout the day.

10.9 BUS PRIORITY IN METROPOLITAN TOWNS

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.

MEASURE BC11

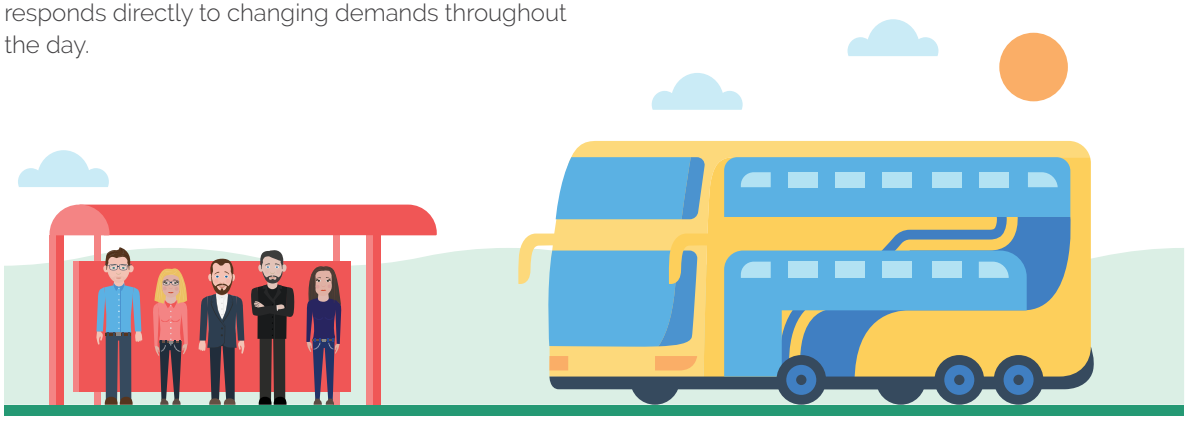
Local Link Services

It is the intention of the NTA and the local authorities to examine the need for bus priority in Metropolitan Towns and Villages across the LSMA and provide for it where required.

10.10 BUS STOPS AND SHELTERS

Under BusConnects Limerick and Connecting Ireland we will enhance bus stops in the LMA region, with better route and fare information and with timetable information specific to each stop.

We will install more Real Time Passenger Information (RTPI) signs along the new bus corridors and elsewhere across the region, providing accurate next-bus arrival information.



Bus shelter provision will be significantly expanded as part of the BusConnects Limerick programme and Connecting Ireland. A large number of additional bus shelters will be provided in new locations, particularly where connecting Ireland services are being provided.

The potential to incorporate urban design and environmentally beneficial features in new bus stops and shelters will be explored.

MEASURE BC12

Bus Stops and Shelters

It is the intention of the NTA and the local authorities to continue to roll-out the program of bus stop and shelter provision, and to monitor potential for further expansion and upgrade during the lifetime of the strategy.

10.11 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.

MEASURE BC13

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.

10.12 SUPPORTING MEASURES

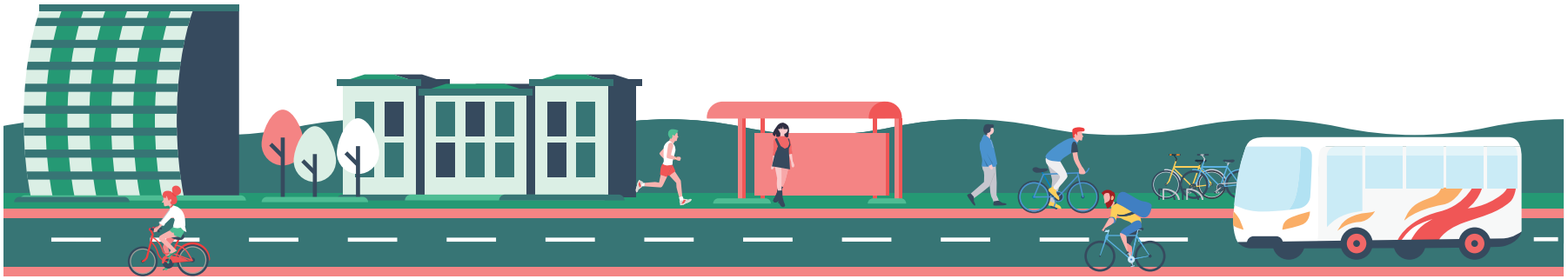
The new Bus Network in Limerick will be significantly upgraded to BusConnects standards. The regional bus network will similarly be upgraded to include measures such as:

- 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 expansion of 24-hour services;
- Smart ticketing to enable integration with other modes of transport and reduce delays;
- Operation of a fully accessible bus fleet;
- Transition of LSMA's urban 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.

MEASURE BC14

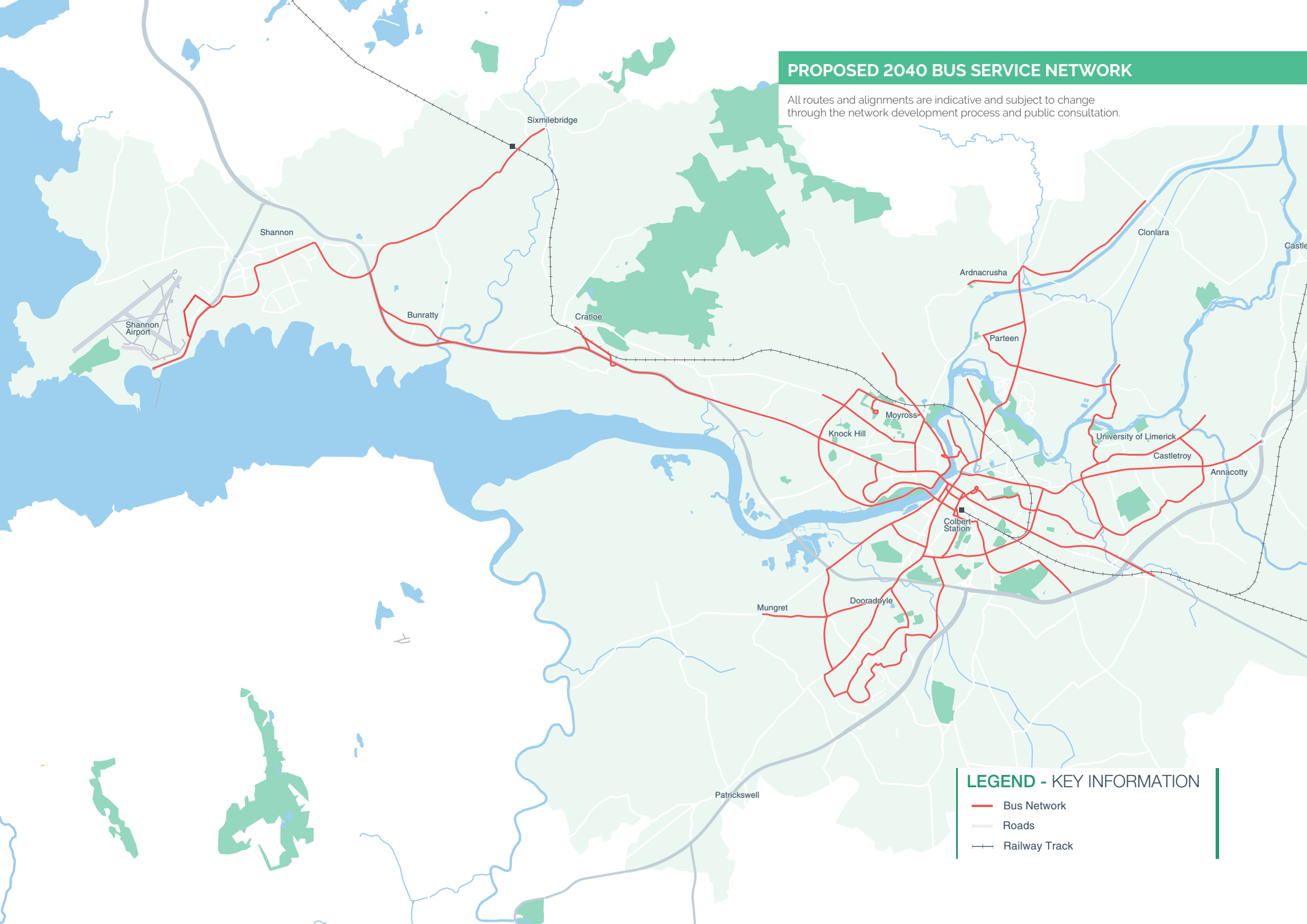
Supporting Measures

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 SERVICE NETWORK

All routes and alignments are indicative and subject to change through the network development process and public consultation.



RAIL

35%
increase
in people living within walking distance of a rail station

48% increase
in rail boardings and alightings between 2016 & 2040.

Park and Ride facilities
at new Ballysimon Station

New Stations
at Ballysimon and Moyross

Station Enhancements
and Upgrades

Increased Frequencies
of Commuter Services

2 trains per hour
on the **Nenagh to Ballybrophy Line**

3 trains per hour
on the **Ennis Line**

Improved InterCity Connectivity
Upgrade Dual-Track between Colbert Station and Limerick Junction

11 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 and suburban connectivity. Maximising the potential of the rail corridors 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 and Waterford rail corridors.

11.1 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 has been completed by the Department of Transport. Separately, an all-island Strategic Rail Review is currently being undertaken by the Department of Transport in collaboration with Northern Ireland's Department for Infrastructure.

MEASURE 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.

11.1.1 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 at Oola and Pallas Green New could be progressed over the lifetime of the Strategy.

MEASURE 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 •
provide a dual-track between Limerick Colbert and Limerick Junction to facilitate improved national and regional connectivity and improve service frequency in line with increased demand.

11.2 LIMERICK COMMUTER RAIL NETWORK

As part of the development of this Strategy, and at the request of the Minister for Transport, detailed assessments of various rail proposals, and packages of proposals, were undertaken. These included assessments of a comprehensive rail network, including new links and passenger services to Shannon, Adare and Mungret, in addition to the upgrading of the existing rail links to double track plus the development of a number of new rail stations.

Under the current land use scenario for the metropolitan area, transport modelling assessment work identified that the level of passenger usage on the additional commuter lines up to 2040 was low, significantly below the levels normally associated with heavy rail commuter networks. With the adoption within the transport modelling analysis of higher levels of development around railway stations from 2040 onwards to represent a Transit-Oriented Development approach, passenger levels

were projected to increase. This work indicates the potential of an alternative land use approach that would focus development around a network of potential rail stations, and seek to provide sufficient development density to support the operation of a comprehensive rail network.

A spectrum of rail scenarios was considered in developing the Strategy and these are reported in the separate "LSMATS Rail Assessment" report, along with details on how land use policies from 2040 to 2070 were developed to support investment in rail. If those land use policies were brought forward to the period between now and 2040, the potential for increased investment in rail being implemented at an earlier date would be greater.

Arising from that assessment work, a number of rail proposals have been identified for inclusion in the Strategy. These are split into the following two phases of investment proposals:

11.2.1 Phase 1 Network

The Phase 1 Network is made up of proposals which could be developed in the short to medium term based on the current forecast levels of population and employment growth and current land use policies.

11.2.2 Phase 2 Network

The Phase 2 network is comprises a more ambitious programme for the regional and commuter rail network to be developed in the long-term based on a higher level of forecast growth for the LSMA which would be distributed on the basis of the principles of Transit-Oriented Development. In the Phase 1 network, additional rail stations are proposed at Moyross and Ballysimon (in tandem with a park and ride facility), with the potential for other stations on the existing rail network to be kept under review, including at Corbally and Parkway, possibly linked to park and ride provision. Coupled with the twin tracking of the line between Limerick Junction and Colbert Station, plus the increasing of service frequency on the Nenagh-Ballybrophy and the Ennis line, this will provide a significantly enhanced rail system in the Limerick Metropolitan area.

In the longer term a transition to a Transit-Oriented Development focussed regional land use policy, would support consideration of a more comprehensive rail network – Phase 2 – including potential lines to Adare, Mungret and Shannon. However, the delivery of these lines to rail passenger standards is contingent upon the appropriate level of development in the relevant areas to support and justify this provision. Further details of the potential for such a scenario is set out in a separate Rail Strategy Report.

