

Straitéis Iompair na Gaillimhe Galway Transport Strategy



An Integrated Transport Management Programme for Galway City and environs

Draft | June 2016



This Transport Strategy will facilitate Galway with an opportunity to grow both physically and economically, offering better transport choices, and creating a public realm to be enjoyed by residents and visitors alike. This in turn will underpin the objectives of the existing and future City and County Development Plans.

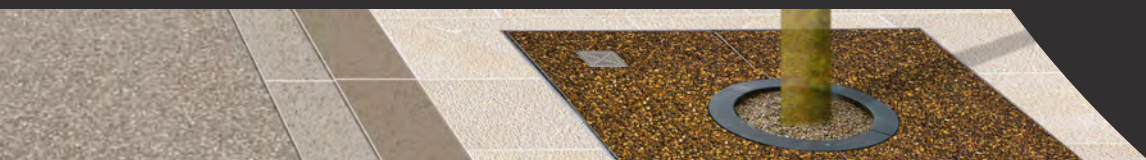




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“a connected city region driven by smarter mobility”





1.1 Introduction

As Galway City and its environs continues to grow, it is crucial to safeguard the future development of the city as the principal economic centre in the West of Ireland and to ensure that its development is sustainable. There is a strong need to address the transportation issues facing the city and surrounding areas at present, and to underpin future growth by establishing a long-term strategy for transport to, within and around the city.

To address these issues, Galway City Council and Galway County Council, in partnership with the National Transport Authority, have developed this draft Galway Transport Strategy (GTS), which aims to address the current and future transport requirements of the study area, which encompasses the city and surrounding towns and villages, including Bearna, Oranmore, Maigh Cuilinn and Baile Chláir.

The draft Galway Transport Strategy builds on previous transport studies carried out for the Galway Region, and sets out an overview of the proposed actions and measures for implementation, covering infrastructural, operational and policy elements (an ‘Integrated Transport Management Programme’, or ‘ITMP’). These consolidated proposals will provide Galway City and its environs with a clear implementation framework for the next 20 years and will be used to secure funding to deliver projects in a phased manner based on priority needs.

Ultimately, the strategy will underpin the objectives of the current and future Galway City and Galway County Development Plans.

The draft strategy development, analysis and proposed underpinning measures are presented in this summary report.

Next steps

Secure Funding for Proposed Measures

Planning and Design of Proposed Measures

Implementation of Measures

In many respects, Galway is a city of contrasts in terms of its physical development and transport requirements. While Galway has a compact walkable core, outside of the city centre the suburbs have developed as a succession of low density residential and employment areas, leading to a predominance of private car usage as a means of travel.

The transport problems currently experienced across the city, particularly during peak hours, are having a significant effect on the quality of life of residents, and are now impacting on the economic capability of the city. These effects extend to the wider county and region, due to the large number of people commuting daily for work or education to the city from the surrounding towns, villages and rural areas.



Galway experiences peak hour congestion and journey time unreliability for all motorised transport.

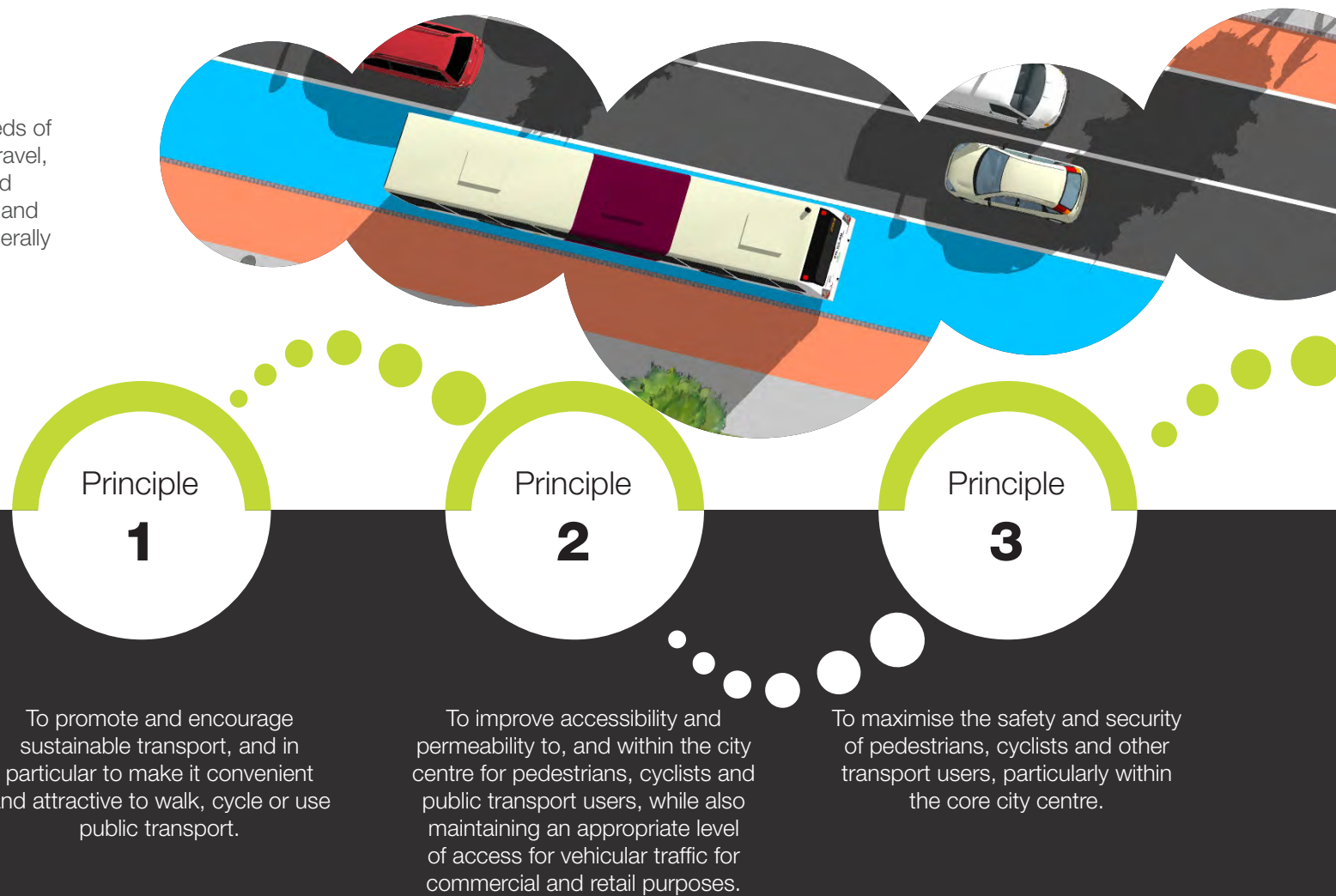
1.2 Current Issues

A number of specific characteristics of Galway City and its environs result in significant problems and inefficiencies with respect to the movement of people and goods, including:

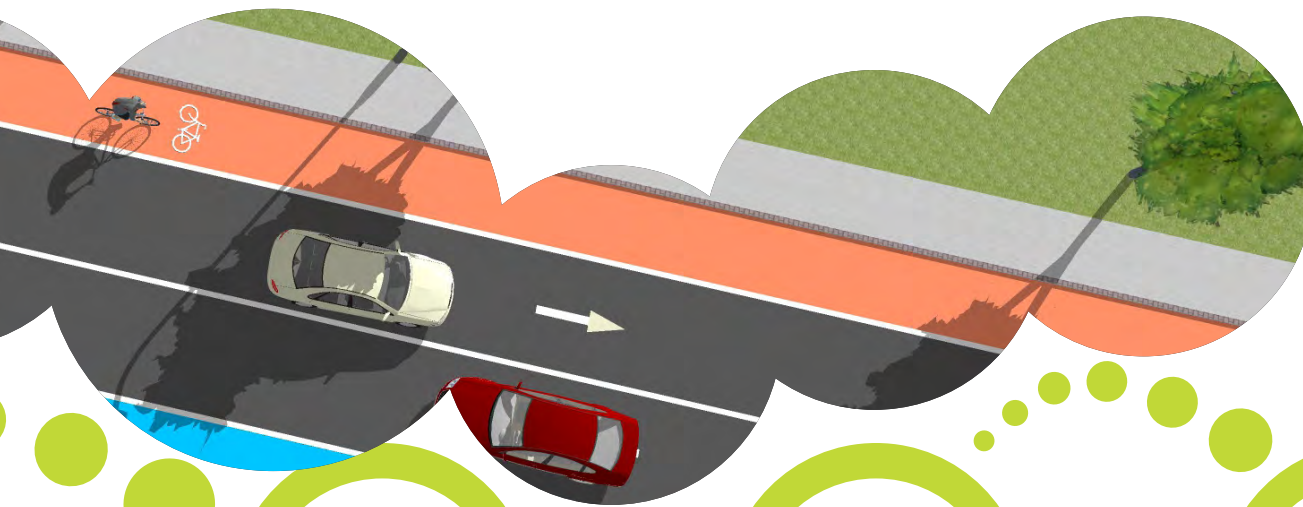
- An over-reliance on private cars;
- Peak hour congestion and journey time unreliability for all motorised transport;
- Safety concerns as a result of traffic congestion;
- Many key junctions within the city operating at or over capacity;
- Connectivity issues on the National and Regional road network resulting in significant volumes of cross-county and strategic travel demand between east and west Galway being concentrated and funnelled through the city area in order to cross the River Corrib;
- The pattern of residential development in the area, along with the location of employment destinations, generating a large amount of cross-city as well as city-bound travel demand;
- Large amounts of residential development located proximate to major employment and educational destinations city-wide, but not readily accessible by walking, cycling or public transport, thereby encouraging travel by private car;
- The short distance between Lough Corrib and Galway Bay, two significant physical natural constraints impacting upon the city;
- A natural barrier to cross-city and cross-county travel formed by Lough Corrib, the River Corrib and Galway Bay, with the three principal river crossings experiencing heavy traffic flows, leading to congestion and delay;
- The position of Galway City as a major regional centre for employment and education for a large geographical area, leading to large numbers of long-distance commuters for whom public transport is not currently a viable option, which leads to greater numbers of cars entering the city;
- The impact of traffic congestion on the City's reputation, particularly with regard to inward development;
- The suburban nature of much of the residential areas, and the wide distribution of jobs across a number of central and non-central locations, which lead to a situation where travel by public transport is not a viable option at this point for many journeys;
- Long journey times and delays on the current bus network, due in part to the limited available road space in the city centre for introducing bus priority which both reduces its attractiveness to passengers and increases costs of operating; and
- Limited roadspace on most of the principal roads, which reduces opportunities for safe and comfortable cycling.

1.3 Vision and Principles

To address the current and future transport needs of the city, a shift is needed towards sustainable travel, reducing the dependence on the private car and taking action to make Galway more accessible and connected, improving the public realm and generally enhancing quality of life for all.



To achieve this vision the guiding principles underpinning the development of the draft Transport Strategy are:



1.4 Planning Framework

It is intended that the Galway Transport Strategy, once finalised, will be consistent with and supportive of the new Galway City Development Plan (2017-2023), and the Galway County Development Plan (2015-2021).

As set out earlier, the strategy will extend beyond the timescale of both the current and new City Development Plans and the County Development Plan and is set out in terms of what needs to be delivered over a 20-year period.

Principle 4

To manage and increase transport capacity (where necessary), for the efficient movement of people and goods into and within the city.

Principle 5

To provide opportunities to enhance the city centre public realm through traffic management and transport interventions.

Principle 6

To maintain and develop transport infrastructure and services to a high degree of quality and resilience.

Principle 7

To adopt a 'smarter technology' approach to all transport interventions, whereby transport infrastructure and services are future-proofed.

The vision of Galway City Council and Galway County Council for transport for Galway is to create

“a connected city region driven by smarter mobility”.

1.5 Strategic Environmental Assessment, Appropriate Assessment and Strategic Flood Risk Assessment



In accordance with the EU SEA Directive (2001/42/EC) – on the assessment of the effects of certain plans and programmes on the environment – and national legislation, a Strategic Environmental Assessment (SEA) has been undertaken as part of the preparation of the draft Galway Transport Strategy.

This constitutes a formal, systematic evaluation of the draft strategy prepared in accordance with the European Communities (Environmental Assessment of Certain Plans and Programmes) Regulations 2004 (SI No. 435 of 2004), as amended by the European Communities (Environmental Assessment of Certain Plans and Programmes) (Amendment) Regulations 2011 (S.I. No. 200 of 2011).

The objective of the Strategic Environmental Assessment (SEA) Directive is ‘to provide for a high level of protection of the environment and to contribute to the integration of environmental considerations into the preparation and adoption of plans and programmes with a view to promoting sustainable development...’ (Article 1 SEA Directive).

The provisions of the draft strategy will be evaluated for potential significant effects, and any measures arising from the SEA will be integrated into the final strategy and incorporated into the new Galway City Development Plan (2017-2023) in order to ensure that any potential adverse effects are mitigated.

An Appropriate Assessment (AA) of the draft strategy has also been undertaken in accordance with the EU Habitats Directive (92/43/EEC) – on the conservation of natural habitats and wild flora and fauna - as transposed into Irish law through the European Communities (Birds and Natural Habitats) Regulations 2011, which consolidate the European Communities (Natural Habitats) Regulations 1997 to 2005 and the European Communities (Birds and Natural Habitats) (Control of Recreational Activities) Regulations 2010.

The findings of the AA Screening have informed the SEA and any necessary mitigation measures arising from the recommendations of the AA have been incorporated into the draft strategy in order to ensure that potential adverse effects are mitigated.

Finally, the draft Galway Transport Strategy has also been subject to a Strategic Flood Risk Assessment (SFRA), which addresses the issues of assessment and management of flood risk in plans and land-use plans. The findings of the SFRA have also informed the SEA and any necessary measures arising from the recommendations of the SFRA have been incorporated into the draft strategy in order to ensure that potential adverse effects are mitigated.

Following completion and finalisation of the GTS, the SEA, AA and SFRA will also be completed.

It is important that the Galway Transport Strategy reflects the needs and aspiration of the public and key transport stakeholders across the city and county.



1.6 Consultation

It is important that the Galway Transport Strategy reflects the needs and aspirations of the public and key transport stakeholders across the city and county. An initial public information event was held in May 2015, at which feedback from the public on the key transport issues was received. In addition, the consultation material was made available online and at City Hall, and further responses from the public were received during the period of open consultation which followed. A total of 45 submissions were lodged. The main themes and issues arising from the submissions were:

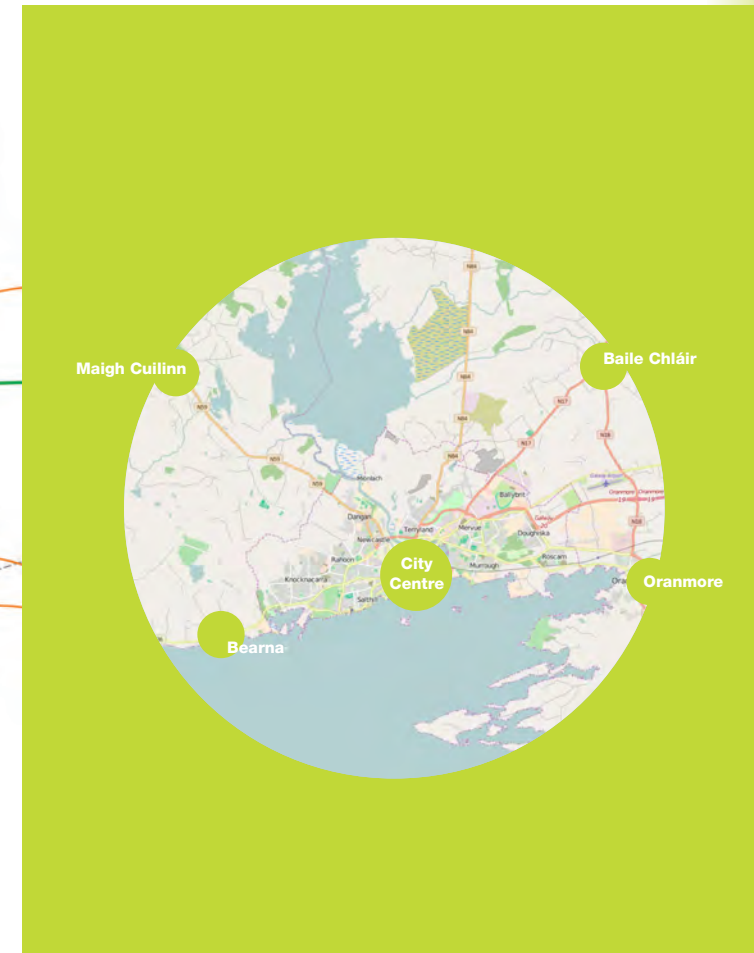
- Public transport in the city needs improvement generally;
- Cycle lanes should be improved generally;
- A light rail system should be considered;
- The bus lane network should be extended;
- A bypass of Galway City is not necessary;
- Public transport needs to incorporate school transport; and
- Park & Ride sites should be introduced.

This feedback has been considered by Galway City Council and Galway County Council and has informed the development of this draft Galway Transport Strategy.

Following completion of this study, a finalised Transport Strategy report with accompanying technical appendices and supporting material will be published later in 2016.

2 Policy and Transport Context

Figure 2.1 Study Area



2.1 Study Area & Existing Land-Use Context

The study area for the Galway Transport Strategy comprises the Galway City Council administrative area and the surrounding hinterland within the Galway County Council administrative area, up to and including the settlements of Bearna, Oranmore, Maigh Cuilinn and Baile Chláir. The city municipal area is illustrated in Figure 2.1.

Within the study area, the city centre has been defined for the purposes of this strategy. This is made up of the area bounded by the city's canal network to the west, and the Fairgreen/Bóthar Bhreandáin Uí hEithir/Bóthar na mBan road cordon to the east. This area is highlighted in Figure 2.1.

2.2 Land-Use Context

The existing land-use profile of the study area outlined above is characterised by significant residential development in the west and east of the city, and in other locations close to major employment and retail areas within the city centre area and in the east of the city. To the north of the city there are several small towns and villages on either side of Lough Corrib, with dispersed residential development throughout the rural areas.

In addition, there are also large residential developments in close proximity to major employment and educational facilities, but which are not easily accessible by walking, cycling or public transport. These settlement patterns have given rise to an increased need to travel, both to the city centre and across the city centre, from the suburban areas and from the wider region.

It is anticipated that the existing land uses will remain largely unchanged over the time period of this strategy, however it is necessary to consider the location and impact of new development both within the city centre and within the wider suburban areas as set out in City and County Development Plans and Local Area Plans, to ensure that these areas are considered in the development of the transport proposals.

A number of brownfield areas are identified as key development opportunities within the city centre, including Ceannt Station and Galway Harbour. The development and expansion of Galway Port is also expected to occur in the coming years. The Headford Road area to the north, where there is existing retail development, is also likely to be redeveloped with a wider mix of uses.

To the east of the city, significant residential development is envisaged at Ardaun, as well as

complementary local employment and services. It is also important to note that opportunities for redevelopment of Galway Airport, purchased in 2014 by Galway City and Galway County Council, remain possible over the lifetime of this strategy.

Other existing suburban areas, including Knocknacarra, Castlegar and Doughiska are envisaged to grow, albeit at a more constrained rate. District centres and lower-order neighbourhood centres are identified by the draft City Development Plan 2017 - 2023 for these suburban areas, and in other locations including Westside, Salthill, Ballinfoywle, Renmore and Ballyburke, which will increased levels of employment.

In the wider county, the settlements at Baile Chláir, Maigh Cuilinn, Bearna and Oranmore themselves see large numbers of daily commuters to and from Galway City. Approximately 50% of Galway City's daytime working population commute from outside the city boundary.

In the preparation of this draft strategy, appraisals of existing land-uses, planned growth areas in the City and County Development Plans and Local Area Plans, and the function of the city centre were undertaken to inform the development and design of the transport proposals.

2.3 Current Transport Supply

Local & Regional Bus Networks

Parts of the study area are served by the existing city bus service, which is facilitated by a limited range of bus-specific infrastructural elements of varying extent and quality, but which are not continuous over any significant portion of the network. The city bus network is very much discontinuous, with priority measures only provided along sections of key corridors.

As such the city bus network is subject to delay, impacting the attractiveness of the bus as a mode of choice. Indeed, the 2011 Census recorded a mode share of 8% for travel within the city area to work or education, which is a relatively low bus mode share for urban areas. Of the current city bus services, only one (the 409 Parkmore service) has a target frequency of one bus in each direction every 12 minutes at peak times (as of April 2016).

Improvements to the city bus service in recent years have included the re-organisation of routes and schedules, newer fleet and the roll-out of the Leap card, in addition to a number of significant bus infrastructure schemes and junction upgrades across the city. These measures have contributed to an increase in patronage of over 30% from 2012-2015, albeit from a previously low base.

A number of regional bus service providers operate to and from the city. Regional and intercity coach

services are subject to delays due to infrastructural deficiencies approaching and within the city centre, where the principal destinations are located at Ceannt Station, Fairgreen Coach Station, Eyre Square/Merchants Road and Galway Cathedral. These delays, along with centralised destinations in the city centre and a lack of integration with the city bus routes and ticketing systems, discourage use of regional bus services for commuters from surrounding towns and villages which are served directly by regional buses.

