Comhairle Contae Mhaigh Eo
Mayo County Council

DRAFT

Ballina Local Transport Plan 2023

Appendices

NTA
Údarás Náisiúnta Iompair
National Transport Authority

Clifton Scannell Emerson
Associates

Appendix 1

Policy Context, Design Guidance and Data Collection

1.1 Policy Context

1.1.1 Regional Spatial and Economic Strategy for the Northern and Western Region (RSES) 2020-2032

The RSES is a strategic development framework published by the Northern and Western Regional Assembly and sets out a vision for the sustainable physical, economic and social development of the region and provide guidance for local level policies.

Ballina is outlined as a key town within the RSES and is noted as being the principal retail town in Mayo and having a vibrant town centre. An LTP is required to be prepared for Ballina under the RSES.

The relevant Key Policy Objectives (KPO) and Regional Policy Objectives (RPO) from the RSES are;

- KPO: Remove barriers to development through enhanced road and rail connectivity to and from Ballina;
- RPO 6.18: Utilise smart technology to provide for enhanced (bus) service experience for customers;
- RPO 6.19: Reduce dependency on fossil-fuel powered vehicles;
- RPO 6.21: Undertake network reviews for city, regional centres and support towns across the region, to provide local bus services;
- RPO 6.22: Provide new interchange facilities and enhanced bus waiting facilities together with enhanced passenger information, utilising smart technology in appropriate circumstances;
- RPO 6.26: The walking and cycling offer within the region shall be improved to encourage more people to walk and cycle, through:
    - (a) Preparation and implementation of Local Transport Plans for Galway Metropolitan Area, Regional Growth Centres and Key Towns, which shall encourage a travel mode shift from private vehicular use towards sustainable travel modes of walking, cycling and use of public transport.
    - (b) Safe walking and cycle infrastructure shall be provided in urban and rural areas, the design shall be informed by published design manuals, included the Design Manual for Urban Roads and Streets (DMURS) and the NTA Cycle Manual.
    - (c) Development of a network of Greenways.
- RPO 6.29: The management of space in town and village centres should deliver a high level of priority and permeability for walking, cycling and public transport modes to create accessible, attractive, vibrant and safe, places to work, live, shop and engage in community life;
- RPO 6.30: 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;

- RPO 6.32: Invest in transport networks and services in the region that are socially inclusive and provide a quality of service, connectivity and facilities to meet all societal needs, disabilities (including mobility, sensory and cognitive impairments) and meet the needs and opportunities of an ageing population;
- RPO 6.33: Reduce dependency on the fossil-fuel powered vehicles and have regard to the National Policy Framework for Alternative Fuels Infrastructure for Transport; AND
- RPO 6.34: Promote deployment of targeted, convenient and safe recharging infrastructure across the region to meet the changing needs of the electric vehicle with particular emphasis in public parking areas and employment locations.

1.1.2 National Investment Framework for Transport in Ireland (NIFTI)

The purpose of the NIFIT is to support the delivery of the NPF. Transport is recognised as a key enabler of the National Strategic Outcomes, namely in terms of sustainable mobility and transition to a low carbon and climate resilient society. The NIFTI outlines 10 Key Transport Challenges (KTC) which all transportation projects should aim to address. These are:

- KTC1: Balancing the protection and renewal of existing assets with significant investment in new infrastructure within available resources;
- KTC2: Decarbonising the transport sector while facilitating increased travel demand;
- KTC3: Supporting Ireland's international connectivity through appropriate surface investment;
- KTC4: Incorporating innovative and emerging technologies within the future transport system;
- KTC5: Maintaining existing transport infrastructure and ensuring the resilience of the most strategically important parts of the network;
- KTC6: Increasing sustainable mode share to reduce emissions and address urban congestion;
- KTC7: Improving interurban connectivity, particularly in the South, Northwest and Northeast;
- KTC8: Safeguarding accessibility for rural Ireland by protecting and renewing existing infrastructure;
- KTC9: Ensuring the future capacity of key strategic links to Ireland's international gateways; AND

- KTC10: Ensuring that transport investment decisions are robust to unanticipated shocks and uncertainty.

1.1.3 National Development Plan 2018-2027 (NDP)

The NDP underpins the NPF by outlining the investment priorities for the framework do ensure successful implementation and value-for-money deliverables. The plan defines National Strategic Outcomes (NSO), with the relevant NSOs defines as;

- NSO 1 – Compact Growth;
- NSO 3 – Public Transport;
- NSO 4 - Sustainable Mobility;
- NSO 8 - Transition to a Low-Carbon and Climate Resilient Society.

1.1.4 National Planning Framework 2040 (NPF)

The NPF is the Government's high-level strategic plan to improve transport, tourism and sport infrastructure by 2040.

Sub headed Project Ireland 2040, the framework seeks to achieve ten strategic outcomes, building around the overarching themes of wellbeing, equality and opportunity. Two of these ten shared priorities are Sustainable Mobility and Enhanced Amenity and Heritage. Sustainable Mobility's special focus is on the provision of safe alternative active travel options to alleviate congestion and help to meet climate action objectives, where Enhanced Amenity and Heritage aims to investment in high-quality infrastructure to create living space with defined character and attractiveness.

1.1.5 Climate Action Plan 2023

This document is the Government's plan for tackling climate breakdown. It outlines the current state of play across key sectors including Electricity, Transport, Built Environment, Industry and Agriculture and charts a course towards ambitious decarbonisation targets. The Climate Action Plan 2023 (CAP23) builds on the Climate Action Plan 2021 (CAP21) with the objective to achieve a net zero carbon energy system and create a resilient, vibrant and sustainable country.

To meet the required level of emissions reduction as set out in the CAP21 by the Government of Ireland, transport related emissions are set to reduce by 51% by 2030. The CAP23 calls for a significant cut in transport emissions by 2030 in order to meet

this sectoral emission ceiling. This includes a 20% reduction in total vehicle kilometres, a reduction in fuel usage, and significant increases to sustainable transport trips and modal share.

The CAP23 highlights that meeting the 2030 transport abatement targets will require transformational change and accelerated action across all key decarbonisation channels. The CAP21 targets have been revised to meet this higher level of ambition,

including a 20% reduction in total vehicle kilometres, a reduction in fuel usage, and significant increases to sustainable transport trips and modal share

This is to be done through active travel infrastructure, improved public transport, planning, innovation and financial supports for improved system, travel, vehicle and demand efficiencies.

Measures related to active travel (from the CAP21) include:

- Action 231: Continue the improvement and expansion of the Active Travel and Greenway Network;
- Action 232: Development of a coherent and connected National Cycle Network Strategy;
- Action 234: Encourage an increased level of modal shift towards Active Travel (walking and cycling) and away from private car use;
- Action 255: Balance better movement priorities within urban areas so transition the built environment and public domain from one that is “vehicle centred” to being “people centred” to align with the goal of net zero by 2050; and
- Action 260: Increase provision of park and ride/share at transport interchange locations.

1.1.6 National Sustainable Mobility Policy

The National Sustainable Mobility Policy To sets out a strategic framework to 2030 for active travel and public transport to support Ireland’s overall requirement to achieve a 51% reduction in carbon emissions by the end of this decade. The target is to deliver at least 500,000 additional daily active travel and public transport journeys and a 10% reduction in kilometres driven by fossil fuelled cars by 2030 in line with metrics for transport set out in the CAP21/CAP23.

The goals of the related Action Plan (2022-2025) are:

- Goal 1: Improve mobility safety;
- Goal 2: Decarbonise Public Transport;
- Goal 3: Expand availability of sustainable mobility in metropolitan areas;
- Goal 4: Expand availability of sustainable mobility in regional and rural areas;
- Goal 5: Encourage people to choose sustainable mobility over the private car;
- Goal 6: Take a whole of journey approach to mobility, promoting inclusive access for all;

- • Goal 7: Design infrastructure according to Universal Design Principles and Hierarchy of Road Users Model;
- • Goal 8: Promote sustainable mobility through research and citizen engagement;
- • Goal 9: Better integrate land use and transport planning at all levels; and
- • Goal 10: Promote smart and integrated mobility through innovative technologies and development of appropriate regulation.

1.1.7 Smarter Travel – A Sustainable Transport Future

This policy document is A New Transport Policy for Ireland 2009-2020 and includes the following five key aims:

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

These aims are underpinned four principal themes:

1. Reduce distance travelled by private car by focusing population and employment growth in urban areas, combined with fiscal measures to encourage behavioural change;
2. Ensure alternatives to the car are more widely available, through improved public transport, cycling and walking;
3. Improve the fuel efficiency of motorised transport through improved fleet structure, energy efficient driving and alternative technologies; and
4. Strengthen institutional arrangements to deliver the Smarter Travel targets.

These four principal themes were supported by a total of 49 actions to be delivered over the lifetime of the policy and an overview of the current implementation status of those individual actions is being published alongside the nine background papers for public consultation.

Action 15 of Smarter Travel relates to cycling and commits toward the publication and implementation of a National Cycle Policy Framework (NCPF) that will address issues such as –

- The creation of traffic-free urban centres to facilitate cycling;
- Investment in a national cycle network with urban networks given priority;
- Cycle training for schoolchildren; and
- Integration of cycling with other transport modes, e.g., carriage of bicycles on public transport.

Action 16 relates to walking and outlines a number of proposed initiatives designed to create a culture of walking in Ireland. These include –

- The creation of larger traffic-free areas in urban centres;
- Providing safe pedestrian routes;
- Improving the surface quality of footpaths;
- Introducing 30 km/h zones in central urban areas where appropriate; and
- Publication of a national walking policy.

1.1.8 Sustainable Mobility Policy Review

The Sustainable Mobility Policy Review, Background Paper 2, Active Travel was published by the Department of Transport, Tourism and Sport to inform public consultation on Ireland's sustainable mobility policy. The purpose of the paper is to provide an opportunity to review public transport policy 'to ensure services are sustainable into the future and area meeting the needs of a modern economy' and by reviewing the role of Active Travel modes in the context of the wider transport network while raising some issues for consideration in developing future policy.

The five benefits of Active Travel that can be capitalised on are identified as:

- Environmental - reduced levels of carbon emissions and greenhouse gases;
- Health - improved levels of fitness and public health generally from increased activity;
- Safety - increased levels of active travel can stimulate the increased provision of quality footpaths and cycle paths by public authorities;
- Economic - increased active travel usage can lead to reduced congestion levels and improved accessibility in urban areas; and
- Social - increased provision for active travel modes can drive improved transport equity.

1.2 Design Guidance

1.2.1 Design Manual for Urban Roads and Streets

This document provides guidance relating to the design of urban roads and streets. It outlines principles, approaches and standards that are necessary to achieve balanced, best practice design outcomes with regard to street networks and individual streets. This Manual sets out an integrated design approach influenced by the type of place in which the street is located and balance the needs of all users. It also aims to put well

designed streets at the heart of sustainable communities creating physical, social and transport networks that promote real alternatives to car journeys, namely walking, cycling and public transport. The manual key design principles are as follows:

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

This document was published by the Irish Government as a high-level strategic plan for shaping the future growth and development of Ireland out to the year 2040. It has been created as a guide for public and private investment to help create and promote economic opportunities and sustainable cities.

The NPF aims to "*Enable more effective traffic management within and around cities and re-allocation of inner-city road-space in favour of bus-based public transport services and walking/cycling facilities*".

The following objectives, relevant to the design of cities and sustainability, are listed within the NPF:

National Objective 4 - Ensure the creation of attractive, liveable, well designed, high quality urban places that are home to diverse and integrated communities that enjoy a high quality of life and well-being.

National Objective 6 - Regenerate and rejuvenate cities, towns and villages of all types and scale as environmental assets, that can accommodate changing roles and functions, increased residential population and employment activity and enhanced levels of amenity and design quality, in order to sustainably influence and support their surrounding area.

National Objective 27 - Ensure the integration of safe and convenient alternatives to the car into the design of our communities, by prioritising walking and cycling accessibility to both existing and proposed developments and integrating physical activity facilities for all ages.

Project Ireland 2040 was launched as part of the National Planning Framework (NPF) with the purpose to provide a high-level strategic plan to improve transport, tourism and sport infrastructure buy 2040. These goals are expressed in this Framework as National Strategic Outcomes (NSOs), which includes:

- Compact Growth

- Enhanced Regional Accessibility
- Strengthened Rural Economies and Communities
- Sustainable Mobility
- A Strong Economy, supported by Enterprise, Innovation and Skills
- High-Quality International Connectivity
- Enhanced Amenities and Heritage
- Transition to a Low Carbon and Climate Resilient Society
- Sustainable Management of Water, Waste and other Environmental Resources
- Access to Quality Childcare, Education and Health Services

1.2.2 Cycle Design Manual

The Cycle Design Manual, published in 2023 by the National Transport Authority (NTA) and approved by the Department of Transport, sets out the best practice design of cycle infrastructure in Ireland. The documents guides the delivery of safe cycling infrastructure to encourage more people to cycle as a regular mode of transport is strongly supported by a preceding national policies and plans.

It notes that for cycle infrastructure to cater for the needs of people who currently cycle and to also attract new cycle users to the network, there are five main requirements which designs should fulfil under the headings of:

1. Safety
2. Coherence
3. Directness
4. Comfort
5. Attractiveness

There are six key design principles that allow for the planning, designing, implantation and maintenance of a cycle network that can cater to all types of cycle vehicles and cycle abilities by means of links with appropriate facilities and width. The key design principles are;

1. Safe system approach
2. Promoters of cycle facilities should cycle
3. Network approach
4. Segregation
5. Everyday mobility
6. Universal Design and Inclusive Mobility

The manual offers detailed typical layouts for cycle facilities and therefore serves as the leading guidance for cycle infrastructure nationwide.

1.2.3 Traffic Signs Manual

The Traffic Signs Manual provides details of the traffic signs which may be used on roads in Ireland, including their layout and symbols, the circumstances in which each

sign may be used and rules for positioning them for the efficient operation of the road network. It also provides guidance on the temporary traffic measures required at roadworks.

To be effective, traffic signs must be readily recognized as such and must:

- Have messages which can be quickly read and understood;
- Be co-ordinated with the geometric road layout so they are conspicuous by day and night; and
- Be located far enough in advance of the situation to give sufficient time for the road user to take the appropriate action.

The Traffic Signs Manual is published into nine chapters namely:

Chapter 1: Introduction and Sign Location

Chapter 2: Directional Information Signs

Chapter 3: Variable Message Signs

Chapter 4: Other Information Signs

Chapter 5: Regulatory Signs

Chapter 6: Warning Signs

Chapter 7: Road Markings

Chapter 8: Temporary Traffic Measures and Signs for Roadworks

Chapter 9: Traffic Signals

The overseeing organisation for the purposes of this Manual is either Transport Infrastructure Ireland (TII) for national roads or the Department of Transport, Tourism and Sport (DTTAS) for regional and local roads.

1.2.4 Traffic Management Guidelines and Accessibility Guidance

The purpose of this guideline is to provide guidance on a variety of issues including traffic planning, traffic calming and management, incorporation of speed restraint measures in new residential designs and the provision of suitably designed facilities for public transport users and for vulnerable road users such as cyclists, motorcyclists and pedestrians including those with mobility/sensory impairments. It also focuses on how these issues must be examined and implemented in the context of overall transportation and land use policies.

1.2.5 Preliminary Design Guidance Booklet for BusConnects Core Bus Corridors

Published in April 2021 by the NTA, the Preliminary Design Guidance Booklet for BusConnects Core Bus Corridors (CBC) has the following Design Guidelines Objectives:

- Facilitate a modal shift from private vehicle use to public transport use and cycling;
- Improve public transport accessibility across the city;
- Deliver a more attractive, reliable and convenient bus system for Dublin; and
- Deliver safe, segregated cycling facilities along each corridor.

The CBC proposes to meet these objectives through the delivery of dedicated bus lanes and cycle tracks. Optimal cross-sections are central to the proposed designs to include footpaths, cycle tracks and bus lanes on both sides of the where feasible. However, the constraints of planning and designing within an existing city are recognised within the CBC and a flexible approach using engineering judgement to rationalise junction and link layouts to best serve the needs of the local catchment is required. In the approach to cycle infrastructure design, the CBC not only aims to cater for existing cyclists, but more particularly for younger and older cyclists, mobility impaired cyclists or new cyclists as well as those who currently do not cycle but would be prepared to, subject to improved safety and greater cycle infrastructure provision.

1.2.6 Area Based Transport Assessment (ABTA)

As part of the requirement for an evidence-based approach to planning, as set out in the National Planning Framework (NPF) and the Regional Spatial and Economic Strategy (RSES), an Area Based Transport Assessment (ABTA) is required to inform a Local Transport Plan (LTP) in order to guide the transport requirements for the future development of the area.

Published by the NTA in September 2021, the 'ABTA 'How To' Guide – Pilot Methodology' serves as the most relevant ABTA guidance document. The guidance is designed to inform the development of LTP's.

The key aims in the development of an ABTA are to:

- Maximise the opportunities for the integration of land use and transport planning by including the ABTA process as integral to the preparation of the Plan;
- Assess the existing traffic, transport and movement conditions within the Plan area and in its wider context;
- Plan for the efficient movement of people, goods and services within, to and from the Plan area;
- Identify the extent to which estimated transport demand associated with the emerging local development objectives can be supported and managed on the basis of existing transport assets;
- Identify the transport interventions required within the Plan area and in the wider context, to effectively accommodate the anticipated increase in demand; and
- Inform Site Specific Transport Assessments for development management applications.

The ABTA process is an iterative process consisting of:

- Part 1 – Baseline Assessment of Plan Area and the Surrounding Area;
- Part 2a – Establish Context for the ABTA (using tools such as SMART Analysis);
- Part 2b – Options Development;
- Part 3 – Options Assessment;
- Part 4 - Refinement & Sense Check the Proposals;
- Part 5 - Finalisation of the Plan; and
- Part 6 - Monitoring and Evaluation

The process aims to develop a desired network that is practically implementable and takes into account the existing physical, ecological, historical and socio-economic constraints within the study area. Through a process of sense checking and refinement as well with stakeholder consultation, an overall LTP for the study area will be generated.
This LTP will be cognisant of the existing sensitives and propose a viable network to encourage mode shift to sustainable modes whilst maintaining a level of service for vehicular traffic that local residents are accustomed to.

1.2.7 National Roads 2040

National Roads 2040 (NR2040) is TII's long-term strategy for planning, operating, and maintaining the National Roads network. NR2040 has been developed to support the delivery of Project Ireland 2040 objectives and to align with the Department of Transport's (DoT) National Investment Framework for Transport in Ireland (NIFTI, December 2021).

The N22040 visions is to develop a road network that is "'*An evolving sustainable transport system focused on: safety; innovation; accessibility; mobility of people, goods, and services*"

- The objectives are to provide a road network that is:
- Safe and efficient transport network for people and goods;
- Environmentally, socially, and economically sustainable;
- Tailored for different customers in different places;
- Managed and improved as a key public asset; and
- Environmentally, socially, and economically sustainable.

1.2.8 TII Publications DNGEO-03084 'The Treatment of Transition Zones to Towns and Villages on National Roads'

This standard document, publish by TII in 2021, describes the requirements that shall be implemented on National Roads on the approaches to towns and villages in terms of the provision of traffic calming measures and pedestrian crossings.

- The document provides guidance on:
- Traffic calming measures;
- School zone/community facilities;

- Pedestrian crossings; and
- Pedestrian Comfort Assessment.