MEASURE RL3

Limerick Commuter Rail Network

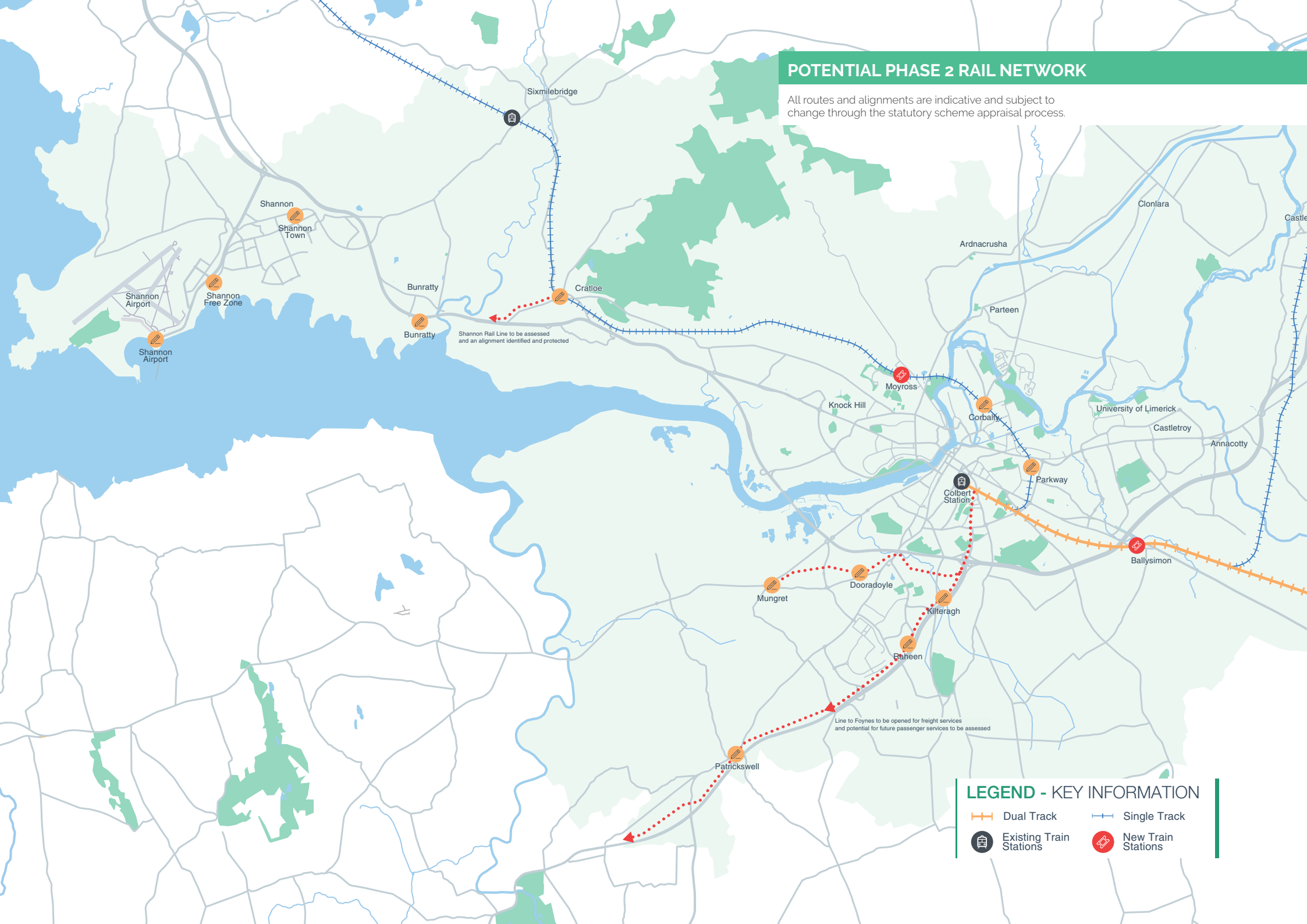
It is the intention of the NTA, in conjunction with Irish Rail, Southern Regional Assembly, Limerick City and County Council and Clare County Council, to:

- Provide investment in the Phase 1 Rail Network for the LSMA as follows:
  - A new rail station at Moyross as demand for travel increases in line with the regeneration of this area;
  - A new rail station at Ballysimon, including Park and Ride;
  - Review the potential for additional stations on an on-going basis
  - Improve the frequency of services on the Ennis Rail Line to provide for an efficient and effective commuter rail service in the long term;
  - Improve the frequency of services on the Nenagh-Ballybrophy line as demand for travel increases.
- Undertake the following in relation to the provision of the Phase 2 Rail Network for the LSMA:
  - In cooperation with the Southern Regional Assembly and the local authorities, seek to develop land use policies for implementation via the RSES and Development Plans which focus development in the LSMA, and the wider region, on the rail network in order to deliver Transit-Oriented Development and support further investment in suburban rail; and
  - Examine the feasibility of providing the full commuter rail network for the LSMA, including the re-use of the Foynes and Mungret lines; a new line to Shannon; and new stations at appropriate locations integrated with high density Transit-Oriented Development.

11.3 ADARE LINE AND RAIL FREIGHT

A rail freight line between Limerick and the Port of Foynes has been inactive since 2001. This line forms the eastern boundary of the suburb of Dooradoyle and the employment area of Raheen, and passes through Patrickswell and to the north of Adare. The adopted RSES proposes an investigation of the possible reinstatement of this freight 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.

As part of this transport strategy, it is proposed to reinstate the single-track Limerick to Foynes line to provide a 'freight only' service, adopting a cost effective design approach.


POTENTIAL PHASE 2 RAIL NETWORK
All routes and alignments are indicative and subject to change through the statutory scheme appraisal process.
Sixmilebridge
Shannon
Shannon Town
Shannon Airport
Shannon Free Zone
Shannon Airport
Bunratty
Bunratty
Cratloe
Shannon Rail Line to be assessed and an alignment identified and protected
Moyross
Knock Hill
Ardnacrusha
Parteen
Clonlara
Corbally
University of Limerick
Castletroy
Annacotty
Parkway
Colbert Station
Ballysimon
Dooradoyle
Mungret
Kilteragh
Raheen
Line to Foynes to be opened for freight services and potential for future passenger services to be assessed
Patrickswell
LEGEND - KEY INFORMATION
Dual Track
Single Track
Existing Train Stations
New Train Stations


2713

MEASURE RL4

Foynes Line and Rail Freight

It is the intention of the NTA and Iarnród Eireann to reinstate the Limerick to Foynes railway line to provide a freight service.

While current indications are the costs and the likely level of usage would be insufficient to justify the upgrading of this rail link to full passenger service in the short term, this position should be kept under periodic review during the period of the strategy in line with Measure RL3.

11.4 RAIL-BASED PARK AND RIDE

As frequency enhancements to the Ballybrophy and Limerick Junction lines are realised, the potential for a Park and Ride where both lines converge will grow. As such, the proposed bus-based Park and Ride at Ballysimon may be suitable as a location for a rail-based facility attached to a new station. This would 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.

MEASURE RL5

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:

- Provide a rail-based Park and Ride station at Ballysimon to reduce traffic levels on the N24 approach to Limerick City in line with the provision of increased service frequencies; and
- Investigate the potential for further Park and Ride facilities where the strategic road network meets high-frequency rail services.

11.5 COLBERT STATION

Colbert Station is the primary terminal for public transport services in Limerick City, located just off Parnell Street/ Hyde Road approximately 15-minutes' 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.

MEASURE RL6

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 Street/ Parnell Street – 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 Street/ Hyde Road. The proposals by the Land Development Agency and Limerick City and County Council to masterplan and develop over 100 acres of State-owned land around Colbert Station envisages a largely low-car mixed-use development. Enhanced bus, pedestrian and cycle connections will inform this process.

11.6 SUPPORTING INFRASTRUCTURE

11.6.1 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.

11.6.2 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.

11.6.3 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.

MEASURE RL7

Supporting Rail Infrastructure

It is the intention of the NTA, Iarnród Éireann 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.

11.6.4 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.

MEASURE 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.

11.7 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 electric / 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.

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.

11.8 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.

MEASURE 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
- Transition to electric/hybrid train fleet for the provision of lower emission train services.

MEASURE 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.


KINGS ISLAND
Coca-Cola
zero

12 LAND USE, REGENERATION AND SCHOOLS

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.

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 (UL), University Hospital Limerick, Technological University of the Shannon (formerly LIT), Dooradoyle, Mary Immaculate College, the National Technology Park, Shannon Town, Free Zone and International Airport.

12.1 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.

MEASURE LU1

Colbert Lands

It is the intention of the NTA and Limerick City and County Council to collaborate closely with Bus Éireann, Iarnród Éireann and the landowners such as the HSE and LDA, in maximising the development potential of the lands at Colbert Station.

This will entail the implementation of Public Transport Oriented Development (PTOD) principles. PTOD 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.

PTOD 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.

MEASURE LU2

City Centre Revitalisation

It is the intention of the NTA to support and facilitate the revitalisation of Limerick City Centre as the regional focus for economic, social and cultural activity and as a location for high density residential development.

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.

MEASURE LU3

Principles for the Integration of Land Use and Transport Planning

In order to promote public transport, walking and cycling across the LSMA, it is the intention of the local authorities to:

- Consolidate development into city, town, suburban and village centres in accordance with the 15-minute city and neighbourhood concept;
- Consolidate development around existing and proposed public transport services and facilities;
- Increase densities in future residential and employment developments;
- Prioritise mixed-use development which reduces the need to travel;
- Ensure that all new development areas will be fully permeable for pedestrians and cyclists through the application of the principle of filtered permeability whereby through traffic by private car is discouraged;
- Deliver schemes to improve permeability for walking and cycling in existing developed areas; and
- Ensure that the layout of new developments will prioritise walking and cycling and enable the efficient provision of public transport services.

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. In line with the principles of the NPF, the integration of land use planning and transport planning in the LSMA will be guided by the following objectives:

12.2 LIMERICK REGENERATION

The vision statement of the adopted Limerick Regeneration Framework Implementation Plan is as follows:

"Safe and sustainable communities of opportunity where people of all ages enjoy a good quality-of-life, a decent home and a sense of pride about their place. Well-serviced and attractive neighbourhoods will be physically connected and fully integrated with the social, economic and cultural life of Limerick."

Almost half of all households in the Limerick regeneration areas have no access to a car.

MEASURE LU4

Public Transport for Regeneration Areas

It is the intention of the NTA, in collaboration with Limerick City and County Council and other stakeholders, to identify and deliver improvements to the public transport offer in the regeneration areas, including:

- Service improvements;
- Public transport information enhancement;
- Improvements to waiting facilities;
- Measures to enhance personal security; and
- Closer engagement with local communities.

MEASURE LU5

Walking and Cycling in Regeneration Areas

It is the intention of the NTA, in collaboration with Limerick City and County Council and other stakeholders, to identify and deliver specific improvements to walking and cycling infrastructure in regeneration areas, based on those measures identified in the Regeneration Framework Plan, including:

- Cycle tracks;
- Greenways;
- Opening up of new walking and cycling links to improve permeability within regeneration areas and between regeneration areas and surrounding neighbourhoods; and
- Cycle parking at retail outlets, public transport stops, and other services.

MEASURE LU6

New Roads to serve Regeneration Areas

The NTA and Limerick City and County Council will seek to deliver new road schemes in regeneration areas to cater for enhanced public transport where requirements are identified, or where there is a socio-economic imperative to provide such connections.

This points to how vital it is to provide public transport, walking and cycling alternatives to these locations as a means of facilitating accessibility to jobs, education, retail and other services throughout the LSMA.

MEASURE LU7

Thomond Weir

It is the intention of the NTA and Limerick City and County Council to:

- Redevelop the Thomond Weir to directly link St. Mary's Park westwards enhancing connectivity to the north west of Limerick City, including Technological University of the Shannon and Thomond Park.
- At the project level, a full Appropriate Assessment will be carried out and will seek to ensure that the project will not adversely affect the integrity of a European site or sites and that each stage of the AA process is undertaken in full according to the Habitats Directive and all transposing legislation.

The regeneration areas are characterised by the following physical features:

12.2.1 Lack of Permeability and Legibility

The primary transportation issue for the regeneration areas is the lack of connectivity between them and their surrounding neighbourhoods. Within Moyross and Southill, in particular, it is difficult to travel due to the impermeable block layout with each sub-estate consisting of large cul-de sacs.

This situation is central to many of the major movement problems of these areas. Given this lack of permeability and legibility, access to employment and services is poor.

This also has a negative impact on potential public transport services, as routeing patterns become overly complex.

12.2.2 Severance

Severance creates immediate barriers in the regeneration areas. Sometimes these barriers are intentional: e.g., the walls and fences that stretch for over 1.5 kilometres along the southern fringe of Moyross. More usually, severance in the regeneration areas are caused by transport infrastructure such as the rail lines which impact on Southill and Moyross, or heavily trafficked roads such as Childers Road, Southill and the Island Road, King's Island which severs St. Mary's Park from the rest of King's Island.

MEASURE LU8

Links to Moyross

It is the intention of the NTA and Limerick City and County Council to significantly improve pedestrian and cycle accessibility at various points between Moyross and Cratloe Road.

MEASURE LU9

Approach to Southill

It is the intention of the NTA and Limerick City and County Council to upgrade Roxboro Road and the Roxboro Roundabout in order to cater for pedestrians, cyclists and public transport, and to better integrate Southill with areas to the north.

12.2.3 Dominance of Vehicular Movement

The roads in the regeneration areas are predominantly designed for the movement of vehicles at speed. It is a key objective to create traffic-calmed streets where the needs of pedestrians, cyclists and public transport users are prioritised.

The development or redesign of streets needs to be carefully considered in terms of land uses and development typologies, with active frontage and passive surveillance, increased permeability and landscaping improvements. This will all assist in reducing the isolation of the regeneration areas from wider neighbourhoods and districts.