National coach services benefit from high-quality road connectivity from the east and south, increasingly of motorway standard with the relatively recent construction of the M6 and the current development of the M17/M18, which will also improve connectivity to the north-east. Similar to regional services, there are numerous operators providing intercity services to and from the city, with a resultant high number of daily arrivals and departures. These services are also subject to delays due to infrastructural deficiencies approaching and within the city centre.

Rail Network

The study area is served by the existing single-track heavy rail line from the east, terminating in the city centre at Ceannt Station. The rail line extends east to Athenry, with a stop at Oranmore/Garraun. From Athenry, rail lines continue towards Dublin and to Limerick.



2.3 Current Transport Supply

Cycle Network

Although the city's generally flat topography is conducive to cycling, the current mode share of 5% is relatively low. Similar to the bus network, the existing network of cycle infrastructure is limited and discontinuous. The volume of vehicular traffic on the tight city centre streets also contributes to an environment that is neither appealing nor perceived as safe for cycling.

While there have been numerous cycle network improvements in recent years, not least the roll-out of the Bike Share Scheme, the cycling environment remains limited. This is particularly true in areas outside the city, despite the fact that many towns and villages are within cycling distance of the city and each other, such as Bearna, Oranmore, Maigh Cuilinn and Baile Chláir.

Pedestrian Network

Within the city centre, there are pedestrian-only streets which are a key asset to the local economy, in particular the tourism/shopping thoroughfare of Shop Street/Quay Street. Other pedestrian facilities of note include the city canal network and the promenade at Salthill. There have also been major junction improvement schemes in recent years which have considerably improved pedestrian facilities across the city.

However, there are numerous locations within the study area where the quality of the pedestrian

facilities are poor. There are locations within the city centre where the mix of vehicular traffic impacts on the safety and comfort of pedestrians. There are streets throughout the city with substandard or missing footpaths, limited or no crossing facilities, and permeability issues resulting from the manner in which residential areas have been developed. The absence of permeability within housing areas often leads to excessively circuitous trips for pedestrians to walk relatively short distances.

Road Network

The geography of Galway City is physically constrained; it is divided by the River Corrib and Lough Atalia and it is bounded to the south by Galway Bay and to the north by Lough Corrib, natural barriers to free movement and development and constraints to the road network. There are currently four bridges crossing the river, of which three are in very close proximity to the city centre, thus drawing traffic into the city for the sole purpose of crossing the river. However, given the land-use characteristics of the city, there is significant cross-city and city-bound travel demand, particularly during peak hours.

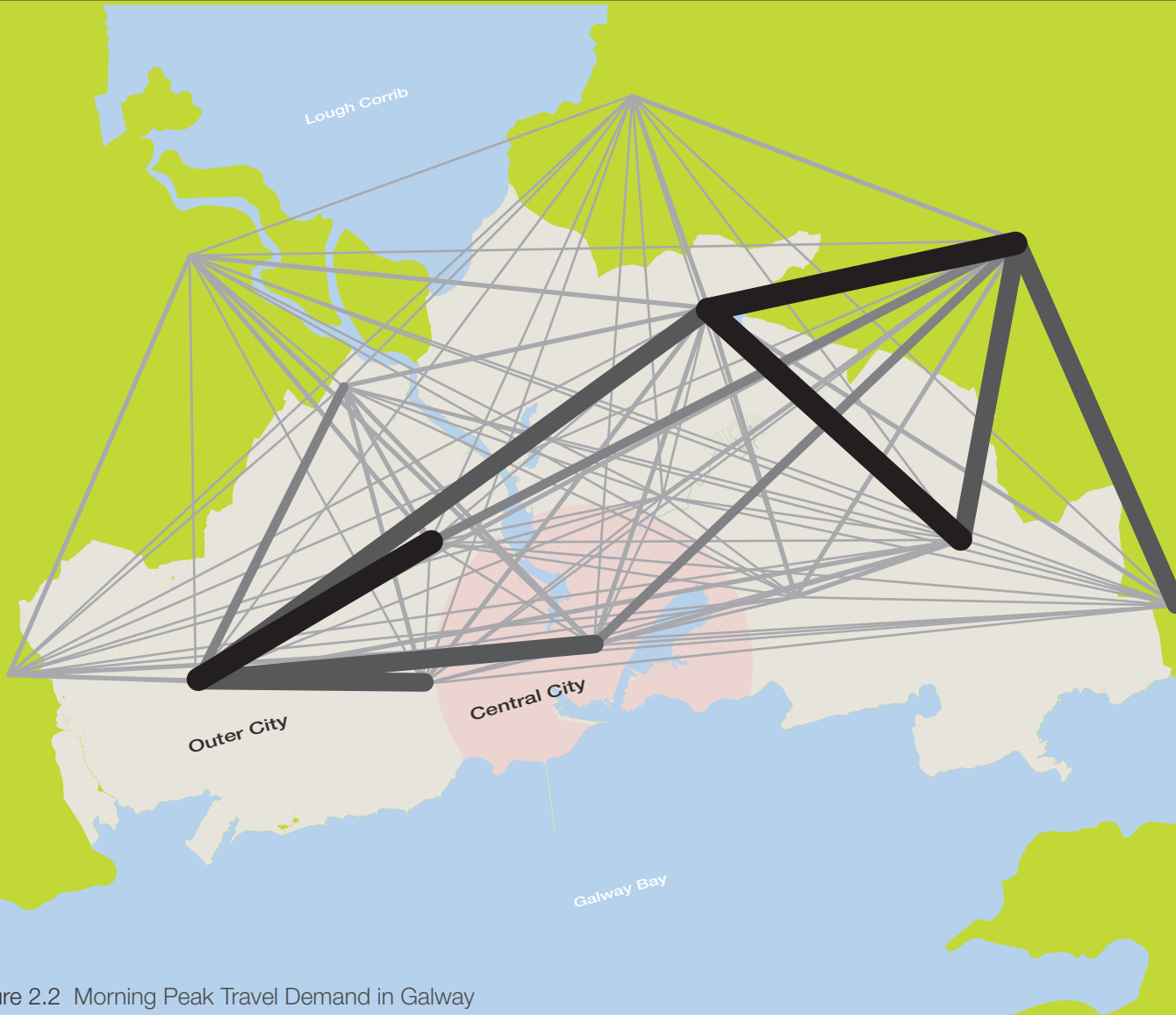
Vehicular traffic crossing the city however is heavily constrained by the limited number of road crossings of the River Corrib. At present, Quincentenary Bridge is the sole option for traffic wishing to avoid the city centre area. Heavy congestion and delay on the approaches to Quincentenary Bridge often leads to traffic re-routing towards Salmon Weir Bridge, Wolfe Tone Bridge and O'Brien's Bridge, which in turn creates congestion across the city.

Galway County and the Connemara region, as far west as Clifden and on to Letterfrack, are equally dependent on this narrow funnel for access as this area is restricted by the extents of Lough Corrib heading north, the Twelve Bens mountains, the Maamturk mountains and many smaller lakes. Access to this area is via the bridges across the River Corrib in Galway City due to the physical natural constraints. Therefore, cross-county traffic, and more strategic traffic to and from the west coast of the country is channelled towards Galway City in order to cross the River Corrib, in turn further exacerbating traffic congestion and delay.

The M/N6 is a highly important national road, and is identified as part of the TEN-T Comprehensive Network. The M/N6 is also identified as a Strategic Radial Corridor in the National Spatial Strategy (NSS) and is an important inter-urban transport corridor linking the Galway Gateway with the Greater Dublin Area via the Midlands Linked Gateway and gives access to regional and international markets, including through strategic airport and port locations as well as linking with other strategic national roads. Equally the N17, NSS Strategic Linking Corridor, the N59 and N84, national roads, are important regional links to and from the city.

While a key challenge of this draft strategy is to provide sustainable and reliable alternatives to travel by private car, the management of the road network will remain critical.

2 Policy and Transport Context



Analysing Travel Demand in Galway

Figure 2.2 shows in summarised form the current typical movements between sectors of Galway in the AM period (7am – 10am) by motorised transport (car, van or bus). The movement ‘desire lines’ consist of a large number of movements, which have been grouped together for illustrative purposes.

Vehicular Trips - AM Peak (7:00 - 10:00)

- 0 - 500
- 501 - 1,000
- 1,001 - 1,500
- 1,501 - 2,000
- > 2,000

Figure 2.2 Morning Peak Travel Demand in Galway



23%

of City population travel on foot



5%

of City population travel by bicycle



8%

of City population travel by Bus/
Coach



<1%

of City population travel by Train



60%

of City population are driving in a car/
van

Source:
This data is from Census 2011

2.4 Movement Context

The highest concentration of trips in Galway occurs between 8am and 9am. ‘Home-to-work’ trips comprise the largest concentration of trips during this peak hour, making up 40% of the total. ‘Home to education’ is similarly high at 35%. Other trip purposes account for the remaining 25%.

Travel volumes reduce considerably mid-morning, with hourly trip volumes between 11am and 2pm being approximately half of the peak hour demand. The number of trips between 2pm and 3pm is 69% of the peak hour and correlates to the end of the school day. Whilst traffic congestion in Galway in the PM peak is perceived to be comparable to the AM peak, total trip demand between 5pm and 6pm is 75% of the AM peak hour volume.

Mode Share

Car is the dominant mode, accounting for approximately 60% of all trips in the city. Walking provides for a high proportion of trips, amounting to nearly 23% overall mode share, whilst bus caters for 8% of trips within Galway City. The mode share for walking and cycling in Galway City is higher than the national average, reflecting the relatively compact nature of the core city centre and the high proportion of the large student population living in close proximity to third level institutions.

Trip Origins and Destinations

As part of the 2011 Census, travel information was processed for Work, School or College trips (POWSCAR) in order to identify the major origin and destination of trips in Galway City.

Just over 45,000 total trips are recorded within POWSCAR for the Galway City and environs area. The origins and destinations with the highest trip volumes (work and education, including internal) are shown below in Figure 2.3.

2 Policy and Transport Context

Figure 2.3 The origins and destinations with the highest trip volumes





2.5 Planning and Policy

The draft Galway Transport Strategy has not been developed in isolation; it builds upon the on-going work of Galway City and County Councils and intentionally links directly with the principles, concepts and objectives outlined in the City and County Development Plans. In addition, the strategy has taken into account national and regional plans and policies. Figure 2.4 illustrates where the draft Galway Transport Strategy sits in terms of national, regional and local policy and planning. The draft strategy also complements other local initiatives such as the Health Cities and Age Friendly Initiatives.



Figure 2.4 Planning Context



As the economy continues to grow, and the role of Galway City as a regional gateway develops, it is critical that the transport network can evolve to meet future travel demand.

2.6 Key Challenges to be addressed in this Transport Strategy

It is clear that the existing transport network and its component parts, as set out above, are experiencing difficulties meeting the current transport demands, with delays and congestion, particularly for vehicular traffic and public transport becoming increasingly prevalent. As the economy continues to grow, and the role of Galway City as a regional gateway develops, it is critical that the transport network can evolve to meet future travel demand. In this regard, a number of key challenges must be addressed by the Galway Transport Strategy. These include:

- The need to transform Galway City Centre from a location typically characterised by heavy congestion and significant traffic volumes to a destination of choice for residents, workers and visitors alike;
- The need to reduce the reliance on travel by private car;
- The need to deliver a public transport network that can offer journey time reliability and frequencies sufficient to maximise the attractiveness of the service and to meet demand;
- The need to supplement the public transport network with complementary facilities such as Park & Ride for the benefit of people accessing the city from the surrounding rural areas;
- The need to facilitate city-bound, cross-city, cross-county and strategic east-west travel on the National and Regional road network without impacting on the functionality of the city;
- The need to improve accessibility to and through residential areas for sustainable travel modes in order to improve the appeal of alternatives to the private car;
- The need to maximise connectivity by walking, cycling and public transport to major employment and education facilities;
- The need to minimise non-essential traffic flow through the city centre;
- The need to minimise the impact of traffic congestion on Galway City Centre, in order to allow the city to grow in a sustainable manner; and
- The need to achieve efficiency and resilience on Galway's transport network, across all modes.

3.1 Approach and Methodology

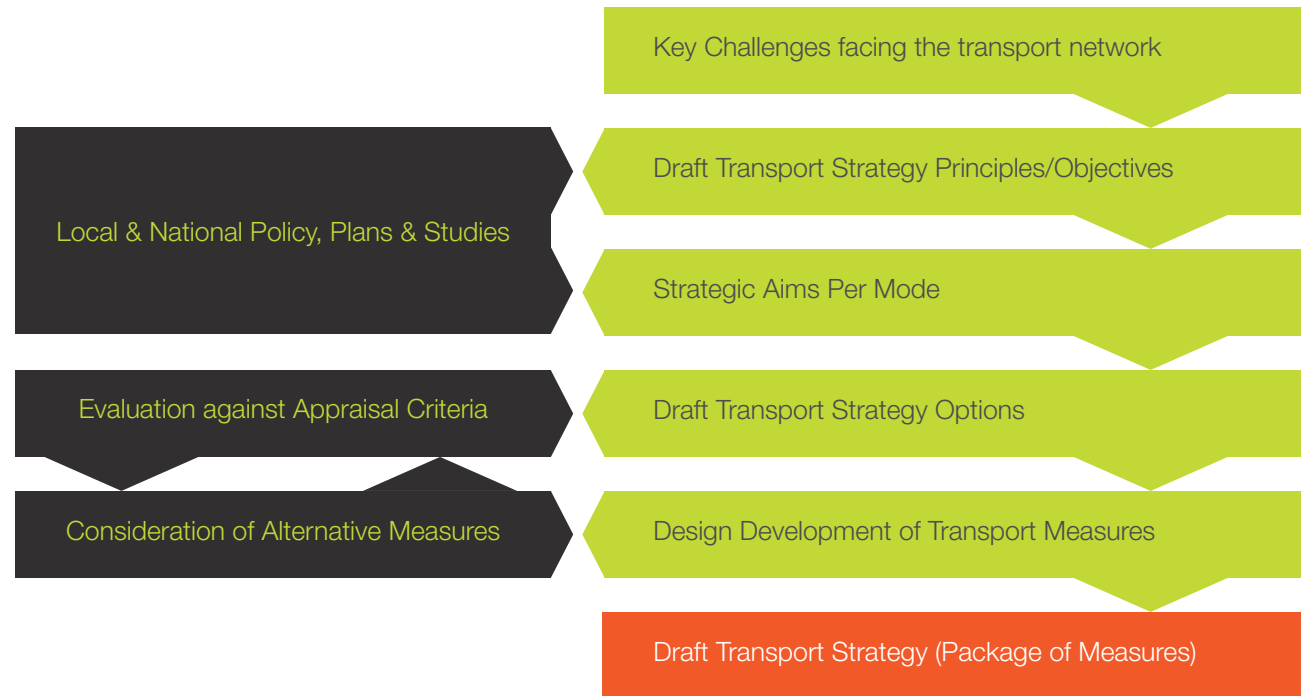
The approach adopted to formulating and testing this draft Transport Strategy and its constituent measures was:

- to initially **establish strategic objectives**;
- to **develop and test strategy options**; and
- to **develop specific proposals** which are brought together under the overall draft strategy.

The draft strategy development process is illustrated in Figure 3.1. The principles set out in Section 1.3 provide a basis for developing aims and proposals for mode-specific solutions (as described later in Sections 4-8) – in order to achieve the strategic objectives of the Transport Strategy.

Strategic Objectives: The development of the draft Galway Transport Strategy must be in accordance with the broader national economic, social and environmental objectives (as set out in the ‘Department of Transport Guidelines on a Common Appraisal Framework (CAF) for Transport Projects and Programmes’). Strategic objectives have been formulated based on an analysis of the key objectives from the City and County Development Plans, and from previous transport studies.

Figure 3.1 Draft Transport Strategy Development Process





The CAF appraisal categories and associated strategic objectives are as follows:

- Economic – to give **value for money**, and support Galway’s function as a **regional centre**;
- Safety – to achieve a **safer** environment for all transport modes, and facilitate a **healthier lifestyle**;
- Environment – to encourage better **integration between transport and urban form**, thereby minimising harmful **transport emissions**;
- Integration – to provide for **integration of transport modes and land use planning and policies**; and
- Accessibility and Social Inclusion – to improve **multi-modal accessibility**, and provide for a **socially-inclusive** transport network.

The transport network options developed have been evaluated in line with these, and an emerging strategy identified for each travel mode – which in turn has guided the development of specific proposals for each component of the overall draft Transport Strategy (public transport, walking, cycling and complementary measures, and road).

3.2 Examining Journey Types

In order to achieve a connected city and environs, the draft Transport Strategy seeks to deliver an integrated network of 'links' (routes) and 'nodes' (stops and interchange locations) along which people can travel seamlessly, changing corridors and modes as necessary to make their journey. In this context, the most suitable travel modes to address the travel demand for each type of journey have therefore been examined. Figure 3.2 presents the range of journeys undertaken in Galway together with the most appropriate modes of travel for each type of journey. For example, radial journeys into the centre are most suitable for bus travel, whereas journeys from rural areas into non-central areas of Galway may often be most suitable for car travel or combined with Park & Ride.

It is also relevant to note that the strategic movement of goods (for example to Galway Port) will continue to be predominantly road based – and cannot be facilitated by walking, cycling or public transport. Also, long distance traffic with origins and destinations outside of the city (for example from Dublin to Connemara), generally has no option but to travel through the city. This by-passing traffic is currently added to local traffic which increases congestion and decreases the accessibility of the western region.

Figure 3.2 Trips to, within and across Galway



A. Within the City - Example - Eyre Square to Dominick Street

These type of journeys should generally be made on foot or by bicycle. Journeys across the centre by car should be discouraged and drivers should be encouraged to either use public transport or park their car before travelling across the central area.

B. Outer City <<>> City Centre - Example - Knocknacarra to Eyre Square

Journeys on radial corridors should be possible by bus (or other forms of public transport) - provided that the service is of a high frequency. Safe bicycle lanes are also essential to encourage cyclists.

C. Outer City <<>> External Areas (not crossing River Corrib) - Example - Ballybrit to Tuam

These journeys are difficult to cater for by public transport, and are often not practical on foot or by bicycle. Use of Park & Ride bus services could however be attractive if the service is of a high quality and frequency.

D. City Centre<<>> External Areas - Example - Eyre Square to Loughrea

These journeys are difficult to attract in large numbers to public transport, as travellers have a wide range of origins outside the city which cannot all be served by frequent public transport. Provision of Park & Ride bus services could however be attractive if the service is of a high quality and frequency.

E. Outer City <<>> Outer City (crossing River Corrib and via the City Centre) - Example - Salthill to GMIT

At present, these journeys are generally made by car. However, safe and direct dedicated cycle routes would encourage cycling for this type and length of journey, and if a reliable public transport service was provided operated via the city centre some drivers would consider these options to be a reasonable alternative. Frequent and reliable bus services on a few radial corridors would allow passengers to transfer between services with a short wait.

F. External <<>> Outer City (crossing River Corrib, but not via City Centre) - Example - Maigh Cuilinn to Parkmore

These journeys are difficult to attract to public transport, as travellers have a wide range of origins outside the city which cannot all be served by frequent public transport. An alternative to travel by car could be Park & Ride bus services if the service is of a high quality and frequency.

G. Outer City <<>> Outer City (crossing River Corrib but not via City Centre) - Example - Westside to Mervue

Journeys between peripheral areas can be difficult to serve by public transport, as orbital public transport is generally not financially viable, and public transport via the centre can often be much slower than travel by car if not on connecting public transport routes. Some travellers will however use public transport via the centre if it is of sufficient frequency and reliability. In addition, the provision of safe dedicated cycle routes could facilitate cycling for this type of journey.

H. External Area <<>> External Area (crossing River Corrib, but not via City Centre) - Example - An Spidéal to Headford

These journeys are the most difficult to attract to public transport, as travellers have a wide range of origins and destinations outside the city which cannot all be served by frequent public transport. Travel by car is often the only practical mode.

I. Short travel in Outer City Areas - Example - Renmore to Merlin Park

These type of journeys can often be made on foot or by bicycle, and are generally difficult to make by public transport unless the journey is on a main radial bus corridor.

3.3 Transport Strategy by Travel Mode

Catering for the range of different journey types in Galway requires interventions to be made for each travel mode in order to develop an integrated package of measures such that the ‘sum of the parts’ improves transport conditions and journey choices for all in Galway.



The draft Transport Strategy proposes an integrated package of measures such that the ‘sum of the parts’ improves transport conditions and journey choices for all in Galway.

Transport Strategy - Traffic Networks



Traffic Management

Traffic within the city’s central area needs to be managed to provide a more comfortable environment for pedestrians and cyclists, and to ensure that public transport travelling through the city is reliable at all times of day. This is essential to achieve a travel mode shift in favour of public transport. Key aims are therefore to reduce vehicular movement through the city centre, reduce vehicle speeds in the core city centre area, and to prioritise active modes (walking and cycling) and public transport in the city centre. The draft strategy therefore includes for routing of traffic which currently passes through the centre (to reach edge-of-centre locations) to more suitable orbital routes around the core city centre area.

Road and Street Network

It is recognised that some journeys across the city are not always convenient by non-car modes such as cycling or public transport (for example, most ‘through’ journeys on National or Regional roads across the city, journeys with an origin or destination outside the city in rural areas, journeys late at night,

etc.). Hence it is considered necessary to provide a resilient/reliable cross-city route for travel by road. An orbital route (identified as part of the N6 Galway City Ring Road project), is considered to be an important element of providing this resilience. Providing additional orbital traffic capacity will increase the opportunities for re-allocation of existing roadspace for use by pedestrians, buses and cyclists, identified as a key traffic management objective of this draft strategy.

