

Limerick City and County Council

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# Limerick Metropolitan District Movement Framework Study



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# Acknowledgements

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**Images**

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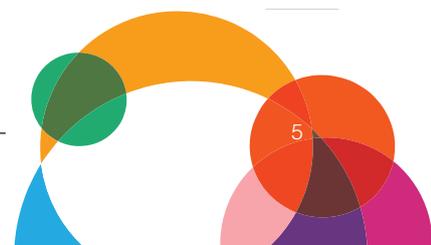


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# Summary and Introduction

Limerick Metropolitan District Movement Framework Study

## 1.1 Summary and Introduction

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Limerick City Centre remains the focal point for the Mid-West Region of Ireland, and must position itself accordingly in order to act as the key economic driver of the region going forward. In order to do so, and to foster sustainable growth, the City must overcome a number of key transportation challenges.

These challenges are not unique to Limerick City and the Mid-West Region; on a national basis, current traffic growth and travel patterns are assuming unsustainable characteristics. Ireland's cities must consider a new approach to their role and function as major urban centres.

In the current economic climate, the provision of additional major infrastructure is no longer a viable solution to urban congestion, as short-term solutions are not likely to resolve travel behaviour patterns established over longer periods.

A fundamental shift towards sustainable travel is therefore necessary. This new approach must have at its heart an emphasis on sustainability – achieving behavioural change with a focus on walking, cycling and public transport as real alternatives for travelling within larger urban centres.

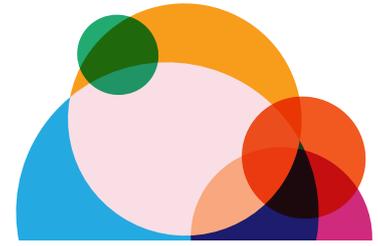
Connectivity and permeability remain at the forefront, and the City must continue the excellent work to date in this regard, and build momentum behind sustainable transport modes, in order to transform the city as a place to live, shop and work. Walking, cycling and public transport must be the focus of efforts, but equally so the careful management of the transportation network is vital to maximise the efficiency and operation of the network for all modes.

Efforts to promote sustainable modes, complemented by a new approach to management of the transportation network will in turn act as catalysts towards delivering an inclusive, sustainable Metropolitan District, which can respond dynamically to traffic demand and also foster the growth of the City and region.

A number of schemes have been identified as part of this study, which should be implemented going forward in order of the priority assigned.



## 1.2 Introduction - The Limerick Metropolitan District Movement Framework Study



This study was commissioned by Limerick City and County Council, and was completed and issued on 6th June 2015.

The Limerick Metropolitan District (LMD) is defined as the area within the existing Limerick City boundary, the urban and partially urban areas within the Southern Environs Local Area Plan and the area defined by the Castletroy Local Area Plan, as indicated in Figure 1.2 below. Connectivity with outlying settlements such as Shannon, Castleconnell, Mungret, Patrickswell and Raheen, etc. is also studied.

The objectives of this Movement Framework Study are to **firstly develop a long-term vision for the LMD in terms of accessibility, mobility and sustainability, and also to develop an implementation plan for comprehensive measures to upgrade the existing transportation network over a 5-year period, with a particular emphasis on prioritising and facilitating movement via sustainable modes of transport.** The core of the Metropolitan District (Figure 1.3) is the main focus of this Study.

This report is **Stage 1** of the Limerick Metropolitan District Movement Framework Study. Stage 1 is an evaluation and appraisal of the LMD in order to understand the existing transport network applicable to all modes, and subsequently to identify the principal areas of concern across the transport network. Stage 1 will inform the mitigation measures to be developed and implemented across the study area in **Stage 2** to follow.

The Limerick Metropolitan District, comprising the city and the surrounding suburbs, has 100,000 inhabitants. Limerick City itself is the third-most populated city in the Republic of Ireland with close to 60,000 inhabitants, and is the key city in the mid-west region of the country. The city lies on the western coast, at the head of the Shannon Estuary, and is a key node on the 'Atlantic Corridor', the

proposed transport corridor that links Waterford to Letterkenny, via Cork, Limerick and Sligo.

The boundary of Limerick City was expanded in 2014 with the merger of Limerick City and County Councils, in order to better accommodate the historic sprawl of the urban area. Figure 1.1 below shows the city of Limerick in an Irish context.

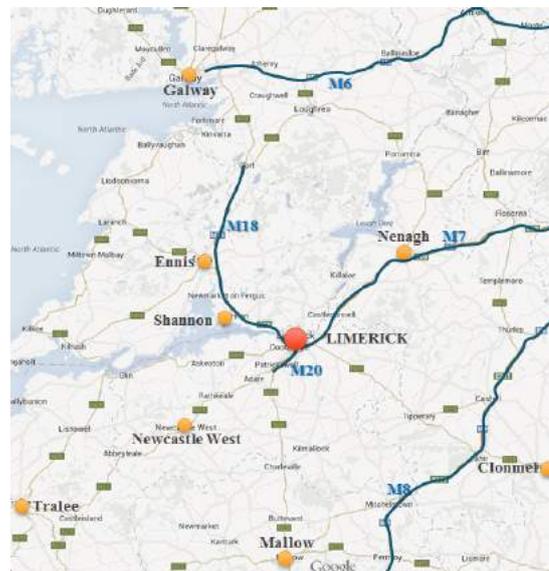


Figure 1.1: Limerick City – Irish Context









# Policy Review

Limerick Metropolitan District Movement Framework Study



## 2.1 Introduction

As part of the evaluation and analysis of the existing transport network within the LMD, it is necessary to examine the numerous policies, guidelines and studies applicable to the study area. This Chapter comprises a High-Level Policy Review, which examines both Policy and Guidelines applicable to the LMD, at a National, Regional and Local level. The following documents were examined:

- Smarter Travel – A Sustainable Transport Future (2009-2020)
- National Cycle Policy Framework (2009-2020)
- National Cycle Manual (2011)
- Design Manual for Urban Roads and Streets (2012)
- Engineers Ireland – The State of Ireland (2014)
- Mid-Western Area Strategic Plan (2012-2030)
- Mid-Western Area Strategic Plan Public Transport Feasibility Study (2012)
- Mid-Western Regional Planning Guidelines (2010-2022)
- Limerick County Development Plan (2010-2016)
- Limerick City Development Plan (2010-2016)
- Limerick Southern Environs Local Area Plan (2011-2017)
- Limerick 2030: An Economic and Spatial Plan for Limerick
- South Clare Local Area Plan (2012-2018)
- Castletroy Local Area Plan (2009-2015)
- Caherdavin Local Area Plan (2005-2011)
- Limerick Regeneration Study (2009-2018)
- Limerick Smarter Travel Plan
- Limerick City Noise Action Plan
- Limerick City Cycle Network Strategy
- Draft Limerick City Delivery Strategy
- Coonagh Recreational Framework Plan
- Limerick City Southside Park and Ride Facility Feasibility Study
- Limerick City Remodelling and Pedestrianisation
- Limerick City Traffic Management Study (2008)

## 2.2 National Policy

### 2.2.1

#### Smarter Travel – A Sustainable Transport Future (2009-2020)

Smarter Travel – A Sustainable Transport Future (2009-2020) is a government policy document which was launched in 2009. **The policy document was prepared in the context of unsustainable transport and travel trends in Ireland.**

Notwithstanding the economic conditions of recent years, Ireland will still see significant car ownership levels, higher car usage levels, lower speeds and longer commute times, health issues, increased pollution and congestion, and an overall decline in quality of life in the coming years without intervention measures.

**The overall vision is to achieve a sustainable transport system in Ireland by 2020.** The challenge therefore is to act, putting strategies in place to incrementally change the travel and transport system in Ireland to a more sustainable format.

The Government sets out five key goals within Smarter Travel, these are:

- To improve quality of life and accessibility to transport for all, and in particular, for those with reduced mobility and those who may experience isolation due to lack of transport.
- To improve economic competitiveness through maximising the efficiency of the transport system and alleviating congestion and infrastructural bottlenecks.
- To minimise the negative impacts of transport on the local and global environment through reducing localised air pollutants and greenhouse gas emissions.
- To reduce overall travel demand and commuting distances travelled by the private car.
- To improve security of energy supply by reducing dependency on imported fossil fuels.



Aligned with these key goals, the key targets are:

- To support sustainable travel, future population and employment growth will take place in sustainable compact urban areas or rural areas, which discourage dispersed development and long commuting.
- Work-related commuting by car will be reduced from a current modal share of 65% to 45%, resulting in an additional 500,000 people taking alternative, sustainable means of travel.
- Car commuters to work will be accommodated on other modes such as walking, cycling, public transport and car sharing, to the extent that commuting by these modes will rise to 55% by 2020.
- The total kilometres travelled by the car fleet in 2020 will not increase significantly from current total car kilometres.
- The road freight sector will become more energy efficient, with a subsequent reduction in emissions.
- A reduction will be achieved on the 2005 figure for greenhouse gas emissions from the transport sector.
- The policy document contains 49 actions, which are grouped into four main themes:
  - Actions to reduce distance travelled by private car and encourage smarter travel, including focusing population and employment growth. Predominantly in larger urban areas and the use of pricing mechanisms or fiscal measures to encourage behavioural change.
  - Actions aimed at ensuring that alternatives to the car are more widely available, mainly through a radically improved public transport service and through investment in cycling and walking.
  - Actions aimed at improving the fuel efficiency of motorised transport through improved fleet structure, energy efficient driving, and alternative technologies.
  - Actions aimed at strengthening institutional arrangements to deliver the targets.

### 2.2.1.1

#### Smarter Travel - Key Points

The actions, goals and objectives contained in Smarter Travel are clear. **Without a shift towards sustainable travel and transport, quality-of-life will decline, economic competitiveness will suffer, the negative effects of transport on the local and global environment will exacerbate, and Ireland's dependency on fossil fuels will continue.**

**Even taking into account the economic decline of recent years, intervention is still required in order to achieve real change.**

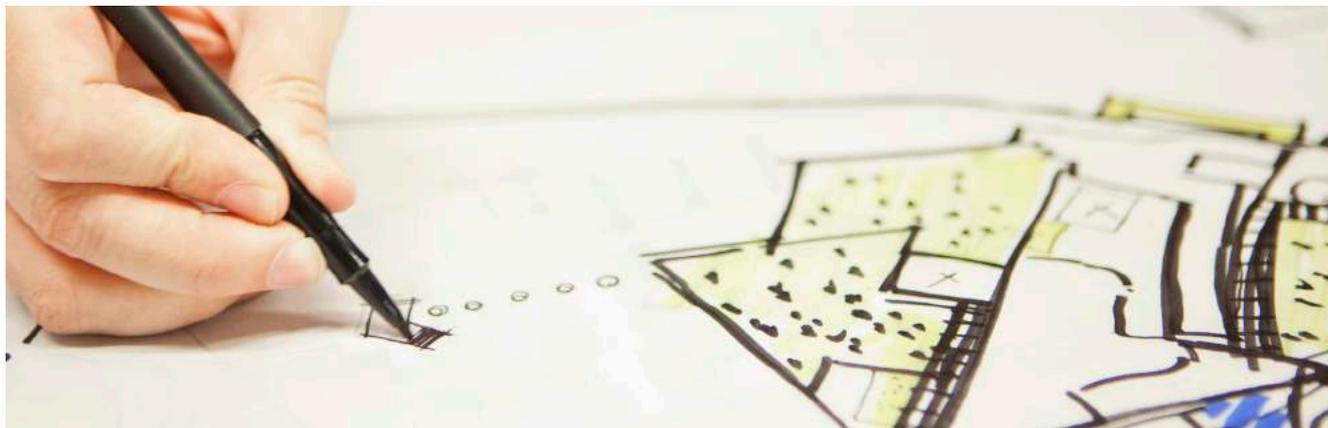
The policy document is strongly aligned with Walking, Cycling and Public Transport modes – a shift to these transport modes is a clear priority. An ambitious sustainable mode share target of 55% is set out by 2020; while this may be difficult to achieve, nonetheless it should be retained as a key objective.

**A comprehensive suite of 49 Actions are proposed to help deliver the key goals and targets set out in the document;** these are wide-ranging, encompassing both 'hard' and 'soft' measures across four main themes. The document itself estimates the cost of implementing the policy at ~€4.5 billion.

### 2.2.2

#### National Cycle Policy Framework 2009-2020

**The National Cycle Policy Framework (NCPF) was developed as part of a suggested action contained in Smarter Travel, and as such the two are aligned.** The framework aspires to a 10% target of mode share by bicycle for trips to work over a 12-year timeframe. The plan notes a decline in cycle commuting from 1986 to 2006, but in the context of increasing congestion, journey times and emissions on roads, a return to cycle usage becomes more viable.



The plan therefore sets out a substantial suite of interventions to improve the ease and safety of cycling, in order to achieve greater mode share going forward; again, as with Smarter Travel, these interventions include both 'hard' and 'soft' measures.

**The 'mission' is to create a strong cycling culture in Ireland.** From the very highest level, the plan states that all planning should consider the needs of cyclists, and that this should dissipate downward into National, Regional, Local and sub-local plans. **Transport infrastructural designs need to be cycling friendly.** The framework states that the focus needs to be on:

- Reducing volumes of through-traffic, especially HGV's in city and town centres and especially in the vicinity of schools and colleges;
- Calming traffic/enforcing low traffic speeds in urban areas; and
- Making junctions safe for cyclists and removing the cyclist-unfriendly multi-lane one-way street systems.
- Other interventions include the following:
  - Schools will be a strong focus of the NCPF;
  - Supporting the provision of dedicated signed rural cycle networks for Cycling Tourism;
  - Ensuring surfaces used by cyclists are maintained to a high standard and are well lit;
  - Ensuring that all cycling networks are sign-posted to a high standard;
  - Supporting the provision of secure cycle parking at all destinations of importance;
  - Integrating cycling and Public Transport, including cycle parking at stations, and the capability to carry bikes on PT services; and
  - Creation of municipal bike systems to complement an improved PT system.

**The vision for 2020 is that all cities, towns and villages will be bicycle friendly, and the bicycle will be the mode of choice for all ages. By 2020, 10% of all trips will be made by bicycle.**

There are a total of 19 objectives set out in the NCPF, across 5 broad themes covering Infrastructure, Communication/Education, Financial Resources, Legislation, Human Resources and Co-ordination, and Evaluation/Effects. These 19 objectives are wide-ranging, and comprehensive, encompassing both physical infrastructural works, and planning, educational and legislative measures.

#### 2.2.2.1

##### [National Cycle Policy Framework - Key Points](#)

Increasing the prominence of cycling in Ireland is crucial, and represents a major opportunity to contribute to the mode share targets set out in Smarter Travel.

The benefits to a strong cycling culture include improved health, greater economic strength, greater safety, environmental improvements, reduced congestion and lower emissions. Cycling as a mode is therefore a cornerstone of the necessary shift to sustainable travel.

Consequently, and particularly in urban and suburban areas, a shift from the traditional car-focused design approach is necessary, in order to create environments which are not dominated by the car. This change in approach will commence at the legislative level, the planning level, the design level and the operational level, and will in turn feed into policy, education and culture in order to ingrain a new focus on cycling across Ireland in a National, Regional and Local context.

## 2.3 National Guidelines

### 2.3.1

#### NTA National Cycle Manual (2011)

The National Transport Authority National Cycle Manual (NCM) was published in 2011. **The NCM seeks to promote a modal shift from private vehicular transport to cycling, walking and public transport.** The NCM sets out comprehensive guidelines to be used when planning and developing a cycle network.

The guidelines set out a seven step process to be used when planning a cycle network in an urban area. The NCM also sets out various criteria which are of use in terms of more detailed design of cycle facilities. **The NCM states that it is essential that cycle design should confer an advantage on the bicycle mode, in order to make the choice of cycling more attractive to potential mode shift.**

Criteria for establishment of the quality of service on a cycle route are set out. **The NCM advocates the philosophy in shared urban streetscapes that cyclists “take the lane” and that traffic follows, i.e. a process of integration rather than segregation.**

Substantial detail is also provided in terms of cycle link design, and for cycle design at junctions, in a wide range of urban environments. Advice is also provided for additional cycle facilities such as parking, bus stops, etc.

#### 2.3.1.1

##### National Cycle Manual – Key Points

The NCM is a comprehensive design tool in incorporating cyclists into road and junction design, in a manner that promotes sustainability, safety and reliability. Cyclists must be allocated sufficient priority in design in order to ensure that a dependable, efficient and non-hazardous network of cycle routes can be developed and implemented in Ireland.

Extensive guidance is also provided in terms of appraisal of existing routes, as well as ancillary processes such as drainage considerations, maintenance issues and legislative contexts.

The NCM is current cycle design best practice in Ireland, and as a result the advice contained in the NCM should therefore form the basis for all cycle-related schemes going forward.

### 2.3.2

#### Department of Transport Design Manual for Urban Roads and Streets (2012)

As one of the key recommendations of Smarter Travel, the Design Manual for Urban Roads and Streets (DMURS) was developed and launched in 2012.

**DMURS sets out guidance on how to approach the design of urban streets in a more balanced way.** As a result of the development and publication of DMURS, **the traditional Design Manual for Roads and Bridges (DMRB) focussed approach to road and street design no longer applies to urban roads and streets** (save in exceptional circumstances).

DMURS sets out a series of principles, approaches and standards that are necessary to achieve balanced, best-practice design outcomes with regard to street networks and individual streets. The aim is to address street design within urban areas, setting out an integrated design approach. **Well-designed streets will be at the heart of sustainable communities**, and will create connected physical, social and transport networks that promote real alternatives to car journeys. DMURS advocates a holistic, design-led approach to street design.

Crucially, the manual recognises **the importance of assigning higher priority to pedestrians and cyclists, without unduly compromising vehicle movement**, in order to create secure, connected places that work for all.



From a policy context, DMURS notes the importance of **‘the alignment of spatial planning and transport policy to contain suburban sprawl, linking employment to transport and encouraging modal shift to more sustainable modes of transport’**.

To support this, DMURS states that ‘street layouts in cities, towns and villages will be interconnected to encourage walking and cycling and offer easy access to public transport. Compact, denser, more interconnected layouts, particularly where served by good quality bus or rail services, will help to consolidate cities, towns and villages, making them viable for reliable public transport’.

The traditional approach to street design has placed emphasis on the importance of traffic flow in Ireland. As a result, this has led to the proliferation of street networks where the car and the pedestrian are segregated. These, however, have in turn led to an increase in car dependency and a reduction in pedestrian activity. Street design has created severance, with distributor roads bisecting communities, cul-de-sac streets leading to significantly increased walking distances, lengthy crossing lengths and wait times, marginalisation of pedestrians and cyclists, minimal route choice for walking and cycling and an overall lack of connectivity for non-motorised modes of transport.

**DMURS recognises that segregation of vehicles and pedestrians in urban areas is not possible, and the interaction of these modes must inform the design process.** Instead of free-flowing road layouts which encourage higher vehicular speeds and reduce safety, integrated, shared spaces which encourage a change in behaviour and a greater balance of priority will help to reorganise the hierarchy of users in a manner which prioritises and supports sustainable modes of transport.

Integrated design approaches result in simpler street networks with higher connectivity, attractive routes and environments for pedestrians and cyclists, promotion of more sustainable modes of transport, more compact (therefore less expensive) streets and junctions and self-regulating, safer streets.

**DMURS proposes a new mode user hierarchy which leads with pedestrians and cyclists followed by public transport, placing the car at the foot of this hierarchy.** In this regard, DMURS advocates that cars should no longer take priority over the needs of the other users.

Designers must have regard to four core principles, these are as follows:

- The creation of integrated street networks which promote higher levels of permeability and legibility for all users, and in particular more sustainable forms of transport.
- The promotion of multi-functional, place-based streets that balance the needs of all users within a self-regulating environment.
- The quality of the street is measured by the quality of the pedestrian environment.
- Greater communication and co-operation between design professionals through the promotion of a plan-led, multi-disciplinary approach to design.

DMURS sets out clear and comprehensive approaches to all elements of urban street design, including guidance for junction design, parking provision, pedestrian crossings, network connectivity, cycle provisions, etc.

The implementation of the principles, approaches and standards contained in DMURS will be dependent on the adoption of the document across spatial planning. To this end, **it is mandatory for DMURS to be incorporated into Development Plans, Local Area Plans, Masterplans, etc.**



## 2.4 National Studies/Commentaries

DMURS also sets out a series of development rationale to be applied across all proposed developments, regardless of scale, in order to demonstrate how a proposed development conforms to DMURS.

### 2.3.2.1

#### DMURS – Key Points

The Design Manual for Urban Roads and Streets represents a major shift in terms of street and road design in an urban context. As outlined above, DMURS now supersedes the traditional Design Manual for Roads and Bridges from a design perspective, and provides a solid foundation on which balanced urban development can occur.

DMURS places greater importance on major themes such as pedestrian and cycle permeability, connectivity and sustainability, and also promotes a shift towards pedestrians and cyclists in order to foster and develop a homogeneous urban environment, where these various modes can integrate with vehicles in a safe manner.

**DMURS is a useful design tool for empowering local authorities with guidance to create urban areas that focus on pedestrians and offer a real alternative to the private car for movements within towns and cities.**

### 2.4.1

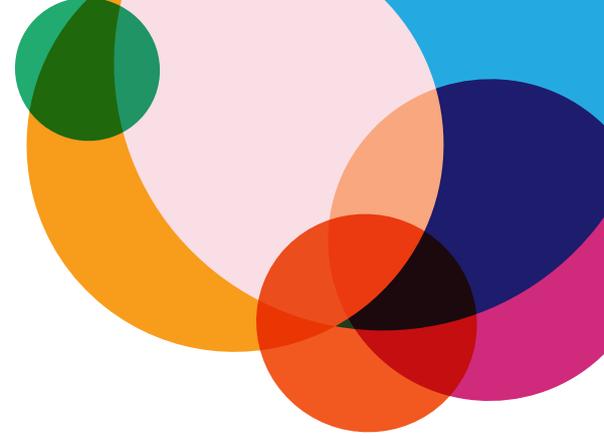
#### Engineers Ireland – The State of Ireland 2014

On an annual basis, Engineers Ireland produces evaluation and appraisal reports regarding the state of infrastructure in Ireland. These reports cover 5 major strands of infrastructure – Energy, Transport, Water and Flooding, Waste and Communications. A grading system is incorporated, and is used to give a rolling appraisal of the standard of infrastructure across the 5 major themes presented above.

**In 2014, Ireland’s Transport Infrastructure received a ‘C’ grading – which is defined as ‘inadequately maintained, and/or unable to meet peak demand, and requiring significant investment’.**

The report notes that Ireland’s transport system is ‘of mixed quality, where top quality projects sit alongside much poorer infrastructure’. Deficiencies are identified in the linkage between the cities of Cork, Limerick, Galway and Waterford, for example. Crucially, the report states that:

**‘Urban areas require substantial investment to move towards a low-carbon sustainable model. This will involve investment in bus lanes, cycle lanes, pedestrian facilities and facilities for the mobility impaired, as well as initiatives to attract car users onto public transport or other modes of travel. There is also a major deficit in park-and-ride facilities. Currently, Irish road infrastructure is not geared towards environmental and low carbon concerns.** Significant investment is needed to draw people out of their cars for even part of the journey. There are major policy initiatives to develop cycling across Ireland, including the introduction of cycle lanes in new roads.’



## 2.5 Regional Policy

### 2.5.1

#### Mid-Western Area Strategic Plan 2012-2030

The Mid-Western Area Strategic Plan (MWASP), commissioned by Limerick City Council, was published in May 2013, and is a planning, land-use and transport strategy for the Mid-West Region which will guide the physical and spatial development of the region to 2030.

In the context of the recent economic decline, the Mid-Western region has been significantly affected, with unemployment levels above the national average. Nevertheless, the 2011 Census indicated population growth in the region, which is allied to the economic growth of settlements such as Ennis, Nenagh, Newcastle West, etc. Limerick City, however, recorded a second consecutive population decline in Census 2011.

In the period to 2030, the regional population of the Mid-West Region is expected to grow from 380,000 to approximately 500,000 persons. As a result, the MWASP seeks to put in place a strategy that will guide the development of the region to 2030, in order to shape a more sustainable future for the Mid-West region, with Limerick City as its core.

The 'Vision' of the Plan is stated as thus –

*“The Mid-West Region and Limerick City as its capital will realise its potential as a gateway region both nationally and internationally. The future of the region will be based on sustainable, economic, social equity and environmental drivers, which together will deliver an enhanced quality of life”.*

The region benefits from a number of strategic assets, such as Shannon Airport, and Foynes Port, for example. However, there are many challenges facing the region in terms of transport and accessibility:

- **Shannon Airport** – improved access is required via upgrade of the national road network, and Limerick Tunnel.
- **Ports** – Strong in the region, and Foynes is a key asset. However, there is poor road infrastructure access via N69 to Foynes, via the old rail line, and via the N67, N68, R473 and R486. There is a need to develop road and rail access strategies for the port – (it is noted that in October 2013 an upgrade study was commissioned for the N69 to Foynes by the NRA).
- **Roads** – Completion of M7, Limerick Tunnel, and part of the M18 has been achieved. The National road network in the region is of strategic importance. The major priority is connectivity to Cork and Galway and Waterford. The M21 is fundamental to the region. The National Secondary Road network is also important and requires improvement works throughout.
- **Rail** – the network is significant, but the local passenger share and national freight activity return from the available infrastructure is disappointing. Direct rail journey from Cork-Limerick is not physically possible. MWASP refers to the need to try and secure a more sustainable public transport link utilising the rail corridor.

Direct rail journey from Cork-Limerick is not physically possible. MWASP refers to the need to try and secure a more sustainable public transport link utilising the rail corridor.

Census data indicates that the number of rail users, as a proportion of total journeys to work, is less than 0.5%. Therefore any investment will be difficult to justify without substantial mode share. The current rail system is primarily serving Inter-City routes. Commuter times by alternative routes are far more competitive by car than by rail, or by



rail/bus combined. Without major investment the service provision will more likely decline instead of increase. The Plan states that there are 'many options' available, starting with low-cost soft measures.

- **Interchanges** – Colbert Rail station is located a short distance from Limerick City Centre, with the coach station adjacent. The facilities are dated, however and could be enhanced to provide a better interchange environment and layout that supports adequate taxi, pedestrian and cyclist provision in and on the approaches.

**Further consideration should be given to the premium location for bus/bus interchange to serve the city and region.** The current metropolitan area bus/bus interchange in the city centre is spread over a number of streets and has no central hub or information point.

MWASP refers to potential for a park and ride at Limerick Junction.

- **Smarter Travel** – The plan notes that smarter travel alternatives are limited, and where provided, that the networks are piecemeal and do not necessarily link large trip attractors and generators.

Smarter Travel alternatives in the hinterland do benefit from some rural transport initiatives, but the marketing, service limitations, funding restraints and interconnectivity of the services needs to be addressed.

The Plan states that much opportunity lies in the hinterland and smaller towns (<5k) to provide, through pilot schemes, small smarter travel projects that can demonstrate how low cost investments can make a change to the regional mode share.

Greater opportunity for change can be realised in the major towns (>5k) where targeted investment, marketing, workplace travel programmes and school programmes could establish a measurable and longer term behavioural change – currently very little exists to promote the Smarter Travel policy.

The Plan notes that rural locations will face particular challenges in achieving the objectives of Smarter Travel, and states that the focus of smarter travel reform should be on the larger urban centres where greater benefit can be realised. The Smarter Travel Policy must be set as a longer-term goal for the region, but the initial investment should be focussed on sustainable modes in urban areas.

- **Public Transportation Issues** – The region contains a variety of transport systems and services which neither individually, nor as a system provides an adequate transport network for the area. A key issue to be addressed is harmonising the service offering to provide a seamless transport system that serves the region.

In Limerick City, the plan notes that the current network covers much of the city, but it is difficult for users to identify which services operate from which locations – availability of this information is critical. Some areas are well provided for by bus, but others have less choice. Other opportunities may exist to link routes and should be considered if reliability can be maintained – this can be assured by using priority measures to improve efficiency.

**Arrangements in Limerick City are confusing** – numerous layover and pick-up points exist with no apparent grouping of stops or services. Also, there are limited bus priority measures in place in the Limerick County and City areas. The plan notes that there is significant potential for reallocation of road space and enhanced urban design in Limerick City Centre, to complement the Orbital Route one-way system implemented in 2010. It states that '**a more radical approach to bus priority could be pursued by excluding general traffic from some streets and dedicating them to buses, cyclists and pedestrians; other traffic would be re-routed to parallel streets.**' The plan defers to the PTFS in this regard.



- The plan notes that information on timetables, services and fares is difficult to obtain. The plan does however acknowledge that a number of initiatives were underway at time of publication to address a number of these issues, including the development of a National Journey Planner by the NTA, on street RTPI in Limerick City, and web and smartphone initiatives, and new timetable and service info.
- **Rural Transport** – The plan notes that the cost of providing rural transport can be prohibitive due to the low population densities and limited patronage, but that the social inclusion and accessibility benefits are substantial. Rural bus services play a significant role in society. The plan states that the rural transport provision needs to a) widen its base of custom to become more sustainable, b) review becoming more integrated into the public transport system, through service integration, ticketing, information, smart card technology and pricing, and c) routings need to be reviewed in order to facilitate transport interchange and localised facilities need to be upgraded to accommodate these interchanges

**Formulation of the Strategy:** The strategic objectives are derived from a number of major reviews in the region, and founded on the Regional Planning Guidelines growth targets for the period 2010-2022, and lesser growth from 2022-2030. Three scenarios were developed, and the medium growth scenario was selected as preferred. The strategic objectives for the region are:

- **Sustainability** – locate development in areas which maximise use of infrastructural investment and public transport and reduce the need to use the motor car.
- **Priority** – Prioritise investment and development opportunities in areas with the most potential for accelerated benefits for the entire region and in line with the proposed settlement hierarchy.
- **Balance** – focussing development is not to the detriment of other areas in the region, but is in proportion to the traditional and emerging roles of each.

- **Inclusion** – Provide parity of access to social, employment and educational opportunities so as to reduce spatial inequalities and areas of deprivation.
- **Co-operation** – Provide a platform for the coordinated implementation of spatial, sectoral and investment strategies.

### The Strategy – Relevant Points

#### Settlement Policy

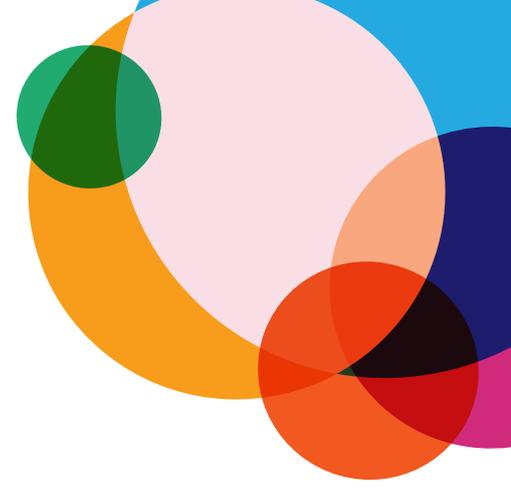
- To integrate the location of key land uses with the highest level of access by public transport, cycling and walking.
- Improving quality of life and accessibility to transport for all, and in particular, for people with reduced mobility and those who may experience isolation due to lack of transport.
- The promotion of key infrastructural investments in locations that can accommodate significant development.
- **The revitalisation of Limerick City Centre as a key component in the economic competitiveness of the region and the heart of a strong and vibrant city.**
- To identify types and levels of development that are appropriate to the function of the Gateway, Hub, strategic towns, villages and rural areas.
- The reduction of overall travel demand and commuting distances travelled by the private car.

#### Employment Policy

- To provide a sustainable and efficient public transport system for the City Region and identify key infrastructure needed to serve the needs of the region in an efficient and economic manner.

#### Development Clusters

- **The plan notes that there is the core Metropolitan Limerick area, and 8 outer settlements, as identified in the RPG Settlement Hierarchy Strategy.**



Within the Metropolitan District, the City Centre, Regeneration Areas, Dock Road, Dooradoyle, Castletroy and Caherdavin are stated to be the target locations for intensification of development.

In addition, strategic development clusters are identified around the Metropolitan City area, with a range of employment and residential uses, and all to be linked by public transport. These will be located at Caherdavin/Moyross, Docklands/City Centre, Dooradoyle/Raheen, Castletroy/Plassey and Southill/Ballysimon.

#### Transportation

The transportation strategy is derived from the study objectives and the RPG objectives, and objectives in Smarter Travel. The strategy objectives are then collated under the themes of economic growth, balanced spatial development, urban renewal, social inclusion, environment and transport. The Transportation Strategy is informed by the Public Transport Feasibility Study, which is discussed in further detail below. The objectives in the various themes are as thus:

#### Economic Objectives

- Provide physical infrastructure required to support industry.

#### Balanced Spatial Development Objectives

- Reduce car commuting where possible.

#### Urban Renewal Objectives

- Provide good public transport to reinforce the role of the city.

#### Environment Objectives

- Promote sustainable access to countryside.

#### Transport objectives

- Link Limerick City Centre through an integrated public transport system and traffic management system.
- Ensure a high quality public transport system.

- Provide rural transport opportunities for the hinterland areas to access the core area and economic nodes.

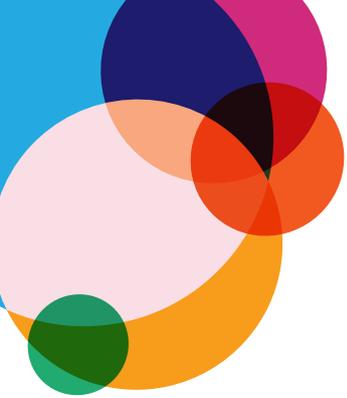
- **Link the region with Galway, Cork and Waterford creating a critical mass to attract investment.**

- Investment in transport infrastructure.
- Reduce car dependency and increase smarter travel.

#### Moving Forward

The MWASP sets out key recommendations for going forward – the transport-related objectives are:

- Assign a travel plan co-ordinator for each of the counties.
- Develop smarter travel plans for each of the main settlement locations in the region.
- Devise a series of destination travel plans for key attractors in the region.
- Restructure the bus networks to form an integrated and seamless public transport offering.
- Investigate the potential for public transport interchange, possibly at rail nodes, in each of the main towns and a bus interchange facility in the City Centre of Limerick.
- **Establish a long-term implementation plan** to assist the phased development of a number of national primary and national secondary routes in the region in accordance with the policies and objectives of the MWRPG's.
- Revise the role of Rural Transport to become better integrated into the public transport offering.
- Prioritise the changes in Limerick City's streetscape to accommodate more sustainable modes following the removal of through traffic since opening of the Southern Ring Road.
- Provide improved Public Transport information.
- **Complete the Atlantic Corridor.**



### 2.5.1.1

#### MWASP – Key Points

The Mid-West Region has been significantly affected by the economic decline over the past number of years, however the ultimate return to growth will still require a strategy to guide and govern the future development of the region.

In this context, **it is therefore necessary to re-focus Limerick City as the core driver of the region, and to shift the priority from out-of-town settlements and suburbs.** The regeneration of Limerick City and the enhancement of the urban area will then act as the main core of the Mid-West.

The strategic recommendations contained in the MWASP report are clear in their advocacy of sustainable modes of transport, such as Public Transport, Walking and Cycling. However, the plan also contains a significant number of strategic transport recommendations, associated with major infrastructural works.

The MWASP advocates an approach to achieve incremental change in the prevalence of sustainable transport modes, in order to build momentum behind a switch to smarter travel modes – **smaller-scale works are therefore recommended in the first instance, with larger infrastructural works following on as required.** The rural nature of the majority of the geographic Mid-West region will in turn require the initial emphasis to be placed on the Limerick Metropolitan District, in order to achieve the optimum benefit from investment.

It is noted that beyond references, that the plan is not very comprehensive with regard to specific sustainable modes, particularly walking and cycling, which are not discussed in any great detail. The focus is primarily on road infrastructure, rail and bus services. This is to be expected given the strategic remit of the MWASP, and these modes are only briefly referenced within the plan itself.

### 2.5.2

#### Mid-Western Area Strategic Plan Public Transport Feasibility Study (June 2012)

The Public Transport Feasibility Study (PTFS), which is incorporated as an Appendix to MWASP, is itself a comprehensive document. **The PTFS aims to achieve a mode shift from car to more sustainable modes, primarily public transport.**

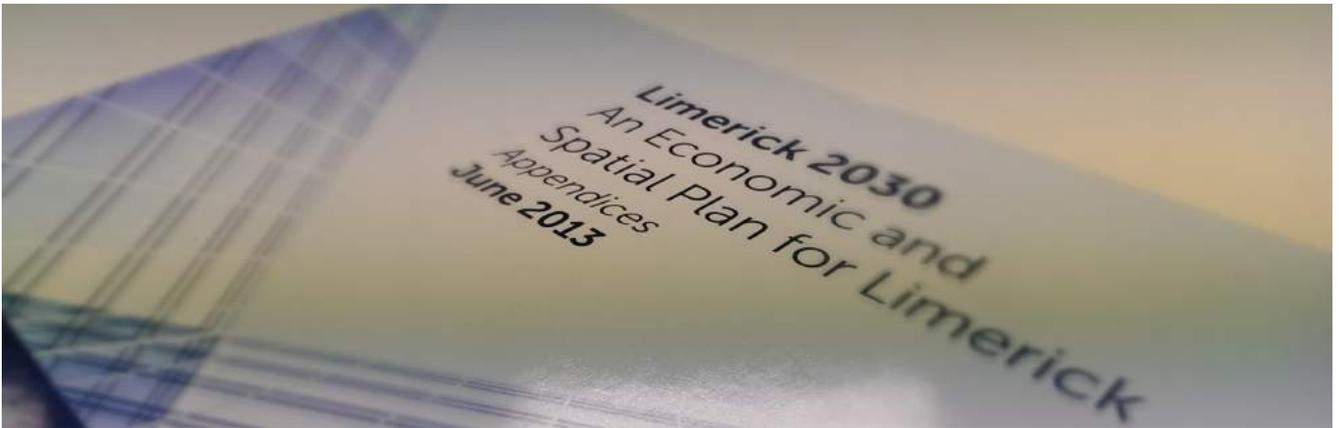
**The overarching objective is to achieve a modal shift to Public Transport, with a target of 55% in the Limerick Metropolitan District,** and a marked change in the modal split in the other large towns in the region.

The PTFS is founded on a 2009 Base Year Multi-Modal VISUM model. The model was built as an appraisal tool against which the various scenarios developed could be assessed. Three scenarios are appraised – Scenario 1 (Do Min), Scenario 2 (Do Something – low cost) and Scenario 3 (Do Something – high cost). The high cost scenario aspires to the 55% mode share target set out in Smarter Travel.

The PTFS ‘aims to reconcile the different transport needs of the population centres by improving accessibility and hence expanding opportunities within the region and improving links beyond.’

A number of possible improvements were considered including demand management measures, upgrading of rail services, the introduction of more and better buses, the role of bus rapid transit, smarter travel and combinations of the aforementioned. For the rural area, public transport is difficult to provide and inevitably costly given the dispersed population, therefore alternatives have been considered where possible.

It is noted that Scenario 2 envisages a spend of approximately €166.2m, and Scenario 3 a total spend of €339.2m (Scenario 3 would include all the spending in Scenario 2, plus a further €160m approx. spend).



As outlined above, three scenarios were developed :

**Scenario 1** – Do Minimum – Forecasted population growth, but no changes to current transport provision

**Scenario 2** – Do Something (Low Cost) – Same population growth, but improvements to the PT network and all road infrastructure

**Scenario 3** – Do Something (High Cost) – additional measures on top of those in Scenario 2

A fourth scenario was also investigated, but failed to achieve a significant shift towards the 55% target, despite an investment of approximately €2 billion.

This led to the decision to change focus in order to seek to achieve the 55% Sustainable Mode Share target in the Limerick urban area only, with 'effective change' in the other main urban towns.

### Traffic Modelling

The model developed for the PFTS is based on VISUM and DIADEM. There is a separate Local Model Validation Report (not available for review). The model is based on the following principles –

- The study area is split into 322 zones; 148 in Limerick, 12 in Shannon, 38 in Ennis and 20 in Nenagh.
- The road network is fully represented, including junction details for calculating capacities and delay in Limerick.
- All PT services presented in Chapter 2 of the PFTS are represented.
- Base Year travel demand is estimated from surveys with car and PT users.
- The 2009-year Base Model was calibrated to UK DfT standards.
- Regional development figures were been obtained for Growth Scenario 1 to produce a forecast of the demand for travel generated by population and

economic activity in future years 2015, 2020 and 2030.

- Of the three investment scenarios that have been captured – Scenario 2 is assumed to be feasible by 2020 and Scenario 3 by 2030

The main problem identified in the modelling was the low existing patronage of PT in the region, even in urban areas. As a result, it is contended that **even a substantial increase in PT usage is unlikely to lead to a substantial reduction in car dominance.**

The 2009 Base Model yielded the following statistics

- Approximately 217,000 daily (12-hr) trips in the study area, of which about 95% are by car
- The calculated mode share for PT is just under 6%
- The majority of trips are made for home-to-work, or home-based other purposes
- For Public Transport, trips from home with other purposes dominate strongly
- 14-15% of the car trips do not have a home origin (for PT this is about 6%)
- The daily number of km and hours travelled by car is more than 10 times as high as those for a PT passenger, at an average speed of 66kph (with a slightly less average speed observed for PT)
- The highest flows are around Limerick, with significant interurban flows. The other three towns (Shannon, Ennis and Nenagh) have relatively low flows.



## Conclusions

**The modelled effectiveness of the proposed investments is deemed to be 'limited'.** Despite the levels of investment proposed, the PT share is only increased to 8.9%. In Limerick City, a greater PT mode share is achieved by 2030 (16%). The impact of the substantial PT investments on car demand is small.

A strong impact of smarter choices is estimated, but it should be noted that these are reflected through matrix manipulations; and it is estimated that more than a third of the increased PT share in 2030 Scenario 3 is due to these.

The PTFS study does not seem to make any recommendation in its closing statements about which of the scenarios are deemed the most suitable for implementation. It is unclear as to what level of commitment exists in the Mid-West region, and particularly in Limerick, to proceed with any of the recommendations contained therein.

The Smarter Choices element of the proposals (in Scenario 2) includes for cycle-related works, such as parking, the Limerick Cycle Network, and a region-wide cycle network. The Smarter Choices works are estimated to lead to an estimated 10% increase in PT, and an equal reduction in car usage.

The Walking and Cycling proposals in Scenario 3 (in addition to the Smarter Choices works in Scenario 2) include shared-use cycleways and footways beside public roads, cycle lanes on residential roads, advanced stop lines, etc. and is deemed to effect a 20% increase in cycle demand (in conjunction with the provision of proposed greenways).

Appendix C of the PTFS shows the various highway schemes that were modelled as part of the Do Min scenario – it is noteworthy that schemes such as the Adare Bypass, and the Atlantic Way Motorway, M20, and Limerick Northern Ring Road are all assumed to be under construction, or complete by 2015. Clearly a number of these schemes have not proceeded, nor will they proceed in the short or medium term.

### 2.5.2.1

#### Public Transport Feasibility Study – Key Points

**It is evident from the results of the PTFS that substantial investment in the Mid-West region in public transport modes shows little success in achieving a substantial mode shift. Even in Limerick City, the anticipated mode shift is only 16%.** The impact of the substantial PT investments on car demand is small.

There is clearly little justification for so called 'big-ticket' schemes, such as Bus-Rapid Transit corridors, or Light-Rail type schemes. However, it is also evident that **lower-cost schemes and initiatives, both 'hard' and 'soft' are worth pursuing.**

Clearly, the challenge is to build momentum behind sustainable alternatives to the private car, in order to build up a degree of incremental change, and to combat the relative inertia that exists in the region with regard to a mode shift. However, given the prevalence of car usage, the significant commuter routes into the Limerick Metropolitan District, and the existing issues present on public transport corridors, **it will be necessary to carefully select schemes and initiatives for implementation in order to achieve the most benefit commensurate to investment required.**



## 2.6 Regional Guidelines/Plans

### 2.6.1

#### Mid-Western Regional Planning Guidelines (2010-2022)

The second Regional Planning Guidelines (RPGs) for the Mid-West Region were published in 2010, superseding the previous iteration of the RPG's covering the years 2004-2016. A revision of the guidelines was necessary to better reflect prevailing conditions at the time, as well as in light of new legislation passed in 2010 (The Planning and Development (Amendment) Act), which required local authorities to produce an evidence-based 'Core Strategy' to demonstrate how a development plan is consistent with the RPGs and the National Spatial Strategy (NSS).

The RPGs offer a long-term strategic planning framework for the Mid-West Region, and their role is to work within the overall policy frameworks identified in the National Spatial Strategy and the National Development Plan, while being mindful of current fiscal and economic outlooks. In this manner, the RPGs can set clear objectives and targets to guide the development plans of various planning authorities.

Although the RPGs are strongly aligned with the National Spatial Strategy, which has since been de-authorised by Government (a successor to the NSS is expected in early to mid-2014), nevertheless the objectives set out in the RPGs are still valid for the region – the development of potential and critical mass around a series of Gateways and Hubs, establishing a clear hierarchy of priority from the major urban areas outwards.

The RPGs therefore acknowledge, in keeping with the NSS, that **the Limerick/Ennis/Shannon area is a Gateway/Hub zone, and that the further development of this zone is a key component of both the NSS and the RPGs. The guidelines aspire to develop this area in a co-ordinated manner.**

The RPGs vision for the Limerick-Ennis-Shannon triangle contains the following:

*“The city core of this area would develop as a vibrant, multi-purpose zone with a population of a size capable of supporting a high level of social and commercial activity”*

*“That this area would be linked through an integrated public transport system, as well as a system of roads to accommodate the private car, and that an integrated traffic management plan would be developed and put in place for this area”.*

**The RPGs note that “the Mid-West Region is now at a crossroads where, if further uncontrolled/unrestricted retail development is allowed, there will be a detrimental impact to Limerick City Centre. Whilst Limerick City is at the top of the retail hierarchy, it has suffered most from competition from other suburban and out of centre comparison shopping destinations”.**

With regard to **Transport and Infrastructure**, the RPGs note that the road network in the region is a key part of the transportation infrastructure, and therefore maintaining and enhancing the capacity, quality and integration of all elements of the road systems is critical.

**Priority Transport Infrastructure:** A series of major strategic road schemes is presented, both of regional and national importance; some of these have since been completed, and some are now postponed indefinitely.

From a Development Plan perspective, the RPGs state that ‘provision must be made for these routes when identified....Integration of routes with other transport modes is crucial, as part of a balanced transportation strategy’.



**Public Transport:** The RPGs state that the enhancement of public transport within the region is a key element in the achievement of the Smarter Travel objectives. The RPGs state that 'enhanced public transport will offer opportunities for travel that are alternative to private transport'. In addition, the RPGs state that the recommendations of the MWASP should be reflected in Development plan policies.

With regard to **Rail**, the RPGs note that the Department of Transport have pointed out that 'rail will play an important role in transport services between areas of high population density'. For this rail development to take place, the RPGs state that 'significant residential development must continue in the areas that the rail network would serve'.

For **Bus Services**, the RPGs state that 'the bus service aspect of public transport will form a fundamental element of the overall infrastructure'.

The RPG's state that **'if public transport is to be an element of the management and integration of the Limerick/Ennis/Shannon area, then it must be addressed as an integrated city-type bus service, with several requirements:**

- Creation of bus corridors that will enable efficient and time-guaranteed services between the major development locations of the region including the major urban centres, major industrial estates, the airport, the central city area and the third-level institutes;
- Creation of bus corridors that will facilitate inter-city services now caught in urban congestion;
- Integration of the bus service with the rail services to the area; and
- Development of bus schedules responding to employment as well as recreational needs.

From a Development Plan perspective, the RPGs state that 'development plans should make provision for bus corridors and the provision of bus facilities particularly in the Limerick/Ennis/Shannon area'.

**For Pedestrians and Cyclists**, the RPGs state that 'walking and cycling rather than driving should be encouraged through health, traffic reduction and air quality. While it is difficult to make provision for pedestrians and cyclists on all existing roads, cycle lanes, pedestrian zones, pedestrian crossings, dished footpaths and similar facilities should be incorporated in all road improvements and in appropriate new roads'.

From a Development Plan perspective, the RPGs go on to state that 'a cycle and pedestrian network should be part of the focus of the coordinated development of the Region and its sub-areas'.

In the context of **Integration of Transport Modes** in the Limerick-Ennis-Shannon region, the RPGs state that 'gaining access to this area and operating efficiently within it will be a crucial element of any future transport system. Such a system will require not only the integration of modes of transport, but also the management of parking and other aspects of the overall transport network that impact on the split between the different transport modes.

As improvements to the public transport system are taking place in the Gateway/Hub areas, a strategy to encourage transfer from private cars to public transport should be developed and implemented in a phased and managed way'.

From a Development Plan perspective, the RPGs state that 'development plans should reflect the objectives and actions of the Integrated Transport Management Plan and should facilitate its implementation through their own policies and objectives'.

## 2.7 Local Policy

### 2.6.1.1

#### Mid-Western Regional Planning Guidelines – Key Points

Given the remit of the MWRPGs, it is therefore no coincidence that the majority of the transport-related elements contained therein are strategic in nature. Indeed, the key objectives of the RPGs are to link the National Gateways as identified in the National Spatial Strategy, and the development of transport corridors.

**Whilst the National Spatial Strategy no longer has application since its withdrawal, the RPGs nevertheless set out clear objectives and guidance for local authorities in the region to assist the formation of development plans in a manner that is consistent with, and supportive of, the long-term objectives for the region.**

In this context, while there is considerable emphasis on a number of major infrastructural projects that apply to the region, there is also an emphasis on supporting the objectives contained in Smarter Travel, and the MWASP, in terms of developing a sustainable transport network.

**The Limerick/Ennis/Shannon triangle forms the core of the region, and Limerick City stands alone as the principal settlement of the Mid-West. The RPGs are clear in their intention for the region to develop from the core outwards, with an emphasis on the re-establishment of Limerick City Centre at the top of the hierarchy.**

### 2.7.1

#### Limerick County Development Plan 2010-2016

The Limerick County Development Plan (LCDP) 2010-2016 was adopted in November 2010 by Limerick County Council.

The LCDP notes that over the period 1996-2006, exceptional growth occurred in the County, resulting in significant increased demand for development, and commensurate population growth.

However, at the same time, the LCDP notes that this growth has been concentrated in the environs of Limerick City, in and around Newcastle West, and in the villages and rural areas within easy commuting distance of Limerick City.

The LCDP is founded on population growth targets in 2016 and 2022, with a total population estimate of ~147,000 persons by 2016, and ~157,000 persons by 2022.

The overall vision statement of the LCDP is the following:

*“Limerick County will adopt a positive and sustainable approach to balanced development thereby enhancing the lives of people who live in, work in and visit the County, whilst protecting the natural and built environment.”*

The vision statement is underpinned by a number of core strategic planning policies, which in turn underpin the various policies and objectives throughout the LCDP itself.

It is noteworthy that the Council recognise the role of the Limerick/Shannon Gateway as the key driver of social and economic growth in the County and the wider Region, and promotes the Gateway as the main growth centre of the County.



Outside of the Gateway area, the LCDP also advocates the sustainable development of the various settlements throughout the county area. These settlements are classified in terms of their strategic context, varying from key towns (such as Newcastle West and Kilmallock) to centres on transport corridors (Foynes, Adare, etc.) to small towns and villages (Shanagolden, Bruff, Doon, etc.).

Regarding **Walking and Cycling**, the plan states that 'Limerick County Council recognises the importance of these transport modes as a mode of transport and recreational activity which is potentially accessible to the wider community'.

'Cycling will be encouraged through the provision of on and off-road cycle routes and traffic management measures that give cyclists priority. New and upgraded road developments will be encouraged to include cycle lanes. These will include urban/village developments and short distance cycles'.

Objective COM O26 – 'It is the objective of the Council to support the policies of the National Cycle Policy Framework'.

Objective Com O28 – 'It is the objective of the Council to promote the development of safe and convenient pedestrian and cycling facilities in the towns and villages to minimise the dependence on private motor vehicles and to encourage an active and healthy lifestyle'.

Objective COM O29 – 'It is the objective of the Council to:

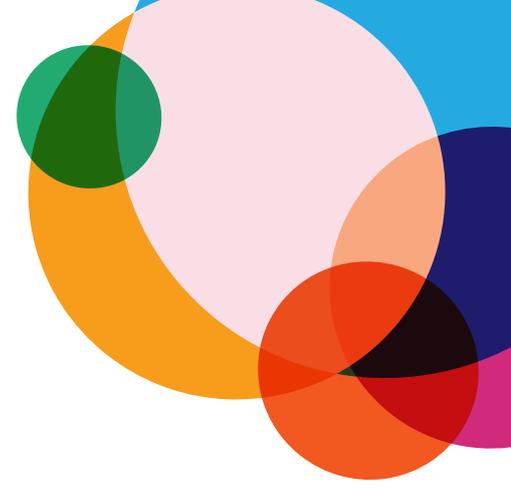
- Encourage the successful incorporation of safe and efficient cycle ways, accessible footpaths, and pedestrian routes, and general cycling facilities into the design schemes for town centres/neighbourhood centres, residential, educational, employment, recreational developments and other uses.

- Provide cycle ways, where appropriate, as part of all road improvement/redesign schemes ensuring, where possible, that cycle ways and footpaths are effectively separated from major vehicular carriageways.
- Prioritise the movement of pedestrians and cyclists in proximity to public transport nodes.
- Require planning applications for residential, commercial, retail, community, educational and industrial developments to demonstrate the proposal's accessibility for pedestrians and cyclists.
- Seek provision of appropriate, well-designed pedestrian ways for residential development proposals to link with amenities and facilities.

With regard to **Transport and Infrastructure**, the LCDP policies and objectives are based on a number of core strategies, which include:

- Infrastructure and land use should be managed and developed together, in a manner that will lend support to the social and economic wellbeing of the community whilst protecting the environment for future generations; and
- An integrated approach should be adopted towards transport to encourage patterns of transport that are sustainable. There shall be emphasis on reducing dependence on the private motorcar, improving inclusive access and traffic safety. Means of travel alternative to the car such as public transport, cycling and walking shall be facilitated and encouraged.

With regard to Public Transport, **the LCDP seeks to both protect public transport assets and facilitate the development of public transport. This includes objectives to promote and develop a high-quality bus system (including bus corridors, etc.), provision for park and ride facilities, protection and improvement of rail infrastructure, enhancement of rural transport initiatives, and incorporation of safe and efficient pedestrian and cycle facilities.**



The LCDP also makes reference to the National Road Network, and the strategic regional road network in the County, outlining the importance of safeguarding their efficiency and capacity by protection from unwarranted development and by ensuring a series of improvement programs.

It is also noteworthy that the LCDP sets out guidance on the preparation of a sustainability statement and social infrastructure assessment (SSSIA), which is required with planning applications comprising more than 5 dwellings, or commercial/industrial developments over 1,000m<sup>2</sup>, in order to assess their compliance with the principles of sustainable development. These include a series of transportation checklist items, including rail and bus connections, park and ride, cycleways and footpath provisions, and a requirement to demonstrate pedestrian and cycle permeability and connectivity.

Within the LCDP, guidance and criteria are also detailed regarding the levels of pedestrian and cycle facilities to be provided according to development type and location.

#### 2.7.1.1

##### Limerick County Development Plan – Key Points

With the area encompassed in the Limerick County boundary totalling approximately 2,500 km<sup>2</sup>, the county is characterised by dispersed population centres, which presents potential difficulty in creating sufficient commercial momentum behind the development and implementation of major public transport initiatives.

As shown in the MWASP Public Transport Feasibility Study, substantial modal shift in the mid-west region as a whole will be difficult to achieve.

Nevertheless, the CDP is cognisant of the role of sustainable transport, and in particular walking and cycling as healthy alternative modes. To this end, the CDP places clear emphasis on the promotion

of these modes, and endeavours to facilitate these by setting out clear guidelines within the plan in order to appraise a proposed development in the context of facilitating both walking and cycling.

The CDP is also supportive of a number of other plans, policies and strategies which themselves place clear emphasis on sustainable modes – such as Smarter Travel, the National Cycle Policy Framework, MWASP, etc.

The CDP is also strongly supportive of the continued support and prioritisation of the Limerick/Shannon Gateway as the key economic driver of the region.

#### 2.7.2

##### Limerick City Development Plan 2010-2016

The Limerick City development plan was adopted on November 25th 2010. The development plan aligns itself with a number of other major plans, including the National Development Plan (2007-2013), the National Spatial Strategy (2002-2020).

The vision of the plan is ‘for Limerick City to continue to grow as the centre of economic, social and cultural development for the Mid-West Region’.

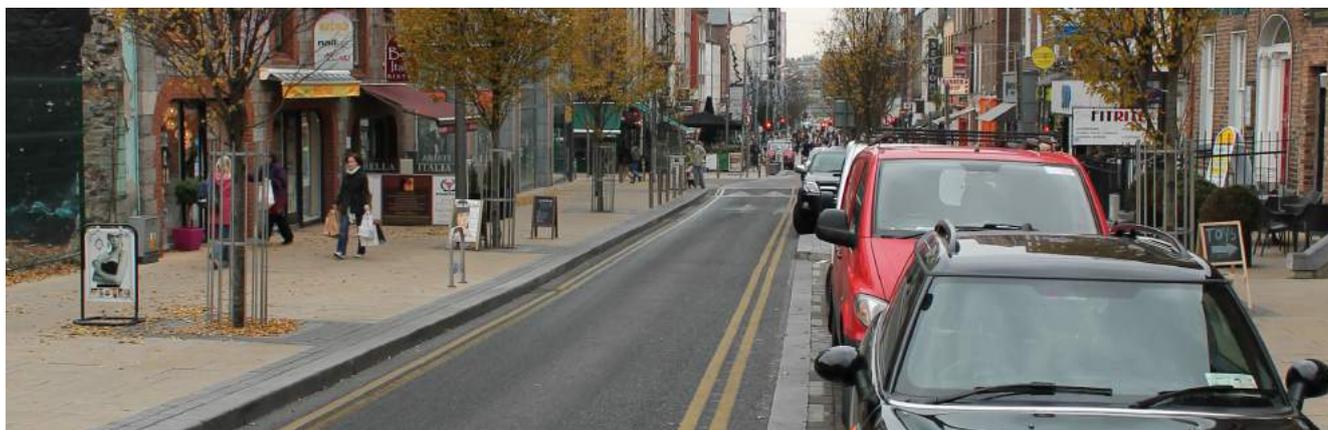
The Overall Goals of the plan include:

**Goal 1** – To promote and provide for the sustainable development of Limerick City enabling it to fulfil its roles as a National Gateway City.

**Goal 2** – To promote social inclusion and to facilitate equality of access to employment, education, transport, suitable housing, social and cultural activities.

**Goal 3** – To provide for a high quality natural and built environment and improved quality of life for those living and working in Limerick City and also for those visiting the city.

The Limerick City Development Plan was prepared in the context of population growth projections, indicating an increase of ~11,000 persons in the city over the life of the plan.



The City Development Plan also takes cognisance of the extension of the Limerick City boundary in order to support and enable future growth of the City, which requires an enlarged administrative area.

### Transportation

**The development plan notes that Limerick City and the Mid-West region have experienced strong growth in car ownership and longer journey times to work since the previous 2004 Development Plan, and as a result most of the City's road network is at full capacity.**

The challenge is therefore 'to embrace the principle of sustainability and deliver on the growing demand for travel by sustainable forms of transport such as bus, train, cycling and walking. In the past, a lack of coordination between land-use and transportation has contributed to today's longer journey times and traffic congestion.

The integration of land-use and transportation has a key role to play in delivering social, economic and environmental sustainability. To deliver on this, the Mid-West local authorities have commissioned the MWASP'.

In Limerick City and Environs, the plan notes:

- A rapid growth in population and households, leading to increasingly dispersed travel patterns.
- An increase in employment leading to a large increase in the demand for travel in the peak hours.
- Increasing car ownership leading to additional commuting by car, which is economically inefficient and environmentally unsustainable.
- Slower than expected delivery of public transport enhancement projects in Limerick City.
- According to the plan, the key features of a more sustainable form of spatial development for the Limerick Area are:
- Development that is concentrated rather than dispersed allowing for it to be served more efficiently by public transport.

- Improved access to locations of employment, education, health, leisure and residence through the provision of a high-quality sustainable public transport system.
- To develop new residential neighbourhoods and employment zones that can be adequately served by public transport.

### Integrated Transport

**The plan states that 'Limerick City Council wishes to create a transport system that offers real choice so that more sustainable transport alternatives are available.** The availability of real choice in transport modes will only serve to help aid social integration, economic growth and environmental sustainability of the City as a whole. To improve accessibility and reduce congestion especially on over reliance on private motor cars we must work to improve the quality of public transport and promote cycling and walking as safe sustainable and healthy transport options.

To achieve these goals Limerick City Council commissioned a Public Transport Feasibility Study for Limerick that will make recommendations for the optimisation of existing transport infrastructure and the provision of new infrastructure where required. The plan will also have the objective of achieving a more integrated and managed approach to the provision of transportation in the City that will encourage modal shift from private car journeys to public transport, cycling and walking.'

An integrated transport system will include the following elements:

- Will tackle congestion;
- Promote better public transport;
- Deliver vital missing links in the transport network; and
- Quality public transport corridors including bus, cycling and walking facilities.

## Smarter Travel

The plan explicitly refers to Smarter Travel as new government policy 'which sets out a long-term plan to achieving a sustainable transport system for Ireland.' The plan refers to the 49 various actions contained in Smarter Travel, and groups them into 4 categories:

### Actions to encourage Smarter Travel

These may include aligning spatial planning and transport, aligning employment policy with transport planning, mobility management, encouraging efficient movement of goods and introducing fiscal measures to influence travel behaviour.

### Actions to deliver alternative forms of travel

May include bus priority measures, high frequency services, investment in the national cycle network, integration of cycling and public transport, establishing car sharing websites and integrated ticketing.

### Actions to improve the efficiency of motorised transport

These may include encouraging plug-in and hydrogen fuel cell vehicles, as well as promotion of efficient driving.

### Actions to ensure integrated delivery of policy

May include the introduction of a sustainable transport and travel bill, establishment of a national sustainable travel office, empowering local authorities to prepare transport plans to complement development plans, and establishing a national competition to deliver sustainable transport in towns and rural areas.

## Development Plan Transport Policies

The following policies, as presented in the Transportation Chapter of the CDP are relevant. It is noted that the plan defers to the recommendations of MWASP and the PTFs in many of these policies.

## Policy TR.1 – Strategic Transportation Issues

- It is the policy of Limerick City Council to implement the objectives and strategies of the National Development Plan, Transport 21, Smarter Travel and any other transport plans that may arise during the lifetime of this development plan including the proposals contained in Mid-West Area Strategic Plan and Public Transport Feasibility study.

## Policy TR.2 – Integrating Land Use and Transportation Policies

- **It is the policy of Limerick City Council to promote and deliver a sustainable and integrated transportation and land use management system for Limerick City. Limerick City Council will complete and implement the recommendation of the MWASP.**

## Policy TR.3 – Development of a High Quality Public Transport System

- **It is the policy of Limerick City Council to co-operate with all Public Transport agencies in developing a high quality public transport system.** Limerick City Council will safeguard lands required or likely to be required for the transportation needs of the city, including lands required for new roads, bridges and railway lines.

## Policy TR.4 – Transport Interchange/Hubs

- **It is the policy of Limerick City Council to promote public transport interchange at strategic locations throughout the City.** An interchange can be a very high quality facility that facilitates the transfer between modes of transport such as bus, taxi bicycle and rail at Colbert Station or it can be physical locations that provide access to the public transport system.

## Policy TR.5 – Enhancement of Road Infrastructure

- It is the policy of Limerick City Council to maintain and enhance the planning, design and maintenance of the transportation and roads infrastructure in the City to ensure improved safety, promote economic growth, social inclusion and amenity for all road users.



### Policy TR.6 – Mobility Management

- It is the policy of Limerick City Council to require a Mobility Management Plan for any development that the Council considers will have significant trip generation and attraction rates at peak hours or throughout the day and where the utilization of existing or proposed public transport may be employed to good effect.

### Policy TR.7 – Traffic Management

- It is the policy of Limerick City Council to provide an efficient traffic management control system for Limerick City as part of an integrated and sustainable transport system.

### Policy TR.8 – Traffic Calming

- It is the policy of Limerick City Council to implement traffic calming measures in appropriate areas throughout the City.

### Policy TR.9 – Cycling and Walking

- It is the policy of Limerick City Council to prioritize the provision of safe facilities for Pedestrians and Cyclists throughout the City.

### Policy TR.10 – Limerick City Inner Orbital Route and City Centre Pedestrianisation

- **It is the policy of Limerick City Council to construct the inner orbital route to facilitate the efficient movement of traffic around the City Centre and streetscape enhancement works including street pedestrianisation and pedestrian priority schemes.**

### Policy TR.11 – Traffic Management Control

- It is the policy of Limerick City Council to enhance the traffic management provision.

### Policy TR.12 – Controlled and Non-Controlled Crossings

- It is the policy of Limerick City Council to enhance the traffic management provision.