In order to address these transport deficiencies, the NTA has begun to roll out enhancements to public transport services by doubling the frequency of the 303 service from Moyross to Southill via Limerick City Centre.

This is just one example of how the implementation of the LSMATS, in conjunction with the programmes of other agencies can deliver significant benefits to the regeneration areas.

MEASURE LU10

Location of New Schools

The NTA will support the local authorities in endeavouring to ensure that Development Plans and Local Area Plans provide for the development of new schools only in locations where access for pupils is maximised by walking and cycling.

12.3 TRAVEL TO SCHOOL

According to the Census, 153 teenagers cycled to education in Limerick City and Suburbs in 2016, of which 6 were female. This compares to almost 3,000 who travelled by car. In 1996, the comparative figures were 717 and 88 for a smaller Limerick City area, with approximately 1,700 travelling by car. The mode share for teenagers cycling to school in urban Limerick has fallen from 9% in 1996 to 2.5% in 2016.

In Shannon, 18 teenagers cycled to school or college in 2016, of which 0 were female.

While the percentage of all children who travelled on foot is quite high for both settlements (31% and 56% respectively), more than half of all children in Limerick and one third of children in Shannon travelled to school by car. Similar figures apply to other settlements across the LSMA and in rural parts. This gives rise to a number of issues, including:

- Congestion at peak hours;
- Development of a car-culture instilling driving as the norm at a young age;
- Lack of social interaction for children and parents;
- Increased air pollution levels at schools contributing to childhood asthma in Limerick; and
- Lack of exercise for children leading to obesity and other associated health issues.

The NTA is addressing school transport issues nationally in two specific ways:

- Development of cycling and pedestrian infrastructure serving schools; and
- Managing An Taisce's Green Schools Travel Module on behalf of Department of Transport.

The LSMATS provides for the continuation of those measures for the LSMA and will seek, in cooperation with other agencies and organisations, to target investment to where it can be most effective.

MEASURE LU11

Design of New Schools

The local authorities will ensure that the detailed design of new schools will be undertaken in a manner which maximises the priority for pedestrians and cyclists in terms of access arrangements, and the location and quantum of car and bicycle parking.

MEASURE LU12

Green Schools Travel

The NTA will continue to expand the Green Schools Travel Module in conjunction with An Taisce in order to promote alternatives to the private car for school travel across the LSMA through their broad range of behavioural change initiatives, such as walking buses, walkability audits, park and stride, cycle training, cycling days and other activities.

MEASURE LU13

Other Behavioural Change Initiatives

The NTA and the local authorities will support organisations seeking to implement other behavioural change initiatives in the LSMA, such as the Limerick Cycle Bus, and take their feedback into account in decisions around infrastructural investment.

MEASURE LU14

NTA Safe to School Programme

Under our national Safe to School programme, the NTA and the local authorities will prepare a programme of works aimed specifically at providing safe walking and cycling environments to schools in the LSMA, including:

- School Streets;
- School Zones;
- Reduced Speed limits;
- Park and Stride; and
- Additional cycle and scooter parking.

13 URBAN DESIGN AND PLACEMAKING

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 2019

The advent of the private car changed the way in which our urban areas function. Our streets became increasingly dominated by cars, and were often designed to prioritise the through movement of vehicular traffic.

There has been a step-change in recent years, however, to re-examine the role our streets play as places that support a much broader range of functions. This shift in focus is in line with recognition of the impacts that congestion and emissions have on the environment and people's quality of life.

Cities and towns around the globe are reconfiguring their streets and public spaces to allow local communities to thrive, encourage healthier lifestyles, improve air quality, and support local economies. This has been brought to the fore during the Covid-19 pandemic where there has been a growing appreciation for good quality public space.

At a time when the value of our urban spaces is appreciated more than ever, it is imperative that a proactive approach to their management and reimagination as vibrant and attractive places for people is adopted.

13.1 ALTERNATIVE APPROACH TO CAR-BASED TRAVEL

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.

13.2 SUPPORTING SUSTAINABLE MOBILITY

Placemaking is the process of creating quality places that people want to live, work, invest and spend time in. It is based on a simple principle; that if you plan for people and places, you get people and places. Increased traffic and congestion is not the inevitable result of growth.

It is the product of deliberate choices made to shape our communities to accommodate the private car. The LSMATS represents an opportunity to move away from this traditional approach to transport planning.

The LSMATS acknowledges that the design of the built environment is a key determinant of how people move around. Better street design in urban areas will encourage more people to choose to walk, cycle or use public transport by making the overall experience more safe, accessible and attractive. It will lower traffic speeds, reduce unnecessary car use and create a built environment that responds more sympathetically to the distinctive natures of the individual communities and places across the LSMA.

Therefore, high-quality urban design and place-making improvements will be included as part of the implementation of LSMATS transport schemes to support sustainable mobility.

MEASURE UD1

Supporting Sustainable Mobility

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

- Reallocate road space in Limerick, Shannon and other Metropolitan Centres to prioritise walking, cycling and public transport use;
- 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.

13.3 CITY CENTRE TRAFFIC MANAGEMENT PLAN

Limerick City Centre is steeped in rich architectural heritage from its Georgian grid pattern layout, public spaces such as Pery Square, to its original street furniture and building facades. The streets of Newtown Pery area represent a unique example of 18th and 19th century planning in Ireland. However, much of Limerick City Centre is dominated by private car parking, through-traffic and HGVs. Over the lifetime of this Strategy, there will be a reduction of car dominance in the City Centre. This shift in focus is in line with the recognition of the detrimental impacts that traffic congestion and associated carbon emissions have on the environment and people's quality of life.

This will be achieved by reallocating a significant amount of space to sustainable modes in the central area by removing on-street parking, reducing levels of car traffic and narrowing carriageways and junctions to better support pedestrian and cycling usage.

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.

Over the lifetime of the Strategy, it will be necessary to consider demand management measures to reduce the level of car dominance in the central City area, in line with public transport improvements to support this prioritisation.

The exact types of demand management measures to be considered will be informed by a separate assessment at the relevant time and will be guided by policy development at central Government level. Traffic management measures in the City Centre will be underpinned by public realm improvements that support walkability and active travel, that promote a high standard of urban design and provide a clear sense of place that respects the existing character of Limerick's Georgian heritage.

13.4 TOWN AND VILLAGE CENTRE PLANS

During the lifetime of the LSMATS, Town and Village Centre Plans will be devised for towns and villages across the LSMA. Measures to promote sustainable travel and promote the place function of these centres may include:

- Upgrade of existing pedestrian and cycle networks;
- Provision of new footpaths and dedicated cycle facilities linking residential areas to amenities and services;
- Retrofit permeability in existing developments to increase catchment of local services and facilities, including schools and public transport stops;
- Improved connectivity between existing train stations and bus stops, and town and village centres; and
- Land use proposals that consolidate village centres, strengthen their place function, and reduce the ribbon development patterns evident in villages like Clarina and Patrickswell.

The 'Walking' Chapter of the LSMATS sets out a series of specific proposals for the town and village centres of the LSMA.

MEASURE UD2

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 Limerick City Centre in tandem with a City Centre Traffic Management Plan and the emerging City Centre Public Realm Strategy, that are sensitive to their historic setting;
- Undertake public realm improvements in Metropolitan town and village centres; and
- Provide bus priority.

13.5 UNIVERSAL ACCESS

The accessibility of the public realm for all individuals, regardless of age or disability (e.g. mobility, visual, cognitive, intellectual), is essential. Transport is aimed at serving all sectors of society and opportunities to access work, education or partake in other activities should not be compromised by the design of the transport environment.

The LSMATS is underpinned by the ongoing work of the NTA in improving the interface between the transport network and persons with physical and intellectual disabilities. The principles of Universal Design will also be followed in the implementation of public realm and streetscape improvements.

The features of Universal Design in the built environment are all encompassing and can include high-quality footpaths, tactile paving, dropped kerbs, sufficient provision of places to rest, public toilets, removal of street clutter, legible and permeable street networks, wayfinding and so on.

The National Disability Authority's Centre for Excellence in Universal Design, Age-Friendly Ireland and DMURS all provide best practice guidance on designing an accessible public realm. All LSMATS transport schemes will be fully inclusive and adhere to these standards.

13.6 INCLUSIVE DESIGN

An important facet of good place-making is ensuring that our public spaces and transport networks are designed in such a way as that they are welcoming and inclusive of all individuals, regardless of age, gender or ability.
Addressing the perception of individual safety and security, and ease of movement in public spaces is a high-priority for LSMATS to enable everyone to choose to walk, cycle and use public transport.

Non-intrusive security measures including appropriate pedestrian-level lighting, clear sight lines, active ground floor frontage, and passive surveillance are therefore important place considerations in both land use and transport planning throughout the LSMA.

MEASURE UD3

Accessibility and Inclusion

It is the intention of the NTA and the Local Authorities to ensure that all transport schemes incorporate high-quality urban realm design that is attractive, safe, comfortable, and accessible for all individuals.

13.7 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.

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.

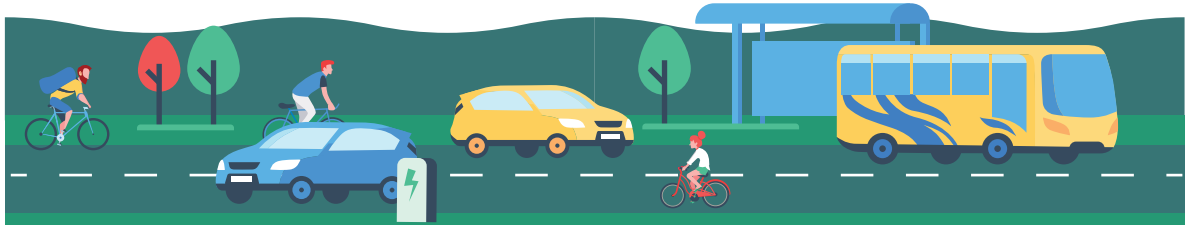
There are a variety of signage typologies present throughout Limerick City. A consistent wayfinding system along the lines of the Legible London system should be employed, alongside the delivery of LSMATS walking and cycle networks. This will benefit locals and visitors alike.

MEASURE UD4

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 (preparation of strategy has commenced), Shannon and other key destinations throughout the LSMA.



ROADS AND DEMAND MANAGEMENT

Regional & Distributor
Roads to provide a multi-modal function

Limerick City
Traffic Management Plan

HGV
Management within Limerick City

N/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 for road infrastructure improvements within the LSMA is approximately

€150m

14 ROADS AND DEMAND MANAGEMENT

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 2019

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.

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.

MEASURE 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 infrastructure to support higher levels of public transport, walking and cycling.

14.1 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 and other urban centres where provision for public transport, walking and cycling becomes more important.

MEASURE 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 reduce the use of the private car for short journeys.

14.2 PRINCIPLES FOR THE PROVISION OF NEW ROADS WITHIN THE LSMA

The 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;


SHANNON
Bus Éireann
LÁNA BUS
Bus

- The planning, design and operation of 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 access points onto the National Road network will be minimised;
- 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.

MEASURE 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 measures outlined in this chapter.

14.3 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 PTOD 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.

MEASURE 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 Scheme;
- Reduce peak time congestion on the N18/N19 network at Shannon and progress the upgrade of the N19; and
- Construct the N69/M21 Foynes to Limerick Road (including Adare Bypass) to TEN-T standard.
- Complete the feasibility and route selection process and seek to progress the appraisal and delivery of the upgrade of the N/M24 Improvement Scheme.

14.3.1 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.

14.3.2 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 N/M20 Cork - Limerick scheme for development, subject to appraisal, planning and procurement. The N20 Cork - Limerick route 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 Scheme appraisal process and the development of a business case for the Scheme.

14.3.3 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.

LSMATS 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.

There are four road access points from the N19 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.

14.3.4 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.


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
M7
N24
N69
Mungret
Dooradoyle
M20
LEGEND - KEY INFORMATION
Motorway
National Roads
Other Roads
New Roads
Road Under Construction
Junction Improvement
Toll
HGV Restrictions
Re-Classified to Regional Road

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.

14.3.5 N/M24 Waterford to Limerick

The NDP identifies the N24 as part of the national road network which will be progressed in order to prioritise projects which will proceed to construction. Consultants have been appointed and a feasibility and option selection is now being progressed.

The delivery of a transport solution for the N24 Corridor will enhance accessibility to the port of Rosslare and the connectivity it provides to markets in the European Union and the UK.

14.4 REGIONAL AND LOCAL ROADS

14.4.1 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.

14.4.2 Limerick Northern Distributor Road

Funding provision for the development of the Limerick Northern Distributor Road (LNDR) has not been included in the Government's National Development Plan 2021-2030. In addition, the Minister for Transport has requested the NTA not to include the LNDR in LSMATS on the basis that proceeding with the LNDR would be contrary to the NPF's objective of compact growth, would undermine the investment planned in active travel/public transport and would accentuate and continue a dispersed, unsustainable development model in the region. Additionally, the Minster has requested that the focus of transport investment for Limerick in the coming years should be on improving active travel infrastructure, delivering BusConnects and adopting a more transport-orientated development approach through the expansion of the rail network to provide a commuter rail system that serves existing and future development.