Parking

As part of a plan to manage traffic in the central area, it is envisaged that the availability of on-street parking will be reduced, and access routes to off-street parking facilities will be rationalised and managed to minimise car circulation within the city centre. Within this area, there will be greater emphasis on the management of, and accessibility to off-street parking locations (including wayfinding and parking guidance). Parking measures will also need to aspire towards reducing and managing on-street parking on public transport routes outside the core city centre area.

There will also be a need to adopt a parking pricing structure which seeks to set the cost of city centre parking at a level that does not undermine travel by public transport as a financially-realistic alternative to car travel.

HGV management

The central area of Galway is unsuitable for heavy goods traffic, and should be restricted to only those vehicles of a suitable size with destinations (or origins) in the city centre. In combination with this, there is a need to manage the arrangements for routing and timing of deliveries to the core city centre area. Articulated vehicles will be restricted to accessing and egressing Galway Port via Lough Atalia Road.

Transport Strategy - Local Public Transport Measures



Local Public Transport

For Galway to flourish as an attractive city in which to live and work, a modern high-quality public transport system is needed which allows people to conveniently reach key destinations within a reasonable time. This will, over time create opportunities for lifestyle choices with less reliance on private car use. Maximising the attractiveness of public transport can best be achieved by focusing on provision of a network of high-frequency cross-city services, with reliable journey times. This will require public transport priority measures to be implemented.

As it is not practical for all parts of the city to be covered by high-frequency public transport services, there also will be a requirement to provide less frequent, subsidiary type services. These will facilitate public transport accessibility, including interchange with the principal public transport network, from other parts of the city, and transport services from the wider hinterland.

Public Transport Interchange and Transfer

The usage of public transport systems is maximised by 'building in' convenient interchange between public transport services. Simple end-to-end services will not attract passengers in sufficiently large numbers. The next generation of public transport in Galway will therefore need to recognise the principle of 'transfer' in the way people use services, as ultimately this will provide a much larger range of destinations accessible for the travelling public.

Taxis

Taxis provide an essential service for people for whom other forms of public transport are not always convenient. It is important that waiting areas are safe and attractive, and are conveniently located, but without detrimental impact on the local environment. Where appropriate, taxis will be able to use bus priority infrastructure.



Transport Strategy - Regional Public Transport



Regional/Inter-city/Commuter Bus & Coach Network

For regional and longer-distance bus and coach services, journey speed and reliability are crucial (compared to frequency). It is therefore important that coaches are able to access bus priority routes, and are provided with sufficient access to and from bus/coach termini in the city centre. The attractiveness of these services can also be enhanced by providing interchange between regional and local public transport at key locations on radial routes outside as well as within the city centre.

Rail

Rail provides regional and national connectivity, complementing the bus system. The improvement of this mode will involve more frequent services. Locally it is desirable to maximise opportunities for transfer between rail and local public transport at Ceannt Station, Oranmore/Garraun and Athenry. The draft strategy therefore includes for an improved transport hub at Ceannt Station/Fairgreen Coach Station in the heart of the city centre, providing enhanced interchange between rail and local and regional bus services.

Park & Ride

Galway has a high proportion of travel with one end of the journey outside the city. Many of these journeys have destinations throughout the city and hence it is particularly challenging to attract such journeys onto a Park & Ride system. A traditional bespoke Park & Ride bus service into the city centre would not provide accessibility to a sufficient range of destinations to make it attractive. It is therefore preferable to base Park & Ride provision on the proposed city-wide public transport network – such that a range of destinations can be reached.

This approach is also more financially sustainable and the service provision to users would be integrated within the public transport fare structure. In parallel with providing Park & Ride services, it will be important to manage the availability and price of parking in the city centre – such that Park & Ride will clearly offer a cost saving to commuters.

Tourist Coach Management

Tourist/visitor coaches will need to be provided with suitable drop-off/pick-up locations in the city centre, with layover spaces provided in a limited number of managed locations outside the core city centre area. Routing for coaches can also be planned such that use is made of proposed priority bus lanes where appropriate.



Transport Strategy - Walking and Cycling



Walking

Within the city centre, there needs to be an emphasis on improving and prioritising the pedestrian network and environment, encouraging and accommodating movement between places and to cater for mobility impaired persons. This will include reducing traffic in the core city centre area. Outside of the core city centre area, emphasis will be placed on increasing permeability within suburban residential and employment areas, improving the pedestrian network where necessary, increasing pedestrian safety and maximising pedestrian accessibility to the public transport network.

Cycling

For cycling to provide a means of ‘mass’ movement in the city, it will be necessary to provide a ‘core’ network combining good segregation from traffic where practical, and traffic management elsewhere. Feeder networks will also need to be defined to fill the gaps between core corridors. Convenient cycle parking at major destinations across the city is also essential. To establish a ‘cycling city’, the further roll-out of the city Bike Share Scheme is desirable – as this assists in normalising cycle travel in the central areas in particular.

Public Realm

The pedestrian environment serves all users, including residents, commuters, tourists and shoppers. The reallocation of road space to public transport in the city centre will be accompanied by an associated improvement in the public realm – in other words, an essential aspect of attracting passengers onto public transport is improve the quality of the receiving environment for passengers’ onward journeys on foot. Improvement of the quality of the public space on transport corridors is therefore a key element of this draft strategy.



Transport Strategy - Supporting Transport Measures



Smarter Mobility

Intelligent Transport Systems (ITS) and technologies allow transport modes to communicate with each other and the wider environment, providing integrated transport solutions and enhanced experiences for transport customers.

Smarter Mobility and ITS will be incorporated into Transport Strategy measures to support infrastructure proposals and to further improve the transport network by maximising efficiency and capacity. Expansion of the existing City Urban Traffic Control (UTC) network is critical, as well as using ITS to manage parking efficiently, improve wayfinding around the city, upgrade street lighting, improve and upgrade junctions and to allow the city to leverage future developments in Smarter Mobility.

Travel to Places of Education

It is important to develop a public transport and cycling network that is conducive to school-related travel. However, there is no unique solution to this travel demand. Instead it is key to promote behavioural change in tandem with

infrastructure improvements to encourage students to use sustainable modes. Promotion of school travel plans across the city will continue, while infrastructure and permeability improvements will seek to improve the appeal of sustainable modes. Galway City Council will liaise with the Department of Education regarding the implications of school admission policies on the travel patterns of students. Furthermore, increased use of the Leap card by school students will offer flexibility for public transport services.

Land-Use Integration

Integrating land-use with transport demand is a fundamental requirement for creating a sustainable city. It is vital to align settlements and major developments with transport interventions and services to reduce travel demand by the private car and to foster and promote sustainable transport modes. Major developments will need to be focussed on core corridors where they can be well-served by public transport and cycling and subject to design principles which promote walking. A co-ordinated approach to mobility management and improvements to permeability will also increase the appeal of sustainable modes.

Behavioural Change

Promotion of alternatives to the private car, for the workforce and for students alike is intended to raise awareness of the travel choices available and to underpin a shift to sustainable modes of transport. It is intended to continue the development of mobility management plans at major employment and educational institutions and to continue the roll-out of the Green Schools Travel Programme across Galway.

Demand Management

In order to shift the focus within the city centre to walking, cycling and public transport, demand management measures are needed to enhance the function of the city for these users. This may include measures such as managing and controlling the availability and cost of parking, restricting traffic flow from certain streets, reducing speed limits, providing additional pedestrian crossings at key locations and a reduced emphasis on facilitating through-traffic.

3.4 Strategy Appraisal

The draft strategy components set out in Section 3.3 have been subject to an assessment of how they address the strategic objectives of the draft Transport Strategy, as set out in Table 3.1. Transport network options have been modelled using the Western Regional Model to ascertain the impacts on travel conditions, mode share and delay.

Modelling has been undertaken for options with different combinations of measures (e.g. with and without major road interventions, with demand management, etc.) and the results quantified to provide guidance in identifying the preferred strategy. The key outcomes of the appraisal of draft strategy options are set out in Sections 3.5 and 3.6.

The transport model used in this case is the Western Regional Model (WRM) – a strategic multi-modal, network-based transport model developed in 2016 to help the National Transport Authority support its transport planning remit and deliver on its planning and appraisal needs. The model covers the five counties of Connacht and Donegal County with a focus on Galway City. It has demand matrices for five separate weekday periods modelled; AM Peak (07:00-10:00), Morning Inter-Peak (10:00-13:00), Afternoon Inter-Peak (13:00-16:00), PM Peak (16:00-19:00) and Off-Peak (19:00-07:00).

The model covers all surface access modes for personal travel and goods vehicles including private vehicles (taxis and cars), public transport (e.g. bus, rail), active modes (walking and cycling) and goods vehicles (light goods vehicles and heavy goods vehicles).



Table 3.1 Appraisal Criteria



Category	Assessment Criteria	Key Performance Indicators
Economic	Ensure value for money in the implementation of proposals	Utilisation of existing infrastructure and extent of new infrastructure requirements
	Support Galway City's function as a regional centre for employment, education, retail, leisure and tourism by providing access for all through an efficient and reliable transport network	Peak hour journey times by mode Capacity versus demand Congestion
Safety	Develop a safer city centre for all transport modes and users	Consider safety implication of all interventions Traffic management measures
	Exploit transport's role in facilitating a healthier lifestyle	Measures which support walking and cycling
Environment	Provide opportunities for better integration between transport and urban form	Reduced traffic volumes in sensitive areas
	Minimise harmful transport emissions	Reduced transport emissions
Integration	Support integration between sustainable transport and land-use planning and policies	Compatibility of transport measures with local, regional and national spatial planning and transport policy
	Provide for better transport integration	Park & Ride facilities Public transport interchange opportunities
Accessibility and Social Inclusion	Improve multi-modal accessibility within residential, employment and retail centres	Accessibility by walking and cycling, public transport, car and HGV
	Provide a socially-inclusive transport network	Coverage and quality of service of public transport network

3.5 Public Transport Choices

What Public Transport Network Configuration Best Suits Galway?

The transport model has been utilised to test the potential passenger use of high frequency public transport services along the busiest corridors in Galway – looking at bus-based or light rail-based options on these corridors (with buses on other corridors). The results provide a basis for identifying the most appropriate public transport system for Galway. Modelling of future conditions indicates that with high-frequency services in place, the maximum single-directional passenger demand is approximately 1,100 over a 1-hour period (in the AM Peak). As indicated in Figure 3.3, this broadly equates to 80-90% of the passenger capacity of a frequent bus service, and less than 25% of the capacity of a frequent light rail service.

This indicates that a light rail service would provide capacity far in excess of what is practically required. Hence, when considering the greater cost of building and operating light rail services at the same frequency as bus services, it is clear that bus-based public transport represents the most appropriate system for Galway over the period considered in this draft Transport Strategy.

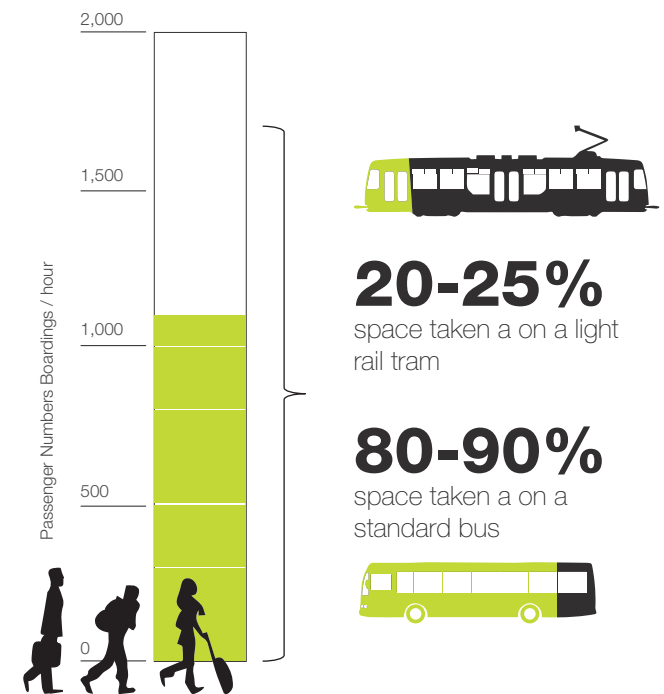
The public transport network and type of system (or mode) is also dependent on a number of further considerations:

Street Network: Galway is an historic city and its layout and road network reflect a city that has developed over many years with some roads and streets, especially in the city centre, being very narrow, resulting in difficult turning movements for some modern public transport vehicles. As is often the case, the limited available roadscape must provide for many competing demands such as pedestrian and cyclist movements, vehicular access and parking, loading and deliveries as well as public transport. An adaptable bus-based public transport mode, which can integrate with other modes when needed, is therefore considered to best suit the city.

Network or Corridor: The most successful public transport networks and services are generally those that offer a consistently high frequency throughout the day on a network of services, and hence can attract a broad variety of trip purposes such as commuter trips, trips to education and trips for retail and leisure activities. In addition, land-use in Galway is spread throughout a number of corridors, with a wide distribution of origins and destinations. Consequently, trips do not all converge to create high demand corridors, and as such, an integrated network of bus services is considered more appropriate for maximising mode-share and revenue (to pay for services) than linear corridor ‘mass transit’ services.

Figure 3.3 Estimated Maximum Occupancy of Public Transport System Options

Maximum Passenger Corridor Demand



Best Practice Guidance on Mode vs Demand:

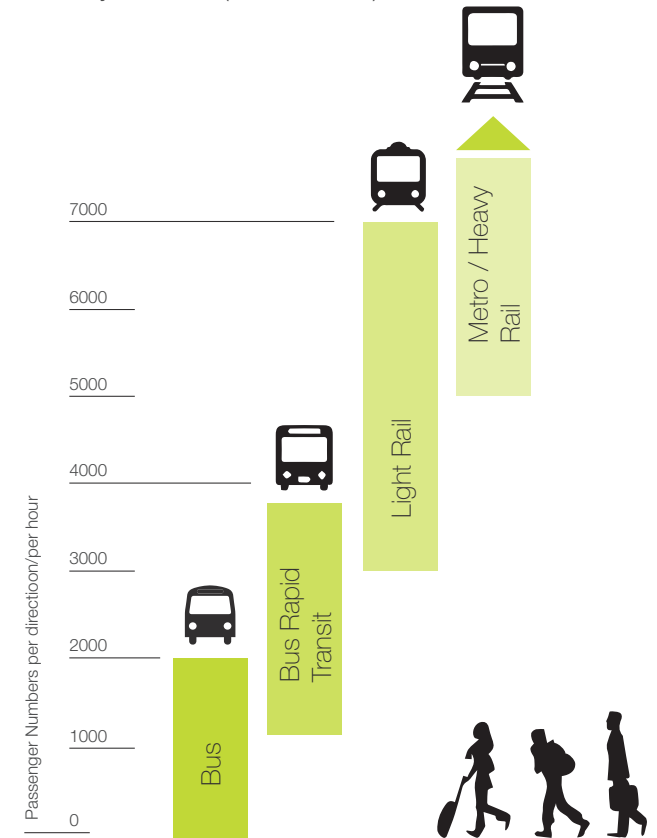
Guidance in respect of the types of public transport systems most suitable relative to the levels of passenger demand (per direction per hour) is shown in Figure 3.4 (greater capacities can be reached through larger vehicles and/or dualling lanes/tracks). In terms of operating urban public transport systems, high-capacity rail-based systems are generally employed where the ‘demand’ (i.e. flows past a point) is over 3,000 per hour per direction. Modelling of future conditions indicate that, with a high-frequency service in place, the maximum single directional passenger demand on radial corridors in Galway is only 1,100 in the peak hour, and hence it would be necessary to reduce the frequency of a light rail service to match this lower demand.

This, in turn would be less attractive to passengers than a higher frequency bus-based service. Hence, when considering the typical capacity of public transport systems, it is clear that a bus-based system is the appropriate solution in Galway.

Therefore, it is concluded that a high-quality bus-based public transport service will cater for the forecasted passenger demand and will provide significant flexibility in terms of network options and the ability to integrate with other modes.

In particular, a bus-based public transport network can cater for high volumes of demand along combined corridor sections (for example through the city centre) whilst diverging out to efficiently provide greater direct catchment within less-dense suburban areas of Galway.

Figure 3.4 Public Transport Mode Capacities (source: UITP Paper ‘Public Transport: making the right mobility choices’ (Vienna 2009))



3 Strategy Development



Orbital services versus radial (with interchange) through the city centre

Surveys of existing transport and the transport model have confirmed that strong demand will remain for radial movements into the city centre and also east-west movements across the city. Providing for this cross-city movement by dedicated orbital services is not considered to be the best option as there is insufficient variety in trip purposes to support high-frequency services throughout the day. Furthermore, a lesser-frequency service, with limited hours of operation would not provide for good flexibility from the passenger’s perspective, and would have an insignificant impact on overall modal splits in terms of transfer from private car usage to public transport.

However, in order to quantify the potential impact of orbital bus services (via Quincentenary Bridge), the model has been utilised to test cross-city bus services travelling via the city centre against an orbital service.

The results are summarised in Figure 3.5, which shows that hourly boardings for an orbital service are approximately 50% of the boardings for an equivalent service routed via the city centre. This outcome clearly indicates that cross-city bus services via the city centre will be both more attractive to passengers and more financially viable

than orbital services. Further key benefits of routing services through the city centre are:

- Service frequencies are maximised along the central portion of radial corridors, which will be likely to attract high passenger use due to low waiting times; and
- Co-routing of cross-city services along the same corridor through the city centre will, importantly, provide passengers with opportunities to transfer between services to reach a much wider range of destinations. An orbital bus service would tend to carry only those passengers with final destinations close to the route – with little opportunity for passengers to take advantage of interchange to other services.

Cross-city services will require significant bus priority measures (to ensure reliable journey times), and providing roadspace for buses simultaneously on city centre corridors and on the Quincentenary Bridge corridor is unlikely to be practical in respect of managing traffic capacity. Only one cross-city bus corridor is therefore proposed, with bus priority measures through the city centre (where most services are routed) are considered to be much more beneficial than provision of bus priority just on Quincentenary Bridge, the N6 National Primary route.

Figure 3.5 Modelled Boardings Comparison for Radial and Orbital cross-city services (AM Peak boardings in both directions)



3.6 Road Network Choices

What Road Network Configuration Best Suits Galway?

The major traffic routes through Galway City are over capacity and congested at peak times, resulting in unreliable journey times for both general traffic and the existing bus network, particularly for cross-city journeys. Traffic delays have a negative impact on nearly all the strategic objectives identified for the draft Transport Strategy including:

- **Economy** – journey time costs for access to work and education. Delays in the network have cost implications for the movement of freight and goods;
- **Safety and active lifestyles** – traffic congestion has a range of direct and indirect impacts including impacts on quality of life, stress and safety of all road users, as well as impacts on adjacent residents and occupiers of road frontage properties;
- **Environment** – the rate of fuel consumption and the resulting traffic emissions increase significantly at lower speeds; and

- **Accessibility and Social Inclusion** – traffic congestion increases the time taken to travel and therefore reduces the accessibility of areas affected. In a mixed road user environment, as is largely the case in Galway, traffic congestion creates barriers for pedestrians, cyclists and public transport movements.

A key aspect of addressing current traffic issues is to support and facilitate a shift to more sustainable transport modes, where practical to do so. Increasing the rates of travel by sustainable modes in Galway City will require a significant improvement in the quality of the public transport, pedestrian and cycling networks. This will benefit from targeted reallocation of road space from general traffic to sustainable modes.

For example, to deliver cross-city journeys by public transport, major priority measures, such as bus lanes and traffic restrictions are required through the city centre. Whilst this will support travel mode shift, it will also reduce the capacity of the overall transport network. Therefore without accompanying road network and traffic management interventions, traffic congestion issues will persist.

Overall therefore, whilst a range of public transport, walking and cycling measures are intended to bring about a shift away from car travel, a significant level of traffic congestion will remain in the city. It is relevant that the provision of a high frequency bus network in Galway (with improved priority through the city centre) in the future would result in both increased public transport usage in the city, but also increased congestion on the major river crossings due to trip displacement.

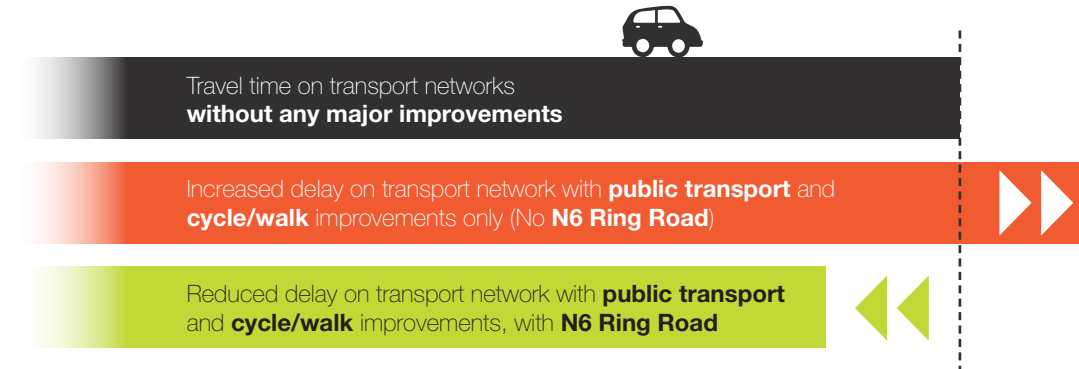


Figure 3.6 Travel Time comparison with and without N6 Galway City Ring Road

The diagram in Figure 3.6 illustrates the modelled comparison of overall travel times (for all modes) for the present day network, and for two scenarios with improved public transport and walking and cycling improvements; that is, with and without a new orbital traffic route. The comparison shows that reducing travel congestion requires both improvement to public transport, walking and cycling networks *and* the provision of a new orbital route.