1.3 Data Collection

Baseline Assessment is the first step undertaken in the ABTA process. It is by baseline assessment that an understanding of the existing conditions of the town of Ballina is established, and potential for improvement is identified. To deliver a long-lasting and high-quality sustainable transport network it is necessary to find the gaps in the existing active travel network, evaluate the quality of existing transport infrastructure, assess the traffic volumes on important links, understand the travel demand pattern and find the potential for new active travel routes. To do so, different forms of data collection were undertaken. Surveys and audits were conducted and analysed to identify the gaps in the existing active travel network and evaluate the quality of the existing transport infrastructure. Traffic Surveys were undertaken and analysed from which relevant information obtained is inputted into the traffic models to get an overview of the existing traffic flows across the town of Ballina, understand the existing travel pattern and identify desire lines. Different data collection tools utilised in LTP development are described in sub-sections below:

1.3.1 Surveys

The existing conditions were established through the surveys shown in Table 1-1.

Table 1-1 Data Collection

Data Type	Data Collected	Methodology
Traffic Surveys	O-D Survey	ANPR
	Average Speed	ATC
	AADT	ATC
	Turning Counts	JTC
Audits	Non-Motorised User (NMU) Accessibility Audit	Observational
	Active Travel Audit	Observational
	Quality Audit	Observational
	Parking Survey	Observational
Surveys	Delivery/Loading Surveys	Observational
	Refuse Collection Survey	Desktop
	Public Transport Survey	Desktop

	School Traffic Survey	Observational
Future Development Proposals	Planned Developments	Consultation with MCC
	Proposed Developments	Consultation with MCC

The data collected from the various surveys was collated and analysed to develop a clear and accurate understanding of the existing travel demand and patterns within the study area. The nuances of the area, both physical and habitual, were identified to allow for the progression of LTP proposals that are customised to Ballina and will achieve the strategic aims of the LAP in the most instinctive, methodical, and efficient way possible with regard given to the existing characteristics and environment that residents are accustomed to.

The data collected from the surveys was utilised as the baseline data to be inputted into the detailed traffic modelling and options development/assessment.

1.3.2 LAM / WRM

Detailed traffic modelling has been carried out to inform the proposals. The baseline assessment included the collection of extensive traffic and POWSCAR data to develop a Local Area Model (LAM) for the Ballina town area. This LAM is integrated with the Western Regional Model (WRM).

The LAM developed has been calibrated and validated in-line with TII Project Appraisal Guidelines and meets all specified criteria for both the AM and PM showing that the model is fit for purpose. The model represents AM and PM peak period base year traffic conditions well, as demonstrated statistically through calibration and validation. The model realistically represents journey times and the modelled traffic flows match observed count data. It therefore provides a robust basis for assessing transport proposal options. The Ballina LAM is shown in Figure 1-1.

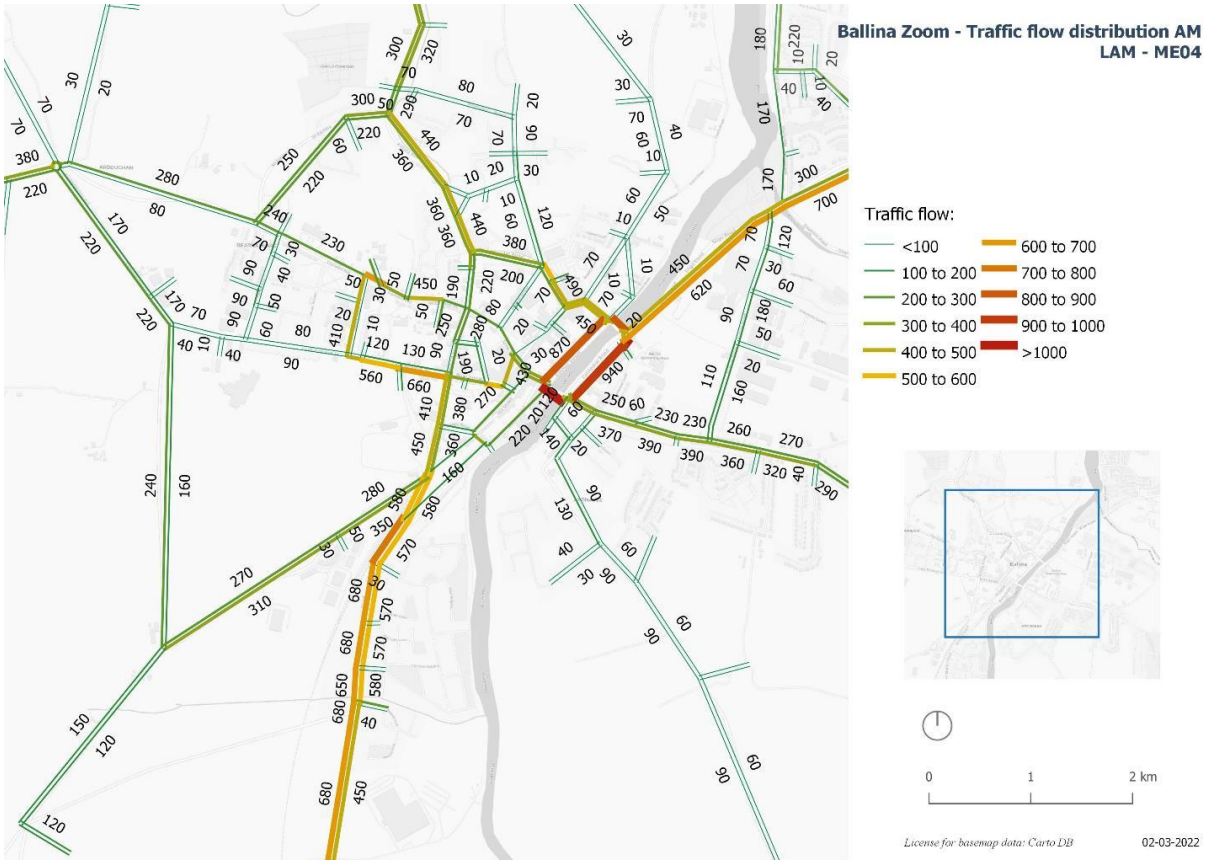

Figure 1-1 Ballina LAM

It has been noted from the LAM that there are high levels of traffic travelling along the National Routes that pass through the town centre, particularly on the quays and Upper Bridge. This represents a key challenge in relation to severance for active travel routes.

The LAM Report is shown in Appendix 1.

1.3.3 Microscale Traffic Modelling

LinSig (V3) is a modelling software dedicated for analysing isolated signal-controlled junctions and small junction networks. Key functions of this software include capacity-based traffic assignment across the roads and lanes forming the modelled network, traffic signal timing optimisation, and forecasting of performance parameters for the entire network, individual junctions, and individual lanes. The models analyse the junctions in relation to their geometry and traffic flows and calculate the Practical Reserve Capacity (PRC). LinSig models were used in conjunction with LAM runs to test the impact of junction proposals.

The traffic modelling was used to:

- Consider the impact of the traffic management options that were developed;
- Consider the impact of the various junction upgrade proposals;
- Consider the impact of reassigning traffic;

- Consider the impact of the proposals of the Ballina By-passes (to the southwest and east); and
- Provide a high-level results summary for the impact of active travel measures on the vehicular network in the plan area.

1.3.4 ArcMap

ArcMap is a GIS analyst tool and geospatial processing program. It can be used to view, edit, create, and analyse geospatial data.

ArcMap allows the user to explore data within a data set, symbolise features, create walking and cycling catchment maps and illustrate proposals.

A network for the study area was generated to include roads, cycle facilities, pedestrian facilities (formal and informal) and public transport routes. The network was originally extracted from Open Street Map and adjusted as informed by site visits and Google StreetView.

1.3.5 ATOS

Accessibility To Opportunities and Services (ATOS) mapping has been provided by the NTA and used to evaluate accessibility to services via GIS analysis using a GIS network of the study area.

The data sources for these service types are:

- Employment – CSO Workplace Zones
- Primary Education – Department of Education
- Secondary Education – Department of Education
- Retail – An Post GeoDirectory
- GP's – An Post GeoDirectory
- Open Space – Development Plan zoning.

An ATOS assessment breaks an area down to 100m^2 grids. The accessibility (walking/cycling catchments) of these grids relative to a service is calculated dependant on how favourably it compares to the average standard deviation of all grids in the study area.

The software calculates the average journey time for all 100m squares which are within this range, and then calculates values for all other 100m squares within the selected study area relative to this average. Therefore, the ATOS calculation provides a realistic representation of the relative connectivity of a grid to a given service within the study area.

Each square is then assigned a value from A to E dependent on its "individual" accessibility.

The ATOS analysis has been analysed to identify the key challenges to provide improved connectivity between the different land uses in Ballina.

ATOS mapping has been obtained from the NTA for access to;

- Employment;
- Primary Education;
- Secondary Education;
- Retail;
- GP's; and
- Open Space.

The ATOS mapping shows the accessibility of these services relative to the residential areas for pedestrians and cyclists. This allows for identification of active travel barriers (ie; severance, junctions, geographical barriers etc) and hence mitigation measures can be developed.

The ATOS mapping shows that the trip attractors within the town centre are largely accessible by both walking and cycling.

An ATOS assessment breaks an area down to 100m^2 grids. The accessibility (walking/cycling catchments) of these grids relative to a service is calculated dependant on how favourably it compares to the average standard deviation of all grids in the study area.

The software calculates the average journey time for all 100m^2 squares which are within this range, and then calculates values for all other 100m squares within the selected study area relative to this average. Therefore, the ATOS calculation provides a realistic representation of the relative connectivity of a grid to a given service within the study area.

Each square is then assigned a value from A to E dependent on its "individual" accessibility which allows for identification of active travel barriers (i.e.; severance, junctions, geographical barriers etc) and hence mitigation measures can be developed.

The ATOS maps for the study area are shown in Appendix 3.

1.3.6 NMU Audit

A Non-Motorised User (NMU) Accessibility Audit was carried out by CSEA in conjunction with PMCE Road Safety Auditors in February 2022. The purpose of the audit was to identify the deficiencies in the current active travel network and how these were impacting on mode choice for local users. The prevalence, severity and location of these discrepancies were noted to guide the development and prioritisation of scheme to be progressed to remedy them.

The audit was focused on qualifying the ease of which active travel users could safely navigate through the Ballina Town Area and determined that area is disconnected for active travel users, particularly for cyclists.

The audit included a thorough examination of the local street / road network specifically from the point of view of non-car users. The audit assessed footpath condition, cycle lane/track condition, junction treatment for active travel users, crossing facilities for active travel users and the public lighting provision within the town area.

The NMU Audit is shown in Appendix 2.

Appendix 2

LAM Report

Ballina Active Travel Mobility Plan

31/03/2022

Reference number 300857

LOCAL AREA MODELLING

SYSTRA

Ballina Active Travel Mobility Plan

LOCAL AREA MODELLING

IDENTIFICATION TABLE	
Client/Project owner	Mayo County Council
Project	Ballina Active Travel Mobility Plan
Study	Local Area Modelling
Type of document	Traffic Modelling Report
Date	31/03/2022
File Name	Ballina Active Travel Mobility Plan_LAM Report
Framework	Transport Infrastructure Ireland
Reference number	300857
Number of pages	34

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2	Author			DD/MM/YY	
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1. INTRODUCTION

1.1 Overview

1.1.1 SYSTRA has been commissioned by Clifton Scannell Emerson Associates (lead-consultant) on behalf of Mayo County Council to prepare Active Travel Mobility & Transportation Plans for the towns of Castlebar and Ballina. The overall objective is to enable the authorities to introduce transport policies and a series of traffic and transportation measures up to 2040.

1.1.2 A Local Area Model (LAM) representing traffic in Ballina has been developed for this study.

1.1.3 The purpose of this Traffic Modelling Report (TMR) is to detail the development of the Ballina LAM and describe the traffic forecasting that has been undertaken to assess the impact of future transportation schemes.

1.2 Background information

1.2.1 Ballina is a town in County Mayo, where the national secondary routes N59 meet the national primary route N26. The N26 is the main access route from Dublin to Ballina. Ballina was designated as a Key Town in the recently adopted Regional Spatial and Economic Strategy 2020 – 2032 (RSES). A key growth ambition for the Northern and Western Region is to build centres of scale across the region, where people and businesses seek to live, work and invest. The town has a primary role in providing regional, strategic employment development of significant scale to support the growth of the higher tier urban centres in the region including Galway and Sligo.

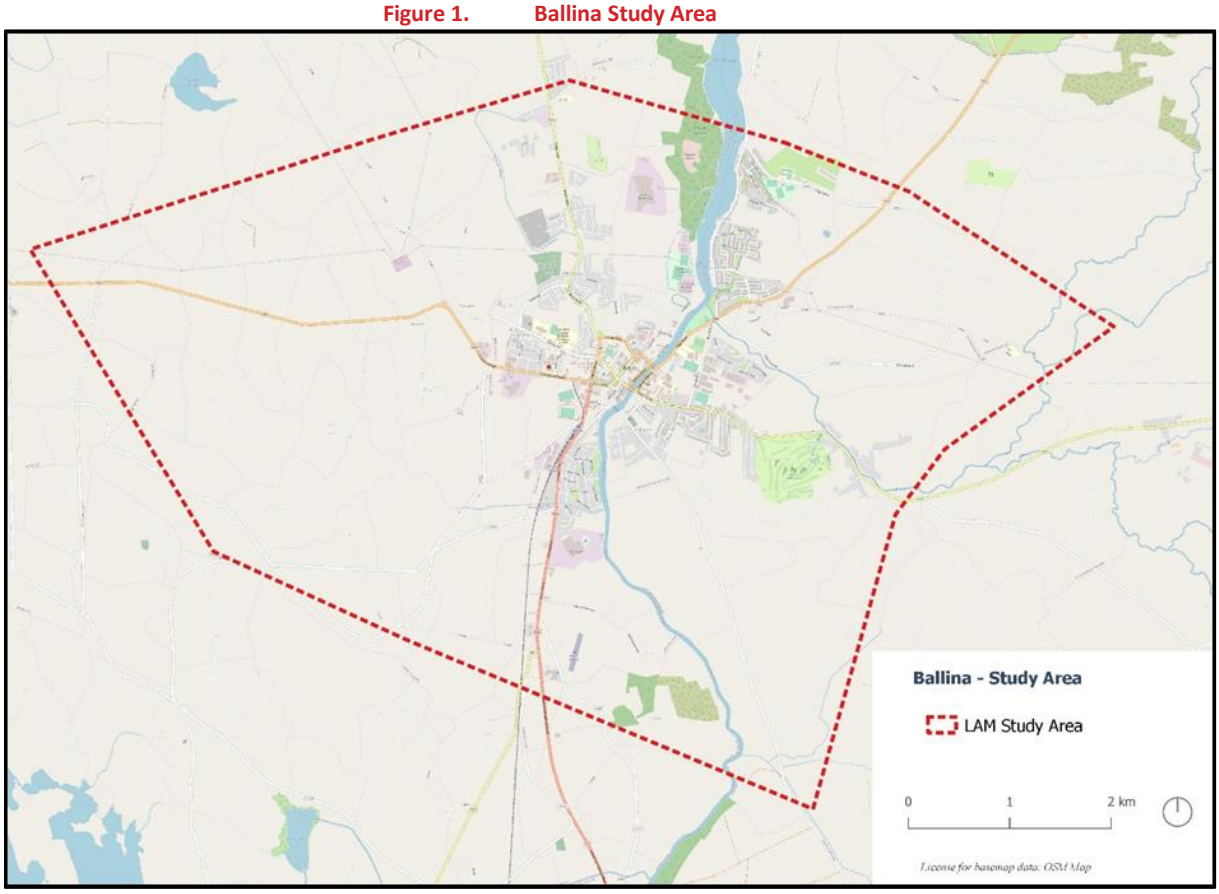
1.2.2 Traffic congestion and road safety problems are experienced within Ballina due to the high flow of traffic crossing the town. The Ballina Active Travel Mobility Plan will underpin evidence-based transport strategies which aim to increase accessibility, promote active travel modes, and seek to reduce car use by a variety of means and to encourage integrated land use and transport planning within and eventually between major towns. The objectives will also benefit Climate Action policies both on a county and regional level.

1.2.3 Walking and cycling strategies support sustainable activity within communities, and will serve to develop towns with networks of safe and convenient routes that will improve the quality of life for everybody in the communities. This is achieved by prioritising walking and cycling for travel to work, education, shopping and day-to-day business whilst also providing high quality public environments and amenities.

1.3 Study Area

1.3.1 The Study Area adopted for the Ballina Active Travel Mobility project is illustrated in Figure 1 below.

Figure 1. Ballina Study Area



1.4 Structure of this Report

1.4.1 The remainder of this report is structured as follows:

- **Chapter 2** describes the traffic data that was collected and used in the development of the Ballina LAM;
- **Chapter 3** outlines the structure of the LAM;
- **Chapters 4 to 7** set out the development of the base year traffic model, including the development of the network, zone system and model calibration and validation;
- **Chapter 8** presents how the impacts of the pandemic travel restrictions are considered; and
- **Chapter 9** summarises the LAM development process.

2. DATA COLLECTION

2.1 Summary

2.1.1 Traffic surveys were carried out in November 2021, comprising:

- Junction Turning Counts (JTC) at key junctions throughout the whole town and at key points on the road network outside Ballina town centre, undertaken on Tuesday 23th November 2021 – See Figure 2 below;
- Automatic Traffic Counts (ATC) on key roads undertaken for a period between 22nd November and 5th December 2021 – See Figure 3 below; and
- Journey time surveys on key routes through the study area, undertaken on Tuesday 23th November 2021 – See Figure 4 below.

2.1.2 The surveys are described in greater detail below. The processed counts were used for calibrating the base year traffic model, and they reflect the conditions on an average weekday in November.

2.2 Traffic Counts

2.2.1 Automatic Traffic Counts (ATC) were carried out at 26 junctions, for a 24-hour period 00:00-24:00 from Monday 22nd November 2021 until Sunday 5th December 2021. Pneumatic tube detectors attached to automatic count devices were in use for the ATCs.

2.2.2 Table 1 below shows the processed observed flows from the ATCs for each location, split by vehicle classes (Car, Lights Goods Vehicle & Other Goods Vehicle) and peak periods (AM 08:00-09:00, PM 17:00-18:00).