Revised rail proposals envisioning a comprehensive commuter rail network for Limerick City and adjoining locations has been included in Chapter 11 of this strategy.

14.4.3 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.

14.4.4 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.

14.5 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;
- Casteconnell;
- Shannon;
- Sixmilebridge;
- Ardnacrusha;
- Clonlara;
- Cratloe;
- Meelick/Ballycannon;
- Bunratty; and
- Parteen.

14.6 DEMAND MANAGEMENT

The implementation of the transport infrastructure and services set out in the previous sections alone are not forecast to meet the objectives to reduce car use and associated emissions required to meet the Climate Action Plan targets. As such, further measures aimed at managing the demand for car travel are required.

The primary manner in which it is proposed to manage demand in Limerick is via changing the way in which parking is provided.
This relates to quantum of parking in new developments; the removal of on-street parking to facilitate sustainable transport modes; and the cost of parking.

Additionally, for the purposes of the LSMATS the manner in which traffic signals operate has been examined with a view to optimising them for sustainable transport modes.

14.6.1 Parking

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.

14.6.2 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.

Details of the parking standards for new developments applied in the assessment of the LSMATS are provided in the accompanying Modelling Report

14.6.3 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.

14.6.4 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 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.

Details of the approach to on-street and off-street parking management which has been applied in the assessment of the LSMATS are provided in the accompanying Modelling report.

14.6.5 Traffic Signal Optimisation

The manner in which traffic signals traditionally operate is to maximise flow by motorised vehicles. The LSMATS has been assessed using a shorter overall cycle time which would favour those walking and cycling by reducing the time they wait for a green light.

14.6.6 Additional Demand Management Measures

The Five Cities Demand Management study examined a wide range of potential measures for the city of Limerick and while a conventional congestion charge was discounted, a range of further measures additional to parking have been brought forward.

As set out above, for the purposes of the LSMATS, the focus has been on the reduction of parking availability and the use of pricing mechanisms, in addition to some changes to traffic signals to give greater priority to sustainable modes. The application of these measures will reduce transport emissions to the extent required by 2030, in conjunction with the electrification of the fleet. If any of those measures do not materialise fully, additional measures will be required.

The implementation of the LSMATS and its review before 2028 will take full cognisance of progress in reducing emissions and the NTA, Government and local authorities will bring forward additional fiscal measures such as Mileage Based Vehicle Taxation to address any shortfalls which may emerge.

MEASURE PM1

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.

15 FREIGHT, DELIVERY 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 such a 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.

15.1 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 existing urban footprint of Limerick City and Suburbs.

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.

MEASURE FDS1

HGV Management

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 existing urban footprint of Limerick City and Suburbs. 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.

15.2 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.

MEASURE 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.

15.3 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.

MEASURE 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.

15.4 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 the Regional Freight 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.

MEASURE 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.

15.5 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.

MEASURE 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

16 SUPPORTING MEASURES AND INTEGRATION

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.

16.1 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 Plans at City or Metropolitan Town Centre level.

These Plans will be based on the NTA/TII Area Based Transport Assessment (ABTA) guidance note. They 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.

MEASURE 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 based on the NTA/TII ABTA guidance note.

16.2 PARK AND RIDE

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.

16.2.1 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.

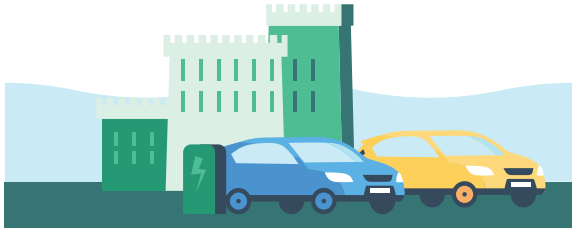
At present, there are no dedicated, permanent Park and Ride facilities within the LSMA. The Strategy will address this shortfall. Strategic PnRs will be expected to cater for between 400-600 car parking spaces and in all cases, be supported by reliable, high-frequency bus services and a potential new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



MEASURE SM2

Strategic Park and Rides

It is the intention of the NTA and local authorities to implement a network of strategic Park and Ride facilities, served by high-frequency public transport services, and walking and cycling networks.

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.

16.2.2 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.

16.2.3 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, bus priority measures, and improvements to the rail network where demand for Park and Ride is identified. 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.

16.3 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 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.

16.4 REGIONAL TRANSPORT HUBS

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 and the objectives for the town as set out in Ennis 2040.

MEASURE SM3

Mobility Hubs

It is the intention of the NTA and local authorities to determine the feasibility of mobility hubs to support Public Transport Orientated Development and low-car regeneration sites.

MEASURE SM4

Regional Transport Hubs

It is the intention of the NTA and the local authorities to support Ennis, Nenagh and Tipperary Town as a Regional Transport Hubs.

Nenagh is a key town in Tipperary with strategic rail and road connections to Limerick and Shannon. There is a strong relationship between Nenagh and the LSMA in terms of commuting for work and education and it is the intention of Tipperary County Council to foster and develop this relationship. Tipperary Town, by virtue of its location close to Limerick junction and along the N24, as well as being served by the Limerick Junction-Waterford rail service is an important settlement in terms of regional connectivity. The LSMATS will facilitate and promote enhanced services between Ennis, Nenagh and Tipperary Town and Shannon and Limerick, supporting their roles as Regional Transport Hubs.

16.5 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 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;

MEASURE SM5

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.

- 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.

16.6 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.

MEASURE SM6

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.

16.6.1 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.

16.6.2 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.

16.7 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.

16.7.1 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.

16.7.2 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.

16.7.3 Car Clubs

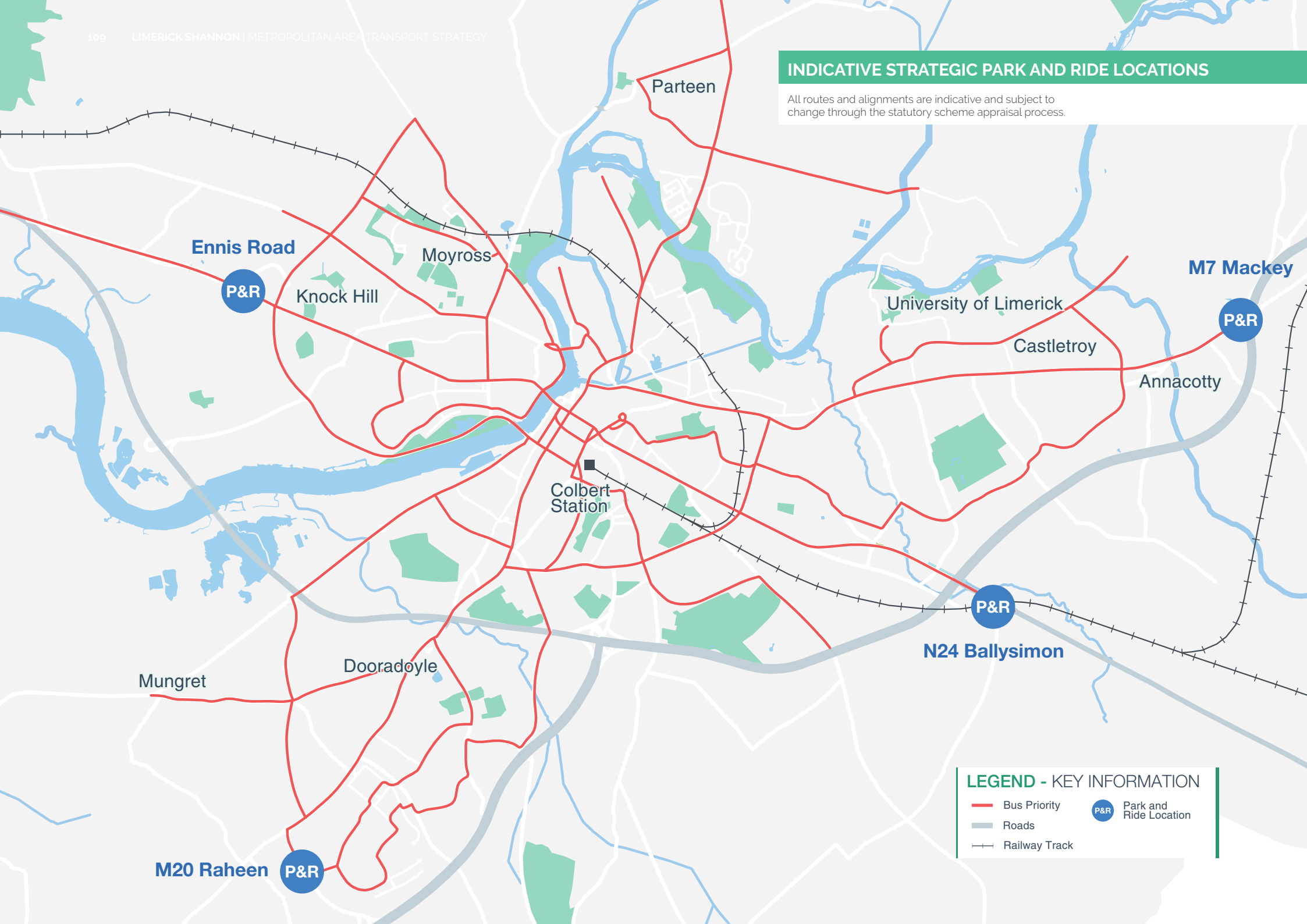
Car clubs are a growing area in Ireland with the long-established GoCar that operates nationwide, recently being joined by the YUKO car club in Dublin. Car clubs can be an important tool in facilitating car-free or low-car development in urban areas, providing access to a car for residents without the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

INDICATIVE STRATEGIC PARK AND RIDE LOCATIONS

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



16.7.4 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.

16.7.5 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 (CPs) 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.

MEASURE SM7

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.

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.

16.7.6 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. 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.

16.8 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.

MEASURE SM8

Small Public Service Vehicles

It is the intention of the NTA, local authorities and other stakeholders 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.

16.9 LATE NIGHT TRANSPORT

The provision of night-time transport options is essential for any modern city. Late night transport is critical to meet the travel needs of late-night/ early-morning commuters, to serve the night-time economy of Limerick City, and to provide a reliable transport alternative to the private car.

At present, many of the LSMA's local bus services do not operate between 23:00 and 07:00. This gap in service provision excludes many people from using public transport as their primary mode of choice to move around the LSMA. The LSMATS will investigate the expansion of late night public transport services and improvements to the taxi system including the facilitation of new technologies.

16.10 INTEGRATION

One of the goals of the LSMATS is to deliver an integrated transport system that allows people and goods to move as efficiently and seamlessly as possible throughout the LSMA across all transport services and modes.

MEASURE SM9

Late Night Transport

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

- Review existing public transport timetables and expand late night service offerings; and
- Improve the taxi system including the facilitation of new technologies.

A fully integrated network is essential to:

- Provide a reliable and attractive end-to-end alternative to the private car;
- Maximise the ease and efficiency for users in terms of travel time, cost, safety, accessibility. and convenience;
- Encourage multi-modal travel; and
- Maximise the catchment of the sustainable transport network.

A successfully integrated transport system requires a multi-faceted approach and depends on a combination of both 'hard' and 'soft' measures. The integration of the LSMA's transport network is supported by three pillars:

- **Integrated Land Use and Transport Planning:** This includes the promotion of land use consolidation, compact growth and public transit-oriented development (PTOD), focused around high-quality interchange points to minimise distances and waiting times between services and seamless transfer between modes.
- **Operational and Technological Integration:** This relates to the coordination of service timetables and fare structures. As proposed above, smart technology will play a key role in the LSMATS by investigating the use of Intelligent Transportation Systems (ITS) and Mobility as a Service (MaaS).
- **Integrated Governance:** This pillar relates to the need for a unified governance structure that will enable the coordinated and integrated delivery of the LSMATS. This includes both Local Authorities, the NTA, TII, Southern Regional Assembly, Irish Rail, Bus Éireann and other stakeholders.

The above sections of this Chapter set out a broad range of measures that will complement the significant infrastructure investment to be delivered under LSMATS. The following presents an overview of key elements of LSMATS that will contribute to the successful integration of the LSMA's transport network.

16.10.1 Integrated Land Use Planning

The integration of land use and transport planning is essential to create a sustainable city-region. The alignment of settlement and land use patterns to an integrated transport strategy can provide opportunities to reduce car dependency and enable a modal shift in favour of sustainable modes. The 'Land Use, Regeneration and Schools' Chapter sets out a number of objectives that promote land-use consolidation and public transport orientated development (PTOD), in line with the NPF's National Strategic Objective to achieve Compact Growth. This will contribute to a compact urban footprint that reduces the overall need to travel, the distance and time travelled, and captures a larger catchment within proximity to public transport services.

Future development will need to be focused along core corridors where they can be well served by sustainable transport modes. A coordinated approach to demand management, parking provision and design principles such as permeability will also play a critical role in promoting walking, cycling and public transport use.