Given the strong negative impact of congestion on achieving the objectives of this draft strategy, unless additional capacity is provided for traffic, the overall objectives for the draft Transport Strategy will not be met. Furthermore, this additional road capacity should not be in conflict with the enhanced sustainable transport network, rather it should focus on supporting trips that cannot be facilitated by the proposed measures (i.e. outer-city movements and external-to-external trips). A new road link to the north of the city is therefore proposed as part of this draft Transport Strategy to deliver the necessary capacity and support the delivery of sustainable transport measures.



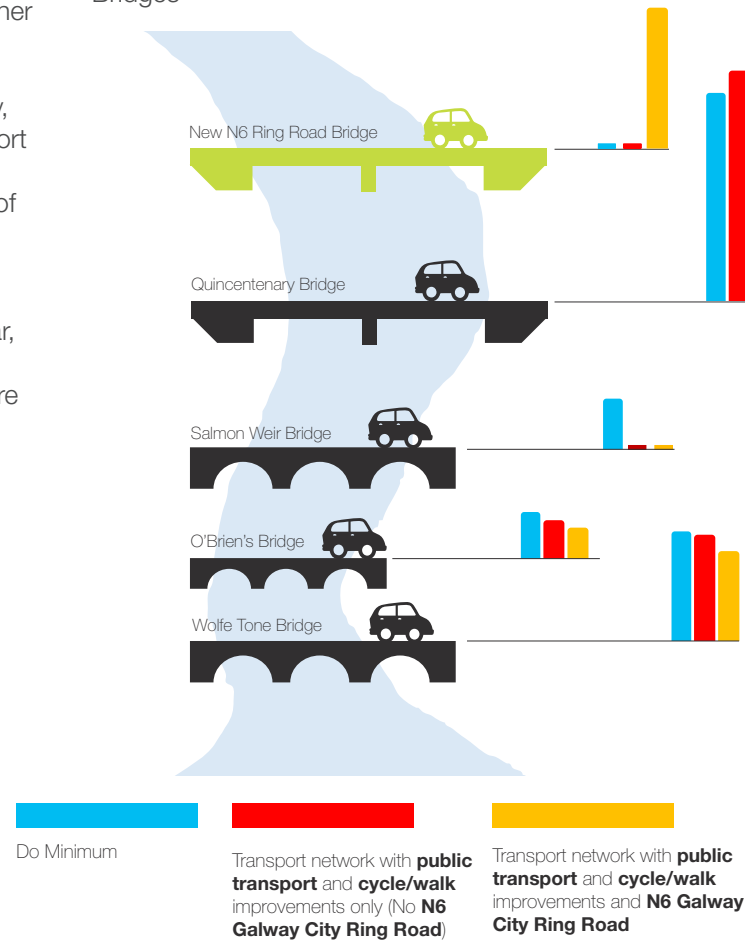
Traffic Flows on Galway's Bridges

Various options for the extent of the additional road capacity and connectivity have been tested together with the sustainable transport network measures. The results of the assessment shows that the inclusion of a new road link to the north of the city, in tandem with the active travel and public transport measures, results in a reduction in traffic volumes on Quincentenary Bridge and Wolfe Tone Bridge of approximately 20% in both cases.

This in turn improves journey time reliability within the city centre for all transport modes. In particular, public transport journey times will reduce and become much more reliable through the city centre with the inclusion of the new road link.

Figure 3.7 illustrates the change in traffic flows on the four River Corrib crossings as a result of providing public transport, walking and cycling improvements only, and with the N6 Galway City Ring Road project in place.

Figure 3.7 Peak Hour Vehicle Flows across Corrib Bridges



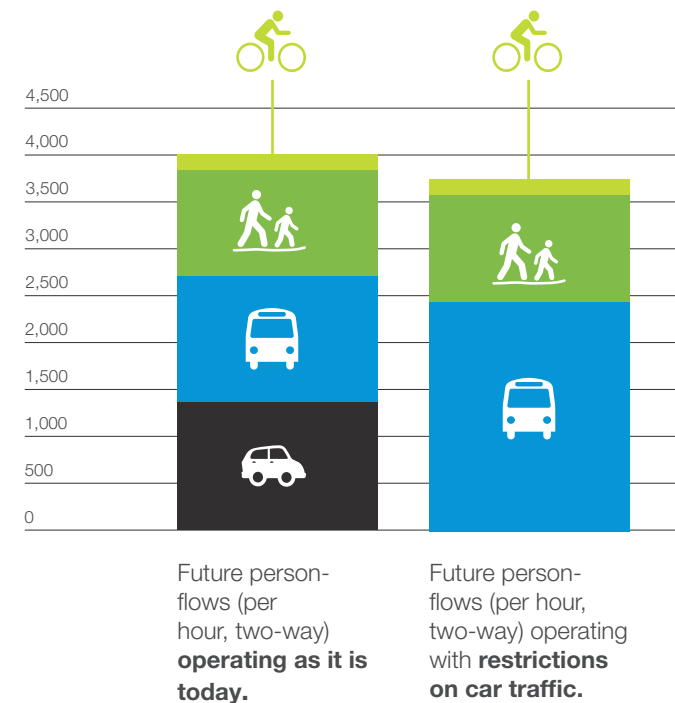


At Salmon Weir Bridge, it is proposed to remove all through-traffic such that the bridge is used only by buses, taxis and cyclists (with a new pedestrian bridge alongside). Modelling forecasts of journeys over the bridge indicate that the introduction of bus priority represents a change to the mode of travel rather than a change in the number of trips.

A major benefit of this change is the potential to significantly enhance the adjacent public realm and local environment as a result of the removal of through-traffic movements.

Figure 3.8 illustrates that passenger trips across Salmon Weir Bridge in the peak periods with the bridge designated as a public transport-only river crossing remain almost unchanged, compared with the bridge remaining open to all traffic.

Figure 3.8 Peak Hour Person Flows across Salmon Weir Bridge



Introduction

As discussed in Section 1, the road network in Galway carries different users (cars, lorries, cyclists, buses, coaches, taxis, school transport, emergency services) as well as catering for varied journeys within the city, such as into the centre, across the city, short local trips, trips with start or end outside the city, through-trips etc. Without intervention, present-day congestion will continue to worsen over time as the city grows and hence it is essential that the resilience of the road-based transport network is improved to support Galway's development. The Galway Transport Strategy sets a range of measures to address current and

future congestion, and includes traffic management (especially in the city centre to prioritise walking, cycling and bus movement), new and improved road and highway links, management of parking activity, and controlling and managing heavy goods vehicle movement and deliveries. The routes through and around the city have been classified on different levels in order to separate journeys by type and assign the most suitable journey types to each road network or alternative mode.

4.1 City Centre Traffic Management

The strategy set out in Section 3 provides a framework for the Traffic Management measures that have been developed.

The draft strategy aims to remove non-essential motorised traffic from the core city centre area (i.e. traffic travelling through the city centre whose origin and destination lie outside the city centre). This will be done using a combination of routes around the city centre, and will prioritise other modes within the core city centre area via the 'Cross-City Link', a proposed corridor (shown schematically in Figure 4.1) through the core city centre area with higher levels of priority allocated to walking, cycling and public transport over private car traffic. The proposed city centre traffic management measures are summarised in Table 4.1.

Figure 4.1 Cross-City Link Concept

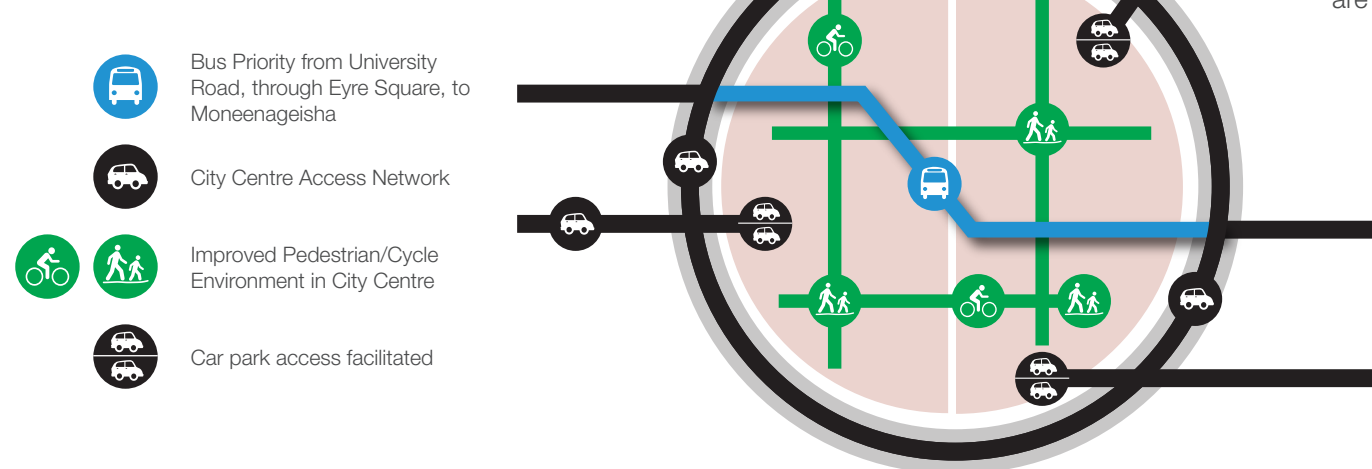


Table 4.1 City Centre Traffic Management

Strategic Aims	Proposed Measures	Design Development and Consideration of Alternatives
<p>Reduce through-car movement and traffic speeds in the city centre.</p>	<p>It is proposed to organise the city centre road network such that there is a ‘city centre access network’ (made up of sections of road circumventing the core city centre area of Galway, rather than a continuous road) along sections of the following roads:</p> <ul style="list-style-type: none"> • Lough Atalia Road; • Dock Road/Merchants Road; • Wolfe Tone Bridge; • Father Griffin Road; • The Crescent; • St. Mary’s Road; • Lower Newcastle Road; • Quincentenary Bridge; • Sean Mulvoy Road; and • Moneenageisha Road. <p>The city centre access network will provide access to the city centre and a through route for local journeys. A secondary network of road access routes will also provide access to car parks (including Fairgreen Road, Bóthar Na mBan and Headford Road).</p>	<p>Lough Atalia Road is designated as part of the city centre access network in preference to College Road (which is more suitable as a bus route), as it provides a route to car parks on the south side of the city centre and to the docks area, and it also forms a direct connection to Dock Road, Wolfe Tone Bridge and to Galway Port.</p> <p>The city centre access network has two orbital river crossings, at Wolfe Tone Bridge and Quincentenary Bridge, with the latter also serving as a key route for intra-city through-traffic.</p>
<p>Prioritise Public Transport movements in the city centre.</p>	<p>A public transport route, the ‘Cross-City Link’, is to be implemented through the core city centre area (with restrictions on other traffic). The Cross-City Link is routed along University Road, across Salmon Weir Bridge, along Eglinton Street, around Eyre Square and along Forster Street and College Road.</p>	<p>Salmon Weir Bridge was identified as the preferred bus-only route on the west side of the city centre. Alternatives were also considered at:</p> <ul style="list-style-type: none"> • Wolfe Tone Bridge, which has a poor connection with the bus lane corridor on Seamus Quirke Road; and • Quincentenary Bridge which was found not to align as well with passenger desire lines (particularly into the city centre). <p>On the east side of the city centre, establishing a bus priority route along College Road is identified as the most appropriate and feasible means of ensuring that buses and coaches can travel directly to and from the city centre via both the Old Dublin Road and Wellpark Road.</p>

4.2 City Centre Access Network

It is clear that the future increase in travel demand cannot be catered for by private vehicle trips alone. In order to ensure that the overall transport system can facilitate this demand, some road space will need to be dedicated to active modes and public transport.

However, given the catchment of Galway City, some journeys by private car will still be necessary, and HGVs will continue to need access to the city and the port. A clearly defined 'city centre access network' is proposed to enable traffic to access and move around the core city centre area. This will facilitate access to car parks, allow traffic to access the city centre at the most appropriate entry points for its ultimate destination and allow for reduced cross-city traffic along specified corridors.

The city centre access network shown in Figure 4.2 illustrates the optimum routes to key destinations in central Galway. Vehicular traffic will travel in both directions on Lough Atalia Road, will use the current one-way system around Dock Road and Merchants Road, and will travel in both directions across Wolfe Tone Bridge, continuing west towards Salthill Promenade along Whitestrand Road (R336).

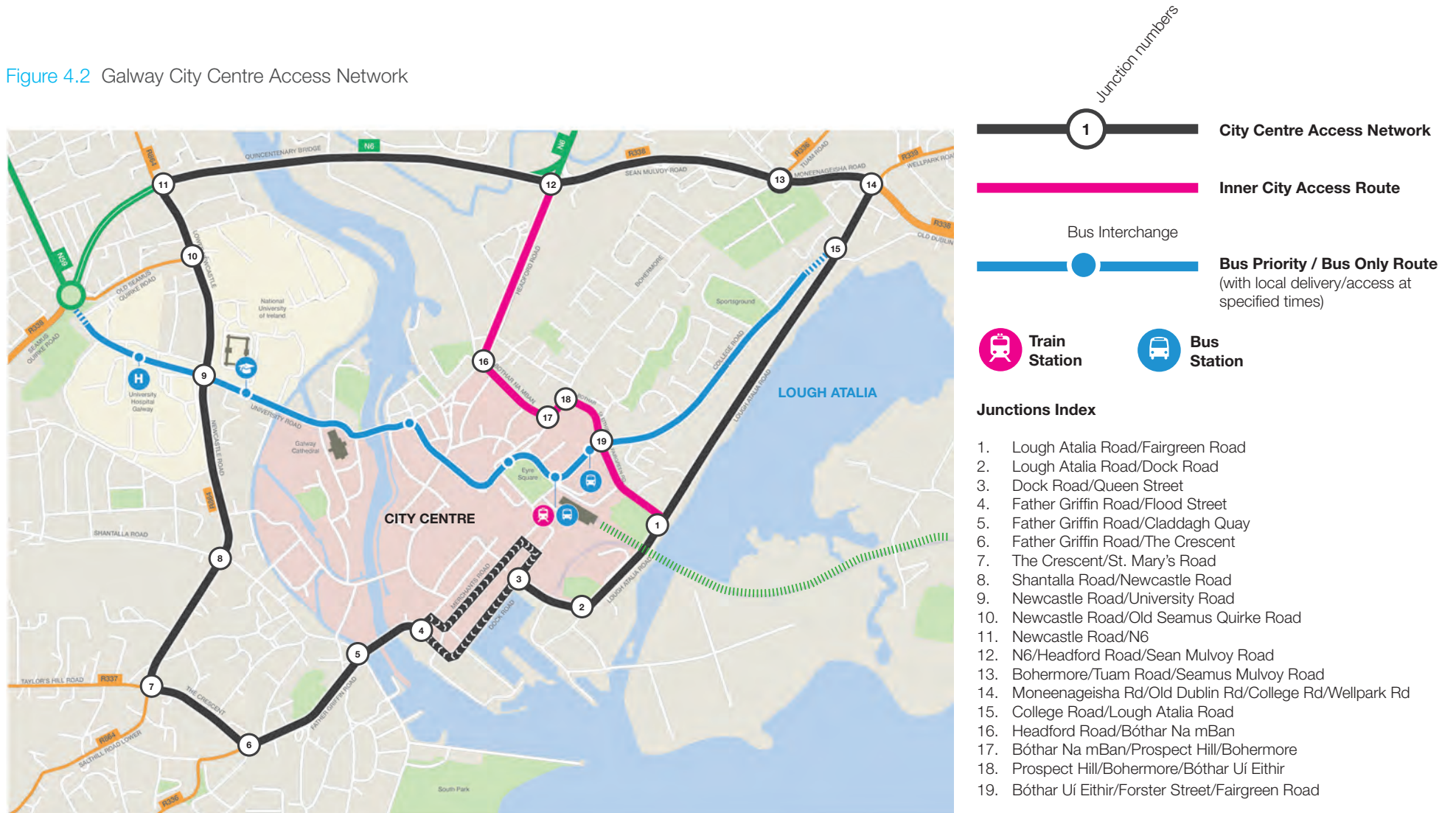
It will be possible to access the Lower Salthill and Taylor's Hill areas by continuing on Father Griffin Road, but traffic access in this area will be subject to junction revisions that will enable continuous bus priority from Salthill Road Lower (Devon Park junction) to St. Mary's Road and Newcastle Road. Access to Shantalla will be possible from the Salthill and Fr. Griffin Road areas, but traffic management measures will make it more favourable to access Shantalla from the R338 Seamus Quirke Road-Bishop O'Donnell Road corridor.

Access to Salthill, Ragoon, Westside, Newcastle, University Hospital Galway, and NUIG will generally be provided from that corridor. The city centre access network will have its primary junctions at the Bodkin junction (for access to Headford Road shopping area and Wood Quay), Sean Mulvoy Road for access to Bohermore, and Moneenageisha Road in order to connect with Lough Atalia Road.

In conjunction with these revisions, a two-way inner city access route comprising Bóthar na mBan, Bóthar Bhreandáin Uí hÉithir and Fairgreen Road will provide an additional inner link from the Headford Road to Lough Atalia Road. In effect, private motorised traffic will be able to access the city centre from all directions, and to exit on the same side. In order to circulate within the city however, cars will have to use the orbital River Corrib crossings on the city centre access network.

Key Changes: Under these proposals, Bóthar Bhreandáin Uí hÉithir and a section of Fairgreen Road will experience some change in movements, becoming a two-way route for traffic.

Figure 4.2 Galway City Centre Access Network



4.3 The Cross-City Link

The 'Cross-City Link', as illustrated schematically in Figure 4.1 consists of a central corridor traversing the core city centre area, which will be restricted to use by public transport vehicles, pedestrians, cyclists and local residential motorised access only. It will enable efficient and reliable public transport to and through the city centre from University Road, across Salmon Weir Bridge, along Eglinton Street, around Eyre Square and along Forster Street and College Road. This forms a central route for public transport, cyclists and pedestrians accessing key areas such as University Hospital Galway, NUIG, the retail and recreational centre of the city and public transport hubs at the train and bus stations. Public realm improvements are proposed along the Cross-City Link to provide an enhanced environment for cycling and walking, and overall this will create more pleasant surroundings for journeys to and through the city centre. Further details of these proposals are presented in Section 7.

The image to the right shows a conceptual representation of the urban character at Galway Courthouse in the vicinity of Salmon Weir Bridge as a result of the Cross-City Link, and the associated reduction in motorised traffic flows.

The Cross-City Link concept - Galway Courthouse & environs



The Cross-City Link



4.4 Core City Centre Access

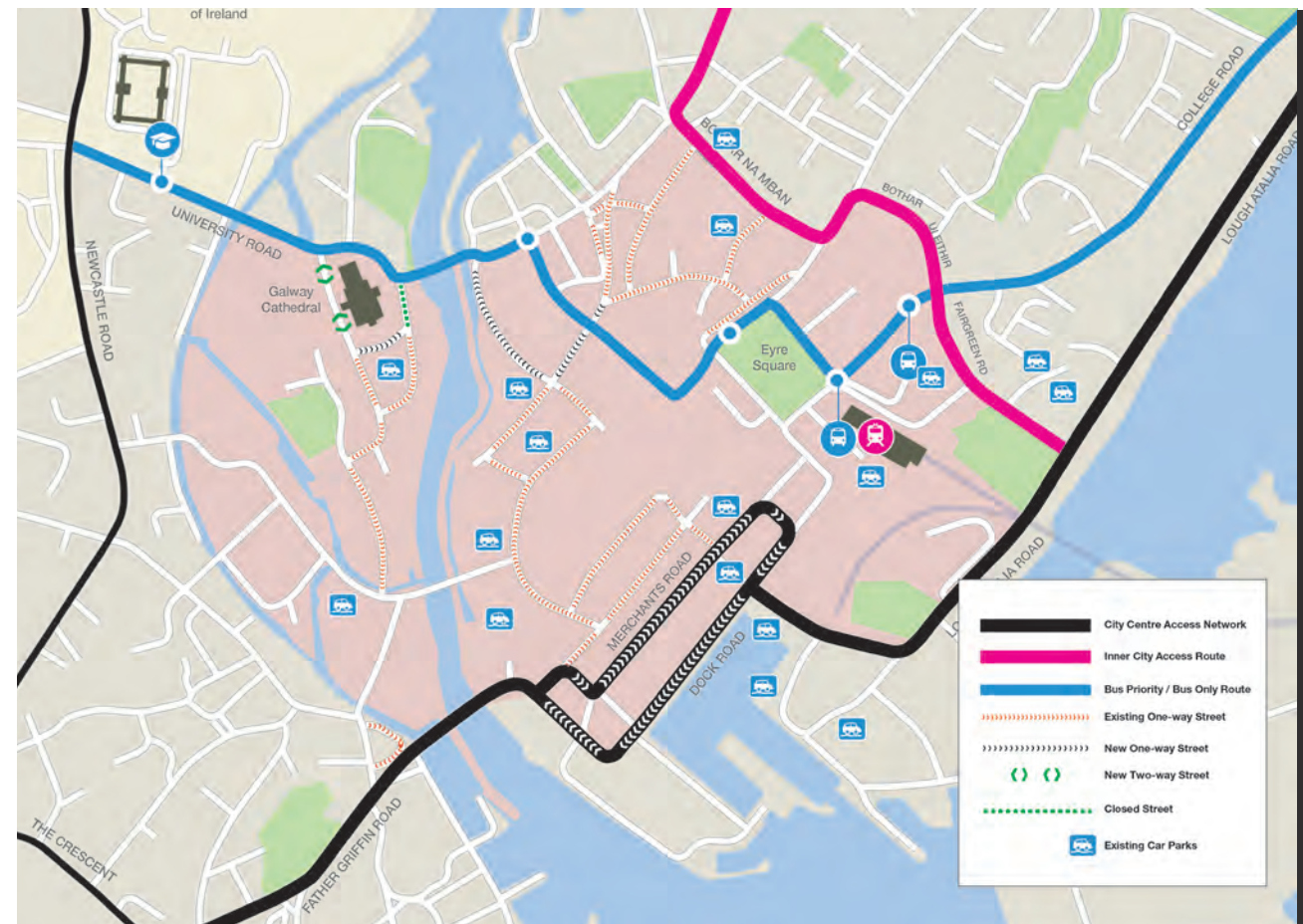
The core city centre area inside of the city centre access network, will see road space reallocated to prioritise public transport and active modes. This will in turn facilitate public realm improvements along the Cross-City Link corridor, but requires changes in movements for private cars within the city centre to facilitate this. The proposed movement strategy can be seen in Figure 4.3. Access to off-street car parking is maintained via these movements. The city centre remains accessible, but priority is no longer given to the private car in this area.