### Policy TR.13 – Signage

- It is the policy of Limerick City Council to provide and improve signage at locations throughout the City where the provision of signage is warranted.

### Policy TR.14 – Car Parking Control

- It is the policy of Limerick City Council to control the provision of on-street and off-street car parking in the City Centre. In this regard **it is the policy of Limerick City Council to provide for short term shopping and business parking requirements and for the need of local residents, rather than long-term commuter parking requirements.**

### Policy TR.15 – Taxi/Minibus/Tour Bus

- It is the policy of Limerick City Council to provide facilities for on-street Taxis, mini buses and tour buses, at appropriate locations and to facilitate the provision for minibus/taxi/hackney transport to provide a feeder service to public transport corridors and to encourage the provision of taxi ranks at appropriate locations including the main rail and bus station.

### Policy TR.16 – Loading Bays

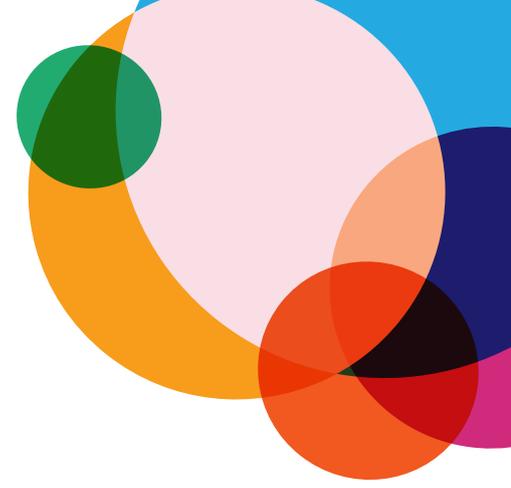
- It is the policy of Limerick City Council to provide loading bays in the City Centre at appropriate locations to facilitate loading and unloading for businesses and for new development to require that appropriate loading and unloading facilities are provided for the day to day function of the development.

### Policy TR.17 – Road Safety and Low Cost Safety Measures

- It is the policy of Limerick City Council to promote road safety and to avoid the creation of traffic hazards. The City Council will continue to implement its policy of providing low cost safety measures at locations to improve safety on the road network as resources permit.

### Policy TR 18 – Signal Controlled Junctions

- It is the policy of Limerick City Council to promote the provision of signal controlled junctions in the



urban environment to provide a safer environment for cyclists and pedestrians.

#### **Policy TR.19 – Improved Access to the Southern Ring Road**

- It is the policy of Limerick Council to liaise with the National Roads Authority (NRA) and Limerick County Council to promote the provision of an additional road link for N20/N21 traffic accessing the City from the Southern Ring Road. In this regard there is a need to provide this access as a result of the layout of the Rosbrien Interchange.

#### **Policy TR.20 – Park & Ride Facilities**

- It is the policy of Limerick City Council to facilitate the provision of Park & Ride facilities as part of the sustainable traffic management system for the City.

#### **Policy TR.21 – Park & Stride/Cycle Facilities**

- It is the policy of Limerick City Council to facilitate the provision of Park & Stride/Cycle facilities as part of the sustainable traffic management system for the City.

#### **Policy TR.25 – Promotion of Alternative Energy Sources for Vehicles**

- It is the policy of Limerick City Council to promote and to encourage the supply of facilities for the supply of energy to vehicles from proven alternatives to fossil fuels. In this respect this may involve the provision of on street charging points for electric vehicles or facilities for the discharge of Bio-Fuels.

#### **Policy TR.26 – Universal Access**

- It is the policy of Limerick City Council to ensure that its public realm is universally accessible.

As with the Limerick County Development Plan, the City Development Plan includes a policy that requires all significant planning applications be accompanied by a Planning Statement and a Design Statement. These documents will outline how the proposed development in question is consistent with prevailing policies, standards and principles.

Design criteria are also set out in the development plan requiring the provision of high-quality cycle facilities as part of all new development proposals, in line with the objectives of Smarter Travel.

Proposals are also set out in the development plan indicating proposed Green Routes for bus travel, and cycleways to be implemented over the lifetime of the Plan.

##### **2.7.2.1**

#### **Limerick City Development Plan – Key Points**

The Limerick City area has suffered in recent years, affected by the presence of a number of major out-of-town developments, which have undermined the City Centre in terms of its place in the hierarchy of urban settlement in the Mid-West region.

In line with other policies, the re-focussing of emphasis and priority on the city centre is a clear objective of the City Development Plan. In tandem, the City Centre must ensure that it can grow in a sustainable manner.

**In the context of a saturated road network in the City Centre, the Development Plan places considerable importance on sustainable transport modes, with mode shift representing a major opportunity to foster growth in the city centre and to improve accessibility while reducing congestion at the same time.**

A large number of the proposed transport objectives contained in the City Development Plan are therefore focussed on sustainable transport modes, and the promotion of alternative travel by walking, cycling and public transport.

The City development plan is also supportive of exerting greater control over the provision and character of car parking in the city area, with a view to both managing the total spaces provided, and with a view to discouraging longer-term parking, predominantly by commuters, in order to encourage a switch to public transport.



### 2.7.3

#### Limerick Southern Environs LAP 2011-2017

The Limerick Southern Environs Local Area Plan (SELAP) came into effect on June 20th 2011, after adoption by Limerick County Council on May 23rd 2011. The SELAP covers approximately 21km<sup>2</sup> and falls mainly within two electoral divisions, Ballycummin and Limerick South Rural. It reaches east to Banemore, south to Ballycummin and west to Conigar in Mungret. It encompasses Dooradoyle, Raheen, Mungret, Gouldavoher and Rosbrien.

The SELAP area is largely urbanised, and has experienced considerable population growth in recent years, and is expected to continue in this regard.

The SELAP document is influenced by Smarter Travel, the National Climate Change Strategy, the MWRPG's, the Limerick Regeneration Agency Masterplans, the City and County development plans, Mid-West Region Retail Strategy and the National Spatial Strategy. It is intended that the SELAP be read in conjunction with the Limerick County Development Plan; the two are not mutually exclusive.

The Vision Statement of the SELAP is as follows:

*“Limerick County Council will adopt a positive and sustainable approach to balanced development thereby enhancing the lives of people who live in, work in and visit the Southern Environs, whilst protecting the natural and built environment”*

The SELAP envisages a population growth of ~9,000 by 2022 in the City Environs, and notes that this increase must be distributed between Castletroy and the Southern Environs. This population increase has therefore been proportioned as 5,400 in the Southern Environs, and 3,600 in Castletroy.

As part of the preparation of the SELAP, consultation and site appraisals were undertaken, and a SWOT analysis of the SELAP was carried out; the lack of public open space and of continuous bus lanes into the city were some of the weaknesses identified:

The following opportunities are identified:

- Creation of pedestrian links
- Re-opening of the railway line
- Provision of park and ride facilities
- Improved green routes
- Improvements to public transport

Chapter 5 of the SELAP deals with transport, and presents two strategic policies:

#### **Policy T1: Transport**

- It is the policy of the Council to seek to improve the overall quality of life by improving levels of accessibility; reducing dependence on private car transport; reducing the need to travel; encouraging the use of energy efficient forms of transport and alternatives to the private car

#### **Policy T2: Compliance with Limerick County Development Plan**

- It is the policy of the Council to ensure that all proposals shall comply with the policies, objectives and development management standards of the Limerick County Development Plan, 2010-2016 in relation to transport and infrastructure and the objectives outlined below

The plan notes that the development of new documents such as Smarter Travel, the Mid-West RPGs, and the MWASP all reflect a change in policy with a view to making non-car transport modes more attractive.

A number of objectives are then presented; of these the following are relevant:

### **Objective T7: Movement and Accessibility**

It is the objective of the County Council to:

- Encourage the development of a safe and efficient movement and accessibility network that will cater for the needs of all users and to encourage priority for walking, cycling, public transport provision and accident reduction; and
- Ensure that adequate facilities and access provision are provided for those with disabilities in the community. The Council will strive to ensure that the provision of such facilities will be in line with current good practice in relation to such issues.

With regard to **Public Transport**, the plan states that 'the council recognises the importance of protecting existing infrastructure to promote sustainable forms of transport'.

### **Objective T9: Measures in support of public transport**

It is an objective of the Council to:

- Protect existing dedicated bus lanes and support the development of further quality bus corridors, in particular from the Raheen roundabout and Loughmore roundabout to link with the City centre;
- Work with Bus Éireann to ensure that the provision of bus services is responsive to need including the emergence of new developments;
- Ensure that the provision of regular and quality public transport facilities in the vicinity and the quality of pedestrian and cycle connections to these facilities are material considerations in proposals for new developments;
- Ensure there is provision for possible extension of bus services into new developments by having penetrable layouts; and
- Prioritise the location of bus and rail corridors and stops in the layout of pedestrian and cycle facilities.

### **Objective T10: Park and Ride**

It is an objective of the Council to:

- **Promote and support the provision of park and ride facilities at two strategic entrance points to the city, within the Southern Environs, one in the region of Castlemungret on the N69 and the other at Ballycummin close to the existing Loughmore Common roundabout.**

With regard to **Walking and Cycling**, the plan states that “ultimately it is hoped that there will be a coherent network of off-road and on-road cycleways, linking Mungret, Dooradoyle and Raheen to the Crescent Shopping Centre and Limerick City. The proposed cycle network for the Southern Environs will link up with the City Council’s proposed cycle network.

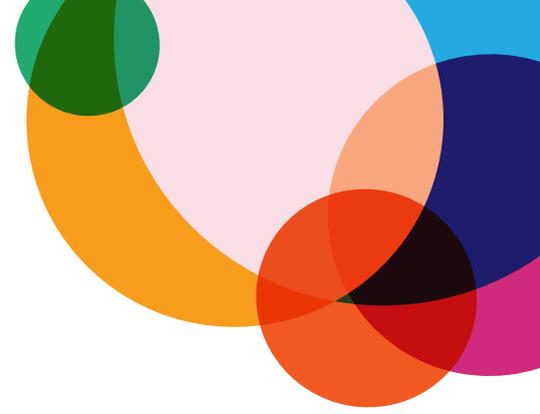
Having regard to the Mungret - Loughmore areas designation as the primary development area in the Southern Environs with objectives for development of residential, education, open space and community uses, priority shall be given to developing the proposed cycle lane and walk way along the regional road R859 from Quinn’s Cross to Mungret Village.”

### **Objective T11: Provision of cycle routes**

It is an objective of the Council to:

- Seek to improve and create additional facilities for pedestrians and cyclists as opportunities arise as part of new developments. The Council will seek to secure the provision of pedestrian routes.

The SELAP also advocates the potential developments are provided with a design statement, sustainability statement and a social infrastructure assessment for developments exceeding specific sizes; developers are advised to consult the Limerick County Development Plan for specific guidance on the provision of these statements. The sustainability statement checklist includes items for public transport support, sustainable modes, pedestrian priority and accessibility and permeability.



## 2.8 Local Plans/Guidelines

### 2.7.3.1

#### Limerick Southern Environs LAP – Key Points

The SELAP recognises the hierarchy of settlement within the Limerick Metropolitan District, whereby the City centre and City environs (including Castletroy and the Southern Environs) represent the principal settlements, and as such recognises the need for Limerick City Centre to regain its status as the principal retailing area, recapturing trade lost to out-of-centre shopping facilities, such as the Crescent Shopping Centre, for example. The SELAP advocates control over the expansion of these out-of-centre facilities, in order to ensure prioritisation of the City Centre.

The SELAP also sets out strong strategic policies which seek to reduce dependence on the private car, and encourage alternative modes of transport. Specific mapping is also provided indicating existing and proposed facilities for Buses, Park and Ride and Cycles throughout the environs.

### 2.8.1

#### Limerick 2030: An Economic and Spatial Plan for Limerick

Limerick 2030, launched in June 2013 is defined as **“a ‘once in a generation’ plan to guide the economic, social and physical renaissance of Limerick City Centre and the wider County/Mid-West Region.”** It defines itself as a flexible, dynamic framework capable of responding to changing circumstances. It is intended to incorporate the plan into the Limerick City and County development plans.

The plan comprises three sections – an Economic Strategy, a Spatial Plan and a Marketing Plan, all of which are applicable to the Limerick Metropolitan District, which is defined in the plan as an estimate (at time of going to print) of a viable integration of a number of county council areas within a new city/county boundary.

The area defined in Limerick 2030 as the Limerick Metropolitan District will comprise ~95,000 of the ~192,000 person population of Limerick City and County combined – 50% of the total population (based on Census 2011 figures).

The Vision for Limerick is stated as thus:

*“Limerick will become a major economic force in the Irish and European economy, a leading centre for commercial investment – both foreign and direct investment and endogenous growth, capitalising in the strength of its higher education institutions, the skills of its workforce and its environmental and heritage attributes. The City Centre will be at the heart of this economic force – an attractive magnet for retail, leisure, residential, commercial, educational and cultural growth. Growth will benefit all citizens across the City, County and Mid-West Region.”*





The plan notes the decline of Limerick as a commercial centre over the last 10-20 years, with the City Centre particularly affected by virtue of being undermined by competition from out-of-centre development.

The **Economic Strategy** for Limerick seeks to pursue the following five objectives:

- Position Limerick as a competitive knowledge economy, known for its skill base excellence in high-tech sectors
- Develop an outstanding environment for starting and growing new business
- Create the conditions for long-term economic growth
- Create a vibrant City Centre economy with a new mix of economic uses and a strong education presence, and
- Maximise the local employment impact from development/regeneration

The **Spatial Plan** for the City Centre addresses eight key objectives:

- To establish a 21st Century City Centre economy capable of competing with other European cities and leading the wider City, Metropolitan District and City-Region economy.
- To reposition the City Centre as the premier regional shopping destination.
- To establish a unique tourism offer that takes full advantage of the City Centre's special heritage and environmental characteristics.
- To make the City Centre once again a desirable place to live by improving the quality of the housing offer in the City Centre.
- To create a high quality and safe urban environment attractive to investors, employers, residents and tourists which generates a sense of pride in the City.
- To build upon the City Centre's rich historic character by fully capturing this rich heritage, protecting and

enhancing it where appropriate and complementing it with world class design for any new development.

- To create quality strategic gateways to the City Centre, thereby making it a welcoming experience for visitors, and
- To attract and retain young people by providing learning opportunities through the co-operation of the University of Limerick, Limerick Institute of Technology and Mary Immaculate College, in providing teaching and residential accommodation in the heart of the City Centre.

The cost of delivering the Spatial Plan in the city centre is estimated at €250 million over the life of the plan and is expected to be primarily funded by private sector investment.

### City Centre Transformational Projects

There are seven projects, which are defined as:

- **A 'world-class' waterfront – a renaissance of Limerick's entire Waterfront** – including restrictions on through-traffic and greater pedestrianisation along the Quays;
- **The 'Limerick Cultural Centre' – an iconic destination building on the Waterfront;**
- **'Great Streets' – a transformation of the City's three main streets – O'Connell Street, Catherine Street and Henry Street** – including greater prominence to pedestrians and cyclists, removal of the existing one-way arrangements in places, enhanced connectivity, a re-design of O'Connell Street to re-balance in favour of the pedestrian – possibly through creation of a shared space;
- **A new City Square/Plaza – to define the focal point or 'heart' of the City Centre;**
- **A City Centre higher education campus – the creation of a multi-versity combining facilities from LIT, UL and Mary Immaculate College in the heart of the City Centre;**



- **Renewal of the Georgian Quarter - a concentrated programme to restore the Georgian part of the city to its former glory,** and
- **Colbert Station renewal – a new public transport interchange and enhanced station environment** – comprehensive regeneration to create a significant transport interchange with greater onward linkage and connectivity.

#### **Infrastructure/Public Realm Investment**

The plan makes specific reference to the need to re-assess the existing and proposed traffic system for the City Centre. The plan refers to the Orbital Route and related plans, which may now require re-consideration in light of the completion of the Shannon Tunnel.

The plan notes that the City Centre transport strategy should seek to:

- Put pedestrians first through the City Centre – wider pavements, wider crossing points, etc.;
- Remove as much extraneous car traffic from the City Centre as possible;
- Improved management of on-street parking;
- Remove one-way traffic where possible, but especially on Henry Street and Lower Mallow Street;
- Reduce the impact of car traffic along the Quays;
- Enable the creation of a new City Square or Plaza in the vicinity of Arthur's Quay and Cruises Street;
- Manage the traffic flows on O'Connell Street and accommodating the new City Square;
- Adopt the 'Smarter Travel' principles that have been formulated for the City Centre;
- Accommodate a new/improved connection between the City Centre and the University of Limerick Campus for pedestrians, cyclists and public transport users;
- Reduce the dominance of over-sized road signs across the City;

- Adopt a coherent pedestrian signing and way-finding system for the City Centre; and
- Create the conditions where Limerick City gains a reputation as a safe and easy place for pedestrians to use and as a green transport City.
- The Spatial Analysis outlines some challenges faced by the City Centre due to its structure such as:
- The disengagement of the city centre from the Waterfront;
- Lack of permeability in areas such as Irish Town;
- A number of large vacant sites, such as the Opera Site and former Dunnes Stores site; and
- Need for stronger integration of City Centre – offering more seamless transition for pedestrians.

The Plan describes the City Centre as generally accessible but highlights deficiencies in the standard of 'welcome' at the City itself, i.e. gateway arrivals, lack of functionality of Colbert Station in terms of onward direction, and the distance of the station from the City Centre itself (and associated lack of clear connection route).

The Plan refers to a need to rationalise traffic routes and to 'put people before traffic', and notes how attempts to accommodate the car above all other modes have minimised ease of navigation in the City Centre, citing examples as the one-way system, overly large vehicle signage, etc.

The Plan also outlines the need for a holistic redressing of the balance in the city centre in favour of the pedestrian over the car, and the need for a balanced consideration of the needs of through traffic, local traffic, public transport provision, services and above all the pedestrian. **The big issue is stated as making the key City Centre streets more accommodating to the pedestrian.**

The Plan specifically refers to the need to reconsider the Orbital Route around the city centre, as the route has not yet been fully implemented, and the completion of the Shannon Tunnel provides an opportunity to do so. This is in the context of the fact that the one-way system would have been primarily indented to maximise the flow of cars, simultaneously reducing the quality of the environment for pedestrians by way of increasing vehicle speeds and reducing safety.

The existing movement strategy in place in the City Centre is also deemed to isolate the Waterfront area from the rest of the City Centre, reducing the appeal of this area to pedestrians.

From an **Accessibility/Connectivity** analysis of the area, the key challenges include the following:

- Traffic needs have taken precedence over pedestrian needs on orbital, one-way and through streets.
- Peak Hour Traffic Congestion.
- Big city approaches to streets with multiple one-way traffic lanes and bus stops and parking, to undermine the public realm.
- Pedestrian way-finding between districts and major destinations is challenged by shifts in the grid, limited pedestrian signage and the most heavily trafficked streets.
- Intersections of one-way streets are difficult to cross for pedestrians.
- Pedestrian access to the Waterfronts at the River and the Canal are challenged by through traffic routes.

An Action Plan is set out which seeks to establish urgent actions which will help to build initial momentum behind Limerick 2030. In particular, in the first five years a focus is required on making substantial progress on a number of the major transformational projects. This sets out a number of various actions deemed to be crucial next steps for building the required momentum.

Of these, the following are noteworthy:

- Commence the necessary studies and assessment to allow the revision of the transport strategy for the City building upon the smarter travel principles and seeking to ensure an integrated public transport, vehicular and cycling/pedestrian strategy
- A prerequisite is to give priority to pedestrians and cyclists in line with the proposals in Limerick 2030.

#### 2.8.1.1

##### Limerick 2030 – Key Points

Limerick 2030 is an ambitious 17-year plan for the Limerick Metropolitan District. There are a number of significant transformational projects contained within, and a revival of Limerick City as the core of the Metropolitan District is the clear priority.

**In order for the plan to become a realistic achievement over its lifetime, it will be necessary in the short-to-medium term to build early momentum behind the delivery of the plan. Clear priorities include the proposed re-development of the Opera and Arthur's Quay areas, and a new City Centre Transport Strategy.**

**Limerick 2030 is unequivocal in its support for the priority of the pedestrian and the cyclist in the City Centre, with traditional efforts to maximise traffic flow highlighted for their non-inclusive approach to movement within the City Centre.** In tandem, Limerick 2030 also advocates a process of control and management of vehicular access and routing within the City, in order to effect a re-balance of emphasis and priority towards the pedestrian.



## 2.8.2

### South Clare Local Area Plan 2012-2018

The Plan has relevance with regard to the outlying settlements which are located in the vicinity of the Limerick/Clare County boundary, namely Parteen, Ardnacrusha and Athlunkard, which all form part of the Parteen Village group.

The general objectives for the Parteen Villages are to consolidate the existing settlements rather than to facilitate any major expansion, to progress and advance the Limerick Northern Distributor Road as a matter of priority, and to introduce appropriate traffic management measures to safeguard the environmental and amenity values of these settlements.

## 2.8.3

### Castletroy LAP 2009-2015

The Castletroy LAP was adopted in July 2009 by Limerick County Council. The LAP itself aligns with a number of plans including the National Spatial Strategy, Mid-Western Regional Planning Guidelines, Limerick County Development Plan, Limerick Land-use and Transportation Study.

The plan has been prepared in the context of an envisaged population increase within the Castletroy area of approximately 2,300 persons by 2015, over the prevailing population of approximately 11,300 persons at that time.

The vision for Castletroy, as stated in the LAP, is as follows:

*“To facilitate and encourage the restoration, consolidation and improvement of the build and natural environment of Castletroy and to promote the creation of sustainable, high-quality living and working environments which provide attractive, vibrant and safe places which function effectively while ensuring that the residential, employment, educational and amenity needs of its current and future population are met.”*

There are five strategic objectives:

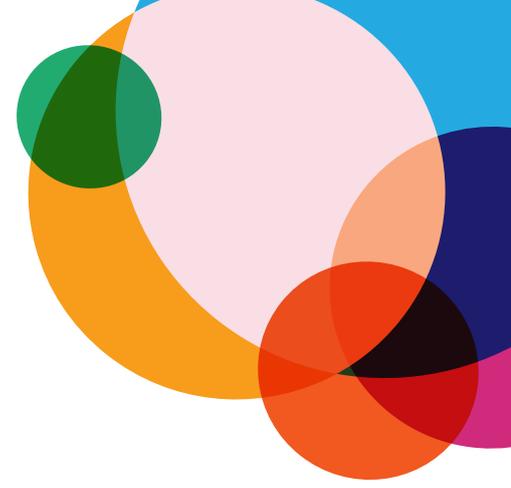
- An enhanced physical and natural environment.
- A consolidated and vibrant district centre.
- A strong local economy.
- A vibrant community with convenient local services and amenities.
- An accessible and legible district.

The ‘Accessible and Legible District’ objective sets out sub-objectives as follows:

- To reduce congestion and improve accessibility and pedestrian and motorist safety throughout the area by completing the distributor road through the area.
- To ensure that the local road network provides ease of access for residents between the various residential and employment areas.
- To protect and improve pedestrian and cyclist routes throughout the district which reduce conflict between the needs of pedestrians and motorists.
- To provide amenity walks within and through the district and linking the various natural and heritage features; and
- To ensure that both visitors and residents have access to varied means of transportation to and from Castletroy, with an emphasis on public transport.

#### Transport and Accessibility

The plan states that ‘a key theme of the County Council’s Transport and Infrastructure policy is the promotion of an integrated transport system throughout the County that is safe, efficient, competitive, accessible and socially and environmentally friendly with an increased emphasis on the use of alternative modes of transport including public transport, cycling and walking. This LAP adopts a similar policy where relevant to Castletroy and aims to explore ways for managing levels of traffic and reducing vehicle dominance in the area as an essential strategic objective.’



This section of the LAP contains a number of County Council policies, broken down into the various modes. Policy M1 is Movement and Accessibility, M3 is sustainable public transport, M4 relates to pedestrians and cyclists, and M5 relates to access and parking.

The plan is accompanied by a transportation-themed map, which outlines the existing bus and cycle provisions, as well as proposals for same, some minor indicative road proposals, and an indicative northern distributor road route.

The map also shows some indicative realignment proposals for one particular road in the LAP area.

In June 2014, having regard to the lack of development in the area, and the policies and objectives which have yet to be secured, Limerick City and County Council extended the lifetime of the Castletroy LAP for a further 5 years, to 2020.

#### 2.8.3.1

##### Castletroy LAP – Key Points

This LAP again emphasises the importance of sustainable modes of transport within the Castletroy area, with the value of pedestrian and cyclists facilities recognised. The themes of accessibility, connectivity, permeability are adopted, with an emphasis on walking, cycling and public transport in the area.

#### 2.8.4

##### Caherdavin LAP 2005-2011

The Caherdavin LAP applied from 2005-2011. In advance of the expiration of this LAP in 2011, the Caherdavin area was subsumed into the overall Limerick County Development Plan area in 2010.

The expired plan was developed having regard to the (then) Limerick County Development Plan, the Limerick PLUTS, the Mid-West Region Retail Strategy, City and County Retail Strategies and the Regional Planning Guidelines (RPG's). The LAP

also had regard to the National Spatial Strategy.

Table 1.1 lists the main themes emerging as part of initial workshops during the preparation of the plan in 2004, and in the Transport section, Cycle Paths/Safe Walkways and new junctions to access potential zoned land were the main themes identified.

The Specific Objectives identified on Page 16 are largely transport related, with some infrastructural accesses/road links proposed, and a specific objective about improving permeability in the area to ensure the safety of vehicular and pedestrian traffic, by 'fostering links between existing and proposed footpaths/cycleways'.

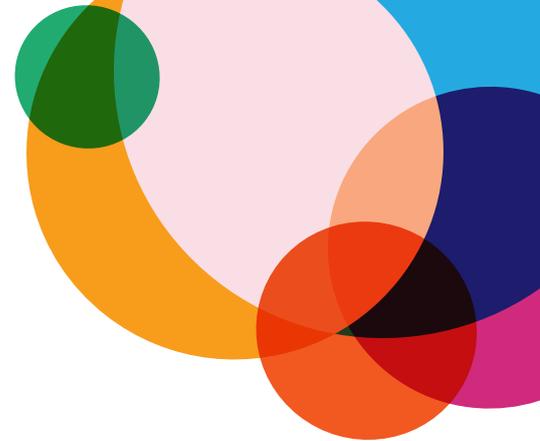
Chapter 8, Transport and Infrastructure, lists the Overall Strategic Aim as:

"To facilitate the future development of Caherdavin through the provision of a safe, sustainable transport system, which will integrate land use and all modes of transport to minimise environmental impact and reduce the need to travel, whilst at the same time facilitating ease of movement for the existing residents of Caherdavin."

#### 2.8.4.1

##### Caherdavin LAP – Key Points

Whilst the Caherdavin LAP expired in 2011, and the area itself was superseded into the Limerick County Development Plan, nevertheless an emphasis on features for non-motorised road users, such as cyclists and pedestrians was evident, as well as the importance of sustainable transport, connectivity and permeability.



## 2.8.5

### Limerick Regeneration 2009-2018

On foot of the recommendations which were developed in response a comprehensive examination of various issues relating to social exclusion, crime and disorder in the report prepared for Government by John Fitzgerald, in 2007 the Limerick Northside and Southside Regeneration Agencies were founded.

These agencies were tasked with implementing all relevant recommendations contained in the Fitzgerald Report. Both agencies were to design and implement a comprehensive and integrated programme for the areas of Moyross, Southill, Ballinacurra and St. Mary's Park. This then lead to the publication of the Limerick Regeneration Programme in 2008.

This Programme is built upon three pillars – Social, Economic and Physical Regeneration, all of which are distinct yet share a commonality within the overall context of the programme. Of these three, Social Regeneration is considered the key pillar, as it will yield the most benefit.

The Plan notes the importance of Physical Regeneration from a visual perspective, but equally the Plan determines Physical Regeneration to be 'more of a means than an end'.

Individual 'vision reports' have been developed for the north and south side regeneration areas. These include specific physical measures which are intended to form part of the overall regeneration programmes. It is stated that the facilities and amenities which form part of the physical regeneration are 'sustainable into the future'.

Whilst the majority of the physical measures entail works such as housing re-development, and facilities such as shops, offices, business parks, etc. a number of objectives are more strategic in nature. Moyross, for example has the objective of

a new town centre as part of its redevelopment.

This is intended to increase the movement of people into, through and out of the area.

In addition, the existing rail line which runs through Moyross is earmarked for use as a transport hub for the wider area. Southill and Ballinacurra are earmarked for realignment of the existing road layout which 'should assist in providing a number of new neighbourhoods that are interlined with plazas/squares and pedestrian ways as opposed to through routes'.

More detailed physical regeneration guidance documents are also available for Moyross, Southill/ Ballinacurra and St. Mary's Park. Whilst these are still a work in progress, they nevertheless provide a good barometer as to the extent of regeneration envisaged in the three areas. These plans are categorised in five broad sections – **Live, Link, Play, Learn, Work** and **Deliver**.

**Moyross** – It is noted that physical barriers are amongst the most critical issues facing the Moyross area. A lack of connectivity to the R445 Cratloe which traverses the south of the Moyross area is one such key obstacle, as is the severance associated with the existing Limerick/ Ennis Rail line which crosses the northern part of the estate. Increased connectivity is therefore deemed to be a crucial issue.

In addition, a network of safe and attractive cycle and pedestrian routes is proposed to connect services, amenities and dwellings. The upgraded Moyross estate will be designed 'to provide permeability across its boundaries'.

Linkage to the Limerick City Green Route project will reinforce the efficiency of the public transport system serving the area. A Bus Rapid Transit (BRT) system is also suggested along this corridor.

With regard to **Pedestrians and Cyclists**, the Physical Regeneration Plan for Moyross has been



designed ‘with a strong focus on the provision of a dense and attractive pedestrian and cycle network’. This is deemed to be one of the most important elements of the proposals, as it will enable:

- The necessary conditions to encourage high levels of pedestrian and cycle journeys to and from LIT and Limerick City; and
- The desired quality of the public realm that will ensure its attractiveness and therefore will contribute towards longer dwell times, hence minimising the impact of peak travel periods.

With regard to **Vehicular Access**, the Plan notes the poor standard of permeability in the area, and with that in mind, the regeneration site has been designed so as to improve integration with the surrounding road network and to ensure the best access to public transport networks.

The Plan also advocates the use of traffic calming measures to prioritise pedestrian movement where appropriate, and to mitigate vehicle-pedestrian conflict at key junctions.

**Southill/Ballinacurra Weston** – The Physical Regeneration plan for these areas again notes the poor standard of permeability; despite the prevalence of distributor roads serving these areas, their function as primary facilitators of through-traffic has in turn reduced the level of connectivity and the standard of access for local residents and businesses.

The key transport constraints identified for the Southill/Ballinacurra Weston areas include:

- The need for increased access from the Southern Ring Road to minimise further severance in the area and ensure the long-term viability of employment.
- Vehicle priority and poor pedestrian provision along the Roxboro Road, and the commensurate need to improve connections to the city centre, particularly for walking and cycling modes, which currently suffer from low patronage.

- The need to increase connectivity in the regeneration areas themselves to mitigate the severance effect of the rail line and achieve a greater degree of permeability.
- The need to increase the frequency and degree of penetration of the bus service which access the regeneration areas.

As with Moyross, the physical regeneration for Southill/Ballinacurra Weston again promotes the enhancement of Public Transport, Walking and Cycling facilities to increase connectivity, reduce traffic congestion and contribute to improved health.

At a more strategic level, it is also proposed to upgrade and improve a number of the major routes in order to facilitate public transport, walking and cycling.

**St. Mary’s Park** – The St. Mary’s site is unique in the sense that the area is bounded by the Shannon and Abbey rivers, with limited existing accessibility to the area at present. Thus there are significant existing issues associated with isolation to be overcome. The northern part of the King’s Island area in particular has no vehicular access to the remainder of the Limerick area. The main access road at the south, the R454, serves significant levels of Limerick-Clare traffic, increasing the connectivity problem.

Bridge connections are an aspirational target at the northern extent of King’s Island to greatly increase linkage to Limerick City and thus open up the St. Mary’s site to much-improved levels of connectivity and access. This, in turn, will allow for a more appropriate route hierarchy to be implemented within the St. Mary’s area.

The location of the St. Mary’s site within a short distance from Limerick City Centre itself means that the site is ideal to facilitate and prioritise walking and cycling.



The river frontages bounding King's Island can in turn then link on to other complementary proposals which link on to UL along the Canal. A comprehensive network of pedestrian and cycle routes are therefore envisaged within the St. Mary's area. In addition, a much greater standard of public transport is proposed through the area. It is worth noting that the major new bridge connections which are proposed as part of the regeneration are aspirational at this stage.

#### 2.8.5.1

##### Re-launch September 2013

Over the 5 years to 2013, a significant degree of works were undertaken primarily comprising the demolition of a large number of homes and the rehousing of families.

However, the economic crisis significantly impacted on the regeneration plan, with many hundreds of homes demolished, but not replaced. Financial constraints led to a genuine concern among the residents of these areas that the regeneration would ultimately not come to fruition. In July 2012 the Limerick Regeneration Agencies were transferred to Limerick City Council ahead of its merger with Limerick County Council.

However, in September 2013, the Minister of State for Housing and Planning launched the Draft Limerick Regeneration Framework Implementation Plan (LRFIP), which outlines the intentions for the regeneration areas over the next 10 years.

This document was launched for consultation purposes (the submissions process concluded on December 5th 2013). A final version of the LRFIP was adopted by Limerick City and County Council in early 2014.

This represents a revived, revised and updated regeneration strategy, which, while still cognisant of the previous regeneration strategies, is framed an alignment with current national and EU policy. Many of the issues and challenges

still remain – from a physical perspective, the issues of infrastructural barriers remains, and the need to increase and develop connectivity within regeneration areas also remains.

A key issue in the LRFIP is the promotion of sustainable movement. In the context of the recently-published Design Manual for Urban Roads and Streets, the regeneration areas can now be provided with an improved movement network which is guided by the following principles:

- Public Transport – improve the quality, frequency and accessibility
- Car Parking – reassess provision in the context of proximity to public transport and the City Centre
- Reduce poor connectivity – a major contributing factor to the underperformance of the regeneration areas – a range of interventions from major infrastructural works to the removal of segregating walls – the overemphasis on traffic flow on routes has led to increased severance

Revised physical regeneration plans have also been prepared for the individual areas, setting out clear and detailed physical measures intended to work within the overall regeneration process.

The LRFIP will cost €293m over the next ten years – by way of comparison, it is estimated that the initial plan would cost ~€1.6 billion. Notwithstanding the impact of the economic crisis on the initial regeneration plan, the revised LRFIP now benefits from a renewed funding commitment from Government.

It is envisaged that physical measures will be allocated the vast majority of funding, with some €253 m allocated. Such physical works will comprise new housing developments, in addition to refurbishment of existing housing stock, and road infrastructure. Among these is the Coonagh-Knockalisheen distributor road (the Limerick Northern Distributor Road), which is to be allocated €40m.

### 2.8.5.2

#### Limerick Regeneration – Key Points

Throughout the initial Limerick Regeneration Plan, and in the revised Limerick Regeneration Framework Implementation Plan, there are strong, common themes which have remained prominent. **Chief among these is the sense of isolation and severance present in these communities, and a lack of connectivity and permeability.**

Whilst the Plan is founded upon three key pillars, Social, Economic and Physical Regeneration, **it is Physical Regeneration which will see the most significant funding over the next ten years. There are major challenges to be overcome in terms of reviving these areas, with housing and transport in particular requiring significant upgrade.**

From a transport perspective, the 2013 LRFIP places a renewed emphasis on walking, cycling and public transport.

Whilst the revised physical regeneration plans for these areas do show indicative movement and connectivity aspirations, it must be noted that the graphical representations illustrate the proposals from a design principles perspective, which is very much at a strategic level. Exact details such as the layout and appearance of upgraded junctions, traffic calming, cycle facilities, etc. are not presented, as they will require more detailed investigation and design going forward.

### 2.8.6

#### Limerick Smarter Travel Plan

In light of the conclusions and recommendations contained in Smarter Travel, a nationwide funding competition was launched. In February 2012, Limerick City and County Councils, Waterford County Council and Mayo County Council were selected as the winning submissions. A total of €21.7 m in funding was allocated to these authorities over a 5-year period to transform the

areas of Limerick City and Environs, Dungarvan and Westport, with Limerick receiving ~€9 m in funding.

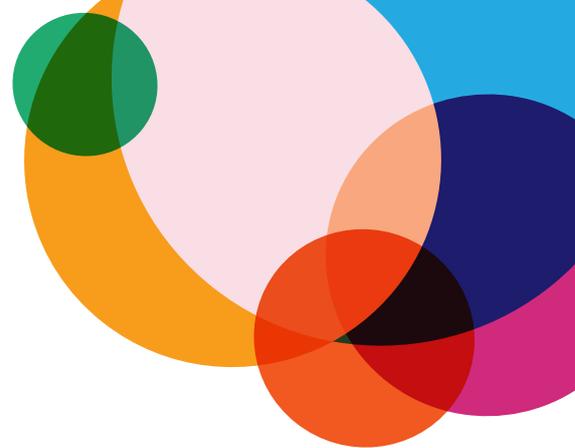
The Limerick Smarter Travel (LST) bid was ranked 1st of all the submissions received by the Department of Transport. It is envisaged that Limerick City and Environs, Dungarvan and Westport will become true Smarter Travel Demonstration Areas, proving that the Smarter Travel approach is a feasible option for local authorities.

The LST bid was prepared in a joint initiative between Limerick City Council, Limerick County Council, and the University of Limerick (UL). The funding received will be used to implement interventions and measures which are targeted at encouraging people to use more sustainable modes of transport, and to fundamentally change the way people think about how they travel.

The LST Plan is focused on four major 'hubs' identified in the City and Environs region. These are:

- Limerick City Centre – the main retail and tourist focus;
- Corbally – a major residential suburb of Limerick City;
- Southill – one of the regeneration areas; and
- Castletroy and UL/National Technology Park – a mix of residential, educational and employment sub-hubs.

It is proposed to foster and improve permeability and connectivity between these four key hubs. This objective is also supported by the implementation of an educational programme in schools, workplaces and communities in the Limerick Region, in order to also encourage a revised behavioural approach to the concept of transport.



Sustainability is the key – interventions and measures must be long-lasting. **The LST Plan sets ambitious targets for modal share within the study area, and at the key hubs including a 14% mode share for cycling, and a reduction in car usage in the Castletroy area from 55% to 38% for example.**

The overall key goals to be achieved by 2017 are:

- Increase cycling modal share by a factor of approximately 5;
- To decrease car mode share from 51% to 37%;
- To increase walking mode share from 31% to 35%;
- To increase public transport mode share from 9% to 12%;
- City Centre – to increase cycle mode share by a factor of 5 and to increase safety;
- Corbally – to reduce car mode share from 44% to 28%;
- Southill – to achieve a 74% mode share for sustainable modes;
- Castletroy and UL – to reduce car driver modal share from 41% to 23%; and
- National Technology Park – to increase walking modal share from 14% to 30%, and cycling from 1% to 11%.

**The 4 hubs have then in turn been complemented by the development of five routes comprising an integrated network of cycle lanes and pedestrian links intended to achieve greater connectivity to the city centre, as follows:**

- Route 1 – Corbally to Limerick City Centre;
- Route 2 – UL to City Centre along the River Shannon and Canal;
- Route 3 – UL, Castletroy and National Technology Park to City Centre;
- Route 4 – Southill, Ballysimon, Monaleen and Castletroy to City Centre; and

- Route 5 – Southill and Roxboro Shopping Centre to City Centre.

**The five routes are further enhanced by 10 links proposed between the routes which will in turn further enhance the degree of accessibility and permeability between the routes. The flagship route will be Route 2, as this route benefits from river and canal frontage along its length.**

Along the individual routes, localised works are proposed throughout including measures such as enhanced crossings, traffic calming, cycle parking, etc.

The Limerick Smarter Travel has a broad market, applicable to employment, tourism, educational, social and leisure uses.

In tandem with the physical proposals contained within each route, **a comprehensive information and marketing strategy has been developed to instigate behavioural change.** These include travel planning initiatives for residents, schools, colleges and workplaces, the development of car sharing clubs, local community initiatives and a comprehensive branding and marketing strategy to further raise the profile of the LST Plan.

#### 2.8.6.1

##### Limerick Smarter Travel – Key Points

The Limerick Smarter Travel Plan is a comprehensive suite of proposals which are designed with the **goal of creating tangible and fundamental change in the Limerick Metropolitan District.** Each of the four key hubs identified represent a diverse range of demographical areas, with all routes linking to the City Centre.

The plan has at its heart a clear and determined focus on sustainable transport, by implementing high-quality facilities for pedestrians and cyclists throughout the study areas. The physical interventions proposed are also complemented by high-quality marketing, branding and awareness



programme, and the provision of a significant tranche of information for development of workplace travel plans, school travel plans, etc.

**The proposals contained in the LST plan will be highly legible, and will provide a solid platform on which behavioural change can then occur.**

### 2.8.7

#### Limerick City Noise Action Plan

Limerick City Council commissioned a Noise Action Plan for the Limerick City area in January 2009. This plan was developed to ultimately identify measures to help avoid, prevent or reduce the exposure to environmental noise, which includes road traffic and transportation noise.

A number of the major national and non-national routes in Limerick City, which carried more than 6 million vehicle passages per year, were mapped in the context of their calculated noise levels, for both average night-time and average day-time noise levels. The following roads in Limerick were mapped:

- N18;
- R857 Ennis Road;
- Island Road;
- Old Dublin Road;
- R463 Corbally Road; and
- R509 Childers Road.

The residential areas adjacent to these routes are therefore sensitive to environmental noise, and the resulting areas for action were priorities in terms of highest population density and highest noise exposure.

The Noise Action Plan provides Limerick City with a foundation on which to develop and implement noise-reduction measures in the various critical zones going forward.

However, it must be noted that the completion of the Limerick South Ring Road since the preparation of the Noise Action Plan will likely have had a resultant impact on traffic flows, and thus a commensurate impact on the ranking and prioritisation of the sensitive areas.

It is therefore envisaged, in accordance with the European Noise Directive Regulations, that Limerick City Council shall undertake a review and revision after a 5-year period of the City in order to re-evaluate the prevailing noise levels and to further develop mitigation measures for implementation. As of 2013, the threshold for investigation on roads has been lowered to 3 million vehicle passages per year, and agglomerations with a population of over 100,000.

The Noise Action Plan therefore recommended that a review be undertaken following completion of the Southern Ring Road in order to identify any significant changes in the City.

In addition, regulations dictate that a revised plan is to be undertaken every 5 years on a rolling basis in order to re-appraise and update the plan and instigate mitigation measures where necessary.

### 2.8.8

#### Limerick City Cycle Network Strategy

The Limerick City Cycle Network Strategy was launched in May 2004. The strategy sets out an envisaged network of cycle routes for Limerick City and its Environs. The strategy was formulated with a key focus on linking workplaces and educational centres with residential areas.

The strategy was prepared in the context of the National Development Plan (2000-2006), the Limerick City Development Plan (1998), the Limerick Traffic Management Study (2000), the Limerick City Corporate Plan (2001-2004), the Transportation and Infrastructure Division of Limerick City Council's Operational Plan (2003), and in cognisance of the prevailing traffic congestion in Limerick City at the time.



Prior to the development of the Strategy, Limerick City Council had developed a number of cycle lanes as part of new road developments in the City, at three locations – the Childers Road/ Carew Park access road, the Corbally Link Road (Phase 1), and the N7 realignment from Groody Bridge to Plassey Park Roundabout. These were incorporated into the Cycle Network Strategy.

In 1999, surveys were undertaken to ascertain the prevailing levels of bicycle usage in Limerick City. In addition, the completion of the Southern Ring Road was also expected to have a beneficial effect on City Centre traffic flows. Thus, Limerick City Council sought to develop cycle facilities to help encourage growth in cyclist numbers.

In accordance with the DTO National Manual for Urban Areas (1998) Limerick City Council then developed its proposals for the various routes. The routes developed were as follows:

- Caherdavin to University of Limerick;
- Childers Road;
- Dock Road;
- Hyde Road;
- Ballysimon Road/Kilmallock Road;
- Garryowen;
- Raheen to City Centre;
- North Circular Road;
- O'Callaghan's Strand/Clancy Strand; and
- Corbally Link Road.

The routes are primarily radial or orbital, and link residential areas, industrial estates, schools and third level colleges with the city centre. It must be noted that the proposals developed as part of this strategy were indicative only.

These routes were to subsequently progress to preliminary design stage, at which point particular constraints and issues along the routes would be further investigated and taken into account.

At present, only a small number of dedicated cycle tracks or cycle ways have been constructed in Limerick City.

These include facilities along the Condell Road, along the Canal Bank, and on the Ennis Road. There are extensive proposals contained in the Limerick Smarter Travel Plan, which will supersede a number of the routes proposed as part of the Limerick City Cycle Strategy.

### 2.8.9

#### Draft Limerick City Delivery Strategy

The concept behind the draft Delivery Strategy for Limerick City Centre is that all deliveries within the city commercial district be made before 11:00 or after 18:00.

The draft Strategy defines the city commercial district as 'within the area bounded by Bishop Quay, Harvey's Quay, Howley's Quay, Honan's Quay, Charlotte Quay, Lock Quay, Lelia Street, Cathedral Place, Newtown Mahon, Sexton Street, Roches Street, O'Connell Street and Mallow Street'.

According to the strategy, this area houses over 13,000 employees, and 500 of the 700 shops in the city. Most of the city centre businesses were keen to have the strategy implemented. However, while this is an advantageous strategy for larger businesses, some of the smaller businesses may incur some costs as a result.

By completing deliveries prior to 11:00, loading bays within the city commercial district can be used for alternative means, such as taxi ranks or on-street parking. Thus, a form of 'dual usage' of the parking capacity ensues. There are obvious exceptions to this strategy, which would arise

where premises make deliveries throughout the day, or where specific deliveries after 11:00 are unavoidable. The draft strategy advocates a process of consultation prior to finalising any relevant bye-laws in order to identify specific issues and make accommodation where possible.

A final version of the Strategy has not been developed or published to date.

### 2.8.10

#### NTA Public Bike Sharing Scheme

Following the overwhelming success of the Dublin Bicycle Share Scheme, which launched in September 2009, the National Transport Authority (NTA) announced plans in 2013 to develop similar schemes for Cork, Limerick and Galway Cities.

The scheme allows participants to avail of the use of a bike at any of the docking stations located around Dublin City to make trips. The first 30 minutes of usage is free of charge on every bicycle. After the 30-minute period expires, a service charge applies. However, users can avail of an annual subscription for €20 or a 3-Day pass for €5, which will cover all usage costs.

The scheme in Limerick was formally launched in December 2014. 23 docking stations are proposed in Limerick housing 400 individual bike docks. At present, 21 are completed and operational. A further docking station is proposed for Colbert Station as part of its redevelopment program, due to commence in 2015.

Upon completion of all 23 sites, 215 bicycles will be deployed in the city at these locations and will be redistributed throughout the city during the day to cater for demand by ensuring that there are both sufficient vacant Docks to dock bicycles and sufficient bicycles at each docking station. There are currently over 2,000 registered users of the scheme in Limerick, with over 15,000 trips undertaken from January to June 2015.

### 2.8.11

#### Limerick Northern Distributor Route

Historically, the Limerick Northern Distributor Road (LNDR) was initially identified in 'The Limerick Planning, Land Use and Transportation Study (PLUTS)' for Greater Limerick. This document was then superseded by the Mid-West Regional Planning Guidelines (MWRPG's – 2010-2022).

The LNDR was identified in the MWRPG's as an infrastructural objective, and the need for same has been adopted in the County Development Plans published in the region since. The LNDR is intended to improve access to Limerick City from County Clare, and to relieve pressure on the existing river crossings in the city centre. The road will also improve connectivity between different areas along the northern fringe of the city, reducing traffic flows in the city and facilitating Public Transport initiatives, including bus corridors.

The need for the scheme was further highlighted in the Fitzgerald Report 'Addressing issues of Social Exclusion in Moyross and other disadvantaged areas of Limerick City'. This report noted that the infrastructure around Moyross estate is 'extremely weak, with poor transport links to the rest of the city'. The report states that previous experience has shown that 'a key element in developing economic activity, and ending the isolation of deprived areas, is through putting in place a sound roads and transport infrastructure'.

Phase 1 of the LNDR will run from Coonagh to Knockalisheen, and is presently under construction. Phase 2 has been progressed to route selection stage, and the preferred route has been identified as running from Knockalisheen Roundabout, north via Parteen, and re-connecting to the R445 and R506 Dublin Road Roundabout/Cappamore Road junction.

## 2.9 Local Studies/Reports

At present, the delivery of the complete LNDR is indefinitely delayed due to funding issues, and the delivery of this scheme in the short-to-medium term is therefore unlikely. Apart from Phase 1, currently under construction, the phasing of the remainder of the route could be structured in such a manner so as to deliver interim benefits to the wider area. Despite these delays, the route remains a critical element of the infrastructural requirements of the Limerick Metropolitan District going forward.

### 2.8.12

#### Coonagh Recreational Framework Plan

In 2009 Limerick City Council commissioned a study to examine the feasibility of the use of lands at Coonagh for informal tourism-related facilities. The lands are located in close proximity to Limerick City Centre, have extensive River Shannon frontage and include large areas of low-lying land.

The Coonagh Recreational Framework Plan (RFP) outlined the particular potential of a series of looped walks which appeared applicable to the Coonagh lands. These facilities would be complementary to tourism and amenity initiatives, as well as providing significant benefit for residents.

The report examined the lands in terms of their proximity to Limerick City, their planning context, local ecology and also presented a development strategy and a recommended planning and management framework.

Three distinct, yet linked walking loops were proposed, ranging in length from 3.5km to 9.5km. Preliminary appraisals were also undertaken for each of the loops, with associated costings developed – implementation of all three loops was estimated to cost approximately €7m.

### 2.9.1

#### Limerick City Southside Park and Ride Facility Feasibility Study

In 2008, Limerick County Council commissioned a Feasibility Study for a potential Park and Ride facility, intended to intercept traffic entering Limerick City from the south and west. The Park and Ride would be located in the southern environs of Limerick City, and would be served by the then-proposed Dooradoyle to City Centre Green Route.

The feasibility study examined a wide range of factors deemed likely to influence the viability of the proposed Park and Ride scheme, including the likely levels of patronage, scale and optimum location, required frequency and costs and ultimate forecasted revenue from the scheme.

Extensive background research was undertaken on the operation of a successful facility, including examination of the Black Ash Park and Ride in Cork City, a number of sites in the UK, and a review of Irish and UK best practice documentation regarding the provision of Park and Ride facilities.

A background review of traffic conditions was undertaken at a number of key junctions in the vicinity of the proposed catchment area for the Park and Ride facility, in order to allow for an estimate on patronage to be determined. A 6% intercept rate was applied to traffic volumes. A total of 422 vehicles were therefore deemed likely to avail of the facilities if provided.

AA sub-review of four potential sites was also undertaken in order to identify the optimum location for the proposed facility. All four sites were located adjacent to the N20-R526 Link Road, and would be accessed via the Dell Roundabout. All four sites would in turn access Limerick City Centre via the R526. All four sites were broadly similar in terms of their proximity to the City Centre and to nearby proposed green route corridors.

The key factors were therefore the level of access attainable from the road network, and the suitability of the sites in terms of implementing the facility successfully. A site located to the south of the Dell Roundabout and close to the existing railway line and was selected as the preferred site location. The feasibility study assumed a Total Capital Cost Estimate of €7.75m for the development of the facility. Operational costs were estimated to be approximately €700,000 per annum. Annual Revenue costs were estimated at approximately €600,000, which indicated that a subsidy of approximately €100,000 per annum would likely be required in order to make the scheme viable.

A 500-space Park & Ride facility was therefore deemed suitable, with a daily rate of €6 per car.

It is noted that the further development/ construction of this facility has not progressed since the completion of this study in late 2008. However, recent efforts to re-open the Foynes-Limerick rail line, which was deemed a key factor in the site selection process undertaken as part of the above study, may result in the viability of the scheme becoming enhanced going forward.

### 2.9.2

#### Limerick City Centre Remodelling and Pedestrianisation

Limerick City Council published the Limerick City Centre Remodelling of Streets and Public Open Spaces programme in 2008. The objective of this was to make the City Centre a pedestrian-friendly environment and improve the centre for shopping, working, visiting and leisure.

The €50m regeneration plan included pedestrianisation of parts of Limerick City Centre, and the development of a new Orbital Route, with a view to giving pedestrians priority in the centre, as well as improvements to the urban realm. The plan included:

- Full pedestrianisation of O'Connell Street between William Street and Roches Street;
- Widening of footpaths and improved landscaping of the remainder of O'Connell Street; and
- Pedestrian priority treatment for all of William Street, with footpath widening and improved landscaping.

The remodelling of Limerick City Centre has been in process since 2001, with the development of the public square at Baker Place, streetscape improvement works at Lower Bedford Row, and a substantial upgrade of Upper Bedford Row (between Henry Street and O'Connell Street).

Substantial works have been carried out on Thomas Street, Little Catherine Street, Augustinian Land, Foxes Bow and Catherine Street (Block 1). Additional riverside public realm improvements have also been carried out on O'Callaghan Strand and Clancy Strand.

The most recent works undertaken as part of the programme comprised works at John's Square in 2012, and the William Street/Sarsfield Street project, completed in 2012.

In addition, the (then) proposed Orbital Route would also allow for wider footpaths and boardwalks, etc. to be constructed along the riverside between Bishops Quay and Arthurs Quay.



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### 2.9.3

#### Limerick City Traffic Management Study – 2000

The 1997 Limerick Corporation Strategic Management Plan identified seven objectives were established which sought to improve Limerick City as a whole.

One of these objectives was associated with traffic and transport issues, and committed Limerick Corporation to continue to maintain and improve the road network within the city, promote and encourage an integrated public transport system and other environmentally friendly transport systems.

In order to achieve this particular objective, seven strategies were set out, including a commitment to 'initiate a traffic management study to enable the corporation in consultation with statutory and interested bodies to deal in the short term with the increasing traffic congestion'. As a result, Limerick Corporation commissioned a Traffic Management Study with the objective of providing short-term recommendations in order to deal with the increasing traffic congestion in the city at the time. The short-term represented a three-year timeframe.

In line with the population growth and the increase in car ownership in the years leading to 2000, and taking into account the economic and population growth expected in the region in the following years, it was apparent that travel demand in Limerick would therefore continue to grow rapidly.

The National Roads Needs Study (1998) also noted that providing additional road capacity to accommodate traffic growth was undesirable. Therefore, sustainable transport solutions, which advocated the careful and efficient management of the urban traffic network, were seen as the optimum way to proceed. This would entail issues such as travel demand management and the promotion of public transport, cycling and walking in preference to the private car.

The Key Principles of the Traffic Management Plan (TMP) were as follows:

- To maintain or improve the capacity of Limerick's strategic road network;
- To ensure that the limited road space within the city is available to all users;
- The crucial need to ensure the promotion of sustainable transport modes, in particular public transport, but also walking and cycling;
- The importance of maintaining access to the City Centre for shoppers, tourists, etc. to maintain the economic viability of the centre; and
- To improve the quality and safety of the road space environment, through minimising the severance caused by traffic in the city centre, and to reduce the negative environmental impacts of traffic such as air and noise quality.

A wide-range of measures was developed for implementation over the three-year period in question, which included the following works:

- Junction Improvements;
- Road Improvements;
- Implementation of Urban Traffic Control (UTC);
- Parking Controls;
- Commercial Vehicle Facilities;
- Public Transport;
- Cycle routes, cycle network and cycle parking;
- Pedestrian crossings;
- Pedestrianised streets;
- Facilities for disabled/mobility impaired; and
- Mobility Management.

#### 2.9.4

##### Limerick Orbital Route Study 2008

In 2006 Limerick City Council commissioned a study to examine and make recommendations for **an inner**

##### **orbital route within the city which would facilitate the pedestrianisation of O'Connell Street and Thomas Street.**

As part of the Limerick City Development Plan (2004-2010) and the 'Remodelling of Streets and Public Open Spaces' programme, one of the key phases of the improvement works in the City Centre would entail the improvement of the pedestrian environment along O'Connell Street between William Street and Roches Street.

A series of Options were developed, and analysed using S-Paramics microsimulation software. Following this, Limerick City Council recommended that the closure of O'Connell Street between William Street and Roches Street be pursued as the preferred Option. The traffic analysis indicated that a series of supplementary measures would be required in order to enable the Orbital Route, and to improve vehicle and pedestrian safety, including such works as enhanced pedestrian crossings, banning of certain movements, additional traffic signal works, etc.

In order to implement the Orbital Route, a Phased Implementation Programme was developed, with a total cost of ~€7.2m, as follows:

- Phase 1 – Initial Infrastructure Works;
- Phase 2 – Upper William Street/Sexton Street;
- Phase 3 – Henry Street;
- Phase 4 – Parnell Street and Mallow Street;
- Phase 5 – Charlotte Quay and Mungret Street;
- Phase 6 – St. Lelia Street and Cathedral Place; and
- Phase 7 – VMS and SCOOT works.

To date, the full implementation of the Orbital Route has not been achieved, as the required background infrastructural works required to enable the Route have not been completed. O'Connell Street remains open to vehicular traffic along its entirety.

## 2.10 Conclusion

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It is evident from reviewing the numerous local plans, studies and guidelines applicable to the Limerick Metropolitan District that there are a number of common issues which require consideration within the context of the overall Movement Framework Study. These include:

- The lack of **permeability and connectivity** throughout the area;
- The need for a high standard of **accessibility to key assets** in the region;
- **Severance** present in certain locations, particularly the regeneration sites;
- **The impact of transport** on the City Centre experience;
- The need to refocus the **City Centre as the core** of the Mid-West Region;
- The need to **integrate land-use and transport**;
- The need to manage **traffic congestion**;
- The importance of **sustainable transport**;
- The **efficiency** of the transport network;
- The **safety** of all road users;
- The need for an **inclusive, balanced transport system**; and
- The need to safeguard the Limerick Metropolitan District as the **key economic driver of the region**.

The numerous plans have placed a clear emphasis on the promotion of sustainable modes of transport, including public transport, walking and cycling, recognising the benefit of achieving a tangible shift to these modes. Especially in the current economic climate, road space and capacity is limited, and must be managed carefully and efficiently in order to maximise the return.

At a regional level, the plans and guidelines reviewed are equally supportive of repositioning Limerick City Centre at the heart of the Mid-West region, but also place an emphasis on the need to facilitate access in a rural context, as well as the need to ensure that major strategic infrastructural works proceed, such as the linkage of the National Gateways via the Atlantic Corridor. Facilitating the growth of the Limerick Metropolitan District in a sustainable manner will therefore act as a key driver of growth across the Mid-West as a whole.

In addition, the regional plans and guidelines are equally cognisant of the fundamental need to develop an integrated, sustainable transport system in the Mid-West region, with the initial focus clearly on Limerick City, in order to achieve the optimum initial benefit and to build momentum behind a genuine shift to sustainable transport.

At a national level, there are clear and comprehensive policies in place which set out a path to achieve a real change in Ireland for the better. Current traffic trends and patterns are unsustainable, and a new approach is required. With that in mind, there are numerous guidelines in place which will facilitate the transformation of the transportation network throughout Ireland, with a clear emphasis on sustainable transport. Urban centres are now provided with guidance that will aid local authorities to plan and implement schemes that re-balance the travel modes in clear favour of pedestrians, cyclists and public transport. There are ambitious targets set out in National Policy to ensure a substantial shift of towards these modes.

## 2.11 The Limerick Metropolitan District Transportation Vision

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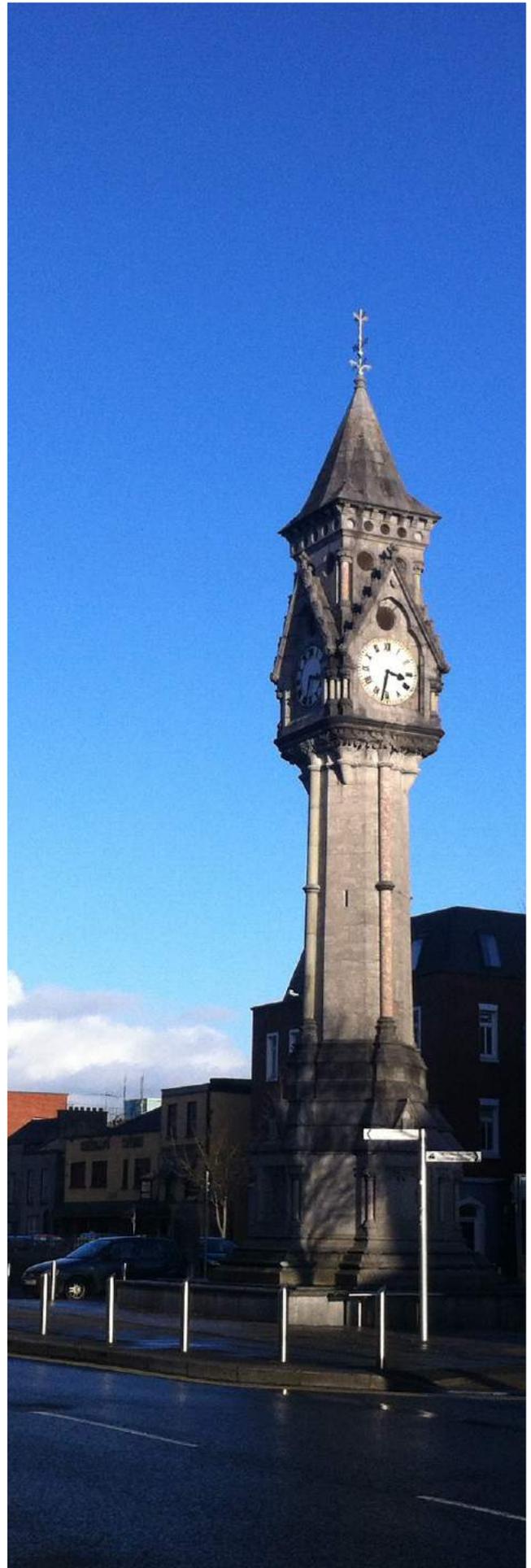
**Limerick must meet the challenge of becoming a beacon city in Ireland by achieving real behavioural change in terms of perception and use of sustainable transport.** Major works are planned in the coming years within the Metropolitan District. Limerick will then become a catalyst for a wider shift across the region.

Limerick City Centre must be at the forefront of the future development of the Limerick Metropolitan District, and the Mid-West as a whole. Substantial changes to the existing transport network are recommended, which will place the pedestrian at the most advantageous position within the City Centre.

**The long-term transportation ‘vision’ for Limerick must therefore be one of cultural change.** The Metropolitan District must instigate a fundamental shift towards sustainable transport, in a manner that will still allow Limerick City Centre to re-focus itself as the prime location in the Mid-West Region. The vision can be set out as follows:

‘The Limerick Metropolitan District, with Limerick City Centre at its’ core, will represent an exemplar of an accessible, inclusive, safe and sustainable place to live, work, shop and study. Walking, cycling and public transport will be the focus of a revised hierarchy of transport, improving the permeability within the Metropolitan District and reasserting the City Centre and suburbs as a welcoming, open and receptive destination for residents and visitors alike’.

There is no doubt that these targets and the vision stated above represent an ambitious, aspirational program for change within the Limerick Metropolitan District and the wider area as a whole. **However, the recent increase in popularity of cycling throughout Ireland, and the strong walking culture already present in Limerick must be used as a springboard to begin the process of achieving real change for the better.**







# Consultation

Limerick Metropolitan District Movement Framework Study

### 3.1 Introduction

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As part of Stage 1 of the Limerick Metropolitan District Movement Framework Study (MFS), it was necessary to liaise with key stakeholders within the LMD, and to garner their views and input with regard to the transportation network, in order to ensure that these key user needs were identified and included within the overall MFS.

This chapter therefore sets out the consultation process undertaken by Arup, and summarises the key issues raised by stakeholders, which informed and guided the development of the MFS.

### 3.2 Consultation Meetings

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Key stakeholders were identified at the outset of the MFS. Given the diverse nature of the various organisational profiles across the study area, it was therefore prudent to ensure that any consultation process was as inclusive as possible. The following key stakeholders were included within the consultation process:

- Limerick City Council
- Limerick County Council
- National Transport Authority
- Limerick Smarter Travel
- University College Limerick
- Limerick Institute of Technology
- Mary Immaculate College
- University Hospital Limerick
- Bus Éireann
- Eurobus Limerick
- An Garda Síochána
- Limerick Chamber
- Limerick City Business Association





Limerick City and County Councils, the National Transport Authority and Limerick Smarter Travel assume the role of either Client or key partner in the overall MFS, and therefore feedback from these organisations has been obtained on an ongoing basis. The consultation therefore focussed on the feedback obtained from other organisations.

Arup arranged a series of meetings with the remaining key stakeholders in January 2014, at which the Movement Framework Study proposal was outlined, and feedback was solicited from the specific organisations regarding particular transport and accessibility issues.