Further objectives for land use planning are presented in the 'Land Use, Regeneration and Schools' Chapter.

16.10.2 Interchange

High-quality interchange between modes and services is essential to the success of the Strategy, and can greatly influence the travel choices that people make. Effective interchange will allow for the widening of the public transport coverage, enabling improved accessibility and connectivity across the LSMA as well as facilitating multi-modal trips.

Improved connectivity and interchange opportunities between Limerick City Centre, Shannon Town, and other key destinations and settlements within the Metropolitan Area and to the wider region will strengthen the functional relationship between these areas.

For the LSMA, interchange between bus services will be of particular importance. Key aspects of high-quality interchange include:

- Continuity of branding and style for interchange legibility and identification;
- Clear and legible information including location and service timetables;
- Wayfinding signage to guide users to other services or nearby destinations;
- Minimised distances between connected services; and
- Additional amenities such as resting areas, public toilets and bike parking at key interchange points.

During the period of the Strategy, provision will be made for interchange as part of the development of BusConnects.

MEASURE SM10

Interchange

It is the intention of the NTA, the local authorities and other relevant stakeholders to deliver high-quality interchange points throughout the LSMA to enable seamless transfer between different modes and services.

Of these, Colbert Station will represent a major interchange hub in Limerick City as well as the Regional Transport Hubs including Ennis, Nenagh and Tipperary as per Objective SM2.

The proposed Park and Ride facilities also represent major interchange hubs on the periphery of Limerick City and Suburbs. These Park and Rides will be integrated with the public transport, walking and cycling networks, thereby an effective means of increasing the accessibility of the sustainable transport network to those that might not otherwise have access.

This is particularly pertinent for people travelling into the City from rural or low-density areas where it is not feasible to provide high-frequency public transport services. Further detailed proposals and objectives in relation to Park and Rides and Parking is set out in the 'Roads and Parking' Chapter of this Strategy.

16.10.3 Information

One of the most important elements of a successfully integrated transport system is the provision of widely available, accessible, and legible information including service timetables, Real Time Passenger Information (RTPI), route maps and wayfinding signage at strategic locations. This allows people to navigate the transport network and move between different modes with ease.

MEASURE SM11

Information

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

- Provide clear and legible information regarding the transport network, including timetables, RTPI, and wayfinding interchange locations; and
- Investigate the potential for Mobility as a Service (MaaS) systems to facilitate sustainable transport.

This will be particularly critical as LSMATS proposals are rolled out. Transport for Ireland's (TfI) website and mobile app provides real time information from Bus Éireann, Iarnród Éireann, Go-Ahead Ireland and more, allowing users to plan their journey efficiently.

MaaS systems, outlined under Objective SM5, usually take the form of an online account which allow users to access information about nearby public transport services, cycle routes, car share schemes, bike share schemes, taxi services and so on all.

MaaS typically enables the user to plan, book and pay for these services. In this way, MaaS systems can transform the user experience of the integrated transport network by providing all necessary information at their fingertips. The potential for the use of MaaS in the LSMA will be investigated as this technology becomes more prevalent during the lifetime of the LSMATS.

16.10.4 Smart Ticketing

Integrated ticketing and smartcard technology offer a convenient way to pay public transport fares and seamlessly integrate with different modes across the network.

MEASURE SM12

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.

16.10.5 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 Bus Éireann public transport services. The on-going changes to public transport fares being implemented by the NTA will be continued within the lifetime of the 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, potentially a flat fare or a zone-based system, allowing multiple journeys by different modes for a single fare.

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

- **Subscription-Based Fare Structure** rewards 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 zone.
- **Multi-Modal Fare Structure** is currently applied in Dublin through the Leap90 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. The Luas card in Dublin can also be used to access GoCars and the BSS.

MEASURE SM13

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.

16.11 EQUITY IN TRANSPORT

The LSMA's transport network is aimed at serving all sectors of society, regardless of resources, ability, age, gender, or other affecting factors.

As the diversity of our society grows, the LSMA's transport services need to evolve and adapt to reflect these differing needs so as to not compromise quality of living.

The LSMA's transport network is used to access opportunities to work, get an education, visit friends, partake in community life and other activities. In this way, transport plays a key role in ensuring an equitable and just society. The 'Land Use, Regeneration and Schools' chapter sets out a number of objectives for the LSMATS to help overcome issues including social isolation in Limerick's regeneration areas. The NTA is also undertaking sustained efforts to improve accessibility and the interface between the transport system and persons with physical and intellectual disabilities. Objectives relating to universal access and inclusive design are set out in the 'Urban Design and Place-Making' Chapter.

The LSMATS is underpinned by the ongoing work of the NTA's commitment to sustained engagement with representative groups throughout the implementation of its plans and programmes. This engagement with local communities and other stakeholders will help achieve the most equitable outcomes for all.

MEASURE SM14

Transport Equity

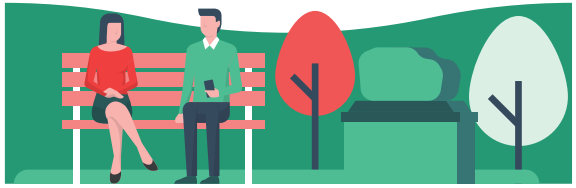
It is the intention of the NTA, in collaboration with local authorities and other stakeholders, to identify and deliver improvements to ensure transport equity in the LSMA, including:

- Ongoing engagement with local communities;
- Improvements to walking, cycling and public transport infrastructure and services in regeneration areas and improved connectivity to the wider region; and
- Continuing to improve the interface between the transport system and persons of all ages and abilities in line with universal access design principles

17 CLIMATE ACTION MANAGEMENT

Transport accounts for approximately 20% of Ireland's greenhouse gas (GHG) emissions. Road transport is responsible for 96% of those GHG emissions. Associated issues linked to high levels of road transport include noise pollution, accidents, and congestion which reduces quality of life, deters active travel, and costs society hundreds of millions of euro per annum in wasted time. Promoting sustainable mobility is critical for climate policy, and it also represents an opportunity to improve our health, boost the quality of our lives, meet the needs of our growing urban centres such as Limerick, and connect our rural, urban and suburban communities.

Climate Action Plan, 2019



17.1 INTRODUCTION

The LSMATS aims to provide an effective and sustainable transport system across the region and to accommodate future travel growth in a managed and balanced way. Increased public transport provision, coupled with enhanced cycling and walking facilities in the urban areas, will enable a transition to more sustainable travel modes for many people in addition to providing the means to cater for much of the increased travel demand.

There is now, however a legislative requirement that public bodies must take account of the Climate Action Plan and Low Carbon Development (Amendment) Act 2021 in the performance of their functions. Specifically, in relation to greenhouse gas emissions, the Act requires a total reduction of 51% in such emissions over the period to 2030, relative to a baseline of 2018. While that overall target has not yet been disaggregated into sectoral targets, it is understood that the transport sector will be required to achieve a 50% reduction.

This is a very significant and challenging target, which will require fundamental changes in the area of transport over the next decade. Central to those changes will be the need to increase the proportion of travel by sustainable modes and reduce the level of usage of Internal Combustion Engine (ICE) powered vehicles.

While the provision of new and additional transport infrastructure and transport services will encourage and deliver increased movement by sustainable modes, such provision will be insufficient on its own to achieve the level of emissions reduction required by 2030. Accordingly, additional demand management measures will need to be put in place to complement the additional transport provision and achieve the overall 50% reduction goal. The following sections set out the additional measures that will need to be adopted.

17.2 ELECTRIFICATION AND BIO-FUELS

One of the main policies to reduce greenhouse gas emissions in the transport sector is the transition away from fossil fuel powered vehicles to electric vehicles. At a national level, the Government's Climate Action Plan 2021 sets out the intention to increase the number of electric vehicles in the State to 936,000 vehicles by 2030 comprised of:

- **845,000** passenger cars;
- **95,000** Low Emissions Vans;
- **3,500** Low Emission HGVs; and
- **1,500** electric buses and expanded electrified rail services.

This is an ambitious level of transition to electric vehicles and will contribute substantially to reducing greenhouse gas emissions.

The Climate Action Plan 2021 also sets out a policy to increase the volume of biofuels used in the road transport sector as a blended fuel for petrol and diesel powered vehicles. It proposes a 10% blend penetration rate in petrol and 20% penetration in diesel by 2030.

17.3 INITIAL EMISSIONS ASSESSMENTS

The NTA's Regional Modelling System has been used to calculate the level of greenhouse gas emissions' reduction under various scenarios.

As identified earlier, the overall target required to be achieved in 2030 is an overall emissions reduction of 50% across the LSMA.

An assessment has been undertaken of the forecast emissions level in 2030, taking account of the additional transport infrastructure and transport services set out in the Transport Strategy proposals, in addition to the vehicle electrification and increased use of bio-fuels proposals. This assessment forecasts that with all of these elements in place, the likely emissions reduction will be approximately 35%.

To deliver the additional reduction, further measures to decrease the usage of petrol/diesel powered vehicles are required.

17.4 ADDRESSING THE DEFICIT

To address the shortfall to achieving the overall target, a set of core demand management measures (the "Core Measures") were identified for assessment in combination with three alternative overall demand management approaches, being:

- **Approach 1** – Increased fuel prices;
- **Approach 2** – Additional electrification (including hydrogen vehicles), and
- **Approach 3** – Congestion charging / low emission zones plus road pricing / tolling.

Each of the three approaches was then considered in order to establish how that approach would address the deficit to fully achieve the 50% reduction target.

17.4.1 Approach 1 – Fuel Price Increases

Approach 1 is focussed on altering the cost of vehicle operation, being petrol/diesel vehicles.

An assessment was undertaken to establish the level of fuel price change that would be necessary to achieve the required additional emissions reductions under this approach. That assessment identified that a significant increase would be necessary to achieve the required decrease in the usage of petrol/diesel powered vehicles, albeit that such increase could be spread out over a number of years.

However, fuel pricing is a national issue rather than a regional matter and could only be implemented by Government. In addition, this issue is likely to be separately considered under the Climate Action Plan reviews and the carbon budgets envisaged under the Climate Action Plan and Low Carbon Development (Amendment) Act 2021.

17.4.2 Approach 2 – Additional Electrification

A second approach to the full achievement of the emissions' target is through additional electrification. Under this approach, an accelerated level of transition to electrically powered vehicles would be incentivised such that the increased take-up such vehicles provides the required additional emissions reductions.

It was noted in section 17.2 that the target level of electrification is already very ambitious, in particular for cars. Accordingly, it is likely that this approach would require an increased electrification of other vehicle types.

Heavy Goods Vehicles make up a high component of the residual emissions in 2030 following the implementation of the planned strategy elements by that date plus the electrification and bio-fuels arrangements set out in the Climate Action Plan 2021. It comprises about 50% of the residual emissions.

While battery operation of HGVs over long distances is not currently a viable solution, given range limitations, hydrogen powered HGVs do represent a technically feasible solution. Hydrogen powered vehicles use a fuel cell powered by hydrogen to operate the vehicle electrically. But a key downside to the operation of such vehicles is the high costs currently associated with hydrogen fuel.

Assessment work undertaken has identified that a transition of about one third of the HGV fleet to electrified use, probably using hydrogen fuel cells, would achieve the necessary additional emissions' reduction.

Hydrogen power is an embryonic technology for HGV use and it is too early to rely upon the successful advancement of this propulsion technology for widespread use in order to reach the emissions target. It is clear, however, that the freight sector can make a significant contribution to the meeting of our national climate change target and the regional objectives for the LSMA. In addition to the potential to operate a proportion of HGVs using hydrogen generated power (or other emerging

technology), other freight–related initiatives to reduce carbon emissions include:

- Increased use of rail freight for longer distance deliveries;
- Greater transfer of goods movements towards smaller vehicles such as vans and smaller rigid vehicles which can more readily transition to zero emissions;
- An accelerated transition of the LGV fleet to fully electric zero emissions vehicles; and
- The use of consolidation centres for more efficient deliveries.

17.4.3 Approach 3 – Congestion / low emission zones plus road pricing / tolling

Under this approach there are a number of different fiscally based arrangements that could be put in place to reduce the level of car travel and promote a greater transference to sustainable modes. These include congestion charging, low emission zone (or zones), tolling and/or road pricing.

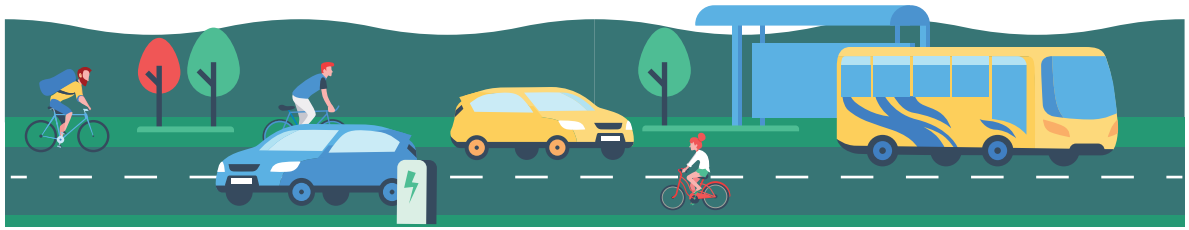
Various configurations and combinations of these options are feasible to achieve the required additional emissions reduction target.