Key Changes

The core city centre area will experience the following changes in movements:

- University Road, Salmon Weir Bridge, Eyre Square, Victoria Place, Forster Street and College Road will become public transport and local access only;
- St Mary Street will become one-way west-bound;
- Newtownsmith will become one-way north-bound; and
- Access to the Cathedral and car park by car will be from the western side only. This access will become two-way.

Figure 4.3 Core City Centre Area



The core city centre area within the City Centre Access Network will see road space reallocated to prioritise public transport and active modes.



Core City Centre Area concept - Eyre Square North

4.5 Road and Street Network

The existing wider road network is crucial to the operation of the city and surrounding region. Due to the rural nature of the immediate surroundings of the city, and given the wide distribution of destinations and trips to, within and across the study area, it will not be possible to provide sufficient public transport alternatives to fully address the transport demand. Even with the anticipated increased uptake in walking, cycling and public transport use, the regional and national road network is likely to suffer an increasing degree of congestion. In the peripheral urban and rural areas travel by private car will therefore remain a key part of the transport system as a whole.

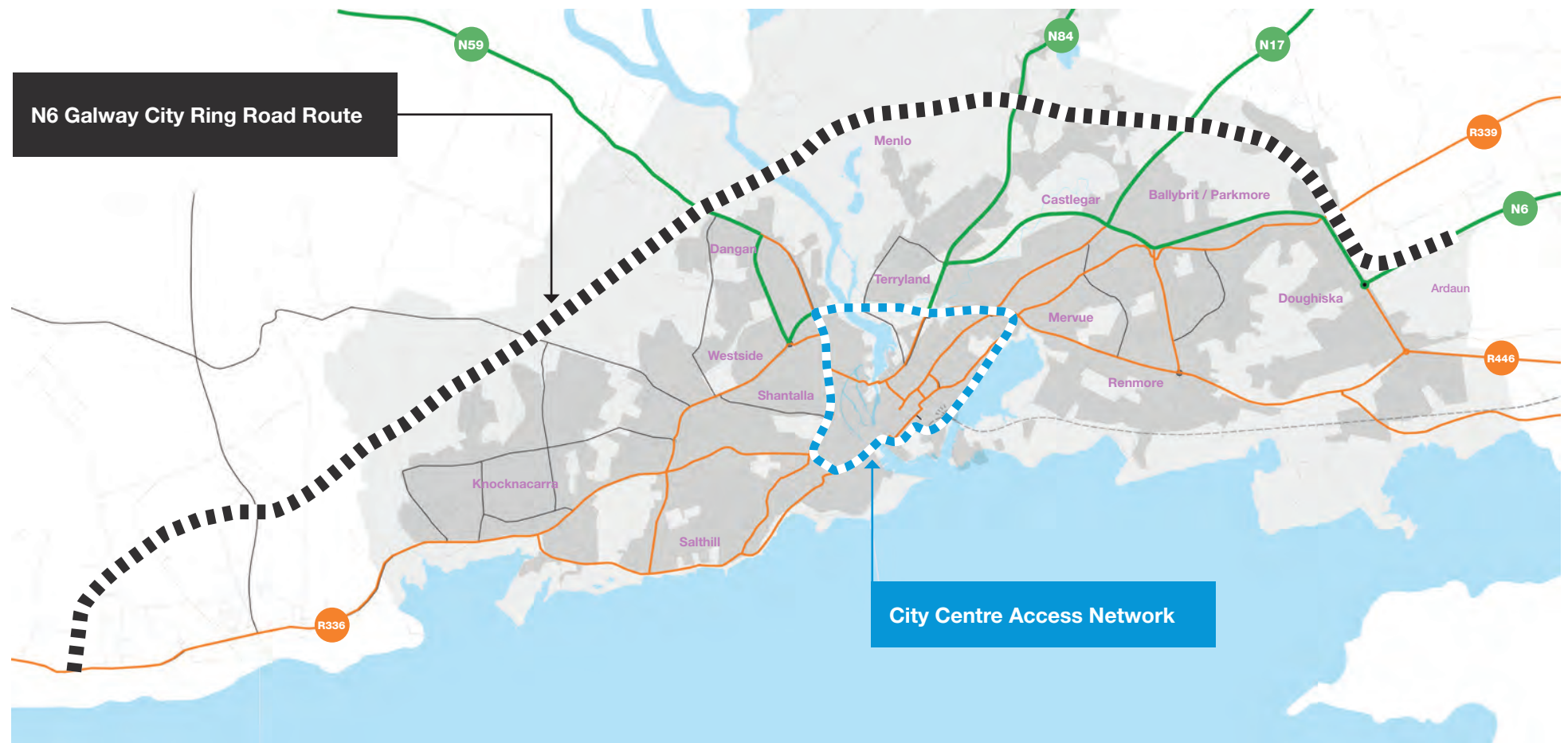
Upgrades to junctions along the N6 have and will continue to improve the performance of this road, but scope for additional capacity is limited by the number and nature of the river crossings. In order to enhance Galway's function as a regional city and to permit continued growth, an additional river crossing is required. The N6 Galway City Ring Road project has identified the most suitable corridor for an orbital road scheme for Galway. The route for this road scheme is presented in Figure 4.4.

The importance and benefits of the proposed orbital route to the delivery of an overall integrated Transport Strategy for Galway have been established as part of the draft strategy development process, as set out earlier in Chapter 3. Table 4.2 summarises the aims, proposals and alternatives considered for the road and street network measures.

Table 4.2 Road and Street Network

Strategic Aims	Proposed Measures	Design Development and Consideration of Alternatives
<p>Provide resilience of operation of the road network such that all travellers have a reliable (not necessarily fast) journey time.</p>	<p>An outer orbital route is recommended in order to enhance resilience of the Galway Transport Strategy, by reducing congestion on other principal roads, and providing opportunity for re-allocation of road-space within the city for bus priority and cycle lanes.</p> <p>In addition to the outer orbital route, a number of ancillary, localised road links are proposed to improve connectivity at a local level for motorised traffic, pedestrians, cyclists and buses.</p>	<p>Upgrades of junctions along the N6 have and will continue to improve the performance of this road, but this is limited by the number and nature of the river crossings. A new orbital road link is required to enhance the resilience of the network, and cater for growth of the city. The N6 Galway City Ring Road project has investigated options – and a feasible corridor has been identified for an orbital road – with associated road links.</p> <p>Numerous public transport scenarios were modelled in order to assess non-road-based solutions – but provision of a new orbital road was found to provide the best overall benefit (in tandem with multi-modal improvements elsewhere).</p>
<p>Provide road network improvements to cater for those journeys which are not able to be made (in a viable manner) by public transport, by cycle, or on foot.</p>	<p>An outer orbital route will provide a convenient route for some car-based journeys which are not able to be made easily by other modes – such as through-journeys.</p>	<p>The road schemes proposed as part of the GTS are not exhaustive, and further road upgrades or new road links may be necessary for redevelopment of existing sites, or for new developments such as the planned Ardaun corridor, for example.</p>

Figure 4.4 N6 Galway City Ring Road



4.6 Parking

As with all urban centres, the supply and management of parking is fundamentally linked to the management of travel demand. While the supply of parking is not mutually exclusive of public transport, there is a need to strike a balance between the two. Within the city centre, there are over 4,000 off-street parking spaces, and a further 700-800 on-street spaces. A number of these car parks are primarily structured around long-stay parking, which is available for as little as €4 per day.

As part of this draft strategy, it is proposed to reduce the dominance of car parking within the city, and particularly to shift the emphasis from on-street to managed off-street parking provision. This effectively requires high-quality alternatives to car-based commuting, namely the walking, cycling and public transport proposals outlined in the Transport Strategy. A number of the existing car park sites within the city represent development opportunity sites, and over time the development of these sites may see a natural reduction in parking stock.

Parking aims and proposed measures are summarised in Table 4.3.

Table 4.3 Parking

Strategic Aims	Proposed Measures	Design Development and Consideration of Alternatives
<p>To provide efficient access arrangements for city centre car parks.</p>	<p>It is proposed to rationalise the city centre street hierarchy such that well-signed routes to car parks are available via the city centre access network and local access routes. Variable Message Signage is also proposed on approaches to the city as well as an associated Parking Guidance System.</p>	<p>Parking is a key element of choice of travel mode, and also can be a physical detriment to city-centre streets. Management of access routes, on-street parking, and pricing are considered as supporting an overall strategy to improve transport conditions in the city centre.</p> <p>In order to discourage commuter car parking and encourage transfer to public transport, it is proposed to restrict car parking within the city centre area. In addition, a strong focus on encouraging major employers to develop robust mobility management proposals will form part of the longer-term strategy for addressing the existing demand for car parking within the city centre. The adoption of reduced parking standards for developments that are located in proximity to core (high-frequency) public transport is also proposed.</p>
<p>To ensure that parking is not significantly cheaper than public transport.</p>	<p>To adopt a philosophy that parking fees are similar or more than typical bus fares. E-parking (parking by phone or text) fees may assist in equalising parking and bus prices.</p>	
<p>To reduce the impact of parking on the city centre environment and movement of buses and cycles.</p>	<p>It is proposed to remove most of the on-street parking in the city centre to provide more road-space for pedestrians and public transport, while retaining disabled driver parking. Improved enforcement is also proposed. Some rationalisation of on-street parking on radial access routes will also assist bus movement.</p>	

4.7 HGV Management

Efficient freight transport and delivery systems are essential for the economic activity of the city and surrounding areas. Galway Port and industrial areas need reliable transport connections for the movement of goods, while commercial outlets and shops need dependable distribution systems to manage stock levels and provide customer deliveries. Given the dispersed rural nature of the region and limited national rail network, movement by road is, and will continue to be, the dominant mode of freight transfer in the region. Consequently, development and management of the road network must take the movement of goods vehicles into account.

HGV management aims and proposed measures are summarised in Table 4.4.

Table 4.4 HGV Management

Strategic Aims	Proposed Measures	Design Development and Consideration of Alternatives
<p>Restrict HGV access to the city centre to only those vehicles with destinations (or origins) in the city centre.</p>	<p>HGV movement around the city will be accommodated via the city centre access network, including access to the city centre and the port.</p>	<p>The HGV Management Strategy needs to balance the operational requirements of Galway Port, Industrial Areas and the city centre commercial district with the need for efficient movement of people and the creation of an attractive city environment. Restrictions on HGV movements to dedicated routes only, such as the city centre access network, and limiting the timing of deliveries in the city centre are therefore considered essential to the draft Transport Strategy.</p>
<p>Manage the routing and timing of deliveries to the central area.</p>	<p>A loading and delivery strategy for the core city centre area is proposed, restricting access to off-peak hours, similar to the current arrangements on Shop Street and Quay Street.</p>	

5 Local Public Transport



A central objective of the strategy is to provide an efficient, reliable and attractive bus service for Galway.

Introduction

Improvement to local public transport is a key aspect of much of the strategic objectives, namely:

- enhancing accessibility through an efficient and reliable transport network; and
- maximising opportunities for interchange in order to integrate transport modes.

At present, public transport in the city comprises buses and taxis, and proposals to upgrade these services have been assessed and developed as part of the draft Transport Strategy.

Options assessment as part of the draft Transport Strategy development identified that a high-quality, high-frequency bus service is the most appropriate form of public transport provision for Galway City and its' environs.

5.1 Public Transport in Galway City

Public transport in Galway currently has a low mode share with usage below 10% of motorised travel. A step-change in the provision and usage of public transport is needed to meet the draft Transport Strategy objectives, and hence an essential component of the draft Transport Strategy is to provide an efficient, reliable and attractive bus-based public transport service for Galway, such that a high proportion of trips to and within the city and environs are able to be made by bus. This requires the achievement of both journey-time reliability and journey speeds sufficient to make the service competitive against private car usage.

The methodology undertaken to develop the proposed Galway City Bus Network was as follows:

1. Develop the most appropriate bus network for the study area, based on origin-destination patterns, and maximising network coverage and services to the principal trip attractors and generators; and
2. Development of infrastructural priority proposals for the network, based on on-site investigations to determine engineering constraints.

A key element of the bus network is that the proposed high-frequency services will operate cross-city, which will provide direct services for passengers wishing to travel to work on either side of the city, and improve east-west connectivity to include Bearna and Oranmore.

Once established, it is intended that the level of travel demand on the proposed network will be regularly monitored, with some routes potentially being upgraded to Bus Rapid Transit (BRT) services in the future by increasing the level of frequency and service provision accordingly, if development along the routes intensifies and patronage increases sufficiently.

On approaches to, and through the city centre, it is essential that public transport travels relatively unhindered by road congestion (to achieve high patronage and to ensure that services are financially viable). This will require implementation of traffic management measures and the removal of through-traffic from the city centre, as set out in Section 4, in order to prioritise bus services.

In order to provide a framework for developing measures, a series of aims for local public transport have been set out – allowing for network proposals to be developed. The proposals are set out in Table 5.1.

Table 5.1 Local Public Transport

Strategic Aims	Proposed Measures	Design Development and Consideration of Alternatives
<p>Maximise patronage attraction by providing a high-frequency public transport network.</p>	<p>The existing main bus corridors are proposed to be upgraded to ‘high frequency’ public transport routes which will form a ‘fixed’ spine of future public transport in Galway. These routes are proposed as follows:</p> <p>West</p> <ul style="list-style-type: none"> Western Distributor Road – Seamus Quirke Road – University Hospital Galway – University Road, and on to Eyre Square Knocknacarra - R336 Coast Road – Salthill – Newcastle Road – University Hospital Galway – University Road, and on to Eyre Square <p>East</p> <ul style="list-style-type: none"> Parkmore – Ballybrit – Monivea Road – Wellpark Road –College Road – Eyre Square Parkmore – Doughiska – Old Dublin Road – College Road – Eyre Square <p>City Centre</p> <ul style="list-style-type: none"> University Road - Salmon Weir Bridge - Eglinton Street - Eyre Square – Forster Street – College Road 	<p>Design development has considered various alternative public transport route corridors on the basis of:</p> <ul style="list-style-type: none"> Matching the proposed network with the existing bus lanes; and Evaluation of the physical roadspace and land-use within which bus priority infrastructure can realistically be delivered within the constraints of the existing land use. The impacts of altering land-uses were also considered <p>To the west, the Seamus Quirke Road – Western Distributor Road corridor has existing bus priority measures in place and, crucially, there is space available for future provision of bus lanes (along Western Distributor Road) – and hence this represents the most suitable corridor – although other corridors west of the city may carry localised bus services.</p> <p>To the east, Old Dublin Road is an established bus corridor with substantial bus priority measures already in place.</p>
<p>Provide city-wide network coverage / connectivity to all parts of the city.</p>	<p>Local buses may also be required to maximise the overall bus network and to provide bus connectivity to areas that lie outside of the principal bus network. Local buses will also provide connection and transfer to and from the city bus network.</p> <p>This ancillary local network will necessarily evolve over time (e.g. as developments proceed), and hence does not represent a fixed network. As patronage increases over time, these routes may be upgraded to higher frequency services, where practical to do so.</p>	<p>On the west side of the city centre core area, a ‘bus-only’ route via Salmon Weir Bridge was identified as the most appropriate and feasible means of delivering the essential combination of short and reliable journey times through the city centre. Alternatives were also considered as follows:</p> <ul style="list-style-type: none"> Via Wolfe Tone Bridge - there is very poor connection with the bus lane corridor on Seamus Quirke Road; and Use of Quincentenary Bridge as a major bus corridor for radial and cross-city routes was not considered to be the most appropriate as the majority of passengers throughout the day are destined for key attractors south of the bridge, and in the city centre, as well as to the east. In the case of cross-city journeys, it is considered essential that buses operate through the central area for interchange with other services at Eyre Square and at Ceannt and Fairgreen Stations (but with bus priority to maintain speed and reliability).
<p>Provide reliable journey times.</p>	<p>Bus Lanes and Bus Priority measures have been designed at a conceptual level along the proposed bus network corridors as follows:</p> <ul style="list-style-type: none"> Western Distributor Road – Seamus Quirke Road Corridor; Salthill Road / St Mary’s Road / Newcastle Road Corridor; Old Dublin Road Corridor; Wellpark Road / Monivea Road Corridor; and City Centre Corridor (University Road - Salmon Weir Bridge - Eglinton Street - Eyre Square – Forster Street – College Road). 	<p>On the east side of the city centre, establishing a bus priority route along College Road was identified via travel demand as the most appropriate and feasible means of ensuring that buses and coaches could travel directly to from both the Old Dublin Road and Wellpark Road. Alternatives were also considered as follows:</p> <ul style="list-style-type: none"> Bohermore – does not provide direct connection with Old Dublin Road/Wellpark Road, and hence there is a high degree of risk of congestion at Moneenageisha causing journey time delay; and Lough Atalia Road – considered to be more suitable as a city centre distributor road, as it provides a route to car parks on the south side of the city centre (and to the docks area).



5.2 Developing the Galway City Public Transport Network



Using the existing bus route alignments as a starting point, a cross-city network proposal was developed. This proposal was based on linking the residential origins to the key destination locations.

The routing of buses was modified in some cases to better reflect the current origin-destination combinations extracted from the 2011 POWSCAR data, and all routes were designed to allow for cross-city interchange at key locations – most noticeably at stops within the core city centre area.

By pairing cross-city routes, it was possible to reduce the number of services to 5, making the network more legible for residents and visitors alike. Figure 5.1 illustrates the proposed bus routes.

The proposed routes are:

Green Route

Knocknacarra – City Centre – Parkmore Industrial Estate (via Seamus Quirke Road and Dublin Road);

Red Route

Knocknacarra – City Centre – Parkmore Industrial Estate (via Salthill and Ballybrit Industrial Estate);

Blue Route

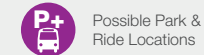
Clybaun Road – City Centre – Castlegar (via Dr. Mannix Road and Tirellan);

Yellow Route

Dangan – City Centre – Parkmore Industrial Estate (via Westside Shopping Centre and Castlepark); and

Brown Route

Bearna – City Centre – Oranmore (via Seamus Quirke Road and Deerpark Industrial Estate)

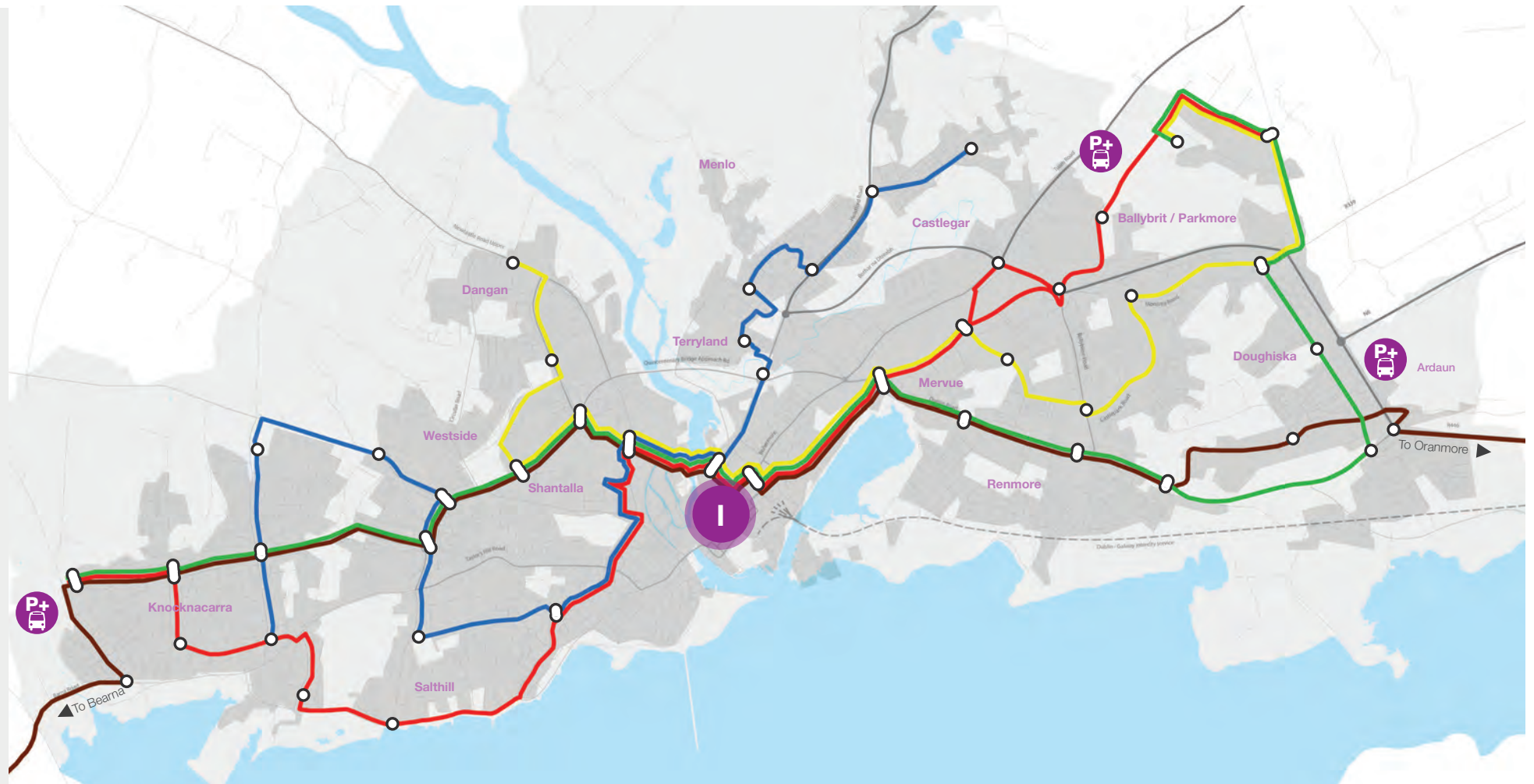


Possible Park & Ride Locations



City Centre Interchange

Figure 5.1 Proposed Bus Routes



5.2 Developing the Galway City Public Transport Network (cont'd)



All routes will serve the major trip attractors of the City Centre, Galway University Hospital and NUIG, as well as linking all major destinations across the city into the public transport network.