### 3.2.1

#### Limerick Institute of Technology

Arup met with Ultan Gogarty of the Estates Department of Limerick Institute of Technology (LIT) on Tuesday January 14th 2014, in the Estates office of the LIT campus in Moylish. The following relevant information was noted:

- LIT is a 'multi-campus' facility, with Moylish as its main campus located off the Cratloe Road to the northwest of the city centre. Additionally the School of Art and Design is located on Clare Street, a Multimedia studies facility on George's Quay, in addition to remote units in Thurles and Clonmel.
- Moylish is the primary facility, with approximately 3,500 students, and 650 staff. The School of Art and Design accommodates about 800 students and in the region of 100 staff, while George's Quay holds approximately 200 students and circa 15 staff.
- The Moylish Campus has approximately 750 parking spaces (staff and students), with circa 300 free, barrier-controlled staff spaces and in the region of 450 pay & display student parking spaces.
- Parking charges are 50c per hour, or €3 per day. A new cashless system has been implemented on campus whereby payment can be made by text for a reduced rate of €2 per day, or €8 per week/€32 per month.

- **A clamping system has been in force, but this is being phased out in favour of a ticketing system, with reduced penalties for paying fines promptly.** Clamping charges have been reduced from an initial fee of €80 to a current fee of €40, with the ticketing system offering a further reduction to €20 if penalties are paid in a 2-week timeframe.
- **Typically the car parks are fully occupied**, with some overspill noted into the surrounding residential areas, despite the local parking restrictions (mainly 2-hour parking limit).
- In the past 3 years, **approximately 80 bicycle parking spaces have been provided around the Moylish campus, with the primary location provided within a secure, enclosed parking shed. There are showers and lockers provided for staff.** Approximately 100 staff availed of the cycle-to-work scheme, although the numbers cycling to the campus do not appear to correspond. **Cycle parking facilities are generally seen to be full.**
- There is an internal campus speed limit of 15 kph, with internal traffic calming – the campus does not have a through route and as such there is no rat-running at present.
- Delivery vehicles are allowed to access all parts of the campus, with no restriction on delivery times or vehicle sizes permitted in to the campus.
- The Campus at Moylish is served by the No. 302 bus route, with a new bus shelter located just outside the campus.

The following areas of concern were communicated to Arup by the LIT Estates Department:

- **Resolution of the parking overspill by the roll-out of residential parking permits is seen as problematic, as residents would therefore be required to apply and pay for these permits – it was noted that this problem has eased in recent times.**
- **It has been approximately seven years since the last expansion of the campus car parking – it is still felt that LIT is lacking in adequate parking provision.**



- LIT is currently developing a Mobility Management Plan with the assistance of the Limerick Smarter Travel team.
- The campus has two main vehicle access points, both on the Old Cratloe Road, and within approximately 120 m of each other. Both of these access/egress points can experience traffic problems at peak times, particularly the exit onto the main roundabout.
- **Future plans for the campus are not likely to involve car parking increases, but will instead focus on reducing demand for car-based travel and reducing the incentive to park.**
- **Despite the presence of a bus route serving the campus, it is felt that there are limitations on what this service can offer, even if the frequencies were to be increased.**
- **It is felt that the campus is not well served in terms of cycle connectivity from the city.**
- **It is also acknowledged that the level of walking permeability through the campus is poor** – for example from the Moyross side it is not possible to access the campus. Pedestrian connectivity with Moyross may be discussed in the context of the Limerick Regeneration project.
- It is not currently possible to expand the level of parking provision, despite the need to do so.
- The campus will actively seek to encourage walking and cycling.
- In terms of future growth, LIT are undertaking a masterplanning process at present, and will seek to expand and develop the campus through engagement and collaboration with the local authorities and Limerick Regeneration, in a partnership-type approach.
- Of significant interest to LIT is the potential for implementation of off-campus parking. It was pointed out that **LIT may be looking to purchase land at Coonagh Cross, and that there is a resultant potential for Park and Ride to be considered at this location, offering an alternative to the student and staff population living in Clare.** There is also substantial student accommodation between the Moylish Campus and Coonagh.
- As an alternative, LIT have suggested that **use of parking spaces at the nearby Jetland Shopping Centre could be considered for a Park and Ride facility** – there may be a benefit to all parties using such a system, as a reduction of parking spaces could be considered at the LIT campus, whilst also providing increased footfall at the Jetland Shopping Centre, and additional patronage for the bus operator.

### 3.2.2

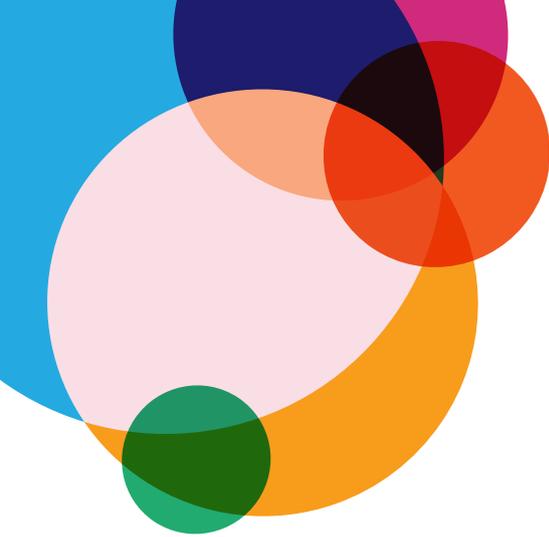
#### Limerick Chamber

Arup met with Orlaith Borthwick and Gary Rowan from the Limerick Chamber on Tuesday January 14th 2014, in their Limerick City offices.

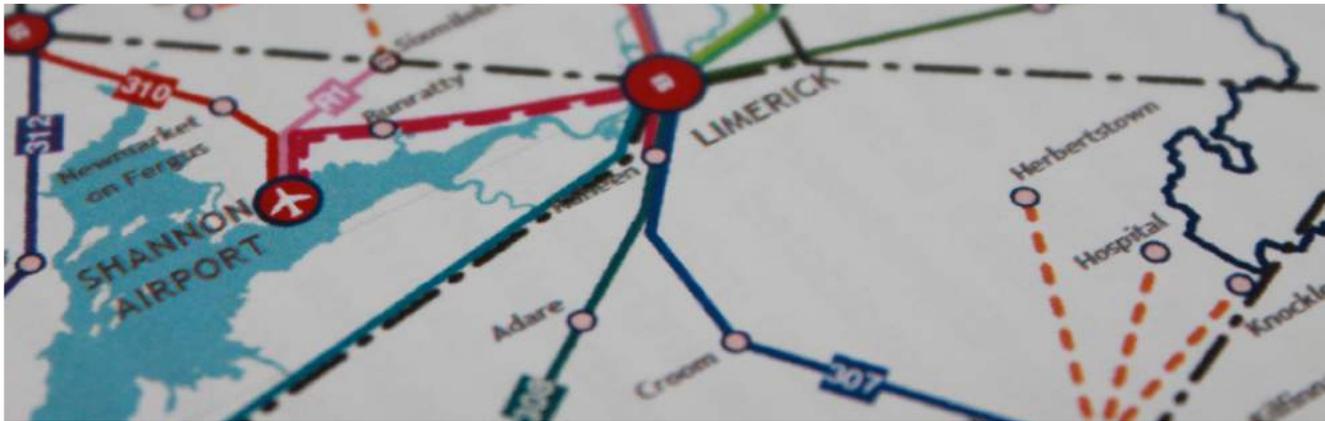
Limerick Chamber represents approximately 500 businesses in the Limerick and wider region, with some organisations in rural locations, extending into Clare and north Kerry. The membership base is therefore a regional one, as opposed to a purely city centre focussed one.

The following points were noted:

- The Chamber has 5 key principles – these are Connectivity and Access, Competitiveness, Economic Development of Limerick to act as a driver for the region, Enterprise and Research, and Retail. The Chamber supports the concept of enhanced connectivity between employment areas and the city centre.



- From a business perspective, the MFS must be clear in outlining its place in the hierarchy of strategies, plans, etc. applicable to the region. **There is a sense that there has been a distinct lack of investment in the Limerick region, despite the numerous plans and strategies prepared.**
- Any Mobility Management Plan must demonstrate its responsiveness to the spatial development framework for the city and county and to the proposed economic development plan devised for the City Centre.
- Specific recommendations and/or review of the Smarter Travel (ST) designation hubs within the city and county need to be undertaken to ensure that ST priorities match available capital expenditure of the local authority and reasonable implementation timeframe of same as otherwise the ST designations as current are delaying and impeding actual economic development projects within identified employment areas.
- The MFS must be targeted toward and achieve consensus and buy-in from major employers in the city region, **as a major thrust of Mobility Management is targeted at employees.**
- **The connection to the City Centre from the outer ring road is poorly balanced, with a concentration of traffic orientated onto the Tipperary Road and Dock Roads.** This issue is exacerbated by the underperformance of the Limerick Tunnel and traffic preferring not to use the tunnel. Prior to completion of the Southern Ring Road, the Rosbrien Interchange was a major access point into the city for commercial traffic generated from the east, and since the SRR has been completed this access has been closed, forcing high numbers of traffic from this route on to other already heavily trafficked roads.
- Connectivity and accessibility to the major places of business both in the city and on a regional basis, is a significant issue, as it affects potential Foreign Direct Investment.
- The issue of free parking in the peripheral retail centres is of concern as part of the larger argument in seeking to promote a competing healthy and vibrant city centre in contrast to, or balanced with easily accessible edge-of-town retail developments with free surface car parking.
- There is a strong, competitive demand for on-street parking between businesses, retailers and shoppers. **There is also a slightly impractical method of on-street parking control (parking discs) which makes it difficult and off-putting for visitors.**
- The parking strategy should be reviewed as part of any MMP and whilst a sustainable argument would be to reduce access to the city centre by private car, there is still a demand for city centre access, and therefore some consideration is required for improved and easier methods of on-street parking control such as pay & display, etc. in order to make the city centre more accessible and attractive for private cars.
- **Wayfinding within the City Centre is an issue**
  - mobility management within the City Centre is poorly defined.
- Three major educational institutions exist in the City and with future increased demands for connectivity between these institutions and the City Centre, and MMP must reflect enhanced connectivity.
- Pedestrian priority over the car in the City Centre should be one of the focuses of future plans and schemes. Pedestrian priority can and is expected to be an effective enhancement for the city centre where it is considered as part of a city-wide strategy and mobility management objectives.
- Mobility Management must reflect the concept of green infrastructure policy and objectives in any future plans and proposals.
- **The many schools and third-level institutes are a major cause of congestion at school peak times.**
- Any MFS objectives must be accountable by periodic review as part of any revised (transportation) funding mechanism, any new or withdrawn funding provision and any review of spatial development objectives.



- Any MFS must demonstrate the sources of available funding to implement specific MFS projects of identify national or European funding programmes that could be used to draw funding for such projects so that this can be used by the implementing local authority department. It is important to reverse the recent trend, and to bring trade and activity back in to the City Centre.
- **A Park and Ride system should be developed and implemented in parallel with sufficiently provided transport infrastructure** that is responsive to the needs of employers and improves access and circulation of the city centre.
- It was noted that it remains relatively easy to drive into Limerick City as a commuting worker without any significant delays – this reinforces the car as the preferred mode of travel.

### 3.2.3

#### Bus Éireann

Arup met with Miriam Flynn, Regional Manager for the South West region, at Colbert Station in Limerick City, on Wednesday January 15th 2014.

Bus Éireann operates a bus network service in Limerick as part of the public service contract on behalf of the National Transport Authority (NTA), which has been in place since 2009.

In 2012, a bus network review was undertaken, which led to the roll-out of a revised and improved network of services, with increased frequency on a number of routes and reduced frequency on others. It is likely that the process will be repeated in 2014 in order to ensure that the existing service is functioning as best as possible, and to make further amendments where necessary.

Currently there are 6 major routes operated by Bus Éireann in Limerick City:

- Route 301 – From Westbury, through the City Centre and to the University Hospital
- Route 302 – From the City Centre to Caherdavin

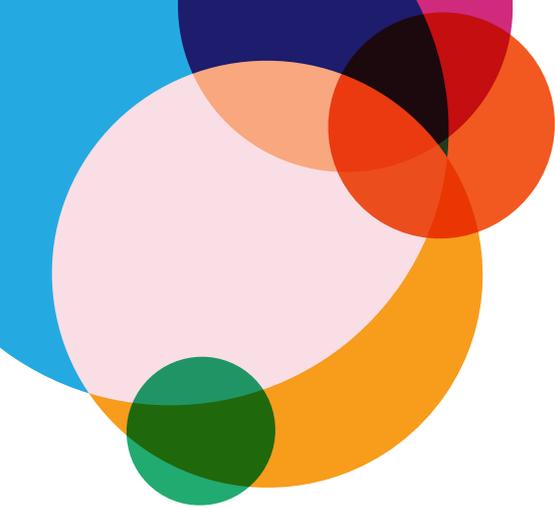
- Route 303 – From Pineview, through the City Centre and to O'Malley Park
- Route 304 – From University of Limerick, through the City Centre and to Raheen
- Route 305 – From St. Mary's Park, through the City Centre and to Lynwood Park
- Route 306 – From Ballynanty, through the City Centre and to Edward Street

All of these services are cross-city services, with the exception of the 302 which serves the western side of the city only. In addition, the 343 service runs from the City Centre to Shannon Airport via Ennis Road, and while it serves bus stops located between the city centre and Coonagh Roundabout it is not part of the core city bus network. There are no direct services, i.e. routes which would have limited stopping points between major locations with the exception of route 304X which operates from Raheen to UL via Childers Road, with one service per day from Monday to Friday during college term only.

The following major issues were outlined by Bus Éireann:

- Bus Éireann are currently operating in Limerick City in the context of significant reductions in their annual subvention over the last five years. The approach taken within the city network is to maximise the efficiency of service delivery and deliver a customer focussed network of services that meets the needs of its customers but taking account of the financial constraints that exist.
- **Delays experienced by buses at particular locations have a significant effect on the quality of services elsewhere**, in particular with a cross city operation in key corridors and limited bus priority measures.

This is a particular problem in the Ballinacurra area and on St. Nesson's Road. The Ballinacurra Bus Corridor is of critical importance in this regard, and its extension along O'Connell Avenue is vital.



- Other areas of importance include along Roches Street and Sexton Street in the City Centre at peak times, along Childers Road, and at the Groody Roundabout. **The most critical route is the 304, which serves UL, the University Hospital, and Raheen** – this route has a frequency of 15 minutes on weekdays. Consequently, this route requires the most attention in terms of providing bus priority and also caters for the largest volume of passengers within the city network.
- **The NTA have also placed emphasis on the importance of Colbert Station as a major pick-up/drop-off point, thereby promoting the integration of all modes public transport.** Bus Éireann have noted that there has been some growth in bus/rail transfer at Colbert Station.
- **The orbital/one-way system in Limerick City Centre is problematic for Bus Services, as it requires additional routing through an often heavily congested city centre** (i.e. loops via Shannon St./Henry Street to get to Sarsfield terminus or alternatively loops via Roches Street/Henry Street to get to William St).

The re-development of Colbert Station has long been in process, with proposals developed since 2006. By the time permission was received for the re-development, the economic climate had resulted in a lack of funding. Nevertheless, the station re-development remains a priority, and plans for the upgrade were released in May 2014. **Recent changes to the city bus services have been successful, for example the 301 and 302 services have improved.** The reliability of all services remains of critical importance, however.

Bus Éireann also noted that **the roll-out of further bus priority measures, as well as the continued expansion of the real-time passenger information (RTPI) system are both vital to further enhance the attractiveness of public transport in Limerick.** Opportunities exist to work with the Smarter Travel project also to further promote sustainable transport options in Limerick going forward.

In consideration of alternative initiatives to enhance the bus service quality in the City, Bus Éireann noted that a feasibility study was undertaken on their behalf in 2008 regarding the potential for a Bus Rapid Transit (BRT) corridor in a number of cities, including Limerick. As Bus Éireann initiated initial feasibility studies on BRT, they would support further development of this concept but do feel that the short term focus needs to be on improving public transport access on key corridors into the city.

Subsequent to this consultation meeting, Bus Éireann forwarded details of the existing City bus service routes, and information on Bus Stop locations, to the Team for reference purposes.

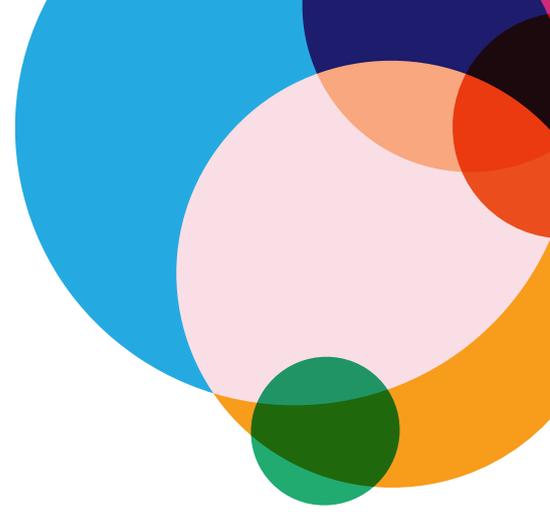
### 3.2.4

#### University Hospital Limerick

Arup met with Joe Hoare, of the Estates department of University Hospital Limerick, in the HSE office located in Plassey, on Wednesday January 15th 2014.

The University Hospital in Dooradoyle is the primary hospital in the Mid-West region, and will ultimately serve a catchment of approximately 380,000 people. In addition to the University Hospital, there are a number of other significant health facilities around the city, such as the Maternity Hospital and St. Camillus Hospital, which are both located on the north-west side of the city, St. Joseph's which is located on Mulgrave Street, St. John's Hospital in the city centre, and a number of potential primary care centre sites identified across the city and suburbs. The Maternity Hospital and St. Camillus are presently busy facilities, with respect to the volumes of trips that they generate.

The University Hospital at Dooradoyle houses approximately 2,500 staff, with approximately 1,500 public vehicles arriving on a daily basis. Approximately 1,000 parking spaces are provided on-site, with circa 800 for staff use, and the



remaining 200 for patient/visitor use. Plans are currently underway to increase the parking provision by approximately 200 through the construction of an underground car park, but it is estimated that in the region of 500 spaces are actually required.

**The University Hospital is also investigating the potential for relocation of the Maternity Hospital to the main Dooradoyle campus, which would significantly intensify activity at this location.**

According to the University Hospital, the most typical hospital attendees are either very young or elderly and quite frail and as a consequence public transport is not ideally suited to these patrons. In this regard, the recent public transport corridors created between the city and the hospital at Dooradoyle were felt to be counterproductive in the sense that there has been a commensurate reduction in available road space for general car-based trips to and from the hospital.

Additionally, the 55% mode share target for travel by sustainable modes was felt to be very challenging for the University Hospital to achieve. However, the primary focus of this mode share target will be directed at home-to-work trips, which covers staff access to and from the hospital. Attempts to achieve a more comprehensive mode shift in this regard will be the main focus.

**At present, the hospital Estates Department is preparing a Mobility Management Plan.** However it is expected that the origin-destination patterns for staff may comprise a large catchment – as a result it is felt that there may be limited scope for mode change. **Despite the hospital being aligned with the University of Limerick, it was noted that trips between both locations are quite low,** with a dedicated, hospital-based lecture facility allowing for students enrolled in the university medical degree programs to base themselves in the hospital grounds.

In terms of accessibility and transport, it is felt that the hospital is quite restricted, with a single access/egress point only, and significant residential, retail and commercial development areas surrounding it. Furthermore, access routes to the hospital are also limited, with all access routes leading to St. Nessian's Road, which itself is already busy at peak times. In fact, the hospital has recently added a helipad to the grounds to facilitate alternative emergency access. **Ideally, some form of additional vehicular access/egress at the rear of the hospital campus would be preferable.**

It was suggested that further information may be available from the drivers of the ambulance fleet regarding major problematic areas for access – the estates department will liaise with them and revert.

### 3.2.5

#### An Garda Síochána

Arup met with Paul J Reidy and Peter Kelly of An Garda Síochána (AGS), in Henry Street Garda Station, on Thursday January 30th 2014. Both members of AGS are actively involved in transportation matters in the city and the wider region.

AGS noted that in the years leading up to 2008, the prevailing trend regarding development in Limerick was to allow development, without commensurately developing the required road infrastructure to serve such developments, which has in turn lead to an overall increase in traffic flows and associated problems, but without the ability to accommodate these flows.

While AGS were cognisant of the improvements works carried out in locations such as Thomas Street, and Bedford Row, they noted that the link road at Sráid an Ceoil, which links Mulgrave Street, Roxborough Road and Sexton Street, was the sole piece of new road infrastructure provided in the City Centre in a number of years.



Within the City Centre itself, AGS noted that cyclist and pedestrian safety were quite good overall, and that issues such as vehicle speeding were not present in any great significance.

AGS outlined five key junctions which were deemed to be critical junctions to the efficient operation of the traffic network in the City Centre under the present layout. These are Henry Street/Sarsfield Street, Sarsfield Street/O'Connell Street, Mallow Street/Henry Street, Mallow Street/O'Connell Street, and the Shannonbridge Roundabout. Based on their experience at major occasions such as GAA/Rugby matches, etc., these five junctions are crucial in terms of maintaining the flow of traffic.

AGS noted that the present arrangement of the orbital system is felt to be a reasonably appropriate traffic flow arrangement for the city centre at the moment. The full proposed orbital system, which would include pedestrianisation of O'Connell Street between William Street and Roches Street, would have to firstly be capable of accommodating the dispersed traffic from O'Connell Street, and may not be a viable option until this area becomes more of an attractor for pedestrians – **in this regard AGS mentioned the proposed re-location of a faculty from UL into the City Centre, which might act as such a catalyst. Overall, however, provided that dispersed/displaced traffic can be accommodated, AGS were supportive of the orbital route proposal.**

AGS also outlined concerns regarding the operation of taxis in the City, in particular opining that the City is well oversubscribed with taxis, and poses challenges to AGS in respect of regulation. A number of illegal ranks have been developed and shut down by AGS. **In this regard, AGS noted that certain taxi rank locations were perhaps inappropriate.** In particular, the proposed pedestrianisation of part of O'Connell Street as mentioned above would require careful planning

of bus stops and taxi ranks in the immediately adjacent streets to ensure that these services can adequately serve a pedestrianised area.

With regard to proposals relating to sustainable transport, AGS were supportive of any measures which would improve public transport, cycling or walking in the City. However, they noted that **the existing bus services in the city can on occasions be unpredictable and are not of such frequency which would encourage motorists to opt for public transport over the private car.** A crucial element of any Smarter Travel-related proposals will be the relevant education required to encourage a change in attitude to the private car in order to achieve any notable modal shift.

AGS also queried the viability/potential for some form of tram/BRT system in Limerick City, citing the success of the Luas/DART, etc. in Dublin as a comparator. **AGS were also welcoming of the pending roll-out of the Limerick Public Bicycle scheme, but also noted that further expansion of this scheme may be limited by a lack of adequate sites.**

In the wider metropolitan area, AGS were critical of the lack of access to the city centre via the Rosbrien Interchange on the M20. In particular, they felt that the removal of access at this point has led to an increased number of vehicles routing in to the city via the Dooradoyle exit from the M20 the R926 Dooradoyle Road, and the Rosbrien Road, as these offer a similar form of direct access to the city centre. This has in turn led to the need to implement vehicle weight restrictions on the Rosbrien Road due to the numbers of heavy vehicles present.

**The Limerick Northern Distributor Road was identified by AGS as a key piece of infrastructure, as it would alleviate a portion of traffic flows which at present must route through the city centre.** AGS noted that the current proposal for Phase 2 of the LNDR is intended to be single-



carriageway only, which was felt to be insufficient as it may encourage overtaking if there are large numbers of HGVs present – AGS expressed a preference that the LNDR be upgraded to a dual carriageway-type road.

**AGS also outlined concerns over potential safety issues along the proposed Smarter Travel Route via the Canal (proposed Route 2), noting that this route will likely require a substantial Garda presence, principally on bicycles along the route.**

### 3.2.6

#### Limerick City Business Association

Arup met with Helen O'Donnell and Philip Danaher of the Limerick City Business Association in Limerick City Centre on Tuesday January 21st 2014. The Limerick City Business Association (LCBA) represents 80 to 90 members, of which about 8 represent major brands, with the remainder comprising local businesses.

The LCBA outlined the decline of the City centre as a result of the development of a large number of out-of-town centres, which have served to undermine the city itself, leading to an overall decrease in activity in the city centre itself. However, there are a number of key features that are still present in the City which are advantageous over these external settlements, such as Brown Thomas and Debenhams, for example.

Access to the City is a key issue, and the **LCBA noted the inconsistency and resultant unreliability of the existing bus services. In addition, the lack of access directly to the City from the Rosbrien interchange was also a concern for the LCBA.** Within the City itself, the LCBA felt that portions of the existing traffic signal network were problematic, citing a lack of co-ordination between junctions as a concern. **The LCBA were also critical of the existing one-way (orbital) system in place.**

Parking provisions within the City were felt to be adequate, but **the LCBA felt that parking is often located at some remove to the major centres. In this regard, the LCBA felt that taxis, loading bays and bus parking facilities were dominating the existing parking areas, effectively restricting the access to these areas** for the typical visitor.

The LCBA noted the **extensive proliferation of signage within the City, and the resultant clutter.** The LCBA expressed a desire to see some form of rationalisation take place in this regard.

With regard to sustainable measures, the LCBA were supportive of initiatives such as improved cycling and walking facilities, as they recognise the value that accessibility on these modes can bring, both in terms of health and in terms of 'branding' of the City. The LCBA did express concerns about the safety of the proposed Limerick Smarter Travel Route along the Canal to UL (Route 2).

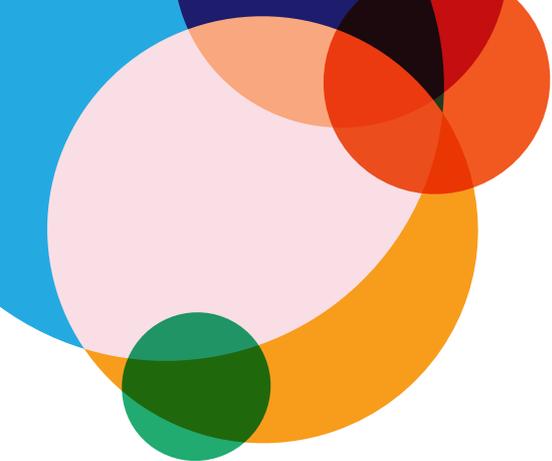
**The LCBA were also supportive of the idea of pedestrianisation of O'Connell Street.** Overall, the LCBA want to make sure that firstly people can get in to the City with a degree of ease and that secondly they can be accommodated a sufficient level of comfort once they are within the City.

### 3.2.7

#### Mary Immaculate College

Arup met with Mr Brian Kirby, head of the Building Maintenance Office of Mary Immaculate College (MIC), on Tuesday 21st of January 2014.

MIC campus is located off South Circular Road, just over 1km to the south of the city centre. The campus avails of access off South Circular Road and Ashbourne Avenue, as well as potential access off Summerville Avenue. The College has recently purchased a site on the eastern side of South Circular Road, immediately opposite the campus main entrance, which will connect the campus with O'Connell Avenue further to the east.



The College currently has over 3,000 full time students and about 250 permanent staff. MIC the largest College of Education in the State and the only one outside Dublin, and therefore its catchment spreads as wide as Clare, Kerry, Cork, Tipperary, Galway and the Midlands as far as Westmeath. To respond to this demand, the College provides residential facilities within and in the vicinity of the campus.

A total of approximately 300 car parking spaces are provided within the campus, about 100 of which are reserved for staff. The remainder are available to both staff and students with some available free of charge and some subject to a €3 daily charge. Approximately 50 additional spaces are presently available for staff at the newly purchased site. MIC does not currently have an active Mobility Management Plan, but has been working with Limerick Smarter Travel to obtain travel data, and more recently has been conducting a travel survey of all staff and students which will provide a basis for an MMP which will be prepared by Punch Engineering Consultants.

Some cycle parking is provided on campus, but the College has recently applied for funding from the NTA for additional high-quality cycle parking facilities, and is in the process of constructing new secure staff cycle parking units and has applied for planning permission to construct two further secure student cycle units adjacent to the Tailteann and Tara buildings.

**MIC is supportive of the proposed bus priority facilities along O'Connell Avenue/Ballinacurra Road, especially in light of the newly purchased site, which will provide the College with a frontage and direct pedestrian connection to O'Connell Avenue.**

Mr Kirby referred to the proposed public bike scheme for Limerick **and the desire to have a station within or in the vicinity of the campus.**

Arup understands that a station is planned to be located on Summerville Avenue immediately outside the main MIC gate.

Arup were invited to keep an open communication with MIC, and were given additional contacts for any further queries, namely the firms of Quinn Architects and Hugh Kelly Architects, who are the architects responsible for a number of previous and ongoing MIC projects.

### 3.2.8

#### University of Limerick

Arup met with Robert Reidy and John Moroney of the Buildings and Estates Department of the University of Limerick (UL), at the university campus, on Tuesday January 21st 2014.

The University of Limerick is based in Castletroy, to the north-east of Limerick City Centre. The university houses approximately 2,150 staff members, and approximately 14,000 students. The campus is accessed via the Plassey Park Road, which is just off the R445 Dublin Road. The campus has two sole dedicated access/egress points, both located on Plassey Park Road. **To the south, the campus is severely restricted in terms of expansion, and as such expansion can only occur northwards. Despite these restrictions, the University has effectively doubled in size since 2000.**

The University is served by a number of bus operators at present. The main services are the Bus Éireann 304 service from the City Centre, and the Eurobus 307 and 308 services serve the University to varying degrees.



UL provide approximately 2,500 car parking spaces on-campus; a certain portion of this parking is free and is shared by staff and students alike. There are also reserved parking areas for staff, for visitors, and a general section where parking is pay-on-exit, with a fee of €3. **UL noted that their total parking allocation is very rarely full to capacity due to the remoteness of a small number of existing spaces.** A number of factors including the home to work distances and routes incurred by a large number of staff imply that any future plans to expand the campus would obviously require a commensurate increase in parking provision.

**UL briefed Arup on the status of discussions regarding the development of a University facility in the City Centre. No specific sites have been identified in the City itself at this time. The development may include student accommodation.**

UL outlined their principal concerns regarding transport in the City and environs. Among these, a key issue was **the need for a significantly improved and more rapid form of linkage to and from the city centre. Such a quality of linkage will be crucial in light of the aforementioned City development. In this context, UL are particularly interested in exploring the feasibility of developing some form of rapid transit corridor to and from the City.**

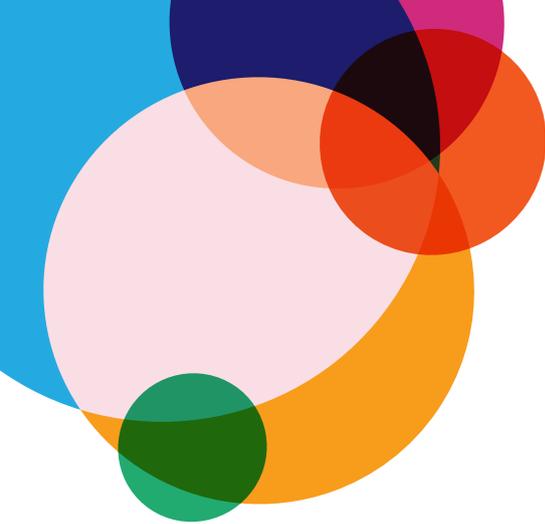
Other concerns included the long walking distances for students living in accommodation in areas such as Thomond Village to access the main bus stop located within the campus. UL have campaigned Bus Éireann with the hope of routing buses serving the campus through a greater portion of the campus itself. While this request has not been accommodated to date, it is hoped that Bus Éireann may be more accommodating in the future.

**UL outlined the importance of the proposed Limerick Northern Distributor Road (LNDR) to the campus, and the need for the scheme to be completed.** UL have carried out considerable work to help facilitate this project, in order to secure agreement on a route for linkage from the University to the LNDR.

The LNDR is crucial in the sense that it will significantly enhance the degree of access to the main UL campus from the north and commensurately reduce the need for vehicles accessing the campus on corridors from the north to route through the city centre. This in turn, would then help to reduce congestion which is common at both existing accesses at peak times. Furthermore, the LNDR and associated linkage to UL would also facilitate the development of a park and ride facility to the north of the campus, if feasible.

**Both existing access/egress points were noted to suffer from heavy congestion, particularly at peak times, with long delays often experienced for vehicles seeking to exit the campus in particular.**

With regard to the campus itself, UL have recently completed (December 2013) a 'UL Smarter Travel Strategy' plan, which is a comprehensive plan to develop and implement a wide range of smarter travel-type initiatives and measures within the campus. UL agreed to forward a copy of this plan to Arup. The campus has a Mobility Management Plan co-ordinator in place.



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### 3.2.9

#### Eurobus Limerick

Arup contacted Michael Curtin of Eurobus Limerick to arrange a consultation meeting, however unfortunately it was not possible to meet with Eurobus in advance of completion and issue of this report. However, discussions with Eurobus via telephone yielded some information and identified some issues.

Eurobus Limerick operates 2 bus services – the 307 Cappavilla – William Street route and the 308 City Centre – Annacotty route, both of which serve the University of Limerick. All services have a standard fare of €1.60, with concessions for juniors, school students and children under 3. These routes are timetabled at hourly frequency. All services have their termini on William Street in Limerick City Centre.

**The main issue of concern for Eurobus Limerick is the unreliability of the existing Bus Éireann services to and from the University, as the sporadic frequencies of arriving buses at the campus often detracts directly from passenger numbers available to Eurobus services,** particularly when multiple delayed buses from Bus Éireann may arrive in a very short space of time, removing the majority of passengers who may then avail of the Eurobus service. To this end, a more reliable and efficient arrival rate to the campus by Bus Éireann services would help Eurobus time their own service arrivals to ensure maximum efficiency.

Eurobus also noted that they have applied for licensing to operate services both at the back of the main UL campus and in other locations such as along the N69 Dock Road in Limerick City, but that permission/authorisation to proceed with these proposals has not been forthcoming. Eurobus also noted that a third private operator runs a shuttle bus-type service to and from the UL campus.







# Network Analysis

Limerick Metropolitan District Movement Framework Study

## 4.1 Introduction

As part of the development of the MFS, it is necessary to analyse the existing transport network within the study area, across all relevant modes, in order to undertake an issues identification exercise across the study area. This chapter therefore sets out an analysis of the transport network within the study area.

## 4.2 The Limerick Metropolitan District Transportation Context

### 4.2.1

#### Regional Context of Metropolitan District

The LMD lands collectively represent the principal node in the mid-west region of the Republic of Ireland. In the wider area, the LMD is proximate to a number of key settlements, including Shannon, Ennis, Nenagh, Killaloe/Ballina, Castleconnell, Tipperary, Kilmallock, Charleville, Patrickswell, Adare, Askeaton, Rathkeale, and Newcastle West, amongst others. Figure 4.1 below shows the LMD in the wider regional context, as well as the numerous outlying settlements.

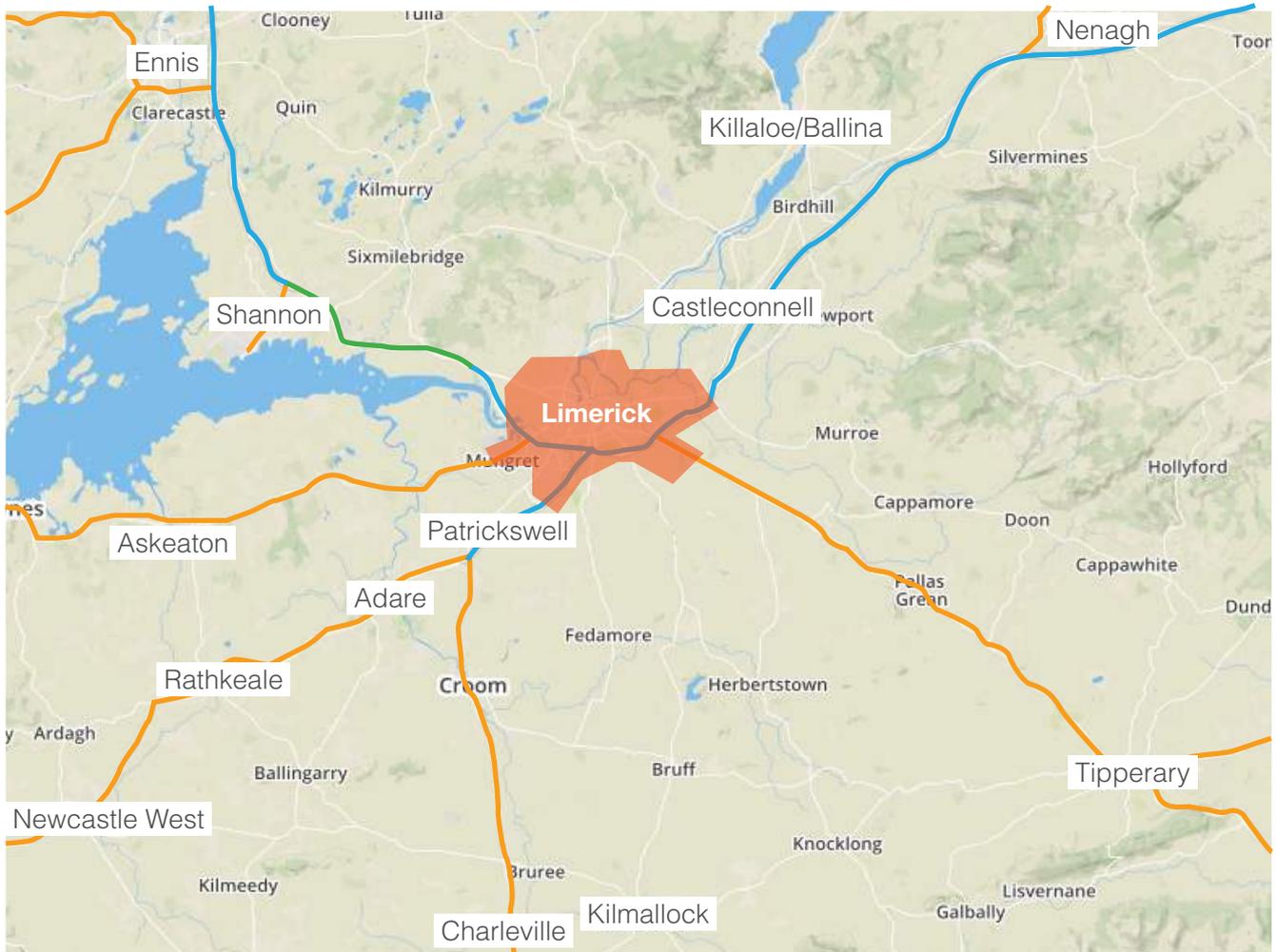
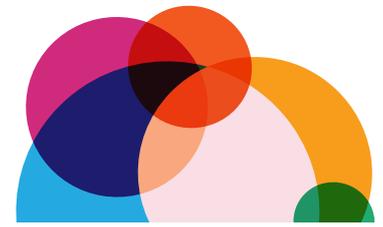


Figure 4.1: Limerick Metropolitan District – Wider Regional Context



## 4.2.2

### Main Trip Attractors/Generators

The LMD lands contain a number of major employment, educational and commercial facilities, each of which acts as a significant attractor for commuting trips. There are also numerous large residential areas. Amongst these major attractors/generators of trips within the LMD are:

1. Limerick City Centre
2. Colbert Station
3. University of Limerick
4. Limerick Institute of Technology
5. Mary Immaculate College
6. Limerick School of Art and Design
7. University Hospital (Mid-West Regional)
8. Saint Camillus' Hospital
9. Limerick City and County Council offices
10. Raheen Business Park
11. National Technology Park, Castletroy
12. Crossagalla Business Park
13. Delta Business Park
14. The Crescent Shopping Centre
15. Childers Road Shopping Centre
16. Parkway Shopping Centre
17. Jetland Shopping Centre
18. Coonagh Cross Shopping Centre
19. Westbury Shopping Centre
20. Grove Island Shopping Centre
21. Numerous residential areas such as Monaleen, Rhebogue, Lower Park, Dooradoyle, Westbury, Caherdavin, Greystones, Moyross, Janesboro, Garryowen, Southill, etc.

Figure 4.2 shows the locations of these major trip attractors, as numbered above, within the LMD. Figure 4.3 shows the major residential areas. See both overleaf.

## 4.2.3

### Population Figures and Commuting Patterns

As part of this network analysis, Arup have examined data available from the 2011 Census and other ancillary documentation, in order to gain understanding of the general travel habits of the population within the LMD.

#### 4.2.3.1

##### Population of the Limerick Metropolitan District

The 2011 Census recorded information for the 'Limerick City and Suburbs' area, which is broadly similar in scope to that of the Limerick Metropolitan District study area. Some points arising from the results of Census 2011 include:

- Total population of 91,454
- Approximate area of 56.84km<sup>2</sup>
- Population density of 1,609 persons per km<sup>2</sup>

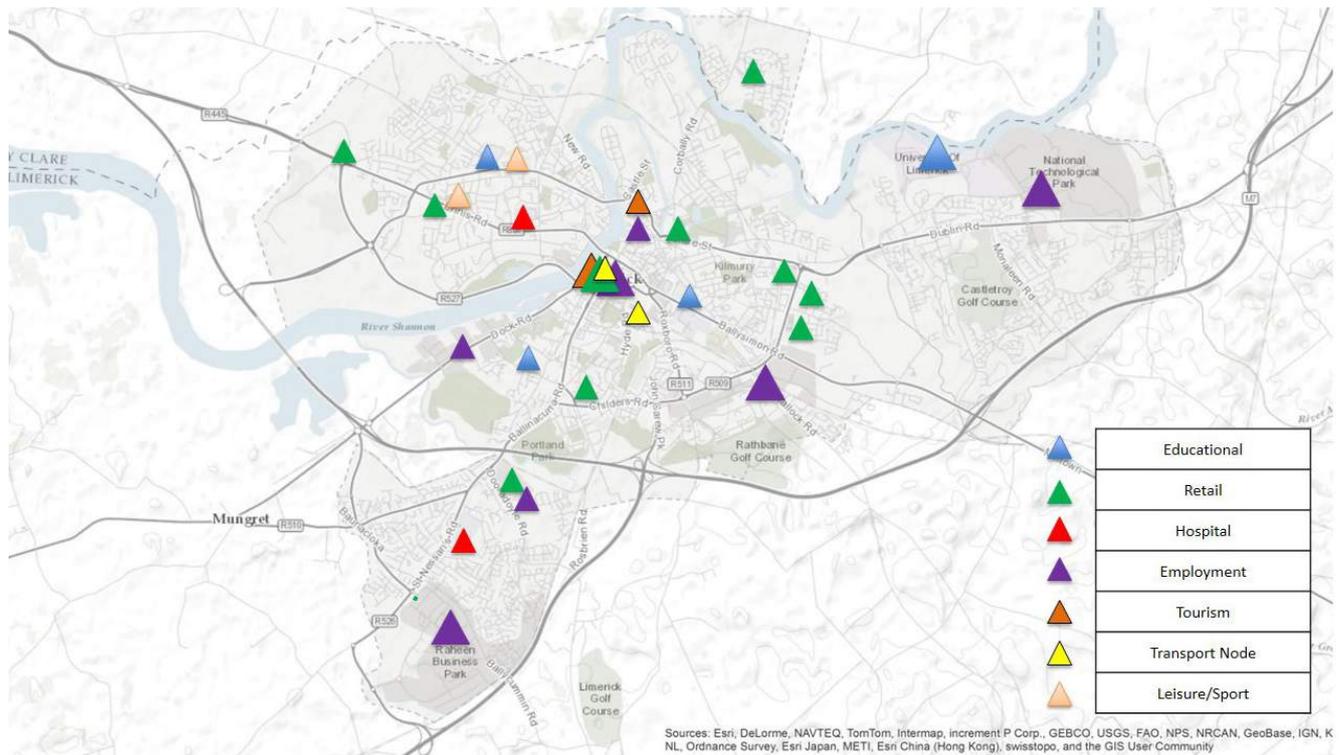


Figure 4.2: Major Trip Attractors within the LMD

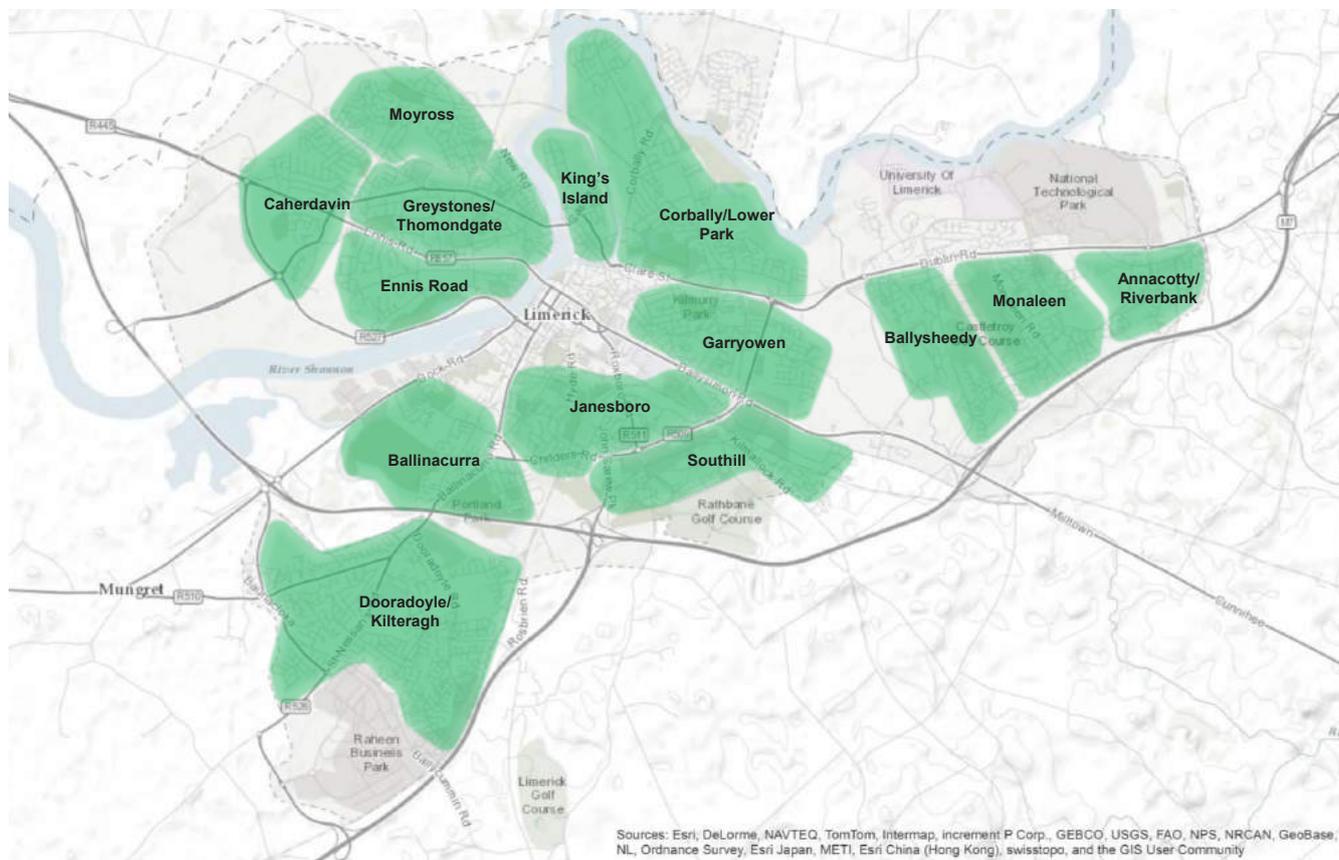
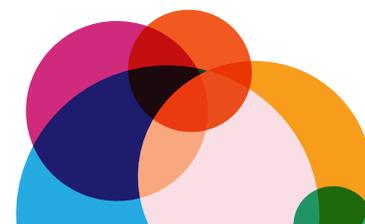


Figure 4.3: Major Residential Areas within the LMD



### 4.2.3.2

#### Working in the Limerick Metropolitan District

The Census in 2011, and the subsequent publication 'Door to Door' which analysed commuting and travel habits within the state, yielded the following information:

- 42,143 persons aged 15 and over are in the labour force, and of these 76.2% were at work, with 23.8% unemployed – higher than the national average of 19.0%.
- The daytime working population of the city and suburbs in April 2011 was a total of 40,464 (resident and non-resident) persons, with 20,378 residents who worked in the city, and 20,086 persons who commuted into Limerick each day to work.

- Limerick County was the main origin for these commuters (53% or 10,679 persons), with Clare (24% or 4,764 persons) and North Tipperary (11% or 2,189 persons) also showing large numbers of commuters.
- The most popular means of travel to work was by car (driver) which accounted for 62.5% of all journeys made to work, and resulted in an average journey time to work of 20 minutes.
- However, among commuters, close to 90% travelled to work by car, with an average journey time of nearly 33 minutes.

### 4.2.3.3

#### General Commuting

- Overall, 77% of the population have a commute time to work, school or college of less than 30 minutes, and 90% have a commute time less than 45 minutes – nationally, 64% of the population have a commute time of less than 30 minutes, and 81% have a commute time of less than 45 minutes.

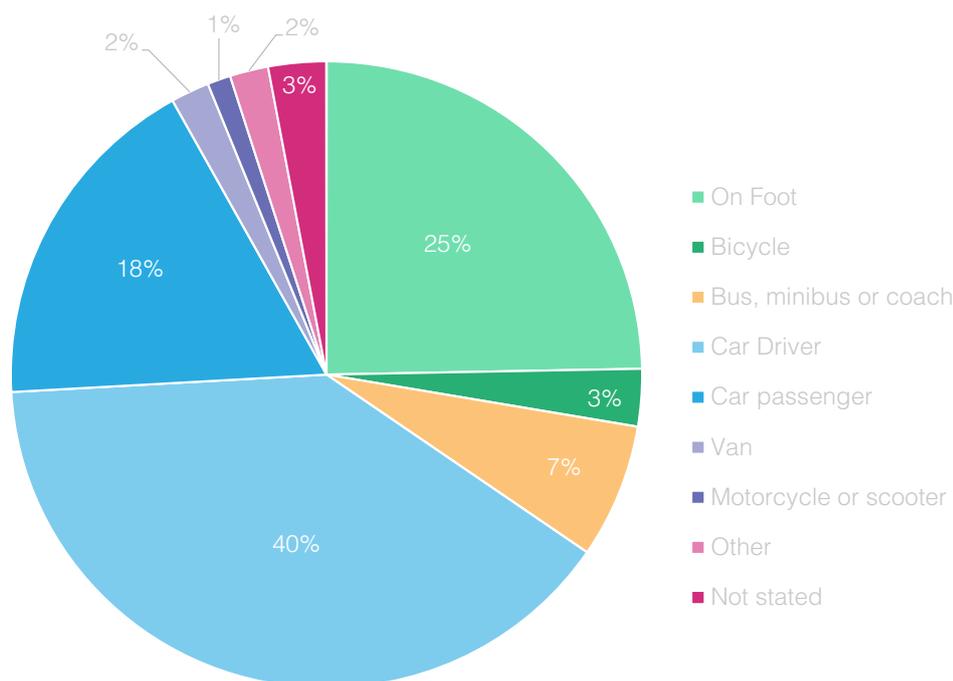


Figure 4.4: Means of Travel to Work/School/College

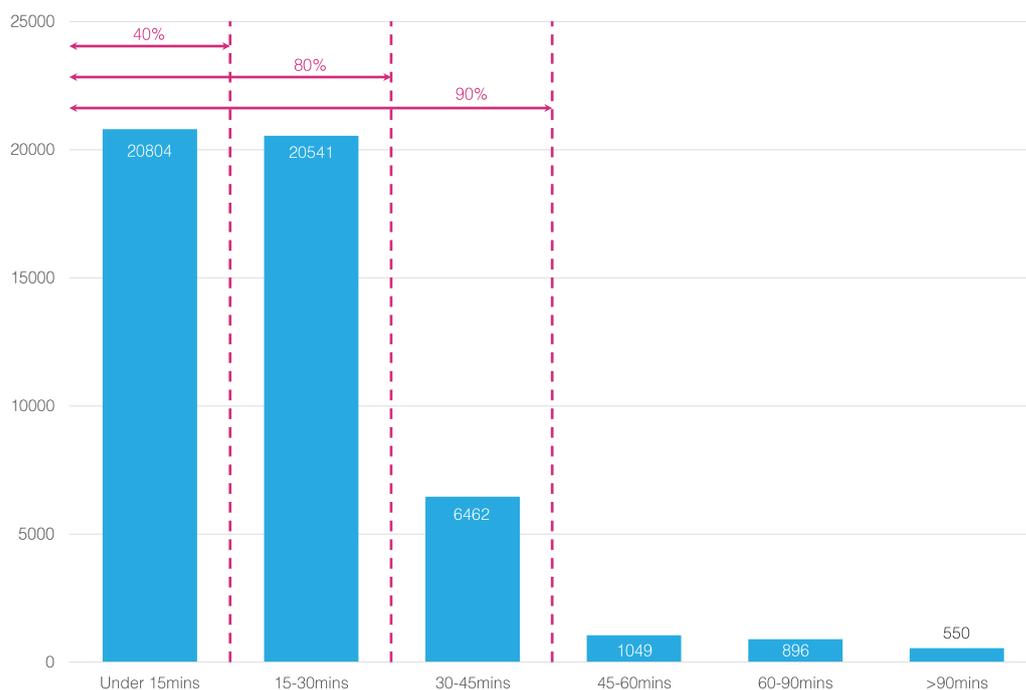
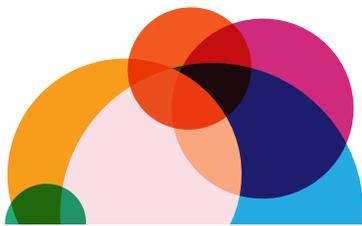


Figure 4.5: Average Journey times for travel to work, school or college

- There is a strong walking culture already present in the city and suburbs, with 25% walking to school/work/college, compared to 15% nationally.
- The private car is the most dominant mode of travel, with 58% of persons either a driver or a passenger in a car travelling to work, school or college, compared to 59% nationally.
- Cycling (3%) and Public Transport (7%) together represent 10% of the commuting population, compared to the national values of 2% and 10% (12% total) respectively.

Figure 4.4 (left) shows the breakdown of modes used for travel to work/school/college amongst the population aged 5 years or older, based on Census 2011 results. Figure 4.5 shows the average journey times for the commute to work, school or college (above).



#### 4.2.3.4

### School Commuting

#### Primary School Students

In the Limerick Metropolitan District, 56% of children aged 5-12 were driven to school, while 35% travelled on foot. 4% travelled by bus or coach. Figure 4.6 below shows the breakdown of modes for children aged 5-12 travelling to school, while Figure 4.7 shows the average journey times for this commute.

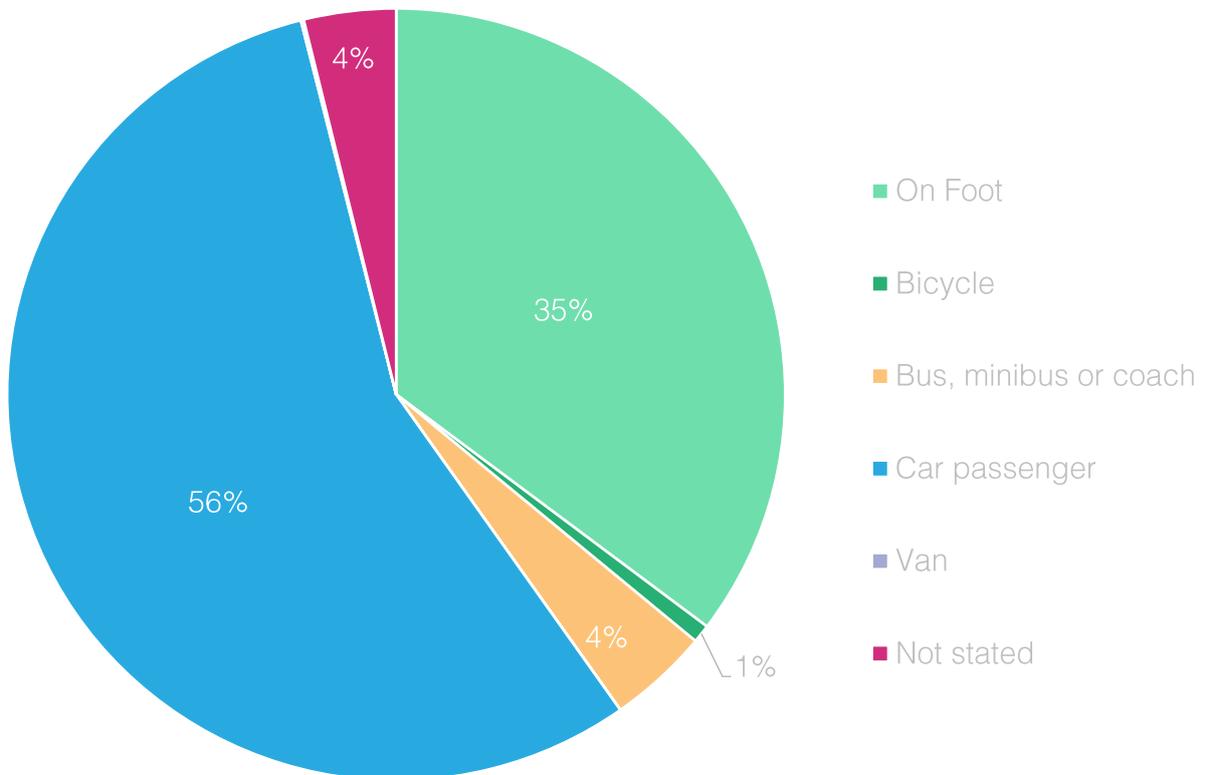


Figure 4.6: Children at School aged 5-12 – Mode of Travel

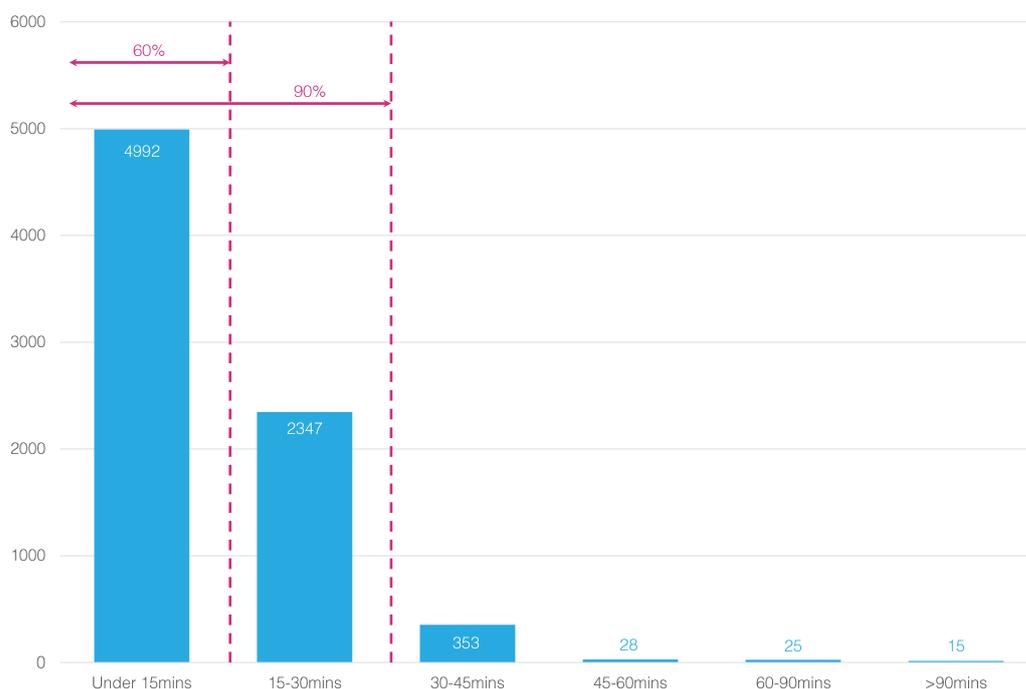
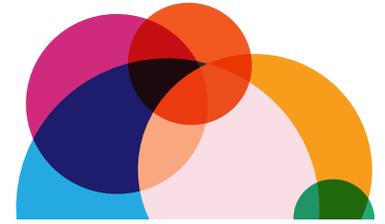


Figure 4.7: Average Journey Times for Children at School aged 5-12

Figure 4.7 above shows that 88% of the Children aged 5-12 had a journey time to school of under 30 minutes, with 60% having a journey time below 15 minutes.

Nationally, Census 2011 showed that 61% of children were driven to primary school, 25% walked, and in urban areas, 7% used the bus to travel to primary school.



### Secondary School/College Students

In the Limerick Metropolitan District, 46% of students aged 13-18 commuted to school or college by car (as a driver or passenger). 31% travelled on foot, and 18% travelled by bus, minibus or coach, while 3% travelled by bicycle. Figure 4.8 below shows the breakdown of modes for children aged 13-18 travelling to school or college, while Figure 4.9 shows the average journey times for this commute.

Figure 4.9 (right) shows that 80% of the students aged 13-18 at school or college within the Limerick Metropolitan District had a journey time of less than 30 minutes.

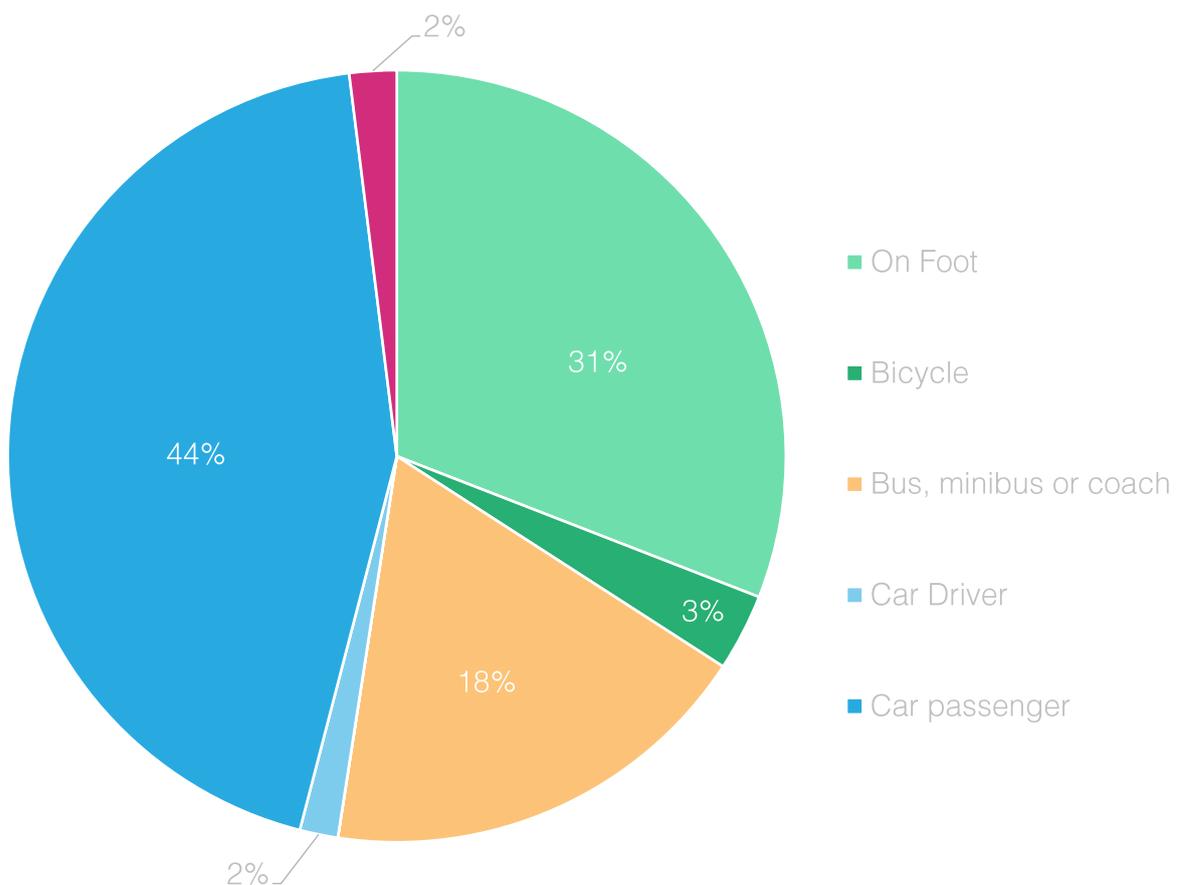


Figure 4.8: Students at School or College aged 13-18 – Mode of Travel

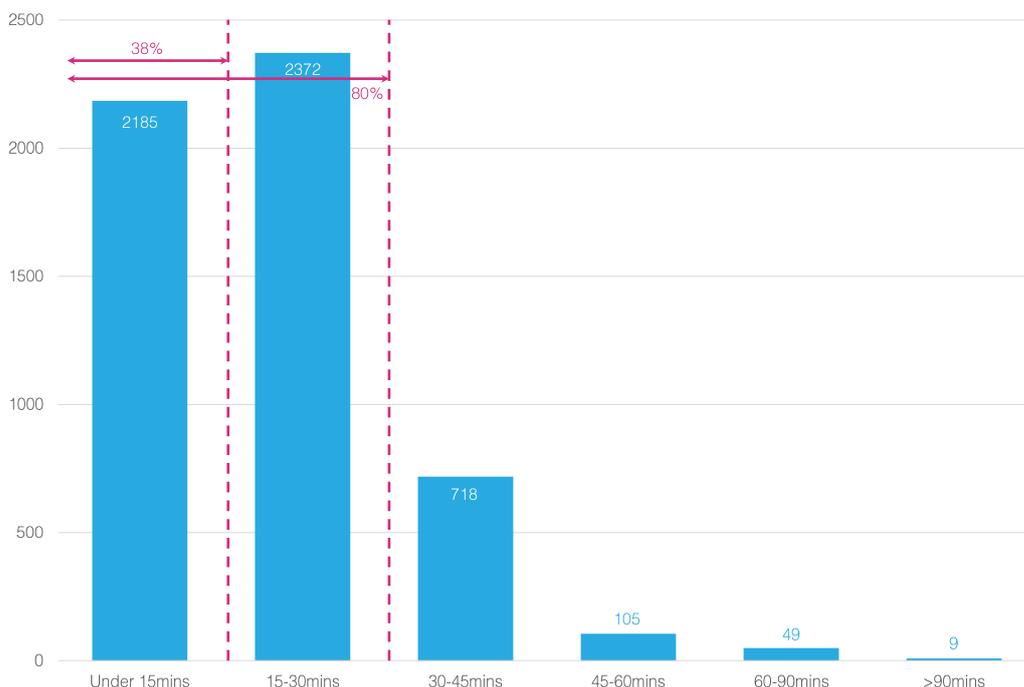
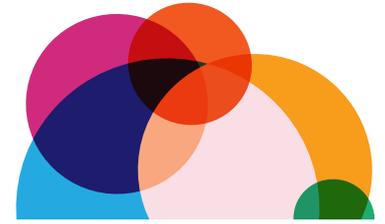


Figure 4.9: Average Journey Times for Students at School or College aged 13-18

Nationally, in 2011 approximately 40% of secondary school students travelled by car, the first time that the car had surpassed the bus (30%) as the primary mode of travel to school. 23% of secondary students walked to school. It is noteworthy that the average journey time to school for these students was 13.6 minutes on foot, 14.4 by car, and a significantly longer 28.2 minutes by bus. 2% of secondary school students travelled to school by bicycle.