One potential scenario would be implementation of tolling points on the national primary routes into the city, with the toll point placed on the city side of the proposed Park & Ride facilities giving motorists the option to transfer to public transport. The cost of parking at the facility plus the public transport fare could be configured so as to be lower than the cost of the toll plus parking in the city centre.

However, this is only one permutation from the multiple potential configurations. Accordingly, the exact arrangements in respect of such an approach will require detailed evaluation at the implementation stage, which will need to assess different alternatives to appropriately select and calibrate the final configuration

17.5 OTHER FACTORS

While the earlier sections of this chapter focus on the need to achieve the vehicle emissions' target, there are additional reasons for the implementation of certain demand management measures. For instance, the conversion of all vehicles to electric vehicles would fully achieve the climate change objectives in transport, but would do nothing to reduce congestion. If car use continued unabated, traffic congestion would still persist and worsen, resulting in a diminished quality of life for many commuters struggling through long commutes in congested traffic conditions.



In addition, there is a need to ensure that the national road network can appropriately perform its primary role of catering for strategic traffic, in particular vehicles involved in the transportation of goods and products, public transport vehicles, and other usage which contributes to national and regional economic development. This means that the level of usage by non-strategic traffic needs to be controlled on these elements of the overall road network to preserve its core functionality.

Ensuring that urban centres are people focussed and not vehicle focussed is an objective of national, regional and local planning policies. This means that management of vehicle numbers, in particular car numbers, is essential in those areas to support the place-making ambitions set out in various policies and plans. Linked to this is the need to improve air quality in urban centres in advance of achieving full vehicle electrification, which may require measures such as the implementation of low emission zones.

Accordingly, there are numerous factors, additional to the greenhouse gas reduction targets, supporting, and requiring, management of the level of car use in order to deliver on other objectives.

17.6 FINAL 2030 EMISSIONS ASSESSMENT

The implementation of the LSMATS elements intended for delivered by 2030 – which comprises an ambitious delivery programme for BusConnects Limerick and the Limerick Cycle Network, coupled with the planned vehicle electrification and increased use of bio-fuel set out in the Climate Action Plan 2021, will see transport emissions in the LSMA decrease by approximately 35%.

Additional measures are required to further reduce emissions to meet the 50% reduction target. A number of alternative approaches, as set out above, are available to achieve this supplemental reduction and it is clear that viable pathways are available to achieve the halving of greenhouse gas emissions from transport across the region by 2030.

Following the adoption of the final LSMATS, it is intended that an additional demand management study will be undertaken, in conjunction with a further examination of goods vehicles' operation, to develop finalised proposals to achieve the intended level of emissions reductions.

It is acknowledged that there are various permutations available to achieve the required target, and further detailed assessment will be required to establish and calibrate the optimal framework. That assessment work to develop the optimal framework will be undertaken at an early point in the lifetime of the Strategy, and will take account of policies set out in updates to the Climate Action Plan 2021 and derived from the carbon budgets to be established under the Climate Action Plan and Low Carbon Development (Amendment) Act 2021.

17.7 EMISSIONS LEVELS IN 2040

Emissions targets are clearly established for 2030 under the provisions of the Climate Action Plan and Low Carbon Development (Amendment) Act 2021. That Act also sets out the objective to achieve a "climate neutral economy by no later than the end of the year 2050". Accordingly, while no specific targets are set for 2040, the final year of this strategy, it is intended that emissions will continue on a downwards trajectory between 2030 to 2050.

The continued electrification of the transport fleet and the implementation of the remaining elements of this strategy will further reduce greenhouse gas emissions within the LSMA.

18 STRATEGIC ENVIRONMENTAL ASSESSMENT AND APPROPRIATE ASSESSMENT

Strategic Environmental Assessment (SEA) and Appropriate Assessment (AA) of the LSMATS have been undertaken in accordance with the EC (Environmental Assessment of Certain Plans and Programmes) (Amendments) Regulations 2011 and the European Communities (EC) (Birds and Natural Habitats) Regulations 2011 (S.I. No. 477 of 2011).

This chapter sets out the assessment process undertaken, including identifying key potential environmental impacts and the mitigation to reduce or avoid these impacts where necessary.

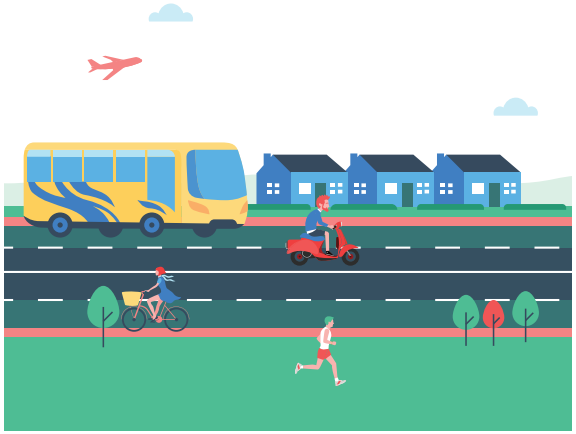
18.1 STRATEGIC ENVIRONMENTAL ASSESSMENT

An assessment of potential significant environmental impacts against twelve Strategic Environmental Objectives (SEOs) defined at the scoping stage of the SEA has been undertaken for each of the proposals outlined in each of the eight chapters of the Strategy (walking, cycling, BusConnects, rail, land use, regeneration and schools, roads and parking, freight delivery and servicing and supporting measures and integration).

The assessment against SEOs was first completed in the absence of SEA mitigation, and then again with SEA mitigation recommendations included.

The SEOs are:

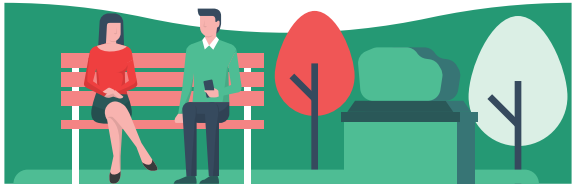
- **SEO 1:** Protect and enhance quality of life in relation to transport while increasing accessibility to economic, employment and community facilities.
- **SEO2:** Avoid damage to recreation and amenity facilities through construction of new transport infrastructure and support and enhance access for tourism recreation.
- **SEO 3:** Prevent damage to, and where appropriate enhance, terrestrial, aquatic and soil biodiversity, particularly EU and national designated sites and protected species.
- **SEO 4:** Safeguard the character and diversity of the Irish landscape and minimise the visual effects on sensitive, designated landscapes and public views.



- **SEO 5:** Avoid damage to, maintain, and where appropriate enhance, cultural heritage resources and their setting.
- **SEO 6:** Avoid conflicts with geological sites of value. Minimise loss of soil resources and contribute towards the appropriate management of soil resources and quality.
- **SEO 7:** 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.
- **SEO 8:** Promote the sustainable use of natural resources (including land), encourage energy efficiency, reuse, recycling while encouraging the effective use of existing infrastructure.
- **SEO 9:** Minimise contributions to climate change (including greenhouse gas emissions) from construction of new/upgraded transport infrastructure or operation of existing and new transport networks. Contribute to the reduction in transport related GHG emissions through modal changes or new technologies.
- **SEO 10:** 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.

The main potential environmental impacts of the LSMATS are summarised below. Further detail is provided in the SEA Environmental Report which accompanies this Strategy document.

- Positive impacts on health, quality of life, accessibility of economic, employment and community facilities and air and noise pollution (SEOs 1, 7 and 8) associated with walking, cycling, BusConnects, rail and other objectives that promote modal shift away from the use of private vehicles and towards public transport, walking and cycling. These objectives will also have a positive impact on SEO 9, along with other objectives linked to decarbonising the freight industry and supporting uptake of EVs, by helping reduce transport related GHG emissions from the LSMA.
- Positive impacts on recreational amenities and the tourism industry (SEO 2) through improvements to the pedestrian realm in Limerick, to the public realm on Old Bunratty Road and improved access to key tourist attractions from greenways.
- Positive impacts against SEO 11 and SEO 12 brought by the opportunity to upgrade new and existing transport infrastructure to be resilient to worst case projections for climate change and to provide accommodations for future use under a changing climate such as additional seating and sheltered areas at stations and along walking and cycling routes.
- Potential for mixed positive and negative impacts on landscapes and townscapes (SEO 4). Whilst public realm improvements and blue green corridors would have a positive impact on townscapes, other types of infrastructure construction could potentially have an adverse impact. Such potential impacts would be assessed and mitigated through the EIA process down the line.
- Mixed positive and negative impacts on biodiversity (SEO 3), with potential negative impacts predominantly associated with new pedestrian crossings on the River Shannon within the Lower River Shannon Special Area of Conservation (SAC) and new road and rail schemes. Further detail, including specific detailed mitigation measures for impacts on these sites have been identified, and are discussed separately in the Appropriate Assessment section below. Site specific siting and routing studies and implementation of the LSMATS Natural Heritage Strategy would ensure unacceptable adverse impacts to other assets are avoided.
- Potential for negative to neutral impacts on built heritage assets (SEO 5) and known and unknown archaeological remains and valuable soils as a result of new infrastructure construction which can be mitigated through site specific siting and routing studies and implementation of the LSMATS Natural Heritage Strategy.
- Potential for negative impacts on flooding as a result of construction of new areas of hardstanding, as well as negative impacts on WFD arising from new river crossings on the Shannon, Blackwater, Abbey and Barnakyle. It is anticipated that flooding and WFD related impacts can be mitigated through the EIA, FRA and WFD processes at project stage.



In summary, in the absence of SEA mitigation, potential significant adverse effects or mixed positive and negative effects were identified against SEOs 3, 4 and 7, with potential neutral or positive effects assessed for all other SEOs. With the implementation of SEA mitigation, neutral or neutral to beneficial effects are assessed against all SEOs except SEO 4 (Landscape) where residual effects would be mixed.

A monitoring and implementation plan has been developed to check the progress of the LSMATS against the SEOs throughout the lifetime of the Strategy. This covers mitigation identified for individual measures included within the revised Strategy as a whole including cumulative impacts with other plans and programmes. The Monitoring and Implementation Plan can be found in the SEA Environmental Report which accompanies this Strategy document.

18.2 APPROPRIATE ASSESSMENT

The AA and Natura Impact Statement (NIS) identified the potential for likely significant effects on European Sites due to the implementation of the LSMATS. Specifically, these negative effects related to qualifying features of the Lower River Shannon SAC and the River Shannon and River Fergus Estuaries SPA, Askeaton Fens Complex SAC, Curraghchase Woods SAC and Tory Hill SAC.

These sites are designated due to supporting habitats and/or species listed on Annex I / II of the E.U. Habitats Directive. Objectives within the LSMATS included projects/proposals that require new crossings and regeneration of existing crossing of the River Shannon or its tributaries (River Blackwater and Abbey River).

The LSMATS also commits to delivering the N/M20 Cork to Limerick Scheme and the N69/M21 Foynes to Limerick Road (including Adare Bypass). Available project level AA/screening information for these schemes identified likely significant effects on Lower River Shannon SAC and the River Shannon and River Fergus Estuaries SPA and for European sites beyond the boundary of the LSMA. Specifically, these sites are Askeaton Fens Complex SAC, Curraghchase Woods SAC and Tory Hill SAC.

Based on AAs published as part of the project level information for N/M20 Cork to Limerick route selection process and the N69/M21 Foynes scheme, mitigation measures have been included in the LSMATS AA to ensure that they would have no significant effect, alone or in-combination, on the Conservation Objectives of each of the Qualifying Interests of the European Site affected by these schemes.

Mitigation measures for Walking and Cycling Objectives which require crossings and regeneration of existing crossing of the River Shannon or its tributaries (River Blackwater and Abbey River) have been included in the AA to ensure that they would have no significant effect, alone or in-combination, on the Conservation Objectives of each of the Qualifying Interests of the Lower River Shannon or River Shannon and River Fergus Estuaries SPA.

Based on the AA prepared in support of the LSMATS no risk of adverse effects on the integrity of a European site would remain through the adoption of the strategy. However, this does not rule out the need for project level assessment. It is possible that a specific, detailed project may come forward within the preferred route which cannot avoid direct impact on a qualifying interest of a Natura 2000 site, the permanent loss of habitat or in-direct effects on a qualifying interest using the AA measures. In such situations the project proponent will need to demonstrate that it is commensurate with the LSMATS AA in terms of avoidance, reduction and mitigation and prove that no residual impacts remain following further assessment for the project to proceed.

In conclusion, subject to the full and proper implementation of the mitigation measures outlined in this Natura Impact Statement, including appropriate site level investigations, the implementation of the LSMATS would avoid adverse effects on the integrity of a European site.

PART C | NEXT STEPS

19 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.

19.1 MONITORING

The NTA will support the local authorities in undertaking periodic monitoring of transport trends and patterns. In addition to these regular snapshots, the NTA will continue to monitor public transport passenger data on an on-going basis as part of its role in public transport regulation. The data collected during these processes will form an input into transport investment decisions made under the LSMATS.