Service Frequency

It is critical that the new network is serviced by frequent and reliable bus services. One of the problems with the current bus provision in Galway is the relatively poor frequency of services across the network, with only one route (of the 11 currently serving Galway City) operating more than 4 buses per hour per direction in the peak hour.

To ensure that the bus is a convenient and fast transport option in Galway, as well as to ensure that interchange is considered as an integral element of the bus network, it is essential that the frequency and reliability of bus services is maintained across the bus network, and throughout the day. It is an aspiration of this draft strategy that all 5 routes will operate at a 15-minute frequency (or better) during the peak period (with the red and green routes likely to operate at a 10-minute frequency or better initially based on existing demand). It is also an objective of this draft strategy to ensure that a high bus frequency is maintained across the whole day to ensure that the bus network is a viable alternative to other trip purposes, as well as peak hour commuting.

Infrastructure Proposals

A number of the 5 routes proposed above lie on existing principal public transport corridors, and are already served by some of the existing city bus services. These sections of the proposed network, which will route in a direct manner on key travel corridors will be the primary focus for implementation of significant infrastructural priority measures (through provision of bus lanes, removal of pinch points and delays, and maximising the efficiency and reliability of services on the proposed bus network) to make the bus service more attractive than the private car. Other sections of the proposed bus network are more heavily constrained in terms of engineering design due to their less-direct routing and due to the route characteristics – these sections of the proposed bus network will be provided with priority infrastructure where feasible.

Network Catchment

An analysis of the population and employment catchment of the proposed bus network was undertaken. This assessment quantifies the number of residential and commercial properties within a 10-minute walking catchment of the proposed bus network. This analysis considers the existing road network, and does not take into account any proposed improvements in pedestrian accessibility to the bus routes, however it does provide a good indication of how well the new bus network will

serve Galway City. The spatial catchment of the cross-city bus network is set out in Figure 5.2.

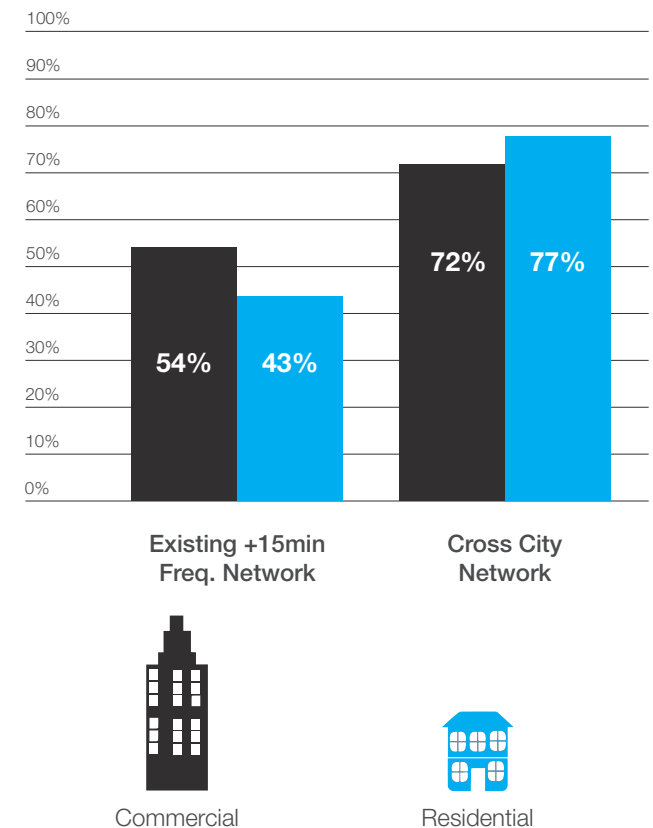
The spatial coverage of the proposed bus network was also assessed against the existing coverage of bus services in Galway. To facilitate a direct comparison, the existing bus services were amalgamated to establish the road routes which are currently served by buses passing at a frequency of more than 4 per hour. Within the study area there are circa 35,000 properties, 90% of which are residential. It is the intention to ensure that as

many of these properties as possible are within 10 minutes walking distance of a bus service. Figure 5.3 shows the percentages of properties which are within a 10-minute walking catchment of the existing and proposed bus network. It is clear that the proposed cross-city network will provide a much higher level of accessibility to a high frequency bus service, with over 70% coverage of both residential and commercial properties. This compares well to the existing bus provision, which offers a high frequency service to only 43% of residential properties and 54% of commercial premises.

Figure 5.2 Cross-City Bus Network Catchment



Figure 5.3 10-minute walking catchment of existing and proposed high-frequency bus networks



5.3 City Centre Public Transport Interchange

It is recognised that usage of public transport can be made significantly more attractive and convenient (as an alternative to the car) by providing opportunities for transfer between services, which can significantly increase the journey options for travellers. The number of destinations served on a single end-to-end service can be increased significantly by providing easy transfer to other services.

The opportunities for public transport interchange in the city centre under the Transport Strategy are illustrated in Figure 5.4, with aims and proposed measures summarised in Table 5.2.

Figure 5.4 City Centre Public Transport Interchange

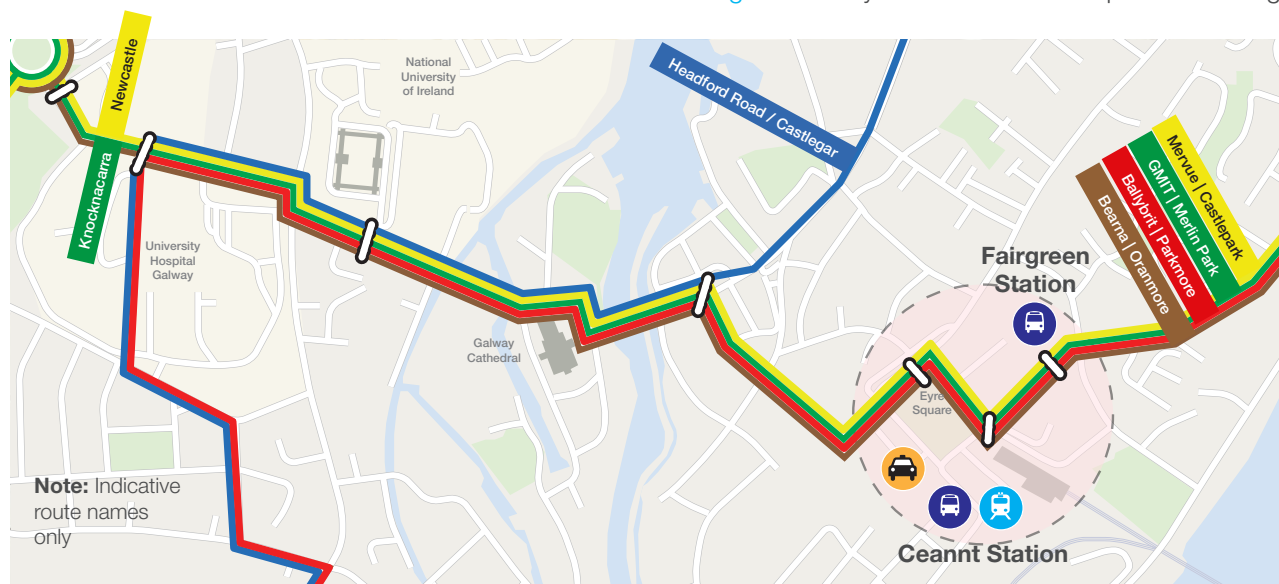


Table 5.2 City Centre Public Transport Interchange

Strategic Aims	Proposed Measures	Design Development and Consideration of Alternatives
<p>Maximise range of destinations served by providing convenient interchange between public transport services.</p>	<p>Eyre Square has been identified as the main hub for Bus/Bus transfer – as well as Bus/Train and Bus/Coach at Ceannt Station/Fairgreen Station. Other key bus transfer hubs will be located at:</p> <ul style="list-style-type: none"> • University Hospital; and • University Road/Cathedral. 	<p>The location of interchange points is a function of the public transport routes. Design development has focused on Eyre Square as the primary location for interchange – due to its inherent advantages over other locations, as follows:</p> <ul style="list-style-type: none"> • It is located on the majority of the proposed bus routes; • It is proximate to Ceannt Station (bus and rail) and Fairgreen Station (bus); • It is already accommodating key bus stops; • It is a busy area and hence provides bus passengers with a secure waiting environment; and • It has retail and café/snack premises close by, which enhance the interchange experience.
<p>Implement multi-mode ticketing which allows transfer between modes.</p>	<p>It is proposed that all services will allow for cross-ticketing such that passengers can transfer between routes without extra charges.</p>	

5.4 Supporting Measures for Local Public Transport

Traffic Restrictions in the City Centre

It is essential to the operation of a successful public transport system that bus priority is provided within the city centre area. Traffic management proposals to achieve this include:

- Restrictions to general traffic flow on University Road, College Road, Forster Street, Eglinton Street, Williamsgate Street, Prospect Hill, Victoria Place and around Eyre Square;
- Segregation of pedestrians from buses at Salmon Weir Bridge through provision of a new, parallel pedestrian bridge adjacent to the existing structure; and
- Designation of Salmon Weir Bridge as a public transport-only bridge crossing

Bus Fleet and Stops

As part of the public transport quality of service provision under this draft strategy, it is proposed to:

- Upgrade the existing city bus fleet for comfort (seating arrangements, Wi-Fi enabled vehicles, etc.);
- Provide vehicles suitable for access by mobility impaired persons, including wheelchair accessibility and space provision;

- Provide high-quality bus shelter facilities including seating, information panels, real-time information displays, with a standardised bus stop pole style and secure cycle parking where appropriate;
- Review and rationalise the spacing of stops across the network; and
- Integrate the bus fleet Automatic Vehicle Location (AVL) system and the Galway City Council Urban Traffic Control (UTC) system in order to allow the adaptive UTC system to enable and/or improve bus priority at signalised junctions.

Ticketing and Payment

It is proposed to:

- Introduce a simplified payment structure, comprising alternative fares for radial journeys to the city centre only and for cross-city journeys;
- Introduce the phased implementation of an easy to use cashless payment system by means of the Leap card and off-board ticketing;
- Investigate other forms of contactless payment in the coming years;
- Explore potential future integration with Demand-Responsive Transport systems, including Mobility as a Service (MaaS) – which essentially means that travel can be made across different modes but using a single mobile device application for journey information and payment.

Marketing and Branding

It is intended that a single 'brand' is applied to all local public transport in Galway (across all transport organisations); this will take the form of logos, maps, ticketing, timetables and signs. Branding will also be included in Mobility Management initiatives at major employment/educational facilities and School Transport Plans.

Access on Foot to Public Transport Stops

It is essential that passengers can walk directly to stops on the public transport network, and measures are proposed as follows:

- Around the city, it is proposed to carry out a continuous programme of improvements to address permeability and severance issues prevalent, with a view to maximising the walking catchment to stops on the bus network; and
- Other improvements along links and at junctions will seek to improve facilities for pedestrians, in particular those with mobility impairments.

Taxi and Demand Responsive Services

Eyre Square will remain the main central taxi rank. Locations on the east and west of the city centre will also be identified such that taxis can travel directly to/from outer areas of the city without a need to travel through the centre.

It is recognised that taxi services will over time migrate to SMART-orientated, demand-responsive transport with information and payment via SMART device technology.

6.1 Regional/Intercity/Commuter Bus & Coach Network

The principal destinations within the city for regional and national bus services will be Eyre Square, at Ceannt Station and at Fairgreen Coach Station. There are also coach parking facilities on Merchants Road and at Galway Cathedral.

Regional services travelling to and from Galway City will for the most part avail of the bus network infrastructure proposals within the city area, in addition to other proposals outside the city, including, for example the Tuam Road bus corridor scheme currently under development.

As part of the Cross-City Link proposal, the proposed traffic restrictions on College Road will significantly benefit services from the south, east and north-east; it is envisaged that College Road will become the primary route to and from the City for these services. College Road provides direct access to Fairgreen Coach Station, and to Ceannt Station, via Eyre Square. For services approaching from the west and north-west, the proposed infrastructure measures on the western side of the city, and the proposed restrictions on University Road and at Salmon Weir Bridge will provide high-quality connectivity to and from the city centre.

Regional Public Transport aims and proposed measures are summarised in Table 6.1.



Table 6.1 Regional Public Transport

Strategic Aims	Proposed Measures	Design Development and Consideration of Alternatives
Coaches/buses should have reliable journey times in the city.	Bus lanes proposed for city bus services are in general also suitable for buses and coaches with origins outside the city.	Design development has focused on city centre traffic management and local bus priority measures – especially in the city centre. These measures are considered to match the aims for efficient and reliable coach services.
Good access in and out of bus/coach termini in the city centre.	The proposed city centre traffic management, with reduced through-traffic and local distributor routes will ensure that coaches are able to access termini with minimal congestion.	
Interchange between regional and local public transport.	A high-quality city bus network will provide interchange opportunities for regional bus travellers – such that passengers can switch modes at a rationalised number of hubs outside the city centre.	

6.2 Rail

Ceannt Station will remain the terminus for rail services to Galway City. Redevelopment works at Ceannt Quarter and improvements at Eyre Square and Fairgreen as part of the Cross-City Link proposals will enhance the passenger experience for rail travel. Garraun will continue to serve as a rail terminus for Oranmore.

In addition, the proposed improved pedestrian and cycle environment within the city centre will contribute to a more attractive rail commute.

Rail service aims and proposed measures are summarised in Table 6.2.



Table 6.2 Rail

Strategic Aims	Proposed Measures	Design Development and Consideration of Alternatives
Increase frequency of rail services.	Rail services will be increased in frequency, subject to sufficient passenger demand and usage.	Ceannt Station re-development will provide an opportunity in the future to enhance interchange between rail and local public transport.
Interchange between regional and local public transport.	Ceannt Station will remain the terminus for rail services to Galway City, and pending major upgrades at the station will significantly improve the offering for passengers. In addition, pending redevelopment works in the vicinity at Ceannt Quarter will re-energise this part of the city centre, and this will complement Eyre Square and Fairgreen as a collective hub for interchange between services within Galway City Centre.	

6.3 Park & Ride

Galway has a high proportion of travel with one end of the journey outside the city. The provision of Park & Ride sites on multiple approaches to the city will be important, and serving these with 'normal' scheduled bus services will maximise their financial viability, and will also offer a wider range of destinations with passengers being able to interchange between routes on the proposed bus network.

This will provide alternatives to the private car for those accessing the city from the county and wider region, and thereby reduce traffic flows to and from the city.

Potential sites for Park & Ride have been identified as part of the bus network development. It is intended that the capacity of these Park & Ride locations will grow organically over time as demand increases.

Park & Ride aims and proposed measures as part of the Transport Strategy are summarised in Table 6.3.



Table 6.3 Park & Ride

Strategic Aims	Proposed Measures	Design Development and Consideration of Alternatives
<p>Maximise destinations reachable by Park & Ride services.</p>	<p>It is proposed to base Park & Ride on the city-wide high-frequency public transport network – such that a range of destinations can be reached.</p>	<p>Potential Park & Ride sites are proposed on the M6, the N17 and west of the city. Locations will need to be investigated in detail and associated bus services planned (as part of the city bus services).</p>
<p>Ensure that Park & Ride is financially sustainable.</p>	<p>Basing Park & Ride on the city-wide public transport network will maximise the financial viability of Park & Ride services. It is intended that the cost of Park & Ride will be integrated with the overall public transport journey fare for passengers.</p>	

6.4 Tourist Coach Parking Management

Tourist/visitor coaches will need to be provided with suitable drop-off/pick-up locations in the city centre, with layover spaces provided in managed locations outside the core city centre area. Routing for coaches can be planned such that use is made of priority bus lanes where appropriate.

Tourist Coach Parking Management aims and proposed measures are summarised in Table 6.4.

Table 6.4 Tourist Coach Parking Management

Strategic Aims	Proposed Measures	Design Development and Consideration of Alternatives
<p>Suitable drop-off/pick-up locations; Controlled coach drop-off/pick-up in the core city centre area; Provision of managed layover coach parking areas outside of the core city centre area.</p>	<p>Possible sites identified to eliminate layover in city centre proper are: Galway Cathedral; Galway Harbour; and Merchants Road.</p>	<p>Potential drop-off/pick-up will need to be investigated in detail and associated designated access routes in the city centre (e.g. using the Cross-City Link bus priority corridor).</p>



7.1 Cycling

In order to meet the strategic objectives of the draft Transport Strategy, the overall aspiration of the proposed cycle network is to provide a safe and comfortable environment for cyclists in the city and surrounding areas, in turn supporting an increase in the number of cyclists and encouraging a greater modal shift from the private car to cycling.

As an area with relatively flat topography and a compact city centre, Galway is well suited to cycling as a means of transport. However, the existing cycling facilities in the city and surrounding areas are limited and discontinuous. The cycle network proposed in this draft Transport Strategy is intended

to maximise the provision of high quality dedicated cycling facilities and to improve measures giving priority to cyclists, encouraging uptake in cycling both for commuting and as a leisure activity in the city and surrounding areas.

The cycle network proposals have been built on investigations made in previous studies as outlined in Section 2. Where possible, the proposed routes are fully segregated, with cyclists physically separated from motorised traffic. In other cases, the network includes on-road cycle lanes and/or wide bus lanes to cater for both buses and cyclists along the same route.

In addition to this, it is intended that proposed traffic management measures will limit access to parts of the city for private motorised vehicles, thereby improving the environment for cyclists, pedestrians and public transport vehicles.

The overall cycle plan has been developed on the basis of three levels of network which support each other and reinforce connections across the study area. These networks are classified as 'primary', 'secondary' and 'feeder' routes, indicating the desired function and character of the cycle route.

With a relatively flat topography and a compact city centre, Galway is ideally suited to cycling as a means of transport.