It is noteworthy that in the 30 years between the 1981 Census and the 2011 Census, the numbers of secondary school students using a car (either driver or passenger) to travel to school has increased by a factor of 5.5.

In the 25 years between the 1986 Census and the 2011 Census, the numbers cycling to school has declined by almost 90%. Even more pronounced is the fall in girls using a bicycle to commute to secondary school, with a 97% reduction from 1986-2011.



### Third Level Education Students

In the Limerick Metropolitan District, 40% of students aged 19 or over commuted to college by car (as a driver or passenger). 39% travelled on foot, and 12% travelled by bus, minibus or coach, while 5% travelled by bicycle.

Figure 4.10 below shows the breakdown of modes for students aged 19 or over travelling to college, while Figure 4.11 shows the average journey times for this commute.

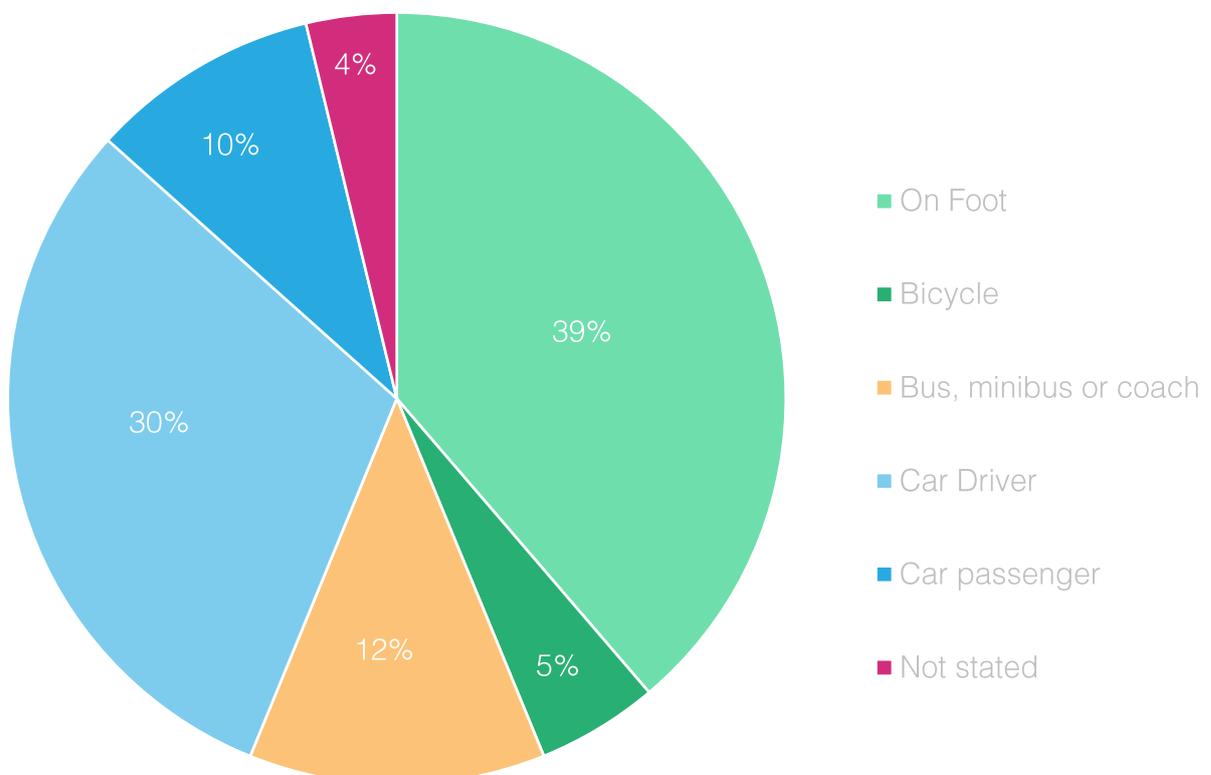


Figure 4.10: Students at College aged 19 or over – Mode of Travel

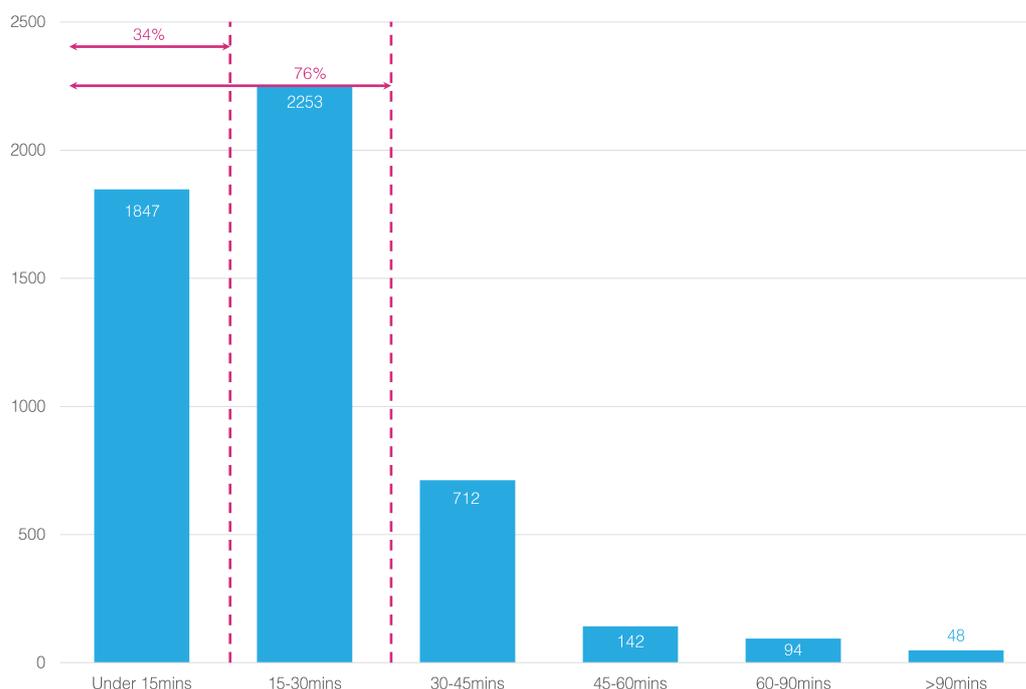
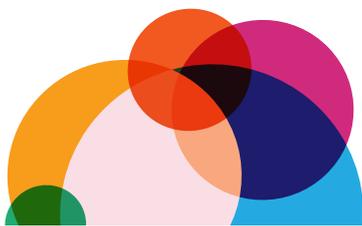


Figure 4.11: Average Journey Times for Students at College aged 19 or over

Figure 4.11 above shows that 76% of students aged 19 and over travelling to college had a journey time of less than 30 minutes.

Nationally, according to Census 2011 29% of all third level students drove to college, 28% walked, and 5% cycled.

At the time of the 1986 Census, less than 5% of students drove to college, with a marginal increase in the following ten years to 1996. From 1996 onwards, however, there was a significant increase in the numbers of students driving to college, with it now representing the major mode of travel to college.

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#### 4.2.4

### Limerick Metropolitan District Transportation Context – Summary

Limerick City is Ireland's third-largest city, with a population in the city and suburbs of almost 100,000 people. The city and suburbs contain a wide range of major trip attractors, both for the city and suburbs, and the wider region itself, with major retail, employment, educational and tourist destinations.

Of the working population within the city and suburbs, approximately 50% are commuting into the area from the wider mid-west region. Limerick County is the largest commuter origin, as well as Clare and North Tipperary. 77% of the population have a journey time to work, school or college of less than 30 minutes, while 90% have a journey time less than 45 minutes. Travel times to work, school or college compare favourably with the rest of the State.

**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**

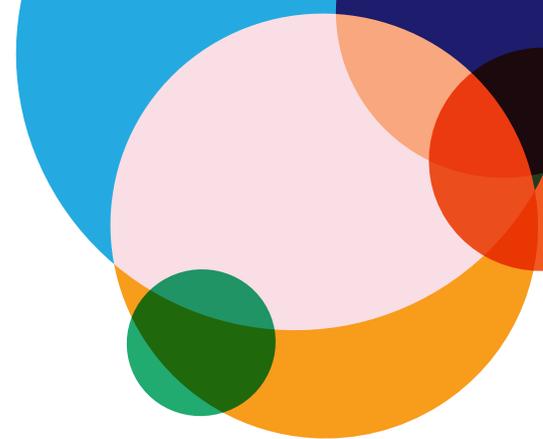
**56% of primary school children are driven to school, and 35% walk, compared to the national values of 61% and 25% respectively.**

**46% of secondary school students travel by car, 31% walk, and 18% use public transport to get to school, compared to the national values of 40% by car, 23% walking and 30% by public transport.**

40% of college students drive to college, 39% walk, 12% use public transport and 5% cycle, compared to the national values of 29% by car, 28% walking, 21% by bus (outside of Dublin), and 5% cycling.

The above travel statistics indicate that walking as a mode of travel in Limerick is quite high compared to the national average, whereas travel by public transport is somewhat lower.





## 4.3 Transportation Networks

The existing transport network within the study area has been examined for all modes. The following elements of the transport network have been examined and analysed:

- Pedestrian Network
- Cycle Network
- Public Transport – Bus, Taxi and Rail Networks
- Vehicular Network
- Car Parking Locations
- Accident/Collision information

### 4.3.1

#### Pedestrian Network

Within the LMD, the vast majority of the road network is supplemented with pedestrian facilities to a certain extent. Predominantly these comprise standard footpaths adjoining carriageways,

and the vast majority of traffic signal controlled junctions within the LMD facilitate pedestrian movements to varying extents. There are a number of locations where available footpath width for pedestrian use is extremely substandard, such as on Roxborough Road at both rail line crossings for example, and along Wickham Street and Lower Gerald Griffin Street in the city centre, amongst others.

There are also a large number of priority and non-priority pedestrian facilities within the LMD, such as signalised pedestrian crossings, zebra crossings, and non-priority standard pedestrian crossing points.

#### 4.3.1.1

##### Pedestrian Crossing Facilities

There are over 40 dedicated signalised pedestrian crossings within the LMD on the various routes approaching the city centre. The majority of these



Figure 4.12: Good Quality Signalised Pedestrian Crossing in City Centre



Figure 4.13: Good quality Zebra Crossing

are of acceptable quality, with some minor issues such as the layout of tactile paving, etc.

There are also approximately 30 zebra crossings located within the LMD on the various approach routes. The majority of these crossings are of a good standard, with flashing beacons, etc., with some minor issues associated with tactile paving and dropped kerbs, etc.



Figure 4.14: High-Quality non-priority pedestrian crossing

There are also a number of non-priority pedestrian crossings provided along the quay frontage, which are of high quality.



Figure 4.15: Insufficient footpath width for comfortable pedestrian movement

At numerous pedestrian crossing locations, it was observed that there are items of street furniture located directly within the line of crossing, which would present a hazard to mobility impaired pedestrians. These can consist of lighting columns, post boxes, bollards, etc.



Figure 4.16: Inadequate Crossing Facilities

There are also approximately 20 non-standard pedestrian crossings located outside of the City Centre on the various approach roads – these crossings are often missing features such as dropped kerbs and tactile paving, and do not offer any pedestrian priority over vehicular traffic.



Figure 4.17: Street Clutter leading to reduced footpath width



Figure 4.19: Guardrail and lighting column creating pinch point along pedestrian path

There are a number of junctions and locations however where pedestrian facilities are lacking. A number of the larger roundabout junctions are missing crossing facilities on the majority of their arms, and there are a number of locations where footpath widths are problematic for the movement of pedestrians. These junctions and crossings can in turn pose safety risks to pedestrians, particularly vulnerable pedestrians, as a result of street clutter, excessive crossing widths, poor features such as dropped kerbs, absence of tactile paving, etc.



Figure 4.18: Pedestrian facilities incomplete – dropped kerbs missing



Figure 4.20: Lack of integration of adjacent crossing facilities and ironwork located in crossing facilities

Within the LMD, there are approximately 60 signalised junctions, which offer varying degrees of pedestrian inclusion.

A number of these signalised junctions provide pedestrian crossings on certain arms only, while other junctions are signalised staggered crossroads, with pedestrian facilities not provided on certain approaches.

The majority of these junctions are of acceptable quality, with some minor issues such as the location and layout of tactile paving, dropped kerbs, etc.

Within the city centre itself, there are over 20 signalised junctions with pedestrian facilities incorporated. The majority of these are of good quality, however there are some issues relating to crossing facilities such as dropped kerbs and tactile paving at some junctions.

There are a small number of junctions (approximately 10) within the city centre which are non-signalised, but have pedestrian facilities incorporated into the junction to a limited extent, such as tactile paving, dropped kerbs, etc.

Additionally, within the city centre there are also approximately 30 additional junctions that are not signalised, and either offer very limited pedestrian crossing facilities, or no crossing facilities whatsoever.

The grid layout of the majority of the city centre streets ensures that there are relatively short walking distances between individual 'blocks', which ensures that pedestrians are typically not a significant distance from nearby crossing facilities within the city centre core.

Figure 4.21 (overleaf) shows the extent of pedestrian crossing facilities within the wider LMD, while Figure

4.22 (overleaf) shows the extent of pedestrian facilities provided within the city centre.

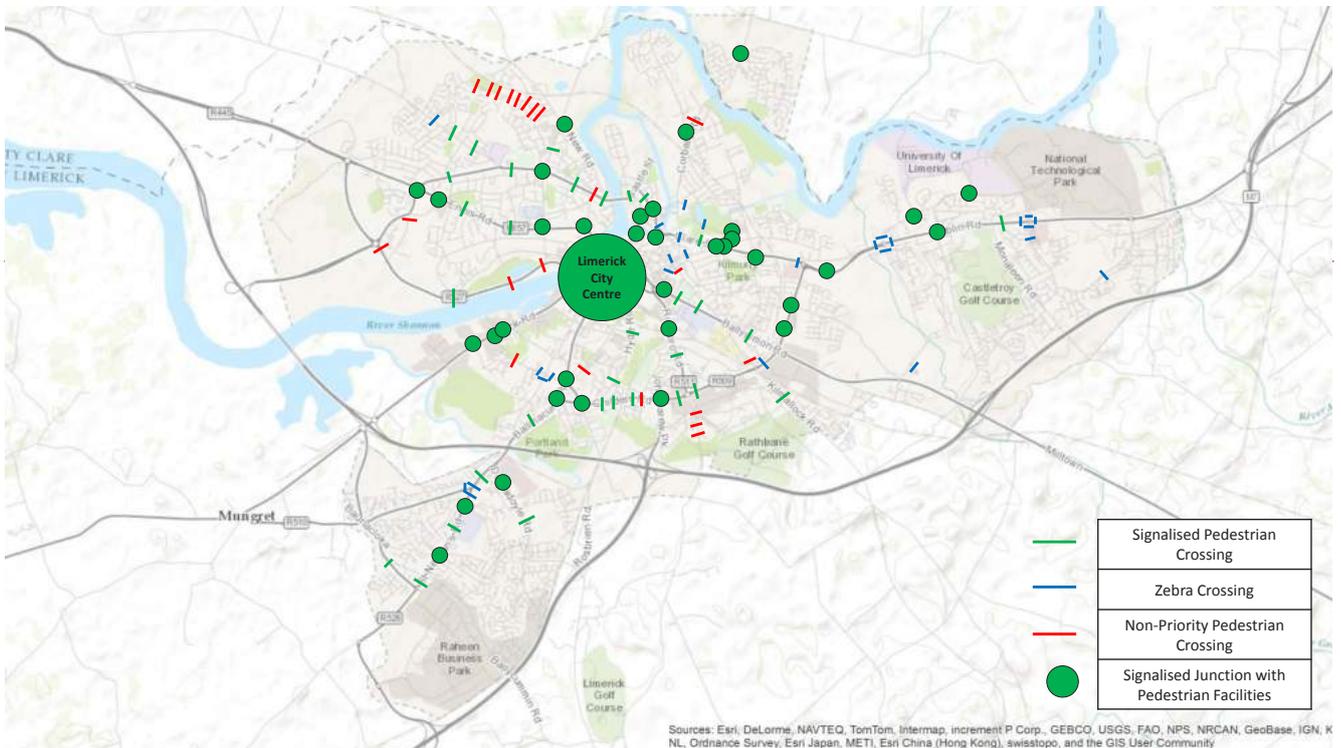


Figure 4.21: Formal Pedestrian Crossings within the LMD

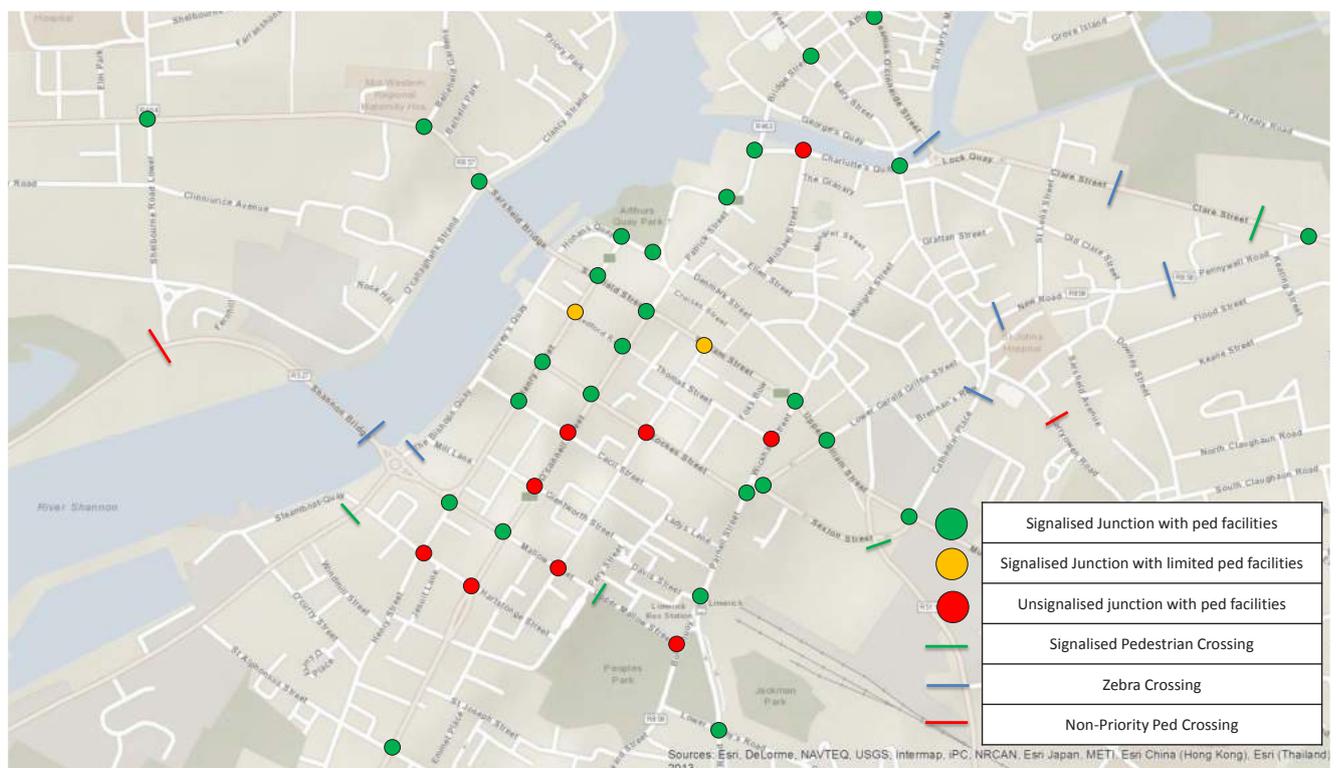
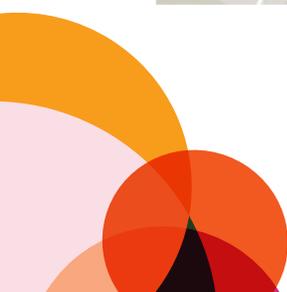


Figure 4.22: Formal Pedestrian Crossings within the City Centre





### 4.3.1.2

#### Pedestrianised Streets

In recent years, there have been major changes made to the streetscape in the city centre, most notably at Thomas Street and Bedford Row, both of which lie to the east and west of O'Connell Street. Bedford Row has been fully pedestrianised in recent years, while Thomas Street has been pedestrianised to an extent, although limited vehicular access is still permitted.

Other improvement works have been carried out at Catherine Street and Little Catherine Street to create a greater sense of place for pedestrians, as well as at Bishop's Quay in order to create a more vibrant waterfront area. All of these works have greatly improved the extent and standard of pedestrian facilities, with much wider footpaths and reduced carriageway space, and the presence of raised road surface profiles which help to give a sense of shared space between the modes.

Streets within the city centre which are pedestrianised at specific hours of the day are as follows:

- Cruises Street, except from 6am to 11am
- Section of Thomas Street – except 6am to 11am
- Section of Bedford Row – except 6am to 11am
- Chapel Street – except 6am to 11am (up to junction with Cruises Street, remainder is pedestrianised)
- Little Ellen Street
- Section of Augustinian Lane
- Todd's Row
- Foxes Bow – except 6am to 11am
- Little Catherine Street – from 11am to 4pm

Figure 4.23 below (left) shows the extent of pedestrianised streets within the city centre.

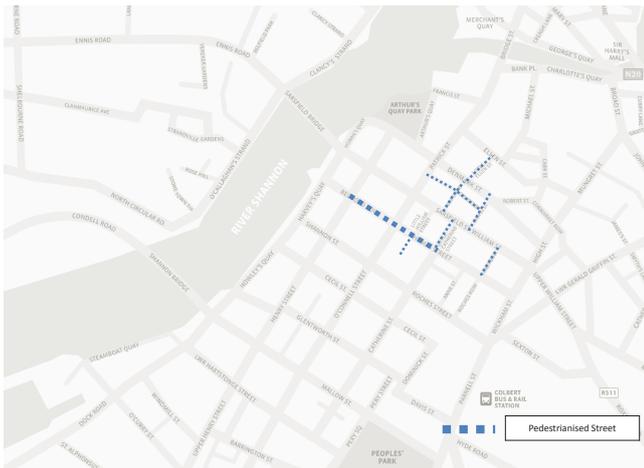
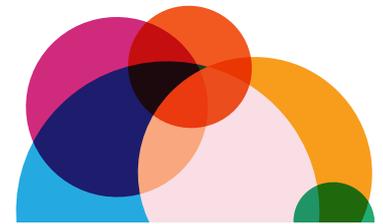


Figure 4.23: Pedestrianised and Partially Pedestrianised Streets within City Centre



Figure 4.24: Thomas Street – Pedestrianised Area and High Quality Public Realm



### 4.3.1.3

#### Pedestrian Wayfinding

There is no formal city centre pedestrian signage in place, with limited directional signage to assist pedestrians routing through the city centre.

There are also locations where excessive signage has added to street clutter, particularly as a result of older, redundant signage which have not been removed. There are good examples of signage that would work well within an overall wayfinding strategy, however, such as newer signage indicating the location of Colbert Rail and Bus



Figure 4.25: High Quality Wayfinding Signage within City Centre

Station, for example.

There is also a proliferation of large, major road signage throughout the city centre, which is often over-dimensioned for the vehicular speeds allowed in the city centre.

An updated, coherent and comprehensive pedestrian wayfinding strategy is of key importance for Limerick City Centre. Homogenisation of the various differing styles of pedestrian signage will help to create 'branding' for the City, and increased signage throughout would be complementary to the dissemination of information about public transport services, tourist information.

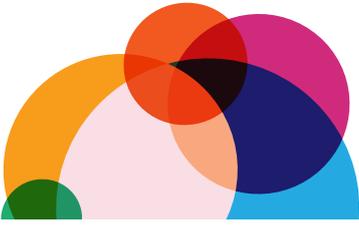
A wayfinding strategy should seek to implement a suite of fingerpost signage and complementary map display units. If so desired, additional features such as electronic mapping and integration with online services via a Smartphone Application could also be considered.



Figure 4.26: Good Quality Wayfinding Signage



Figure 4.27: Signage Clutter



#### 4.3.1.4

##### Public Realm

The Limerick Public Realm Design Guide (PRDG) (2008) set out key principles for Public Realm, including Movement and Accessibility, Public Safety and Activity. The PRDG was developed to promote a more consistent approach to the design and management of Limerick's streets. The PRDG gives guidance on the use of street furniture, public lighting, surfacing, signage and public art, amongst others.

In recent years, as outlined above, significant improvements have been made within the City Centre to specific streets, creating a much-improved Public Realm. Thomas Street, Bedford Row, Upper William Street and along the river frontage on Bishops Quay/Harvey's Quay/Howley's Quay are all examples of the high-quality improvements made to-date.

This excellent progress made to date seeks to establish a high-quality public realm which encourages people to choose the City Centre as their destination of choice, but also to ensure that the City Centre encourages people to spend a greater portion of their time in a welcoming and pleasant environment.

Further works are planned in the short-term, such as improvements on Parnell Street. However, the standard of public realm throughout the remainder of the City Centre, and on O'Connell Street in particular, requires improvement in order to further continue the progress to-date.

#### 4.3.1.5

##### Pedestrian Permeability/Connectivity

In the wider LMD, there are areas with good levels of connectivity and permeability for pedestrian movement, and other locations where the standard of these are poor.

The main barriers in Limerick are constituted by the River Shannon, the Park Canal, the various railway lines and by large road infrastructure including the M7 motorway (Limerick Southern Ring Road). In addition, some areas (residential and commercial) were developed without the desired pedestrian permeability. Some examples of the varying levels of permeability and connectivity are listed below.

Many of the issues with permeability and connectivity arise from the piecemeal development of numerous residential areas over the years, with a resulting lack of integration between adjoining areas. As a result, there are areas where traffic is channelled to a minimal number of access/egress points, leading to a proliferation of cul-de-sac streets, and ease of movement for pedestrians and cyclists is hindered. This can in some instances result in significant distances to travel to reach locations that are in fact on desire lines that cannot be accommodated due to barriers to movement.

The issue of pedestrian permeability and connectivity can be difficult to remedy. The amendment of streets to remove features such as cul-de-sacs in retrospect can often be the subject of opposition from residents, with concern over the attraction of undesirable traffic movements through streets, and the potential for anti-social behaviour.

These concerns can be addressed through the creation of high-quality linkage that creates increased filtered permeability, whereby pedestrian and cyclist permeability is enhanced to a level greater than that afforded to vehicular permeability, in addition to other locations where increased connectivity for all modes may also be considered.

As set out in the Design Manual for Urban Streets (DMURS), measures to increase the quality of these links could include maintaining clear sight lines where possible and ensuring that sufficient passive surveillance can be achieved, in order to minimise the perception of these links as anti-social spaces.



## Moyross

A prime example of an area with connectivity and permeability issues is in Moyross, to the north-west of the city centre. There are numerous residential areas here, such as Pineview Gardens for example, which have cul-de-sac roads, reducing the overall level of permeability. There are, however, areas with a high level of linkage for pedestrian use only in this area, primarily across green open spaces, which help to improve pedestrian movement.

The main access road through the area (off Knockalisheen Road) is provided with a number of on-street, non-priority pedestrian crossings, for example, with extensive additional traffic calming features. These crossings do not conform to any design standard, and are confusing in the sense that they indicate that pedestrians have some degree of priority, when in fact they do not.

The number of crossings indicates a high level of pedestrian demand to and from Corpus Christi primary school, the community enterprise centre and Moyross sports complex and sports field, for example, but the crossings themselves do not offer priority to crossing pedestrians as mentioned, and features such as dropped kerbs and tactile paving are of insufficient quality, or are missing entirely.

Additionally, within the Moyross area, there is a major severance issue as a result of the Limerick-Ennis rail link, which routes through the northern portion of Moyross and segregates the lands around Glenagross Park. There is a single crossing of this rail line within Moyross (there are other crossings on the Knockalisheen Road and Kileely Road outside of the estate) and as a result residents of Sarsfield Gardens and Castlepark, etc. are heavily restricted from the lands to the south of the rail line, with a number of cul-de-sac residential areas.

Further south within the Moyross lands, there are barriers to movement present between the northern extents of the lands within the Limerick Institute of Technology and the residential areas off Shanabooly Road, for example, with a number of cul-de-sac residential areas present here.

To the north-west of this area, in Caherdavin, there is a student accommodation development at Thomond Village. This complex is developed for students attending Limerick Institute of Technology. Again, there are major barriers to movement between Thomond Village and Delmege Park, for example, and no linkage to the LIT campus from the north-west – instead students must route south along Galtee Avenue and onto Old Cratloe Road in order to get to LIT.

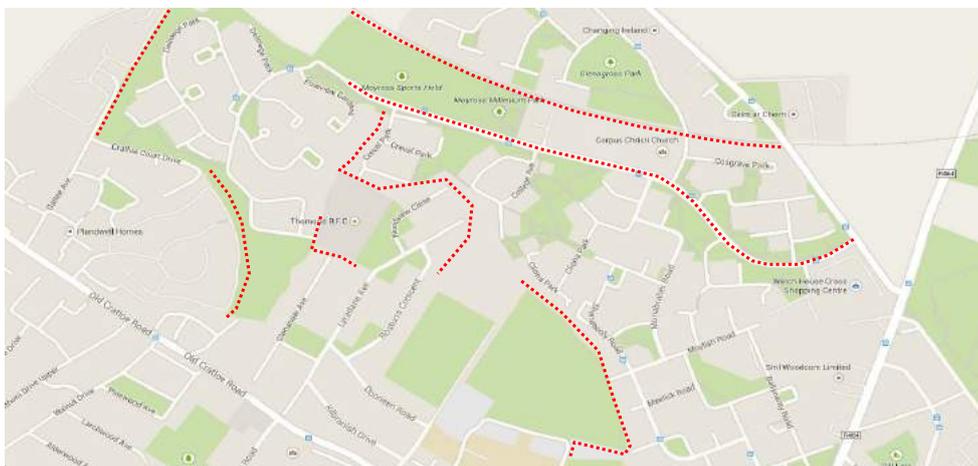


Figure 4.28: Connectivity and Permeability Issues at Moyross

## King's Island

In a similar manner to Moyross, King's Island suffers from a degree of severance due to the layout of the residential streets, especially at the northern half of the island. There are good pedestrian routes around the extent of the island itself along the river, but connectivity to the mainland is restricted from the northern half of the island.

To the south, the island is accessed from the east via Bridge Street, and the south via Bridge Street and Island Road. From the west, the island is accessed via High Road. Pedestrian and cyclist access to the city and suburbs is therefore restricted to the south of the island, where there are connections to the mainland.

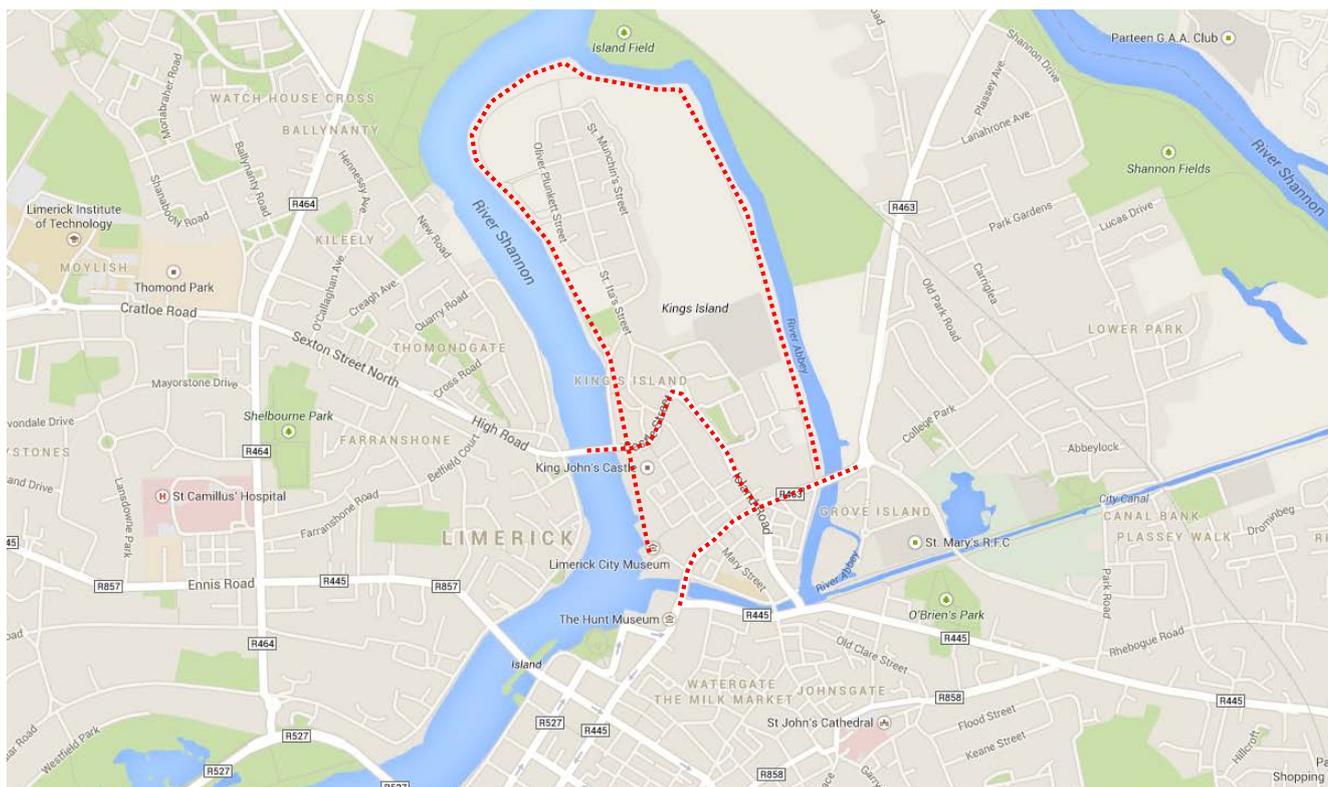
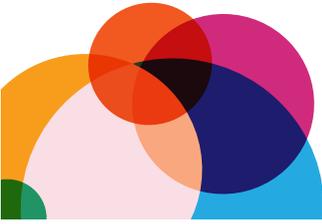


Figure 4.29: Connectivity and Permeability Issues at King's Island

## Lissanálta

To the south of the city, in Dooradoyle, a further example of a residential area with limited connectivity and permeability is at Lissanálta. The area is bounded by the Limerick-Foynes rail line to the east, by Dooradoyle Road to the west, and by the R926 link road to the M20 interchange to the north.

The area has a number of streets with cul-de-sac ends (e.g. Oakleigh Wood, Springfields, Lissanálta Drive, Cúl Cranagh), and limited linkage to the surrounding road network, effectively channelling vehicles and pedestrians along common routes.



## Greystones

In contrast to the examples referenced above in Moyross and Lissanálta, an example of a residential area which offers good permeability and connectivity is in the Greystones area to the northwest of the city centre. The residential estates at Avondale Drive, Parkview Drive, Mervil Drive and Brookville Avenue are all in this area. The layout of these estates avoids cul-de-sacs as much as possible, and there is a high level of connectivity between the internal distributor road networks.

There are also parallel routes internal to these residential areas which remove traffic from the main Clonmacken Road and improve the internal quality of the residential areas in Brookville Avenue by virtue of removal of main road traffic flows.

Within this overall area, there are numerous links to the main road network on Shelbourne Road, Ennis Road and Clonmacken Road, which all help to distribute traffic flows to and from these residential areas.

## University Hospital Limerick

A further example of an area with connectivity/ accessibility issues within the LMD is the University Hospital Limerick, in Dooradoyle.

The University Hospital has a single vehicular access point, via a roundabout junction on the R526 St. Nessan's Road. Vehicles have no alternative but to route in and out of the Hospital via this single access point. Pedestrians have more access options to enter the Hospital campus, but again, these are all exclusively on the R526 St. Nessan's Road. The Hospital is bounded to the north and to the east by residential development and to the west by St. Nessan's Road. To the south, there are some undeveloped lands adjoining the campus, but these are in turn further bounded by residential developments on all other sides.

In the wider area, the primary access to the University Hospital is via St. Nessan's Road. Access from the wider road network therefore requires vehicles to use St. Nessan's Road from the north or the south. This can lead to somewhat excessive routing requirements for vehicles using the South Ring Road to access the Hospital. Additionally, and perhaps most significantly, the Hospital is heavily restricted by traffic conditions on St. Nessan's Road, which would effectively mean that emergency traffic to and from the Hospital is at particular risk from external factors, although there is a bus lane present on the inbound approach to Limerick City which could be of use in an emergency situation.

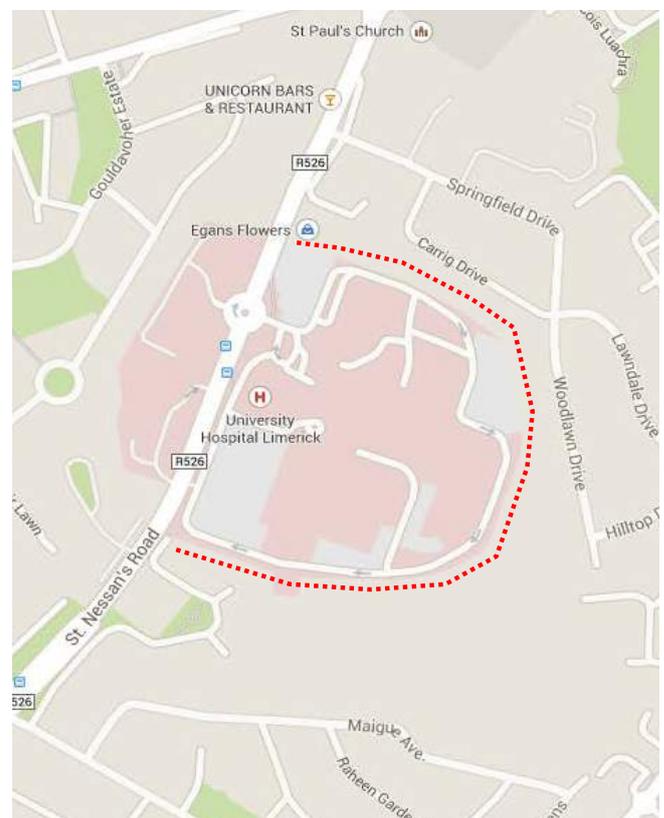


Figure 4.30: Connectivity and Permeability Issues at University Hospital Limerick

### **Kilteragh**

Similar to Lissanálta, residential developments at Kilteragh show numerous locations where permeability and connectivity is poor. Residential streets are seen to branch off from the Ballycummin Road, and there are a number of cul-de-sac streets at Claureen, Killard and Clonmore for example, and access/egress points are reduced to a minimum.

### **Newtown Park and Bloomfield, Annacotty**

In the Annacotty area, the Castletroy Neighbourhood Park located opposite Castletroy College is connected to the adjacent Bloomfield residential estate via an internal path through the estate, but the residential lands to the east at Newtown Park (Beech Grove, Roskeen, etc.) are segregated from the park. This park offers 1.2km of pedestrian and cycle pathways, a skateboarding area, an outdoor gym and a performance area, as well as a children's playground, and is therefore a valuable community asset.

### **Ferndale**

The residential lands at Ferndale are accessed from a 'left-in/left-out' only junction just north of the Coonagh Roundabout – the use of this access therefore requires vehicles to travel north to the next roundabout and U-turn. Within the estate, there are numerous cul-de-sac residential streets, and despite the proximity to lands in Caherdavin Heights, both areas are segregated.

### **Limerick City Centre**

Within Limerick City Centre, there are a number of key pedestrian desire lines and key pedestrian destinations. The numerous bridge crossings into the city centre are key pedestrian desire lines where pedestrian movements are concentrated. Other key destinations include Colbert Station, Arthur's Quay Park, Bishop's Quay, Thomas Street/Bedford Row, King John's Castle, St. Mary's Church, the Milk Market, Market Quarter, the Hunt Museum, Catherine Street and Cruises Street, for example.

In addition, other key areas include Sarsfield Street and William Street, for shopping and where the majority of city bus services have their termini.

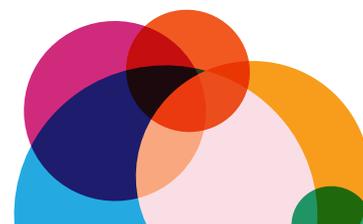
With the majority of the city centre core area laid out in a grid-like pattern of streets, pedestrian permeability is generally quite good. The transition into the more organic streets such as Cornmarket Row, Robert Street, Mungret Street and the areas around the Milk Market routes through less structured street layouts, and are as a result slightly less permeable. The route from Colbert Station through to the City Centre itself is also somewhat indirect.

Throughout the City Centre, there are numerous minor streets linking higher order streets, such as Davis Street, Myles' Street, Roche's Row, Theatre Lane, Post Office Lane, Griffith Row, etc. These streets are capable of carrying vehicular traffic, but are in most cases excessively narrow, with little or no footpath provision, high property walls on both sides and minimal public lighting, creating an unwelcoming environment for pedestrians.

There are also numerous areas where pedestrian movements are given varying degrees of priority, on the various pedestrianised streets, but also through a series of inter-street links, such as Fox's Bow, Augustinian Lane, Todd's Bow, Chapel Street and Little Wickham Street. Consideration should be given to the feasibility of re-allocating a number of these streets for pedestrian use only.

Amongst the key barriers to pedestrian movement are geographical constraints such as the River Shannon and the City Canal, for example – these constraints funnel pedestrian movement to the main river crossings at Shannon Bridge, Sarsfield Bridge, Baals' Bridge, etc.

Other major barriers to pedestrian movement within the city are represented by the multi-lane, single-direction streets that circulate the city centre core. Wide, multi-lane streets carry multiple lanes of



traffic flow, and create severance for pedestrians, in addition to creating a reduced sense of personal safety. O’Connell Street, Henry Street, Roches Street and William Street are examples of this. The proposed inner orbital route for the city centre may require re-consideration in light of the change in traffic volumes following the completion of the Limerick South Ring Road and Limerick Tunnel, and in the context of the severance created by the orbital proposals within the city centre.

In recent years the improvement works carried out within the City Centre by Limerick City and County Council includes the improvements to public realm at Thomas Street and Bedford Row, as well as pedestrian priority initiatives at the numerous signalised junctions within the City Centre in order to minimise wait time for pedestrians at crossing points.

To the north of the City Centre, the level of connectivity through Nicholas Street and Castle Quarter towards King John’s Castle is noticeably reduced. There are a number of narrow streets in the vicinity of King John’s Castle such as Newgate Lane, St. Francis Place, and portions of Nicholas Street which are designated as one-way, creating a degree of severance for pedestrians and visitors to King John’s Castle and St. Mary’s Cathedral. There are pedestrian-only links through from the Potato Market to Crosbie Row via St. Augustine Place, as well as through the visitor car park at King John’s Castle, and along The Parade and from Church Street across Castle Road, but the overall level of permeability and signage up to King John’s Castle and St. Mary’s Cathedral is in need of improvement.

Figure 4.31 below shows the main pedestrian desire lines within the city centre, the major trip attractors and existing barriers to movement.

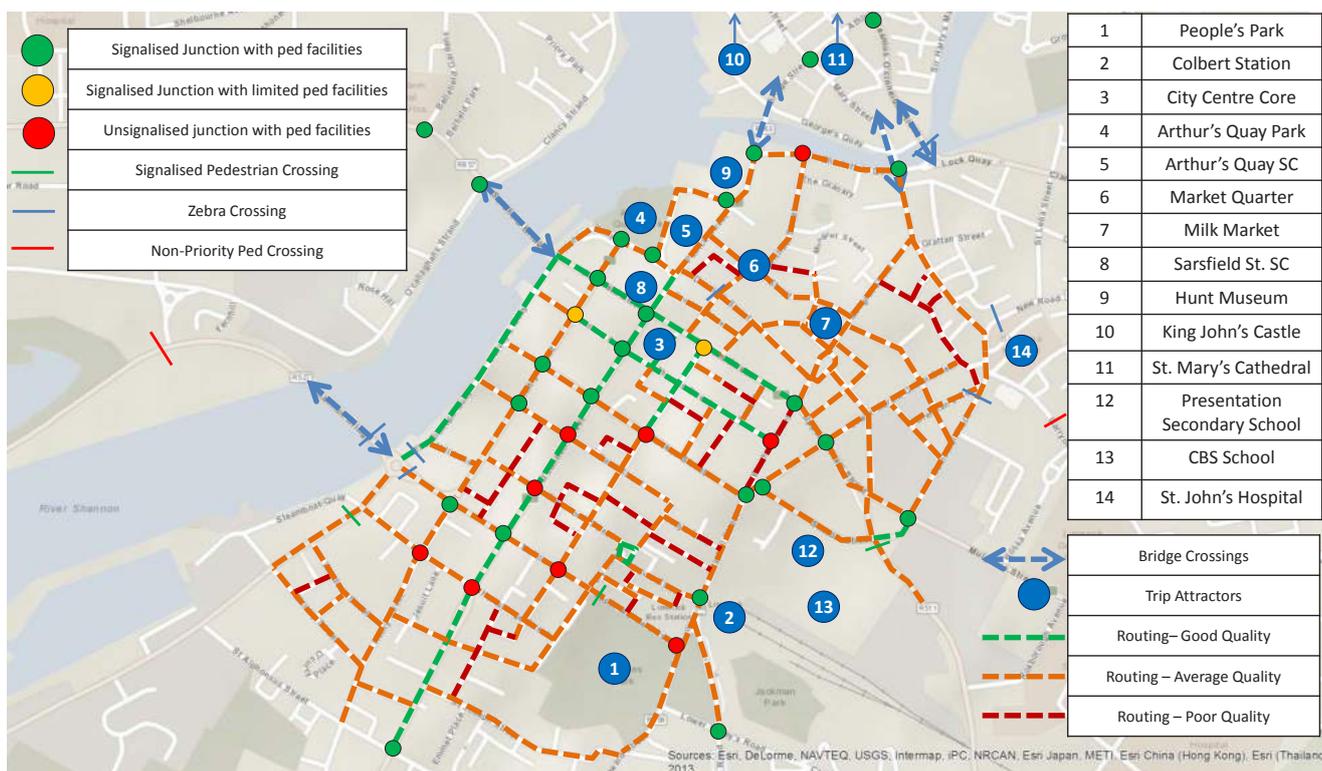


Figure 4.31: Pedestrian Routes, Trip Attractors and Barriers to Movement in Limerick City Centre



## 4.3.2 Cycle Network

### 4.3.2.1 Existing Cycle Network

The current cycle network within the LMD is limited. There are a number of on-road and off-road cycle lanes provided within the LMD, but the extent of these is very minor within the overall LMD. Currently cycle facilities are in place in the following locations:

- Castletroy/Annacotty/UL area – predominantly off-road cycle facilities, with some on-road sections – of good quality
- Dooradoyle/Raheen area – an even mix of on-road and off-road cycle facilities, of acceptable quality

- Caherdavin/Moylish/Condell Link Road – mostly on-road cycle facilities, of acceptable quality, some off road cycle lanes near the Limerick Northern Distributor Road connection point at Coonagh Roundabout of good quality.
- Pa Healy Road – off-road cycle lanes of good quality
- River and Canal routes – along Condell Road, and within King's Island and along the City Canal – off-road cycle lanes, of sufficient quality

There are also a number of residential areas where there are internal cycle facilities. The various bus lanes in place within the LMD area are also suitable for cycle use, and effectively provide additional on-street cycle facilities, with a good degree of separation from vehicular traffic.

Figure 4.32 below shows the major current on-road and off-road cycle lanes within the LMD.

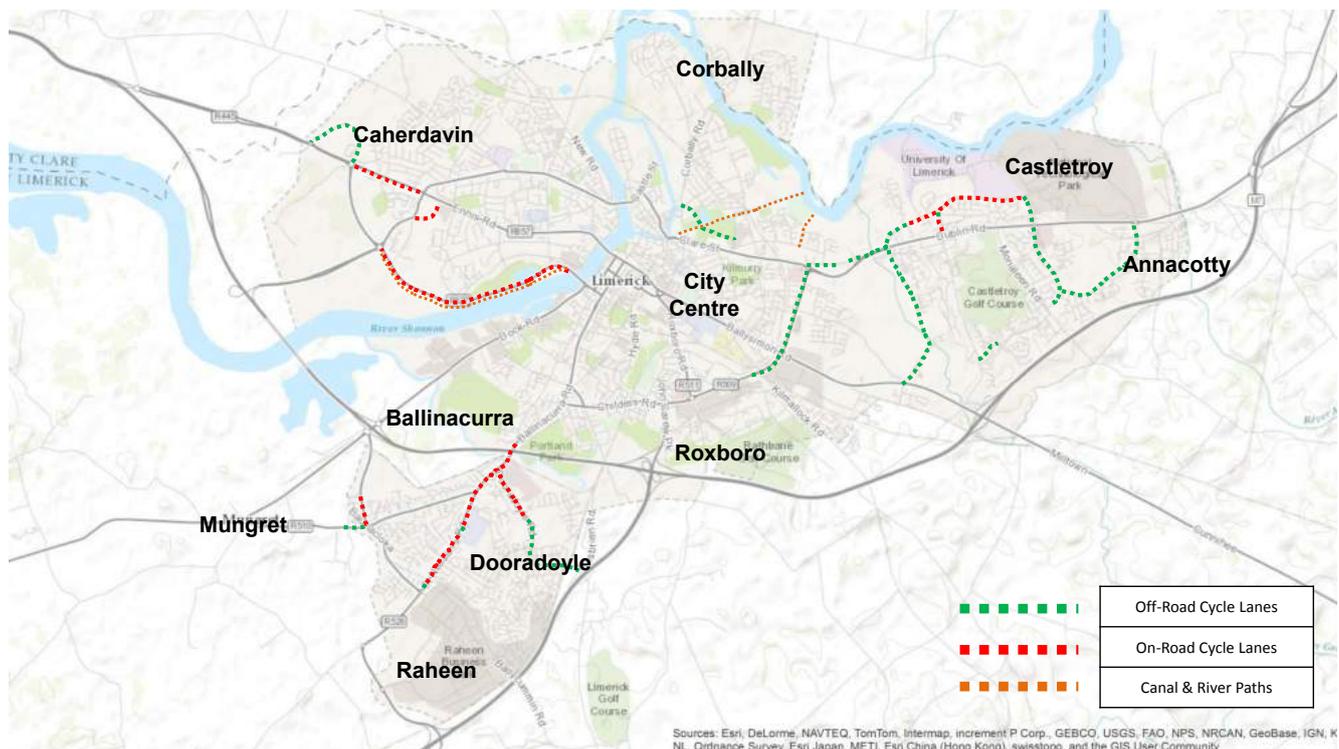
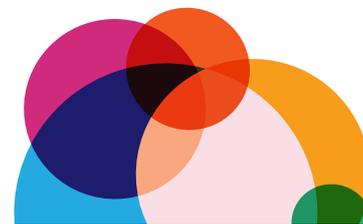


Figure 4.32: Existing On-Road and Off Road Cycle Lanes within the LMD



It can be seen from Figure 4.32 above that a significant portion of the cycle network is consolidated around the east of the city, providing good off-road facilities and extensive linkage to the University of Limerick and environs.

Limerick Institute of Technology and Mary Immaculate College are not linked to the city centre by any cycle facilities at present, although there are some limited cycle links in their environs.

It can be seen in the above figure that currently there are no complete cycle corridors across the LMD. The major strategic corridors that currently exist in the LMD comprise the southern, eastern and north-western links to the city centre from the developed areas in the suburban fringes. Within the city centre itself, there are no current cycle links, either on-road or off-road.

#### 4.3.2.2

##### Quality of Cycle Network

There are a number of locations where the existing cycle network is of good quality, with highly visible and clean cycle lanes suitably segregated from vehicular traffic (either off-road entirely, or on-road but with good separation from vehicular traffic). There are other locations however where the cycle lanes are seen to be carrying excess dirt and debris from the adjoining carriageways.



Figure 4.33: High Quality, Legible and Segregated Cycle Lane



Figure 4.34: Dirt and Debris in Cycle Lane

There are other locations where interruptions to the cycle links are required, such as at specific junctions, etc. however the manner in which the cycle links are transitioned off-road and on-road would likely be problematic for cyclist use.



Figure 4.35: Transition to on-road cycle lane – excessively tight manoeuvre, kerbing and debris collectively pose increased risk of incidents

There are also locations where the integration of cycle lanes with ancillary facilities such as bus bays, etc. are such that they displace cyclists back into general traffic, or force cyclists to mix with other road users in an undesirable manner.



Figure 4.36: Bus Bay across cycle lane displaces cyclists into general traffic, despite additional scope to re-allocate road space to cycle lane

Portions of the existing on-road cycle network lie on heavily trafficked routes, such as the Condell Road, Ennis Road, St. Nessian's Road and the Plassey Park Road, while other portions route through quieter streets such as Groody Park/Ballysheedy and Monaleen/Newtown.

#### 4.3.2.3 Cycle Network Proposals

The Limerick Smarter Travel (LST) project envisages the development of a comprehensive network of cycle links within the LMD, greatly enhancing the existing cycle network and consequently improving the connectivity between the major nodes within the LMD.

There are 5 major proposals contained within the LST proposals, all of which will link the city centre to major centres to the east of the city centre. However, there are also additional proposals contained within the LST overall project that will improve the linkage throughout the city and the environs, including greater linkage between the 5 major routes identified.

Figure 4.38 (right) shows the cycle route proposals contained in the LST project.



Figure 4.37: Cycle Lane routed off-road to accommodate bus stop, but located in direct conflict with bus users

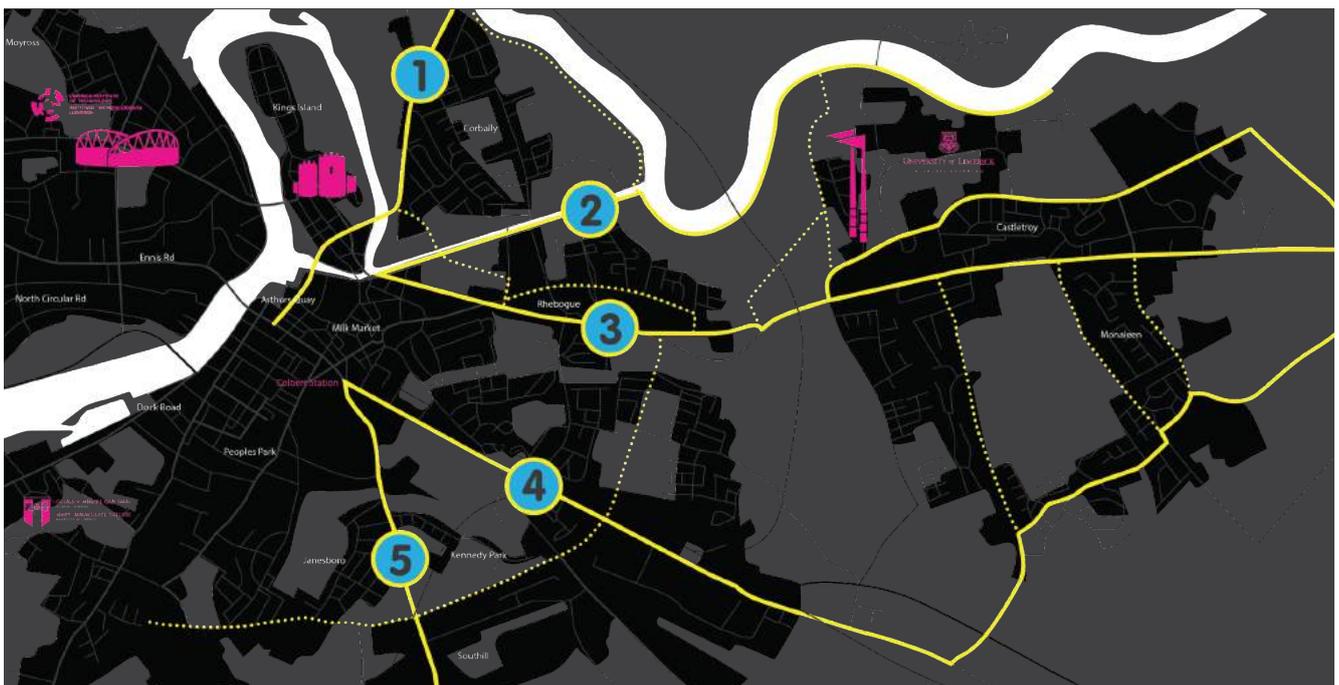
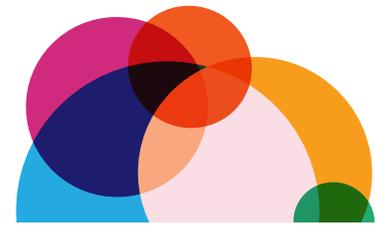


Figure 4.38: Limerick Smarter Travel Routes 1-5 and linkage between routes

In addition to the cycle network proposals associated with the 5 key hubs shown above, there are numerous additional cycle schemes that are put forward for implementation across the LMD in the various Development Plans, Local Area Plans, as part of infrastructural works currently at design stage, and as suggested by the Limerick Smarter Travel office:

**Limerick Northern Distributor Road** - the Coonagh-Knockalisheen section of the LNDR is expected to commence construction in late 2014 or early 2015. This includes the installation of cycle lanes as part of the works.

**Childers Road Upgrade** – the proposed upgrade of the R509 Childers Road from the John Carew Park link road to the Parkway roundabout will include the installation of off-road cycle lanes along the majority of the route length.

**Coonagh Recreational Framework Plan** – this RFP envisages the creation of a dedicated walking and cycling loop through the lands located to the west of the City. Three different loop options are suggested, with lengths ranging from 3.5-9km.

**Great Southern Trail** – the Great Southern Trail is a 96km stretch of countryside in West Limerick and North Kerry, following the Limerick-Tralee rail line, which closed in 1978, but remains the property of CIÉ. In Limerick, approximately 40km of the trail has been developed to date for walking and cycling, and links the towns and villages of Rathkeale, Ardagh, Newcastle West, Barnagh, Templeglantine and Abbeyfeale.



Southern Environs LAP – this LAP, which covers the period 2011-2017, indicated cycle lane proposals along the R859 from Mungret to Gouldavoher, as well as additional cycle lane infrastructure proposed in greenfield lands (in tandem with proposed new distributor roads) to the north and west of Dooradoyle.

Castletroy LAP – the Castletroy LAP (2009-2015) was extended in June 2014 for an additional 5 year period, to 2020. This LAP outlines some minor additional cycle network proposals in the Monaleen area and along the Old Schoolhouse Road, in the southern extent of the LAP area.

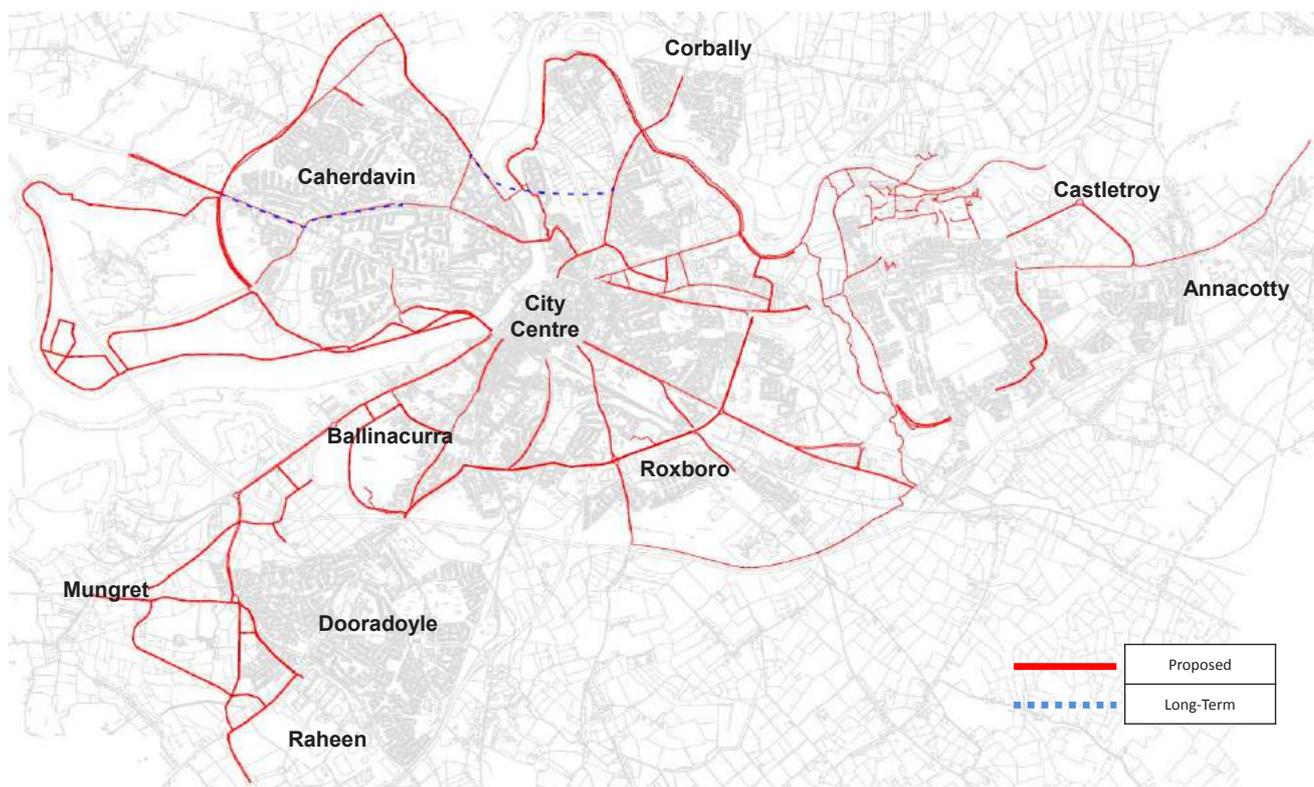
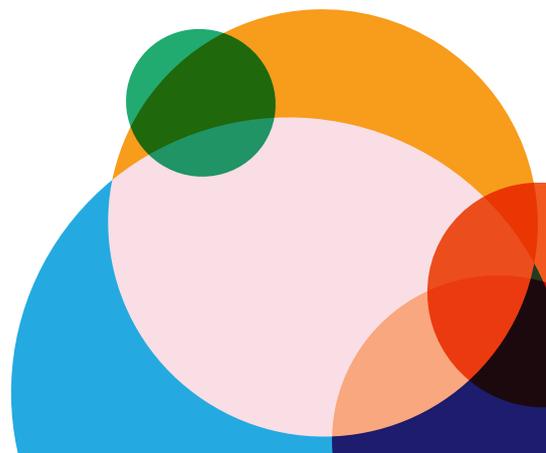


Figure 4.39: Proposed (red) and Long-Term (blue) Cycle Routes in wider LMD from City Development Plan, Local Area Plans and LST Office



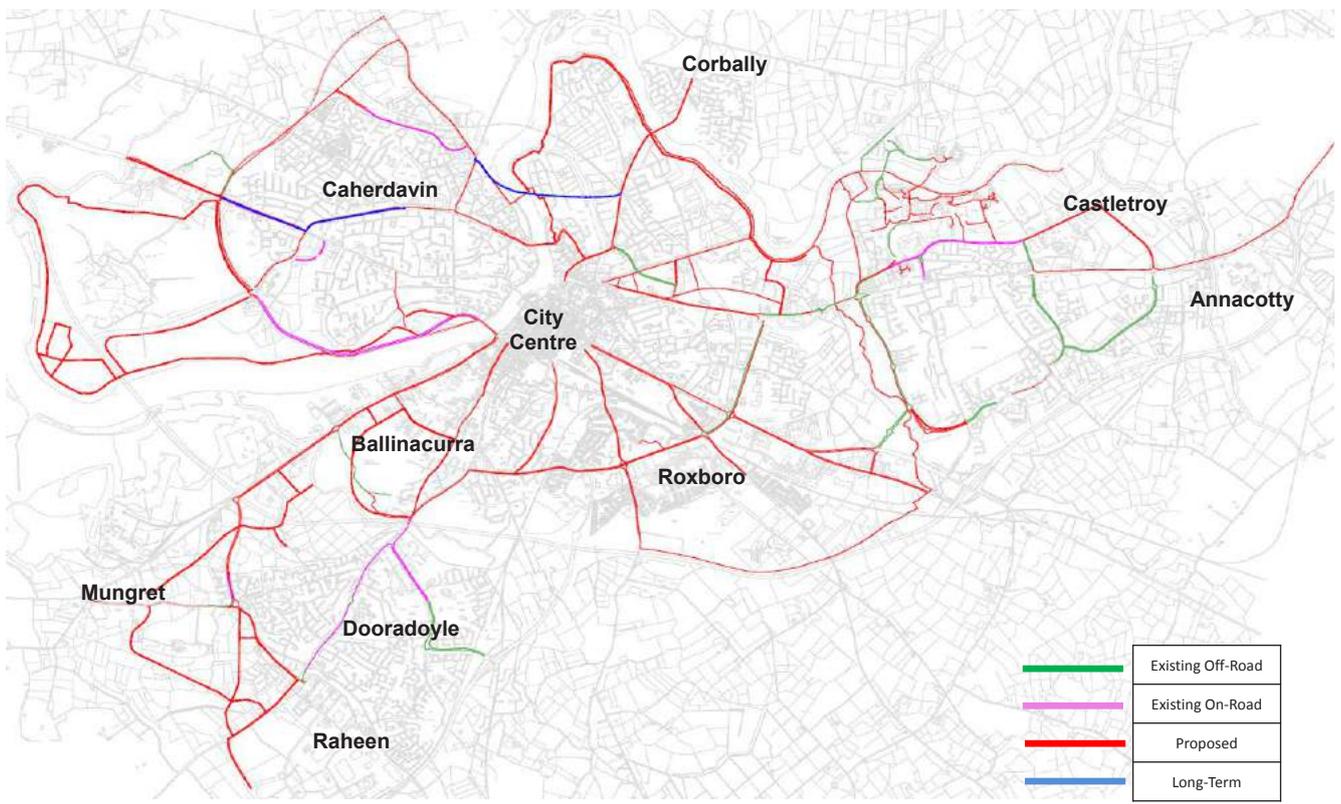
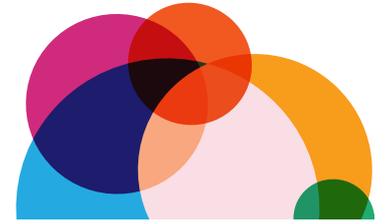


Figure 4.40: Existing and Proposed Cycle Lane facilities

Limerick City Centre – the Limerick City Development Plan (2010-2016) identifies a number of proposed cycle ways and long-term cycle ways to be implemented over the lifetime of the plan and beyond. The proposed cycle ways are predominantly reflective of the proposals contained in the Limerick Northern Distributor Road (Coonagh-Knockalisheen) scheme and the Childers Road upgrade, but there are additional cycle way proposals shown along the Shannon Fields, in the Ballinacurra area, in Rhebogoe, Moyross and on the Cratloe Road.