Table 1. Processed Automatic Traffic Counts (pcu)

ATC Site	Direction	GeoDirection	AM PEAK			PM PEAK		
			CAR	LGV	OGV	CAR	LGV	OGV
28	A	EB	118	12	9	138	14	6
28	B	WB	205	15	17	164	9	6
29	A	NB	370	35	35	499	24	24
29	B	SB	350	21	45	353	15	33
30	A	EB	376	28	42	476	11	56
30	B	WB	321	10	16	429	9	9
31	A	NB	257	72	71	424	90	41
31	B	SB	206	23	25	275	22	14
32	A	NB	49	16	8	162	32	2
32	B	SB	36	9	7	96	20	6
33	A	NB	44	11	7	74	9	2
33	B	SB	44	7	5	65	8	1
36	A	NB	736	86	87	898	84	113
37	B	SB	765	111	75	846	111	81
38	A	NB	387	63	30	601	71	26
38	B	SB	526	50	36	412	39	30
39	A	EB	225	31	15	379	32	8
39	B	WB	345	36	23	347	28	14
40	A	NB	149	14	14	192	10	19
40	B	SB	143	34	20	243	31	16
41	A	NB	208	34	9	221	19	11
42	A	NB	565	86	44	545	58	42
42	B	SB	378	81	54	527	96	34
43	B	WB	129	39	20	216	44	13
44	A	NB	244	46	33	315	48	24
44	B	SB	312	32	32	298	27	21
45	A	NB	10	2	3	26	3	1
45	B	SB	15	3	2	18	3	1
47	A	NB	157	16	68	284	24	94
47	B	SB	307	29	19	267	30	17
48	A	EB	66	27	7	39	20	8
48	B	WB	47	18	11	43	14	5
49	A	EB	85	12	5	174	17	4
49	B	WB	169	24	6	104	14	4
50	A	NB	65	10	12	53	8	2
50	B	SB	44	6	3	61	8	3
51	A	NB	452	36	60	521	53	34
51	B	SB	425	44	46	489	38	44
52	A	EB	225	92	32	153	68	16
52	B	WB	171	34	29	312	44	12
53	A	EB	12	6	4	32	9	3
53	B	WB	24	17	4	19	9	3

Figure 2. Automatic Traffic Counts locations (November 2021 survey)

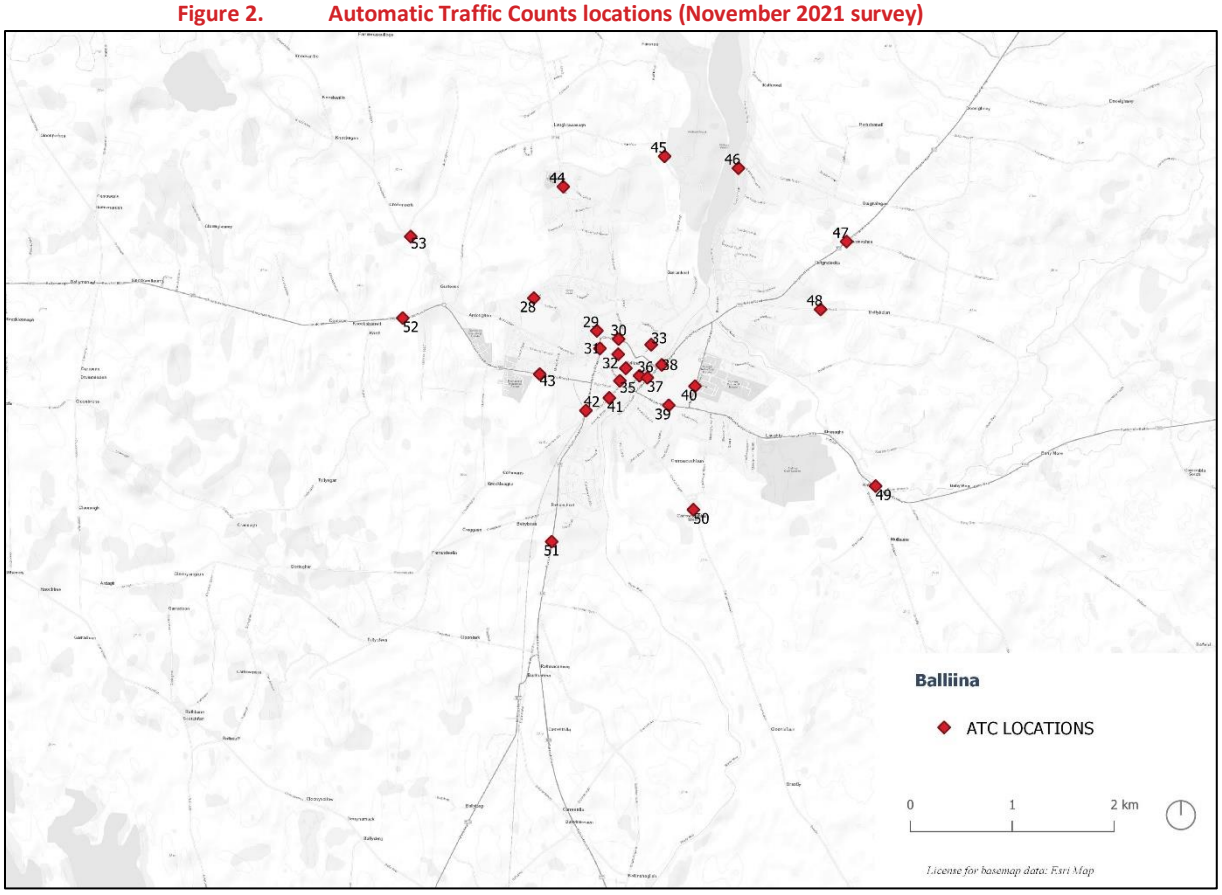
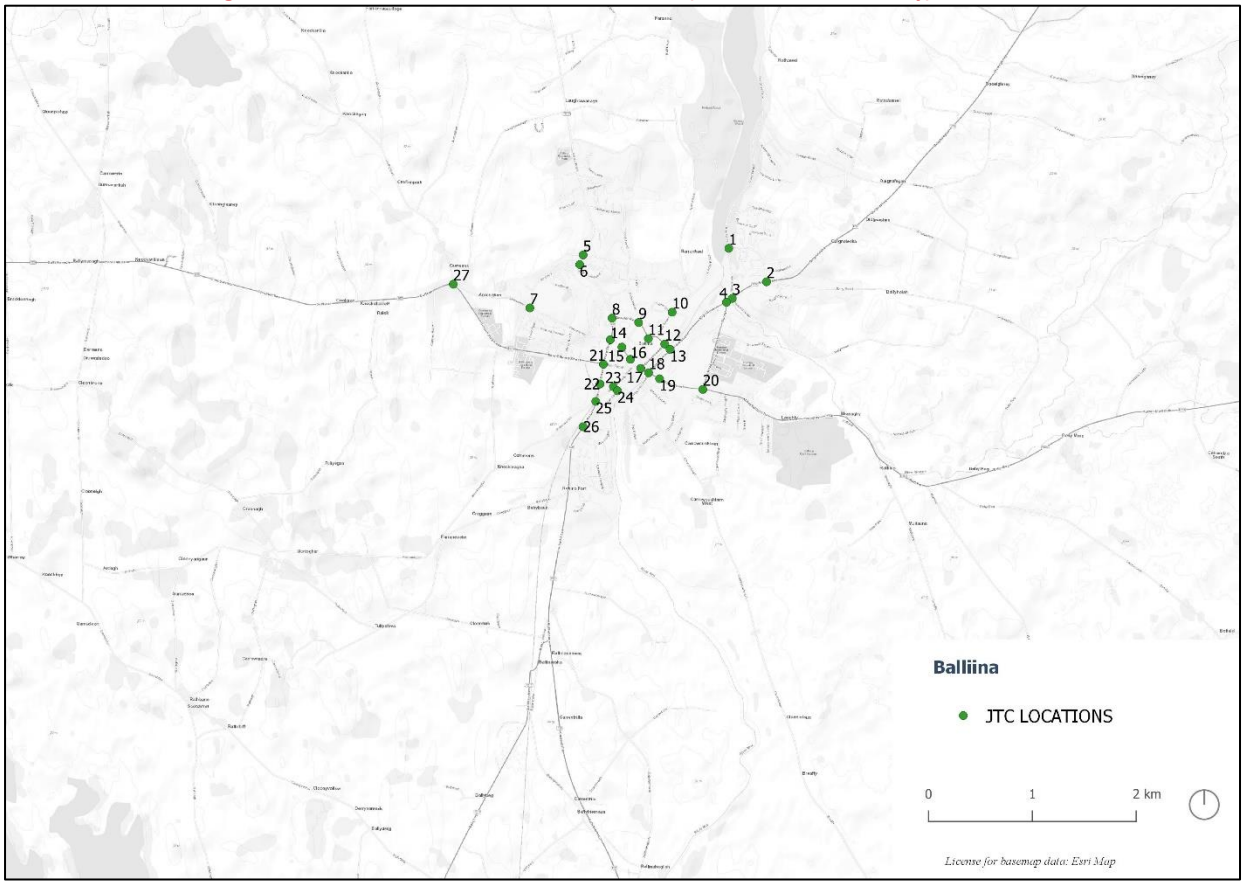


Figure 3. Junction Traffic Counts locations (November 2021 survey)



2.3 Journey Time Surveys

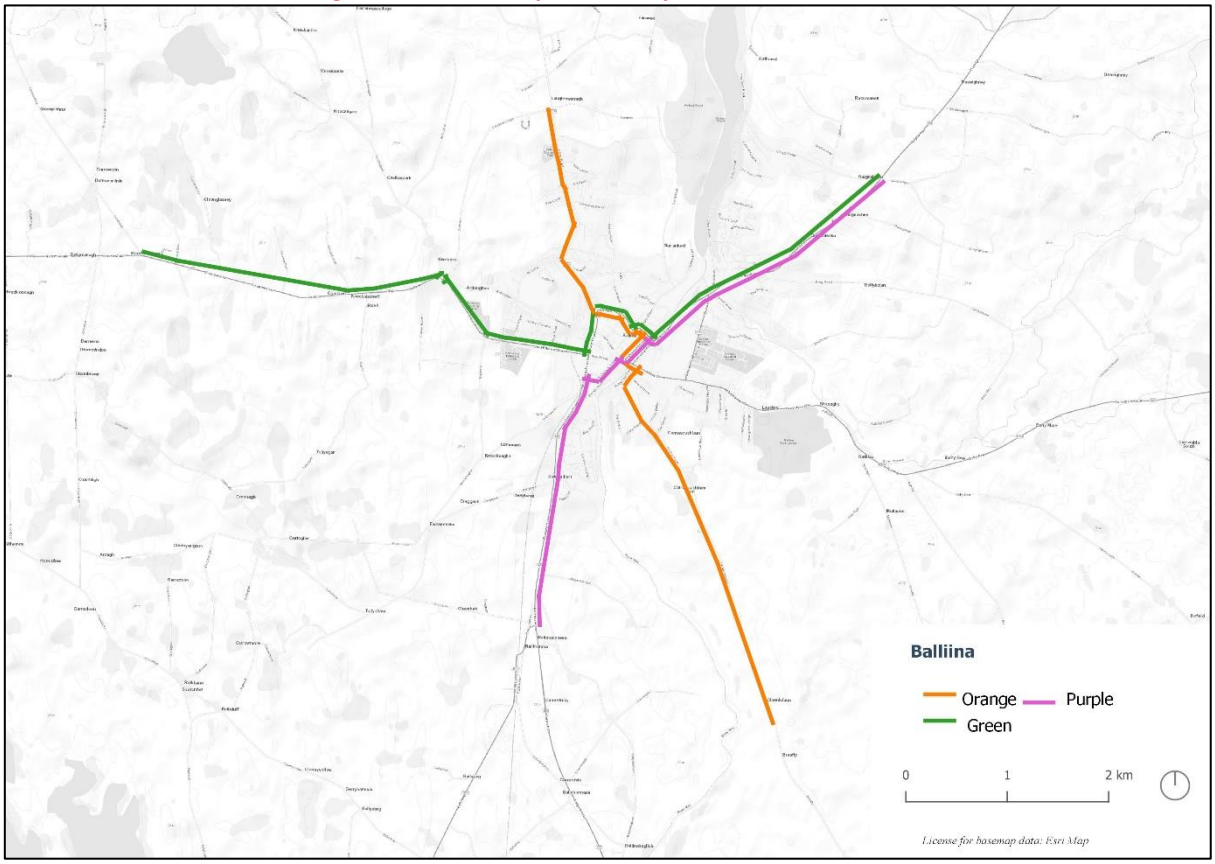
2.3.1 Journey time surveys were undertaken along the three main corridors (colour coded as green, orange and purple in Figure 4 below) travelling through Ballina. The routes were surveyed using a single GPS-equipped survey vehicle, driving the routes through the day and recording its position and timing. All recordings were captured on 23th November 2021.

2.3.2 The routes were undertaken with the driver starting before the initial starting node to allow them to get up to speed with the other vehicles on the road before continuing beyond the final point. The driver was instructed to drive at the prevailing traffic speed insofar as it was safe and legal to do so. This is a common form of survey for recording variation in speed along a route.

2.3.3 To increase the sample size, records with a starting and a finishing time within 07:00-10:00 for AM (respectively 16:00-19:00 for PM) were included. Number of observations recorded were (both directions):

- Green route: 0 in AM and 10 in PM
- Orange route: 18 in AM and 16 in PM
- Purple route: 17 in AM and 12 in PM

Figure 4. Journey Time Survey Routes



2.3.4 Table 2 below, shows the recorded average journey times for each of the above routes for each of the time periods surveyed.

Table 2. Observed Average Journey Times in seconds

ROUTE	DIRECTION	AM	PM
Green	Eastbound	-	980
Green	Westbound	-	853
Orange	Northbound	555	644
Orange	Southbound	507	625
Purple	Northbound	531	882
Purple	Southbound	559	857

3. BASE YEAR MODEL DEVELOPMENT

3.1 Introduction

3.1.1 The following chapter describes the methodology used for developing the Ballina Local Area Model (LAM). The National Transport Authority's (NTA) Regional Modelling System (RMS) was used as a basis for the LAM development, providing initial network detail and prior demand matrices. Further refinement was undertaken in the modelled area and it was calibrated and validated to observed count data in-line with TII project appraisal guidelines.

3.2 NTA Regional Modelling System (RMS)

3.2.1 The NTA RMS comprises the following three main components:

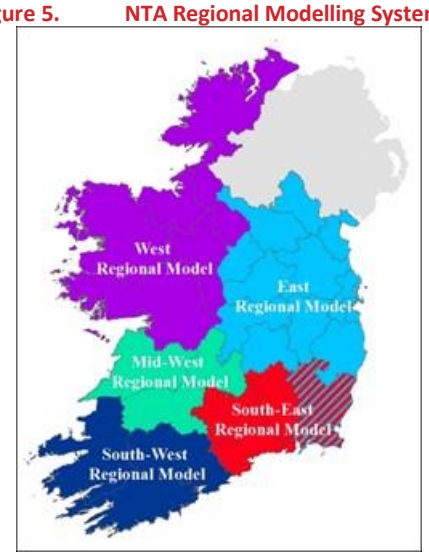
- The National Demand Forecasting Model (NDFM);
- 5 Regional Models; and
- A suite of appraisal Modules.

3.2.2 The NDFM takes input attributes such as land-use data, population etc., and estimates the total quantity of daily travel demand produced by, and attracted to, each of the 18,641 Census Small Areas in Ireland

3.3 West Regional Model (WRM) Overview

3.3.1 The WRM is a strategic multi-modal transport model representing travel by all the primary surface modes, including: walking and cycling (active modes); travel by car, bus, rail, tram, light goods and heavy goods vehicles; and broadly covers the Connaught province of Ireland including the counties of Galway, Leitrim, Sligo, Roscommon, Mayo and Donegal. The five regional models are shown in Figure 5 below, and highlights the location of the WRM.

Figure 5. NTA Regional Modelling System Extent



3.3.2 The WRM is comprised of the following key elements:

- Trip End Integration: The Trip End Integration module converts the 24 hour trip ends output by the NDFM into the appropriate zone system and time period disaggregation for use in the Full Demand Model (FDM);
- The Full Demand Model (FDM): The FDM processes travel demand, carries out mode and destination choice, and outputs origin-destination travel matrices to the

assignment models. The FDM and assignment models run iteratively until an equilibrium between travel demand and the cost of travel is achieved; and

- Assignment Models: The Road, Public Transport, and Active Modes assignment models receive the trip matrices produced by the FDM and assign them in their respective transport networks to determine route choice and the generalised cost for each origin and destination pair.

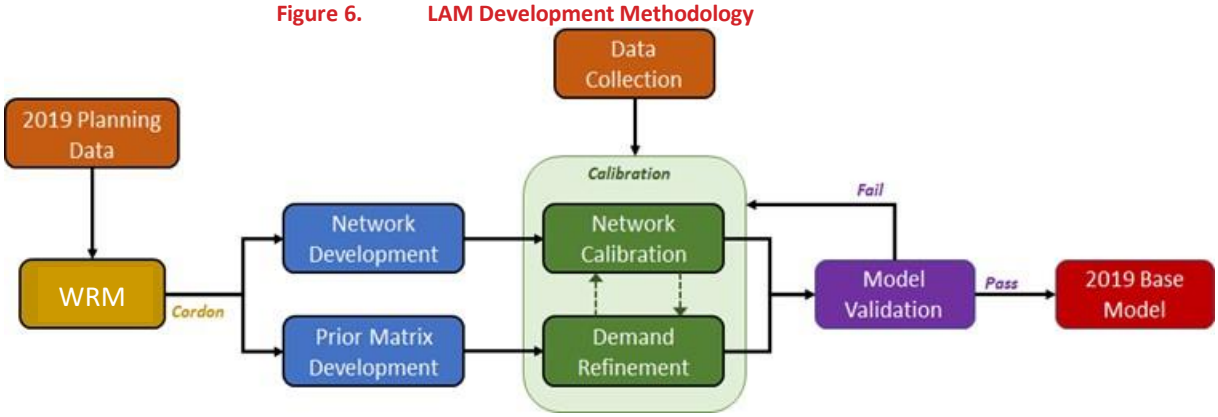
3.3.3 Destination and mode choice parameters within the WRM have been calibrated using two main sources: Census 2016 Place of Work, School or College - Census of Anonymised Records (2016 POWSCAR), and the Irish National Household Travel Survey (2017 NHTS). The NTA's RMS is the most sophisticated modelling tool available for assessing complex multi modal movements within an urban context. This provides a consistent framework for transport assessment.

3.3.4 As the study area falls within the area covered by the WRM, It therefore is an ideal tool to use as a basis for the development of the Ballina LAM. In addition, it provides the platform to forecast future trip demand and distribution.

3.4 LAM Development Methodology

3.4.1 The methodology for developing the Ballina LAM from the RMS is illustrated in Figure 6 below.

Figure 6. LAM Development Methodology



3.4.2 In summary, the process involves the following steps:

- **2016 WRM Run:** The calibrated base year scenario (W17R02) was used as the starting point for the Ballina LAM;
- **WRM Cordon:** The 2016 WRM road assignment was cordoned to extract the initial network and traffic matrix covering the Ballina LAM extent (see Figure 1).
- **Network and Prior Matrix Development:** The initial WRM cordoned road network was reviewed in greater detail for the study area for items including junction layouts, network speeds, missing links etc... The zone system from the WRM was disaggregated where necessary to provide a more accurate representation of traffic loading onto the road network. Several links were added to the cordoned road network.
- **Data Collection:** Traffic survey data including link counts, junction turning counts and journey time information was collected and used to calibrate and validate the LAM (refer to Chapter 2 for further information).
- **Calibration:** Calibration is the process of adjusting the model to better represent observed data. This was undertaken in two steps:

- Network Calibration: adjustments to the road network based on observations extracted from traffic survey data e.g. altering turning capacities at junctions, updating link speeds etc.; and
- Demand Refinement: adjustments to the prior matrix to better represent observed travel movements from count data.

- **Validation:** Validation is the assessment of the validity of the calibrated model, and its robustness in representing observed traffic conditions. Calibration and validation is an iterative process. If the results of the validation checks are unsatisfactory, then adjustments will be made as required in order to achieve a better representation of reality. The Ballina LAM was validated in-line with TII and UK Department of Transport TAG guidance. Further information on model validation is provided in Chapter 7 of this report.