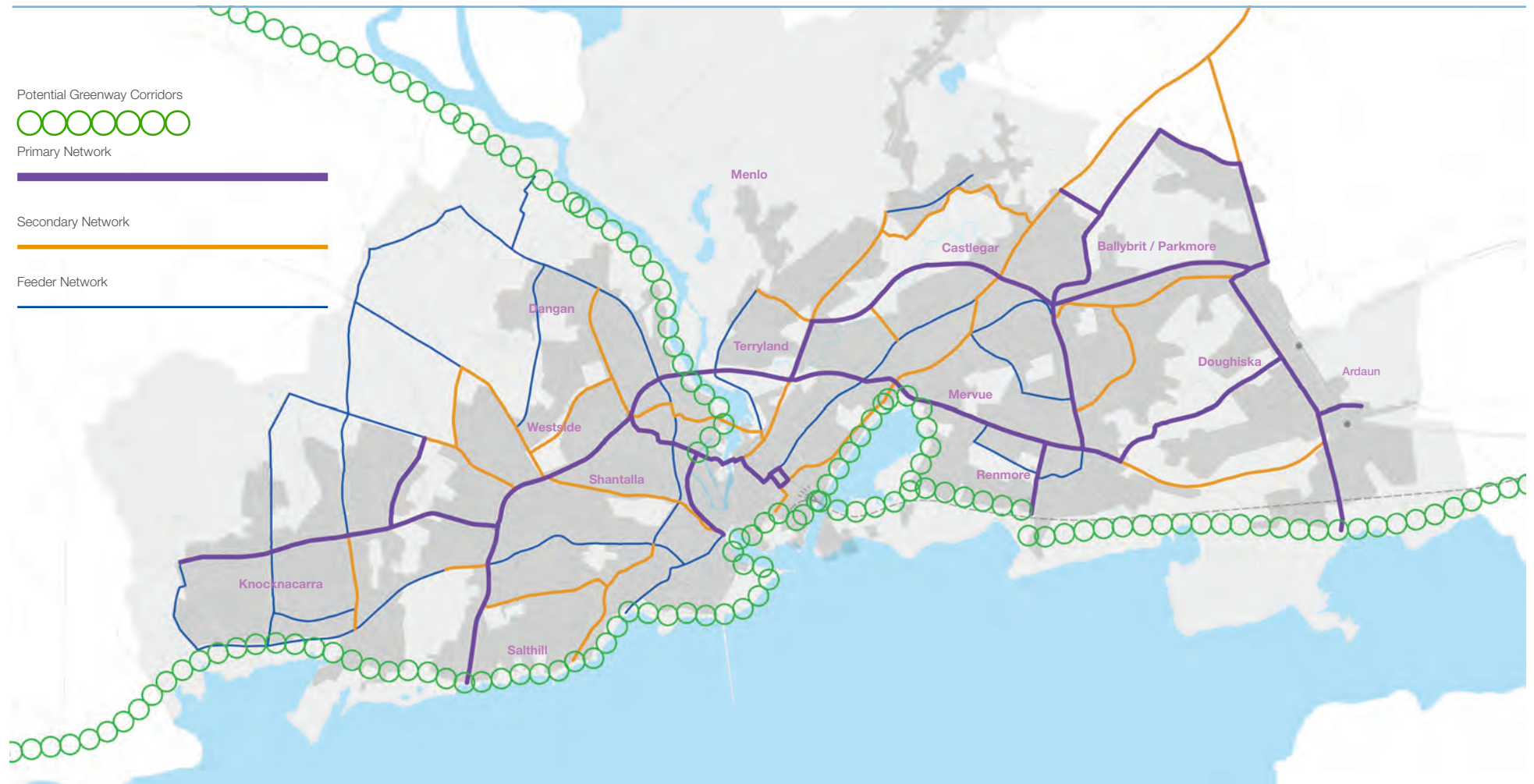
In order to provide a framework for developing measures, a series of aims and proposed measures for cycling have been established, as summarised in Table 7.1. These provide a basis for developing specific plans for infrastructure proposals. The resulting proposed cycle network in this draft Transport Strategy is presented in Figure 7.1.



Table 7.1 Cycle Network Infrastructural Design Measures

Strategic Aims	Proposed Measures	Design Development and Consideration of Alternatives
<p>To provide a primary ‘trunk’ cycle network which will provide a convenient and safe route for medium-distance radial commuter / leisure journeys.</p>	<p>The primary network includes two Greenways providing connectivity for cyclists from nearby towns and villages; one along the western bank of the River Corrib from Galway City to Oughterard, via Maigh Cuilinn; and one along the coast from An Spidéal to Oranmore, passing through Galway City. The latter will continue east, connecting to the Dublin-Galway Cycleway.</p> <p>As part of the Greenway network, it is proposed to carry out investigations to determine the feasibility of connecting from Eyre Square to Renmore via the existing rail crossing over Lough Atalia or via lands at Galway Port, as an alternative to a route to the north of Lough Atalia.</p> <p>Additional primary routes include a cross-city route to the north of the city, building on existing facilities, and a route through the city centre, along with some key north-south links. In general, primary routes are either segregated, off-road cycle only paths, or dedicated cycle lanes along new or existing roads. Wherever possible, these routes are separated from traffic by kerbs or edge markings.</p>	<p>Design development has considered various alternative cycle route corridors on the basis of:</p> <ul style="list-style-type: none"> • Matching the primary network with the existing Greenway proposals and areas of high demand; and • Evaluation of the physical roadspace within which cycle infrastructure can realistically be delivered within the constraints of the existing land use. <p>Conceptual designs have been prepared along sample links and at junctions and pinch points to verify that the proposed networks can be realised.</p> <p>The cycle network design has also included identifying junction upgrades (at a conceptual level) at numerous locations around the city, notably the signalisation of several large roundabout junctions. This will improve the safety of cyclists at these junctions, providing signalised crossing facilities and simplified junctions for cyclists to navigate.</p>
<p>To provide a secondary cycle network which will provide a recognisable grid network for local journeys, and will be connected to the primary network for longer journeys.</p>	<p>The secondary network provides connections from residential areas and areas of employment to the primary network and key destinations. Secondary links are a combination of off-road cycle paths, cycle lanes along existing roads, shared bus and cycle lanes, and traffic-calmed roads. They often run parallel to primary routes, providing an alternative link.</p> <p>In addition to this network, feeder links have been identified on streets and roads which are highly constrained or more suited to other modes, but need to cater for cyclists also. These are generally cycle-friendly advisory routes where traffic calming and management measures allow cyclists and motorists to mix safely.</p>	
<p>To increase options for cycling in and across the city centre.</p>	<p>Through-traffic will be removed from the core city centre area. This will reduce the amount of traffic on these roads, creating a shared environment where cyclists can safely use the existing street network. Cyclists will be permitted to use Salmon Weir Bridge, which is to be designated as public-transport only as part of the Cross-City Link.</p>	

Figure 7.1 Proposed Cycle Network



7.2 Supporting Measures for Cycling



Bike Share Scheme

The Coca-Cola Zero Bike Share Scheme was launched in Galway in 2014. In Galway City, there are currently 15 hire stations. Nine further stations are planned, with future expansion possible depending on uptake. It is anticipated that the development of cycle facilities as outlined above will encourage higher numbers of cyclists, both on private and shared bikes.

Bicycle Parking

Bicycle parking will be provided and/or upgraded near bus stops and key destinations such as the city centre, the rail and bus stations, schools and colleges, the hospitals, shopping areas and other large workplaces.

Permeability and Wayfinding

Permeability is a key constraint for cyclists and pedestrians in Galway. Links between residential areas and/or workplaces will be improved for use by active modes, providing more direct routes. In addition, a cycle route signage programme is proposed in parallel to the development of the cycle network.



**As a city of learning
with a compact,
walkable city
centre, Galway
enjoys a high
walking mode share
of approximately
23%**



7.3 Walking

Galway has significant potential to build on the existing pedestrian environment for the city's residential and commercial community, shoppers and the significant number of tourists who visit the city all year round.

As a city of learning with a compact, walkable city centre, Galway enjoys a high walking mode share of approximately 23% providing a strong foundation from which a prominent and sustainable walking culture can be fostered.



The benefits of pedestrian priority within the city centre are long-recognised, with the pedestrianised area from William Street through Shop Street, High Street and Quay Street representing a major asset to the local economy. Further afield, the canal walkways and the promenade at Salthill are other flagship pedestrian features, as well as amenity routes along the natural assets of Lough Atalia and River Corrib.

While the vast majority of the pedestrian network in the city and suburbs is of reasonably good quality, there are locations where the pedestrian offering is limited, with sub-standard footpaths, lack of crossing facilities and low priority allocation in the hierarchy of road users being common issues affecting pedestrians, particularly those with mobility impairments. Research carried out in recent years has indicated that the proportion of walking trips decreases considerably with increasing distance from the city centre.

The limited number of crossings of River Corrib within the city centre also hinders walking, in particular due to poor quality pedestrian facilities and heavy traffic flow on the bridges.

Within the core city centre area, there will be a continued focus on improving and prioritising the pedestrian network to encourage and accommodate movement between places and to cater for mobility impaired persons. The adoption of an integrated strategy, which removes significant volumes of motorised transport from the core city centre area will create the space to achieve this, thereby reinforcing the concept of Galway as a 'walking city'.

The Cross-City Link initiative outlined in Section 4 of this report will seek to reinforce the pedestrian at the top of the hierarchy of modes and underpin the planned transformation of the city centre. Outside of the city centre, emphasis will be given to increasing permeability within suburban residential areas, improving and updating pedestrian networks, increasing pedestrian safety and maximising pedestrian accessibility to the public transport network. Specific emphasis is also placed on improving connectivity and permeability within and to the industrial sites to the east of the city, including to, from and between Ballybrit and Parkmore Industrial Parks.

In order to provide a framework for developing measures, a series of aims and proposed measures for walking have been established, which provide a basis for developing specific plans for infrastructure proposals, as summarised in Table 7.2.

Table 7.2 Walking Network Design

Strategic Aims	Proposed Measures	Design Development and Consideration of Alternatives
To provide improvements for pedestrians along city centre public transport corridors.	<p>Provide a new pedestrian river crossing at Galway Cathedral, adjacent to Salmon Weir Bridge;</p> <p>Establish and implement a city centre public realm improvement programme (signage, surface materials and lighting), including pedestrianisation schemes, to create a comfortable, well connected walking environment.</p>	<p>Design development has considered:</p> <ul style="list-style-type: none"> • Priority movements for pedestrians and areas of key desire lines; • Conflict points between modes and selecting appropriate corridors to cater for each mode (i.e. prioritising footpaths, cycle lanes and/or bus lanes in particular locations); • Gap analysis in the existing pedestrian network; • Identification of areas of concern with regards to pedestrian safety; • Junction upgrade proposals, incorporating pedestrian crossing facilities; and • Permeability and pedestrian access to residential and employment areas. <p>Conceptual designs have been prepared along sample road sections and at key junctions to illustrate potential layouts and the feasibility of proposed upgrades or other works.</p>
To increase priority given to pedestrians over road traffic.	<p>Transform the character of the core city centre area with a clear emphasis on pedestrians through extended pedestrianised areas, traffic management, reducing pedestrian wait times at crossings, removal of through traffic, limiting on-street parking availability and revised road and junction layouts;</p> <p>Enhance the pedestrian offering through upgrade of major roundabout junctions to include signalisation, and provide dedicated pedestrian facilities and priority.</p>	
To increase legibility and wayfinding.	<p>Define a safe, legible city centre pedestrian network, providing for ease of movement for all users, including persons with mobility, visual and hearing impairments, and for those using buggies and prams;</p> <p>Implement a Smart Information and Integrated Wayfinding Strategy for the city centre for all modes, including pedestrians. This will include wayfinding signage across the city and provision of information on walking, cycling and public transport networks, to benefit the community and visitors alike.</p>	
To increase the quality, comfort and safety of the pedestrian facilities.	<p>A structured, prioritised programme of improvements will be undertaken across the pedestrian network, including providing new footpath facilities, widening existing facilities, providing new and improved crossing facilities, removal of street clutter, adapting junction layouts in order to minimise crossing distances and reduce vehicle speeds, and a program of improvements to pedestrian permeability through residential areas in order to create safe, secure environments that encourage and foster a strong walking culture.</p>	

7.4 Supporting Measures for Walking



This draft Transport Strategy will ensure that the needs of pedestrians, including the mobility impaired and disabled, are fully considered in the design of all new facilities and upgrades of existing facilities. This will include:

- Revision of road junction layouts, where appropriate, to provide dedicated pedestrian crossings, reduce pedestrian crossing distances, provide more direct pedestrian routes and reduce the speed of turning traffic;
- Creation of permeable pedestrian environments in residential areas, amenable to walking, and maximising accessibility to the proposed bus network;
- In conjunction with An Garda Síochána the Local Authorities will evaluate and, where appropriate, seek the introduction of lower speed limits in the core city centre area and on residential streets;

- Cooperation with An Garda Síochána in the enforcement of laws in relation to parking on footpaths;
- Removal of unnecessary street clutter to facilitate ease of movement along streets and through 'places'; and
- Leisure Walking: Advance the roll-out of the greenway network, including the Oranmore-City Centre-Bearna Greenway and the extension of the Dangan Greenway to Oughterard via Maigh Cuilinn.

Permeability is a key constraint for cyclists and pedestrians in Galway. Links between residential areas and workplaces alike will be continuously improved as part of a structured, prioritised implementation programme based on the above principles.



This draft Transport Strategy will ensure that the needs of pedestrians and the mobility impaired and disabled are fully considered in the design of all new facilities and upgrades of existing facilities.



7.5 Public Realm

Galway City Council has committed to delivering a Public Realm Strategy in 2016.

The quality of the pedestrian environment is an important characteristic which influences residents, commuters, tourists and shoppers in their choice of destination and main mode of travel. The reallocation of road space to public transport in the city centre must therefore be accompanied by an associated improvement of the public realm. This section outlines a number of specific measures to be implemented supporting Galway as a ‘walking city’ and enhancing the city centre public realm, in turn strengthening the current bid for Galway City to be named European Capital of Culture for 2020.

Cross-City Link

The Cross-City Link project is intended to significantly improve public transport, walking and cycling within the core city centre area. The Cross-City Link proposal includes the following elements, which contribute to public realm enhancements:

Bus Priority

The route will be subject to traffic restrictions such that road sections become essentially bus-only, with a commensurate reduction in traffic flows – but with local access and deliveries allowed on a permitted basis.

General Traffic

General traffic will be excluded from the corridor from Salmon Weir Bridge to the north-eastern end of Forster Street. There is a further bus priority section proposed for College Road to prevent general traffic from entering and leaving the city centre via College Road, with Lough Atalia Road designated as the main access route for general traffic.

Deliveries and Local Access

Certain permitted vehicles will be allowed to travel on the Cross-City Link route for delivery and business purposes. A management system will be implemented in respect of permits, delivery times and locations of access. Local businesses and residents will continue to be able to access their property.

Legibility and Linkage

The Cross-City Link will define a clear, legible corridor, linking places which currently have high pedestrian footfall and movement within the city centre. It will encompass the NUIG Campus and University Hospital, past the Cathedral and Courthouse, through Eyre Square and on towards the Sportsgrounds. It creates a space within the city and immediate environs that considers pedestrians, cyclists and public transport above the private car, and will greatly strengthen these modes as viable choices for commuters and visitors alike.

Key Locations

Key locations along the route to be upgraded, in respect of the urban environment to create comfortable spaces for pedestrians, are:

- **University Road** - the gateway to the city from the west, accessing the canal network, NUIG and Nun's Island (from the junction with Newcastle Road to Salmon Weir Bridge);
- **Cathedral Quarter** - comprising the front entrance to Galway Cathedral and surrounding street space;

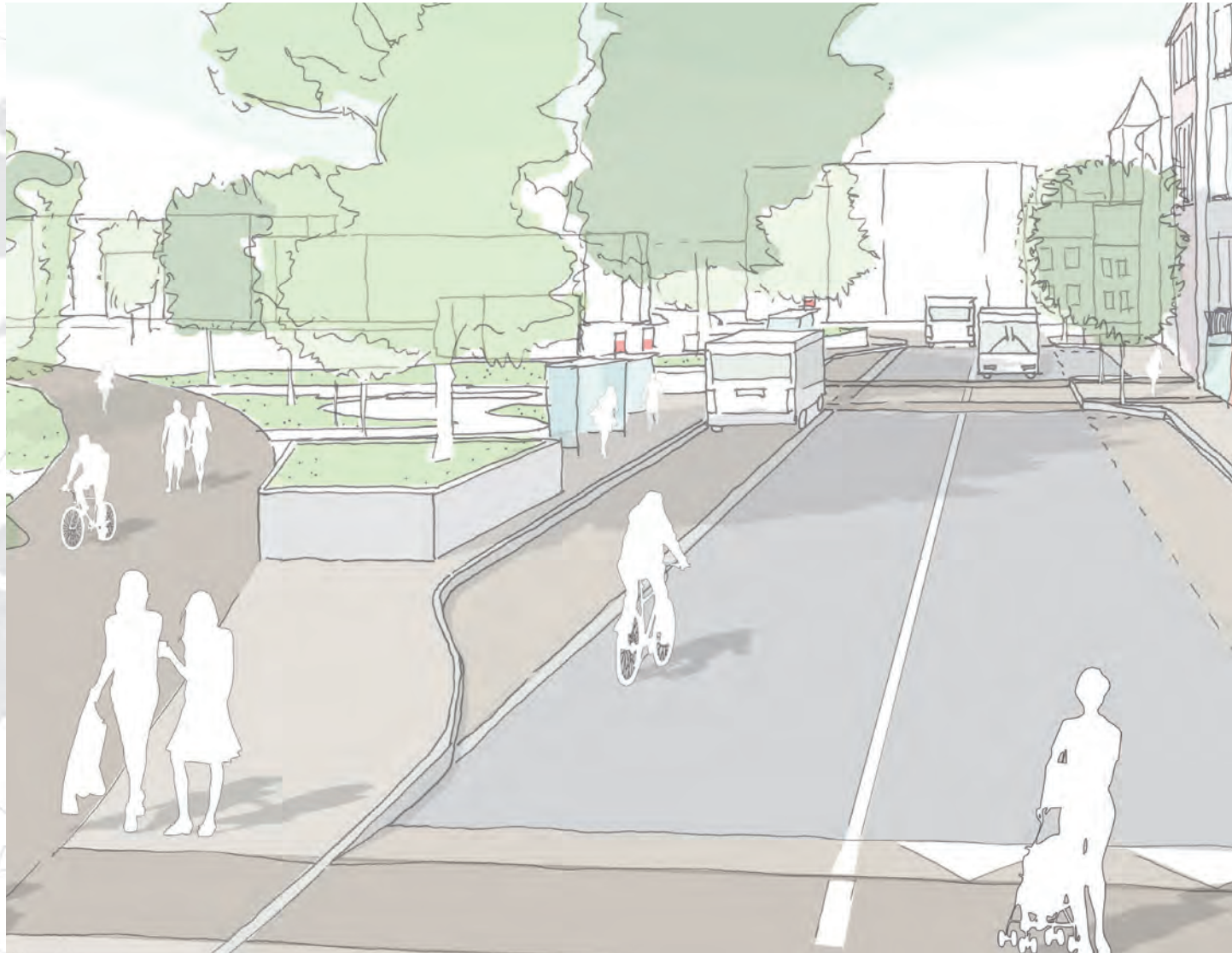
- **A New Pedestrian Bridge** adjacent to Salmon Weir Bridge, providing a pedestrian alternative to the sub-standard pedestrian facilities on Salmon Weir Bridge;
- **Courthouse (Waterside)** - a key riverfront area adjacent to the Cathedral Quarter;
- **St. Francis Street/Eglinton Street** - providing connectivity to the existing pedestrian areas on William Street, Shop Street and environs;
- **Eyre Square** - the principal destination within the city centre for shopping and recreation;
- **Ceannt Quarter** - incorporating Ceannt Station, and rail/bus interchange; and
- **College Road** - the gateway to the city from the east.

The Cross-City Link is presented overleaf, with a number of views along the route illustrated in the following pages.

Note that the following illustrations are conceptual only and will be the subject of a separate design process.

The Cross-City Link - urban realm proposals





The Cross-City Link - Eyre Square South



The Cross-City Link - Eglinton Street



8.1 Smarter Mobility



Smarter Mobility can be described as the way intelligent transport services are changing how cities function. Intelligent Transport Solutions (ITS) use technology to increase efficiency, safety and co-ordination across transport networks.

The Local Authorities, supported by the National Transport Authority, will continue to adopt Smarter Mobility and ITS as a means of improving the overall transport experience in Galway, building on initiatives such as the City Urban Transport Management Centre (UTMC). The UTMC forms the hub for urban traffic control in the city together with the recently-introduced Parking Guidance System (PGS), Variable Message Signs (VMS), CCTV and fault monitoring system.

Other improvements progressed by the NTA in recent years include the introduction of integrated ticketing through the Leap card, the provision of Real-Time Passenger Information at bus stops, and the roll out of the city Bike Share Scheme.

Smarter Mobility policies and ITS will be used to support and ‘future-proof’ proposed infrastructure, implement changes and add value to the operation of the transport network by maximising efficiency and ensuring the optimum performance of the entire network.

Smarter mobility projects can be broadly categorised into three groups:

- Projects which provide additional capacity to the transportation network;
- Projects which incorporate demand management; and
- Projects which utilise intelligent systems to deliver overall efficiency and cost savings to passengers.

Projects can fall under more than one category and deliver multiple benefits.

Additional capacity can be gained through the efficient use of the network by being more resilient to change and giving greater ease of movement to the most appropriate mode at different locations.

Demand management measures will be developed over time and will potentially include bus and pedestrian priority at traffic signals, managing parking fee structures to reduce the attractiveness of car travel to and from the city centre, and traffic management to reinforce the revised hierarchy of need within the core city centre area from the private car to other modes. Potential measures will originate at a ‘policy’ level so that measures can be developed and be classified as meeting policy aims. Projects which include enforcement of similar policies would also be considered as demand management measures.

Intelligent systems include those which utilise current and future technologies in order to deliver services in a more efficient manner. Over their lifetime these systems will deliver the intended service at a lower cost and offer a higher level of service to the customer. Cost savings can be earned through streamlining of delivery, reduction in power consumption and encouraging modal shift.