Figure 4.39 below shows the extent of the cycle lane proposals in the various plans across the LMD. Figure 4.40 (right) shows the existing and proposed cycle lanes in the LMD.

#### 4.3.2.4

##### Cycle Parking

Within the city centre, there is a mixture of older post and rail type cycle stands, and newer cycle parking stands throughout. Furthermore, the Limerick Smarter Travel scheme has resulted in numerous additional cycle parking stands being implemented throughout the city centre.

As of December 2013, an initiative from the Limerick Smarter Travel Office has been launched within the city centre to allow cyclists to park their bicycles at a secure location in a multi-storey car park within the city centre.



Figure 4.42: Secure off-street cycle parking within Anne Street Multi-Storey Car Park



Figure 4.41: Good Quality Cycle Parking Stands

The pilot location of this scheme is the city centre car park at Anne Street, where 22 bicycle spaces have been provided on the ground floor, which are fully lit and monitored by CCTV. As part of this, cycle maintenance facilities and 10 lockers have also been made available for use by cyclists. It is envisaged that this initiative will continue to be rolled out among the other city centre car parks in 2014, with Howley's Quay Car Park the location for the next block of secure cycle parking.

#### 4.3.2.5

##### Public Bicycle Scheme – Limerick City

Following the success of the Dublin Public Bicycle Scheme in recent years, it is now proposed to implement a similar scheme in Limerick City.

This will entail the construction of a number of bicycle parking areas throughout the city and environs, and associated infrastructural works. The Limerick Public Bicycle Scheme will greatly enhance the level of accessibility to high-quality bicycles and parking facilities within the LMD.

As part of this scheme, 215 bicycles will be available at 445 individual bicycle docks, which will be deployed at 23 locations around the city centre and environs.

In the medium-to-long term, as the scheme considers expansion, further docking stations could be considered at locations such as the University Hospital Limerick, Limerick Institute of Technology and the University of Limerick. In addition, dedicated internal bicycle sharing schemes can be considered for implementation at major institutions such as LIT and UL. For example, University College Cork operates a small-scale internal bicycle sharing scheme (approximately 20 bicycles) within the Campus for staff and postgraduate use only.

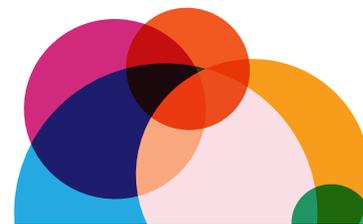


Figure 4.43 below shows the locations of the proposed cycle docking stations throughout the LMD.

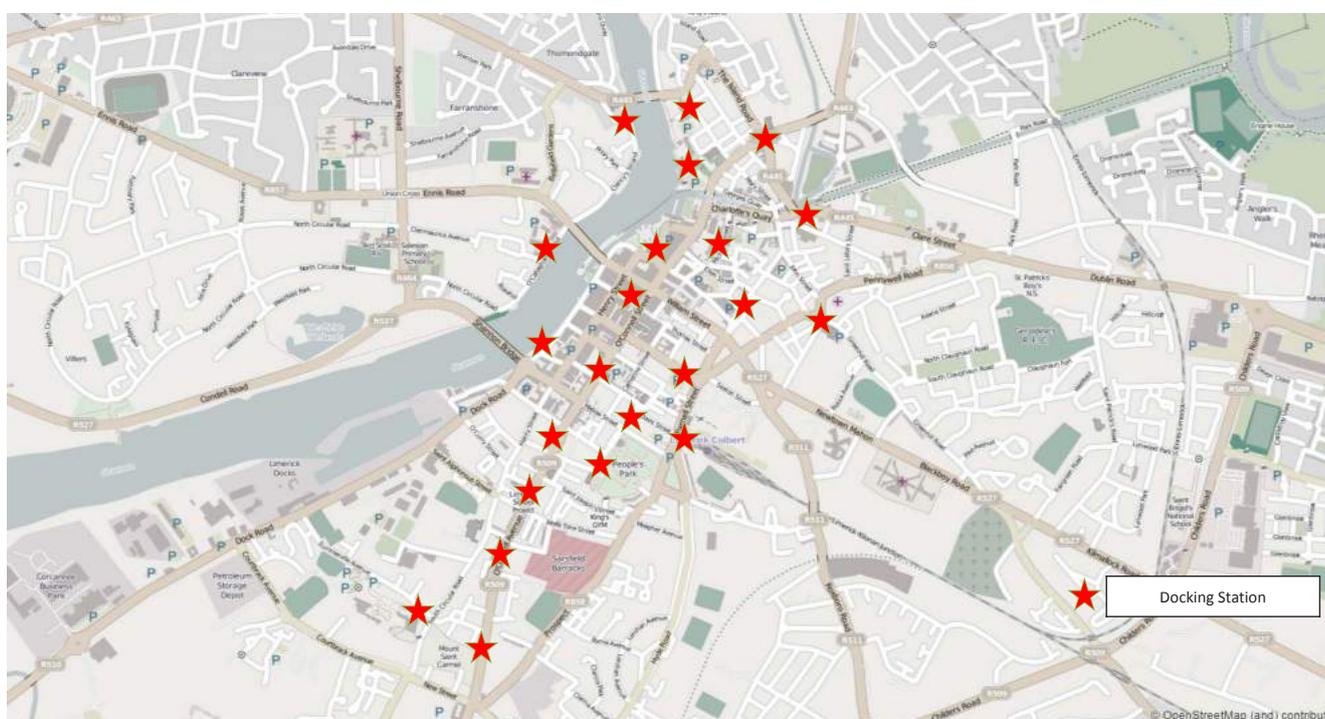


Figure 4.43: Public Bicycle Scheme Docking Locations

### 4.3.3

#### Bus Network Analysis

There are various bus services currently in operation within the LMD. The principal service provider is Bus Éireann, who operates several City Centre-based routes within the LMD. In addition, there are a number of private bus operators, including Eurobus Limerick, who operate more localised services. Finally, there are also the intercity and regional bus services which mostly serve Limerick Bus Station only, but with some additional stops within the LMD.

### 4.3.3.1

#### City Centre Services

As outlined above, Bus Éireann operates a wide range of services within the City Centre and the LMD lands. There are 7 principal City Centre services, as follows:

- 301 – Westbury – City Centre – University Hospital – 30 minute frequency
- 302 – City Centre - Caherdavin – 20 minute frequency
- 303 – Pineview – City Centre – O’Malley Park – 30 minute frequency
- 304 – University of Limerick – City Centre – Raheen – 15 minute frequency
- 304X – Raheen – University of Limerick Direct Service – 1 service per day (Monday-Friday, College Term only)
- 305 – St. Mary’s Park – City Centre – Lynwood Park – 60 minute frequency
- 306 – Brookfield – City Centre – Ballynanty – 60 minute frequency

The current city centre schedule of services has been in place since September 2012, following a review of the network operation by Bus Éireann and the National Transport Authority.

The objective of this network review was to deliver improved and more frequent services, with the introduction of clock face timetable frequencies (i.e. services at particular intervals past the hour). All of the above services are cross-city routes, with the exception of the 302, which serves Caherdavin (to the west of the City Centre) only. The 306 route has been modified since the review in 2012, and no longer serves the Brookfield area to the east of the city centre; instead it serves lands to the south of the city at Lord Edward Street and Prospect Hill.

In addition to the Bus Éireann routes outlined above, Eurobus Limerick operates two routes which serve the University of Limerick and the City Centre, as follows:

- Route 307 – Cappavilla – William Street via Brookfield Hall – hourly frequency, and
- Route 308 – City Centre – University – Annacotty – hourly frequency.

### 4.3.3.2

#### Quality of Overall City Centre Bus Network

As can be seen in Figure 4.42 below, the city centre benefits from good bus network coverage in certain areas, but less so in others. For example, the 303, 305 and 306 services are scheduled with far greater time between runs than other services such as the 304. Many of the city services also route through numerous residential areas, which can make routes circuitous to an extent and potentially lead to operational efficiency issues.

It is also noteworthy that cross-city services are not in place to link the lands to the north-west of the city centre to the major urban centres in Raheen, Dooradoyle, Castletroy and the University of Limerick – a transfer is required between services.

The existing services running from the north-west of the city (302, 303 and 306) either terminate in the city centre itself or only route to the immediate southern suburbs of the city at Roxboro.

Within the city centre, it is noted that the majority of bus services layover along Sarsfield Street and William Street, but that there are also other bus and coach layover areas along O’Connell Street, Liddy Street and Arthur’s Quay for example.

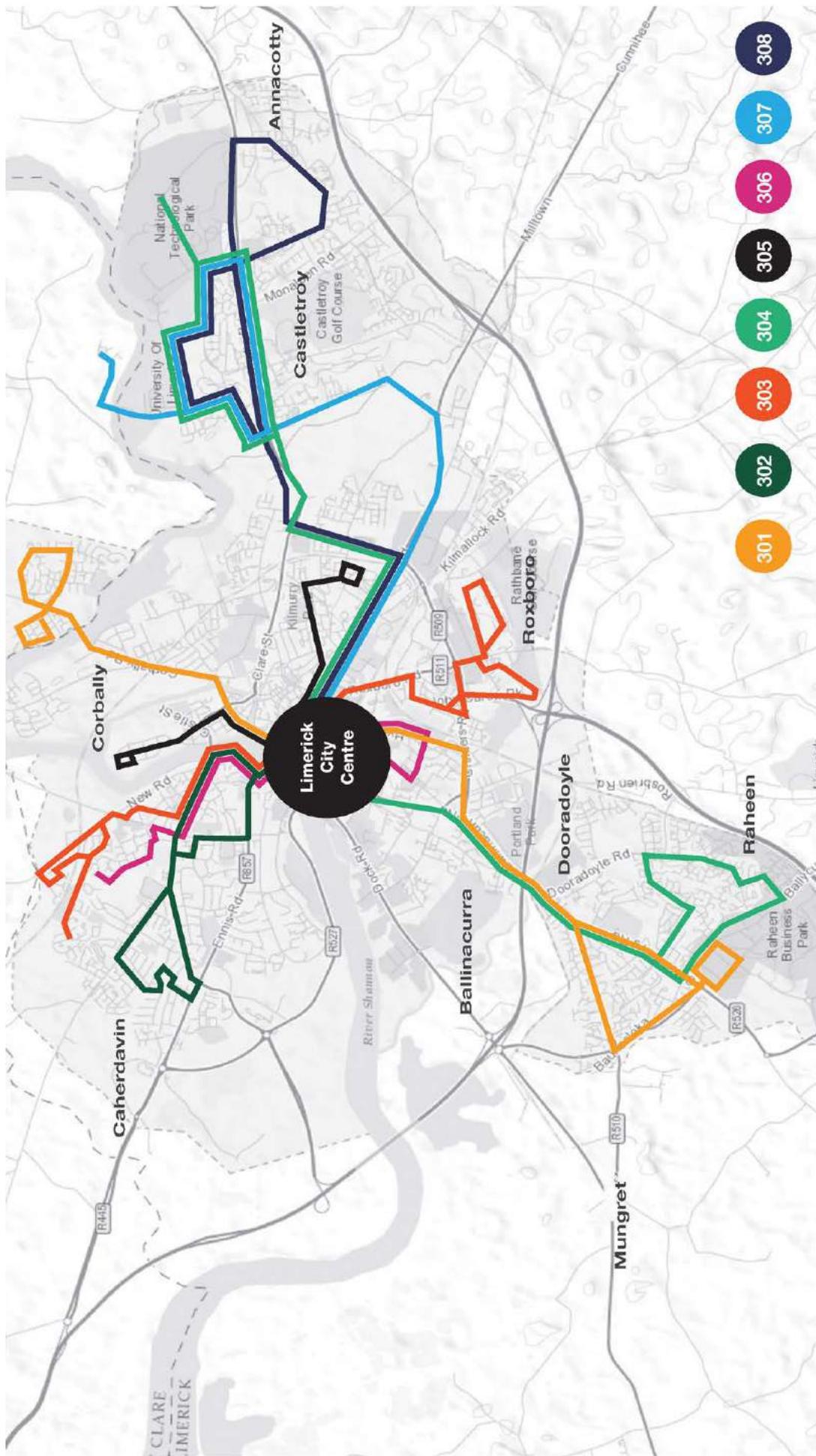


Figure 4.44: Existing City Bus Service Routes 301-308



Figure 4.45: Bus lay-by area on Sarsfield Street in City Centre



Figure 4.46: Coach lay-by area at Arthur's Quay

Crucially, there is a lack of route information available either at stops or online, with no map currently available of the city centre bus network.

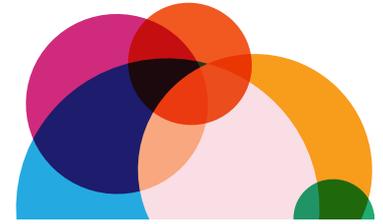
Although there is now a Journey Planner Smartphone Application (or App) available from Transport for Ireland this appears to be timetable-dependant only, and not based on any real-time information from the fleet itself; therefore there is no real-time information App of similar quality to the recently-launched Dublin Bus App, which gives information on specific services as they route within the overall city network.

The individual routes are discussed in more detail later in this report.

#### 4.3.3.3

##### Colbert Station

The principal terminal for public transport services in Limerick City is at Colbert Station. This station facilitates rail/coach/bus interchange. At present, the station is in need of upgrade and modernisation, which is expected to occur in 2014/2015, subject to funding. In addition to the upgrade of Colbert Station, Limerick City Council have also commissioned work intended to upgrade Parnell Street, adjacent to Colbert Station, which in turn may also facilitate the re-routing of some of the city bus services, which do not frequent Colbert Station to any significant extent. The upgrade of Colbert Station and Parnell Street may therefore facilitate a better level of integration and interchange between the various transport modes.



#### 4.3.3.4

##### Regional Services

In addition to the city centre, there are a number of regional services operated by Bus Éireann, as outlined below. A portion of these routes stop at a number of locations within the LMD, but the majority predominantly route to Colbert Station as part of their overall journey. These services are as follows (effective as of February 2014):

- 72 – Tralee – Limerick – Birr – Athlone
- 313 – Limerick – Ardnacrusha
- 314 – Limerick – Askeaton – Foynes – Tarbert – Ballybunion and return
- 320 – Limerick – Charleville and return
- 321 – Limerick – Rathkeale – Newcastle West
- 323 – Limerick – Killaloe – Newport – Nenagh – Borrisokane – Birr and return
- 328 – Limerick – Hospital – Galbally – Mitchelstown
- 329 – Limerick – Bruff – Kilmallock – Kilfinane
- 332 – Limerick – Newport – Rearcross – Cappamore – Dundrum
- 333 – Limerick – Ennis – Corofin – Ennistymon – Doonbeg and return
- 336 – Limerick – Ennis – Kilrush – Kilkee
- 337 – Limerick – Ennis – Lisdoonvarna – Doolin
- 341 – Shannon – Limerick – Newport – Cappamore
- 343 – Limerick – Shannon Airport
- 345 – Scarriff – Killaloe – Limerick
- 346 – Limerick – Tulla – Scarriff – Whitegate

There are two other service providers who operate regional bus routes within the LMD, these are as follows:

- JJ Kavanagh – Shannon Airport – Limerick – Nenagh – Portlaoise – Kildare – Dublin City – Dublin Airport
- Dublin Coach M7 Express – Ennis to Dublin via Limerick

Both of the above services serve the City Centre, and also access the University of Limerick and the Annacotty area.

#### 4.3.3.5 Long-Distance Services

Bus Éireann also operate a number of Expressway services in the LMD lands, which again predominantly serve Limerick Bus Station, with some additional access to areas on the Limerick – Dublin corridor, and the Limerick – Cork Corridors. These are as follows:

- X12 – Dublin Airport – Dublin – Portlaoise – Roscrea – Nenagh – Limerick an return and a daily non-stop Limerick-Dublin service
- 13 – Limerick – Adare – Listowel – Tralee and return
- 14 – Limerick – Kerry Airport – Killarney and return
- X51 – Limerick – Galway Express
- 51 – Cork – Limerick – Shannon Airport – Ennis – Galway and return
- 53 – Cork – Limerick – Galway – Sligo – Derry and return
- 54 – Kerry – Limerick – Galway and return
- 55 – Limerick – Clonmel – Waterford and return
- 57 – Ballina – Westport – Castlebar – Galway – Limerick – Cork and return

Finally, Bus Éireann also operates the Eurolines service 890 from Limerick – Waterford – London, which serves Limerick Bus Station only.

### 4.3.3.6 Bus Stops/Shelters

The vast majority of the bus stops located within the LMD are of the standard pole type, and are very prevalent within the city centre, as on-street space restrictions would restrict the feasibility of bus shelters, as seen in Figure 4.46 below. A number of these stops are in poor condition and display little or no information about bus services or routes, etc.



Figure 4.47: On-Street Bus Stop where Shelter is not feasible

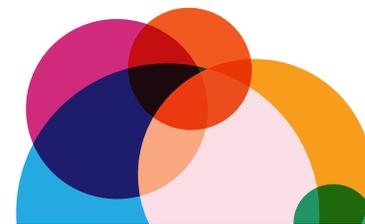
The absence of dedicated higher quality bus shelters along a number of the main bus routes in the City Centre, such as along William Street for example, poses challenges in terms of providing sufficient comfort and protection for waiting patrons. Alternative solutions may require consideration to circumvent the issue of geometric restrictions, such as canopy-style shelters that do not detract from the numerous shop fronts.

However, outside the city centre where space is more readily available, there are a number of locations where higher quality bus shelters have been provided. For example, in UL, the University Hospital, LIT, and along some of the existing bus lane corridors and major routes there are higher quality bus shelters and laybys at a number of locations, as shown below in Figure 4.48.



Figure 4.48: Higher-Quality Bus Shelter

Other locations within the LMD are typically provided with a single-pole bus stop and an on-street bus cage marking.



#### 4.3.3.7

##### Green Route Locations

In 2011, the Limerick City Green Routes project identified 3 corridors for implementation of green routes to the east, west and south of the city.

At present, there are a number of existing partial green routes in place within the LMD, all of which are provided on the inbound direction, as follows:

- A. R445 (Dublin Road) from Kilmurry Roundabout – Groody Roundabout
- B. R445 (Ennis Road) from Coonagh Roundabout – Clonmacken Road junction and at the Maternity Hospital (short section)
- C. R527 (Tipperary) Road from Ballysimon Road to Mulgrave Street – Newtownmahon
- D. R527 Condell Road

- E. R526 (Cork Road) Raheen Roundabout – Ballinacurra Road

At present, the southern corridor, from the City Centre to Raheen, is complete from Raheen to St. Nessian's Road, and an additional bus lane on Ballinacurra Road to link this corridor to Punches Cross will be completed in April 2014. The final phase of this corridor will then be the completion of the link from Punches Cross to the city centre.

The eastern and western green route corridors are currently partially complete, as outlined in Figure 4.49 above. The bus lanes along Condell Road primarily benefit regional services and taxis, as there are no city centre services which currently route on Condell Road. Figure 4.49 above also shows the proposed and envisaged Green Routes as indicated in the current Limerick City Development Plan.

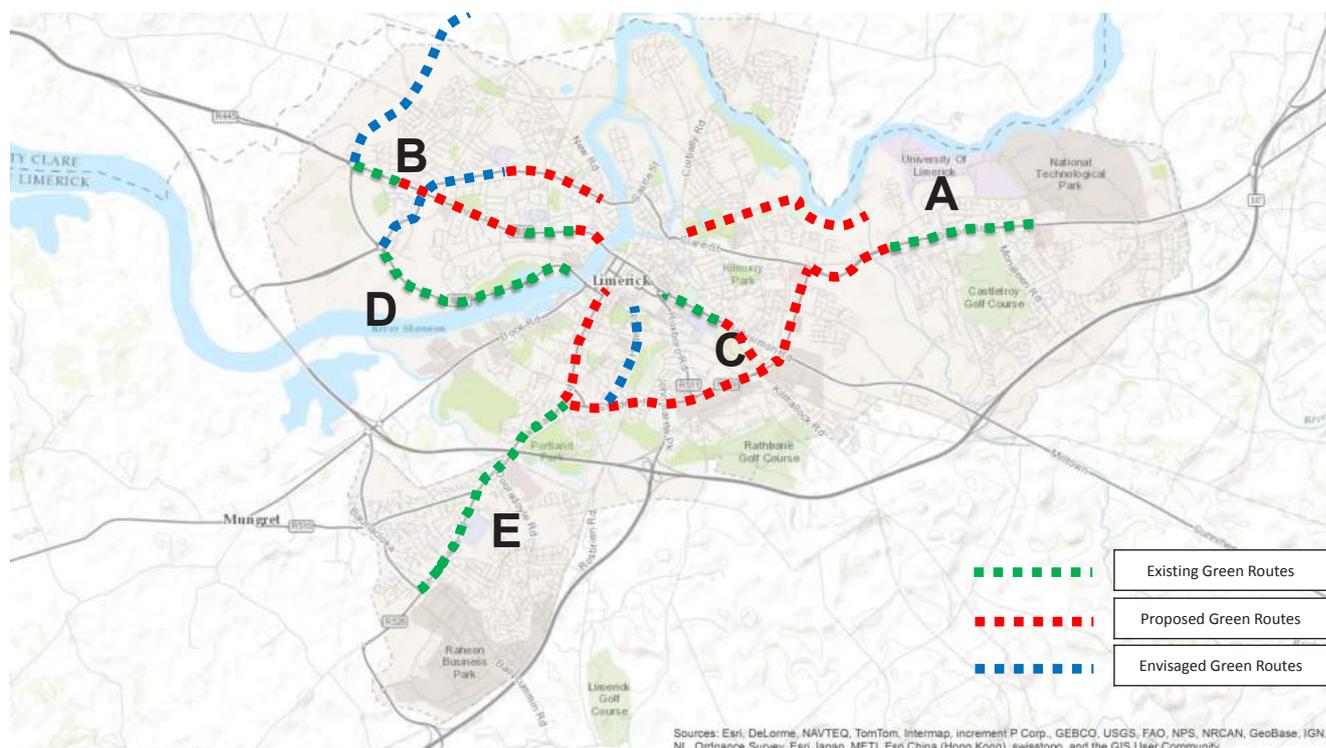


Figure 4.49: Bus Lanes within LMD



#### 4.3.3.8

#### Real-Time Passenger Information ( RTPI)

The coverage of Real Time Passenger Information (RTPI) signage is limited in the LMD. There are a total of 16 existing electronic signage poles, which are largely consolidated on the Raheen – City Centre – University of Limerick corridor, with some additional RTPI signage in place on the City Centre – Limerick Institute of Technology route and on the Corbally Road.

Figure 4.51(right) shows the locations of existing RTPI signage within the LMD. The further roll-out of RTPI is expected to continue within the LMD in 2014 and subsequent years.

#### 4.3.3.9

#### Bus Priority

Bus priority is provided at approximately 20 junctions throughout Limerick and integrated to the Limerick City Urban Traffic Control system. The system assists in providing priority for public transport vehicles, helping buses stay on schedule and improve service reliability. Further enhancement of existing junctions to incorporate Bus Priority is planned. The introduction of these facilities on routes entering the City Centre provides greater option for alternative modes of transport.



Figure 4.50: RTPI Signage in City Centre

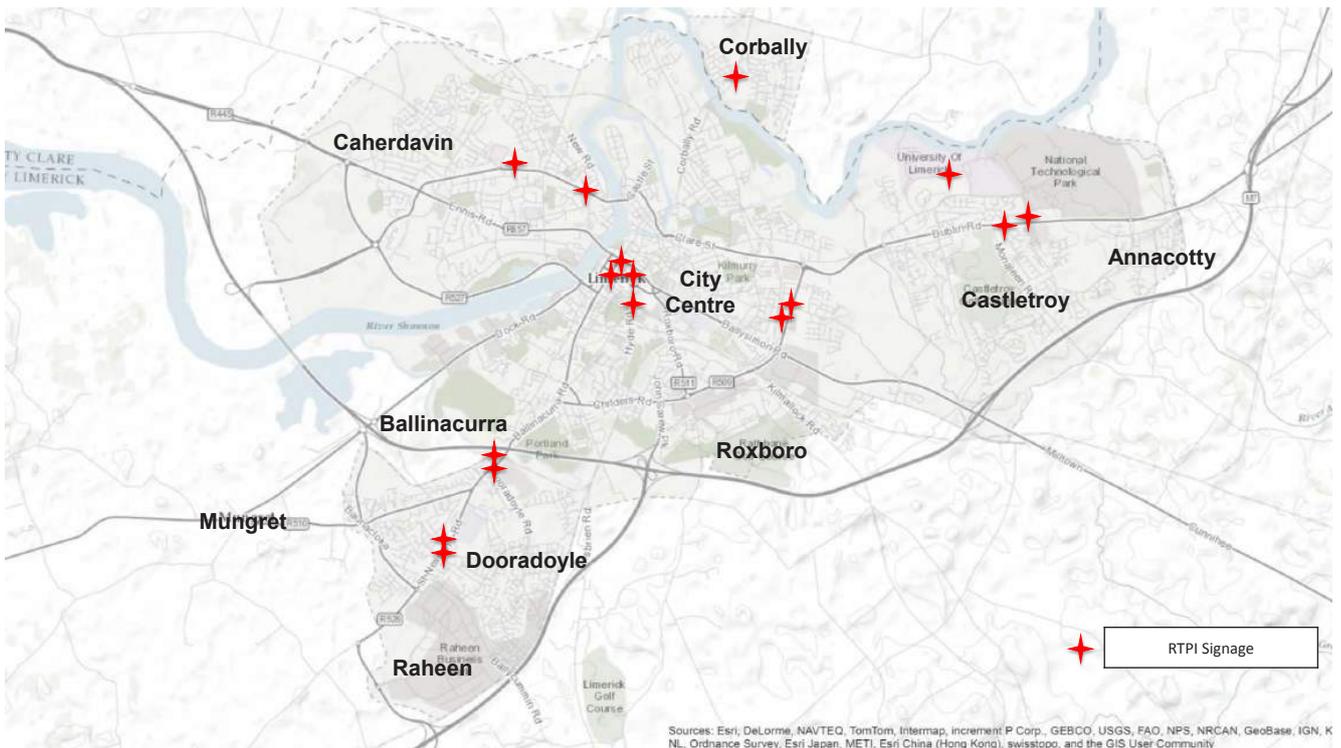
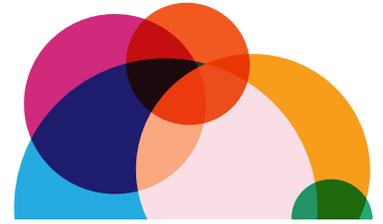


Figure 4.51: RTPI Coverage within LMD

#### 4.3.3.10

##### Bus/Coach Facilities

The principal Terminus in the City Centre is Colbert Station, which the majority of Regional services serve. Colbert Station is also the Rail Interchange within the city.

The city centre bus services predominantly have their termini at the extents of their routes, e.g. the Route 304 has termini at the University of Limerick and at Ballycummin, however within the city centre itself the services have their termini in the Sarsfield Street/William Street/Henry Street/Liddy Street area, and at Arthur's Quay.

All city centre services therefore converge on a localised area for terminus access. However, all such termini located within the city centre are on-street, and it is therefore typical to see a series of city centre buses parked along a number of streets within the city centre.

Coach parking within the City Centre is limited, with a clear need for additional parking to meet tourist coach parking and layover needs. Coach parking is provided in certain locations, such as on O'Connell Street, Castle Street and at the Potato Market, for example.



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The absence of layover facilities is currently leading to incidents of coaches parking overnight in bus stop bays. There is therefore a distinct need for a dedicated, off-street coach parking facility which would provide secure, overnight parking if needed, minimise the use of street space in the city centre by coaches, and provide access to services for cleaning of coaches and air/water, as well as providing refreshment facilities for drivers. Some form of integration with Colbert Station in this regard may be a viable solution, as well as at additional sites around the city.

#### 4.3.3.11

##### Bus-related Accident History

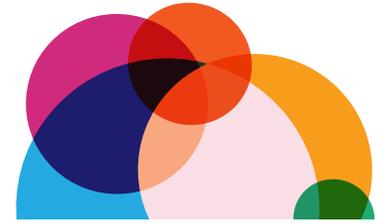
Interrogation of accident data available from the Road Safety Authority indicates that there is no significant accident history involving buses within the LMD. The most recent such incident was recorded in 2005 on the R463 Corbally Road, but limited additional information is available at present.

#### 4.3.3.12

##### Analysis of Bus Route Corridors

With the exception of the 302 service, all of the Limerick City bus services are required to traverse the city centre as part of their routes. This inevitably results in buses having to route through areas that are suffering from traffic congestion, leading to delay, which can be significant at peak times. As a result, there is a strong perception that the bus service in operation within the city centre is extremely unreliable in terms of achieving journey time targets and indeed in achieving frequency targets. All services currently experience delay on the approaches into the city centre, particularly at peak times.

In addition, the current circulatory system which is in place within the city centre can be problematic for buses as it requires them to route around the city centre in order to reach their termini as part of their scheduled services. It is noteworthy that



there are no bus priority measures in place within the city centre.

In order to evaluate the quality of service offered by each of the city centre bus services, a catchment analysis exercise has been undertaken along each of the respective routes.

Each of the routes was analysed using GIS in order to ascertain the levels of the LMD population that are within a 500-metre walk distance from a bus stop along a given route.

#### Bus Éireann No. 301 City Service Route

The 301 runs along the Westbury-University Hospital cross-city corridor, and serves lands at Raheen, Dooradoyle, Fr. Russell Road, St. Nessan's Road, Ballinacurra Road and Hyde Road to the south of the city, and lands in Lower Park and Athlunkard to the north, as well as the Crescent and Westbury Shopping Centres, and the Mid-Western University Hospital.

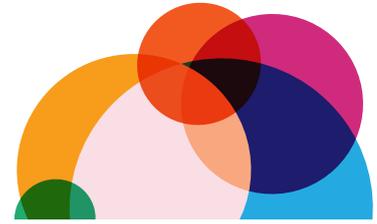
The 301 benefits from bus lane facilities on St. Nessan's Road at present and will do so in the future on Ballinacurra Road (bus lane currently under construction). The 301 experiences some overlap with the 304 service along St. Nessan's Road and the Ballinacurra Road.

This service experiences delay on the approaches into the city centre on Corbally Road and St. Nessan's Road/Ballinacurra Road, and within the city centre at O'Connell Street, Roches Street, Henry Street, Arthur's Quay, as well as on Hyde Road. The 301 has a 30-minute timetable frequency target. The main city centre termini are at Sarsfield Street and Arthur's Quay.

Figure 4.52 below shows the catchment along the 301 City Centre Service. The GIS analysis indicates that a total of 18,200 people live within 500m of a bus stop on this service, approximately 20% of the total population of the LMD.



Figure 4.52: City Centre 301 Service Catchment



### Bus Éireann No. 302 City Service Route

The 302 Service is the sole service in operation within the city centre which does not operate as a cross-city service. Instead, the 302 routes out to Caherdavin, and back in to the city centre only. The 302 service serves lands along the Ennis Road, Old Cratloe Road, Caherdavin, Shelbourne Road and Farranshone, as well as serving St. Camillus’s Hospital, Limerick Institute of Technology and Thomond Park.

This route does not currently benefit from any bus lane facilities. The 302 overlaps a short portion of its route with the 303 and 306 services. Within the city centre, the service must terminate on Sarsfield Street, but then re-route around the city centre to

Henry Street in order to pick up passengers for the start of the outward journey. This adds an additional routing delay to the service between drop-off and pick up points. Delays are experienced within the city centre, as well as outbound via Sarsfield Bridge and Shelbourne Road, and inbound along High Road and Clancy’s Strand.

The 302 has a 20-minute timetable frequency target. The main city centre terminus is at Sarsfield Street for drop-off and Henry Street for pick-up of passengers.

Figure 4.53 below shows the catchment along the 302 City Centre Service. The GIS analysis indicates that a total of 11,101 people live within 500m of a bus stop on this service, approximately 12% of the total population of the LMD.



Figure 4.53: City Centre 302 Service Catchment

### Bus Éireann No. 303 City Service Route

The 303 serves the Moyross area to the north-west of the city, and the Southill area to the south-east. The service routes through a large amount of residential areas to the north and south of the city in Moyross, Kileely, Ballynanty, Janesboro and Southill as well as serving the schools and industrial estate located at Donough O'Malley Park.

The 303 shares a portion of its route with the 301, 302 and 306 services, and does not benefit from any current bus lane or other priority features. The service experiences delay within the city centre,

and on the approaches to the city centre along Clancy's Strand and Roxborough Road. The 303 has a 30-minute timetable frequency target. The main city centre termini are at William Street and Henry Street.

Figure 4.54 below shows the catchment along the 303 City Centre Service. GIS analysis of the 500-metre catchment indicates that a total of 14,154 people live within 500m of a bus stop on this service, approximately 15% of the total population of the LMD.

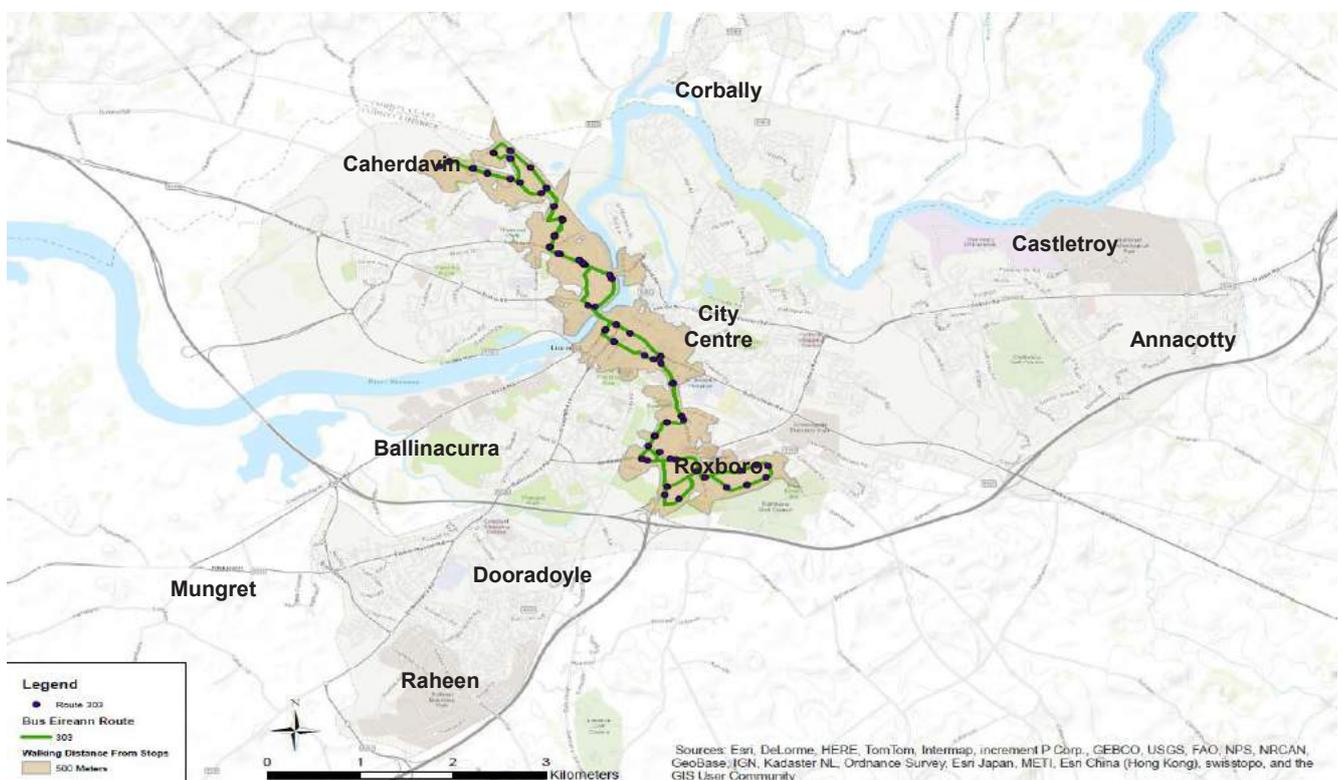


Figure 4.54: City Centre 303 Service Catchment



### Bus Éireann No. 304 City Service Route

The 304 is the most significant service in the city, serving the Raheen-UL cross city corridor. The service has the highest frequency schedule of all the city centre services, every 15 minutes. The 304 serves residential lands in Dooradoyle, on Ballinacurra Road and O’Connell Avenue, industrial and commercial lands at Raheen and Castletroy, as well as the University of Limerick, the University Hospital, and the Crescent, Childers Road and Parkway Shopping Centres, and the National Technology Park.

This service benefits from bus lane facilities along a section of the R445 Dublin Road, on the R527 Ballysimon Road/Mulgrave Street and on St. Nessan’s Road, which improve the journey times along the route. Currently, additional bus lane facilities are under construction on the Ballinacurra Road, which will further enhance the quality of this service. However, the service then experiences delays within the city centre along Sexton Street, Roches Street, Henry Street, William Street, Parnell Street and on O’Connell Street. There are also potential delays inbound on the R445 in the vicinity

of the Parkway Roundabout. These delays are further exacerbated at peak times. This service has a 15-minute frequency target.

There are a number of specific locations along this route which are problematic for bus travel- the first of which is the inbound bus lane on Mulgrave Street in the vicinity of the Limerick School of Music – this bus lane is time-plated to facilitate on-street parking at peak times – as a result low usage of the bus lane by drivers was observed.

Secondly, on the inbound approach on the R526 St. Nessan’s Road, there is an interruption to the bus lane at the Unicorn Bar to facilitate a zebra crossing – it was noted that buses have significant difficulty merging back into general traffic in order to pass through St. Paul’s Roundabout and avail of the next section of inbound bus lane.

The main city centre termini are at Sarsfield Street and William Street.

Figure 4.55 below shows the catchment along the 304 City Centre Service. Analysis shows that a total of 23,931 people live within 500 m of a bus stop on this service, approximately 26% of the total population of the LMD.

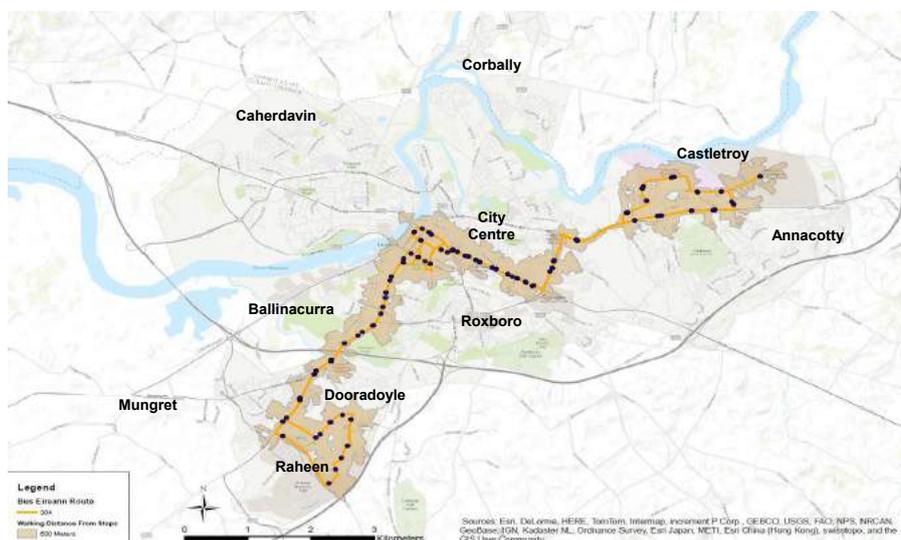
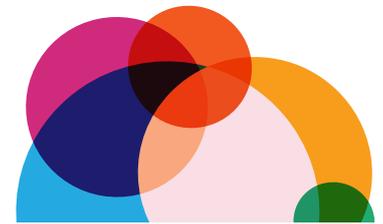


Figure 4.55: City Centre 304 Service Catchment



### Bus Éireann No. 305 City Service Route

The 305 serves St. Mary's Park in King's Island to the north of the city centre, and serves Lynwood Park to the east of the city centre. Although it is technically a cross-city service, it has a much smaller catchment as the route is restricted to the north by the extents of King's Island, and the route does not extend east of the city centre to any significant degree.

The route serves the residential lands on King's Island, and residential lands in the Kilmurry area. It shares a small portion of its route with the 301 and 304 services. The 305 benefits from a short

section of the bus lane present on Ballysimon Road and Mulgrave Street. The route experiences delay in the city centre, particularly on Roxborough Road, and William Street, as well as approaching the city centre from King's Island. The main city centre termini are at William Street and Liddy Street. The 305 has a 60-minute frequency target.

Figure 4.56 below shows the catchment along the 305 City Centre Service. Further investigation of the 305's 500-metre catchment indicates that a total of 10,471 people live within 500m of a bus stop on this service, approximately 11% of the total population of the LMD.

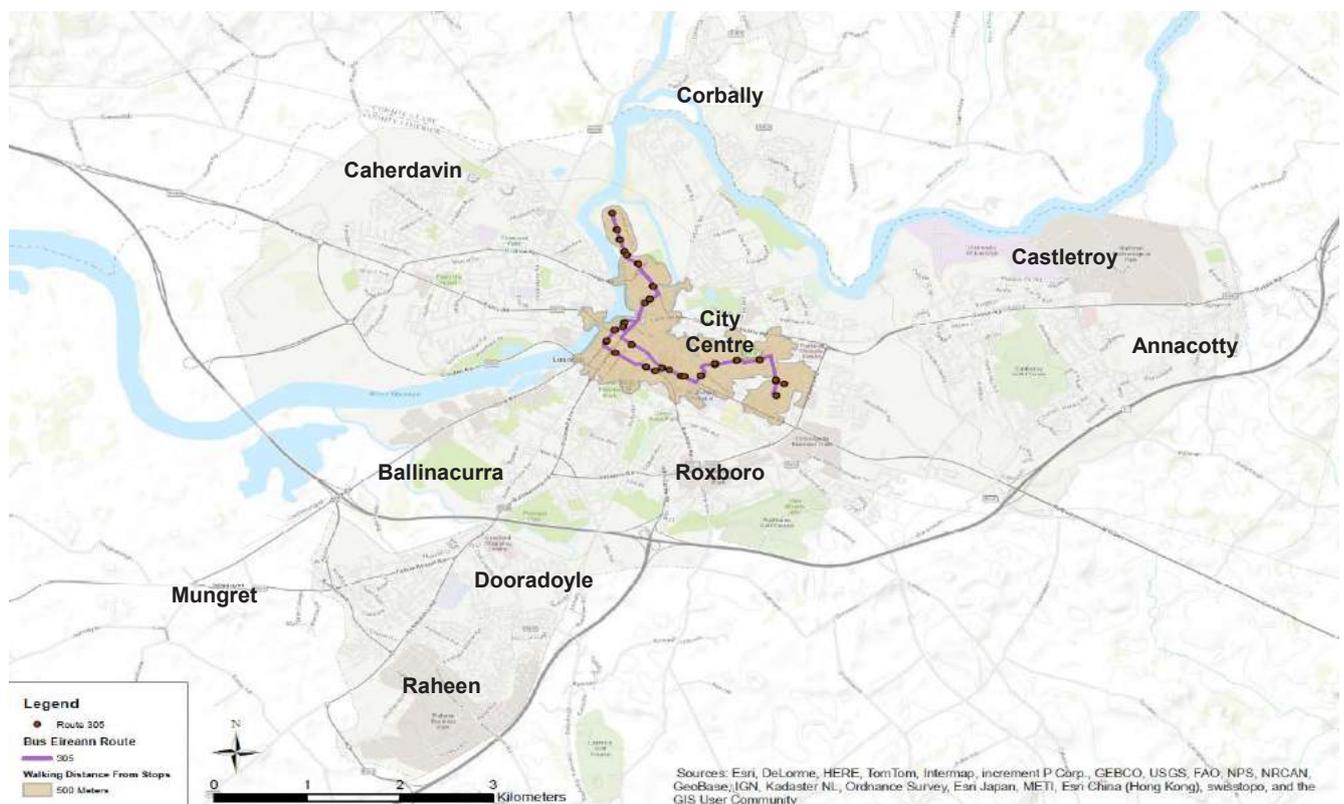


Figure 4.56: City Centre 305 Service Catchment

### Bus Éireann No. 306 City Service Route

The 306 serves the Ballynanty area to the west of the city centre, and the Edward Street/Prospect Hill area to the south. Similar to the 305 route, the total catchment of the 306 route is quite small in size, although the route is still a cross-city service.

The 306 serves lands to the north of the city centre at Kileely and Ballynanty, and to the south of the city along Hyde Road, as well as Colbert Station. The 306 also serves some student accommodation areas to the south of the city centre (City Campus) along Prospect Hill.

The 306 shares a portion of its route with the 302, 303 and 301 services. The service does not benefit from any bus lane or other bus facilities at present. Delays are experienced through the city centre, as well as along Mallow Street, and Prospect Hill. The 306 has a 60-minute timetable frequency target

Figure 4.57 below shows the catchment along the 306 City Centre Service. GIS shows that a total of 10,114 people live within 500m of a bus stop on this service, approximately 11% of the total population of the LMD.

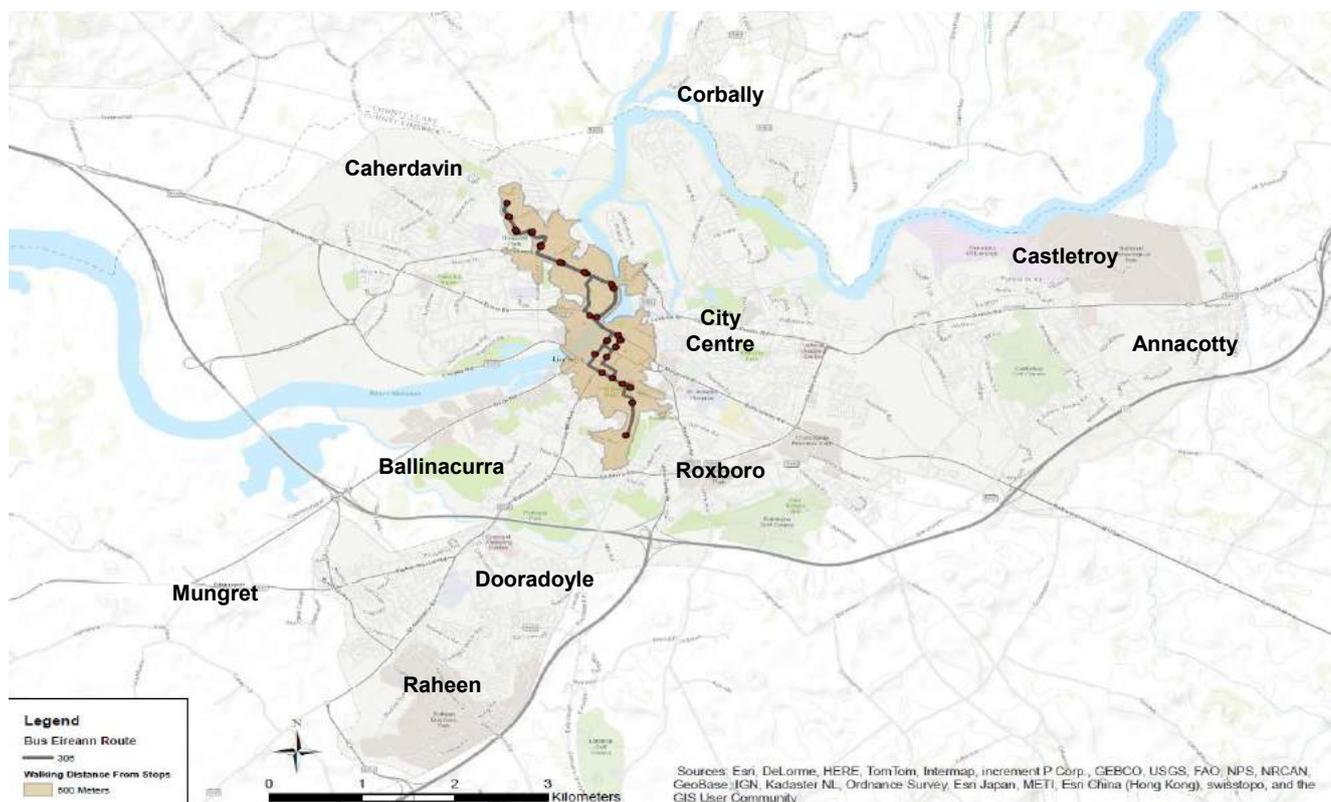
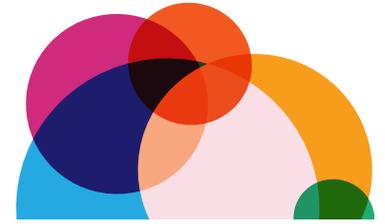


Figure 4.57: City Centre 306 Service Catchment



### Eurobus No. 307 City Service Route

The Eurobus 307 service serves UL and the residential areas located to the north of the campus, and the Castletroy and Ballysheedy areas to the east of the city. The 307 shares a portion of its route with the 304 service from the city centre. The 307 therefore benefits from some bus lane facilities along the Dublin Road and the Ballysimon Road/Musgrave Street.

As with all other city services delays are common within the city centre, as well as on the Dublin Road and the Ballysimon Road. The service has a 60-minute timetable frequency target, and the main city centre terminus is at William Street.

Figure 4.58 below shows the catchment along the 307 City Centre Service. GIS analysis indicates that a total of 9,736 people live within 500m of a bus stop on this service, approximately 11% of the total population of the LMD.

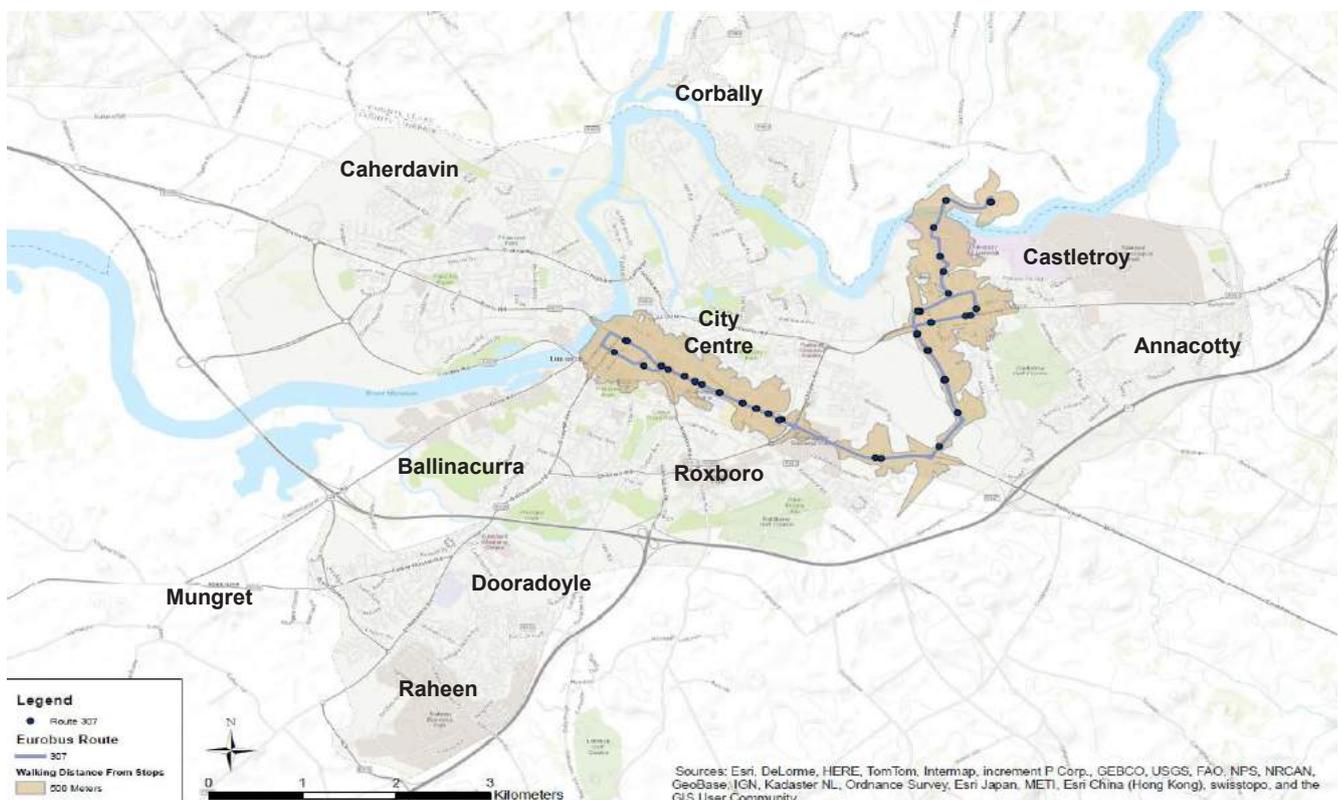


Figure 4.58: City Centre 307 Service Catchment

### Eurobus No. 308 City Service Route

The 308 Eurobus also serves UL from the city centre, as well as the Annacotty area to the east of the city. The 308 shares a portion of its route with the 304 and the 307 routes, and also benefits from bus lane facilities along the Dublin Road and Ballysimon Road/Musgrave street.

Again, delays are common in the city centre, as well as the Dublin Road and Ballysimon Road. The main city centre terminus is also at William Street.

Figure 4.59 below shows the catchment along the 308 City Centre Service. Further investigation indicates that a total of 13,609 people live within 500m of a bus stop on this service, approximately 15% of the total population of the LMD.

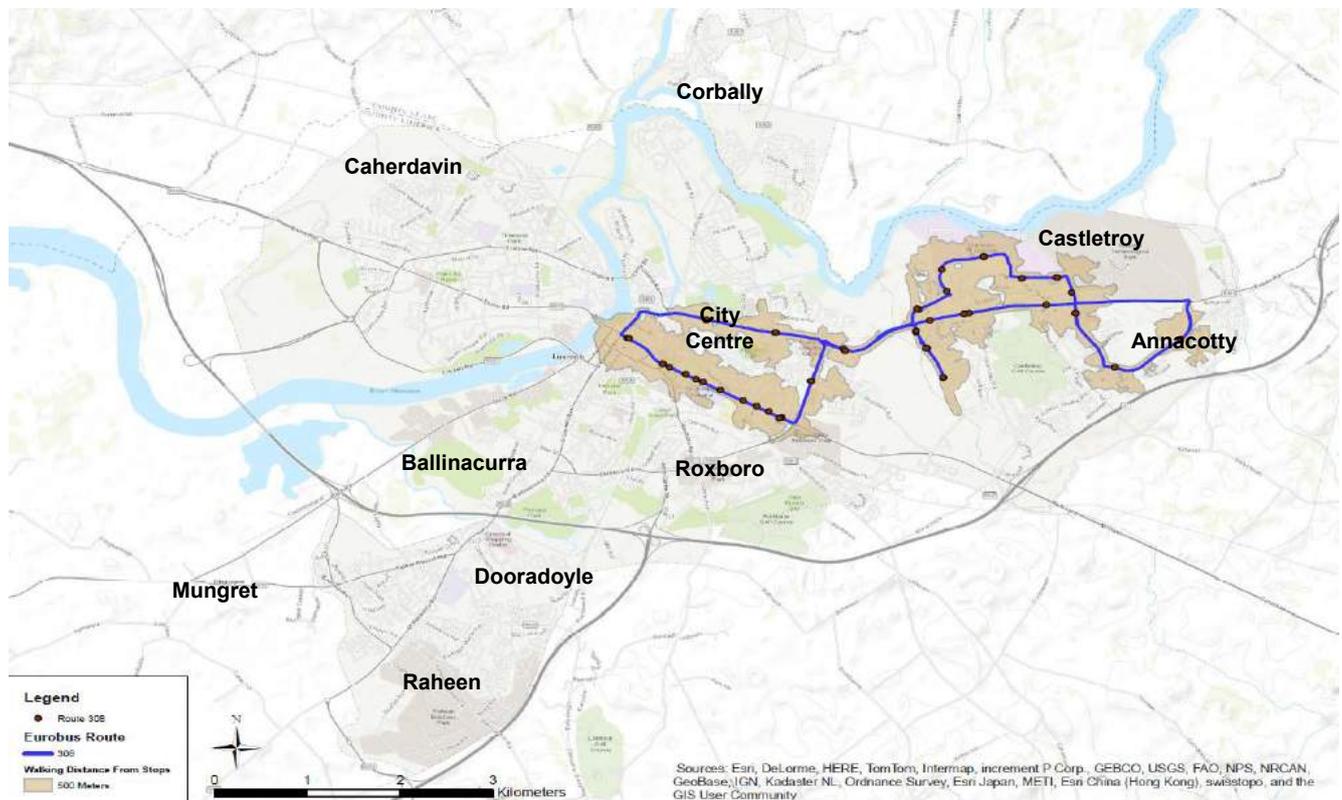
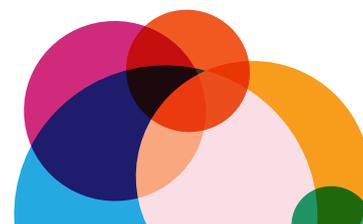


Figure 4.59: City Centre 308 Service Catchment



### All City Centre Services

Figure 4.60 below shows the catchment for all 8 city centre bus services combined.

Clearly there are some locations, especially within the city centre, where a significant concentration of bus routes occurs and avail therefore of a significant public transport accessibility. However, analysis indicates that a total of 56,530 people live within 500m of a bus stop (on all routes), which corresponds to approximately 62% of the total population of the LMD.

It is also clear that significant areas, including the Docklands and Corcanree business parks, large residential areas between the Ennis Road and Condell Road, the Lower Park and Rhebogue areas, Monaleen, Crabbsland and Crossagalla, as

well as a large section to the east of Dooradoyle are not well served by current city centre bus services.

However, the overall population within the catchment of bus services may be a misleading figure when the frequencies of bus services are factored in. The reality is that only a fraction of the 56,000 population that live within 500 metres of a bus stop, likely avail of frequent bus services.

Figures 4.60 and 4.61 (overleaf) show the 500-metre catchments of all services and correlate these with the frequency of the nearest stop. It can be seen that the Raheen-City Centre-UL (along Mulgrave Street) corridor and to a certain extent, the western side of the Shannon are the areas that provide the better service for trips in the AM Peak period.