3.5 Model Area

3.5.1 The area to be analysed in detail in the Ballina LAM is illustrated in Figure 1, and was identified through the following:

- Review of all major roads and alternative routing options in the study area; and
- Internal discussions with the project team.

3.6 Model Time Periods

3.6.1 Automatic Traffic Counts (ATC's) were undertaken at 21 locations throughout the study area (further information included in Chapter 2 of this report).

3.6.2 These ATC results were utilised to identify the typical profile of traffic demand within the study area throughout an average weekday. The ATC data suggests that the hours experiencing the highest levels of traffic are from 08:00-09:00 in the AM, and 17:00-18:00 in the PM. These peaks are also consistent with the NTA WRM.

3.6.3 Therefore, the Ballina LAM was developed, calibrated and validated to represent the following time periods:

- AM Morning peak period: 08:00 to 09:00;
- PM Evening peak period: 17:00 to 18:00;

3.7 Demand Segmentation

3.7.1 The prior travel demand for the Ballina LAM was derived from the NTA's WRM (See Chapter 5 for more details). The WRM assignment matrices contain the following ten user classes:

- Car Employer's Business (in work time)
- Car Commute (travel to/from work);
- Car Education (travel to/from school);
- Car Other (other non-work purposes such as shopping, visiting friends, etc);
- Retired
- Taxi;
- Light Goods Vehicles (LGV);
- Other Goods Vehicles (OGV) 1;
- OGV2 Permit Holder (5 or more axles and allowed drive in Dublin city centre); and
- OGV2 (5 or more axles and not allowed drive in Dublin city centre).

3.7.2 Each user class has its own defined set of generalised cost parameters based on a price per kilometre and a price per minute. To ensure consistency with the larger strategic WRM, the ten user classes and their associated generalised cost parameters were retained for the Ballina LAM.

3.8 Model Software

3.8.1 The model software used to develop the Ballina LAM is the SATURN (Simulation Assignment of Traffic to Urban Road Networks) suite of transportation modelling programs.

3.8.2 SATURN has 6 basic functions:

1. As a combined traffic simulation and assignment model for the analysis of road-investment schemes ranging from traffic management schemes over relatively localised networks (typically of the order of 100 to 200 nodes) through to major infrastructure improvements where models with over 1,000 junctions are not infrequent;
2. As a "conventional" traffic assignment model for the analysis of much larger networks (e.g., up to 6,000 links in the standard PC version, 37,500 in the largest);
3. As a simulation model of individual junctions;
4. As a network editor, data base and analysis system;
5. As a matrix manipulation package for the production of, for example, trip matrices; and
6. As a trip matrix demand model covering the basic elements of trip distribution, modal split, etc.

3.9 Assignment Parameters

3.9.1 The Ballina LAM was developed in SATURN and the model was calibrated and validated using release version 11.4.07 of the software. The SATURN application SATNET was used to build the various data files in to an assignable road network (UFN) file.

3.9.2 Matrices were then assigned to the network using the SATALL application, where it iterates through assignment and simulation loops until the user defined levels of convergence are reached (RSTOP and STPGAP), or the model reaches the user defined maximum number of assignment and simulation loops (MASL). SATALL uses a converged equilibrium assignment method to assign the traffic to the road network over successive iterations, until user defined convergence criteria are achieved.

3.9.3 The generalised cost and assignment parameters from the WRM road model were used in the Ballina LAM.

4. NETWORK DEVELOPMENT

4.1 Introduction

4.1.1 This Chapter provides an overview of the network developed for the Ballina LAM. The goal in developing the LAM was to create a model that accurately reflects current traffic conditions in the study area for the 2021 base year, and to a sufficient level of detail to allow the modelling of alternative schemes. To achieve this goal, the model must have a sufficiently defined road network and trip demand representation.

4.2 Network Development

4.2.1 The NTA's WRM was utilised as a base for generating the highway network for the Ballina LAM. The base WRM network was developed from the HERE mapping layer which provides a detailed representation of all National Primary, Secondary, Regional and local roads in Ireland.

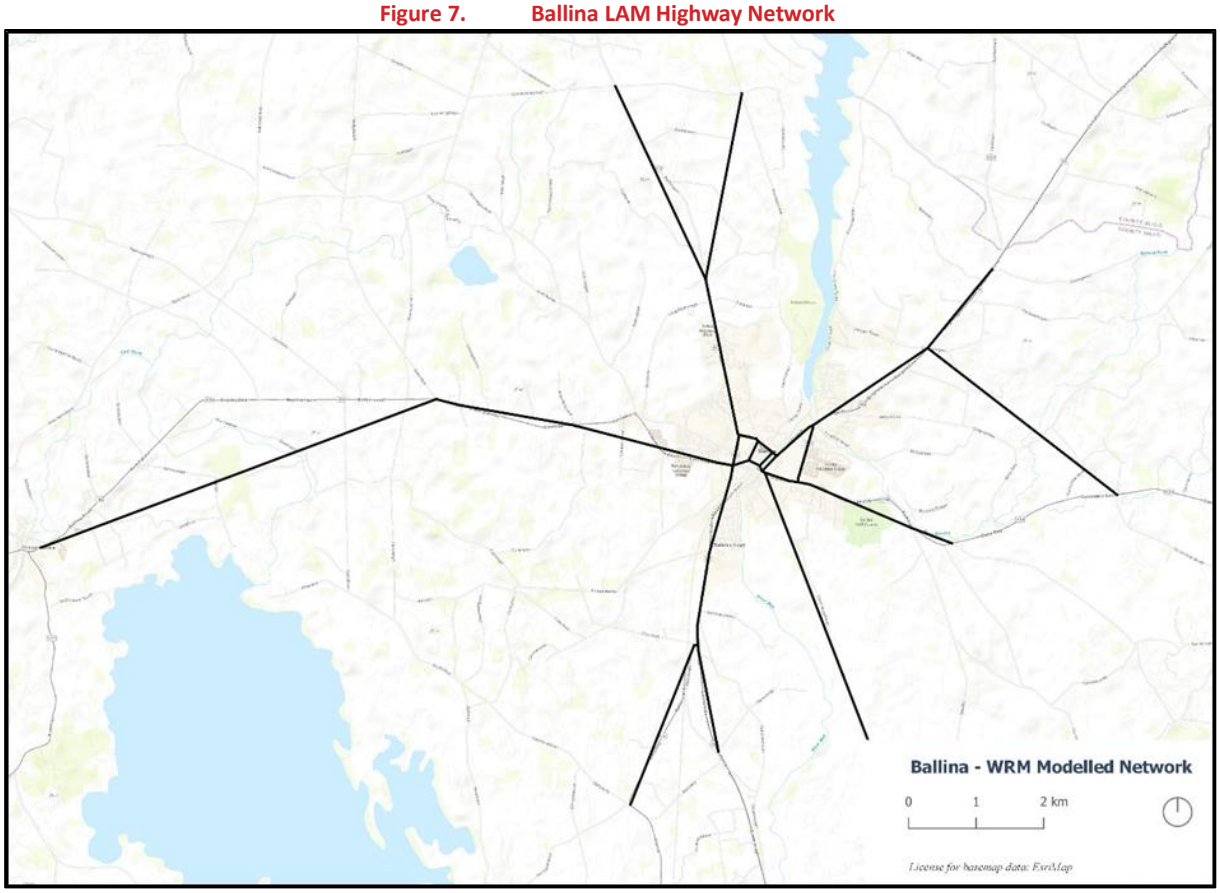
4.2.2 The Ballina LAM road network, extracted from a cordon of the WRM, is illustrated in Figure 7. A detailed review was undertaken of all model coding in the study area using digital mapping systems such as Google Earth to ensure it represented, as accurately as possible, the existing road network. This included aspects such as network speed limits, availability of bus lanes, junction layouts, pedestrian crossing points etc.

4.2.3 Junction capacities and saturation flows were adopted from the Network Coding Guidelines developed for the NTA as part of the RMS development, and were further reviewed during the calibration process. Where required, additional detail was added to ensure that traffic was loading onto the road network at the correct locations.

4.2.4 Traffic signals' phasing and timing were provided by Mayo County Council and included in the LAM coding.

4.2.5 As illustrated in Figure 7, the WRM provides a detailed representation of all significant roads within the study area. To ensure full network coverage and route choice, all roads have been considered, from the national primary routes to minor residential streets.

Figure 7. Ballina LAM Highway Network



5. ZONE SYSTEM AND PRIOR MATRIX DEVELOPMENT

5.1 Introduction

5.1.1 This chapter describes the development of the base LAM trips matrix with reference to the following aspects:

- Zone system development; and
- Matrix development.

5.1.2 These matrices were later subjected to matrix estimation as part of the process of calibrating the model. The matrices described in this section are referred to as 'prior' matrices.

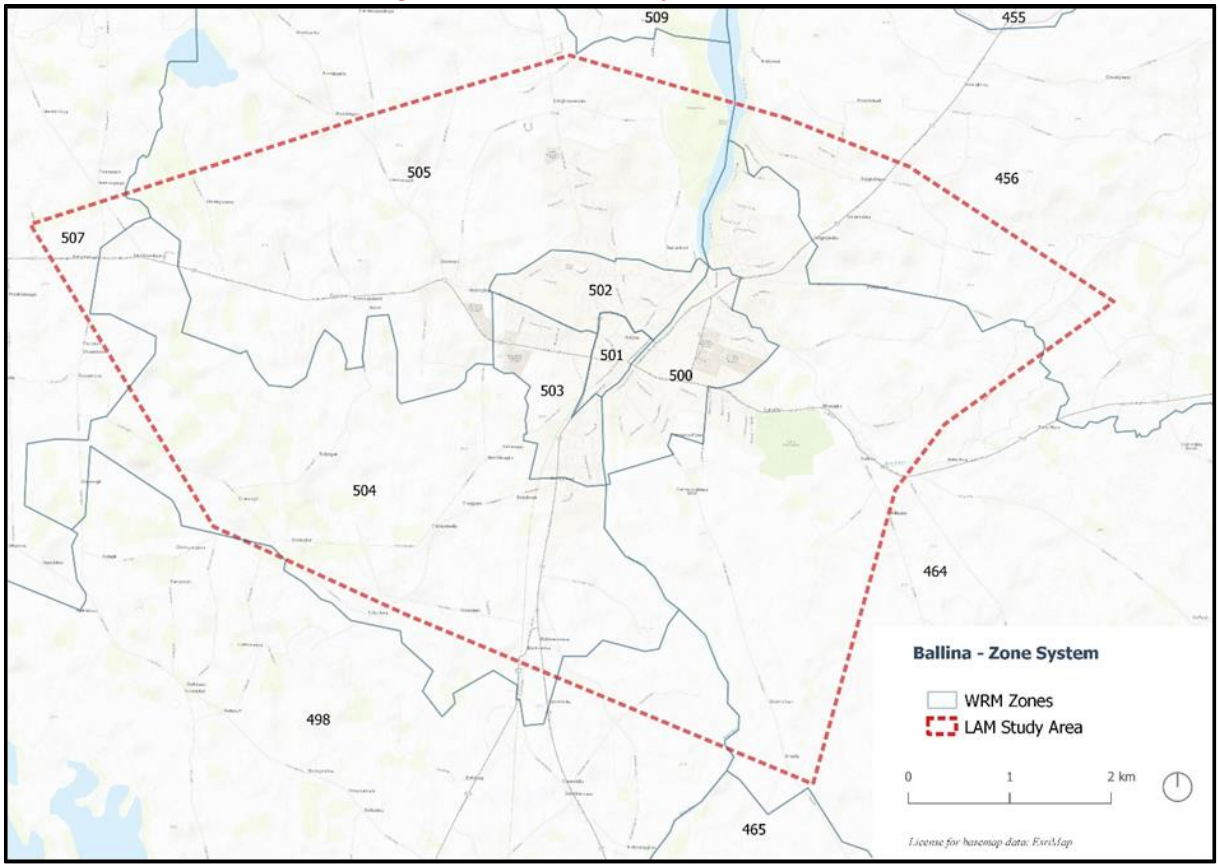
5.2 Zone System Development

5.2.1 Similar to the road network described previously, the base Ballina LAM zone system was adopted from the WRM. The WRM zone system was developed using the Census Small Area Population Statistics (SAPS) and Place of Work, School or College Census of Anonymised Records (POWSCAR) to get detailed information on population, employment and education centres across the model area. Other data sources such as MyPlan and Geo Directory were also used to obtain information on specified land-use zoning and location of commercial development. The following rules were then applied to generate the zone system:

- Population, Employment and Education – the number of zones with values of population, number of jobs and persons in education above a certain threshold should be minimised;
- Activity Levels – the number of zones with activity levels that have very low or very high levels of trips should be minimised;
- Intra-zonal Trips – threshold values should be applied to the proportion of intra-zonal trips within each zone, to avoid an underestimation of flow, congestion and delay on the network;
- Land Use – zones should be created with homogeneous land use and socio-economic characteristics where possible;
- Zone Size/Shape – zone size and the regularity of zone shape should be considered in order to avoid issues with inaccurate representation of route choice;
- Political Geography – it should be possible to aggregate all zones to ED level i.e. zone boundaries do not intersect ED boundaries; and
- Special Generators/Attractors – large generators/attractors of traffic such as Airports, Hospitals, shopping centres etc. should be allocated to separate zones.

5.2.2 Figure 8 below, illustrates the WRM zone system within the study area.

Figure 8. WRM Zone System

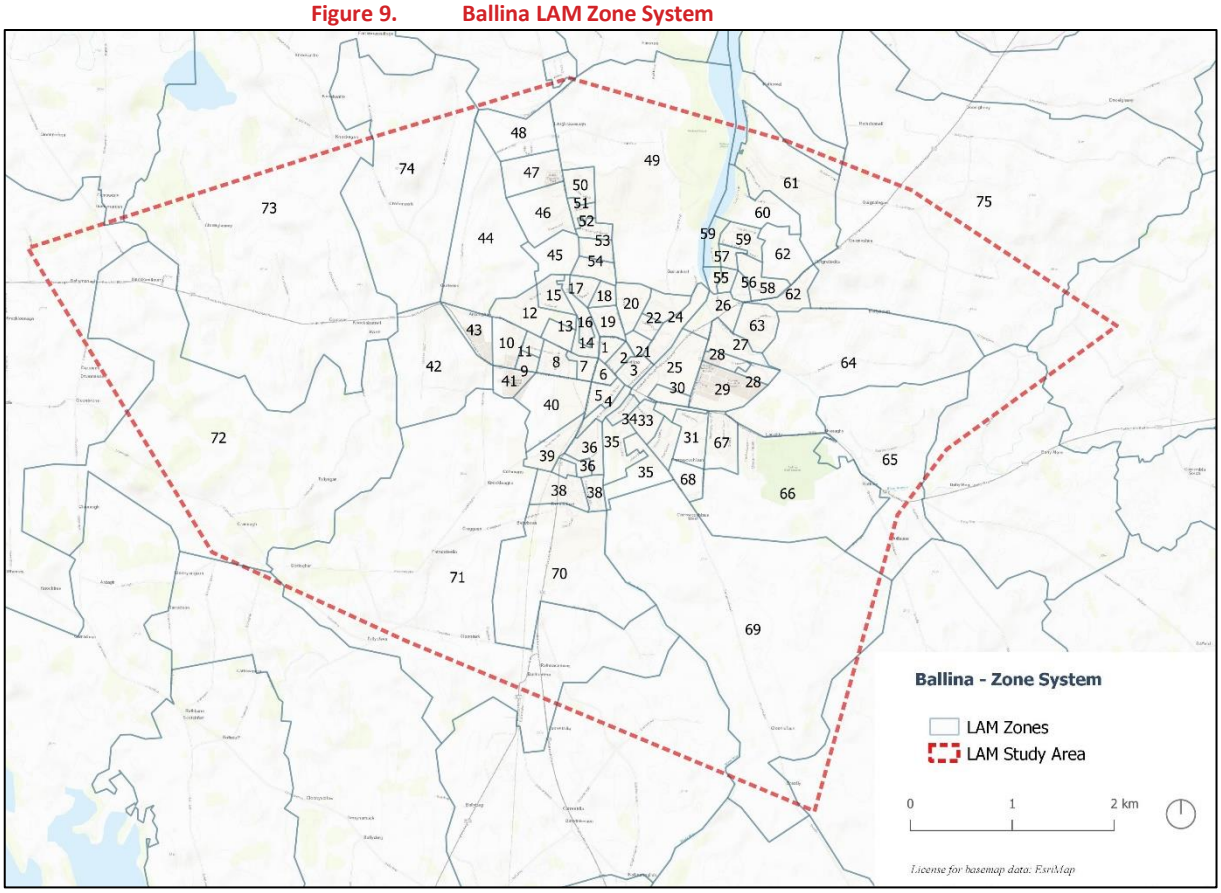


5.2.3 In the parts of the WRM, close to City areas, the WRM zones are represented in quite a high level of detail. As such, individual housing estates and key employers have been given their own zones. However, in areas further away from the town centre, the WRM zones become larger and more aggregate in nature primarily due to the lower levels of activity (population and employment) in these areas.

5.2.4 A detailed review was undertaken of all WRM zoning and centroid connectors in the study area. On review of this, a number of edits were applied to the WRM zone system in order to provide a more accurate representation of traffic loading onto the road network for the Ballina LAM.

5.2.5 Figure 9, below, illustrates the zonal system developed for the study area. In total, 86 zones have been created, with 75 internal zones within the study area and 11 external zones representing the roads that enter the area of interest. This level of detail ensures that traffic loads accurately within the Ballina LAM study area.

Figure 9. Ballina LAM Zone System



5.3 Prior Matrix Development

5.3.1 As noted previously in Chapter 0, the Full Demand Model carries out mode and trip destination choice for all zones within the WRM. The FDM has been calibrated using Census data, hence, providing a robust and accurate representation of trip distribution across the model network. In order to generate prior matrices for the study area, a cordon was extracted from the calibrated 2016 WRM base year scenario. The cordon function within SATURN, facilitates the extraction of trip matrices for a subset area of the WRM whilst maintaining route and destination choice from the full model.

5.3.2 A bespoke Excel spreadsheet tool was created to disaggregate the cordoned WRM matrices to each of the 75 internal LAM zones. This tool used available data on populations, employment, and education places at Census small area level, to split trips to/from each WRM zone between the more detailed LAM zoning system. This allowed for a consistent split of demand within the study area, whilst maintaining consistency with the WRM matrix.

6. BALLINA LAM EARLY CHECKS

6.1 Introduction

6.1.1 During the development of the Ballina LAM model 2021 reference case network, initial assignments of the AM and PM periods were undertaken, and flow comparisons undertaken between the WRM 2016 network and the developed LAMs in order to identify model discrepancies.

6.2 Flow comparison overview

6.2.1 The comparison showed an impact on flows in the wider area as a result of the addition of more detailed infrastructure in the LAM model. This analysis shows the distribution and choice of all trips associated with the new zone system and so the absolute number of vehicles being forced to re-route is relatively small, particularly given that these are spread around the LAM boundaries, rather than focussed on one point.