The next Census, to be undertaken in 2022, will provide the most comprehensive data set on transport and travel trends in the LSMA and will feed directly into the next review of the LSMATS.

Additional monitoring will be undertaken as part of the statutory SEA process and as recommended by the Equality Impact Assessment Report.

19.2 MECHANISMS FOR DELIVERY

There are a number of mechanisms that will be used to deliver the LSMATS, including the following:

19.2.1 EIA Applications to An Bord Pleanála

Transport schemes over a certain threshold are subject to the Environmental Impact Assessment Directive and transposing legislation. Such developments are submitted to An Bord Pleanála for assessment. Major road schemes and some major bus schemes would fall into this category.

19.2.2 Railway Order and Motorway Order

Applications for new rail lines and / or supporting infrastructure, and for new motorways or changes to existing motorways, are submitted to An Bord Pleanála for assessment as Railway Orders and Motorway Orders, respectively.

19.2.3 Part 8 Developments

Many walking, cycling and road schemes are subject to the Part 8 process whereby projects over a certain threshold, but below the EIA threshold, are assessed by the Elected Members of the Council.

19.2.4 Development under Section 38 of the Road Traffic Act 1994 (as amended)

Certain measures which enhance the provision of public bus services and certain measures which facilitate the safe use of public roads by different classes of traffic (including pedestrians and cyclists), can be implemented by the relevant Local Authority.

19.2.5 Bus Operational Changes

Changes to the timetables and routeing of bus routes and rail service timetables are a matter for the NTA.

19.3 CONSULTATION

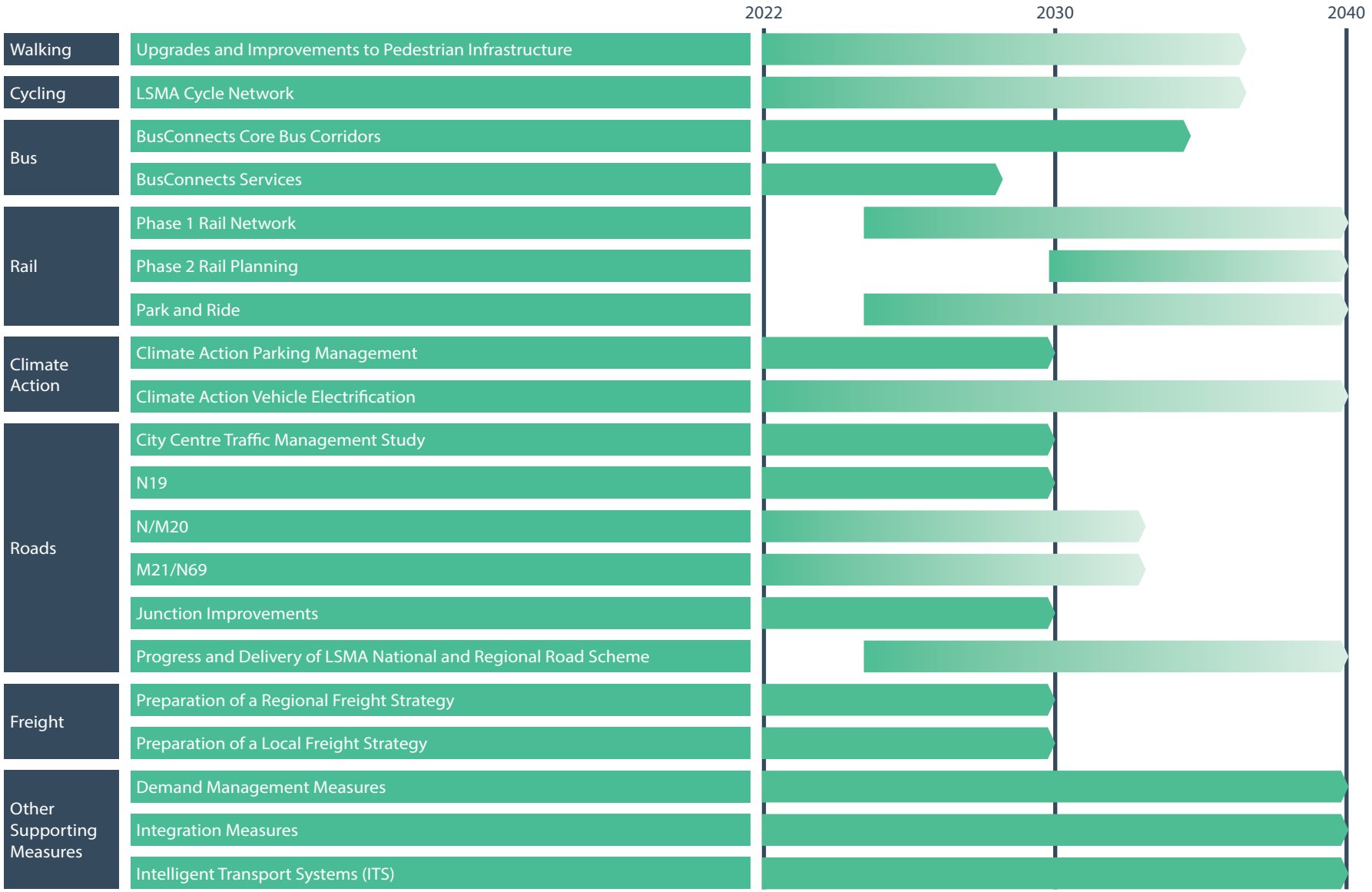
The requirement for public consultation related to the above processes is set out in legislation. In cases where consultation is not a statutory requirement, such as in changes to bus routeings, the NTA will seek engagement with local communities as part of the decision-making process.

19.4 PHASED IMPLEMENTATION

The implementation of the major public transport and roads infrastructure projects of the LSMATS has been determined by the National Development Plan and will be subject to subsequent reviews. However, an indicative implementation is attached, which divides delivery over the life of the current LSMATS timeframe.

A number of major road schemes have progressed through planning and design and will be delivered in line with investment decisions by central and local government. In order to set out a phasing plan for the bus and rail infrastructure, a more detailed

IMPLEMENTATION PLAN



investment programme will be prepared by the NTA once the LSMATS is finalised and the current capital spending review is completed. In the case of bus infrastructure, the NTA will commence the preparation of the BusConnects Limerick programme immediately and will publish concept details of potential bus corridors and new routes for public consultation and development within 2 years of LSMATS' finalisation.

In relation to walking and cycling, the implementation of the LSMATS will continue primarily as part of the following programmes:

- NTA Regional Cities Grants Programme;
- Active Travel Towns Programme; and
- Safe Routes to School.

In these programmes, the NTA will oversee the roll-out of the funding provided by the Department of Transport. The implementation agencies for these programmes will, for the most part, be Limerick City and County Council and Clare County Council.

Notwithstanding the above, the NTA and both local authorities are of the view that the high-level implementation programme set out below is practical and realistic at this stage in the LSMATS process. This will be subject to change due to potential changes to funding, feasibility and the efficiency with which schemes can be delivered through the design and planning approval stages.

19.5 SHORT TO MEDIUM-TERM

19.5.1 Pedestrian Network

- Audit of walking facilities serving schools and preparation of Safe Routes to School Programme;
- Delivery of measures proposed by the Limerick Metropolitan District Movement Framework;
- Delivery of measures set out in Shannon Town Centre Masterplan
- 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.

19.5.2 Cycle Network

- Audit of cycle facilities serving schools and preparation of Safe Routes to School Programme;
- 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;
- Completion of Inter-urban and Greenway Cycle Networks; and
- Further implementation of the network in line with new development opportunities and traffic calming.

19.5.3 Bus Network

- 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 and UL to Limerick City Centre;
- Deliver Bus Priority from Raheen to Limerick City Centre;
- Improve regional services from Shannon Airport to Limerick, Cork and Galway; and
- Completion of BusConnects Limerick bus priority measures.

19.5.4 Rail Network

- Review to examine the improvements in journey times and investment in high-speed rail between Belfast, Dublin, Limerick Junction and Cork;
- Provision of a dual-track between Limerick Colbert Station and Limerick Junction subject to a feasibility assessment;
- Design and implement the upgrade of Ballycar rail line to alleviate flooding;
- Investigate further investments in an enhanced commuter rail network; and
- Deliver new stations at Moyross and Ballysimon subject to feasibility assessments;
- Increase frequency of services into Limerick;
- Upgrade existing stations in the LSMA.

19.5.5 Road Network

- 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 Coonagh-Knockalisheen Road;
- Progress National Road Schemes in line with NDP; and

- Ongoing review, monitoring and implementation of National Road network demand management measures.

19.5.6 Parking

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

19.5.7 Freight

- 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.

19.6 LONG-TERM

19.6.1 Pedestrian Network

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

19.6.2 Cycle Network

- Ongoing maintenance of cycle infrastructure; and
- Provision of cycle infrastructure to serve new development areas.

19.6.3 Bus Network

- Ongoing operation and optimisation of the BusConnects network and priority measures; and
- Expansion of bus network and priority to serve new development areas.

19.6.4 Rail Network

- Implementation of new rail lines, stations and enhanced rail services in line with emerging investment plans, priorities and feasibility assessments.

19.6.5 Road Network

- 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.

19.6.6 Parking

- Delivery of all Park and Ride facilities.

19.7 FUNDING AND COSTS

The delivery of LSMATS will be subject to the availability of funding. It is acknowledged that each of the major elements of the 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 (PSC) and the Common Appraisal Framework (CAF). In addition to 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:

- Funding from EU funds and/or support from the European Investment Bank;
- Development contributions for strategic public transport infrastructure;
- Site-specific development contributions for specific enhancements; and
- Potential 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 Sustainable Travel

112k 2016

304k 2040

AM Peak Mode Share 2016 - 2040

Based on modelled outputs. Additional Demand Management Measures to be implemented in line with developing Government Policy will increase Public Transport Mode Share.

69.3% 2016
41.0% 2040

5.1% 2016
12.6% 2040

Safety & Environmental

Over a 30 year strategy period

Reduction in **13.1** Fatal Casualties

Reduction in **66.3** Serious Casualties

Reduction in **1661.0** Slight Casualities

84% reduction in car CO^2 emissions between 2016 and 2040*

*Combined Impact of Strategy and National Climate Action Plan. Based on the Mid-West Region.

Accessibility And Social Inclusion

Bus Connects Catchment

72.6% of population

72.7% of jobs

Social Inclusion: **up to 7.5%** increase in PT mode share for disadvantaged and very disadvantaged areas

Economy & Cost Estimate

Present Value of Costs: €1.20bn
Present Value of Benefits: €4.19bn
Net Present Value: €2.99bn

Benefit to Cost Ratio: 3.5

Total Strategy Cost Estimate **€1.5bn**

20 STRATEGY OUTCOMES

The Climate Action Plan (CAP) recognises that Ireland must achieve a significant modal shift from car to active travel and public transport if we are to achieve our target of a 51% reduction in Green House Gas emissions by 2030 and ultimately net zero by 2050.

National Development Plan 2021-2030.

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.

20.1 KEY INDICATORS

20.1.1 Reduction in CO2 Emissions from Transport in the LSMA

The LSMATS, in combination with a number of Government initiatives, related primarily to the conversion of the national fleet to low and zero-emissions vehicles, is forecast to lead to a reduction in CO2 Emissions of approximately 85% for passenger transport over the lifetime of the strategy to 2040.

The rate at which this is achieved, and reductions from freight transport are attained, in particular up to the Climate Action Plan target date of 2030, will depend on a number of factors, including the following

- The speed at which the conversion of the fleet to electric vehicles can be rolled out;
- The extent to which the local authorities and the NTA deliver alternatives to the private car such as the Cycle Network and Bus Corridors;
- The extent to which demand management measures are implemented by local and national government to reduce the use of cars; and
- Technological advances in the area of alternative fuels for goods vehicles.

In phasing the implementation of the LSMATS, many of the key Climate Action Management measures, such as BusConnects Limerick, the cycle network, traffic signal prioritisation for sustainable modes, reduced parking and vehicle electrification are front-loaded into the first phase. This enables, in conjunction with the additional steps set out in Chapter 17, transport emissions in the LSMA to meet the target level of reduction by 2030. As set out on that chapter, this will require additional assessment work on the additional emissions reduction approaches to establish and calibrate the optimal permutation, particularly in relation to demand management. The assessment work to develop this optimal framework will be undertaken at an early point in the lifetime of the LSMATS in cooperation with Government and the local authorities.

20.1.2 Air Quality

The Transport Strategy, in combination with other Government policies and programmes, is forecast to lead to a significant reduction in air polluting emissions compared to 2016. (Table 20.1).