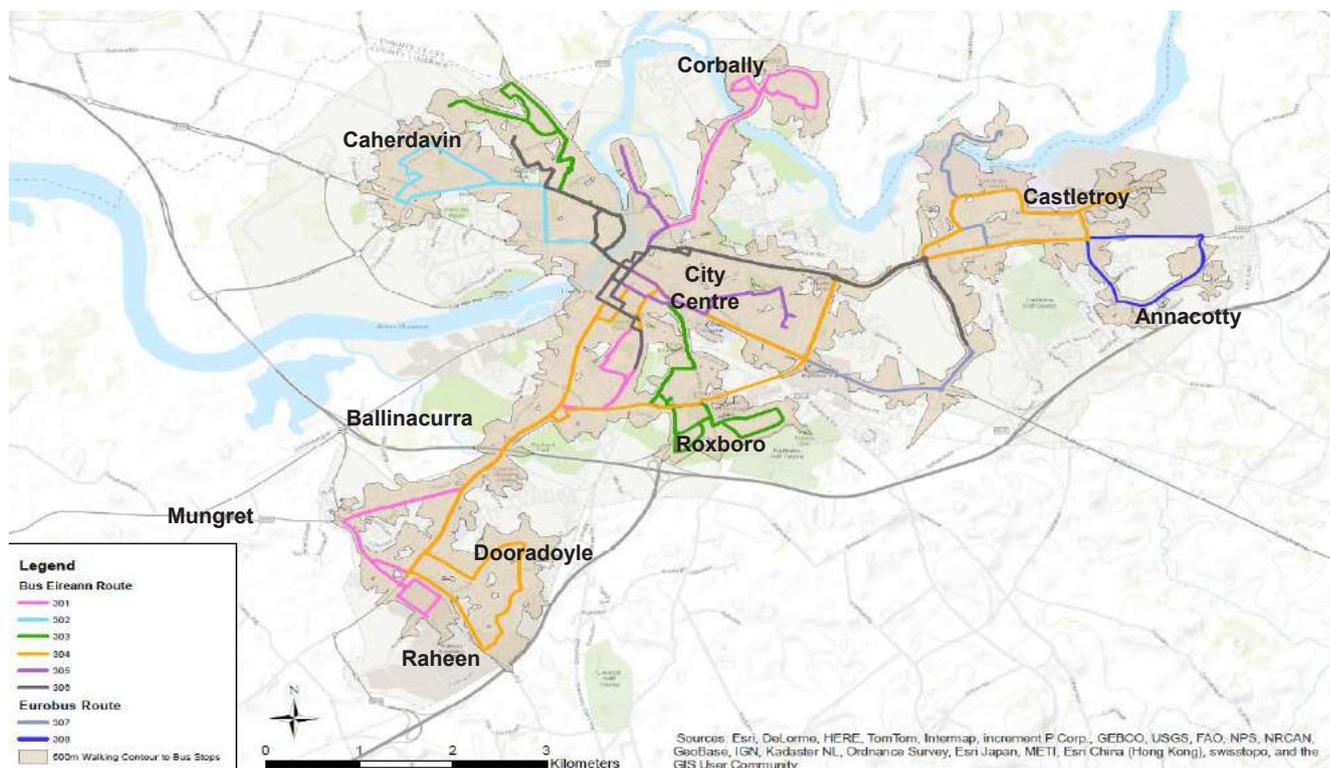


Figure 4.60: All City Centre Services 301-308

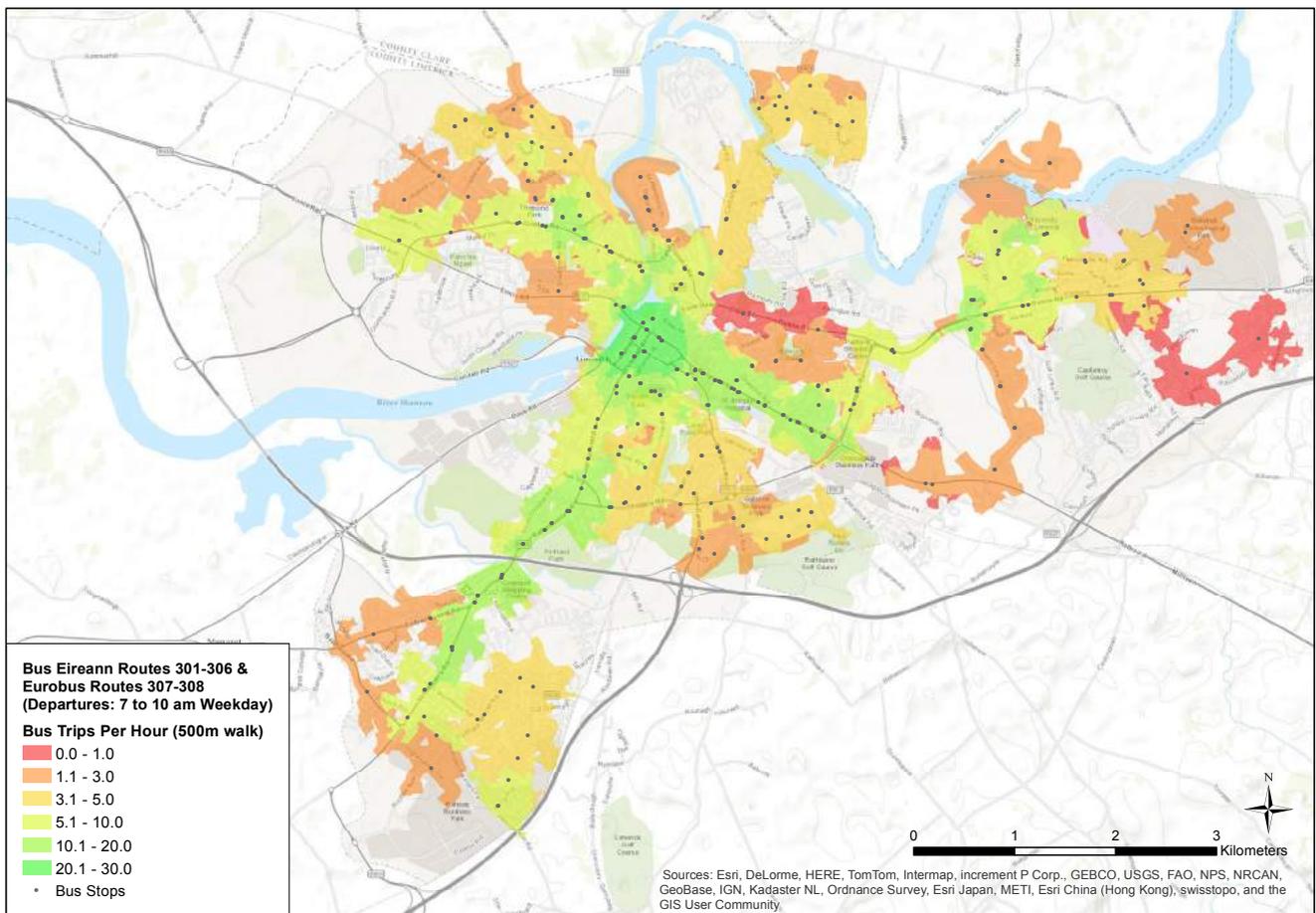
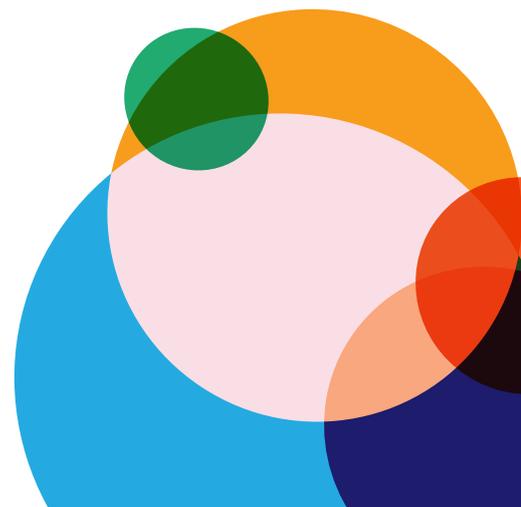
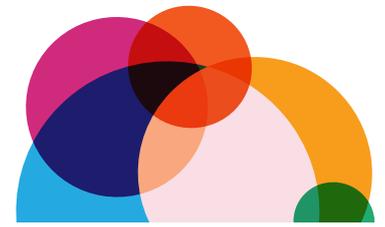


Figure 4.61: Trip Concentrations from Bus Stops on City Centre Services





### 4.3.4

#### Rail Network

A number of rail links converge in the city centre, with the Limerick-Ennis Rail line, the Limerick-Nenagh Rail line, the Limerick Junction rail link and the Limerick-Foynes rail line all approaching and meeting at Colbert Station. The Limerick-Foynes rail link also serves the Irish Cement Plant at Mungret.

Despite the presence of rail infrastructure, the services are somewhat limited to the link to Limerick Junction, where the trains serving Dublin and Cork converge.

The only rail access point within the city centre is at Colbert Station, located just off Parnell Street/Hyde Road, approximately a 5-minute walk from the city centre. In the wider region, the nearest passenger service stop is on the Limerick-Nenagh rail line at Castleconnell, north of the LMD.

Figure 4.62 shows the rail network in the Limerick Metropolitan District.

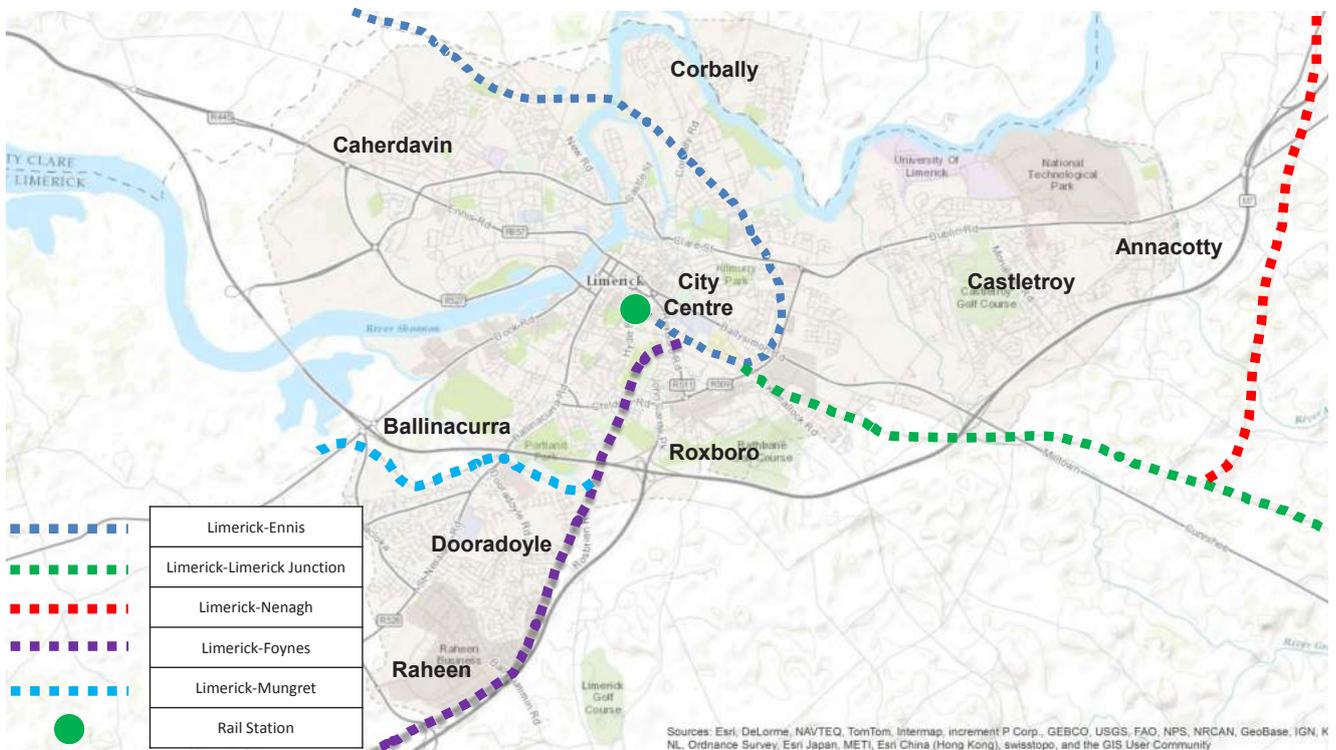


Figure 4.62 shows the rail network in the Limerick Metropolitan District.





Services to Limerick from Cork and Dublin must route via Limerick Junction, requiring interchange at this station in order to continue to Limerick City Centre. There are therefore no direct rail connections between Limerick-Cork and Limerick-Dublin. The Limerick-Nenagh-Ballybrophy line connects to the Cork-Dublin line at Ballybrophy. This line offers limited commuter choice to Limerick City from Nenagh, Roscrea, Cloughjordan, Birdhill and Castleconnell. The route has a very infrequent timetable, with 2 services per day, and also suffers from a number of speed restrictions in the vicinity of the city centre.

The Limerick-Ennis line forms part of the Western Railway Corridor, which links Limerick to Galway. This link was reopened in 2010, linking Limerick and Galway by train for the first time in over 30 years. There are 5 services per day, and the route allows for linkage into the Galway-Dublin route. The nearest passenger stop to Limerick City Centre is at Sixmilebridge.

The Limerick-Ennis line runs parallel to the R509 Childers Road for a portion of its route to Colbert Station, and also runs through lands in Rhebogoe, Lower Park and Moyross. The line therefore causes a degree of severance in these areas, particularly in Moyross where there are limited connectivity options to lands either side of the line.

However, potential use of the linkage to Limerick City Centre may be worthy of consideration, with suburban passenger stops at Parkway and Moyross representing possible interchange options which could derive benefit from this rail link, which is not heavily used at present. Similarly, the Limerick-Mungret spur to the Irish Cement factory and the Limerick-Foynes rail line could also be considered for alternative uses if these lines are to remain closed.

It is likely, however, that these lines are simply in a 'Care and Maintenance' status, and the use of these links for alternative modes of travel may have to occur in tandem with any rail services that might be re-established, or indeed may simply not be feasible.

The Limerick-Foynes rail line in particular has been in a state of disuse since 2003/2003, although the Shannon Foynes Port Company are currently advocating the reopening of the line for freight uses. The Limerick County Development Plan also highlights the potential use of the Limerick-Foynes rail line for passenger services from Adare, Patrickswell, Foynes, etc., which would indicate that the use of the line for rail services remains a priority going forward.

#### 4.3.5 Taxis

There are a number of varying Taxi facilities located within the city centre (source [www.limerickcity.ie](http://www.limerickcity.ie)). These range from permanent Taxi ranks to time-dependant ranks, depending on the location.

##### 4.3.5.1

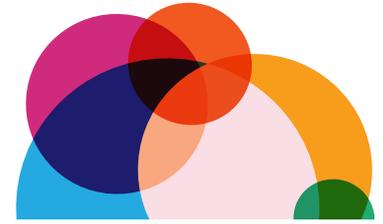
#### Permanent Taxi Ranks

- Sarsfield Street
- Patrick Street
- William Street
- Thomas Street – junction with Catherine Street
- Thomas Street – junction with Anne Street
- Bedford Row
- Cecil Street
- Parnell Street
- Honan's Quay
- Colbert Station

##### 4.3.5.2

#### Time-Dependant Taxi Ranks

- Cecil Street Lower – 7pm to 7am each day
- Robert Street – 7pm to 4am each day
- Michael Street – 10pm to 7am each day
- William Street – 11am to 4am each day
- O'Connell St – 7pm to 7 am each day



### 4.3.6

#### Road/Vehicular Network

##### 4.3.6.1

##### Regional Context – Road Access to LMD

Limerick City lies on the convergence point of several National Routes and a number of Regional Routes, which emanate from the city centre in a radial manner. In recent years, the completion of the Southern Ring Road (SRR) scheme and the Limerick Tunnel has seen the city benefit from a high-quality southern bypass, which links the M7 to the N18 by way of a ring road located to the south of the city.

A number of the major approach routes are intercepted by the SRR, but subsequently continue to the city centre as downgraded regional routes. Other approach roads cross underneath the SRR and continue on to the city centre.

##### 4.3.6.2

##### National Road Access

From the west, the N69 connects with the SRR at the Bunlicky/ Ballykeeffe Interchange and subsequently continues in to the city centre as the R510 Dock Road.

From the south and south west, the N20 and N21 merge into the M20, which then connects to the SRR at the Rossbrien Interchange – however this approach to the city does not facilitate direct onward connectivity to the city centre via the Rossbrien Interchange – vehicles must divert east or west to the next interchange in order to continue towards the city.

From the south east, the N24 connects to the SRR at the Ballysimon Interchange and continues to the city centre as the R527 Ballysimon Road. From the east, the M7 Dublin Motorway joins the SRR at the Newport Roundabout, where the R445 Old Dublin Road provides linkage to the city centre.

The SRR passes under the River Shannon at the Limerick Tunnel, and to the west and north west of the city access is facilitated via the Coonagh

interchange which links to the Clonmacken Roundabout, and via the R445 Ennis Road roundabout (note: access to the city centre via the R445 is only possible on the southbound approach on the N18/M18).

It is evident therefore that the city enjoys a high standard of accessibility from the east, south and west, but a significantly lesser level of accessibility from the north. The principal access from the south, the M20, also suffers from a lack of direct onwards connectivity to the city centre.

##### 4.3.6.3

##### Regional Road Access

In addition to the national route accessibility mentioned above, there are also a number of regional and local routes, which again emanate from the city centre in a radial manner.

To the north, the Old Cratloe Road and the Knockalisheen Road (both of these are non-regional routes) approach from the north-west, and the R464 Kileely Road and the R463 Corbally Road approach from the north (note: both of these roads converge further to the north at O'Connor's Cross).

To the south, in addition to the regional roads which continue to the city from the various interchanges along the SRR, there are additional regional routes which pass beneath the SRR en route to the city centre. These are as follows:

- R512 Old Cork Road
- R511 Fedamore Road
- R526 Ballinacurra Road

Within the LMD lands, there are a number of additional roads which are important to the function of the internal transportation network.

The principal route among these is the R509 Childers Road to the south of the city centre, as it serves as an inner partial southern relief road, linking the R445, R527, R511 and R509, as well as linking to the Rossbrien interchange.

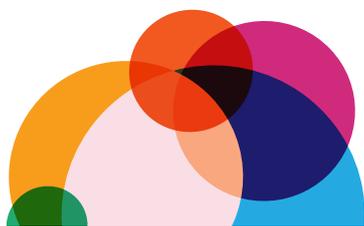


Figure 4.63: Road Network and Hierarchy within LMD

Similarly, to the north-west, the R464 Kileely Road links the Knockalisheen Road, Old Cratloe Road, R445 Ennis Road and the R527 Condell Road.

Figure 4.63 above shows the hierarchy of the road network contained within the Limerick Metropolitan District (LMD).

#### 4.3.6.4

##### Local Road Network – City Centre and Environs

The majority of the city centre area can be characterised as a series of grid-style streets, with a more organic street layout towards the northern and western portions. There are, as a result a number of long, straight streets within the city centre, but also a number of narrower, more geometrically varied streets outside of the main grid network.

The primary axis through the city centre is along O’Connell Street and O’Connell Avenue. For the purpose of this study, the section of O’Connell Street between its junctions with William Street and Roches Street (including the Bedford Row-Thomas Street axis) is considered to be the city centre core.

The city centre area is controlled by way of a series of one-way routes, designated so as to ensure that traffic flow is directed in a circulatory manner around the city centre. This effectively creates a one-way system around the city centre, allowing for multi-lane, one-way streets to carry traffic flow.

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An 'orbital' route system was developed with the objective of maintaining traffic access to the city, but simultaneously giving greater pedestrian and cyclist priority within the city. As part of the orbital system, it was initially intended to pedestrianise part of O'Connell Street (between William Street and Roches Street), and to channel traffic flow to the adjoining streets. To date however, this full orbital system has not been implemented as proposed, with O'Connell Street remaining open to vehicular traffic.

The completion of the Limerick SRR in 2010 and the commensurate reduction in traffic flows in the city centre since the opening of the Limerick Tunnel as a result may no longer necessitate the full implementation of the orbital system as originally proposed – a re-evaluation of this proposal may therefore be necessary.

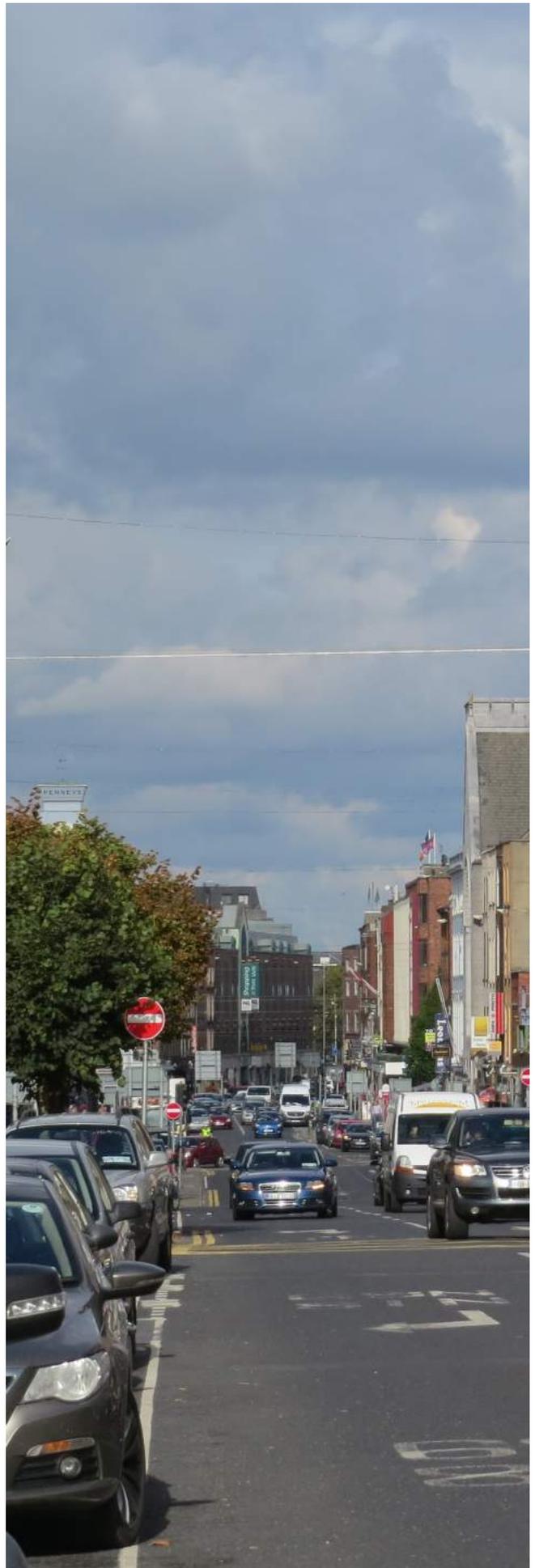
At present, major streets in the city centre including a portion of Henry Street, Sarsfield Street, Roches Street, Shannon Street, William Street, Wickham Street and a portion of O'Connell Street are all one-way.

Other ancillary streets such as part of Catherine Street, Sexton Street, High Street, Harvey's Quay and Honan's Quay are also one-way.

The current main element of the circulatory system is based around the following four junctions:

- Sarsfield Street/Henry Street
- Sarsfield Street/O'Connell Street
- O'Connell Street/Mallow Street
- Lower Mallow Street/Henry Street

These four junctions link together to form a single grid of streets which collectively allow for a clockwise route around the core city centre, and subsequent connect to the various routes leading to and from the city centre area.



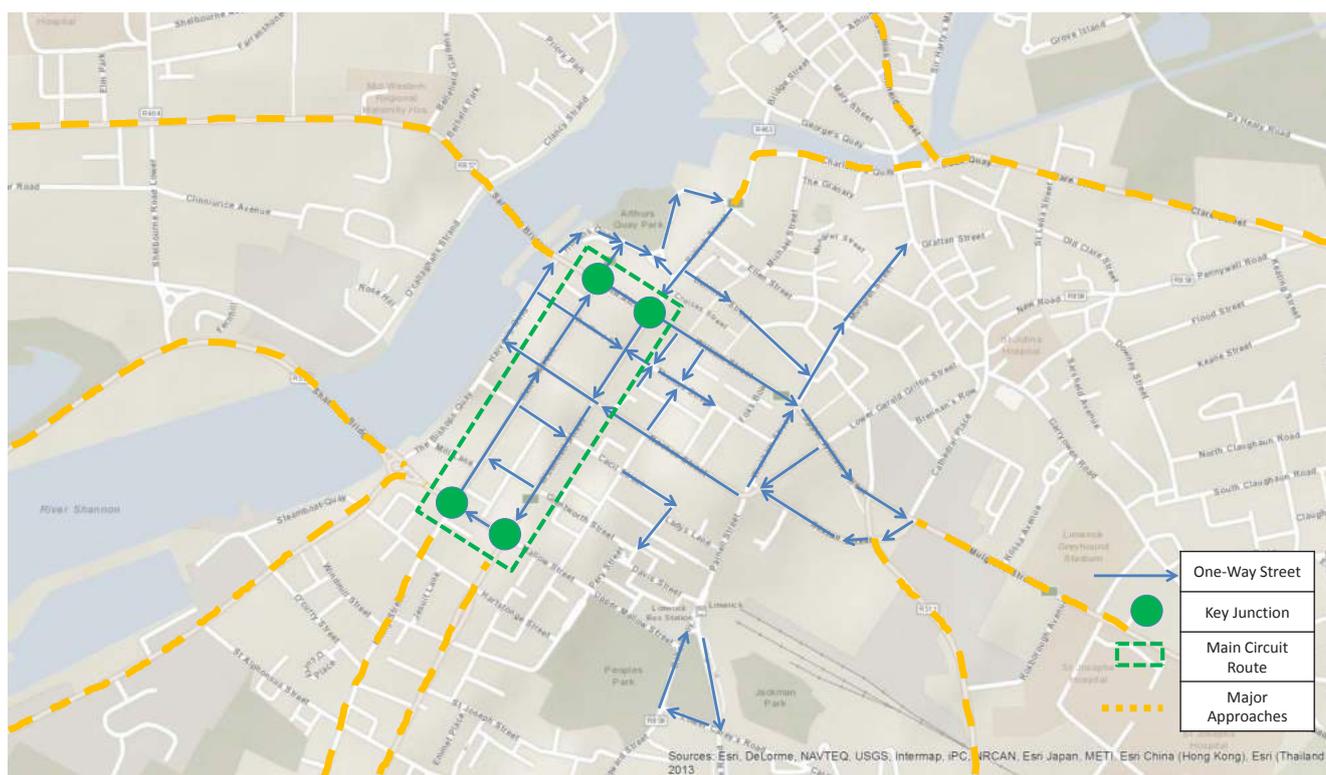


Figure 4.64: Existing City Centre One-Way Streets, Circulatory Routes and Key Junctions

The majority of the grid-style sections of the city centre consist of wide, multi-lane carriageways. Footpath widths along the major streets are generally of good width and of sufficient quality.

Outside of the core city centre grid network however, the more organic-style streets such as Denmark Street, High Street, Ellen Street, Michael Street, Mungret Street, etc. are generally narrower streets, with less grid-style junctions and more varied horizontal alignment. Footpath widths and qualities on these routes are more varied, with pedestrian facilities of a lesser quality in many locations.

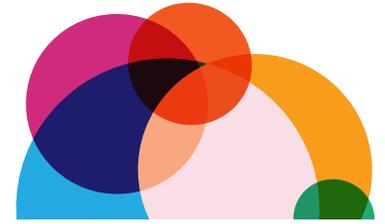
Figure 4.64 above shows the existing one-way streets in the city centre area, as well as the current circulatory route which is in place. The four main junctions listed above are also indicated on Figure 4.64.

#### 4.3.6.5

#### Major Road Infrastructure Proposals

Long-standing proposals to develop a distributor road to the north of the city centre have progressed to a certain extent, but are currently held given the lack of available capital funding.

The Limerick Northern Distributor Road (LNDR) is intended to connect to the Coonagh Roundabout on the R445 Ennis Road, and circumvent the city to the north, before re-connecting to the R445 Old Dublin Road to the east of the city at a point close to the R445/M7 Newport Roundabout. The LNDR has been identified in the Fitzgerald report on the regeneration areas of Limerick City as an important means to provide high-quality access to the wider road network.



Phase 1 of the LNDR comprises the Coonagh-Knockalisheen link, which is expected to progress to construction before the end of 2014, with the remaining section at route selection stage, but currently subject to delay from funding issues.

Future progression of the LNDR route is likely to continue eastwards from Knockalisheen, which may be beneficial in terms of increasing road connectivity to the north of the City, and providing increased linkage to the University of Limerick from the north. The correct phasing of the delivery of the remainder of the LNDR could therefore unlock a number of benefits regardless of the completion of the entire route.

In addition, there are a number of additional proposed road infrastructure works currently at various stages of development. The upgrade of the Childers Road corridor between the Parkway Roundabout and the John Carew Link Road would include the facilitation of a Green Route, associated cycle tracks and footpaths, as well as junction upgrades along the corridor. Scheme designs have been prepared, but as of yet the proposal has not been advanced to the planning stage.

It is noted that this scheme also includes the removal of four large roundabout junctions (Roxborough, Kilmallock, Tipperary and Parkway roundabouts) and replacement of these with signalised junctions, which currently contribute to the level of severance between the north and south of the Childers Road corridor. This in turn will seek to improve the standard of pedestrian and cyclist facilities at these junctions.

Secondly, the upgrade of the Roxborough Road from Southill to the City Centre is also proposed as part of masterplanning works included in the remit of Limerick Regeneration. This link suffers from a number of significant pinch points, particularly where the route crosses over the rail line to the City Centre. This results in sections of the link where insufficient road width is available for footpath

provision or additional cycle proposals.

Thirdly, with the completion of the Limerick Southern Ring Road in 2010, motorway access to the lands in Southill was removed by way of amendment of the interchange layout at Rosbrien. Previously, as part of Phase 1 of the Limerick SRR project (from Rosbrien to Annacotty); direct access into the City from the Rosbrien roundabout was possible, via the John Carew Link Road. The completion of Phase 2 of the Limerick SRR amended the interchange layout at Rosbrien and removed the direct access to the City as a result.

In December 2011 the Mid-Western National Roads Design Office (MNRDO) were tasked by Limerick County Council with identifying potential solutions to restore the accessibility to the lands at Southill and the City itself via the Rosbrien interchange.

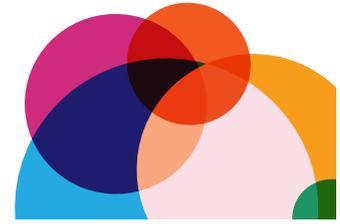
A total of 14 potential options were identified; of these, 6 were deemed feasible for further investigation, while a seventh was noted to be the subject of a separate study. No further analysis or examination of these access options has been undertaken to date.

As with the LNDR, restoration of motorway access to the Southill lands has been identified in the Fitzgerald Report as vital in terms of increasing accessibility to the Southill area.

#### 4.3.6.6

##### Network Management and Control

The Limerick Traffic Management Centre is responsible for addressing traffic-related concerns and issues throughout the city and county. It applies the principles of traffic engineering in reviewing sites and traffic signal timing to provide for safe and efficient movement of vehicular, bicycle and pedestrian traffic. It also works to ensure the streets and junctions have the capacity and geometric features required to handle current and future traffic volumes.



The Traffic Management Centre (TMC) maintains and operates traffic control equipment for the City and County, including Urban Traffic Control (UTC) systems such as traffic and pedestrian signals, variable message signs (VMS), car park signs, automatic traffic count sites, pedestrian crossings, traffic monitoring CCTV, real-time passenger information (RTPI) and junctions and crossings controlled by Intelligent Traffic Control technology.

In order to better manage the network of junctions within the city centre area in a highly efficient and effective manner, a centralised traffic signal control system known as Adaptive Urban Traffic Control (AUTC) is in operation.

Implementation of this system was completed in 2005, and in subsequent years additional junctions have been incorporated into the AUTC system. The system functions by utilising a sophisticated software system that automatically adapts to manage traffic by collecting vehicle flow information from strategically located detectors throughout Limerick city, and then recalculating the traffic signal timings for each traffic signal based on the prevailing traffic conditions.

AUTC is very effective in managing traffic on streets that have large fluctuations in traffic flow. In addition, traffic signal malfunctions are detected immediately resulting in improved and efficient maintenance response times. The system can be programmed to provide priority for Buses and emergency vehicles and assists public transport vehicles to stay on schedule, improving reliability. At present, there are a total of 49 signalised junctions and 13 signalised pedestrian crossings in 16 different 'cells' within the LMD which are covered by this control system.

As part of the initial development of the AUTC system in Limerick City, communication infrastructure needs were met through the use of existing Eircom lines within the City. This was facilitated by a lease agreement between

Limerick City and County Council and Eircom for the long-term use of the lines to form part of the AUTC network. This form of communications has significant recurring operational costs.

In recent years, in tandem with major infrastructural works throughout the City road network, Limerick City and County Council has commenced a programme of systemically installing fibre-optic cabling wherever possible to develop a communications network under the ownership of Limerick City and County Council, to facilitate the expansion of detection and monitoring capabilities (such as additional CCTV, additional detectors, VMS signage, etc.) and to reduce (and eventually eliminate) recurring costs associated with the on-going lease of lines from a third party communications provider. To date, approximately 50% of the lease lines referred to above have been replaced with fibre-optic cabling.

While the AUTC system is of key importance within the City, the system itself is quite dated, and is in need of modernisation to account for software enhancements to the existing AUTC software and to address IT requirements, etc.

The expansion of the Limerick City area into the suburban areas also places additional demand on the AUTC system and staff resources particularly in respect of monitoring and responding to malfunctions which completely rely on public or Garda complaints. Consequently, junctions that are not on the current system will require appropriate upgrading and integration to the UTC system.

Furthermore, any expansion of the AUTC system would also result in additional resourcing and staffing demands in respect of pro-active monitoring and traffic control and ensuring that the system delivers to its capability.

Going forward, the AUTC system will need to evolve into an Urban Traffic Management Control (UTMC) system, and will have to expand to



include other control facilities as CCTV, Bus Priority, Variable Message Signage (VMS), Parking Guidance Signage (PGS), etc. in order to maximise the efficiency of the Network Control throughout the LMD.

In terms of detection, the AUTC system is complemented by a limited but growing CCTV system in operation throughout the City and County comprising approximately 25 CCTV cameras in the City at present. The primary purpose of the Limerick Traffic Management CCTV system is to monitor and manage the road network and is particularly useful in validating planned or unplanned incidents, monitoring the impact and verifying that control strategies employed are effective.

CCTV cameras are also used for other tasks such as junction control and management, car park monitoring, and enforcement of traffic and parking regulations. CCTV cameras are used at busy road junctions, either as a manual surveillance tool to monitor traffic flow, or with automatic video analytics technology as an alternative to induction loops and other detection technologies.

Cameras also assist in detecting and gathering evidence of bus lane violations, illegal junction movements, illegal parking and other traffic offences.

A further element of the AUTC system is the Parking Guidance System. The Limerick Parking Guidance system is designed to reduce congestion and queuing in Limerick City. The system obtains relevant car parking information using an electronic communications system and disseminates car park occupancy data to parking guidance signs and the Limerick City Council Website. The provision of this information results in drivers spending less time looking for a parking space, improving driver experience and reducing traffic congestion in the city centre.

Limerick City and County Council have also installed a number of Variable Message Signs (VMS) at strategically located junctions – there are 12 such signs in place at present. This provides Limerick City and County Council with the capability to display strategic and tactical transport related messages to motorists which is extremely useful during planned and unplanned events.

A system of bus priority was previously installed but is now obsolete and non-functioning. Bus priority provides a more efficient passage to public transport vehicles at traffic signal by either advancing or extending the green light upon detection. This system is in need of a significant upgrade with more modern and effective technology available.

Whilst there are clearly a number of tools at the disposal of the TMC department of Limerick City and County Council, it must be noted that outside of the City Centre, in the wider suburban areas and further beyond into County Limerick proper, the AUTC network is quite limited in providing Limerick City and Council with limited capability in monitoring and controlling.

There are additional signalised junctions in operation outside of the AUTC system, but many of these operate on a stand-alone basis and are not under centralised control resulting in inefficient operation and maintenance response times. A number of these junctions will require significant upgrading to facilitate integration to the UTMC.

Furthermore, the standard of detection is very limited and therefore there is very little information available as to how the network is performing outside of the City centre area.



Network Management and Control plays a key role in the function of the LMD from a movement perspective. For example, CCTV systems increase safety along cyclist and pedestrian routes, as well as enabling enforcement and controlling driver behaviour such as red-light running, speeding, etc. A UTMC system allows for significant data collection, including pedestrian and cyclists movements, which represents a major benefit for scheme planning and monitoring.

VMS signage can advise people of incidents, events, and can allow for fluidity across the traffic system by advising users of delays on specific routes and potential alternatives. Sustainable modes of transport such as travelling by bus or cycling can be underpinned by a UTMC system through greater bus priority at key junctions, and cycle detection and priority, for example.

UTMC can underpin a safety strategy, by rolling out and monitoring compliance with reduced speed limits, one-way systems, traffic signal operations, parking, weight restrictions, speed management and control, increasing pedestrian mobility at junctions, increasing the extent and standard of bus priority, and allowing for specific planned or unplanned events to be effectively managed.

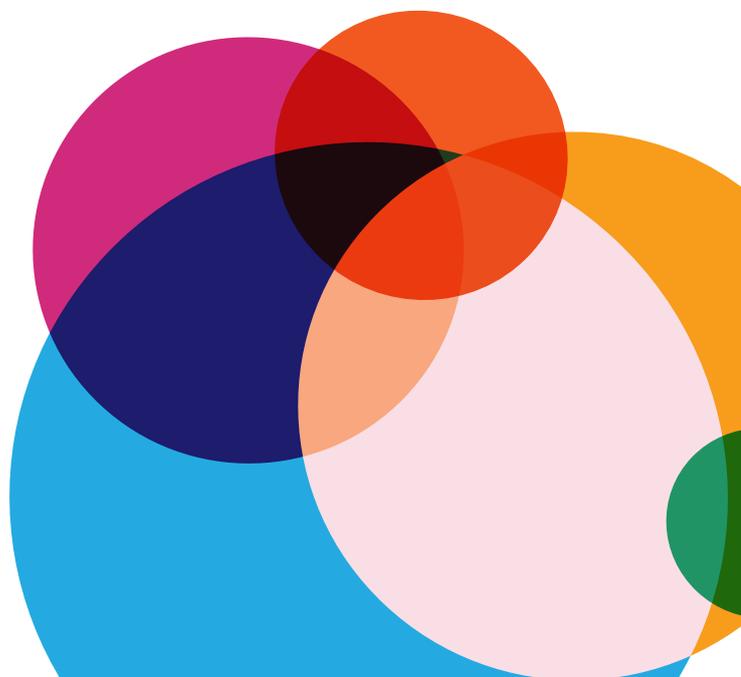
Other features of a UTMC system include data collection, such as vehicle flows, classification, axial loading, journey times, etc. The collation and publication of this data represents a major benefit to LC&CC. Other features of UTMC include emission and noise monitoring, as well as cost efficiency through intelligent public lighting, for example.

#### 4.3.6.7

##### Accident/Collision Information

Accident data available at [www.rsa.ie](http://www.rsa.ie) was interrogated, highlighting the following accident information for the seven-year period between 2005 and 2012:

- A total of 22 fatal incidents within the LMD
- A total of 55 serious injury incidents
- 50% of fatal incidents involved cars
- 45% of fatal incidents involved pedestrians
- 9% of fatal incidents involved cyclists
- 9% of fatal incidents involved motorcyclists
- 5% of fatal incidents involved HGV's
- 80% of serious injury incidents involved cars
- 35% of serious injury incidents involved pedestrians
- 4% of serious injury incidents involved cyclists
- 5% of serious injury incidents involved motorcyclists
- 5% of serious injury incidents involved HGVs



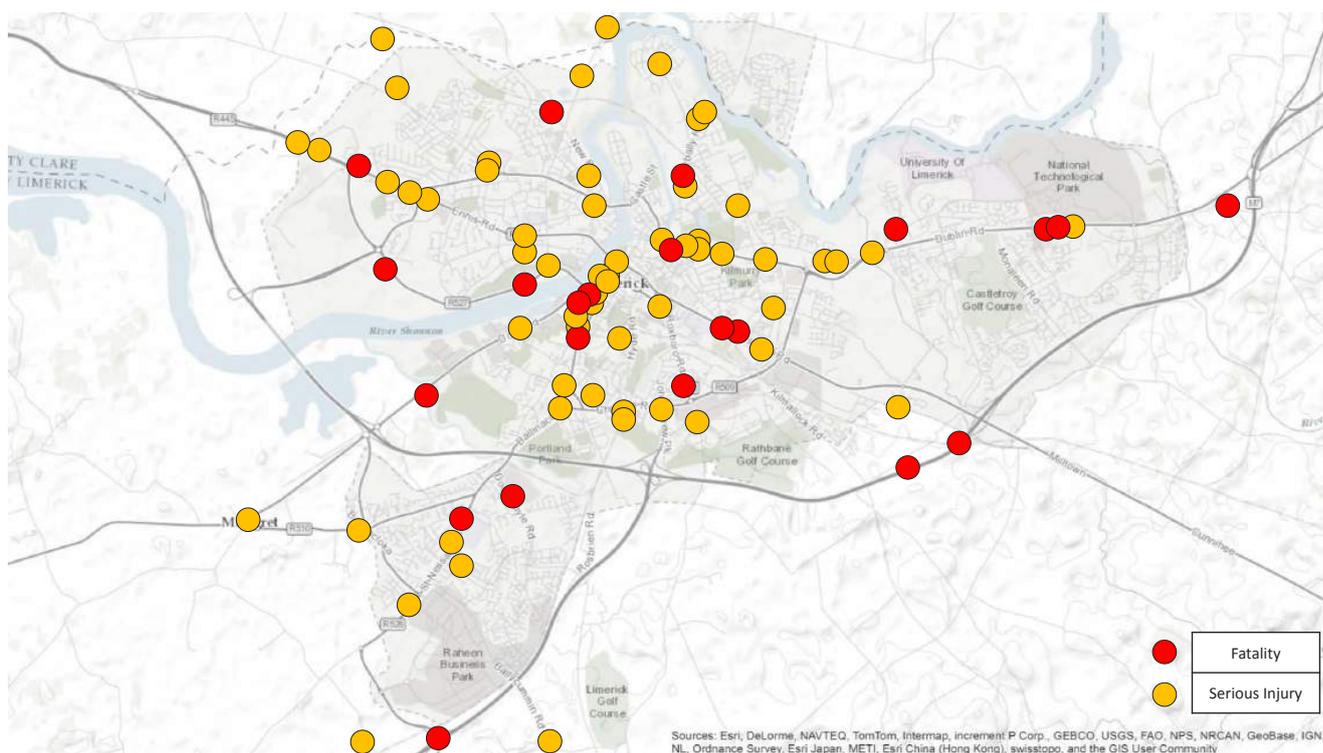
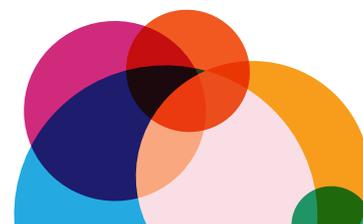


Figure 4.65: Fatal and Serious Injury Incidents 2005-2011

Figure 4.65 above shows the locations of fatal and serious injury incidents within the LMD in the above mentioned time period.

The above Figure and accident information presented show a high percentage of fatal injuries involving pedestrians within the LMD, at 45%, as well as a high percentage of serious injury incidents (35%) also involved pedestrians.

Cyclists and motorcyclists are represented to a lesser extent in the accident history; however 9% of fatal incidents were seen to involve cyclists.

HGV and Bus accident history within the LMD is quite good, with low representation in the recorded accidents.



## 4.3.7

### Car Parking

#### 4.3.7.1

##### Off-Street Car Park Locations

There are a total of 16 off-street Car Parks within the City Centre which charge for parking, as follows:

Name	Type	Entrance/Exit	Rates	Spaces
City Centre Car Park – Anne Street	Multi-Storey	Anne Street	€2/Hour €9.90/Day	350
Thomas Street	Surface	Thomas Street	€1.70/Hour €7/Day (2 spaces)	30
Arthur's Quay	Multi-Storey	Arthur's Quay	€1.80/Hr €18/Week	570
Aviary	Multi-Storey	Mount Kennett Place	€1.40/Hr €5/Day	280
Charlotte's Quay	Multi-Storey	Charlotte's Quay	€2/Hr €10/Day €15/Week	428
Cornmarket Square	Multi-Storey	Denmark Street	€1.60/Hr €7.50/Day	418
Cruises Street (Q-Park)	Multi-Storey	Denmark Street	€1.90/Hr – Up to 3 Hrs €2/Additional Hr €20/24-Hour	340
Harvey's Quay (Q-Park)	Multi-Storey	Harvey's Quay/Shannon Street	€0.60/15-Minutes €15/24-Hour	650
Howley's Quay	Multi-Storey	Henry Street/Shannon Street	€1.80/Hr €20/Week	350
Steam Boat Quay	Multi-Storey	James Carey Walk	€2/Hr €12/Week	294
Summer Street	Multi-Storey	Summer Street	€1.50/Hr €8/Day €15/Week	429
Ellen Street	Surface	Ellen Street	€1.50/Hour - Cars €2.50/Hour - Vans	100
Colbert Station	Surface	Hyde Road	€5/Day	300
Henry Street/Jury's Inn (Q-Park)	Multi-Storey	Mount Kennett Place	€1.70/Hr – Up to 3 Hrs €1.80/Additional Hour €14/24-Hour	205
Barrington's	Multi-Storey	Sheep Street	€1.50/Hr €4.50/Day €15/Week	230
Potato Market	Surface	Merchant's Quay	€2/Hr €4/Day	88
<b>TOTAL</b>				<b>5,062</b>

Table 1: Car Parking Locations and Rates in Limerick City Centre (source: Limerick City Council website)

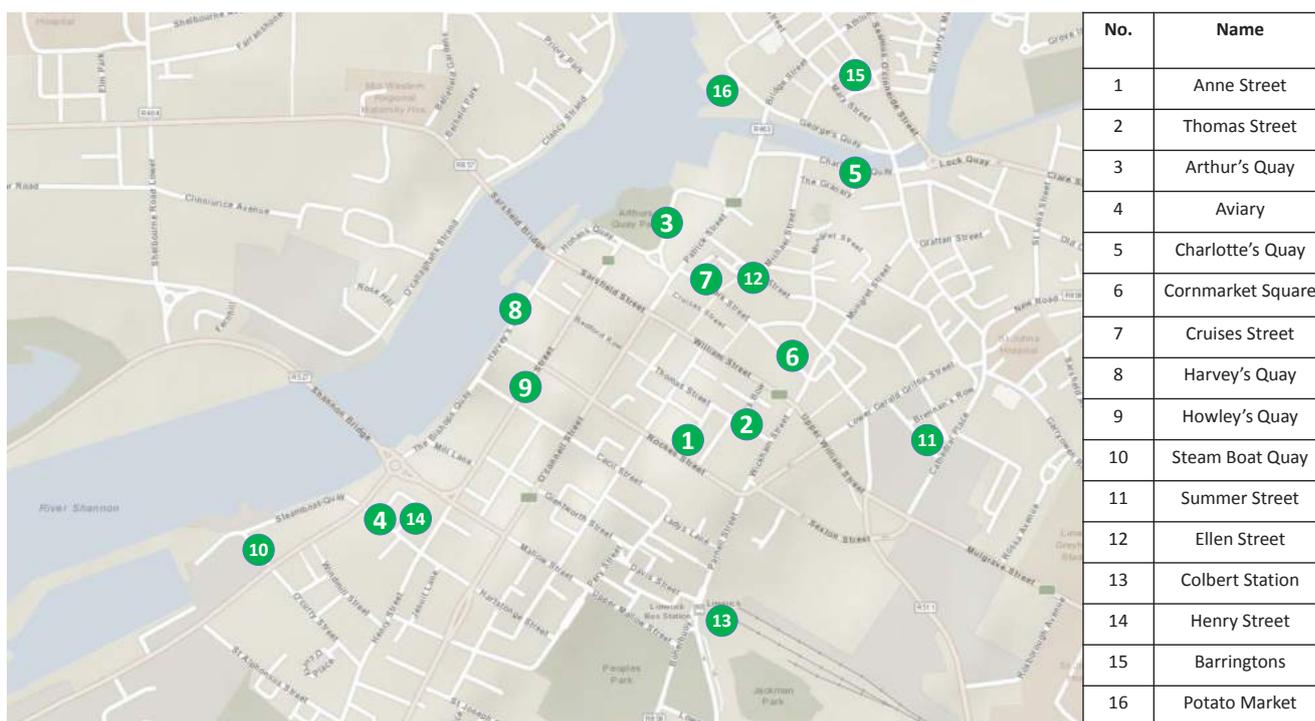
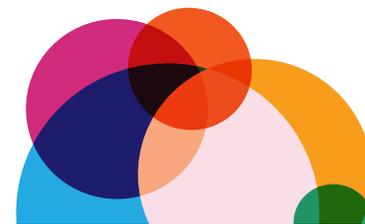


Figure 4.66: Off-Street Car Park Locations in City Centre

There are therefore a total of 5,062 parking spaces available at the off-street parking locations referenced above. In the greater LMD environs, there are car parking facilities available at all of the shopping centres located in the suburban areas of the city centre.

It is evident from Figure 4.66 above that the distribution of off-street car parking areas is largely consolidated around the north of the City Centre – by comparison, car parking facilities to the south, such as along O’Connell Avenue are limited, despite this location representing a key business area of the city.

It can be seen that the parking rates are all significantly varied within the city centre, with hourly rates varying from €1.40 to €2.40, depending on location, which means that the most expensive rate is approximately 70% higher than the lowest.

All-day parking rates are also varied, with rates as low as €4 per day and as high as €18. Weekly parking rates are also seen to be wide-ranging, from €12 to €20.

It is clear then that the pricing structure of parking charges within the city centre car parks encourages long-stay parking, with low daily and weekly rates available throughout the city centre.

As part of the ParkMagic system which operates in Limerick City, advance parking spaces can be reserved at the Harvey’s Quay and Henry Street car parks, and paid in advance.

There is also an on-street parking guidance system in place throughout the city, with electronic signage advising motorists of the availability of spaces at various off-street car parks.

Figure 4.66 above shows the locations of the off-street car parks within the city centre.



#### 4.3.7.2

##### On-Street Parking

Limerick City operates a dual on-street parking system, whereby users can either purchase disposable parking discs (€2 each) at various outlets within the city centre and at City Hall, or pay for parking via phone, using the ParkMagic system, which facilitates incremental payment in 30-minute intervals. On-street parking within the city centre is currently subject to a 2-hour limit, which is covered by one parking disc.

At present, therefore, there are two alternative methods available to patrons wishing to park on-street. Limerick City Council are currently considering alternative systems to combat the concerns regarding Disc parking (availability of discs, coverage of streets, etc.) – the use of a Pay & Display parking ticket system is currently under consideration as an alternative.

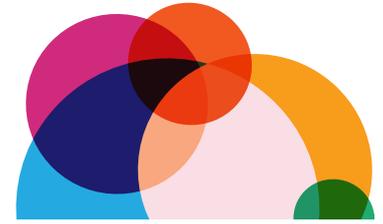
#### 4.3.7.3

##### Disabled Parking Locations

There are a total of 35 on-street disabled parking spaces located around the city centre – these are located at the following streets:

Location	Number Of Spaces
Bedford Row	1
Boherbuoy Road	2
Catherine Street	5
Cecil Street Lower	3
Charlotte Quay	1
Ellen Street	1
Hartstonge Street	1
Henry Street	1
High Street	2
Mallow Street Lower	1
Mallow Street Upper	1
Merchant's Quay	2
O'Connell Street	3
Patrick Street	1
Pery Square	3
Roches Street	1
Sexton Street	4
William Street	1
Georges Quay	1

Table 2: Location of Disabled Parking Spaces in Limerick City Centre (source – [www.limerickcity.ie](http://www.limerickcity.ie))



#### 4.3.7.4

##### Park and Ride

There are currently no official park and ride facilities provided within the LMD. In 2008 a feasibility study undertaken on behalf of Limerick County Council identified a suitable location for a Park and Ride facility to intercept traffic travelling to the city from the south and west. In tandem with the bus lane proposals planned along this corridor, the two schemes would therefore be mutually beneficial. Furthermore, the south and west approaches to the city would also benefit from the Foynes-Limerick rail line if the line were to be re-opened.

Four sites were identified, all located adjacent to the N20/R526 link road, all accessed via the Dell Roundabout and in the Raheen Industrial area to the southwest of the city, approximately 6km from the city centre.

Despite the recommendations and conclusions contained within this feasibility study, no Park and Ride facilities have been implemented to date within the LMD.

More recently, the Public Transport Feasibility Study (PTFS) prepared as part of the Mid-West Area Strategic Plan (MWASP) also identified a number of potential sites to be considered for Park and Ride purposes, including:

- R445 Dublin Road between M7 and Castletroy;
- R445 Clondrinagh/Coonagh Roundabout;
- N18/N69/R510 Interchange;
- M20/R526 Loughmore Roundabout; and
- Near N24 Ballysimon Road.

The PTFS again expressed a preference for the M20/R526 site, due to the proximity of the site to the Raheen Industrial area and the bus lane infrastructure in place along the route to the city centre. To date, however no further development has occurred since in this regard.

There is also a privately-operated Park and Ride service which operates only for major events in Limerick City and the surrounding areas, such as matches at Thomond Park, etc. There are a number of designated pick up points where users can park their car and travel to their respective events via coach. These pick up points vary depending on the event, but are mostly located in a number of hotels, such as the Kilmurry Lodge Hotel, the Radisson Blu Hotel, and at other hotels outside the city such as the Woodlands Hotel in Adare.

#### 4.3.8

##### Transportation Networks – Summary

Outside of the city centre, within the LMD there are approximately 90 pedestrian crossings of varying degrees of priority, ranging from signalised pedestrian crossings to zebra crossings to non-standard, non-priority pedestrian crossings. Generally the quality of crossings is sufficient, but there are a number of locations where the crossings are sub-standard.

Within the city centre, the grid network of the majority of the major streets result in relatively short walking distances between 'blocks' in order to use pedestrian crossing facilities. There are approximately 20 signalised junctions within the city centre that have pedestrian facilities incorporated, but there are approximately 40 that have little or no pedestrian facilities incorporated.

The city centre core is changing, however, with recent improvement works at Thomas Street, Bedford Row and Little Catherine Street for example creating a distinct urban realm by way of prioritising pedestrians over vehicles, with raised surfacing, narrow carriageways and time restrictions all placing greater emphasis on the pedestrian over the vehicle.



The standard of pedestrian permeability and connectivity varies within the LMD. Obviously, within the city centre pedestrians benefit from high permeability and connectivity throughout, with little natural barriers to movement outside of those created by vehicular traffic flows.

Within the wider LMD, however, there are locations where permeability and connectivity are strong, or are hindered by barriers to movement. Examples of the latter include Moyross, King's Island and Lissanálta, while the University Hospital also offers limited accessibility to pedestrians, with access only possible along the western boundary.

Cycling as a form of commuting is currently the choice of approximately 3% of the population travelling to work, school or college. The overall cycle network within the LMD is limited at present, with sporadic cycle lane provision. These vary in quality, with a mixture of on and off-road facilities provided.

It is noted that there is good linkage to the east of the city, towards University of Limerick, where there are extensive off-road facilities. Along the Rivers and Canals there are also off-road facilities, while there are on-road facilities to the southwest and northwest, in Dooradoyle and Caherdavin respectively.

Although the coverage of the cycle network is limited at present, there are major efforts underway to greatly enhance the extent and standard of the cycle network by the Limerick Smarter Travel office. It is noted however that the proposals developed by LST are consolidated to the east of the city, with facilities such as Thomond Park and LIT to the northwest not forming part of the LST proposals.

Additional measures implemented by LST include the roll-out of safe and secure cycle parking within the city centre car parks, with a pilot scheme introduced in January 2014. Furthermore, the city centre will shortly benefit from the implementation

of the Limerick City Public Bicycle Sharing Scheme, which will deploy 400 bicycle docking stations at 23 locations within the city.

Bus usage for commuting to school, work or college has a mode share of only 7% within the LMD. The Bus Network within the city allows for a wide range of city-centric and regional services to operate across the LMD. Colbert Station within the city centre is the principal terminus location for regional services; city centre services primarily have their termini/layover on key streets within the city centre, such as Arthur's Quay, Sarsfield Street, William Street and Liddy Street.

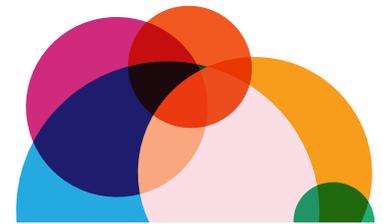
The existing provision of bus lanes within the LMD is limited, with only the southern corridor and Condell Road currently offering physical bus priority facilities of note.

There are eight main city centre services; collectively these routes have a catchment area that covers approximately 62% of the population of the LMD. It is noted that certain services, particularly to the north and northwest of the city, have sparser timetable schedules and offer limited coverage of the LMD compared to other more significant services such as the 304.

Within the city centre, there are no existing bus priority measures in place, resulting in bus services experiencing additional delay and poorer quality of service due to traffic congestion within the city centre. The current circulatory system also requires bus services to route around to layover points, often leading to additional delay.

The rail network is also limited, in the sense that direct connections by rail to Dublin and Cork are not possible at present. Linkage to Galway via the western rail corridor is possible, while the Limerick-Nenagh-Ballybrophy service suffers from low patronage and speed restrictions along the line. The Limerick-Foynes line is currently not in operation, but may be reopened in the medium-





term for freight purposes, which may create passenger service opportunities.

The LMD benefits from a high standard of accessibility from the national, regional and motorway network, which is primarily consolidated on the southern, eastern and western approaches to the city. The LMD has benefitted from the recent completion of the Limerick Southern Ring Road, which has been reflected in a reduction of traffic flows across the city.

It is noted that direct access to the city from the M20/M7 motorway is not possible, which leads to some re-routing in order to access certain locations by road.

Accessibility from the road network to the north of the city is markedly different, however, with limited regional road accessibility into the city, although in the longer term the construction of the Limerick Northern Distributor Road would significantly improve the standard of accessibility to the north of the LMD.

Within the city centre itself, there is an extensive network of grid-style streets as well as some other more organic road layouts outside of the city centre core. This therefore results in a number of long, straight streets, which have been classified and structured to accommodate traffic flows in a circulatory manner around the city centre. This creates a network of one-way, multi-lane streets within the city centre, which carry high volumes of traffic flow – however this is felt to be to the detriment of pedestrians within the city centre, with the priority placed on the facilitation of traffic flow.

There are over 5,000 off-street parking spaces provided at 16 car parking locations within the city centre. On-street parking is subject to a 2-hour limit, and requires the use of parking discs or the ParkMagic system to pay by phone. Parking charges within the city centre are clearly structured so as to encourage longer-term commuter parking, with 5-day parking available for as little as €12.

There are currently no formal park and ride facilities provided within the LMD. Informal services are provided by private bus service providers for specific events, such as concerts or sporting events for example. These services use a number of hotel car parks as depots. The location of a park and ride site would be governed by a number of factors, including passing traffic flows, accessibility from the road network, and the extent of priority facilities linking to the city centre.



## 4.4 Catchment Analyses

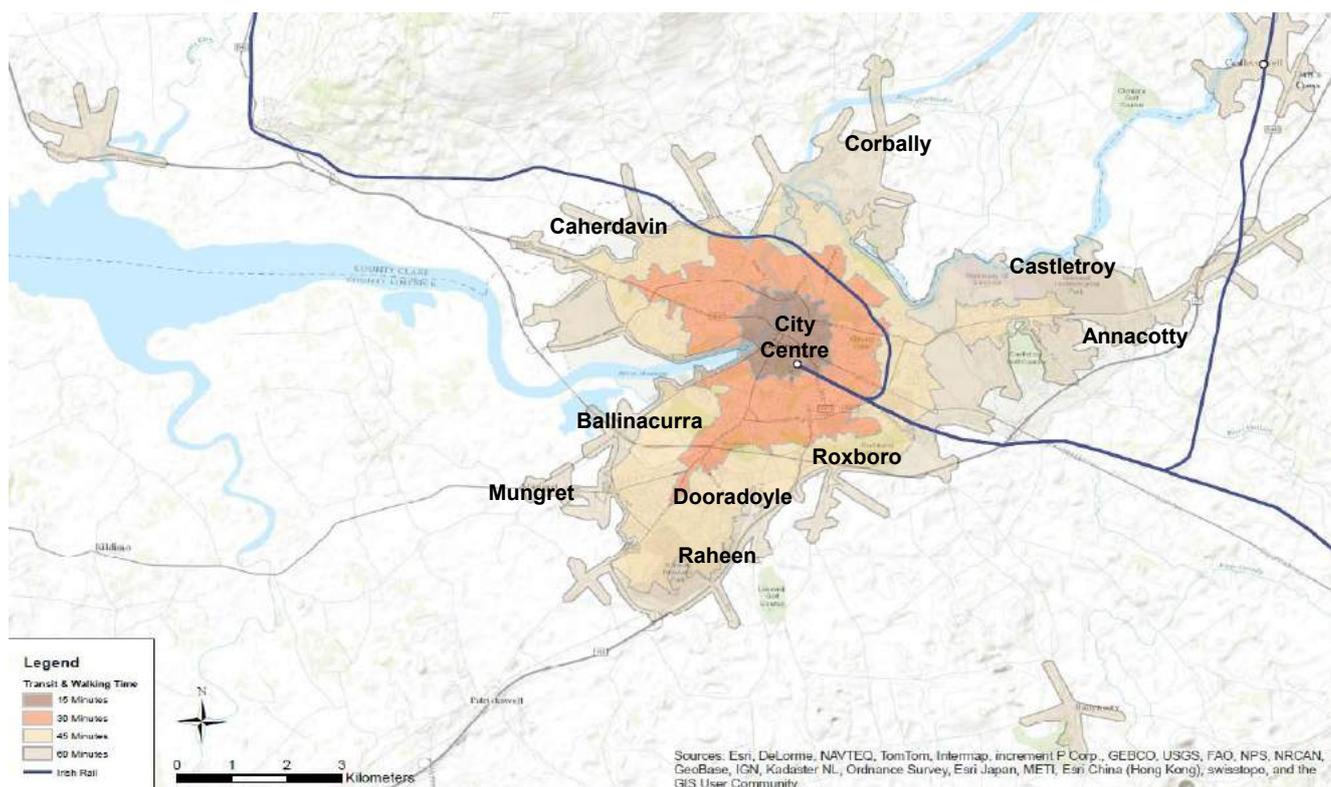


Figure 4.67: 15, 30, 45 and 60 minute travel catchments to Limerick City Centre

As part of the network analysis, travel times have been examined to the various major attractors in the LMD. As part of this, the following destinations have been examined:

- City Centre
- Primary Schools
- Secondary Schools
- Third Level – University of Limerick, Limerick Institute of Technology and Mary Immaculate College
- University Hospital Limerick

### 4.4.1

#### Limerick City Centre Catchment

Figure 4.67 above shows the areas within 15, 30, 45 and 60 minutes travel from the city centre, including walking and public transport.

It can be seen that immediate environs of the city centre are within a 30-minute travel time of the city (including walking and public transport), while the extensive bus provision to the south of the city is reflected in the 45-minute catchment extending into the southern environs (Dooradoyle and Raheen). It is noticeable in the above Figure that the eastern extent of the LMD has substantial areas of land which are outside of a 45-minute travel time by public transport.

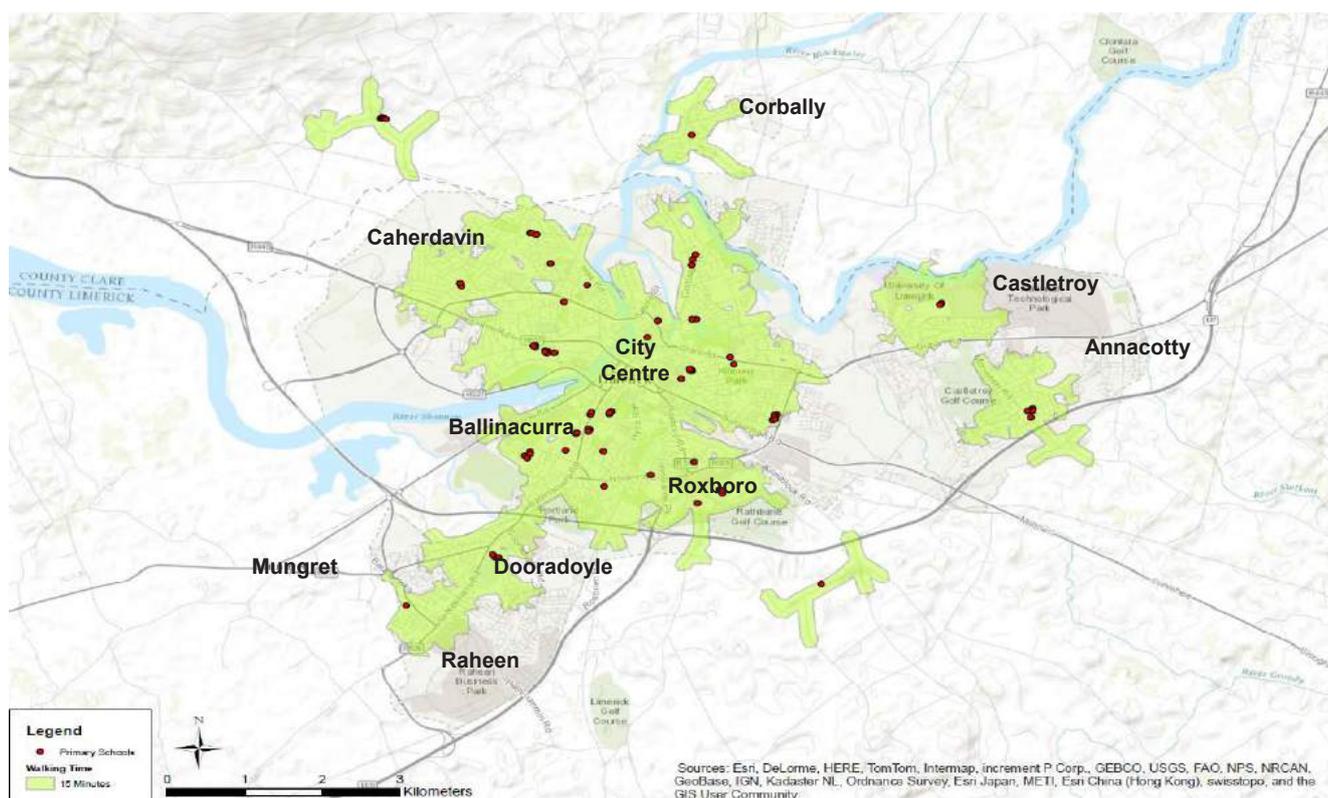
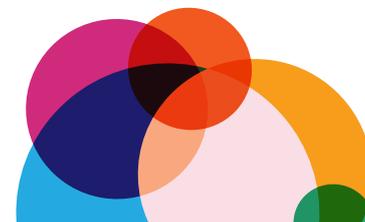


Figure 4.68: 15-Minute Walking Time to Primary Schools

#### 4.4.2

### Education Catchments

#### 4.4.2.1

#### Primary Schools

Figure 4.68 above shows the areas within the LMD that are within a 15-minute walking distance to the nearest primary school.

Further interrogation of the catchment shown above indicates that 5,566 children between the ages of 5-12 are within a 15-minute walking distance of their nearest primary school.

Census 2011 data for the Limerick City and Suburbs area indicated that there were 8,462 children between the ages of 5-12 in this area.

Thus, approximately two thirds of children between the ages of 5-12 are within a reasonable walking distance to their nearest primary school.

As outlined in Section 2 of this report, Census 2011 showed that only 35% of children aged 5-12 actually walked to school, and 1% cycled.