Figure 10. AM Traffic Flow Distribution WRM model

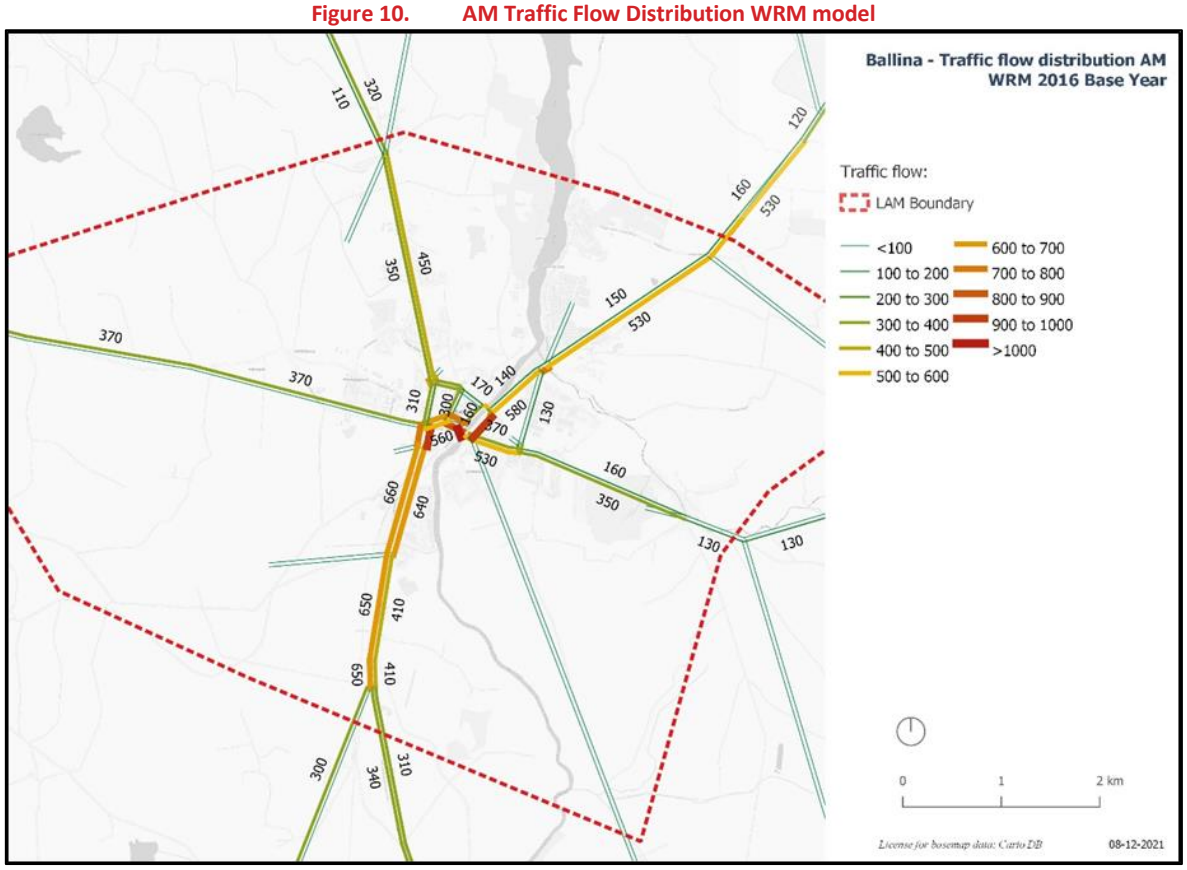
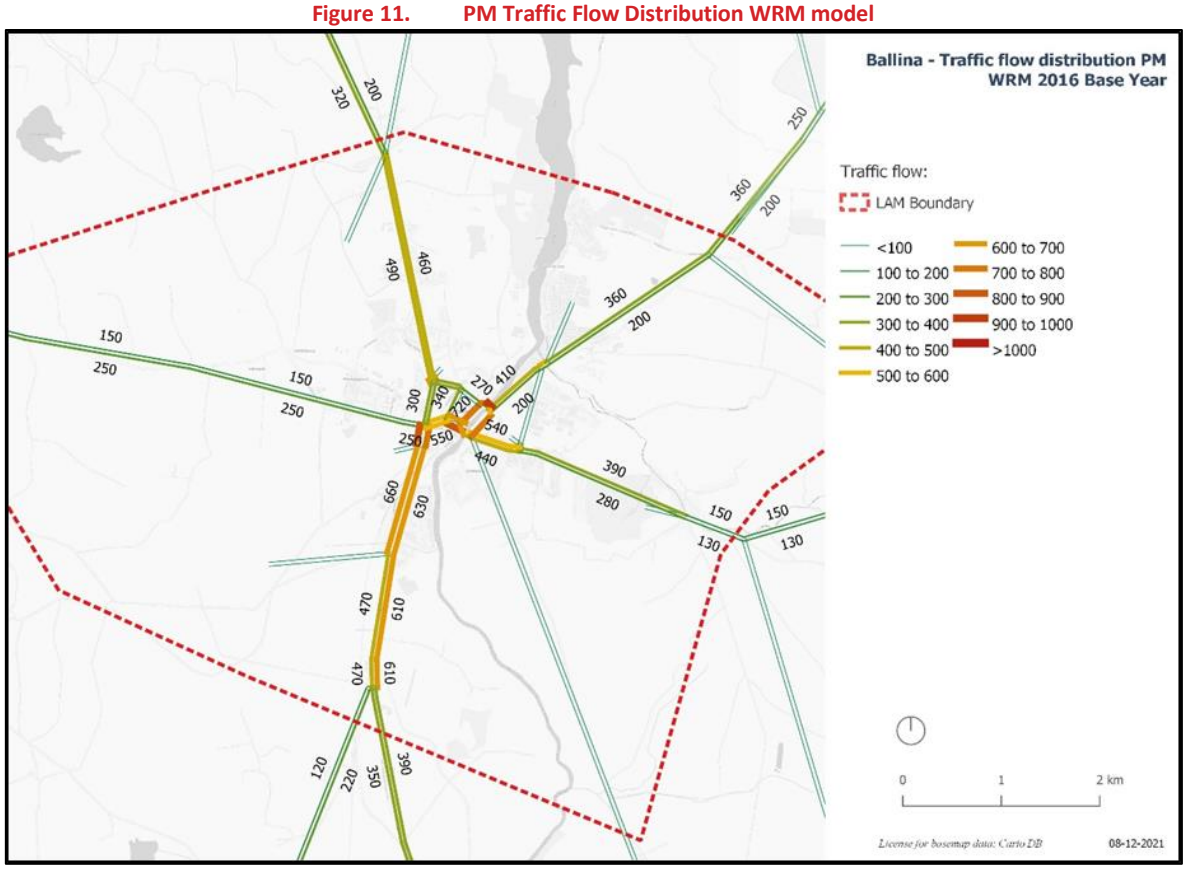


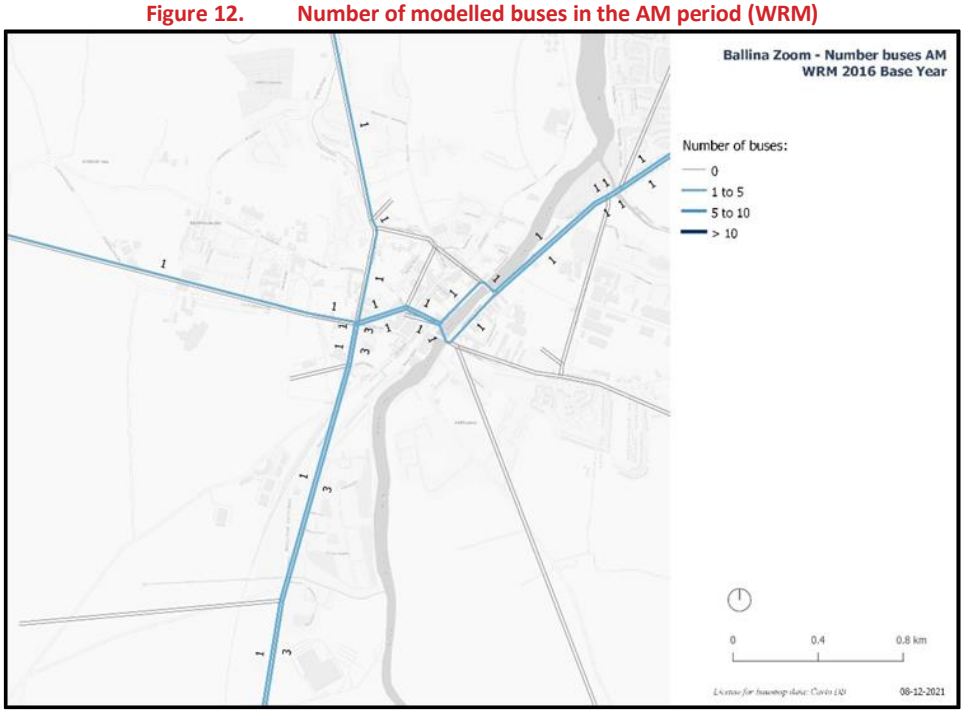
Figure 11. PM Traffic Flow Distribution WRM model



6.3 Bus Flow Assumptions

6.3.1 There are only a few modelled buses in Ballina in the WRM (see Figure 12). Their contribution to traffic is not significant and can be ignored in the LAM.

Figure 12. Number of modelled buses in the AM period (WRM)



7. MODEL CALIBRATION AND VALIDATION

7.1 Overview of the Calibration and Validation Process

7.1.1 Once base prior matrices have been generated, the calibration process aims to reduce differences between observed and modelled traffic characteristics. Generally, the components of the model that may be adjusted on the demand side are trips distribution and trip production / attraction. This adjustment usually involves trip matrix estimation.

7.1.2 On the supply side (network), modelled junction and link characteristics may be altered if sufficient new information is available to justify changes to the existing network.

7.1.3 The Ballina LAM was calibrated and validated in accordance with Transport Infrastructure Ireland's (TII) Project Appraisal Guidelines (PAG) for National Roads Unit 5.1 – Construction of Transport Models (October 2016). This is a widely accepted standard in Ireland that provides robust calibration and validation criteria to which certain types of highway models should adhere. Additionally, the LAM development has followed guidance from the UK's Department for Transport's Transport Analysis Guidance (TAG) unit M3-1, particularly in terms of matrix estimation controls.

7.1.4 The following sections of this chapter detail the calibration process undertaken to ensure that the LAM accurately reflects baseline conditions, including information on:

- Traffic Count Data;
- Calibration Steps;
- Matrix Estimation; and
- Calibration Statistics (i.e. GEH and Linear Regression Analysis).

Traffic Count Data

7.1.5 To ensure the robustness of the developed strategic model, a series of traffic counts for the study area have been used to assist in the calibration and validation of base model flows. The following surveys were used in the process:

- Junction Turning Counts (JTC) at 26 points (162 individual movements);
- Automatic Traffic Counts (ATC) at 42 points; and
- Moving Car Observer (MCO) Journey Time Surveys along 3 existing paths.

7.1.6 The ATC and JTC survey locations are illustrated in Figure 2 and Figure 3 respectively. The Journey Time Surveys are discussed in further detail in section 8.3 describing the model validation process.

7.1.7 Turning counts were undertaken at key locations to provide detailed movements within the specified junctions. The locations of ATC surveys provide a record of traffic in the study area over an extended period of time (14 days). Incorporating this information enables an accurate representation of traffic flows within the model.

Calibration Steps

7.1.8 As an initial calibration step, all modelled movements with corresponding junction turning counts were examined to determine if the count exceeded modelled capacity. Remedial steps were then taken to permit realistic flows in the model.

7.1.9 Similarly, the capacity and speeds of modelled links were also checked to ensure they were broadly in line with survey information.

7.1.10 As the LAM was coded based on best practice, guidelines developed during the NTA Regional Model Scoping Process, the network coded was an accurate and up-to date representation of the existing road network. If required however, the following network model parameters were adjusted if there was clear reason for doing so:

- Junction type (Priority, Signalised, Roundabout);
- Road lengths;
- Signal timings;
- Link free flow travel speed;
- The number of approach lanes at each junction arm;
- Traffic lane width per junction approach, and the lane discipline adopted (including prohibited turns);
- Saturation flow through junctions;
- Assumed road capacities;
- Link based flow-delay relationships;
- Any other traffic management measures that may impact on capacity, such as bus lanes, traffic calming, parking controls and cycle-lanes.
- Zone co-ordinates; and
- Zone loading points (connections to the network).

Trip Demand Adjustment (Matrix Estimation)

7.1.11 Following calibration of the network, trip demand is adjusted in line with count data, so that there is an improved agreement between counts and modelled flows. The base prior matrix is fed into a SATURN programme called ME2. ME2 then adjusts origin-destination patterns to produce a trip demand matrix that better replicates traffic counts when assigned to the network. When this replication is satisfactory the matrix is said to be calibrated.

7.1.12 The prior matrix is adjusted only after all options for improving the network are exhausted. Any matrix adjustment must significantly improve the match between observed and modelled flows, and not introduce more trips into a zone than could realistically be expected. Controls are placed on zones to ensure that the trip demand generated is sensible and in line with census population and employment statistics.

7.1.13 The algorithm driving the ME2 estimation process tends to reduce long trips in place of chains of short trips, especially when counts are spread over the entire area, which may not fully reflect reality. Constraints are therefore placed on the adjustment process to protect the number of movements and distribution of the through trips contained within the original car trip matrix. By restricting such long through trips, the matrix adjustment algorithm is forced to create or re-distribute short trips.

Calibration Statistics - GEH

7.1.14 The GEH statistic is a measure that considers both absolute and proportional differences in flows. Thus, for high levels of flow a low GEH may only be achieved if the percentage difference in flow is small. For lower flows, a low GEH may be achieved even if the percentage difference is relatively large. GEH is formulated as:

$$GEH = \sqrt{\frac{(observed - modelled)^2}{0.5 \times (observed + modelled)}}$$

7.1.15 The reason for introducing such a statistic is due to the inability of either the absolute difference or the relative difference to cope over a wide range of flows. For example, an absolute difference of 100 PCUs/hr may be considered a big difference if the flows are of the order of 100 PCUs/hr, but would be unimportant for flows in the order of several thousand PCUs/hr. Equally a 10% error in 100 PCUs/hr would not be important, whereas a 10% error in, say, 3,000 PCUs/hr might mean the difference between adding capacity to a road or not.

7.1.16 In general, the GEH parameter is less sensitive to the above statistical biases since a modeller would probably feel that an error of 20 in 100 would be roughly as bad as an error of 90 in 2,000, and both would have a GEH statistic of roughly 2.

7.1.17 As a rule of thumb in comparing assigned volumes with observed flows, a GEH parameter of 5 or less would be an acceptable fit, while GEH parameters greater than 10 would require closer attention.

7.1.18 The UK Design Manual for Road & Bridges (DMRB) Volume 12a guidelines (Traffic Appraisal in Urban Areas) are a widely accepted standard in Ireland (with TII basing their guidelines on this document) that provides extremely robust validation criteria to which certain types of highway models should adhere. This document sets a guideline that 85% of links should have a GEH less than 5 (when measured in vehicles per hour) as shown in Table 3 below. In addition, it is commonplace to establish that 90% of assessment links have a GEH of less than 10 and that 100% of validation links have a GEH less than 20.

Table 3. Calibration Criteria

CRITERIA	ACCEPTABILITY GUIDELINE
Assigned hourly flows compared with observed flows	
Individual flows within 100 v/h for flows less than 700 v/h	>85% of cases
Individual flows within 15% for flows between 700 & 2,700 v/h	
Individual flows within 400 v/h for flows greater than 2,700 v/h	
Individual flows – GEH < 5	
Modelled journey times compared with observed times	
Times within 15% or 1 minute if higher	>85% of cases

7.2 Model Calibration Results

Traffic Flow and GEH Calibration Results

7.2.1 Table 4 below summarises the GEH calibration results for the model after the matrix estimation process, for each of the three modelled time periods. The full list of GEH results for each traffic count location are presented in the accompanying calibration dashboards in Appendix A.

Table 4. Count Calibration Statistics (Post-Calibration)

GEH	AM	PM
GEH < 5	89%	87%
GEH 5 to 10	9%	10%
GEH > 10	2%	3%

7.2.2 The figures demonstrate that an excellent calibration has been achieved in the model for the morning and evening peak periods, with overall GEH<5 of 89% and 87% respectively, which falls well within TII standards.

7.2.3 Figure 13 to Figure 14 show the Modelled vs Observed flow totals for the AM & PM peak hours.

Figure 13. Ballina AM Calibration – Modelled vs Actual Flows

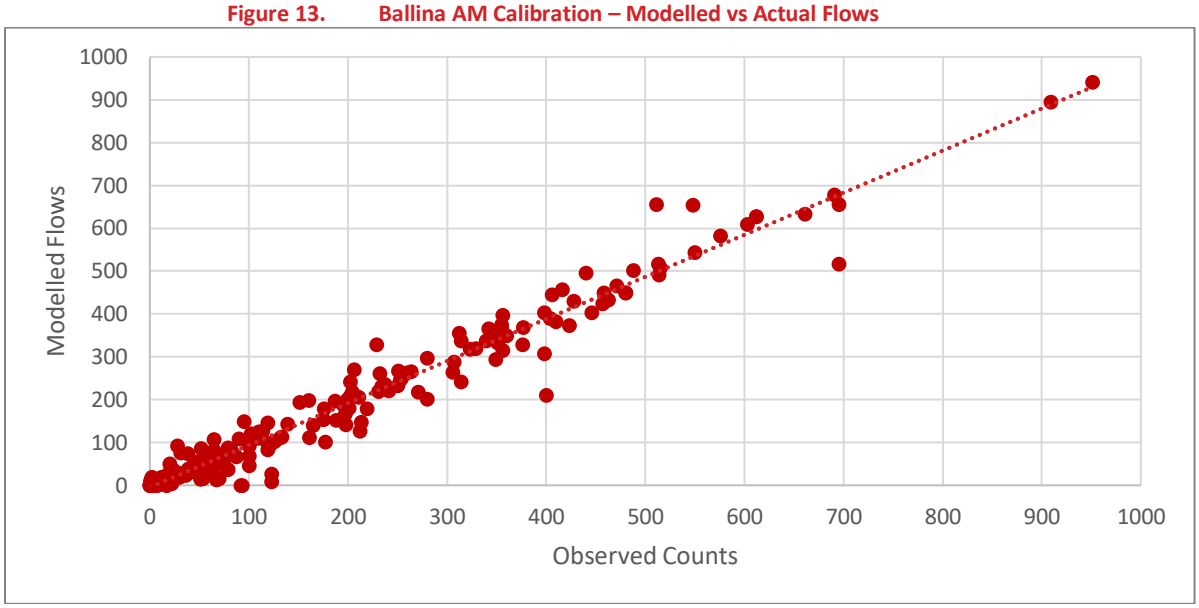
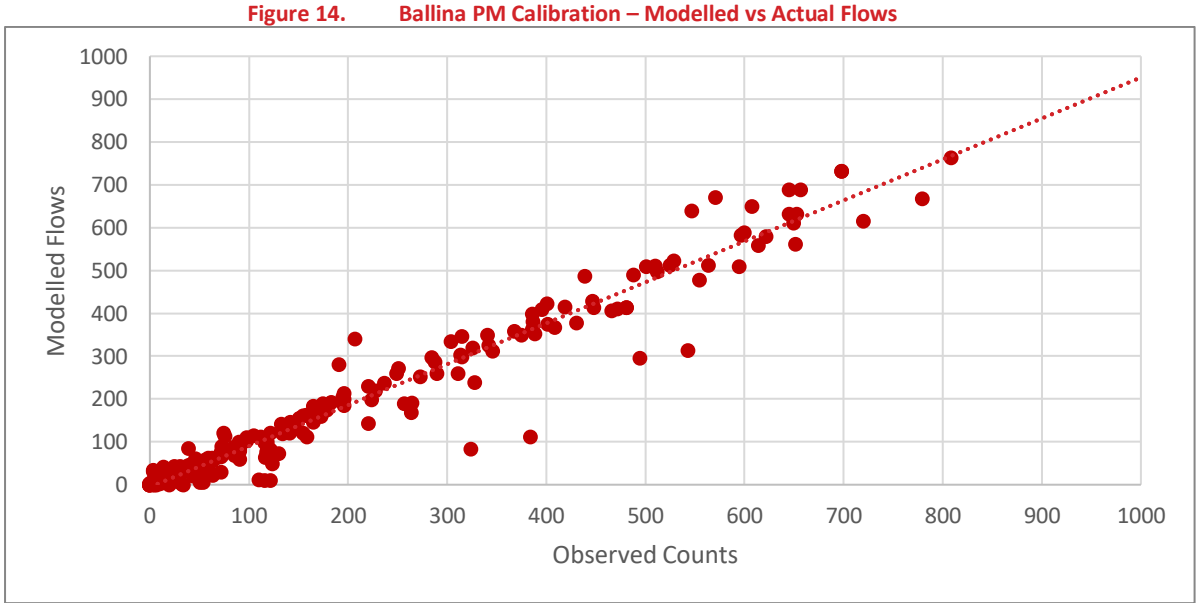