Table 20.1 | Air-polluting Emissions 2016 and 2040 (Kg)

	$NO_{X/KG}$	$NO_{2/KG}$	$PM10_{/KG}$	$PM2.5_{/KG}$
2016	695,863	218,402	50,826	33,888
2040	125,156	31,787	44,240	24,427
DIFF	-82.0%	-85.4%	-13.0%	-27.9%

20.1.3 Mode Share

Limerick Shannon Metropolitan Area

The LSMATS is forecast to lead to a significant reduction in car mode share for the study area as a whole, reducing from 70% in 2016 to 46% in 2040 with the LSMATS in place. For the AM Peak period, the corresponding figures are 69% and 41%. All other modes increase with the highest proportional increase being seen in cycling. This data is shown in Figures 20.1 and 20.2 below.

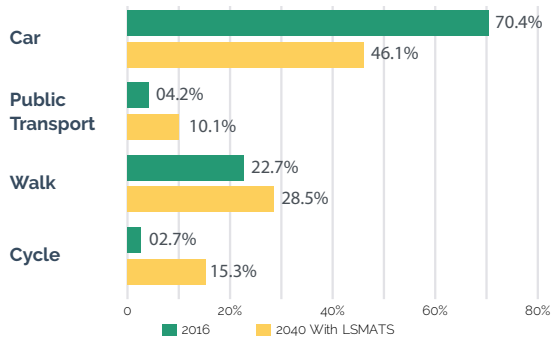


Figure 20.1 | 24 Hour Mode Share for the LSMA 2016 and 2040

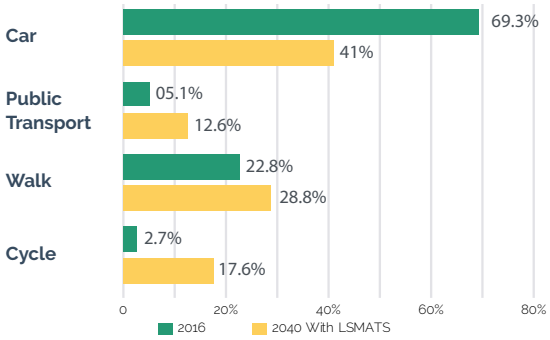


Figure 20.2 | AM Peak Period Mode Share for the LSMA 2016 and 2040

Limerick City and Suburbs

The LSMATS is forecast to lead to a significant reduction in car mode share for Limerick City and Suburbs, reducing from 67% in 2016 to 41% in 2040 with the LSMATS in place. For the AM Peak period, the corresponding figures are 66% and 36%. All other modes increase with the highest proportional increase being seen in cycling. This data is shown in Figures 20.3 and 20.4 overleaf.

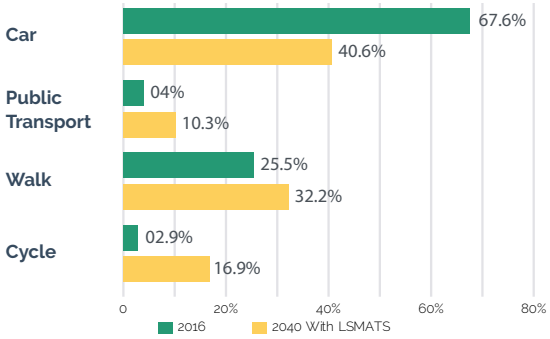


Figure 20.3 | 24 Hour Mode Share for Limerick City and Suburbs 2016 and 2040

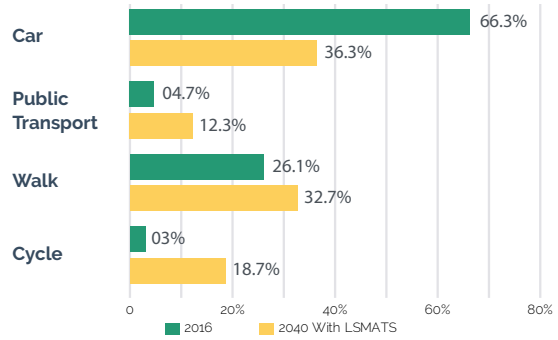


Figure 20.4 | AM Peak Period Mode Share for Limerick City and Suburbs 2016 and 2040

20.2 TARGETS FOR WALKING AND CYCLING

Notwithstanding the outputs above, which are the result of a modelling exercise only, the NTA, in conjunction with the local authorities will aim to meet the walking and cycling mode split targets set out below up to 2040.

Table 20.2 | – Targets for Walking and Cycling

MODE	WALKING	CYCLING
LSMA BASELINE	23%	3%
LSMA MODELLED OUTCOME	29%	15%
LSMA TARGET	30-35%	10-15%
LIMERICK CITY AND SUBURBS TARGET	30-35%	15-20%

The cycle infrastructure proposed under this Strategy will deliver a comprehensive and safe network of cycling routes serving all of the key areas and destinations, and with the capacity for large volumes of cyclists. With that infrastructure in place, the level of usage will be determined by the willingness to use cycling instead of other modes, in particular the car mode.

Accordingly, the cycling target is ambitious and meeting it will require high levels of cooperation from all stakeholders in the region.
The higher targets for Limerick City and Suburbs reflect the greater potential for these modes due to the number of shorter trips being undertaken and the flat topography.

It should be noted that the modelled output in relation to cycling mode share, doesn't take account of uplifts from behavioural change programmes and targeted information campaigns, which are difficult to account for in a strategic transport model.

With the addition of these measures, an increased mode share for cycling will be delivered. However, it should also be noted that the implementation of demand management measures which aim to encourage the use of alternatives to the private car further, will be required to support these higher levels of uptake.

20.3 MEETING THE STRATEGIC OBJECTIVES

Chapter 2 described the pillars upon which the LSMATS has been developed. In order to assess the performance of the strategy, a translation of these overarching pillars into strategic transport objectives was required.

This section, to be read in conjunction with the infographic and key indicators at the start of this chapter, summarises this appraisal under each of these objectives.

1. To prioritise investment in sustainable transport in order to reduce the reliance on the private car;
2. To provide a high level of public transport connectivity to key destinations;
3. To facilitate higher density housing a part of Transit-Oriented Developments at key points of high public transport accessibility;
4. To deliver a fully accessible and inclusive transport system;
5. To identify and protect key strategic routes for the movement of freight traffic and to improve access to Shannon-Foynes Port and Shannon Airport;
6. To improve road safety, public health and personal security; and
7. To minimise the impact of motorised traffic in urban centres

20.3.1 Objective 1 | To prioritise investment in sustainable transport in order to reduce the use of the private car for all trip purposes.

The implementation of LSMATS will result in a step-change in public transport provision, with 85km of bus priority proposed which facilitates a 200% increase in bus capacity. The LSMATS also builds upon existing walking and cycling strategies adopted by both Local Authorities to deliver a comprehensive safe and convenient network for pedestrians and cyclists.

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 LSMATS, in conjunction with other government policies may lead to a reduction in CO_2 emissions of up to 87% across the Mid-West. The achievement of this figure is dependent on a very high uptake of electric cars over the next two decades.

The need for private car ownership (and dependency) will be reduced through the enhancement of other modes, the adoption of demand management measures plus other supporting measures including car clubs and Mobility as a Service (MaaS).

20.3.2 Objective 2 | To provide a high level of public transport connectivity to key destinations.

BusConnects Limerick will provide end-to-end radial and orbital connectivity between Limerick City Centre and suburbs by providing for 137km of cross-city routes and 28km of orbital routes.

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, Technological University of the Shannon, City Centre, University Hospital Limerick and Raheen.

The investment set out for the commuter rail network will provide additional connectivity to the city centre and select key destinations. The roll-out of Park & Ride serving highest demand corridors will significantly extend the reach of public transport.

20.4.3 Objective 3 | To facilitate higher density housing a part of Transit-Oriented Developments at key points of high public transport accessibility

The LSMATS sets out a clear approach for the delivery of housing in locations where public transport can be used to the maximum extent. The LSMATS facilitates both the regeneration of the city centre and the redevelopment of under-utilised land to a greater intensity than before, in particular at locations along the Core Bus Corridors and those served by proposed rail stations.

It is clear, however, that due to the compact nature of urban Limerick which means that almost all trips within the built-up area can be undertaken by cycling – with a high proportion also by walking – any development within the existing footprint of the city and suburbs could be considered to be Transit-Oriented once the layout and development standards promote and facilitate walking and cycling. The improvements to the walking and cycling networks, proposed by LSMATS, will facilitate this.

In summary, the close integration of land use planning and transport planning in the LSMA, as put forward in the LSMATS, will facilitate the local authorities in meeting their housing targets in a consolidated urban form reducing the proportion of urban generated housing being accommodated in peri-urban and rural locations.

20.4.4 Objective 4 | To deliver a fully accessible and inclusive transport system.

73% of jobs and people within the LSMA (including all rural areas) will be covered by the BusConnects Limerick network. This will provide a reliable, high frequency, fully accessible public transport service to improve connectivity, in particular within the city and suburbs.

In terms of social inclusion, the LSMATS provides for significant uplift in bus services to areas of social disadvantage. Similarly, all rail infrastructure investments will ensure accessibility for all users and will service areas of social disadvantage, such as Moyross.

The roll-out of enhanced cycling and pedestrian infrastructure will also have a significant positive impact on areas of social disadvantage by addressing many of the issues around geographic isolation, providing a viable and affordable alternative to car use.

The harnessing of the principle of Universal Design will ensure that walking network upgrades, especially to and around public transport stops and stations, public transport buildings and passenger facilities, and public transport vehicles consider and provide accessibility for all.

The LSMATS provides the framework for investment which will enhance personal security around public transport stops and stations; and along walking and cycling routes, in particular through improved public lighting and security measures.

20.4.5 Objective 5 | To improve access to Shannon Foynes Port and Shannon Airport.

LSMATS supports the further investigation into the feasibility of rail freight from the Port of Foynes to Limerick and further afield over the lifetime of the Strategy, as well as the development of a Regional Freight Strategy. The LSMATS also provides for the delivery of the Foynes to Limerick Road.

In addition to the improved access to Shannon Airport proposed under BusConnects Limerick, LSMATS provides for the route identification and protection of a potential future rail line that would serve Shannon Airport, Shannon Free Zone and Shannon Town.

20.4.6 Objective 6 | To improve road safety, public health, and personal security.

The management of HGVs within Limerick city and suburbs, as well as the reduction in car dependency levels through the provision of sustainable alternatives, will significantly improve the pedestrian environment by reducing noise and air pollution and risk of conflict.

The promotion of walking and cycling trips will improve public health and wellbeing through increased physical activity. In addition, by proposing enhanced public transport with full priority, the LSMATS will provide reliable travel options free from congestion, reducing personal stress.

20.4.7 Objective 7 | To minimise the impact of motorised traffic in urban centres.

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* (DMURS) and the *National Cycle Manual* guidance. The public realm will be accessible, attractive, safe and interesting for all ages and abilities.

This will be of particular benefit to Limerick City Centre where roadspace will be reallocated to sustainable modes and for the creation of new urban spaces. This will make the city a more attractive place to live, work in and visit, and will facilitate significantly higher levels of social, cultural and economic activity.

GLOSSARY

AA	Appropriate Assessment
ABTA	Area-Based Transport Assessment
ACA	Architectural Conservation Area
Brownfield Development	Regeneration of former industrial lands in urban and suburban areas for other uses
Bus Gate	A point on the road network through which only buses and bicycles may pass
CLC	Construction and Logistics Centres
Compact Growth	Focussing development of housing and commercial development into existing urban areas
DMURS	Design Manual for Urban Roads and Streets - Government guidance aimed at reducing car dominance
EIA	Environmental Impact Assessment
Greenway	Off-road cycling and walking route
HGV	Heavy Goods Vehicle
ITS	Intelligent Transport Systems - traffic management that adapts to traffic conditions in real time
LAP	Local Area Plan
LNDR	Limerick Northern Distributor Road
LSMA	Limerick Shannon Metropolitan Area - Limerick City, Suburbs, Shannon and South Clare
LSMATS	Limerick Shannon Metropolitan Area Transport Strategy
LTP	Local Transport Plan
MaaS	Mobility as a Service - the use of technology to support integration and multi-modal travel
MASP	Metropolitan Area Strategic Plan - Land Use Plan on which the LSMATS is based
NDP	National Development Plan
NPF	National Planning Framework
NTA	National Transport Authority
NTP	National Technology Park
Passive Supervision	Informal Security provided by activity and overlooking
Permeability	How convenient it is to Walk and Cycle through an Area
Road User Hierarchy	A system of prioritising modes of transport with pedestrians first and private cars last
RSES	Regional Spatial and Economic Strategy - Overarching regional policy on land use development
RTPI	Real Time Passenger Information
SAC	Special Area of Conservation
SDZ	Strategic Development Zone - Area for Fast-Track Planning
SEA	Strategic Environmental Assessment
SPA	Special Protection Area
SRA	Southern Regional Assembly - Agency responsible for RSES and MASP
TEN-T	Trans European Network - Transport
TEN-T Comprehensive Network	Network which covers all European regions
TEN-T Core Network	Includes the most important connections, linking the most important nodes
TfI	Transport for Ireland - the national transport brand
TII	Transport Infrastructure Ireland - Agency responsible for National Roads
TOD	Transit-Oriented Development - Development based on high levels of transport accessbility
UL	University of Limerick

Jacobs SYSTRA