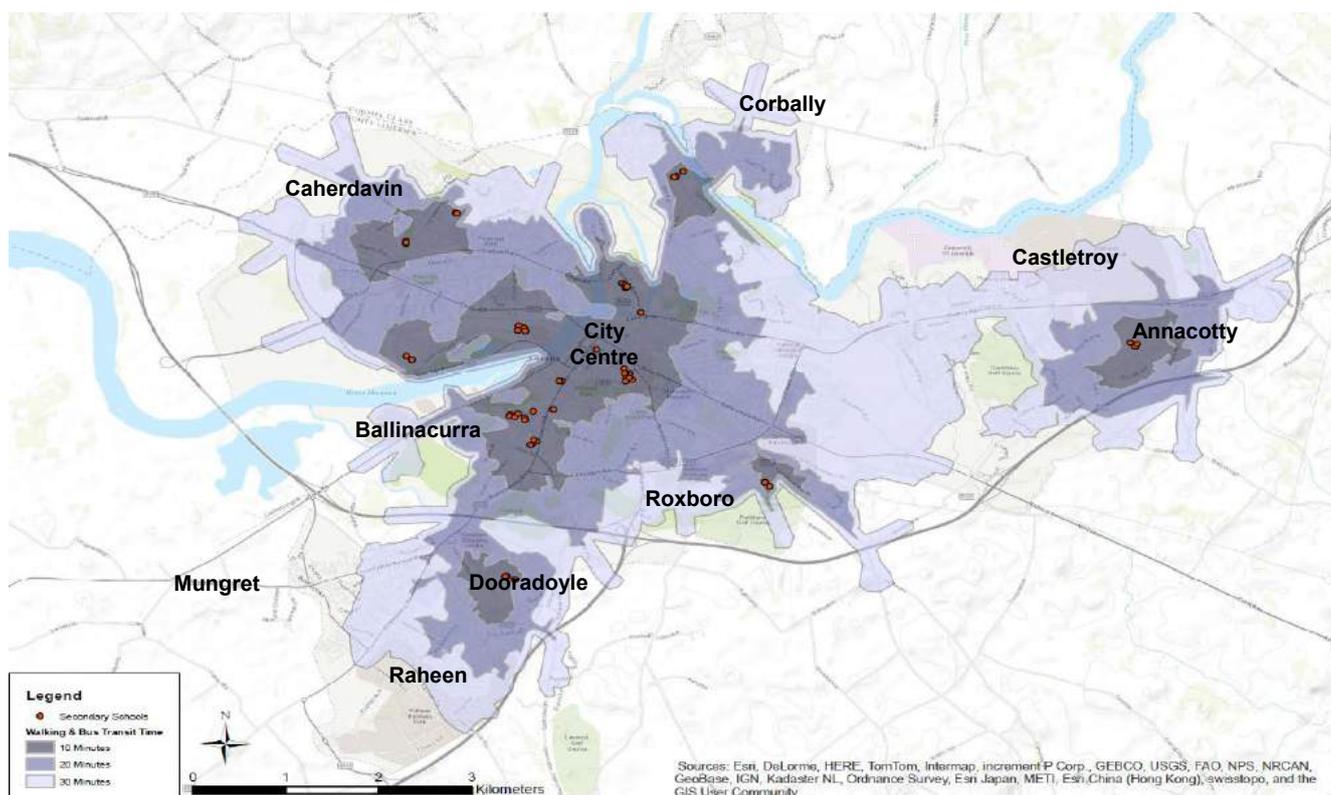


Figure 4.69: 10, 20 and 30-minute Walking and Bus Travel Time to Secondary Schools

#### 4.4.2.2

#### Secondary Schools

Figure 4.69 below shows the areas within a 10, 20 and 30-minute travel time by public transport, including walking, to the nearest secondary school.

Further interrogation of the catchment shown above indicates that 2,482 children between the ages of 13-18 are within a 20-minute travel time to their nearest secondary school. A total of 5,738 students between the ages of 13-18 are within a maximum 30-minute travel time of their nearest secondary school.

Census 2011 data for the Limerick City and Suburbs area indicated that there were 6,670 children between the ages of 13-18 in this area. A total of 86% of students are therefore within a maximum 30-minute travel time to their nearest secondary school.

As outlined above in Section 2 of this report, Census 2011 indicated that 31% of students aged 13-18 walked to school or college, 3% cycled, and 18% used the bus.

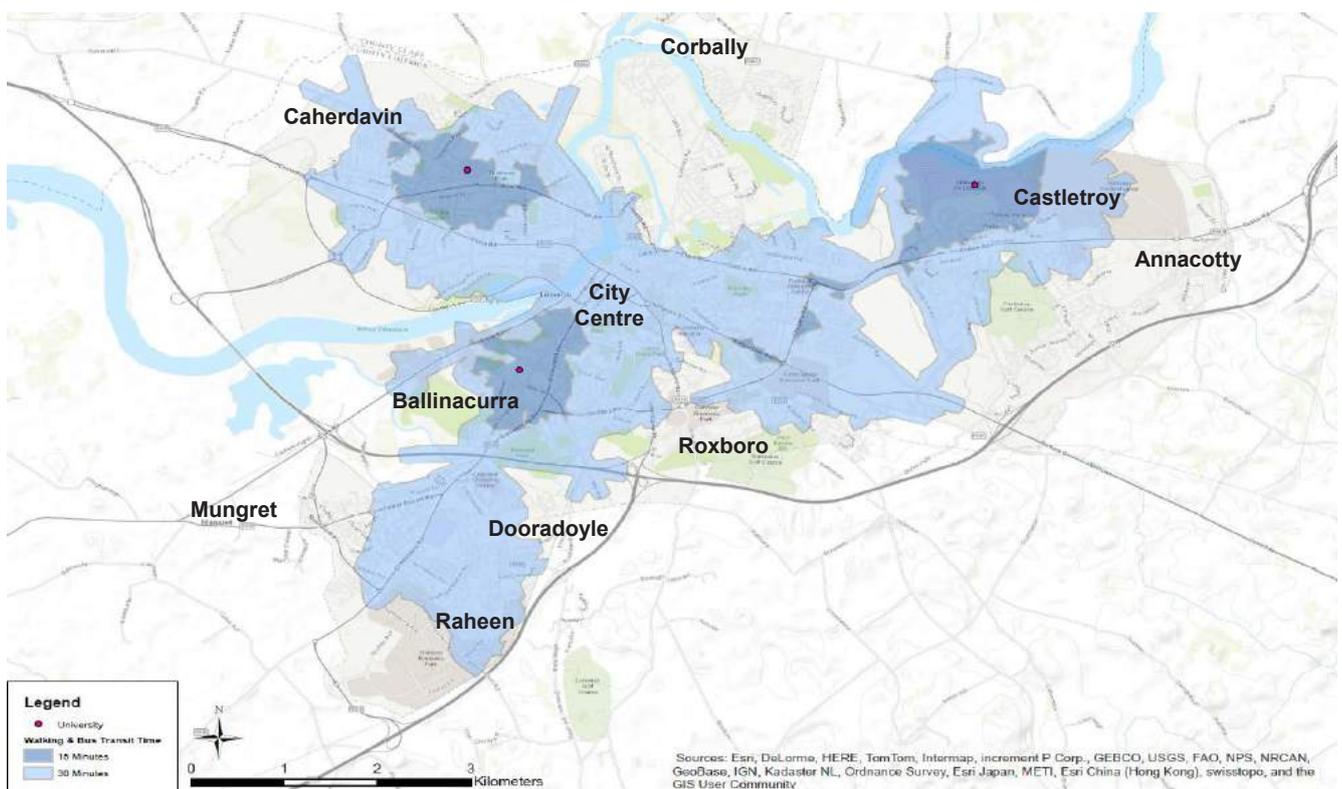
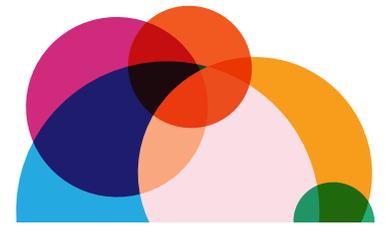


Figure 4.70: 15 and 30-minute Walking and Bus Travel Time to UL, LIT and Mary Immaculate College

#### 4.4.2.3

##### 3rd Level Education

Figure 4.70 below shows the catchment within the LMD within a 15 and 30-minute travel time, by walking and by bus, to the three major Third Level facilities (UL, LIT and Mary Immaculate College).

A total of 9,576 students over the age of 15 are within a maximum 30-minute travel time of their nearest third level facility.

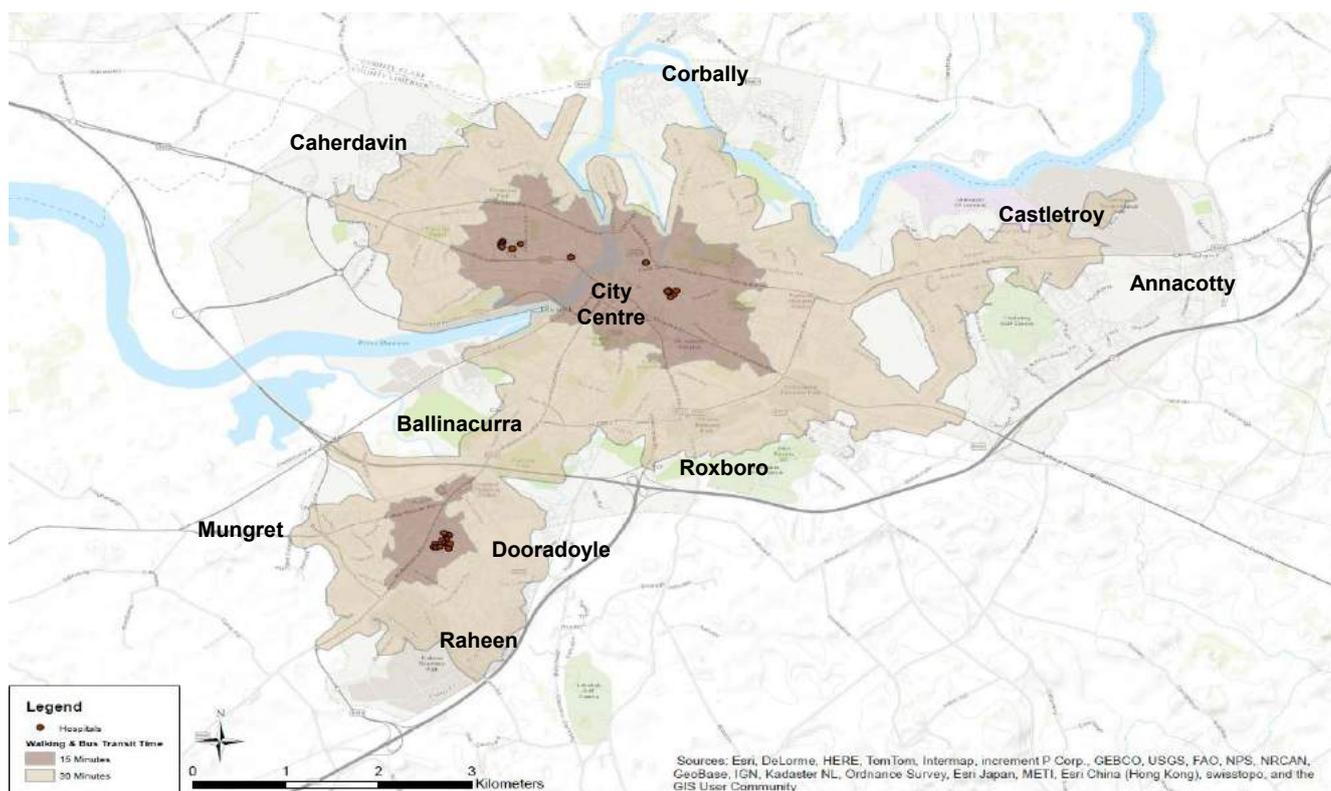


Figure 4.71: 15 and 30-minute Walking and Bus Travel Time to University Hospital

### 4.4.3

#### University Hospital Limerick Catchment

Figure 4.71 above shows the catchment within the LMD that is within a 15 and 30-minute travel time, by walking and by bus, to the University Hospital Limerick at Dooradoyle.

Further interrogation of the catchment shown above indicates that 2,659 people are within a 15-minute public transport travel time to the University Hospital, and a total of 22,389 people are within a 30-minute travel time.

It is clear from these results and from Figure 4.71 above that accessibility to the University Hospital from the north, east and west of the city centre is poor, with these areas all lying outside a 30-minute travel time. Approximately 70,000 (75% of the overall population) people are therefore outside a 30-minute travel time to the University Hospital.







# Key Issues

Limerick Metropolitan District Movement Framework Study



## 5.1 Introduction

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Following examination and analysis of the Limerick Metropolitan District (LMD) from a policy context, and subsequently having undertaken stakeholder consultation and network analyses across the LMD, major issues across numerous modes of transport have been identified.

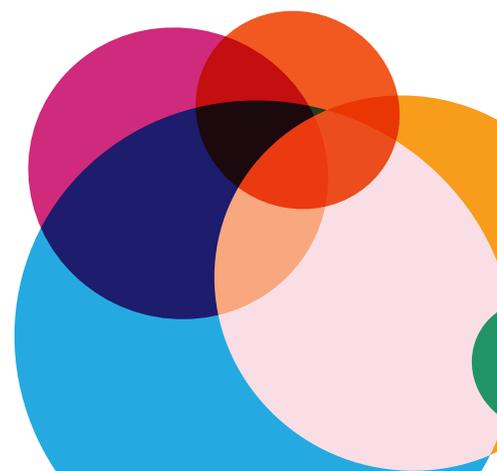
This chapter sets out the various issues which have been identified, in order to base the development of schemes aiming to address them.

### 5.1.1

#### Categorisation of Issues

For the purpose of this assessment, issues identified have been classified according to the various transport modes, as follows:

- Network Functionality and Management Issues
- Pedestrian Network Issues
- Cyclist Network Issues
- Public Transport Network Issues
- Vehicle Network Issues



## 5.2 All Transport Networks - Functionality and Management Issues

### 5.2.1

#### Strategic Network Management

Across the entire LMD, the functionality of the transportation network as a whole is such that **the network is relatively inflexible or static with regard to its accommodation of traffic flows, particularly where these flows may be susceptible to short-term volatility.**

From a network-wide perspective, there are therefore issues with regard to **the capability of the network itself to respond to specific planned or unplanned events in a dynamic manner. Unforeseen events, such as emergency incidents associated with a vehicle collision, or adverse weather, can cause sections of the network to break down very quickly, often permeating rapidly throughout the remainder of the LMD.**

An example of this would be the emergency events of early 2014, associated with heavy flooding, which resulted in the closure of a number of key links due to flooding, in particular on the northern side of the LMD, as well as the effective closure of a number of key links in the City Centre.

A second example would be the undertaking of planned road works/ maintenance and associated traffic diversions, or the phasing of traffic management associated with major infrastructure, etc., which can often lead to significant traffic flow issues in the wider area. In particular, the northern side of the LMD is susceptible in this regard, as the level of alternative routing available is much lesser than that on the south side.

This is particularly relevant in the context of the sprawl of the City area into the surrounding suburbs. Additional junctions at the extents of the new City, and at the fringes of the Metropolitan District itself, will require incorporation into the system of detection, feedback and responsiveness that dictates the overall efficiency, capacity and safety of the entire LMD road network.

**It is therefore important to ensure that the network as a whole can adapt and respond to both typical and atypical events as they occur, in order to react to demand as it develops.**

**The principal elements of such a dynamic and adaptable network should therefore consist of suitable network monitoring and feedback systems, as well as an increased level of network operation control.** As part of this, greater information gathering and dissemination systems throughout the LMD are of paramount importance. Outside of the core areas, more remote junctions require an enhanced level of monitoring to enable reactionary measures to be actioned swiftly and efficiently.

The ability to detect key information and rapidly deliver feedback to network operators and to general traffic in turn assists the capability of the network itself to dynamically respond to fluctuations in traffic flows and to temporary disruptions to service arising from either planned or unplanned events.

Outside of reactionary responses to demand, a flexible and dynamic network can also enhance the quality of the service offered to pedestrians, cyclists and public transport by allocating greater priority to these modes.

## 5.3 Pedestrian Network Issues

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### 5.3.1

#### Insufficient footpath width

There are a number of locations where footpath widths are insufficient for the safe and comfortable movements of pedestrians. Examples include along the Roxborough Road, Wickham Street, etc.

In certain locations available width is restricted by structures such as rail bridge parapets, and as such it may not be possible to achieve substantial improvements in width, but in other areas it may be possible to re-allocate road space to achieve greater footpath widths for pedestrian use.

### 5.3.2

#### Greater pedestrian priority

Within the city centre, and particularly along the grid network of junctions, there are numerous locations where there are areas of redundant road space at junctions. In many locations this is a result of on-street parking in the vicinity of junctions; in others it is the presence of street furniture. In other locations it is a result of the layout of the junctions themselves which facilitate higher vehicle speeds when undertaking turning movements at larger junctions.

There is a clear opportunity therefore to re-design a number of these junctions and to re-allocate this 'dead' road space to pedestrians. The works may predominantly comprise additional build-outs and tighter junction radii, for example, and while the actual reduction in road space available for traffic flow would be minimal, pedestrians would greatly benefit from shorter crossing lengths, better quality crossings, and from the resulting lower vehicle speeds.

### 5.3.3

#### Sub-standard pedestrian crossings

Throughout the LMD, there is a number of locations where there are pedestrian crossings provided, but of an insufficient standard. For example, there are numerous locations where non-standard, non-priority pedestrian crossings are provided, such as several locations in Moyross, or on High Road.

Other locations have pedestrian crossings present, which are either missing key features such as tactile paving or dropped kerbs, or have these facilities in place but not to standard.

In addition, there are also a number of junctions where pedestrian crossing facilities are provided across some of the approach arms, but not all. As outlined above, there are also numerous locations where there are items of street furniture hindering or blocking the crossing desire lines.

### 5.3.4

#### Extent of pedestrian crossing facilities

Within the city centre, despite the presence of a number of signalised junctions which provide for pedestrian movements, there are little or no dedicated pedestrian facilities, such as signalised pedestrian crossings or zebra crossings.

The grid road network covering much of the city centre means that there are generally short walking distances to the nearest signalised junction, however there are still opportunities to provide mid-block crossings which facilitate pedestrian movement exclusively, which would help to reinforce the hierarchy in favour of the pedestrian, as well as acting as traffic calming and increasing the sense of 'shared space' between the pedestrian and vehicles.

Outside of the city centre core area, the extent of crossing facilities provided for pedestrians reduces noticeably in the more organic streets, such as in the vicinity of the Milk Market. These locations have significantly lesser levels of pedestrian activity, which in turn leads to a greater priority being indirectly allocated to vehicles.

### 5.3.5

#### Pedestrian facilities at major junctions

In the city centre, **it was noted that there are a large number of junctions which do not facilitate pedestrian crossing movements. The majority of these junctions are non-signalised, but they also do not provide features intended to facilitate pedestrian movement, such as dropped kerbs or tactile paving.**

In the wider LMD area, it was noted that there are a number of major roundabout junctions on the various approaches to the city centre, which are often linked by footpaths, etc. but pedestrian crossing facilities across the junctions themselves are either not provided or are very limited.

Examples include the Roxborough Roundabout, and the Kilmallock Roundabout. Despite being outside the city centre, these junctions are in populated areas, and there are clear desire lines across the junctions to and from the city centre and outlying residential and commercial/retail areas. It is also noteworthy in this context that the majority of the primary and secondary schools in the southern portion of the LMD are located inside the Childers Road boundary to the south of the City Centre, resulting in high demand to cross this arterial link.

Throughout the LMD, and particularly in Limerick City Centre, there are minimal features incorporated into the existing network of signalised junctions with regard to pedestrian crossings. For example, enhancements such as pedestrian detection facilities, pedestrian countdown timers, etc. are not present.

These facilities tend to improve the quality of pedestrian crossings by providing additional information to users, as well as additional measures to further enhance the priority allocated to pedestrians (particularly the more vulnerable pedestrians such as the elderly or mobility-impaired) throughout the network.

Pedestrian detection systems at signalised crossings improve safety for vulnerable users, and also act to assist the dynamic operation of the crossings themselves by way of making allowances for specific demand.

### 5.3.6

#### One-way system within city centre

**The existing circulation system in place within the city centre creates a series of multi-lane, single-direction streets, which can be to the detriment of pedestrian amenity.** This system is clearly intended to maximise traffic flow, therefore lowering pedestrian needs in the hierarchy.

Furthermore, **it is evident that these one-way streets encourage undesirable behaviour such as on-street double parking, as there is a perception among drivers that there is ample street space available, often leading to capacity issues.**



### 5.3.7

#### Barriers to movement

**There are a number of locations where pedestrian permeability and connectivity is hindered by the streetscape.** Examples of these include in Moyross and at the University Hospital Limerick as identified elsewhere in this report.

Routes carrying high levels of traffic flow, as well as an absence of pedestrian facilities also contribute to restricting pedestrian movement. There are also a number of other locations where facilities such as guardrail are further inhibiting pedestrian movement, usually in order to ensure minimal disruption to traffic flow.

At other locations within the city centre, the layout of junctions is not conducive to minimising the risk to pedestrians, particularly the junctions within the grid network.

An example is the junction of Roches Street and Catherine Street, where on-street furniture occupies redundant space which could be easily re-allocated to pedestrians, reducing crossing lengths and crossing times as a result, and introducing subtle, more psychological forms of traffic calming while simultaneously giving greater prominence to the pedestrian.

### 5.3.8

#### Street clutter

Within the city centre, there are locations with a proliferation of on-street directional signage. These are often sized to comply with typical highway speed limits, and do not address the particular urban context and mix of uses/activities that occur within a city centre environment. There are also redundant signs and urban furniture adding to the general cluttered feel of key public spaces.

### 5.3.9 Pedestrianised streets/zones

As outlined elsewhere in this report, there are a number of pedestrianised streets within the city centre which create a real sense of space for pedestrians, placing them at the top of the movement hierarchy.

**The consolidation of these streets around the city centre core greatly improves the sense of place for pedestrians within the city centre.** In fact there is a noticeable difference between the pedestrianised areas on Cruises Street, Bedford Row and Thomas Street, and adjoining streets which are more typically oriented towards the flow of general traffic.

However, **the extent of pedestrianisation is limited to streets within the city centre core itself, and plans to pedestrianise a section of O'Connell Street have yet to be implemented.**

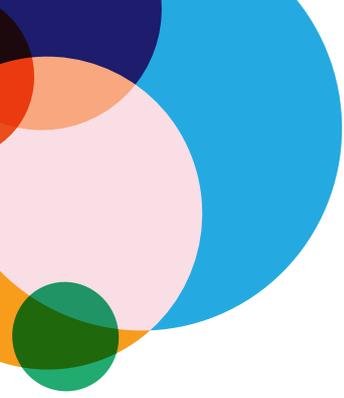
### 5.3.10 Accessibility to bus stops

A number of residential areas which are within a 500-metre catchment of a bus stop are presented with barriers to accessing these stops in the form of residential estate boundary walls and fences. The actual population catchment of the various bus services is, in some cases, severely impacted by this lack of permeability.

### 5.3.11 Pedestrian wayfinding

The city centre does not have a consistent internal signage system throughout to guide pedestrians around the city to the major retail, commercial and tourism areas.

Although there are a number of locations where there are various types of wayfinding signage, the standard of same is not homogenised, and the newer signage is largely designed around improving the linkage between Colbert Station and the City Centre.



## 5.4 Cycle Network Issues

This is an issue that should be the focus of a coherent strategy, as it detracts from the visitor experience, especially the more unfamiliar visitor groups such as tourists.

### 5.3.12 Pedestrian safety – scenic/amenity routes

As part of the proposals developed by the Limerick Smarter Travel team, there are a number of scenic amenity routes proposed, many of which seek to utilise the river and canal paths linking the city centre to the west.

Concerns have been identified at the consultation stage of this study, however, regarding the safety of these routes, which will offer minimal natural surveillance, particularly at times of low natural light. As a result, the safety of pedestrians and cyclists alike along these routes will be a key issue.

### 5.3.13 Pedestrian/vehicle conflicts

A high proportion of fatal incidents, serious injury incidents and minor injury incidents within the LMD have been observed to involve pedestrians. Almost 50% of fatal incidents from 2005-2011 and 35% of serious injury incidents involved pedestrians.

It is evident that the conflict between these users and the other vehicular modes in the LMD is a contributory factor to the accident history. The safety of vulnerable road users within the LMD must be the principal concern.

Issues discussed previously in this section, such as those relating to vehicular speed and inadequate provision for pedestrians at junctions would need to be addressed in order to improve pedestrian safety throughout the LMD.

### 5.4.1 Extent of network

As identified in this report, **the existing cycle network coverage is limited within the overall LMD. There are no complete corridors in place providing linkage to major destinations, and facilities in place range from on-street cycle lanes adjoining carriageway space to higher-quality off-road links.**

As noted above, the majority of the existing cycle network appears to be consolidated to the west of the city, in the vicinity of the University of Limerick. There is no complete cycle corridor linking the city centre to one of the outlying zones.

### 5.4.2 Quality of network

Across the network, the links which are off-road are typically of good quality, with cyclists suitable segregated from general vehicular traffic. The facilities which are primarily on-road are often alongside vehicle parking areas or adjacent to heavy traffic flows.

There are issues with the presence of debris, dirt and blocked drainage systems located in cycle lanes, as well as some locations where transitioning of cycle lanes from on-road to off-road and vice versa requires excessive manoeuvres and where suitable kerbing, etc. is not provided. There are further examples of locations where the mixture of cycling facilities with other facilities such as bus stops and bus bays, etc. are causing direct conflict.

Along the principal Green Route corridors into the city, from the East, West and South, the levels of traffic present on these routes may not be conducive to cycle safety on the same routes – for example a portion of the southern green route along the Ballinacurra Road has an inbound bus lane, but no outbound bus or cycle lane.

### 5.4.3 City centre cycle network

**There are no elements of the cycle network within the city centre at present.** Features such as advance cycle stop lines (ASL's) or cycle lanes, etc. are not present at junctions within the city centre, but are present on many of the approach routes. The one-way system in place around the city centre is also problematic for cyclists as these routes carry heavy traffic flows, and there can be increased incidents of overtaking and speeding, etc.

### 5.4.4 Cycle facilities at major junctions

**Outside of the city centre, the major routes to the principal destinations within the LMD carry significant volumes of traffic, and as such are not ideally suited to on-road cycling where the space is shared due to the high numbers of vehicles.**

In addition, there are a number of large roundabout junctions on the outer radial routes, which do not provide any priority to cyclists. Examples include the Groody Roundabout, Parkway Roundabout and the Roxborough and Kilmallock Roundabouts. There are also no locations where additional cyclist-friendly features such as cycle detection at signalised junctions, etc. are in place.

### 5.4.5 Support and enhancement of public bicycle scheme

It is anticipated that the Limerick public bicycle scheme will become operational in the city centre by the end of 2014. In order to enhance the viability and appeal of the scheme going forward, it would be desirable to consider additional complementary infrastructural measures, for example additional advanced stop line facilities at major junctions, cycle-friendly crossings at major junctions, and, where feasible additional cycle network provision.

### 5.4.6 Suitability of cycle corridors

Along the three green route corridors, to the south, east and west of the city, the infrastructural works required to achieve bus priority linkages may not therefore lend themselves to creating dedicated cycle linkages along these corridors.

Furthermore, the significant traffic volumes present on these routes may lead to safety issues for cyclists, and capacity issues for general traffic. Exploration of alternative, parallel corridors may be worth of consideration, as safer and more direct cycle linkages may be more attractive to intermediate, lesser experienced cycle commuters.



## 5.5 Public Transport Network Issues

### 5.5.1 Extent of network

**Although three green route corridors have been identified and works implemented along these, there is currently no complete bus corridor to the city centre on the southern, eastern or western routes.** The most extensive of the three is the southern corridor, where the inbound bus lane has recently been extended to Punches Cross.

The eastern and western corridors have limited bus lane lengths in place. Despite the good quality bus facilities on Condell Road, this route is not used by city centre services.

In addition, apart from the 304X, which only runs within a very restricted operational window, there are no direct bus services operating within the city centre and environs.

### 5.5.2 Quality of Service

The majority of the issues regarding the existing city bus services are due to external factors, such as routing through heavily trafficked areas, such as the city centre for example. As a result, there are often significant delays on the city centre bus routes, which in turn lead to a degree of service slippage, or even missing services. The overall result of this is that the RTPI presented at numerous stops becomes too variable, and users develop a critical and mistrustful attitude towards the quality of the bus services.

The resultant loss of confidence in the quality of service leads to a reduction in the overall attractiveness of bus as a realistic travel alternative. This is particularly undermining to a mode that is already competing with relatively low car parking charges within the city centre, the availability of significant numbers of parking spaces throughout, and the relatively short car-based commuting times already present within the LMD.

There is also a distinct lack of information available across the bus network regarding routing and stops. A number of bus stop poles do not indicate key information such as the routes served, or information about timetabling.

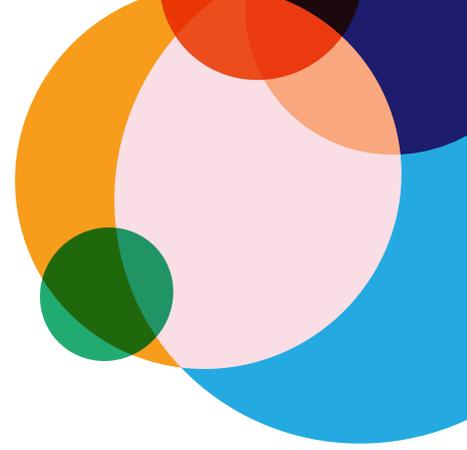
There are locations which would benefit from the provision or improvement of shelters and Kassel kerbing, as well as basic route and timetable information, especially within the city centre.

**The two key challenges to making bus a more desirable mode choice are in efficiency and comfort. A high-quality, efficient service, with sufficient user information, clarity and legibility, will quickly assert itself as a real commuting alternative to the private car.**

### 5.5.3 Public Transport linkage between UL and City Centre

As outlined in this study, the University of Limerick envisage the relocation of a faculty from within the Castletroy Campus to the city centre. This will in turn be supplemented by ancillary accommodation requirements, which UL intend to also develop in the city centre.

As such, and **given the capacity restraints present along the existing bus service routes between UL and the city centre, the development of a dedicated high quality public transport link between the two is worthy of consideration. This could comprise major improvements along existing routes, entirely new transport systems/routes or a combination of both.**



#### 5.5.4 Pinch-points

There are a number of locations on existing routes where there are interruptions to bus lanes, such as at junctions, etc. However, buses have major difficulty at certain locations when attempting to merge back into general traffic flow between sections of bus lanes. An example of this is on the 304 route inbound from Raheen.

There are other locations where the quality of bus lane infrastructure is compromised by parking which is permitted within the lanes outside of peak times, such as the inbound bus lane on Mulgrave Street.

#### 5.5.5 Lack of bus priority

Within the LMD, and the city centre in particular, there is a moderate level of bus priority, such the provision of bus lanes on certain approach routes.

There are no bus lane facilities in place within the city centre core area. Furthermore, the completion of the three green route corridors identified may require the use of additional bus priority measures where constraints do not allow for dedicated bus lane facilities to be implemented.

#### 5.5.6 One-way system

The one-way system currently in place often requires circuitous routing for buses to reach their termini in the city centre, which can result in additional delay for buses along the last portion of their routes, as well as adding to user confusion regarding the locations of termini.

#### 5.5.7 Connectivity and interchange facilities

While the majority of the city bus services are cross-city, it is evident that a number of these services do not allow for connectivity to important destinations within the LMD.

In particular from the northern side of the city, there are limited cross-city services, which only extend into the southern area of the LMD for a short section. As a result, transfer is required onto another service in the city centre, meaning two bus journeys to complete. For example there are no bus services linking the Caherdavin area to the University Hospital Limerick or to UL

**There is also little or no interchange between city services and the inter-urban and regional services. With Colbert Station not directly served by the city services, there is little interchange at present between the regional services and the city services at this point, but also in the wider area, there is no intercept between the various services outside of the city centre, allowing for interchange to occur outside of the centre itself.**

#### 5.5.8 Timetabling and route info

Within the LMD, and in particular within the city centre, there is a distinct lack of information at bus stops about services and routes. In particular, at bus shelters, there are minimal facilities which advise users of their options to travel within the LMD. A number of city centre bus stops do not display basic information such as which routes serve them, and some of the information displayed can be out-of-date or superseded. A minimum standard of user information should be available at each bus stop.

#### 5.5.9 Real Time Passenger Information

The extent of RTPI coverage is minimal within the city centre and environs at present, with just 16 electronic signs in place at present. There is therefore a noticeable difference in quality between the various city centre bus stops. In order to provide greater assurance to patrons about the reliability of services, further roll-out of RTPI signage throughout the LMD is necessary.



### 5.5.10 Park and Ride

**There is currently no formal park and ride facility in place within the LMD.** As outlined above, there are informal services which are scheduled around various major events, which utilise a number of hotel car parks, and are privately operated.

Various studies undertaken in recent years have identified a number of viable sites – it would appear from these studies and from the profile of the corridor, that the southern corridor would represent the most viable, as the corridor avails of a significant catchment, the most extensive infrastructure and the most frequent bus service.

However, **there is also potential for such a facility on the western corridor, which could avail of extensive bus lane facilities on Condell Road for example, as well as serving the LIT campus.**

**Any proposals to provide dedicated public transport linkage between UL and the City Centre could also lend itself to the provision of a Park and Ride service on the eastern corridor.**

### 5.5.11 Coach parking

There are a number of formal and informal locations where coach parking is provided within the city, such as at City Hall, on O'Connell Street and at Clancy Strand, for example. However, there are shortages of coach parking facilities at key tourist destinations, in particular at locations in the vicinity of King John's Castle. Additional coach parking is therefore required to facilitate tourism traffic.

There is also a clear need for longer-stay coach parking to accommodate layover requirements and to minimise the extent of coaches routing around the city centre seeking adequate parking facilities and the use of city bus stops for overnight parking.

### 5.5.12 Colbert Station

The existing Bus and Rail interchange at Colbert Station does not link well with the city centre, despite being located approximately five minutes away on foot.

**The station itself requires upgrade and modernisation, and the station itself can play a much more active role in complementing the city centre.** There are also minimal city centre bus services which frequent Colbert Station, which is primarily served by regional services.

### 5.5.13 Underutilised rail network

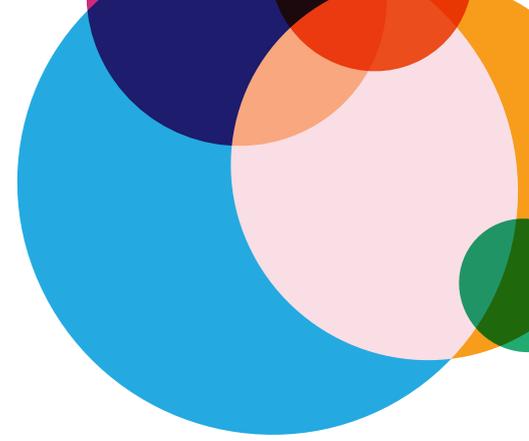
At present, there are several rail lines converging on the city, but many of these are largely unused at present, such as the Limerick-Foynes line, etc. There are potential synergies with this line and possible park and ride services along the southern corridor. Alternatively, there may be scope to utilise the corridors for direct bus services.

The potential for increasing the frequency of rail services along the rail lines appears low at present, with passenger levels not significant enough to justify supplementation with additional service frequencies.

### 5.5.14 PT/BRT corridor

In the context of the lack of connectivity to the city centre from the north, significant levels of traffic must route through the city centre to access major nodes such as the University of Limerick and the National Technology Park.

**As a result, and in the absence of any commitment to funding the Limerick Northern Distributor Road at present, there may be a potential for the development of a public transport corridor to link this area to the city centre.** This may be a combination of priority measures and new infrastructure along the existing eastern green route corridor or it may comprise entirely new routes to and from the city centre.



Such a facility may be of increased relevance in the context of the University of Limerick's plans to relocate a faculty and associated student accommodation to the city centre.

In addition, a high profile sustainable transport initiative such as this could generate major interest and momentum behind a desire to change mode.

#### 5.5.15 Technology and innovation

Although there is now a Journey Planner smartphone and internet app available at [www.transportforireland.ie](http://www.transportforireland.ie), at present the service appears to be timetable-oriented and not flexible in terms of adapting to bus delay on routes. The service is also primarily developed for use in a national context.

Furthermore, the web-page itself is subject to a number of technical issues. A good example of a journey planner application which has been recently developed is the Dublin Bus smartphone application – this provides users with continuously updated data on the location of their bus, and can be tailored around the users travelling habits.

The use of a high-quality facility such as this can significantly reduce wait time at stops, for example. There may be potential in the development of a similar application themed specifically for the LMD.

#### 5.5.16 Taxis

There may be merit in the further implementation of time-dependant taxi ranks at specific locations – for example, during evenings there are clear demands for taxi facilities at specific nightclubs and pub areas – consultation with An Garda Síochána identified the appearance of a number of illegal taxi ranks at certain locations.

## 5.6 Vehicular Network Issues

### 5.6.1 Limerick Northern Distributor Road

**From a major infrastructural perspective, the Limerick Northern Distributor Road is a crucial scheme going forward for the LMD.** As outlined in this report, the degree of accessibility into the LMD and the city centre from the north is significantly less than that available from the south, east and west. Whilst it is perhaps outside of the remit of this study to propose any strategic infrastructural schemes such as the LNDR, the importance of the scheme to the region needs to be taken into account.

### 5.6.2 Traffic demand management

At numerous locations within the LMD, there are issues regarding the flow of traffic. For example, the R445 Dublin Road between Mackey Roundabout and the Groody Roundabout, the R463 Corbally Road in the vicinity of the Grove Island roundabout, the R857/R445 Ennis Road, R511 Roxborough Road, R509 Childers Road and R526 St. Nessan's Road all carry heavy traffic volumes in the morning and evening peaks.

Careful management of traffic flows on the LMD road network is crucial in the short-to-medium term in the absence of committed funding for major infrastructural works. In the case of the Limerick Northern Distributor Road, preliminary analysis shows that even in the event of this scheme proceeding, demand management measures will still be necessary on the R445 Dublin Road.

### 5.6.3 Weight restrictions

As outlined in this report, the connectivity issues to the city centre from the M20 at the Rossbrien Interchange have resulted in greater numbers of vehicles diverting from the M20 at the Dooradoyle exit, and routing through the local road network on Rossbrien Road and Dooradoyle Road.



The presence of larger numbers of HGVs using these routes subsequently led to the introduction of a 3-tonne weight restriction on the Rossbrien Road to minimise the extent of vehicles unnecessarily routing through this area.

The route to the city centre via the Dooradoyle interchange initially passes through a number of residential areas, and as such the passage of larger vehicles along these areas is clearly undesirable. There may be potential to consider weight restrictions within these routeing paths.

In addition, there may be potential to implement a weight restriction within the city centre to encourage certain vehicles to route across the city via alternative means.

#### 5.6.4 Toll avoidance

There is evidence to suggest that high levels of vehicles are avoiding the use of the Limerick Tunnel and routing through the city centre instead. During November of 2013, when a toll amnesty was introduced on the Limerick Tunnel for HGVs, a 70% increase in HGV activity through the tunnel was recorded.

Whilst data for general traffic toll avoidance is not available, by way of comparison the Environmental Impact Statement (EIS) documentation prepared for the Limerick Southern Ring Road (SRR) Phase 2 included an examination of the scheme without tolling, and indicated that in 2008, traffic flows using the SRR would increase by 27% above forecasted levels if the scheme were to be non-tolled.

In future years, as traffic flow increases, the proportion which would transfer to the SRR if non-tolled is proportionally lower – in 2028 it was estimated in the EIS that an additional 19% would transfer to the SRR if non-tolled.

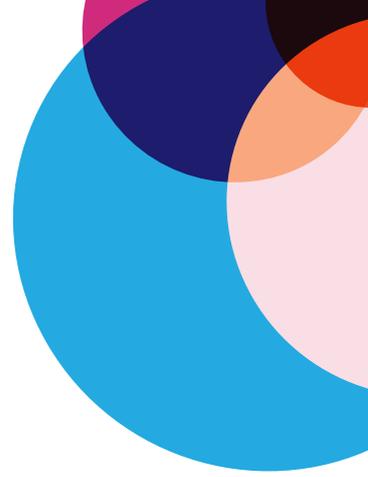
#### 5.6.5 Network monitoring/management

As outlined above in this report, approximately 50 junctions within the LMD are currently incorporated into the SCOOT AUTC system, which manages and controls traffic flows in order to minimise delay and congestion.

**There are two major issues that have been identified from a strategic level with regard to network management and control within the LMD:**

- **The application of the city-centre template of network management (AUTC, CCTV, PGS, VMS, SCOOT or MOVA, etc.) in the suburban areas**, particularly Dooradoyle and Castletroy, in order to homogenise both and to achieve a universal standard of network management across the new, expanded City area, and
- **The upgrade and improvement of the existing control facilities**, of which some is reaching end-of-life (e.g. CCTV cameras, Public Lighting, control software, etc.) and to upgrade the AUTC system to a more modern UTMC-style system

In addition to these elements which are required within the overall LMD road network, from a strategic perspective an Urban Traffic Management Control (UTMC) system requires consideration, to facilitate the development of sufficient protocols to be implemented throughout the network where required in order to react to planned events (e.g. road works, sporting events, concerts, etc.) or unplanned events (traffic collisions, flooding, etc.).



The further upgrade of the AUTC system to UTMC is necessary to further improve the efficiency of traffic flow within the LMD and the city centre, as well as to further facilitate any future measures aimed at sustainable travel, such as bus priority, etc. Within the entire LMD, the system requires improvement and extension, namely:

- Continuation of installation of fibre-optic cabling network to replace lines currently leased from Eircom
- Incorporation of major junctions in the suburban areas, particularly Dooradoyle and Castletroy into the AUTC system
- Upgrade of these suburban junctions to provide a similar standard of operations to the City Centre, such as detection, countdown timers, monitoring, etc.
- Additional detection measures such as CCTV, in-ground detection, etc.
- Expansion and upgrade of AUTC system to a UTMC system in order to include additional features such as CCTV, VMS, PGS, etc.
- Implementation of bus detection technology to enable signal priority
- Implementation of information dissemination systems, such as VMS signage and the further roll-out of Real-Time Passenger Information (RTPI) signage at major routes and at bus stops
- Upgrade of the existing Traffic Management system to include for Urban Traffic Management Control (UTMC) which can facilitate strategic and automated management of the network
- Widening of extent of network management control to include enhanced monitoring of remote junctions within the wider LMD lands and fault detection, etc.

### 5.6.6 Management of Taxi facilities

As identified in the consultation with An Garda Síochána, there appears to be sufficient scope to review the existing taxi network within the City Centre.

In response to the appearance of a number of unofficial ranks, consideration could be given to implementing additional dual-use parking/taxi areas, which would allow for taxi-designated zones to be in operation at specific times where demand exists, for example at various public houses or nightclubs in the evening peak periods.

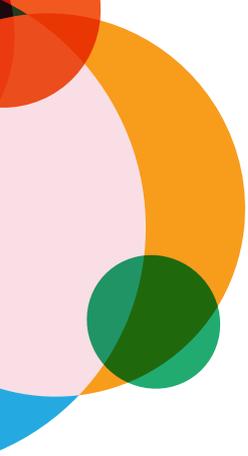
### 5.6.7 Speed limits

At present, there is a 30kph speed limit in place along the quays in the city centre. The extent of signalisation within the city centre effectively ensures that speeds are not excessively high throughout, and as a result it may therefore be feasible to adopt a mandatory 30kph speed limit within the city centre. A speed limit review should be considered for implementation within the LMD to identify potential areas to adopt reduced speed limits.

### 5.6.8 Pedestrianisation

**The recent pedestrian works implemented at Thomas Street and Bedford Row in the city centre have significantly improved the sense of place for pedestrians in the city centre. The logical progression would therefore be to consider further locations for pedestrianisation or partial pedestrianisation, in particular in the context of the proposed 'orbital system' which includes proposals to pedestrianise a portion of O'Connell Street.**

It would be important however to ensure that the operation of the vehicle network outside of these pedestrianised zones is still to a sufficient standard so as to avoid network breakdown issues from diverted traffic flows.



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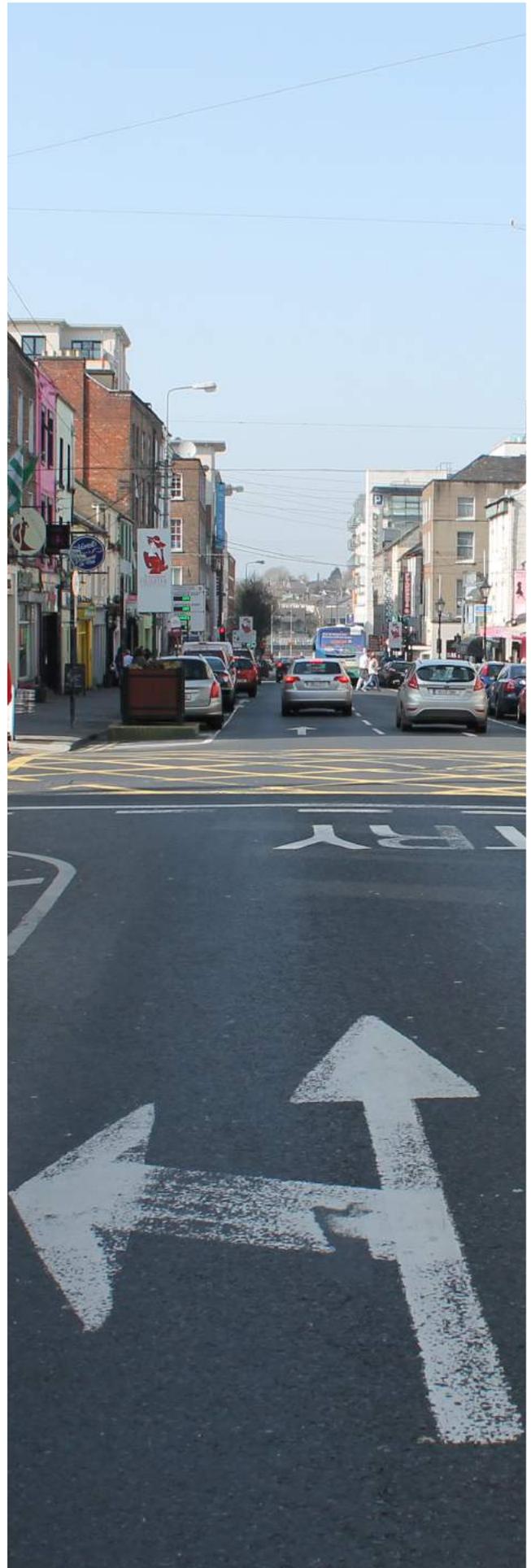
Furthermore, reconsideration of the orbital route is advocated in recent strategy documents such as Limerick 2030, in the context of the negative impact of multi-lane, single direction traffic flows on the pedestrian network by way of creating severance and reducing safety.

### 5.6.9 Car parking

There are over 1,000 on-street parking spaces operated by Limerick City Council, and over 5,000 off-street privately operated parking spaces. As identified in this study, the structure of city centre car parking charges is such that it encourages and facilitates long-stay car parking. Five-day weekly parking can be acquired for as little as €12.

**This charging structure is clearly incentivising commuter traffic into the city centre.**

In addition to the relatively short commute times in to the city for commuters, collectively **these factors are significantly undermining the viability of the city bus services.** At the same time, it is also noteworthy that there is a lack of car parking provision in the southern environs of the City Centre, leading to the use of car parking at the Crescent Shopping Centre as an informal park and ride location, for example.







# Proposed Transportation Networks

Metropolitan District

Limerick Metropolitan District Movement Framework Study

## 6.1 Introduction

As expected from an urban area of this size and regional importance, the transportation context is a complex one. Across the Metropolitan District, there are various types of transport demands along with a wide geographical distribution of trip attractors and trip generators. Any proposals to enhance or improve the transportation networks must therefore seek to facilitate the following major demands within the LMD:

- Travel between the various residential areas and the City Centre
- Travel between the various residential areas and suburban employment nodes
- Travel along cross-city corridors
- Links between 3rd level education (University of Limerick, Limerick Institute of Technology and Mary Immaculate College) with the City Centre
- Connectivity between Colbert Station and the City Centre
- Connectivity to and from University Hospital Limerick
- Cycle-based demand post-introduction of Limerick Public Bicycle Scheme
- Pedestrian demand within the City Centre

## 6.2 Limerick Metropolitan District Proposed Bus Priority Network

The proposed Bus Priority Network set out in this report contains a combination of recommended infrastructural works to provide or improve the existing priority in place for bus service, and also suggested amendments or improvements to services as a whole throughout the LMD, in particular on secondary corridors and in areas not currently well served.

The overall goal of the proposed Bus Priority Network is to serve demand for bus travel as effectively as possible, within the prevailing constraints, and to offer a competitive advantage to bus over the private car in order to encourage mode shift in line with national, regional and local policy.

The development of corridors of bus priority, which offer competitive and reliable journey times, is a critical means by which this goal can be met.

These corridors approach the City from the South, East and West, and are already augmented to varying extents with dedicated bus priority infrastructure. Completion of these corridors will in turn assist the facilitation of cross-city routing, with the associated benefit of removing city centre layover.

In addition, particular sections of the existing bus network will be improved to eliminate a number of localised issues. **Inter-connectivity between the Primary Corridors will also be a key area of focus.**

**Secondary Bus Corridors will also be the subject of improvement where possible.** These corridors facilitate key demands from parts of the LMD outside of the primary network. Within the City Centre, the routing of buses will be rationalised and re-structured in a manner that minimises layover times and minimises unnecessary circulation of the city centre core. Further Bus Priority measures will also be implemented within the City Centre.

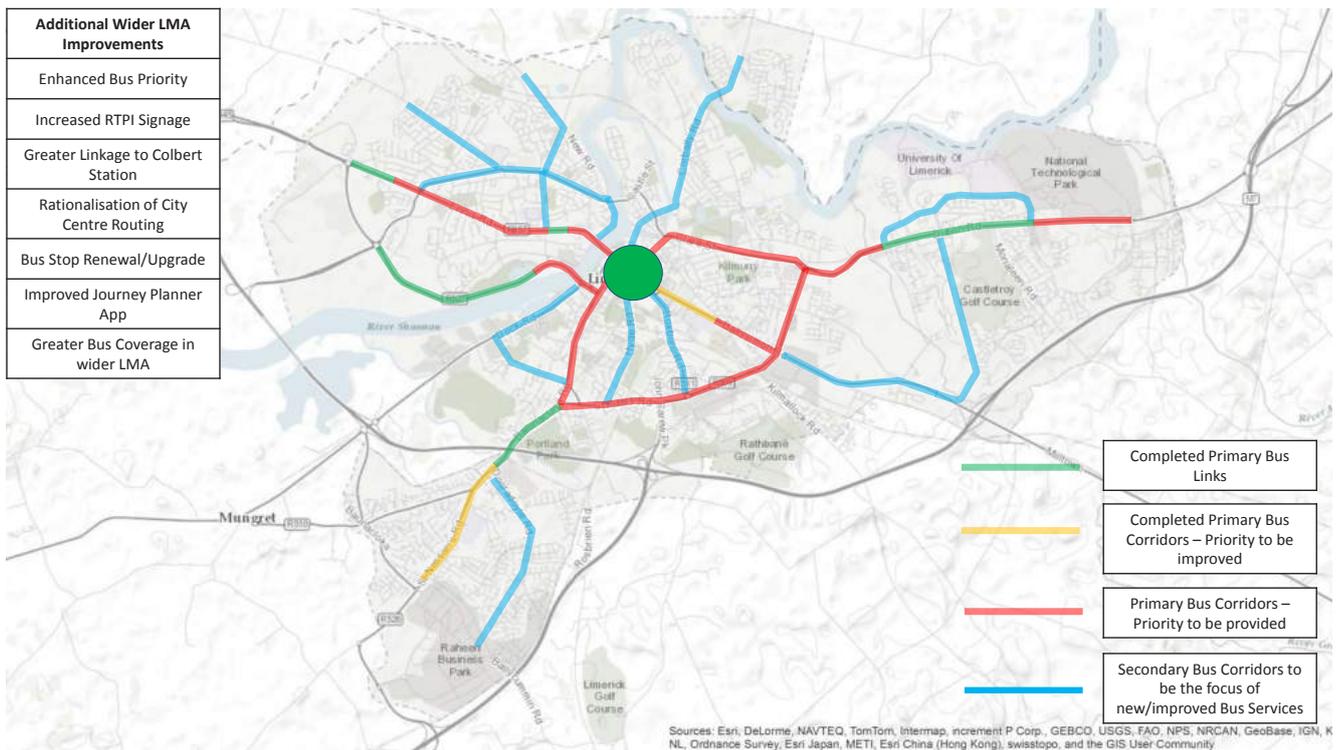
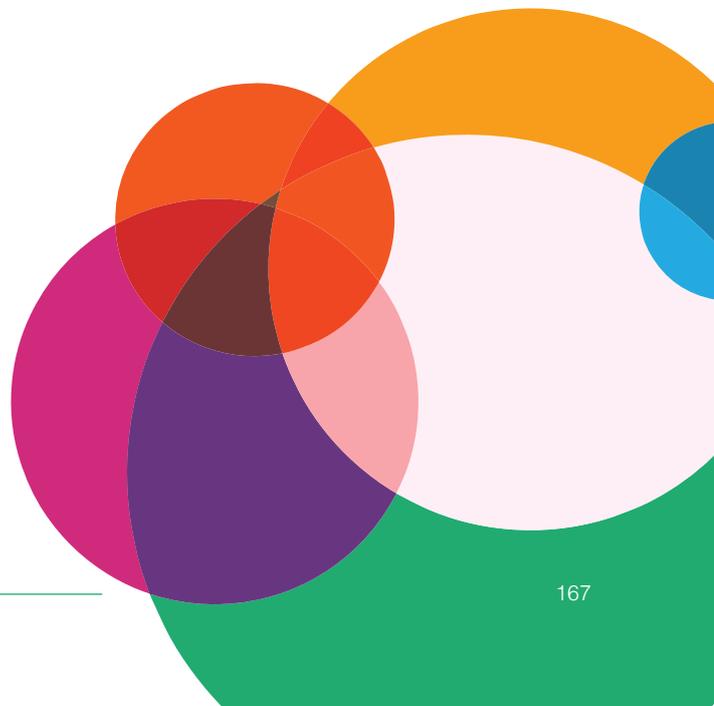


Figure 6.1: Proposed Bus Network Plan

Additional, complementary measures that will augment the Bus Network further include the improvement of existing Bus Stops, the further implementation of Bus Priority measures and Real-Time Passenger Information, the roll-out of Leap Card, the continuing development of Transport for Ireland’s Journey Planner smartphone app and website, and providing greater connectivity and coordination with Colbert Station, which is also the subject of a major re-development program.

Figure 6.1 above shows the proposed Bus Priority Network within the LMD.





### 6.3 Limerick Metropolitan District Proposed Cycle Network

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Whilst cycle network proposals for the LMD are already quite comprehensive, as set out in the Limerick Smarter Travel proposals, the Limerick City Development Plan, or the Coonagh Recreational Framework Plan, the current extent of infrastructure provision on the cycle network within the LMD is limited. There are various subsections of infrastructure throughout the LMD lands, but no complete links on any of the approach corridors. Existing infrastructure is a mixture of cycle lanes and raised or segregated cycle tracks, with the majority of the latter in place to the east of the City.

This report sets out a skeletal cycle network which will inform short-term investment and which will then be taken forward as an input into a full Limerick Metropolitan Cycle Network Plan, to be published in 2015, from which a further suite of proposals will emerge.

The proposed cycle network will seek to link the main trip generators and attractors with safe cycle routes in a mix of greenways, cycle tracks, cycle lanes and shared streets. The extent of cycle provision on any link will be determined by the existing and projected demand for cycling, but within the physical constraints of the transport network and land use patterns.

For the purposes of this framework plan and in order to direct short-term investment in cycling in Limerick, the following primary corridors have been identified:

- Eastern Radial - Annacotty / UL / Plassey / Castletroy to Limerick City Centre
- Southern Radial – Raheen / University Hospital / Dooradoyle to Limerick City Centre
- North Western Radial – Caherdavin / LIT to the City Centre

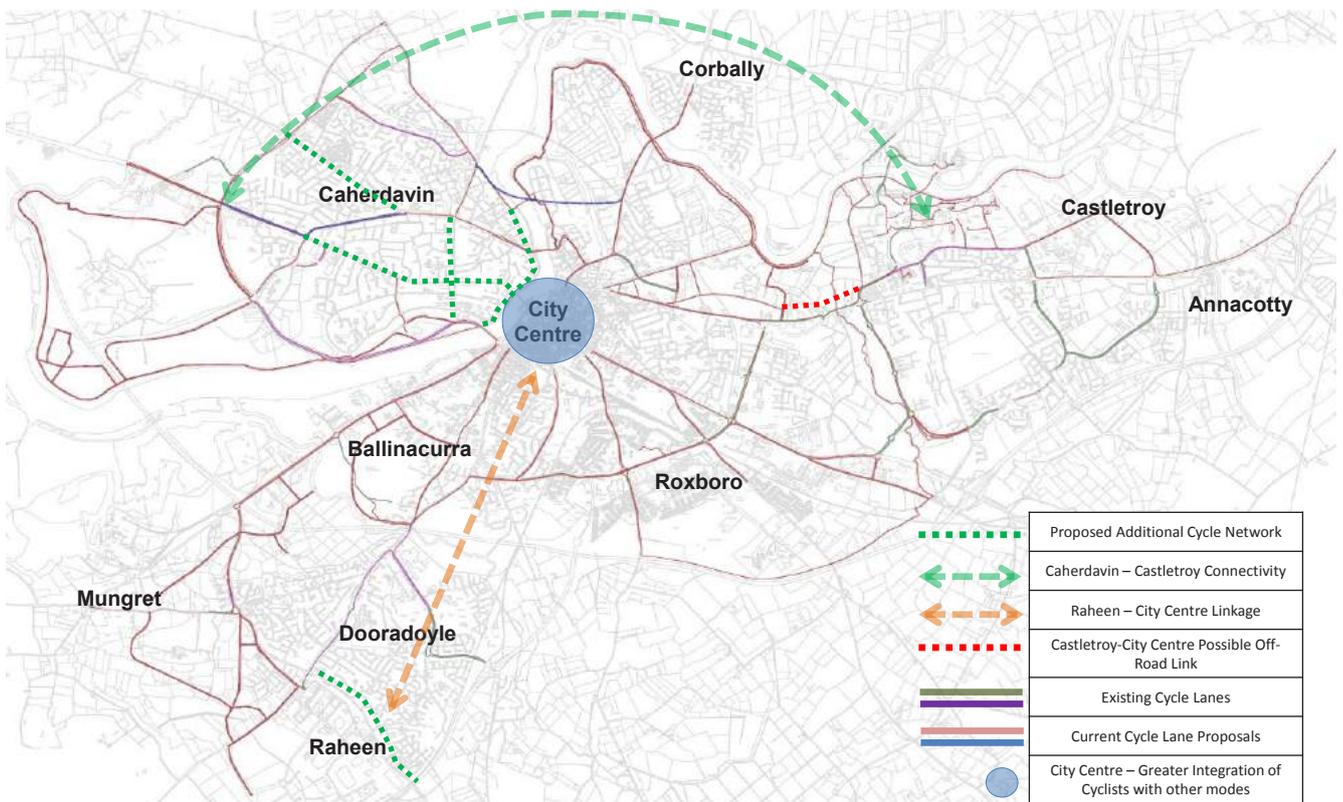


Figure 6.2: Proposed Cycle Network Plan

In advance of the Limerick Metropolitan Cycle Network Plan and subject to resources, further studies will be carried out on each corridor to identify which routes are to be used and the extent and nature of physical interventions necessary in order to provide cyclists with a high quality of service. Figure 6.2 identifies the possible focus links for the metropolitan cycle network.

Existing barriers to cycle travel that exist along a number of the major routes, such as inadequate facilities for cyclists at junctions, severance associated with major links crossing cycle routes and inadequate facilities along existing links will be minimised or removed through design.

**In the City Centre, greater measures to improve**

cycle integration are recommended including the provision of additional Advanced Cycle Stop areas (ASL's), reduced speed limits, cycle facilities on the major bridge crossings in to the city, and improved, cycle-compatible crossings, for example.

In addition to the primary radial corridors above, consideration should be given to a cycle loop circumventing the city core, in order to facilitate cycle movements around the city centre as well as through the city centre.

## 6.4 Limerick Metropolitan District Proposed Pedestrian Network

Across the Metropolitan District, the pedestrian network is of mixed quality. Within the City Centre, the quality of pedestrian facilities varies significantly, from well-designed pedestrianised streets to narrow and cluttered footways along important links.

**A key objective of the pedestrian network proposals is to standardise the City Centre pedestrian network, and achieve uniformity across the remainder of network.** This will involve the improvement of footpaths, upgrade of crossings and the provision of new linkage and crossings.

A number of junctions within the City Centre have been identified as suitable for minor improvement works that will improve crossing facilities, reduce crossing widths and times, assist in the calming of traffic and re-allocate priority to pedestrians within the City Centre. Examples of these include the grid-style network of junctions within the City Centre, such as the Roches Street/Catherine Street junction, where the above features can be implemented without any reduction in effective carriageway width.

Existing pinch-points along pedestrian links, such as Roxboro Road, Wickham Street, etc. will be improved in order to provide better quality facilities and overall pedestrian amenity along these key streets.

**A major issue for consideration as part of the proposed pedestrian network is the pedestrianisation, or partial pedestrianisation, of O'Connell Street.** This proposal is a key part of the Limerick 2030 Economic and Spatial Strategy for Limerick and in light of the completion of the Southern Ring Road network and Limerick Tunnel, this scheme should be re-considered and re-evaluated.

**It is noteworthy that St. Patrick's Street in Cork City is proposed to be the subject of a partial pedestrianisation scheme** as part of the Cork City Centre Movement Strategy, which will restrict traffic (except buses and taxis) from accessing St. Patrick's Street at specific times. In tandem with this, the Orbital Route Scheme, which envisages a number of multi-lane, single-direction routes circumventing the city, may need to be re-examined.

**Other major elements of the pedestrian network proposals include a city-wide wayfinding strategy, the removal of on-street signage leading to clutter and reduction of footway widths, the removal of barriers to movement such as guardrail, etc. and the improvement of access to bus stops throughout the LMD, particularly in the suburban areas.**



## 6.5 Limerick Metropolitan District Proposed Vehicle Network

A key issue across the LMD with regard to the vehicle network is that of the management of vehicle demand. The existing Urban Traffic Control (UTC) network comprises approximately 50 junctions located within the City Centre core.

The suburban areas contain a number of traffic signal installations, which are stand-alone in nature, and not part of the main AUTC/UTC network. **The expansion and upgrade of the LMD AUTC/UTC network is a key element in terms of exerting enhanced control over traffic flow, but also in terms of ensuring a dynamic, adaptable system capable of responding to specific events, such as accidents, emergency situations, road works, etc.** as part of a strategic Urban Traffic Management Control (UTMC) protocol for the entire LMD.

It is also worth noting that a key benefit from maximising the extent of detection, monitoring and control over the traffic network within the LMD is the resultant opportunity to enhance the priority given to public transport vehicles over the private car, contributing to the efficiency and attractiveness of the public transport network.

With Phase 1 of the Limerick Northern Distributor Road (Coonagh-Knockalisheen) due to begin construction by the end of 2014, the phasing of the remaining sections of the LNDR is key in order to avail of interim benefits on the road network in advance of completion of the entire LNDR scheme.

Within Limerick City Centre, the challenge is to re-assert the pedestrian, cyclist and public transport vehicles at the top of a revised road hierarchy, above the private car in order to build momentum behind a genuine shift to sustainable modes of transport – this must be achieved in a manner which still recognises the requirements of a functioning vehicle network. The proposed Orbital Route may require re-consideration in light of achieving a new hierarchy of priority within the City Centre.