Figure 14. Ballina PM Calibration – Modelled vs Actual Flows

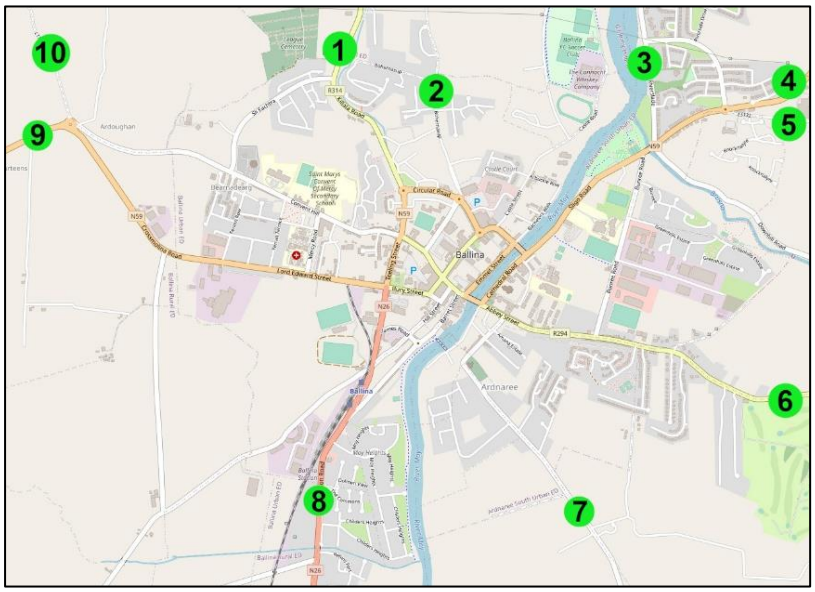


Comparison with Automated Number Plate Recognition (ANPR) data

7.2.4 ANPR data was collected by TRACSIS on 23th of November 2021 between 7am and 7pm at 10 points, as shown in Figure 15. This was used to generate an observed "through traffic" matrix between these 10 zones for the AM (7-10am) and PM (4-7pm) periods.

7.2.5 An equivalent matrix of vehicular trips between these 10 LAM external zones was skimmed. The observed matrices were factored to convert the 3-hour period to a single hour, as in the LAM. Figure 16 & Figure 17 compare the top ten OD-pairs observed and modelled demand in the AM and PM periods. It can be seen from the figure that the major external-to-external movements in the LAM matches the ANPR data quite well.

Figure 15. ANPR Survey Sites



SITE	NAME
1	R314
2	Bohernasup
3	CoastRd
4	N59 East
5	L51322
6	R294
7	ChurchRd
8	N26
9	N59 West
10	L1109

Figure 16. ANPR / LAM Comparison: AM

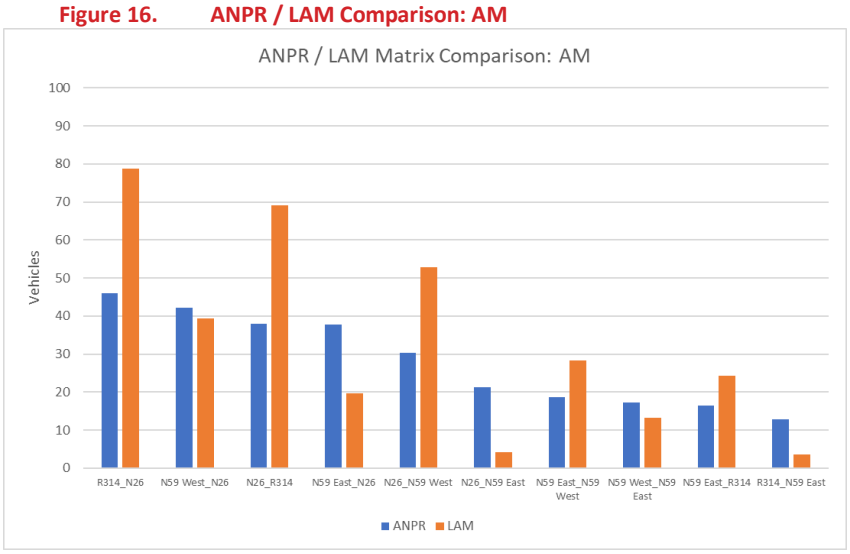
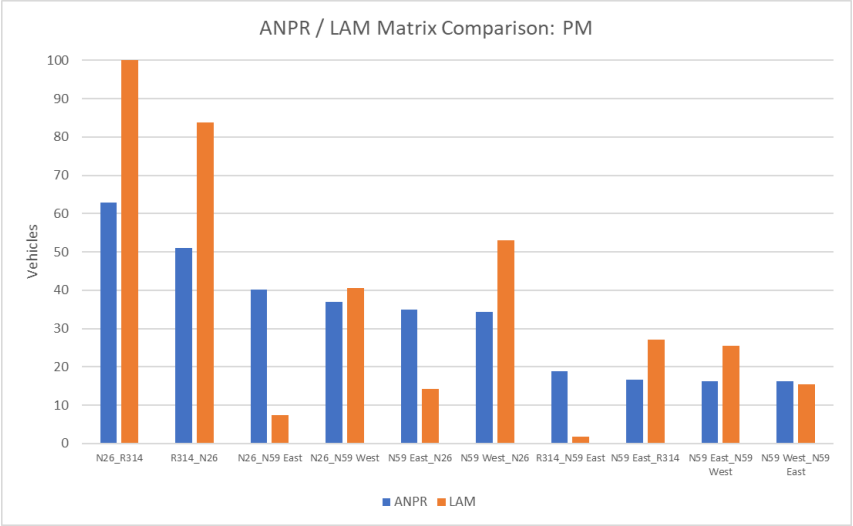


Figure 17. ANPR / LAM Comparison: PM



7.3 Journey Time Validation

7.3.1 As outlined in Section 7.1, Table 3, TII guidelines recommend that modelled journey times should be within +/- 15% of the observed time, or 1 minute if higher, in more than 85% of cases. Table 5 below, details the overall results for the cumulative route totals and the individual timing sections, for the coloured journey time routes shown in Figure 4. The results show a good match to TII guidelines, with 7 routes of 10 meeting the +/-15% observed criterion.

7.3.2 The Green route is not included in the AM validation table as observed time wasn't captured.

Table 5. Journey Time Validation

PERIOD	ROUTE	DISTANCE (m)			TIME (s)			TII Criteria
		Obs	Mod	%Diff	Obs	Mod	%Diff	
AM	Green Eastbound	9,281	8,852	-5%	-	723	-	-
AM	Green Westbound	9,281	8,497	-8%	-	780	-	-
AM	Orange Northbound	7,319	7,156	-2%	555	594	7%	ok
AM	Orange Southbound	7,319	7,190	-2%	507	604	19%	No
AM	Purple Northbound	6,234	6,214	0%	531	522	-2%	ok
AM	Purple Southbound	6,294	6,103	-3%	559	553	-1%	ok
PM	Green Eastbound	9,281	8,852	-5%	980	870	-11%	ok
PM	Green Westbound	9,281	8,497	-8%	853	792	-7%	ok
PM	Orange Northbound	7,319	7,156	-2%	644	696	8%	ok
PM	Orange Southbound	7,319	7,190	-2%	625	707	13%	ok
PM	Purple Northbound	6,234	6,214	0%	882	625	-29%	No
PM	Purple Southbound	6,294	6,103	-3%	857	629	-27%	No

7.4 Calibration and Validation Summary

7.4.1 This chapter provides an overview of the calibration and validation of the Ballina local area traffic model. In summary:

- The NTA WRM was used as a basis for development of Ballina local area traffic model with additional network and zonal detail added to more accurately represent localised traffic movements;
- The model has been calibrated and validated in-line with TII Project Appraisal Guidelines and meets all specified criteria for both the AM and PM;
- The LAM is fit for purpose, and represents AM and PM peak period base year traffic conditions well, as demonstrated statistically through calibration and validation.
- It provides a robust basis for assessing transport scheme options as:
  - The model realistically represents journey times; and
  - The modelled traffic flows match observed count data.

8. PANDEMIC TRAVEL RESTRICTIONS CONSIDERATION

8.1 Introduction

8.1.1 Recommendations to limit movements and encouragements to work from home if possible were in place at the time the traffic survey was made (November 2021).

8.1.2 Traffic volumes and patterns were obviously impacted by these travel restrictions. We analysed historical data from TII automated counters in the area to quantify the impacts the restrictions has on traffic at the time of the survey.

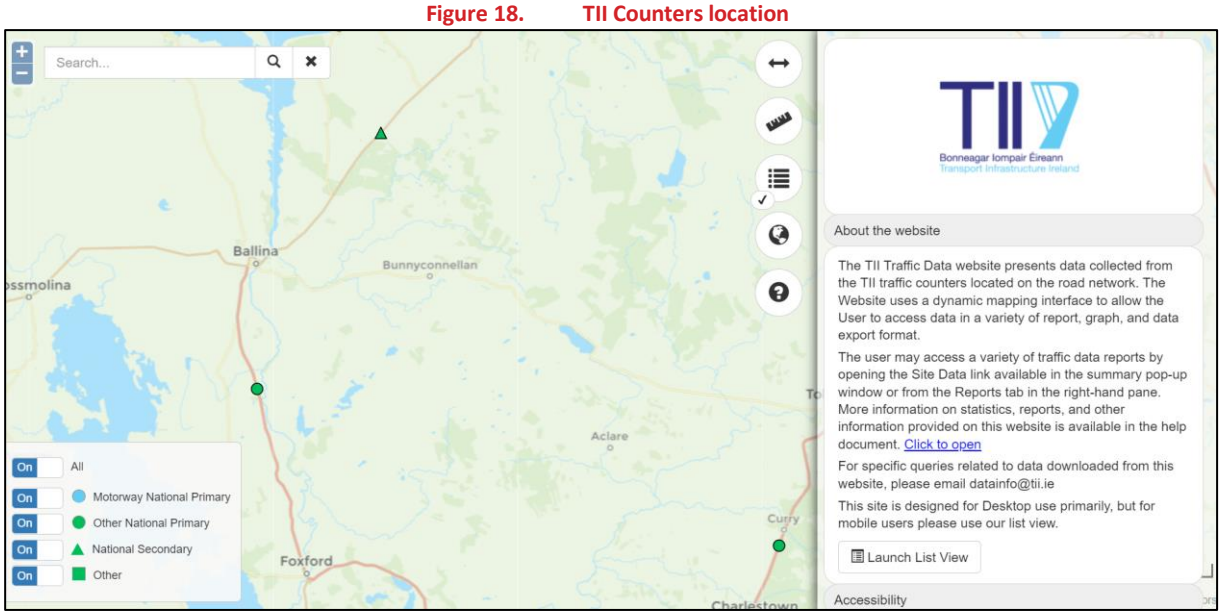
8.2 TII counters analysis

8.2.1 The following two TII traffic counters were included in the analysis:

- TMU N26 020.0 N - N26 Between Foxford and Ballina
- TMU N59 040.0 S - N59 Between Sligo and Ballina

8.2.2 Map below shows their location on a map. Both are recording N5 traffic on either side of Ballina.

Figure 18. TII Counters location



8.2.3 We extracted traffic data for the same period of the year (last 2 weeks in November) in 2018, 2019 and 2021. Comparing 2021 traffic to the average 2018-2019 traffic allows us to estimate what the traffic would have been in "normal" conditions at the time of the survey.

Table 6. TII counters observed flows

	Average weekday 08:00-9:00				Average weekday 17:00-18:00			
Description	2021	2019	2018	**2021 Vs. Av (2018-2019)**	2021	2019	2018	**2021 Vs. Av (2018-2019)**
N26 Between Foxford and Ballina	610	687	589	**-4%**	682	707	644	**1%**
N59 Between Sligo and Ballina	340	329	353	**0%**	393	384	375	**4%**

8.3 Outcome

8.3.1 The TII counters analysis shows that traffic in 2021 at the time of the survey was about the same as it was in 2018 and 2019 over the same period (relative differences between -4% and +4%).

8.3.2 For consistency, the 2021 LAM has been calibrated using non-modified observed data from the survey. We recommend no factoring to the modelled demand as the analysis of historical data suggests that the 2021 period surveyed has similar level of traffic as before the pandemic.

9. CONCLUSION

9.1.1 The Ballina LAM is a robust tool representing traffic in the study area in greater details. Two time periods are considered and both validate well against observed data.

9.1.2 The impacts of the pandemic-related travel restrictions have been assessed and quantified. The 2021 calibrated demand doesn't need to be adjusted to represent "normal" traffic conditions.

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Birmingham – Edmund Gardens
1 Edmund Gardens, 121 Edmund Street,
Birmingham B3 2HJ
T: +44 (0)121 393 4841

Dublin
2nd Floor, Riverview House, 21-23 City Quay
Dublin 2,Ireland
T: +353 (0) 1 566 2028

Edinburgh – Thistle Street
Prospect House, 5 Thistle Street, Edinburgh EH2 1DF
United Kingdom
T: +44 (0)131 460 1847

Glasgow – St Vincent St
Seventh Floor, 124 St Vincent Street
Glasgow G2 5HF United Kingdom
T: +44 (0)141 468 4205

Glasgow – West George St
250 West George Street, Glasgow, G2 4QY
T: +44 (0)141 468 4205

Leeds
100 Wellington Street, Leeds, LS1 1BA
T: +44 (0)113 360 4842

London
3rd Floor, 5 Old Bailey, London EC4M 7BA United Kingdom
T: +44 (0)20 3855 0079

Manchester – 16th Floor, City Tower
16th Floor, City Tower, Piccadilly Plaza
Manchester M1 4BT United Kingdom
T: +44 (0)161 504 5026

Newcastle
Floor B, South Corridor, Milburn House, Dean Street, Newcastle, NE1 1LE
United Kingdom
T: +44 (0)191 249 3816

Perth
13 Rose Terrace, Perth PH1 5HA
T: +44 (0)131 460 1847

Reading
Soane Point, 6-8 Market Place, Reading,
Berkshire, RG1 2EG
T: +44 (0)118 206 0220

Woking
Dukes Court, Duke Street
Woking, Surrey GU21 5BH United Kingdom
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SYSTRA

Appendix 3

NMU Audit

Clifton Scannell Emerson & Associates

Ballina Town, Co. Mayo

Non-Motorised Road User Accessibility Assessment

P·M·C·E

November 2022

Clifton Scannell Emerson & Associates

Ballina Town, Co. Mayo

Non-Motorised Road User Accessibility Assessment

Document Ref:	P22-018-UQA-GEN-RP-001

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P·M·C·E

T +353 (1) 464 3041
F +353 (1) 459 1836
info@pmceconsultants.com
www.pmceconsultants.com

Unit 17, Greenmount House
Greenmount Office Park
Harold's Cross, Dublin 6W
D6W VX78, Ireland

Table of Contents

1 Introduction

1.1 Assessment Overview and Scope

This Non-Motorised Road User (NMU) Accessibility Assessment has been undertaken as part of the Area-Based Transport Assessment (ABTA) for Ballina, Co Mayo. The purpose of this NMU Accessibility Assessment is to identify gaps in the existing non-motorised road user provisions in Ballina, including cycle lanes/tracks, greenways, footpaths and crossings from the perspective of all users, including people with disabilities, and to recommend improvements where considered appropriate.

The scope of this Accessibility Assessment includes: -

I. Assessment of the local road network conditions.
II. Identify the key active travel destinations;
III. Identify existing/likely NMU routes;
IV. Classify the routes;
V. Identify the issues within each route/area;
VI. Propose measures to address any issues identified; and
VII. Suggest priorities for implementing recommended measures.

1.2 Ballina Town

1.2.1 Overview

Ballina is located in north County Mayo and has a population of just over 10,000. The River Moy passes through the Town Centre and a number of National Roads pass through the town, including the N26 which connects Ballina to the N5 and the N59, which links Sligo and Galway. The Scope of this Assessment includes the Ballina Urban Electoral Division (ED) and Ardnaree South Urban ED as shown in Figure 1-1. In addition, other residential and recreational areas located at the periphery of the two urban ED were included as part of the Assessment.

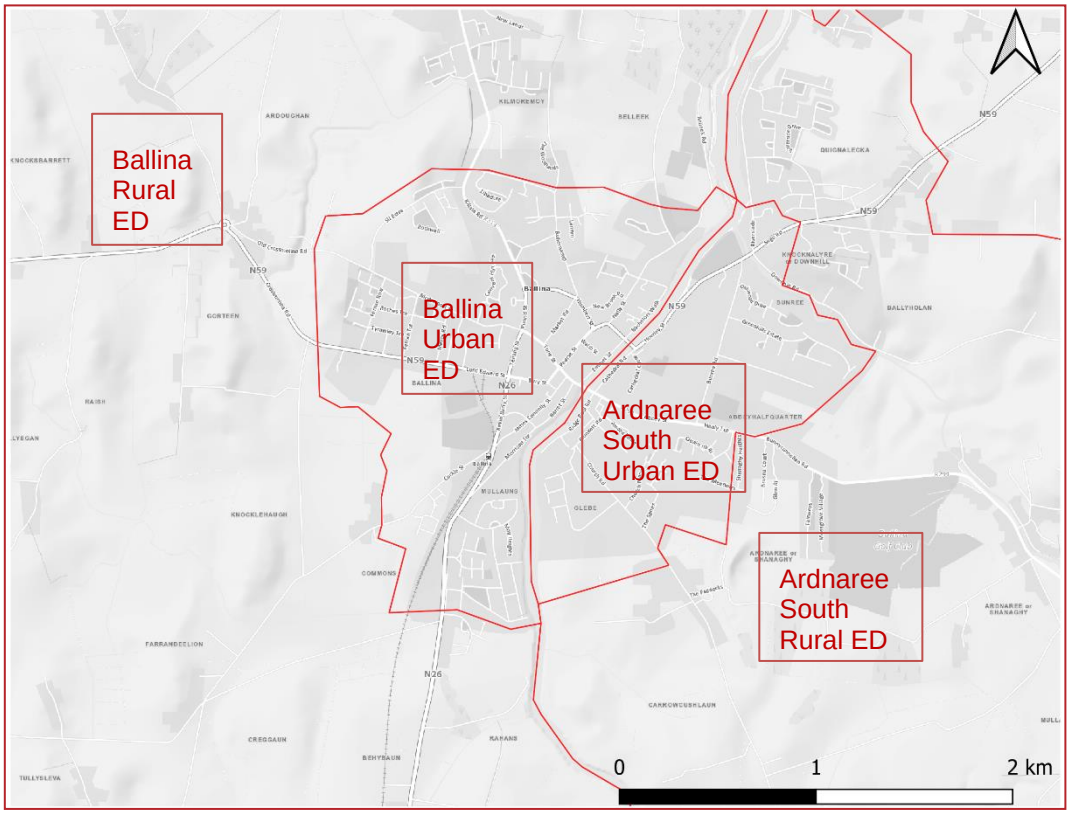


FIGURE 1-1: LOCATION PLAN (SOURCE: WWW.OPENSTREETMAP.ORG)

Figure 1-2 shows the population density of the areas within Ballina. The data was obtained from the Central Statistics Office Census survey of 2016. The map shows the population density per square kilometre. Figure 1-3 shows the number of people with disabilities within each area.