Proposed Smarter Mobility and ITS projects for Galway as part of this Transport Strategy include:

- Removing non-essential private cars from an area within the core city centre area;
- Maintaining, expanding and integrating Galway City Council's Urban Traffic Management Centre (GCC UTMC);
- Providing an integrated ticketing system or universal method of payment across all modes;
- Creating and operating a smart parking system for Galway City;
- Creating a smart street lighting system for Galway;
- Providing an integrated wayfinding system for all modes;
- Auditing all traffic signal junctions to ensure correct layout, configuration and operation is in place;
- Creating smart priority routes for pedestrians and cyclists;
- Providing smart parking facilities for cyclists;
- Providing a "last mile" taxi service for bus users;
- Providing a zone-based, variable pricing structure for public transport;
- Examining demand-based variable pricing for parking;
- Encouraging and providing for electric vehicle usage over time;
- Enforcement of red light running and parking restrictions; and
- Ensuring all proposals are future-proofed for Co-operative ITS (or C-ITS, which entails vehicles and devices being capable of communicating).

Galway City Council have progressed the adoption of Smarter Mobility and ITS, as can be seen in the construction and commissioning of the City's Urban Transport Management Centre.

8.2 Travel to Places of Education



School travel is a critical factor affecting transport in Galway, particularly in the morning peak period. School trips by car are a substantial contributor to local congestion and have a significant impact on travel times by all modes. In many instances, a trip to a school to drop off children forms part of a different trip, usually a journey to work, and as a result it is challenging to develop overarching solutions to school travel applicable to the entire study area. Bespoke solutions are often required for individual school sites. Galway City Council will liaise with the Department of Education in order to examine the impact of school admission policies on school travel demand.

However, across the study area, improvements to school transport arrangements proposed as part of this draft Transport Strategy combine the following:

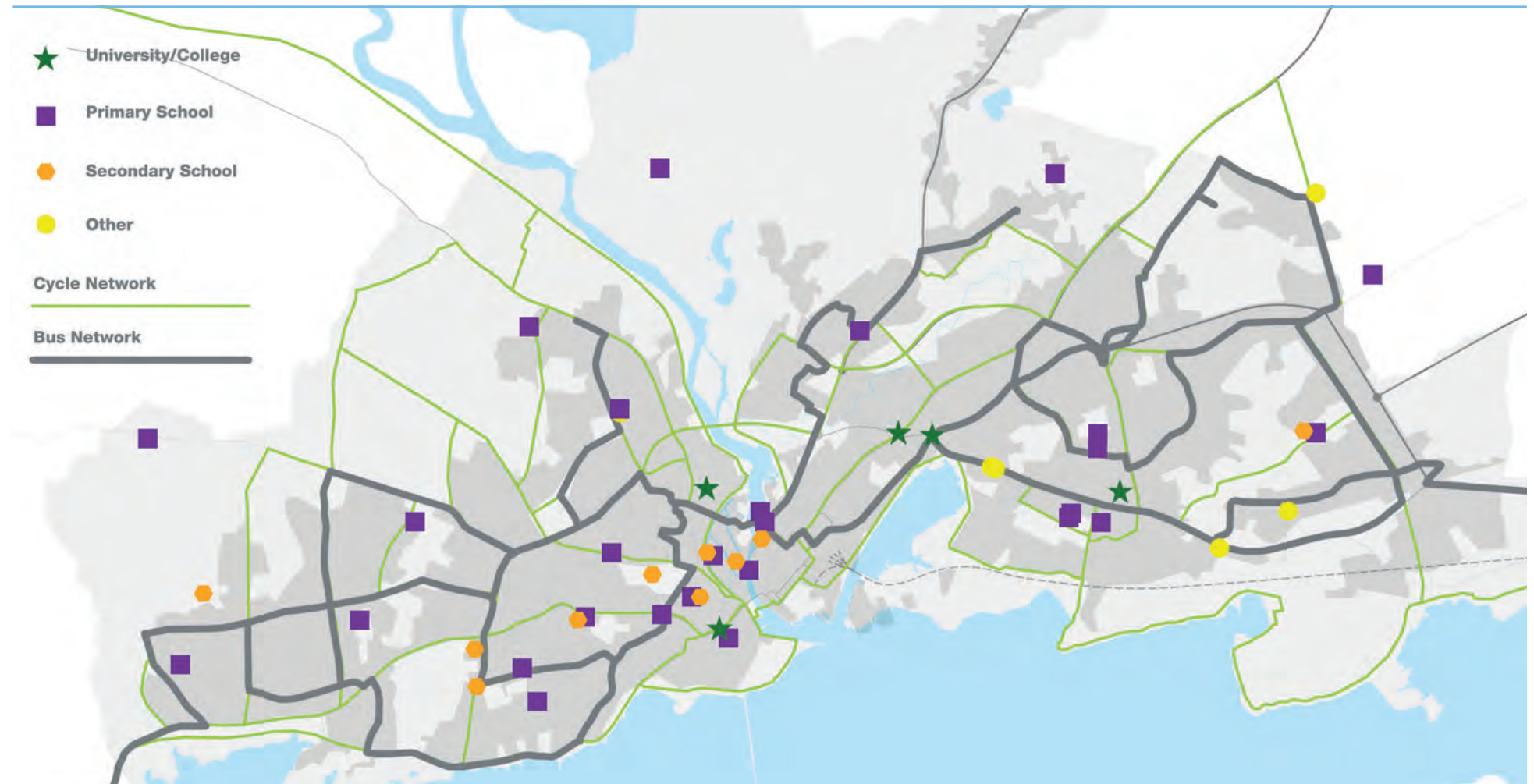
- Behavioural change programmes which encourages students and schoolchildren to travel to school by modes other than the car;
- General strategic improvements of bus, cycle and walking networks will provide safe opportunities for students to use non-car modes – especially when bus and cycle networks are planned to serve educational centres;
- Permeability improvements targeted at walking and cycling modes, improving accessibility to the bus network, and also minimising excessive routing for those who wish to walk or cycle to school;
- Promotion of school travel plans, and participation in the Green Schools Travel initiative; and
- At second and third levels, implementing mobility management planning for student travel, combined with targeted promotion of alternatives to the private car to better inform students of their travel options.

Figure 8.1 illustrates the locations of educational facilities within the Galway City in the context of the proposed draft Transport Strategy bus and cycle networks.

School travel is a critical factor affecting transport in Galway, particularly in the morning peak period.



Figure 8.1 Proposed Bus and Cycle Networks and locations of educational facilities



8.3 Land-Use Integration

The integration of land-use and transportation is essential in creating sustainable city living. The alignment of settlement and land-use patterns to an integrated transportation strategy can provide opportunities to reduce car dependency and allow for greater investment in alternative means of travel including public transport, walking and cycling. It also delivers considerable benefits in terms of reduced congestion, reduced greenhouse gas emissions, enhanced health and wellbeing and has benefits for the public realm.

The consolidation of settlement into areas that are close to employment centres, shops, community and educational facilities is a strategic policy of Galway City Council, which is reflected in policies and objectives relating to land-use in the Draft City Development Plan 2017-2023. The strategy for the city promotes the sustainable development of key brownfield sites such as Ceannt Station, the Inner Harbour and the Headford Road area, consolidation of existing residential areas, and significant new development at Ardaun on the eastern edge of the city.

This is further supported in the Draft City Development Plan (2017-2023) through the development of sustainable residential neighbourhoods, where the reliance on private transport is reduced and where services are

provided locally, allowing access by walking and cycling. The consolidation and concentration of development reduces travel demand, allows for the effective provision of services including public transport, and enables more sustainable patterns of travel.

At a local level, the preparation of Local Area Plans and masterplans provides a framework for mixed-use development in conjunction with this draft strategy and the application of sustainable densities at locations adjacent to public transport routes. Collectively, these plans will ensure that sustainable patterns of travel can be achieved.

The primary goals of land-use and transport integration in responding to the need to travel may be summarised as follows:

Reducing the need to travel;
Reducing the distance travelled;
Reducing the time taken to travel;
Promoting walking and cycling; and
Promoting public transport use.

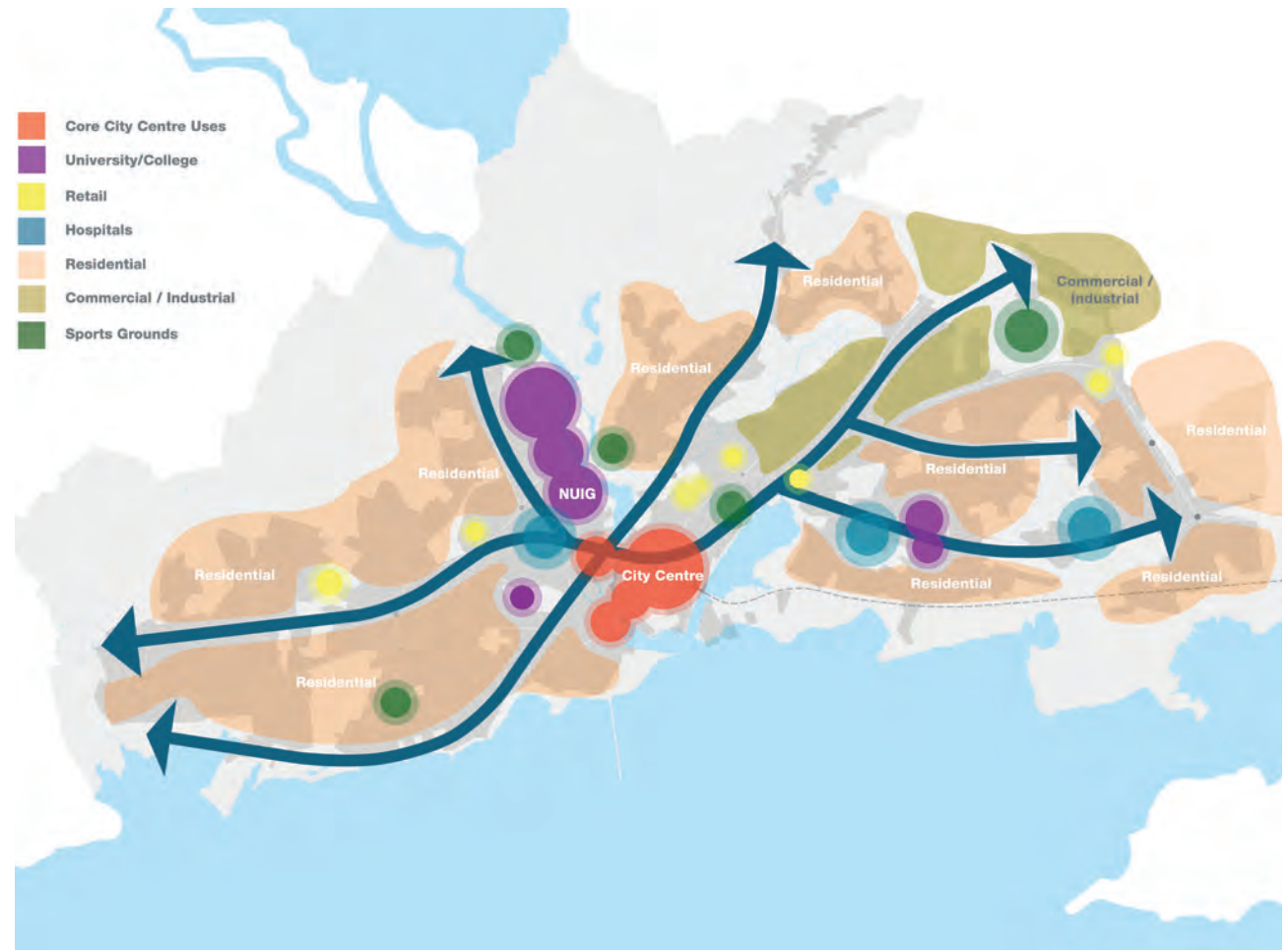
Existing land-uses and key trip attractors relative to the public transport corridors proposed in this draft Transport Strategy are presented in Figure 8.2.

The following land use principles are therefore intended to guide development in Galway:

- High-volume, trip intensive developments, such as offices and retail, should primarily be focused into the city centre, or areas well served by public transport;
- Residential development located proximate to high capacity public transport should be prioritised over development in less accessible locations;
- All non-residential development proposals should be subject to maximum parking standards – these standards should vary with location with regard to the centrality of the proposal within the city and the level of public transport provision. Area-based parking standards could be considered;
- For all major employment developments and all new and extended schools, travel plans/mobility management initiatives should be conditioned as part of planning permissions and be carried out in a manner consistent with existing NTA guidance;
- To the extent practicable, residential development should be carried out sequentially, whereby lands which are, or will be most accessible by walking, cycling and public transport – including infill and brownfield sites – are prioritised;
- Planning at the local level should promote walking, cycling and public transport by maximising the number of people living

- within walking and cycling distance of their neighbourhood or district centres, public transport services, and other services at the local level such as schools;
- New development areas should be fully permeable for walking and cycling and the retrofit of walking and cycling facilities should be undertaken where practicable in existing neighbourhoods, in order to give a competitive advantage to these modes;
- Where possible, developments should provide for filtered permeability. This would provide for walking, cycling, public transport and private vehicle access but at the same time would restrict or discourage through trips by private car;
- To the extent practicable, proposals for right-of-way extinguishments or other requirements should only be considered where these do not result in more circuitous walking and cycling trips for local residents accessing public transport or local destinations; and
- In urban areas, including the numerous towns, villages and settlements, the Design Manual for Urban Roads and Streets (DMURS) will guide localised proposals with a view to reaffirming walking, cycling and public transport modes over the private car.

Figure 8.2 Land-Use Integration with proposed public transport routes



8.4 Behavioural Change

Behavioural change, as it applies to transport, is about making people aware of the range of travel choices available for the variety of trips which they make on a daily basis and encouraging the use of more sustainable travel choices where feasible. Measures to encourage this involve the targeted promotion of public transport, walking, cycling and car sharing as alternatives to single-occupancy private car use.

They comprise a highly personalised approach aimed at engaging a group of people, making them think about their travel choices, providing them with full information, and encouraging and incentivising the use of alternatives.

In recent years, fostered by the Government's Smarter Travel policy document, and supporting initiatives and work undertaken by a number of agencies, there has been an increased awareness of the benefits that such programmes can deliver. The NTA is responsible for the management of the Smarter Travel Workplaces and Campuses Programme and administers the Green Schools Travel Module on behalf of the Department of Transport, Tourism and Sport. In addition to these two core programmes, the NTA funds behavioural change initiatives via the Regional Cities Sustainable Transport Grants Programme for Galway City.

These programmes have been highly successful in reducing car use in many locations across the country and if maintained and expanded, can be predicted to have a regional-level impact on travel behaviour in the Galway Metropolitan Area.

As an example, the recent national rise in cycling to primary school between 2006 and 2011 – the first such rise in a generation – occurred at the same time as Green Schools Travel began to roll out on a significant scale. Furthermore, the Galway University Hospitals group were named 'Smarter Travel Workplace of the Year' in 2015 following their efforts in working towards a reduction in single-occupancy car trips to and from the hospital.

These programmes form a core element of this draft strategy and as such, it commits to the continued implementation and support for Smarter Travel Workplaces and Campuses and a School Travel programme over its lifetime. Behavioural change initiatives will continue to be promoted in Galway to travellers within, to and from the city in order to encourage the use of sustainable travel modes, chiefly public transport, walking, cycling and car-sharing as alternatives to single-occupancy private car use. Initiatives will be developed and targeted at various locations and at varying scales, for example at workplaces, schools and neighbourhoods.







Implementation

This draft strategy is intended to frame the long-term build-out of transport in Galway City and environs for the next 20 years. The implementation of the strategy, and delivery of the specific proposals, will be through a series of multi-annual ‘implementation plans’ which will be agreed between the Councils and funding agencies, in particular the NTA.

The implementation plans will set out short-term delivery programmes for the proposals of the Galway Transport Strategy, and will be fully cognisant of funding availability, as well as requirements and timelines of statutory planning processes. Ultimately, this will ensure that the strategy can be delivered in a timely and efficient manner, and ensure that the transport benefits for Galway are maximised.

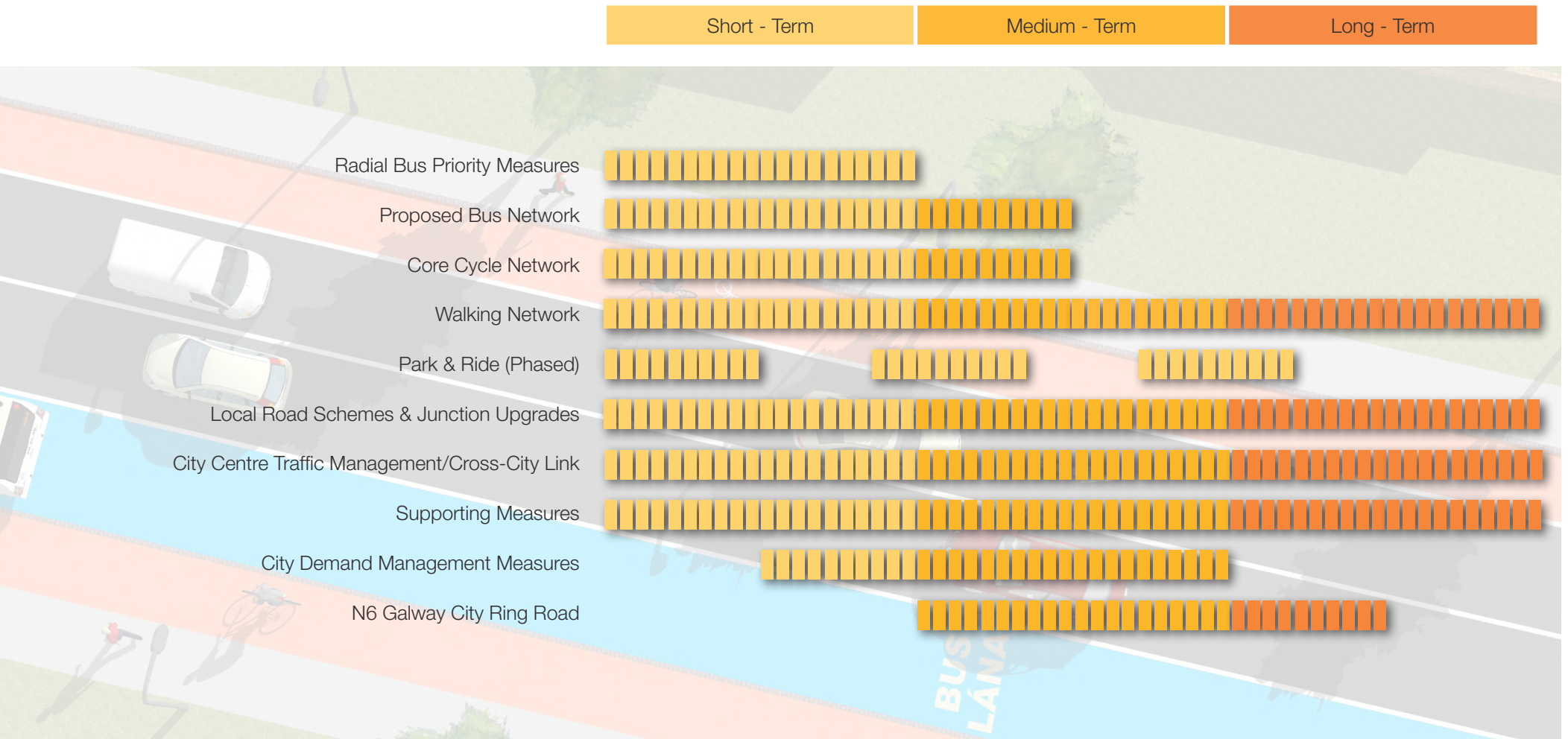
It is anticipated that the annual service plans of the City and County Councils will also reflect the contents of these implementation plans.

Provision will be made for the periodic review of the strategy to take account of emerging trends, and any emergence of new development opportunities, or to reflect the changing requirements of the evolving Galway transport network.

From a strategic planning perspective, it is anticipated that the implementation of the Galway Transport Strategy will be phased over three broad time bands (Short-Term, Medium-Term and Long-Term). This timeframe for delivery is set out in Figure 9.1.

Ultimately, this will ensure that the strategy can be delivered in a timely and efficient manner, and ensure that the transport benefits for Galway are maximised.

Figure 9.1 Indicative Phasing of Implementation of Galway Transport Strategy





Outcomes



The implementation of the proposals set out in this draft strategy will result in positive outcomes for Galway, providing long-term transport, tourism, commercial/retail and public realm benefits for the city and its environs. These benefits are listed below:

Future-Proofing the City – to ensure Galway can continue to grow as an economic and cultural centre in the West of Ireland, the draft strategy frames the future transport needs of the city and its environs, in terms of Public Transport, Walking, Cycling and Strategic Road provision.

Facilitating New Transport Infrastructure –

- **Public Transport:** Ensuring that the 'Cross-City Link' is introduced to increase the amount of people able to access the heart of the city by public transport;
- **Walking and Cycling:** Likewise, ensuring that a network of cycle and walking routes is developed across the city and environs to provide safe, convenient and comfortable links to key destinations from residential areas; and

- **Road Network:** Providing improved access and movement across, and within Galway City and environs, and facilitating the development of a strategic relief road which will meet the long term road capacity requirements of the city, as well as offering vastly improved accessibility to the west of County Galway.

Improved Efficiency of the overall transport network, by optimising the use of limited city centre road space, facilitating a greater degree of access to the city.

Improved Environment, Urban Realm and Ambience – Enhancing the streetscape of the city centre, reducing noise and air pollution and freeing up more space where people can walk, shop, socialise and enjoy the city.

Tourism, Commercial and Retail Benefits – Improving the overall commercial/retail and tourist environment of Galway, with additional transport capacity for shoppers and visitors accessing the city centre, and also key tourist locations such as Salthill Promenade and Galway Racecourse.



DRAFT

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***“a connected city region
driven by smarter mobility”***