**Furthermore, car parking within the City Centre remains a major issue – the current set-up is clearly advocating long-term parking stays, placing other sustainable modes at a key disadvantage.**







# Schemes for Development

Limerick Metropolitan District Movement Framework Study

## 7.1 Introduction

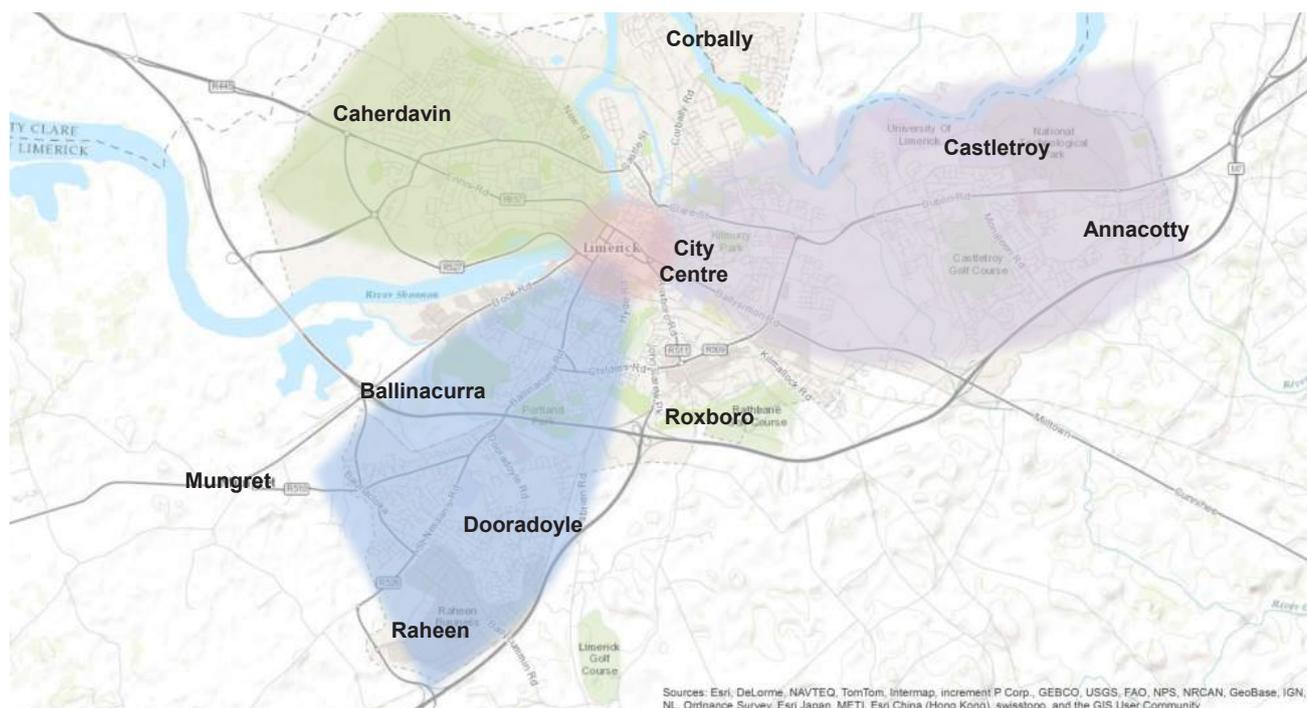


Figure 7.1: Sub-areas within LMD

Following identification of major issues in Chapter 5 above, this Chapter sets out a potential high-level of schemes/initiatives that are proposed in order to mitigate the issues identified, or resolve them to a significant extent.

For the purpose of this section, the Limerick Metropolitan District has been divided into a number of geographical sub-areas, so that schemes can be proposed for more specific locations, in addition to ‘blanket’ schemes that are worthy of consideration across all of the LMD. The sub-areas of the LMD are therefore:

- Limerick City Centre;
- North-western Corridor – including Moyross, Caherdavin, Ennis Road, Condell Road;
- Southern Corridor – including Raheen, Dooradoyle, Ballinacurra; and
- Eastern Corridor – including Clare Street, Mulgrave Street, Rhebogue, Castle Troy, Annacotty, and Monaleen.
- There are also schemes which are applicable to the entire LMD.

Figure 7.1 above identifies the geographical areas within the LMD considered for the purposes of scheme identification.

## 7.2 Limerick City Centre

	Scheme Description	Network issue being addressed	Benefits
1	Partial Pedestrianisation of O'Connell Street, between Roches Street and William Street	Prominence of private car over other modes in City Centre Pedestrian mobility and connectivity	Improved pedestrian environment Reduced emphasis on vehicular traffic Improved safety
2	Extension of pedestrianisation to include junction with Denmark Street	Prominence of private car over other modes in City Centre	Further enhanced pedestrian zone Increased safety
3	Changes to vehicular circulation at Liddy Street, Honan's Quay to accommodate pedestrianisation of O'Connell Street	Prominence of private car over other modes in City Centre	Facilitation of pedestrianisation proposals by routing vehicle traffic elsewhere
4	Pedestrian improvements at key junctions throughout the city centre grid network of streets, including O'Connell Street, Catherine Street and Henry Street (approximately 20 junctions)	Pedestrian connectivity and permeability Prominence of vehicular traffic over other modes in City Centre	Shorter Crossing lengths, better crossing facilities, Traffic calming Improved safety
5	Streetscape improvements, such as footpath widening	Pedestrian mobility Prominence of vehicular traffic over other modes in City Centre	Greater sense of place for pedestrians Improved urban realm Reduced emphasis on vehicular traffic
6	Rationalisation of bus routes and re-location of bus termini from the city centre	Significant city space used for bus layover purposes	Lesser impact of dwelling buses within City Centre Improved routing Increase of potential bus catchments
7	Implementation of bus priority on Roches Street and Shannon Street	Integration into city centre circulation system posing additional delay for buses on many approaches	Reduced delay to bus services within city centre Greater emphasis on Public Transport over private cars
8	City Centre pedestrian wayfinding strategy	Lack of signage to aid pedestrian movement within the City Centre environs Lack of clarity for non-familiar pedestrians, e.g. tourists	Improved pedestrian mobility City Centre branding opportunity Integration with other sustainable modes Tourist benefits
9	Street de-cluttering programme, including street furniture and signage	Pedestrian mobility/connectivity within City Centre	Improved urban realm Less barriers to movement
10	Colbert Station and environs improvements and enhanced connectivity to Limerick city centre core	Lack of connectivity onwards to City Centre and vice versa Standard of 'welcome' to visitors Lack of clarity for visitors as to onward destination	Better linkage to city centre Improved clarity to visitors, tourists, etc. Improved pedestrian mobility Better integration with public transport Improved urban realm

	Scheme Description	Network issue being addressed	Benefits
11	Rationalisation of parking charge structure to discourage long-stay commuter parking and encourage short-stay retail parking	Parking structure encouraging long-stay commuter parking, seriously undermining City Centre Public Transport	Increased turnover of spaces within city centre Greater shift to public transport
12	Roll-out of secure cycle parking proposals as developed by Limerick Smarter Travel	Lack of cycle connectivity Cyclist safety	Greater levels of cycling Increased safety
13	Review and improvements to coach parking facilities within city centre including layover facilities	Lack of sufficient parking for coaches within City Centre Insufficient linkage to key tourist destinations	Increased connectivity to City Centre for tourists Greater presence of coach parking at key attractors
14	Provision of inbound Bus Lane or in/outbound cycle lanes on Shannon Bridge	Lack of PT priority Lack of cycle facilities Reduced PT Patronage Cyclist Safety	Increased Safety Increased PT/Cycle activity and patronage Reduced traffic congestion

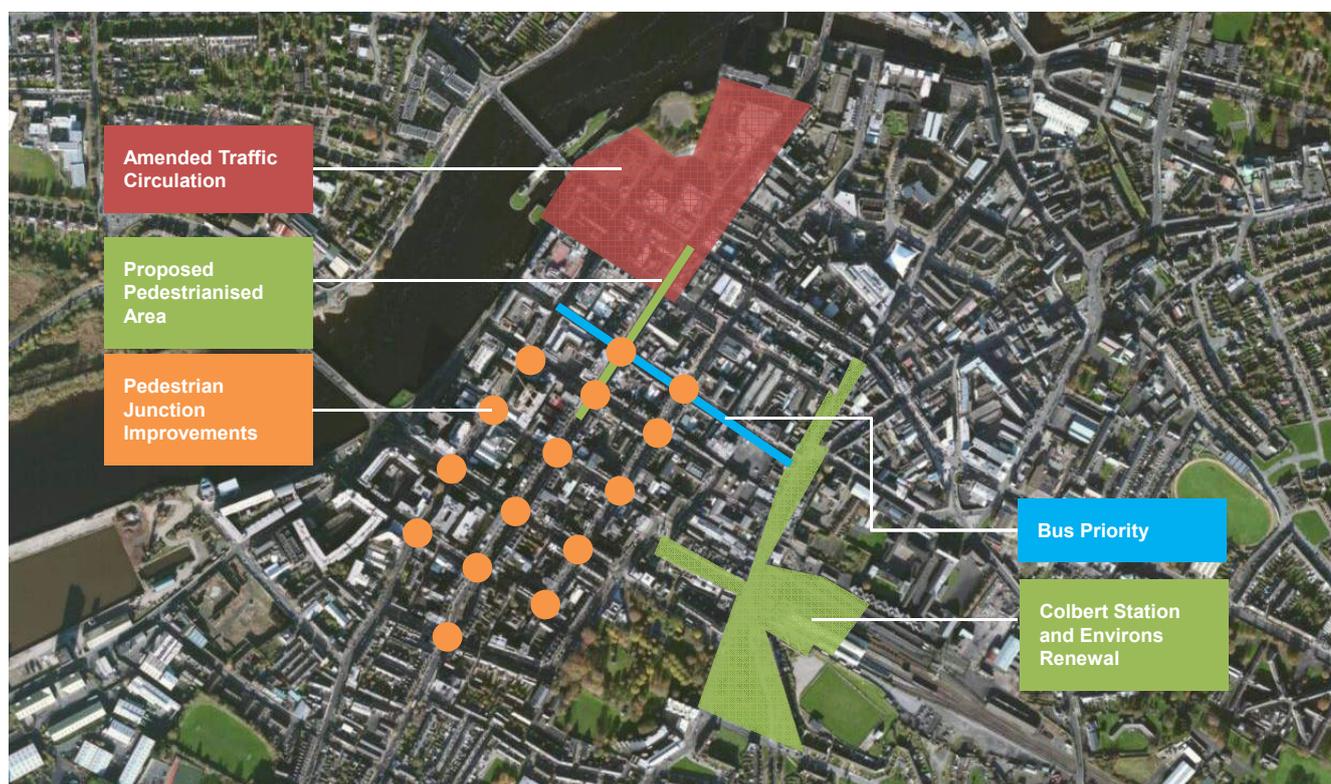


Figure 7.2: Preliminary Potential Schemes – Limerick City Centre



## 7.3 Southern Corridor

	Scheme Description	Network issue being addressed	Benefits
1	Complete southern green route from Raheen to City Centre	Lack of complete bus corridor to City Centre Delay associated with congestion Reduced quality of service Lower patronage	Improved efficiency on southern corridor bus routes Increased patronage Reduction in delay Greater emphasis on public transport
2	Parallel cycle routes along South Circular Road and Rosbrien Road, especially connecting Mary Immaculate College with city centre	Lack of facilities outbound on southern corridor for cyclists Inbound corridor carries large flows, deterring cycling due to high numbers of vehicles	High-quality cycle route on dedicated approach, with greater vehicular separation Integration with Mary Immaculate College and nearby schools Integration with public bicycle scheme
3	Improvements to existing inbound bus lanes (e.g. resolving pinch-points at Unicorn bar)	Intermittent gaps in bus corridor leading to delays for bus services attempting to integrate back in to general traffic Priority given to vehicles rather than buses	Improved journey times Greater emphasis on public transport Improved quality of service
4	Pedestrian permeability/connectivity improvements, especially along Ballinacurra Road bus corridor and in the Raheen/Dooradoyle residential areas	Poor access to existing bus stops Barriers to movement within residential lands Excessive pedestrian routing undermining the viability of public transport services	Increased bus patronage Reduced car usage Less barriers to movement
5	Enhanced permeability and connectivity at University Hospital Limerick, especially from the east	Existing access to Hospital confined to the west Excessive routing required for some approaches to access Hospital	Greater accessibility to the Hospital for pedestrians and cyclists Reduced need to travel by car
6	Park and Ride – potential site on Rosbrien Road (near Old Crescent RC), and Dock Road	No existing Park and Ride service in operation Little alternative to private car	Reduced demand for car trips to City Centre Increased bus patronage Encouragement of modal shift
7	Potential use of disused rail line to the city centre for P&R bus routing and potential cycle corridor	Incomplete corridors on all three major approaches to the City Centre	Dedicated public transport corridor 'Flagship' type scheme
8	Extension of Cycle Network further into Raheen	Incomplete cycle linkage Lack of cycle priority accessing Raheen area Connectivity to Ballinacurra Green Route/Cycle Lane	Greater cycle network coverage Enhanced cycle facilities and safety Connectivity to existing cycle links Potential integration with cycle corridor on Rosbrien Road or Old Rail Line

	Scheme Description	Network issue being addressed	Benefits
9	Roxboro Road Roundabout Upgrade to Signalised Junction	Lack of pedestrian and cyclist facilities Pedestrian and Cyclist Safety Lack of Public Transport Priority Severance to Regeneration Area	Greater permeability and connectivity Increased Safety Greater PT priority Greater PT patronage
10	Roxboro road pedestrian and cyclist safety improvements	Lack of Pedestrian and Cyclist facilities along the route Pedestrian Safety Severance to Regeneration Area	Greater permeability and connectivity Increased Safety
11	Dock Road Roundabout upgrade to signalised junction	Lack of pedestrian and cyclist facilities Pedestrian and Cyclist Safety Lack of Public Transport Priority	Greater permeability and connectivity Increased Safety Greater PT priority Greater PT patronage
12	R527 Ballysimon Road Upgrade between Garryglass Roundabout and Childers Road to provide Bus and Cycle lanes	Lack of and cyclist facilities Cyclist Safety Lack of Public Transport Priority	Greater permeability and connectivity Increased Safety Greater PT priority Greater PT patronage
13	Cycleways/footpath improvements on R589 from Quinn's Cross to Mungret, and associated pedestrian crossing improvements at Quinn's Cross Roundabout	Lack of cyclist and pedestrian facilities in area identified as suitable for development of a number of schools	Greater connectivity Increased safety



## 7.4 Eastern Corridor

	Scheme Description	Network issue being addressed	Benefits
1	Improved public transport along the city centre to UL corridor	Linkage between UL and the City Centre needed to support growth of UL Increased car usage to and from the University Possible re-location of a UL faculty to the City Centre undermined by PT linkage issues	Dedicated, high-quality public transport link to City Centre High-quality of service 'Flagship' scheme Increased public transport mode share Reduced car use Potential for other public transport services to use link
2	Possible cycleway along Rhebogoe Road to complement public transport offer on the Dublin Road corridor	R445 Dublin Road heavily trafficked, potentially compromising cyclist safety	Segregated route offering increased safety for cyclists Increased cycling mode share
3	Further improvement/extension of the eastern Green Route corridor	Incomplete corridor at present undermining viability of PT services Reduced quality of service on Bus routes leading to lower patronage	Dedicated bus corridor Improved journey times Increased Bus patronage Reduced car usage
4	Park and Ride in Annacotty	No existing Park and Ride service in operation Little alternative to private car	Reduced demand for car trips to City Centre Increased bus patronage Encouragement of modal shift
5	Bus lanes along Childers Road, from Parkway Roundabout to Tipperary Road Roundabout	Delays to city bus services common at these locations due to traffic flows and congestion Reduced patronage for bus services	Reduced journey times Improved quality of service Emphasis on public transport over the private car Greater bus patronage
6	Bus priority facilities along Clare Street	Minimal city centre services using Clare Street Accessibility to bus services reduced along this catchment Little alternative to car users	Possible linkage to UL from City Centre Greater bus catchment Greater emphasis on public transport over the private car Improved quality of service
7	Improved pedestrian and cycle connectivity both along and across Childers Road, between Parkway Roundabout and Roxborough Roundabout	Lack of connectivity for pedestrians and cyclists along and across the route	Greater ease of movement Higher quality, safer crossing facilities Increased walking and cycling demand

	Scheme Description	Network issue being addressed	Benefits
8	Grove Island roundabout upgrade to Signalised Junction	Lack of pedestrian and cyclist facilities Pedestrian and Cyclist Safety Lack of Public Transport Priority	Greater permeability and connectivity Increased Safety Greater PT priority Greater PT patronage
9	Pedestrian link at Rhebogogue Road	Lack of pedestrian and cyclist facilities Pedestrian and Cyclist Safety Severance	Greater permeability and connectivity Increased Safety
10	Extend Bike share to UL	Low cycle mode share Traffic Congestion	Greater permeability and connectivity Increased Cycle Patronage Reduced Traffic Congestion

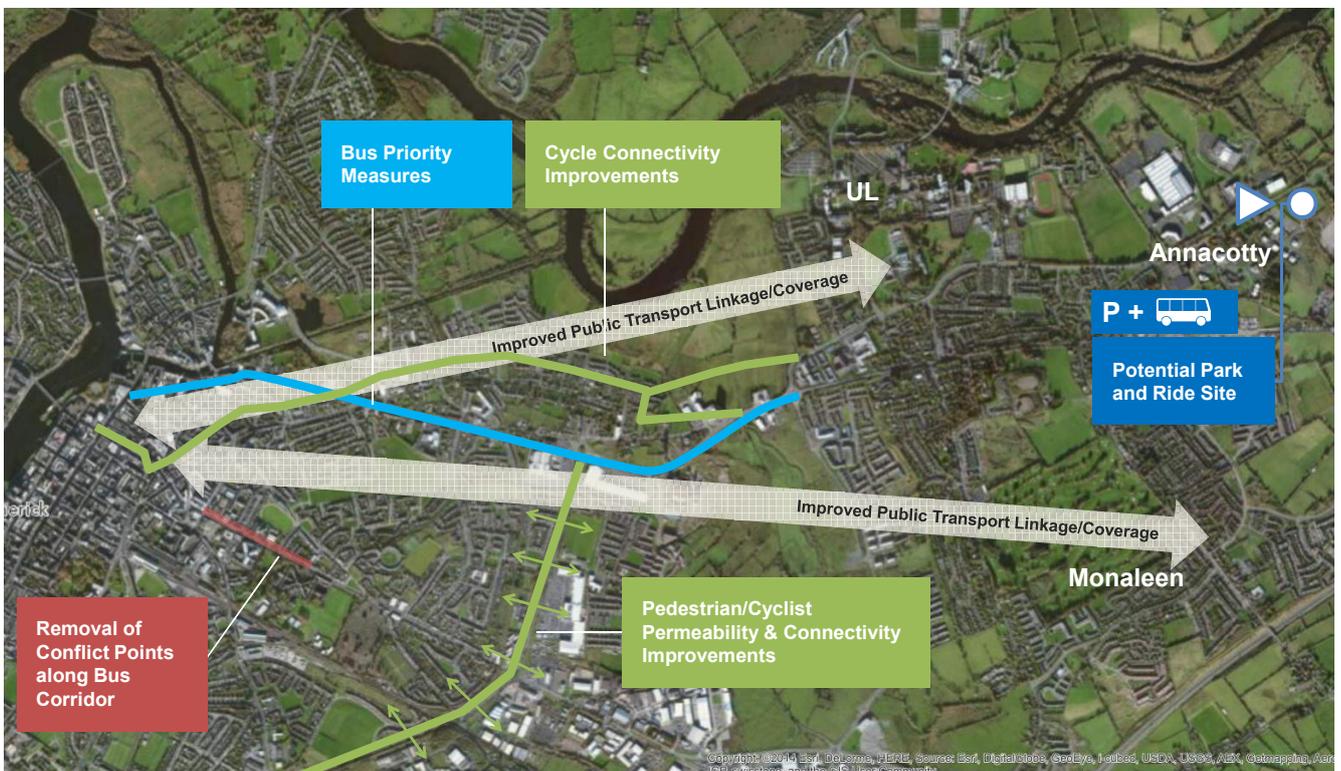


Figure 7.4: Preliminary Proposed Schemes – Eastern Corridor

## 7.5 North-Western Corridor

	Scheme Description	Network issue being addressed	Benefits
1	Pedestrian permeability/ connectivity improvements, especially along bus routes	Accessibility to bus services Low bus patronage Little alternatives to private car	Greater ease of access to bus services Reduced car demand Greater bus patronage
2	Cycle facilities between LIT and city centre	Lack of cycle connectivity between LIT and City Centre Reduced mode share for cycling to LIT Increased demand for car trips to LIT	Better quality linkage to City Centre from LIT Improved cycle safety Increased cycle patronage Reduced vehicle demand
3	Completion of the north-western Green Route Corridor as far as practically possible	Incomplete corridor at present undermining viability of public transport services Low quality of service on bus routes Low bus patronage	Dedicated bus corridor Improved journey times Increased bus patronage Reduced car usage
4	Park and Ride – potential sites at Coonagh, Jetland and/or Condell Road	No existing Park and Ride service in operation Limited alternatives to private car	Reduced demand for car trips to City Centre Increased bus patronage Encouragement of modal shift
5	Implementation of inbound bus lane/cycle lanes on Shannon Bridge	Incomplete Bus Linkage to City Centre Lack of public transport priority over private car Delays associated with lack of infrastructure	Greater public transport priority Improved journey times Increased bus patronage
6	Extend Bike Share Scheme to LIT	Low cycle mode share Traffic Congestion	Greater permeability and connectivity Increased Cycle Patronage Reduced Traffic Congestion
7	Condell Road upgrade from Clonmacken Road Roundabout to Coonagh Roundabout to provide footpaths, bus lanes and cycle lanes	Incomplete Bus Linkage to City Centre Lack of public transport priority over private car Lack of pedestrian and cyclist facilities Pedestrian and cyclist safety	Greater public transport priority Improved journey times Increased bus patronage Greater permeability and connectivity

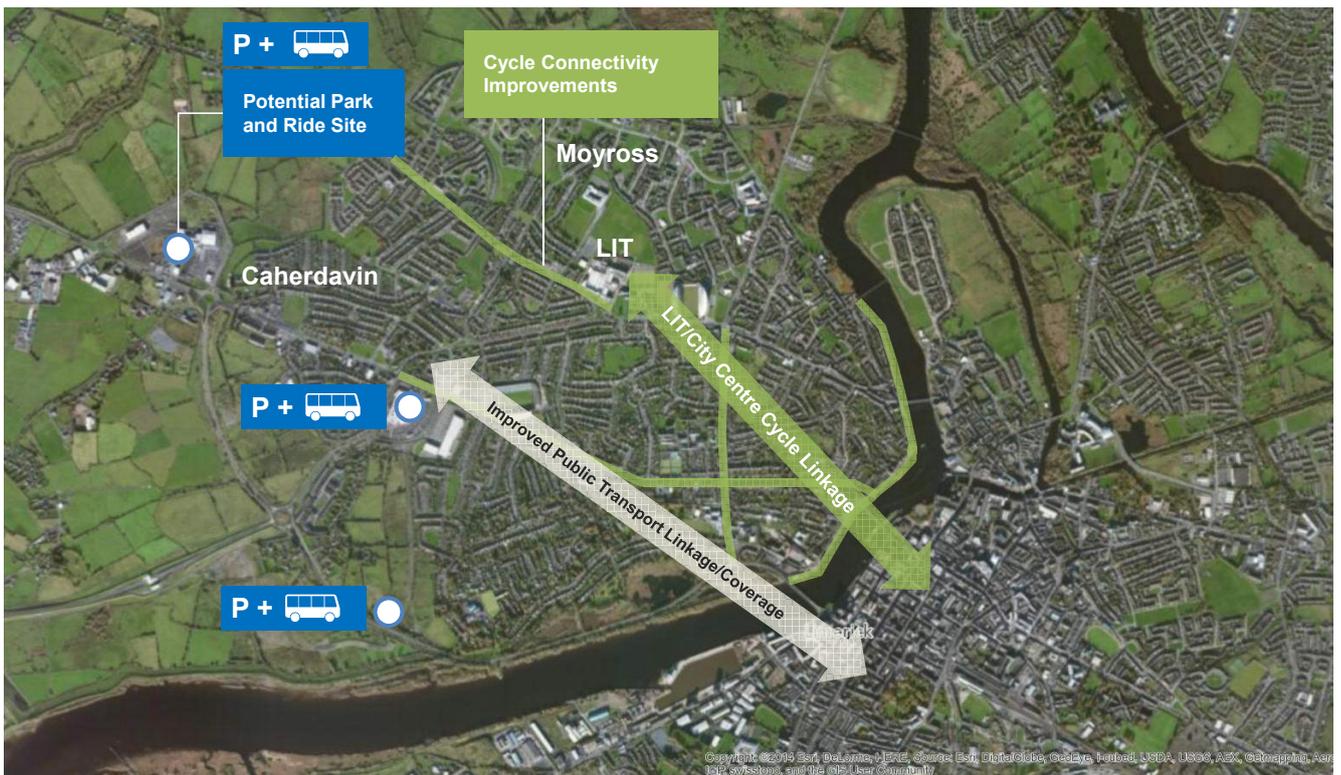
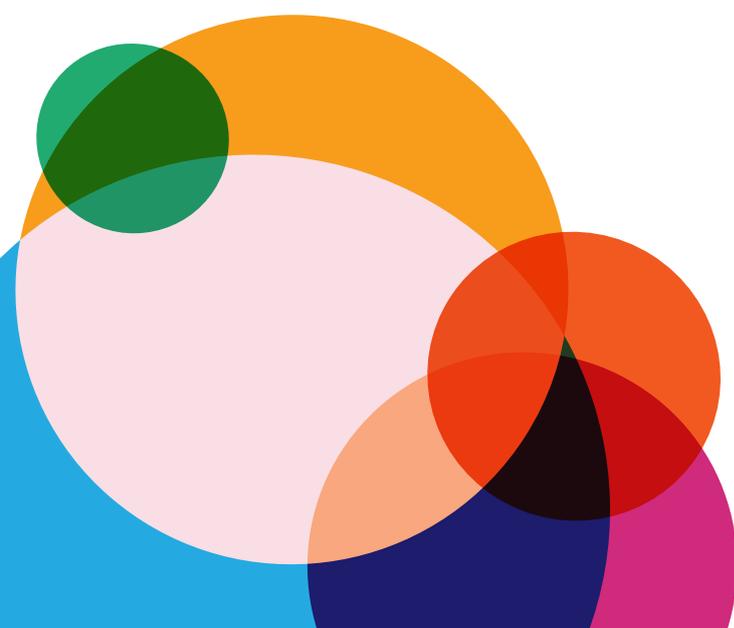


Figure 7.5: Preliminary Potential Schemes – North-Western Corridor



## 7.6 Other Schemes applicable to entire LMD

Additional schemes, which do not have a particular geographical scope and have applicability across the entire LMD, have been considered. These are multi-modal network wide schemes intended to address a number of issues, which present themselves across the transport network as a whole.

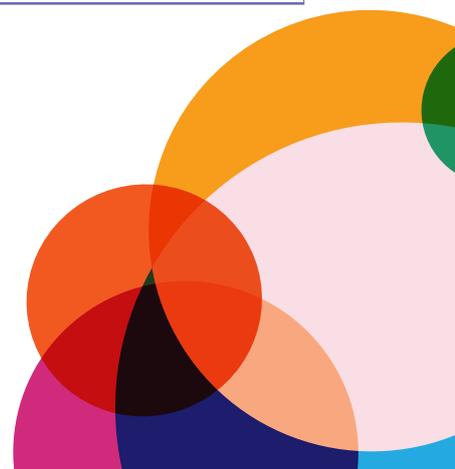
	Scheme Description	Network issue being addressed	Benefits
1	Upgrade of sub-standard pedestrian crossings	Pedestrian mobility Pedestrian safety	Increased pedestrian mobility and safety Greater priority allocated to pedestrians
2	Development of the LMD Cycle Network – subject to a plan to be developed in Q2 2015	Cycle permeability Cyclist Safety	Greater cycle mode share Increased cyclist safety Reduced congestion
3	Appointment of a Travel Plan Coordinator for LMD	Overall management and control of mobility within LMD	Greater input into travel planning Reduced car mode share
4	Streetscape improvements, including footpath widening, etc.	Pedestrian permeability Priority for vehicles Pedestrian Safety	Increased pedestrian safety Increased pedestrian permeability Greater emphasis on pedestrians over cars
5	Improvements to junctions which offer crossing facilities across certain arms only	Pedestrian/cyclist mobility Pedestrian/cyclist safety	Increased pedestrian/cyclist mobility and safety Greater priority given to pedestrians and cyclists
6	Improvements to bus route catchments – maximise accessibility to bus stops from residential areas	Bus service patronage Bus network coverage pedestrian mobility/ connectivity Low public transport mode share	Greater bus patronage Less barriers to pedestrian movement Greater bus mode share
7	Further roll-out of advanced cycle stop lines on the major approaches to the city centre	Cycle safety Cycle mobility	Increased cyclist mobility and safety Greater priority allocated to cyclists
8	Extension and improvement of the existing AUTC/SCOOT system throughout LMD to provide greater facilities such as remote monitoring, Bus detection/priority, etc.	Network flexibility Safety of all users Connectivity/efficiency Priority of sustainable modes over general traffic	Reduced congestion and delays Increased mobility and safety Greater network adaptability Greater pedestrian/cyclist permeability/connectivity Greater priority allocated to sustainable modes



	Scheme Description	Network issue being addressed	Benefits
9	Improvements at signalised junctions to incorporate additional features such as pedestrian and cyclist detection, countdown timers, additional signal aspects, etc.	Pedestrian/cyclist safety Pedestrian/cyclist mobility Network management and adaptability	Improved pedestrian/cyclist safety Improved pedestrian and cyclist permeability/ connectivity Greater priority to pedestrians and cyclists Greater network control and flexibility
10	Renewal of existing cycle and bus lanes to improve surfacing, transitions, etc.	Sections of network of insufficient quality Inadequate transitions along cycle networks Cyclist safety	Improved cyclist safety Greater emphasis on cycling and public transport
11	Upgrade of pedestrian crossing facilities (outside of improvements mentioned above)	Pedestrian mobility Pedestrian safety	Increased pedestrian mobility and safety Greater priority allocated to pedestrians
12	Upgrade and Renewal of bus stops and shelters to provide better quality up-to-date route and pricing information	Bus shelter quality issues Information dissemination issues Reliability and quality of public transport service	Greater comfort for public transport users Greater patronage Increased reliability of public transport service
13	Junction tightening works to reduce vehicle speeds and improve pedestrian mobility where applicable	Pedestrian and cyclist safety Pedestrian and cyclist mobility/ connectivity Vehicular speeds Priority of private car over other modes	Improved pedestrian and cyclist safety Greater pedestrian and cyclist mobility and connectivity Lower vehicle speeds Greater emphasis on other modes over the car
14	Increased overall network signage – improved wayfinding for pedestrians, cyclists and general traffic	Wayfinding issues	Improved routeing choices Improved information dissemination Improved mobility for all users



	Scheme Description	Network issue being addressed	Benefits
15	Greater information gathering and dissemination systems – increased electronic signage, CCTV, detection, use of web or smartphone-based applications to distribute information, etc.	Delays and congestion Network management Flexibility of network Impact of planned and unplanned events on network	Reduced congestion and delays Greater adaptability of network to planned and unplanned events Improved network efficiency and capacity
16	Bus stop and shelter upgrades	Pedestrian access to bus vehicles Pedestrian facilities at bus stops/shelters Information dissemination at stops/shelters	Higher quality stops and shelters Improved access for vulnerable road users Greater attractiveness of public transport as mode of travel
17	Smart on-street parking detection and information	Delays and congestion Network management Flexibility of network	Reduced congestion and delays Improved network efficiency and capacity
18	Park-and-Cycle Locations	Lack of interchange between modes Little incentive to cycle Patronage of Public Bicycle Scheme	Reduced vehicle demand Greater cycle patronage Support of Public Bicycle Scheme
19	Mini Park and Ride sites	Lack of P&R service in regular operation Lack of alternative to Private Car	Reduced vehicle demand Greater use of PT Reduced congestion
20	Extend roll-out of RTPI signage	Lack of information available to bus users	Greater confidence in bus services Increased bus usage
21	Improvements to bus stop facilities	Unclear information on stops, services, fares, etc. Lack of adequate shelters Older stops in need of repair/refurbishment	Increased awareness of routes and areas served Greater reliability of services Increased awareness and confidence in public transport



	Scheme Description	Network issue being addressed	Benefits
22	Improvements to sustainable transport priority measures at junctions, e.g. bus/pedestrian/cyclist detection/priority measures at signalised junctions	<p>Little facilities in place to give emphasis to sustainable modes over general traffic</p> <p>Emphasis on general vehicular traffic – no priority allocated to sustainable modes</p> <p>Pedestrian/cyclist safety and comfort</p> <p>Delay to services due to congestion</p> <p>Reduced public faith in quality of service</p>	<p>Improved pedestrian/cyclist/PT service quality</p> <p>Improved journey times</p> <p>Greater user confidence in services</p> <p>Greater usage of public transport</p> <p>Greater prominence over private car</p> <p>Cost savings from avoiding congestion and delay</p>
23	Reorganisation of public transport network coverage to include lands not covered by city centre bus services	Certain residential areas not covered by the existing city bus services	<p>Greater bus service catchment</p> <p>Greater bus patronage</p>
24	Improvements to existing bus lanes and cycle lanes to renew surfacing, improve transitions, etc.	<p>Cyclist Safety</p> <p>Priority of PT services over private car</p>	<p>Increased cycle safety</p> <p>Greater PT patronage</p>
25	LMD Speed Limit Review	<p>Pedestrian and cyclist safety</p> <p>Prominence of private car</p>	<p>Increased safety</p> <p>Greater emphasis on pedestrians and cyclists</p>
26	Smart on street parking detection and information	<p>Delays and congestion</p> <p>Network management</p> <p>Compliance monitoring</p>	<p>Reduced congestion</p> <p>Greater flexibility in network</p> <p>Increased parking regulation compliance</p>
27	Secure cycle parking at bus stops	<p>Bicycle security</p> <p>Low cycling mode share</p> <p>Low PT patronage</p>	<p>Greater cycling patronage</p> <p>Greater PT patronage</p>





# Priority of Schemes for Development

Limerick Metropolitan District Movement Framework Study

## 8.1 Introduction

The potential schemes suggested for consideration in Chapter 7 above represent a multi-modal approach to addressing the major issues identified in Chapter 5. However, the purpose of this Chapter is to recognise that there are restrictions in place that will either limit or direct funding for these schemes, in line with both the scheme in question and the funding source to be utilised.

The primary source of funding over the coming years will be the National Transport Authority, who will pursue certain schemes identified in this study that address the issues set out in Chapter 5 above, and are developed around sustainable transport modes such as walking, cycling and public transport. A number of the schemes proposed may already form part of the NTA's remit, and as such while they may be presented in this study, they will be funded directly by the NTA themselves.

Other schemes may be pursued directly by Limerick City and County Council via their own funding streams, or from alternative funding sources such as JESSICA, CEF or ELENA for example.

The implementation of the schemes identified in Chapter 7 for consideration within the LMD will take place over a number of years – for the purpose of clarity, it is assumed that a 5-year duration is applicable to the schemes presented below. As a result, it is therefore necessary to organise these schemes in order of priority to ensure for example that particular schemes which provide immediate benefit, or schemes which may form part of a long-term program of improvements are delivered in the most appropriate order. Other schemes may require further study or investigation to determine their feasibility and suitability. Other schemes may be implemented over the entire period of works (and indeed beyond), due to their propagation throughout the study area.

In addition to the schemes set out in the following Tables as Priority 1, 2 and 3 schemes, specific schemes that are already underway or ongoing at present are presented independently.

## 8.2 Priority 1 Schemes

Priority 1 schemes are recommended for immediate evaluation and/or implementation where possible throughout the LMD. These schemes offer immediate benefit to the movement of pedestrians, cyclists and public transport, and in many cases represent quick and substantial improvements at numerous existing problematic locations. These schemes will in turn help to generate momentum towards a modal shift that will develop from the City Centre outwards into the LMD, and complement schemes proposed as Priority 2 and 3.

In other instances, schemes that are recommended as Priority 1 may require an initial scoping or suitability/feasibility study, or a review of any existing studies applicable, to establish in greater detail the issues that will need to be resolved as part of implementation.



### 8.3 Priority 2 Schemes

Priority 2 Schemes are recommended as the focus of secondary improvement measures throughout the LMD. These schemes will deliver benefit to pedestrians, cyclists and public transport, but at a more moderate level than those proposed as Priority 1 above.

In addition, certain Priority 2 schemes will be the focus of feasibility studies at the Priority 1 stage, in order to develop these schemes to a sufficient extent to allow implementation. Examples of this would include the development of a City Centre Wayfinding Strategy – the development of the strategy itself would be a Priority 1 scheme, while the implementation of the strategy recommendations would represent a Priority 2 scheme.

### 8.4 Priority 3 Schemes

Priority 3 schemes are those schemes intended to further augment the benefits arising from Priority 1 and 2 schemes – again these schemes will offer benefit, but at a reduced level to Priorities 1 and 2. These schemes are recommended for implementation throughout the LMD following the completion of more significant schemes designated as Priority 1 or 2. In addition, a number of Priority 3 schemes may be the result of a scoping or feasibility study, prepared at Priority 1 or 2 level.

### 8.5 Specific Remits

Within the tables below, there are a number of schemes which are recommended for implementation, but which fall under the remit of the National Transport Authority directly as mentioned above, and as such while estimated costs are presented in the tables below for these schemes, these costs will not be borne by Limerick City and County Council. These schemes are marked with an asterisk (\*) to highlight this fact.

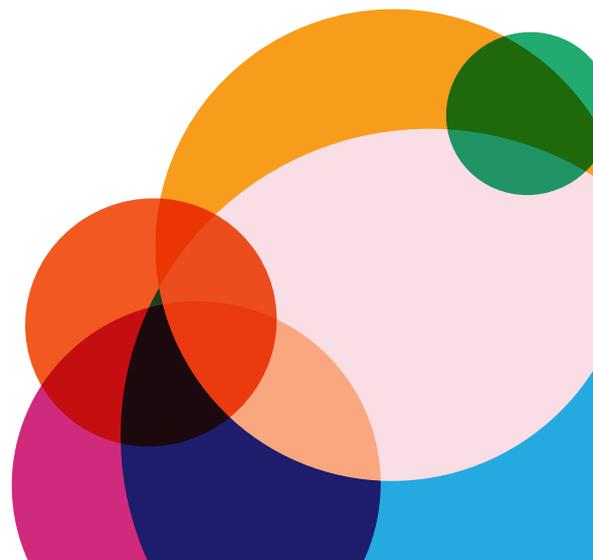


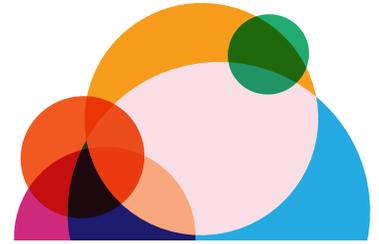
## 8.6 Proposed Phasing of Schemes

### 8.6.1

#### Schemes currently underway

	Schemes already underway	Network issues being addressed	Location	Estimated Timescale	Estimated Cost
<b>A</b>	*Colbert Station and environs improvements and enhanced connectivity to Limerick city centre core	Lack of connectivity onwards to City Centre and vice versa Standard of 'welcome' to visitors Lack of clarity for visitors as to onward destination	City Centre	Planning Application approved Q4 2014 – Construction to commence in 2015 3-4 Year duration	€15-20m
<b>B</b>	Parnell Street and Environs Streetscape Upgrade	Lack of connectivity onwards to City Centre and vice versa Standard of 'welcome' to visitors	City Centre	Planning Application due Q1 2015 - Construction in late 2015 or early 2016 subject to funding	€2-3m
<b>C</b>	Roll-out of secure cycle parking proposals as developed by Limerick Smarter Travel	Lack of cycle connectivity Cyclist safety	City Centre	Years 1-5	€150-250k
<b>D</b>	*Development of Cycle Facilities between LIT and Limerick City Centre – study commencing November 2014	Lack of cycle connectivity between LIT and City Centre Reduced mode share for cycling to LIT Increased demand for car trips to LIT	North-Western Corridor	Study completion in Mid-2015	€50-75k

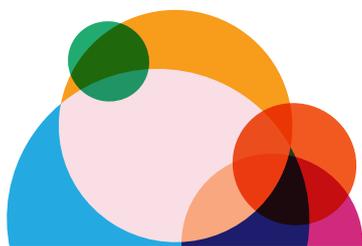




## 8.6.2

## Priority 1 Schemes

	Priority 1 Scheme Description	Network issues being addressed	Location	Estimated Timescale	Estimated Cost
<b>1a</b>	New study regarding feasibility of Partial Pedestrianisation of O'Connell Street, between Roches Street and William Street	Prominence of private car over other modes in City Centre	City Centre	3-5 months	€150-250k
<b>1b</b>	Implementation of Partial Pedestrianisation of O'Connell Street, between Roches Street and William Street	Pedestrian mobility and connectivity Pedestrian connectivity and permeability Prominence of vehicular traffic over other modes in City Centre	City Centre	6-12 months	€3-5m
<b>1c</b>	O'Connell Street Streetscape Upgrade – pedestrian facilities, cycle facilities, junction upgrades, public lighting improvements, etc.		O'Connell Street, from O'Connell Avenue to Patrick's Street	Years 1-5 and beyond	€5m
<b>2</b>	Implementation of Limerick Metropolitan Area Cycle Network, as identified in Cycle Network Plan (to be developed in 2015)	Lack of Cycle Connectivity Cyclist Safety Prominence of Private Car	Entire LMD	Plan developed in mid-2015, Roll-Out in Years 2-5	TBC
<b>3</b>	Pedestrian improvements at key junctions throughout the city centre grid network of streets, including O'Connell Street, Catherine Street and Henry Street (approximately 20 junctions)	Pedestrian connectivity and permeability Prominence of vehicular traffic over other modes in City Centre	Entire LMD	Years 1-5 and beyond	(€150k per jn) - €3m



	Priority 1 Scheme Description	Network issues being addressed	Location	Estimated Timescale	Estimated Cost
4	Further development of public transport link from UL to City Centre, to progress to preliminary design, EIS, CPO, etc.	Linkage between UL and the City Centre needed to support growth of UL Increased car usage to and from the University Possible re-location of a UL faculty to the City Centre undermined by PT linkage issues Lack of PT and Cycle Connectivity	Eastern Corridor	Years 1-3	€300k to progress Implementation on phased basis – Phase 1 (UL to Parkway) = €3m
5	Childers Road Upgrade - review study and scheme design and progress to implementation	Lack of bus priority along Childers Road Emphasis on general vehicular traffic Delay to services Reduced public faith in quality of service	Eastern Corridor	Review in Year 1 Works in Years 2-5	€300k to review scheme €7m Implementation Costs
6	Implementation of Cycle facilities between LIT and city centre	Lack of cycle connectivity between LIT and City Centre Reduced mode share for cycling to LIT Increased demand for car trips to LIT	North-Western Corridor	Years 2-3, following completion of ongoing study	€2m
7	Extension of Cycle Network further into Raheen	Incomplete cycle linkage Lack of cycle priority accessing Raheen area Connectivity to Ballinacurra Green Route/Cycle Lane	Southern Corridor	Years 2-3	€1m
8	Complete southern green route from Raheen to City Centre	Lack of complete bus corridor to City Centre Delay associated with congestion Reduced quality of service Lower patronage	Southern Corridor	Years 2-4	€3-5m



	Priority 1 Scheme Description	Network issues being addressed	Location	Estimated Timescale	Estimated Cost
9	Appointment of Travel Plan Co-ordinator for LMD	Overall management and control of mobility within the LMD	Entire LMD	Years 1-5 and beyond	€300k
10	Grove Island Roundabout Junction Upgrade to Signalised Junction	Lack of pedestrian/cyclist facilities Lack of Public Transport Priority Pedestrian Safety	City Centre	Years 1-3	€1-2m
11	Roxboro Roundabout Junction Upgrade to Signalised Junction	Lack of pedestrian/cyclist facilities Lack of Public Transport Priority Pedestrian Safety Severance to Regeneration Area	Southern Corridor	Years 1-3	€1-2m
12	Pedestrian Link at Rhebogue Road (beneath Rail Crossing)	Lack of pedestrian facilities Pedestrian Safety Severance between residential and school areas	Eastern Corridor	Years 1-2	€500,000
13	Roxborough Road pedestrian and cyclist safety improvements	Lack of pedestrian and cycle facilities Pedestrian and Cyclist Safety Severance between residential and school areas Connectivity to Southside Regeneration Area	Southern Corridor	Study in Year 1, leading to implementation in Years 2-3	€100k study €2-3m works
14	Implementation of bus priority on Roches Street and Shannon Street	Integration into city centre circulation system posing additional delay for buses on many approaches	City Centre	3-6 months for study, leading in to implementation in Year 2	€50k study €1-2m works

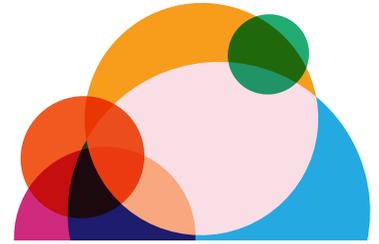


	Priority 1 Scheme Description	Network issues being addressed	Location	Estimated Timescale	Estimated Cost
15	Development and Implementation of a City Centre and wider LMD pedestrian wayfinding strategy	Lack of signage to aid pedestrian movement within the City Centre environs Lack of clarity for non-familiar pedestrians, e.g. tourists	City Centre and Wider LMD	3-6 months development, leading in to implementation thereafter	€100k development €500k roll-out
16	Improvements to existing inbound bus lanes (e.g. resolving pinch-points at Unicorn bar on 304 Route)	Intermittent gaps in bus corridor leading to delays for bus services attempting to integrate back in to general traffic Priority given to vehicles rather than buses	Entire LMD	Year 1	€500k

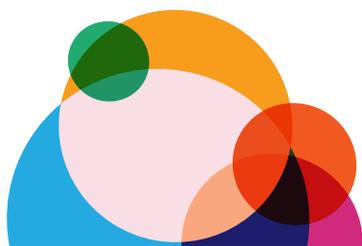
### 8.6.3

#### Priority 2 Schemes

	Priority 2 Scheme Description	Network issues being addressed	Location	Estimated Timescale	Estimated Cost
17	Extension of O'Connell Street pedestrianisation to Patrick's Street, and include junction with Denmark Street	Prominence of private car over other modes in City Centre	City Centre	Year 3 – following implementation of Scheme 1b above	€1m
18	Streetscape improvements, such as footpath widening	Pedestrian mobility Prominence of vehicular traffic over other modes in City Centre	City Centre	Years 1-5 and beyond	€300k/yr = €1-2m
19	Rationalisation of parking charge structure to discourage long-stay commuter parking and encourage short-stay retail parking	Parking structure encouraging long-stay commuter parking, seriously undermining City Centre Public Transport	City Centre	6-12 months	€20k study



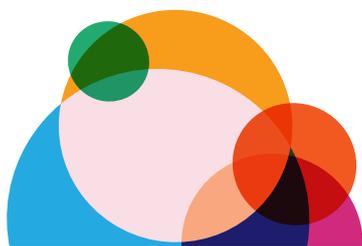
	Priority 2 Scheme Description	Network issues being addressed	Location	Estimated Timescale	Estimated Cost
20	City Centre and LMD Speed Limit Review study to identify locations where reduced speed limits can be applied and enforced in core city area and wider LMD	Reduced Pedestrian/ Cyclist Safety Emphasis on vehicle flow in City Centre	City Centre and Entire LMD (parallel studies)	6-9 months	€100k study (incl. Public Consultation, etc.)
21	Improvements to bus stop facilities within the city centre and environs	Unclear information on stops, services, fares, etc. Lack of adequate shelters Older stops in need of repair/refurbishment	City Centre and environs	Years 1-5 and beyond	€40k per stop – assume 100 stops = €4m
22	Smart on-street parking detection and information	Delays and congestion Network management Flexibility of network	City Centre	Years 1-2	€100k study Works Cost of €2-3m
23	Initial Scoping study and subsequent works regarding improvements to sustainable transport priority measures at junctions, e.g. bus/pedestrian/cyclist detection/priority measures at signalised junctions	Little facilities in place to give emphasis to sustainable modes over general traffic Emphasis on general vehicular traffic – no priority allocated to sustainable modes Pedestrian/cyclist safety and comfort Delay to services due to congestion Reduced public faith in quality of service	Entire LMD	6 months scoping study, leading to implementation of recommendations over Years 2-5	€300k - study Assume 15 jns @ €500k = €7.5m - Works
24	Extend roll-out of additional RTPI signage*	Lack of information available to bus users	City Centre	Years 1-2	Assume 30 more signs, €20k per sign = €600k



	Priority 2 Scheme Description	Network issues being addressed	Location	Estimated Timescale	Estimated Cost
25	Scoping study and subsequent works relating to the extension and improvement of the existing Network Control system throughout LMD to provide greater facilities such as remote monitoring, Bus detection/priority, etc.	Network flexibility Safety of all users Connectivity/efficiency Priority of sustainable modes over general traffic	Entire LMD	6 Months, leading to implementation as over Years 2-5	Study €250k Notional Cost of €5m (over 5 years – phased)
26	Parallel cycle routes along South Circular Road and Rosbrien Road, especially connecting Mary Immaculate College with city centre	Lack of facilities outbound on southern corridor for cyclists Inbound corridor carries large flows, deterring cycling due to high numbers of vehicles	Southern Corridor	Years 1-2	€1m
27	Bus priority facilities along Clare Street	Minimal city centre services using Clare Street Accessibility to bus services reduced along this catchment Little alternative to car users	Eastern Corridor	Years 1-3	€1m
28	Pedestrian permeability and connectivity improvements, increasing accessibility especially along bus routes and at stops	Accessibility to bus services Low bus patronage Little alternatives to private car	Entire LMD	Years 1-5	€50k study €2m works
29	Feasibility study and subsequent works regarding implementation of inbound bus lane or cycle facilities on Shannon Bridge	Incomplete Bus/Cycle Linkage to City Centre Lack of public transport priority over private car Delays associated with lack of infrastructure for buses Cyclist Safety	City Centre	6 Months scoping study, leading to works in Years 1-2	€30k study €300k works



	Priority 2 Scheme Description	Network issues being addressed	Location	Estimated Timescale	Estimated Cost
30	Upgrade of sub-standard pedestrian facilities at crossings and junctions	Pedestrian mobility Pedestrian safety	Entire LMD	Years 1-5	€100k per location €5m (assume 50 locations)
31	Scoping study and subsequent works to review and identify improvements to bus route catchments – maximise accessibility to bus stops from residential areas	Bus service patronage Bus network coverage pedestrian mobility/ connectivity Low public transport mode share	Entire LMD	Scoping Study in Year 1, leading to implementation programme in Years 2-5	€1-2m
32	*Renewal of existing cycle and bus lanes to improve surfacing, transitions, etc.	Sections of network of insufficient quality Inadequate transitions along cycle networks Cyclist safety	Entire LMD	Years 1-5	€250k/yr = €1.25m
33	*Upgrade and Renewal of bus stops and shelters to provide better quality up-to-date route and pricing information	Bus stop/shelter accessibility and quality issues Information dissemination issues Reliability and quality of public transport service	Entire LMD	Years 1-5	€500k
34	Scoping study and associated works to identify locations where junction upgrades can be undertaken to reduce vehicle speeds and improve pedestrian mobility where applicable	Pedestrian and cyclist safety Pedestrian and cyclist mobility/ connectivity Vehicular speeds Priority of private car over other modes	Entire LMD	Scoping study undertaken in 6 months in Year 1, leading to implementation in Years 2-5	€30k study €2-3m works
35	Extension of Limerick Bicycle Sharing Scheme to LIT and UL	Lack of Cycle Facilities Cyclist Safety	Eastern and North-Western Corridors	Years 2-5	€1-2m



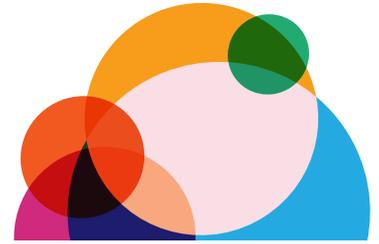
	Priority 2 Scheme Description	Network issues being addressed	Location	Estimated Timescale	Estimated Cost
36	Dock Road Roundabout junction upgrade to signalised junction	Lack of pedestrian facilities Lack of Public Transport Priority Pedestrian Safety Severance to Regeneration Area	Southern Corridor	Years 3-5	€1-2m
37	*Rationalisation of bus routes and re-location of bus termini from the city centre	Significant city space used for bus layover purposes	City Centre	Years 2-3	€300k
38	Street de-cluttering programme, including street furniture and signage	Pedestrian mobility/ connectivity within City Centre	City Centre	Years 2-3	€500k
39	Review and improvements to coach parking facilities within city centre including daytime Tour Coach facilities and secure overnight layover facilities – and integration with Bus Éireann services	Lack of sufficient parking for coaches within City Centre Insufficient linkage to key tourist destinations	City Centre	Years 2-3	€500k
40	Pedestrian permeability/ connectivity improvements, especially along Ballinacurra Road bus corridor and in the Raheen/Dooradoyle residential areas	Poor access to existing bus stops Barriers to movement within residential lands Excessive pedestrian routing undermining the viability of public transport services	Southern Corridor	Years 2-3	€500k
41	Possible cycleway along Rhebogue Road to complement public transport offer on the Dublin Road corridor – in addition to Smarter Travel proposals	R445 Dublin Road heavily trafficked, potentially compromising cyclist safety	Eastern Corridor	Years 2-3	€1m



	Priority 2 Scheme Description	Network issues being addressed	Location	Estimated Timescale	Estimated Cost
42	Further improvement/extension of the eastern Green Route corridor	Incomplete corridor at present undermining viability of PT services Reduced quality of service on Bus routes leading to lower patronage	Eastern Corridor	Years 2-4	€2-3m
43	*Enhancement of bus coverage to areas not currently served by city centre services	Some residential areas not covered by the existing city bus services	Entire LMD	Years 2-3	€0.5-1m
44	Improved pedestrian and cycle connectivity both along and across Childers Road, between Parkway Roundabout and Roxborough Roundabout	Lack of connectivity for pedestrians and cyclists along and across the route	Eastern Corridor	Years 2-4	€1m
45	Feasibility study and associated works relating to provision of secure, sheltered cycle parking adjacent to suburban Bus Stops	Cyclist Safety/Comfort Cycle/Bus Patronage	Entire LMD	Study in Year 2, roll-out in Years 2-4	€500k
46	Park and Ride – potential sites at Coonagh, Jetland and/or Condell Road	No existing Park and Ride service in operation Limited alternatives to private car	North-Western Corridor	Year 3	€5m
47	Park and Ride in Annacotty	No existing Park and Ride service in operation Little alternative to private car	Eastern Corridor	Year 3	€5m
48	Park and Ride – potential sites on Rossbrien Road (near Old Crescent RC) and Dock Road	No existing Park and Ride service in operation Little alternative to private car	Southern Corridor	Years 3-4	€5m



	Priority 2 Scheme Description	Network issues being addressed	Location	Estimated Timescale	Estimated Cost
49	Feasibility Study into mini Park and Ride sites and roll-out of works – potential provision along existing suburban routes – approximately 10 suitable sites	No existing Park and Ride service in operation Little alternative to private car	Entire LMD	Years 2-4	Study = €30k 10 sites @ 300k per site = €3m
50	Completion of the north-western Green Route Corridor as far as practically possible	Incomplete corridor at present undermining viability of public transport services Low quality of service on bus routes Low bus patronage	North-Western Corridor	Years 2-4	€2m
51	Further roll-out of advanced cycle stop lines on the major approaches to the city centre	Cycle safety Cycle mobility	Entire LMD	Years 2-5	25 jns@ €15k = €300k
52	Upgrade of R527 Ballysimon Road between Garryglass Roundabout & Childers Road to provide Bus and Cycle lanes	Lack of PT and Cycle infrastructure Lack of priority for Bus and Cycle travel Delays for inbound bus services	Southern Corridor	Years 3-5	€3m
53	Condell Road upgrade between Clonmacken Roundabout and Coonagh Roundabout to provide footpaths, cycle lanes and Bus lanes	Lack of pedestrian linkage Lack of priority for Bus and Cycle travel Delays for inbound bus services	North-Western Corridor	Years 2-3	€1-2m
54	Pedestrian/Cyclist improvements on R859 between Quinn's Cross Roundabout and Mungret	Accessibility, connectivity & safety issues at lands identified as suitable sites for primary & secondary school developments Lack of pedestrian facilities in the area Need for improved pedestrian facilities at Quinn's Cross Roundabout	Southern Corridor	Years 2-3	€3m



## 8.6.4

## Priority 3 Schemes

	Priority 3 Scheme Description	Network issues being addressed	Location	Estimated Timescale	Estimated Cost
55	Study into potential changes to vehicular circulation at Liddy Street, Honan's Quay to accommodate pedestrianisation of O'Connell Street	Prominence of private car over other modes in City Centre	City Centre	Year 4	€50k study
56	Enhanced permeability and connectivity at University Hospital Limerick, especially from the east	Existing access to Hospital confined to the west Excessive routing required for some approaches to access Hospital	Southern Corridor	Years 3-4	€50k study
57	Potential use of disused rail line to the city centre for P&R bus routing and potential cycle corridor and potential integration with freight	Incomplete corridors on all three major approaches to the City Centre Existing public transport impacted by general traffic congestion	Southern Corridor	Years 3-5	€3-5m
58	Greater information gathering and dissemination systems – increased electronic signage, CCTV, detection, use of web or smartphone-based applications to distribute information, etc.	Delays and congestion Network management Flexibility of network Impact of planned and unplanned events on network	Entire LMD	Years 3-5	€1-2m
59	Implementation and improvement of the existing AUTC/SCOOT system throughout LMD to provide greater facilities such as remote monitoring, Bus detection/priority, etc.	Network flexibility Safety of all users Connectivity/efficiency Priority of sustainable modes over general traffic	Entire LMD	Years 2-5	€2-3m





# Appendix

Limerick Metropolitan District Movement Framework Study

Figure 7.2: Preliminary Potential Schemes – Limerick City Centre



Figure 7.3: Preliminary Proposed Schemes – Southern Corridor

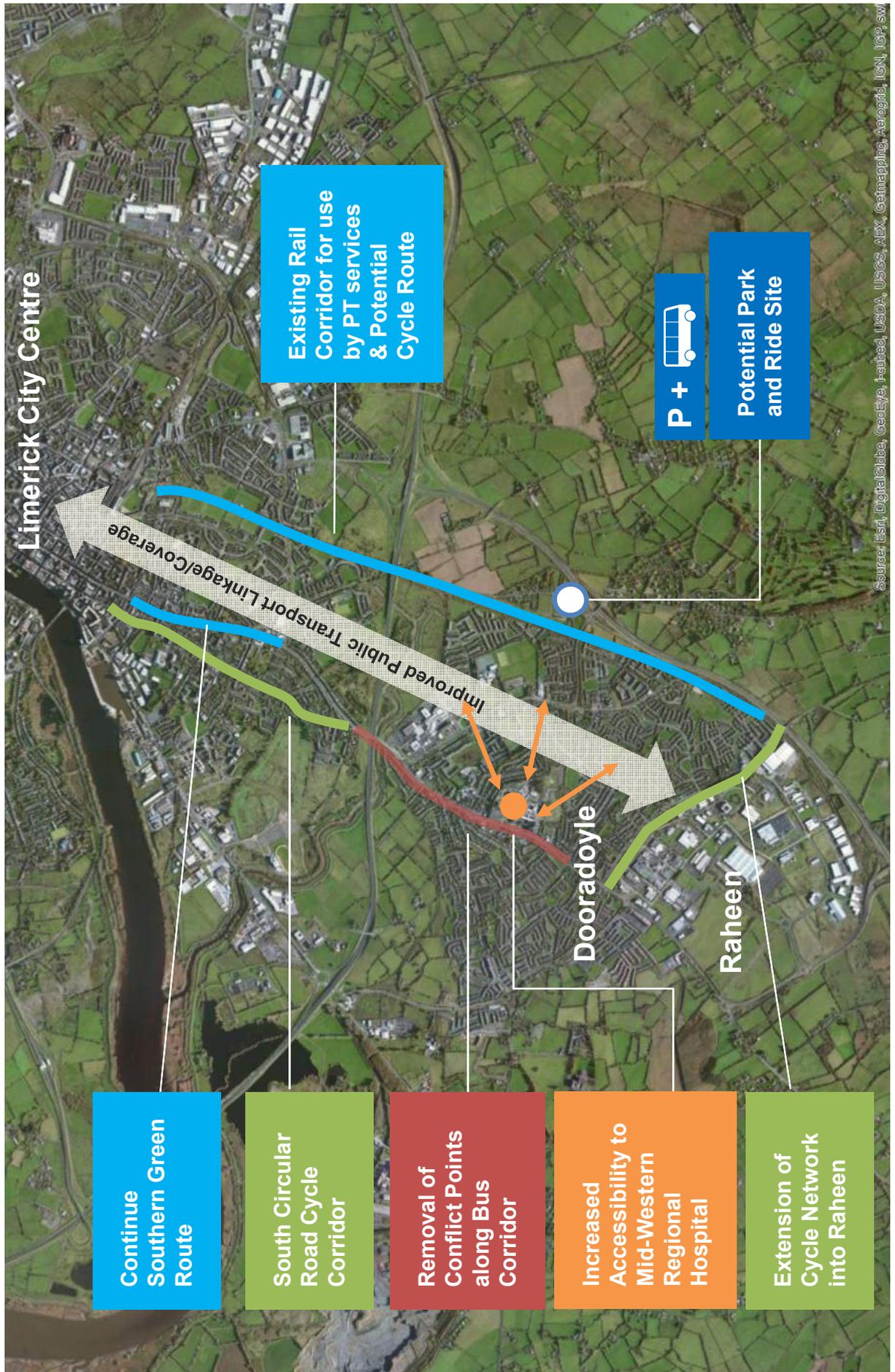


Figure 7.4: Preliminary Proposed Schemes – Eastern Corridor

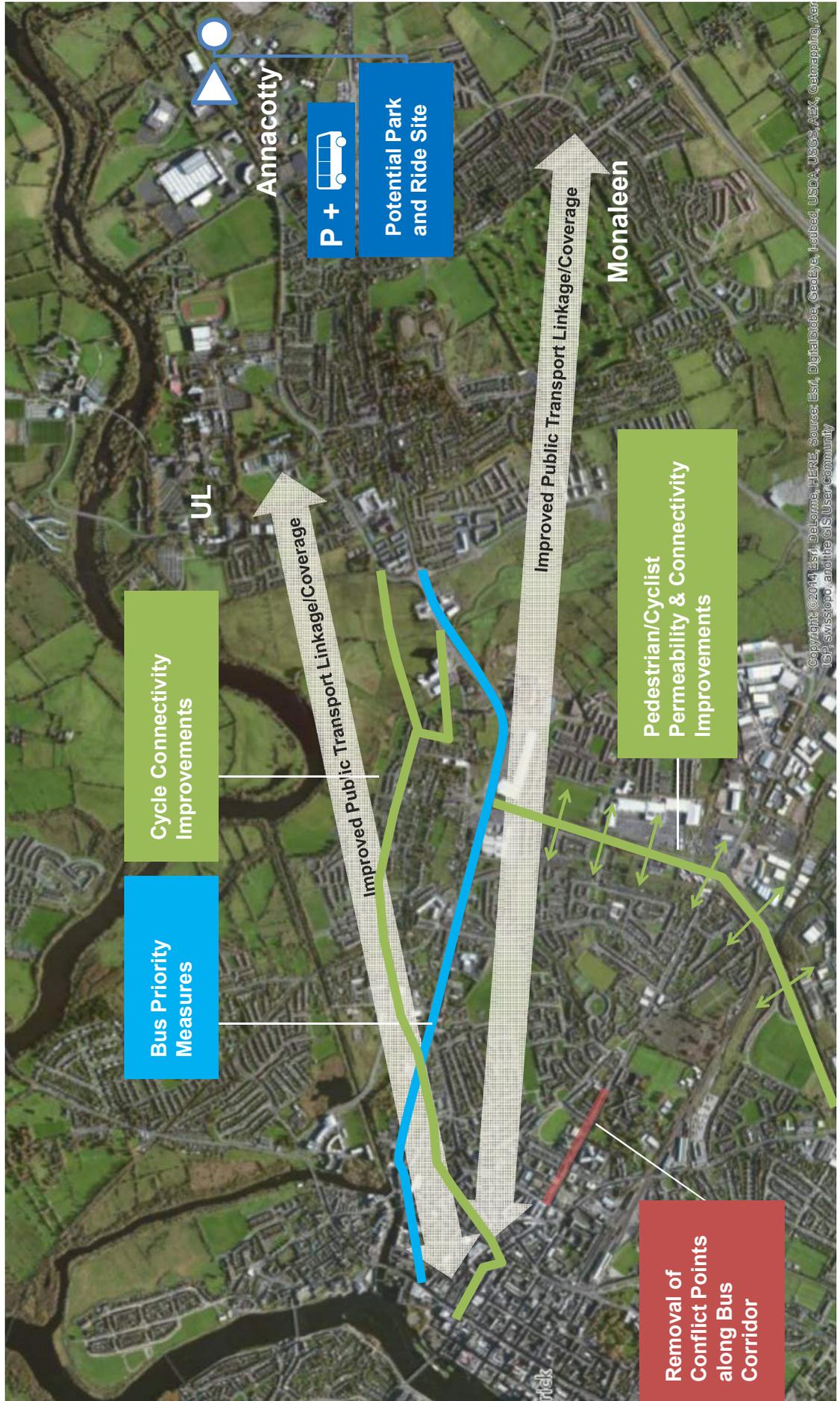


Figure 7.5: Preliminary Potential Schemes – North-Western Corridor