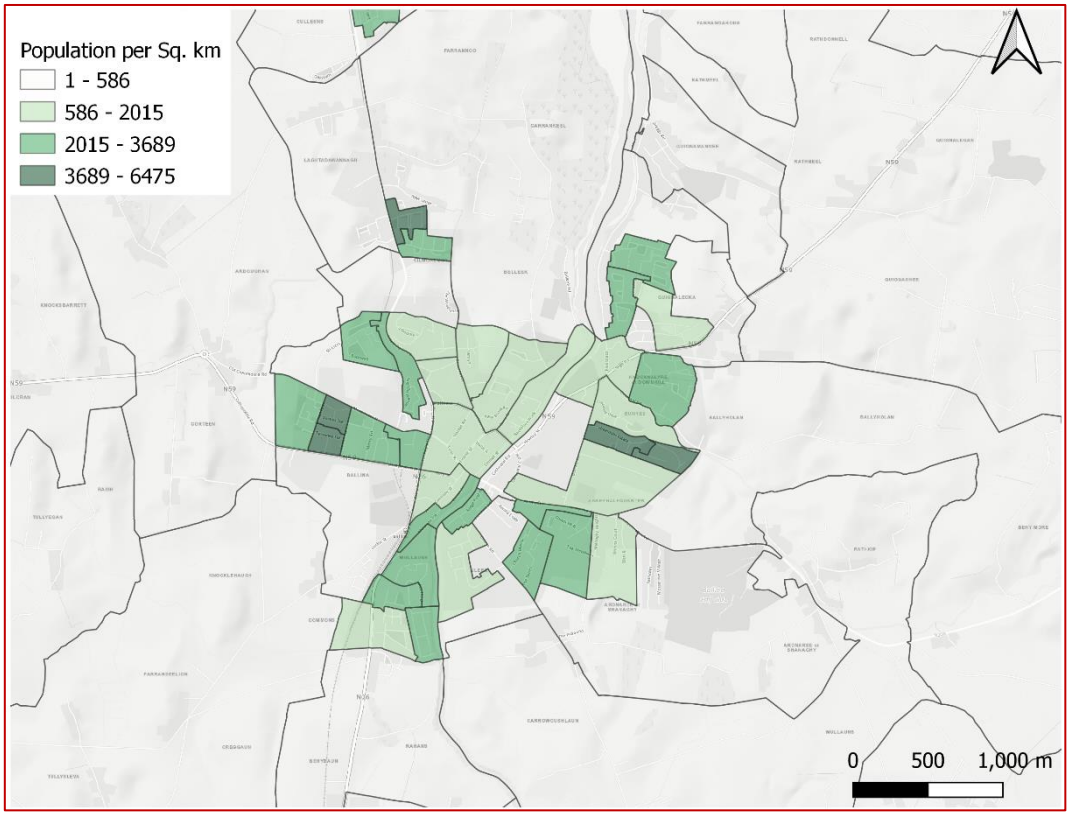


FIGURE 1-2: CENSUS 2016 SMALL AREAS POPULATION DENSITY (SOURCE: WWW.CSO.IE)

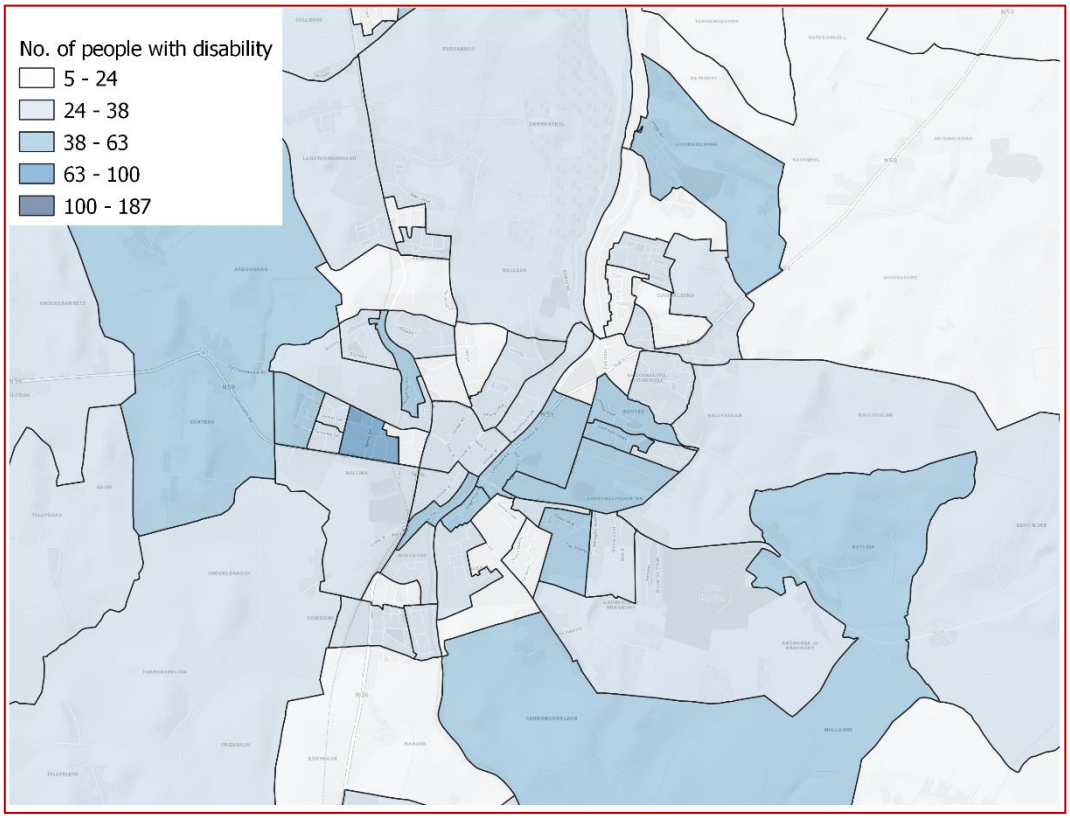


FIGURE 1-3: CENSUS 2016 SMALL AREAS POPULATION WITH DISABILITY (SOURCE: WWW.CSO.IE)

1.2.2 Areas

FIGURE 1-4 shows:

- The extents of Ballina Town Centre (shown in red);
- Overall Town Area (shown in green);
- The extents of Ballina Urban ED areas (shown in purple);
- National Roads (shown in yellow);
- Regional and other arterial roads (shown in magenta); and
- Other important links (shown in light blue).

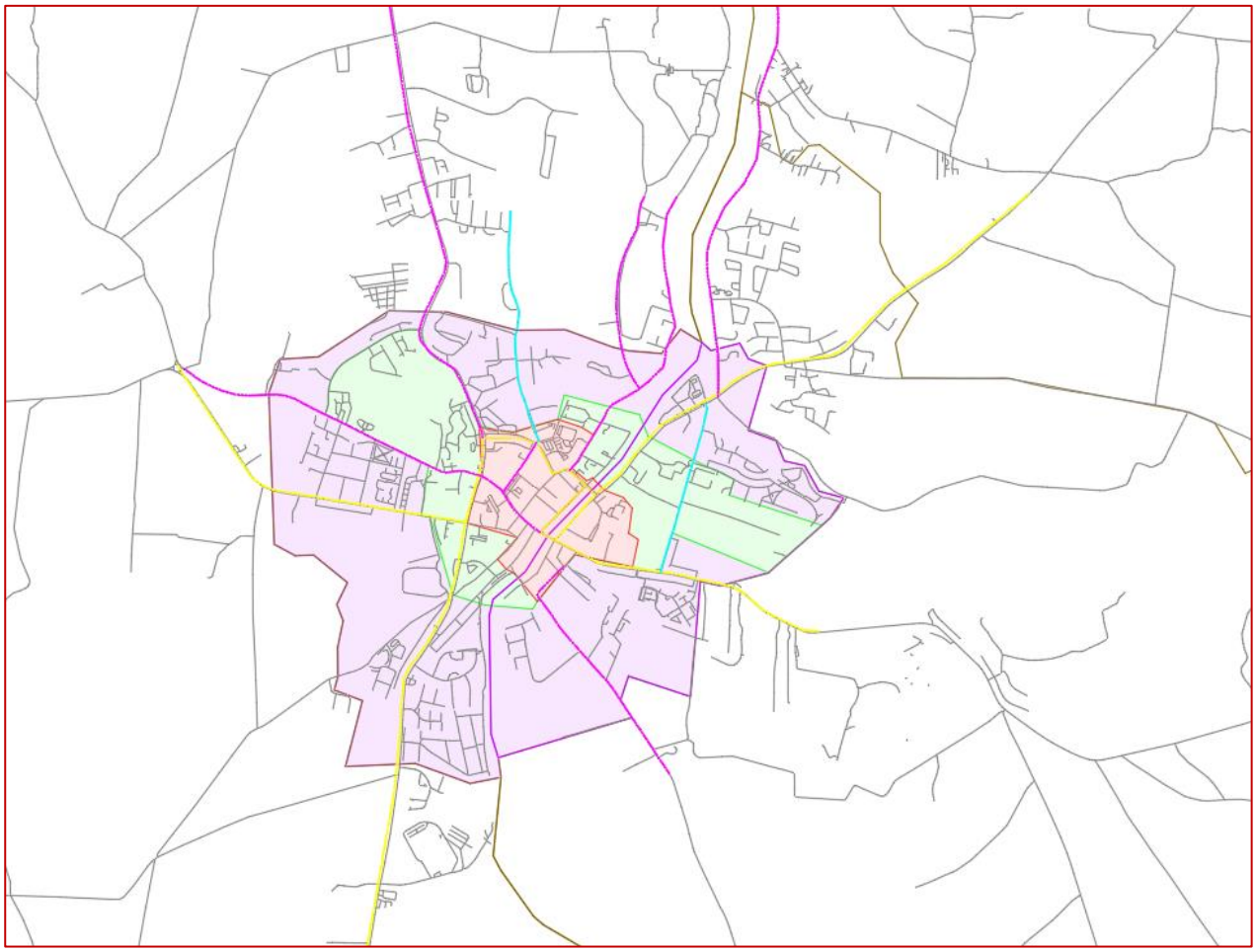


FIGURE 1-4: BALLINA TOWN CO. MAYO (SOURCE: WWW.OPENSTREETMAP.ORG)

The Ballina Town Centre area includes the main shopping areas, public transport stops, banks, restaurants, offices and hotels. The Overall Town Area would include the schools and other shopping areas located in the periphery of the town. The extents of the Ballina Urban ED includes most of the other developed areas of Ballina.

1.2.3 Main Roads

- **N26 (Foxford Road):** is a two-way National Primary Road with a posted speed limit of 50kph within Ballina, which commences at its junction with the N59 to the north and extends southwards from Ballina, through Foxford, to where it meets the N5 near Swinford.

  There are pedestrian footpaths along the N26 from its junction with the N59 to its junction with the L1122 Commons, however there are no cyclist facilities along it.

  The N26 serves a number of housing estates on its eastern side and multiple direct accesses along its western side.

- **N59 (Crossmolina Road):** is a two-way National Secondary Road with a posted speed limit of 50kph within Ballina town. There are pedestrian footpaths along the N59 from its junction with the N26 to the roundabout with L1109, however there are no cyclist facilities along it.

  The N59 serves a number of housing estates on its northern side and multiple direct accesses along both its northern and southern sides, with on-street parking also provided along its southern side.

- **McDermott Street/Convent Hill:** is a one-way road with a posted speed limit of 50kph with footpaths along both sides from its junction with Fenian Row to its junction with the N59 and a one-way cycle lane along its length.

  The road serves a number of schools on its northern side and access for multiple housing estates along its southern side.

- **Killala Road (R314):** is a two-way Regional Road with a posted speed limit of 50kph and a footpath along its western side. There are cyclist facilities along Killala Road, however these are discontinuous and are located on the eastern side of the road only.

  Killala Road serves a number of housing estates along with multiple direct access, with some sections including on-street parallel parking.

- **Bohernasup:** is a two-way road with a posted speed limit of 50kph and footpaths on both sides. There are no cycle facilities on the road, which serves a number of housing estates and multiple direct accesses with some on-street parking.

- **Castle Street/Nally Street:** is a narrow two-way road with footpaths on both sides of the road to its junction with Arbuckle Street, where the footpath on the eastern side of the road ends. There are no cycle facilities along the road, which serves a number of housing estates and multiple direct accesses.

  Castle Street/Nally Street forms a link to/from the Ballina Athletic Track, the Ballina Town FC Soccer Club, Belleek Wood/Park and Belleek Castle.

- **N59 (Sligo Road):** is a two-way National Secondary Road with a posted speed limit of 50kph within Ballina, with footpaths on both sides from the town centre extending to the roundabout with Quignalecka/Behy Road. There are cycle facilities on some sections of the N59, however, these are discontinuous. The road is the main route between Ballina Town and the region north-east of the River Moy.

- **Riverslade/Quay Road:** is a two-way local road with a posted speed limit of 50kph and footpaths on both sides of the road, however, these are discontinuous along some sections. There is a shared cyclist/pedestrian facility along the western side of the road, however, it is also discontinuous.

  Riverslade/Quay Road serves a number of housing estates and multiple direct accesses, with some sections of the route including on-street parking.

- **Abbey Street (R294):** is a two-way Regional Road with a posted speed limit of 50kph and footpaths on both sides of the road, with some short sections shared with cyclists. The road serves a number of housing estates and has multiple direct accesses, with some sections of the route including on-street parallel parking.

- **Plunkett Road/Church Road:** is a two-way road with a posted speed limit of 50kph and a footpath on one side and no facilities for cyclists. The road serves a number of housing estates and has multiple direct accesses.

1.2.4 Existing Cycle Facilities

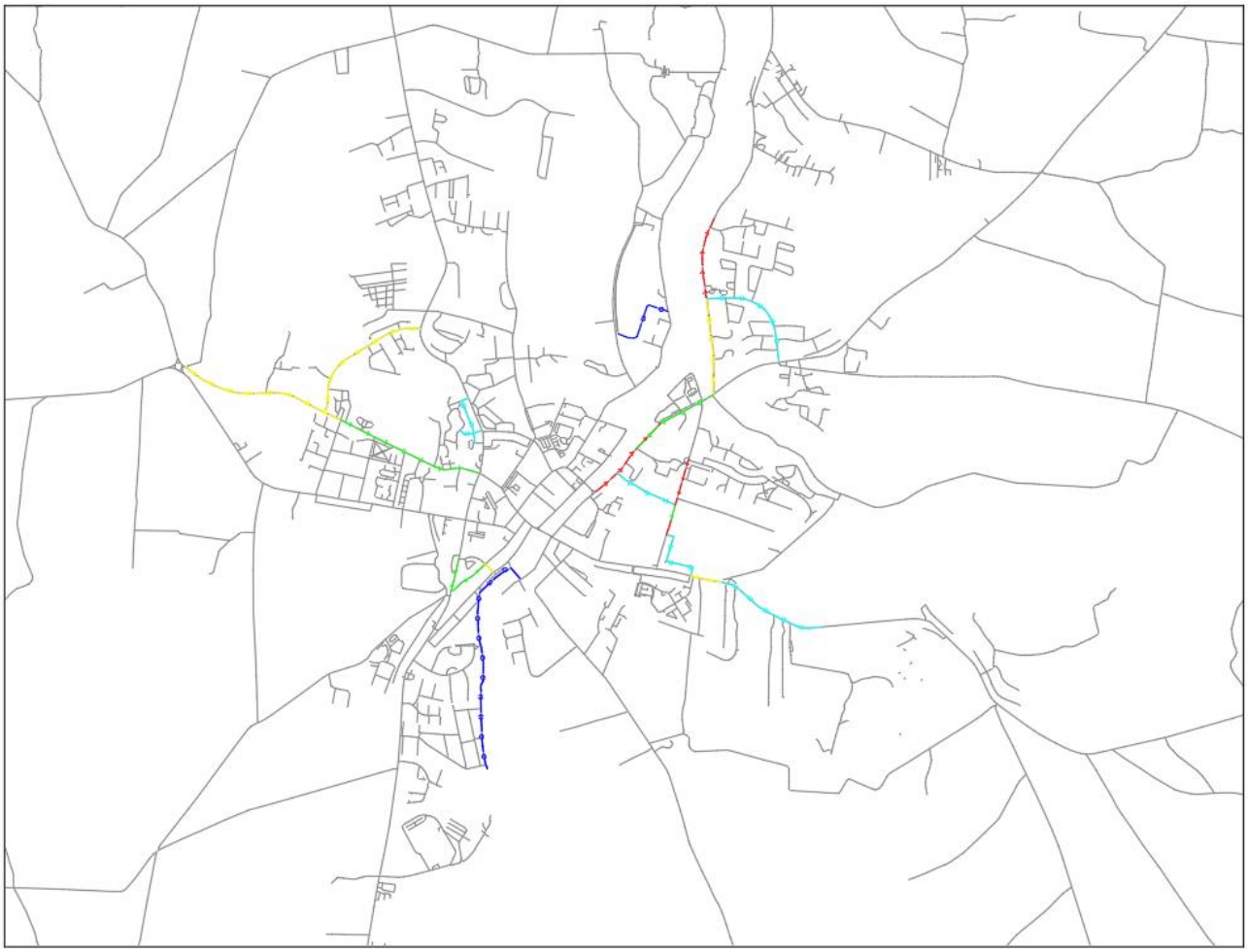


FIGURE 1-5: EXISTING CYCLISTS FACILITIES

Figure 1-5 shows the exiting cycle facilities within Ballina. The figure shows a number of different type of facility, denoted as follows: -

- **Dark Blue**: Greenway (shared pedestrian and cyclist facilities.
- **Green**: One-way cycle lane
- **Yellow**: Two-way cycle lane or track
- **Light Blue**: Shared pedestrian/cyclist route (with some on road facilities)
- **Red**: Shared (one-way) cyclist and pedestrian path

The existing cycle facilities within Ballina are comprised of many short sections of cycle lanes, tracks and/or shared paths. None of the existing facilities extend through/across the town centre, with many terminating at the periphery of the town centre with no dedicated facilities to cater for cyclists to/from many of the main trip attractors (i.e. schools, shops and recreational areas).

2 Methodology

The methodology adopted for the Aassessment was as follows: -

- collection of available data/information on the Study Area, including Ordnance Survey mapping, historical collision data and traffic flow/volume data;
- a Desktop Review of the collected data/information, and the identification of key routes for NMUs within the town as well as key facilities and trip attractors in Ballina for pedestrians, cyclists and the mobility- or visually-impaired;
- a site visit undertaken on the 15th and 16th February 2022, where all roads/areas within the town were reviewed to identify gaps, or areas for improvement, in the existing NMU provisions with a particular focus on the key routes identified in the previous step; and
- the collation of all issues identified, categorised by the road user-type affected and whether the issue identified was an accessibility or a safety issue.

The extents of the area within the scope of this assessment are indicated in Figure 1-1. Weather conditions during the site visit were wet, traffic volumes were moderate and pedestrian & cyclist volumes were moderate.

3 Key Routes and Areas

3.1 Active Travel Desire Routes

Three areas have been identified that would likely generate demand to/from each high-density population area, as follows:

- **Town Centre**: Ballina Town centre includes the main shopping areas, public transport stops, banks, restaurants, offices and hotels;
- **Schools Area**: this is accessed via Convent Hill Road and includes St. Mary's Secondary School, Scoil Íosa and St. Dymphna's School. These schools accommodate over 800 students.
- **Recreational Areas**: two main recreational areas have been identified. The first is north of Ballina Town centre and includes attractions like Ballina Athletic Track, Ballina Town FC Soccer Club, Belleek Wood/Park and Belleek Castle. The second area is north- east of Ballina Town centre which includes the Slipway (Paddle and Pedal), the Ice House and a School (Quay National School).

Figure 3-1 shows the identified/likely active travel routes to/from the higher density population areas. The desire lines identified link the higher density population areas and the Town Centre (shopping area), Schools and Recreational Areas.

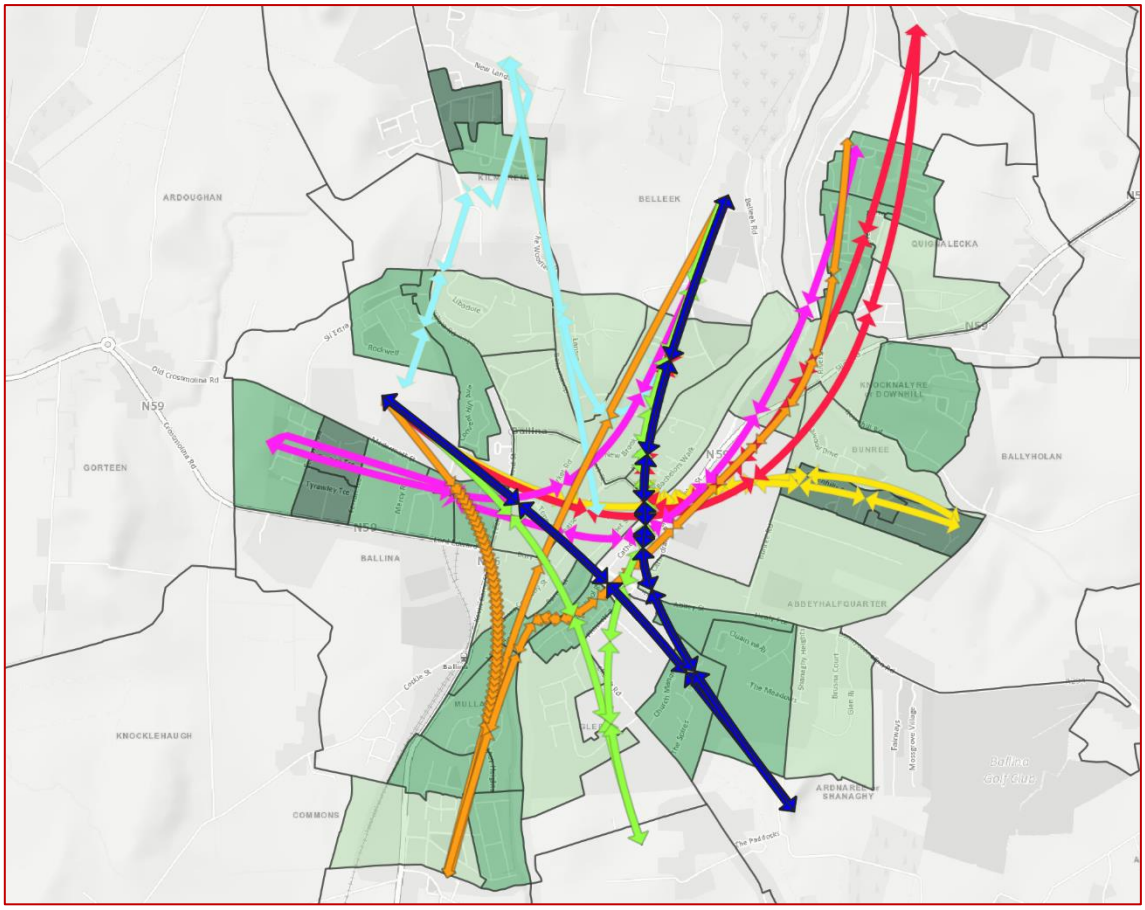


FIGURE 3-1: ACTIVE TRAVEL DESIRE ROUTES

3.2 Active Travel Routes

3.2.1 Residential Areas-Routes

Based on the Active Travel Desire Routes identified in Section 3.1, a number of Routes were identified which would serve the different residential areas and link them to Ballina Town centre, the Schools Areas and the Recreational area.

The routes have been identified by assuming an NMU journey commencing in the primary residential areas to the trip attractors. The eight routes identified are shown in Appendix A.

These routes were then combined/overlaid in order to identify the Key Active Travel Routes within Ballina.

3.2.2 Core Routes

Based on the routes in Appendix A, three core route were identified which link the majority of the 8 area-routes. The Core Routes are shown in Figure 5-1, the figure shows the three main core routes A, B and C.

Core Route A links Ballina Town centre, Schools Area and the Recreational areas. The link travel in north-east to south-west direction. It also includes a link to Ballina Athletic Track, Ballina Town FC Soccer Club, Belleek Wood/Park and Belleek Castle.

Core Route B Links a number of the desire travel route from the residential areas (identified in section 3.2.1) to Core Route A.

Core Route C links a short section of a green way located south-west of River Moy Core Route A.

Routes 1 to 5 are links between all the remaining major residential areas and the Core Routes.

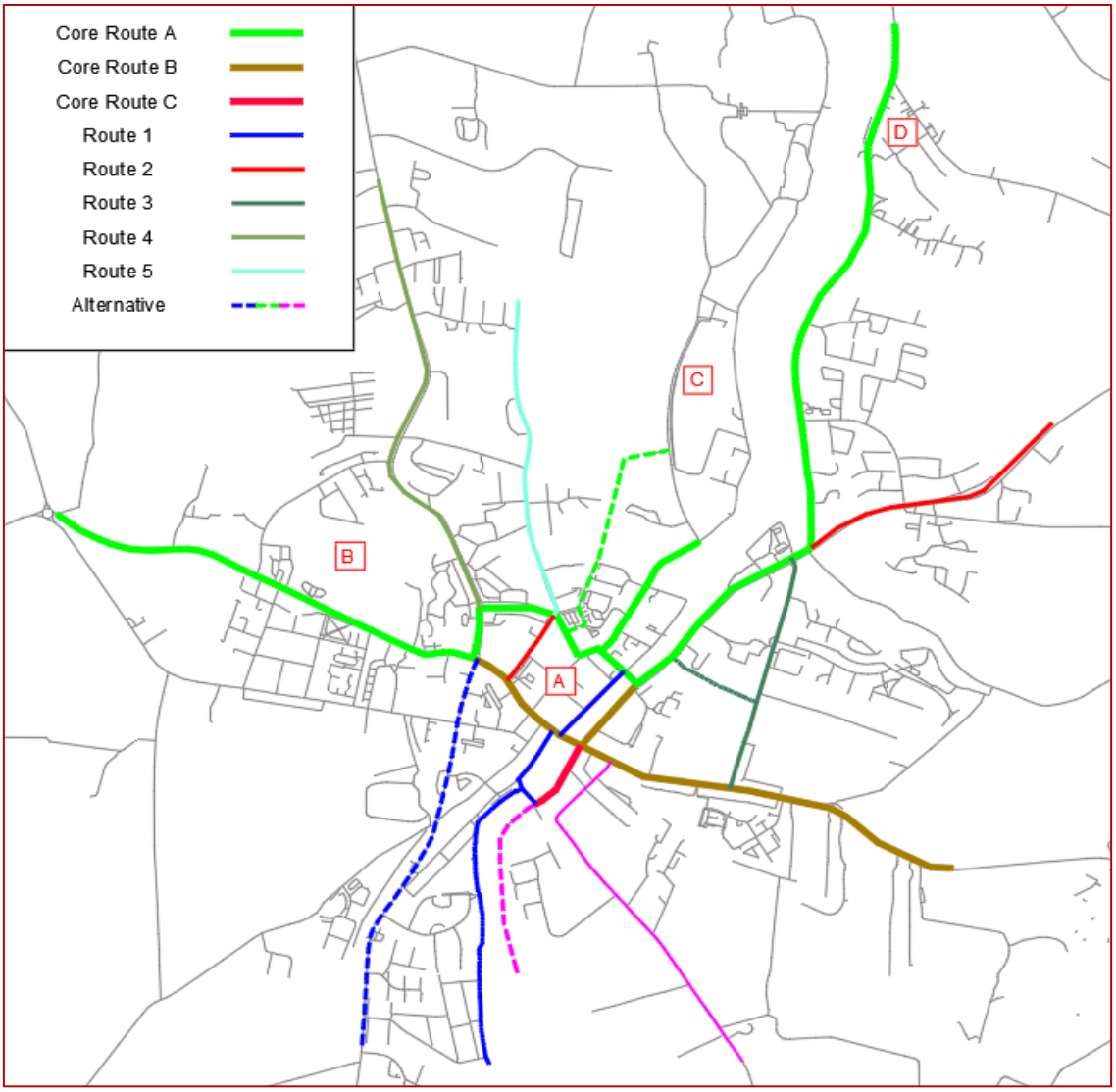


FIGURE 3-2: ACTIVE TRAVEL CORE ROUTES

4 Assessment Findings

4.1 General Findings

4.1.1 Absence of Footpaths along Pedestrian Desire Lines

There is currently a lack of footpaths linking some of the residential developments to existing footpaths and/or to the town centre. Vulnerable Road Users (VRUs) are therefore required to travel within the verge or carriageway to access the existing facilities, with a consequent increased risk of slips, trips and falls or of being struck by a vehicle.

In addition, an absence of dropped kerb facilities at appropriate locations could result in mobility-impaired pedestrians be unable to access the footpath, or cross the carriageway, which could lead to them choosing to travel within the carriageway to an appropriate access location with a resulting increased risk of being struck by a vehicle or having to ascend/descend a full-height kerb with an increased potential for trips and falls.

At locations where there are no footpaths, visually-impaired pedestrians have no safe means of accessing the town centre and other facilities independently.

Suggested Treatment

Continuous footpaths, with appropriate crossings, should be provided along the identified NMU desire lines linking the main trip attractors to the residential areas. In addition, all newly developed areas should have pedestrian links/footpaths to the existing footpath network.

4.1.2 Parked Vehicles Obstructing Footpaths

Vehicles were observed parked on the footpaths in a number of locations throughout the Town Centre. In some locations this parking was designated, although apparently unofficial, parking for residential units. At other locations, vehicles were unsafely and/or inappropriately parked on the footpath and cycle lanes. This often resulted in the entirety of the footpath being blocked, leading to non-motorised road users having to descend the kerb and travel in the adjacent carriageway where there is an increased risk of being struck by a passing vehicle.

This is a particular concern for elderly/mobility impaired road users as these individuals may be unable to descend a kerb easily and safely. In addition, visually impaired pedestrians cannot continue their journey where the footpath is blocked and would be unlikely to be able to travel around parked vehicles in the footpath. Similarly, wheelchair users might not be able to navigate around parked vehicles if the effective footpath width is reduced.

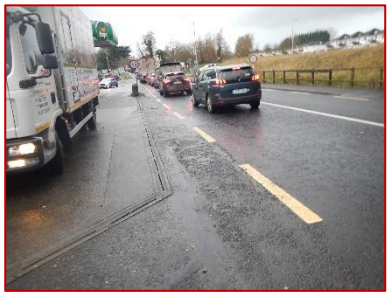
Suggested Treatment

Parking deterrent measures should be provided and parking enforcement should be frequently undertaken.

4.1.3 Discontinuities in Footpath Provisions

There is an absence of continuous pedestrian routes within parts of the Town Centre and other areas. At a number of locations footpaths terminate abruptly and/or are blocked by property boundaries or parking spaces. A lack of continuous pedestrian routes may lead to pedestrians stepping off of the footpath and into the carriageway to continue their journey, where they are at increased risk of being struck by a passing vehicle.

In some locations footpaths terminated flush with the adjacent carriageway, or sections of footpath had no vertical separation from the adjacent carriageway. At these locations there is a risk that visually-impaired pedestrians may inadvertently enter the carriageway, where they are at risk of being struck by a vehicle or cyclist.



Suggested Treatment

Continuous footpaths should be provided throughout the Town Centre. Care should be exercised in the choice of materials used and the provision of an appropriate level difference between the carriageway and the footpaths.

4.1.4 Footpath/Carriageway Vertical Separation

There is no vertical separation between the carriageway and some of the footpaths within the Town Centre and also on some the other existing pedestrian routes into the Town Centre. Fluctuations in kerb levels may lead to an increased risk of trips and falls, particularly for visually impaired pedestrians. Visually impaired pedestrians may inadvertently enter the carriageway where there is insufficient vertical separation.

Suggested Treatment

Full-height kerbs should be provided between footpaths and the adjacent carriageway, other than at crossing locations. Where this is not feasible/possible then footpaths shall have minimum of 60mm vertical separation to the carriageway, 25mm at vehicular accesses and a maximum of 6mm at pedestrian crossings.

4.1.5 Inadequate Width of Shared Paths

There are a number of existing paths which pedestrians share with cyclists. The width of these shared paths varies, and in some instances the path is narrow and is unlikely to be able to safely accommodate both cyclist and pedestrian volumes. This could result in collisions between cyclists and pedestrians or to cyclists choosing to travel within the adjacent carriageway, obviating the benefit intended by the provision of the shared path.






Suggested Treatment

Where possible segregated cyclist and pedestrian facilities should be provided. Where this not feasible the shared facilities should have a width sufficient to accommodate the expected volumes of pedestrians & cyclists, and in line with the recommendations in the National Cycle Manual.

4.1.6 Absence of Pedestrian Crossings on Likely Desire Lines

Within the Town Centre there are a number of locations where there is no pedestrian crossing along likely pedestrian crossing desire lines at junctions and between discontinuous sections of footpath. The absence of crossing facilities on likely pedestrian crossing desire lines could lead to pedestrians crossing at unsafe locations, leading to an increased risk of vehicle-pedestrian collisions.

The absence of dropped kerbs at pedestrian desire crossing points may create difficulties for mobility-impaired pedestrians undertaking crossings as they are unlikely to be able to safely descend the kerb to cross the carriageway, resulting in potential trips and falls.

Where dropped kerbs are provided to facilitate the mobility-impaired undertaking a crossing, accompanying tactile paving has not been provided in all instances. The absence of tactile paving could result in visually-impaired or partially-sighted pedestrians inadvertently entering the carriageway or encountering difficulties identifying the other side of the crossing.

Suggested Treatment

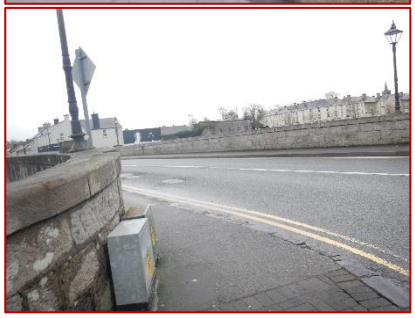
Appropriate pedestrian crossing facilities (either controlled or uncontrolled, should be provided at likely pedestrian crossing desire line locations.

Where possible, footpaths should be continuous across all private access (including private car parks, service stations, etc) with the onus on drivers to yield to pedestrians on the footpath.

Similarly, at junctions with minor, lightly trafficked, side roads a continuous footpath could also be provided, however, where this is not feasible appropriate crossing facilities (i.e. dropped kerb and tactile paving or raised table and tactile paving) should be provided.

4.1.7 Insufficient Inter-visibility between Pedestrians and Drivers at Crossings

At a number of the uncontrolled pedestrian crossing locations there is a lack of adequate inter-visibility available from the crossing point between approaching drivers and a pedestrian about to commence a crossing, often as a result of the position of adjacent boundary walls or the distance the crossing is offset away from the junction mouth.



Suggested Treatment

Pedestrian crossings should be positioned such that adequate inter-visibility between approaching drivers and a pedestrian about to commence a crossing.

4.1.8 Lengthy Pedestrian Crossings without Refuge

At a number of the junctions along main routes leading to the Town Centre pedestrians are required to cross a relatively wide junction-mouth where no pedestrian refuge island is available. Lengthy crossing distances result in vulnerable road users being exposed to vehicular traffic for an extended distance/time, in particular elderly and mobility-impaired pedestrians. Wide junction mouths often arise as a result of large-radius corners at junctions, which can encourage high speeds by turning vehicles, further increasing the risk presented to Vulnerable Road Users (VRU).

Suggested Treatment

Within the extents of the Town centre, the Overall Town Area and the sub-urban areas junction mouths should be amended in accordance with the recommendation of the Design Manual for Urban Roads & Streets (DMURS). Where crossing distances remain significant, pedestrian refuge islands should be provided.

4.1.9 Footpath Condition

The footpath condition at number of locations was noted as being in a poor condition, presenting a possible slip or trip hazards to pedestrians.

Suggested Treatment

Footpath surfaces at these locations should be renewed, ensuring that where vehicles cross the footpaths (e.g. at private vehicular accesses) that the footpath strength is sufficient to withstand the vehicular loading without deformation or deterioration.

4.1.10 Absence of Hazard Tactile Paving at the Top and Bottom of Steps

Tactile paving at height hazards (i.e. corduroy tactile paving) is absent at the landings at the top and bottom of steps at a number of locations within the Town. The absence of hazard tactile paving at the top and bottom of steps may lead to visually impaired pedestrians being insufficiently aware of the height hazard resulting in an increased risk of falls.



Suggested Treatment

Hazard tactile paving should be provided at steps in accordance with the recommendations of the National Disability Authority.

4.1.11 Absence of Ladder and Tramline Tactile Paving at Entry/Exit to/from Shared Paths

At the start & end of shared pedestrian and cycle facilities the roadmarkings provided (e.g. pedestrian and cyclist symbols and straight-ahead arrows) are faded and there is no ‘Ladder & Tramline’ tactile paving to advise visually-impaired pedestrians that they are entering/leaving an area shared with cyclists.



Suggested Treatment

Adequate warning signage, markings and ‘Ladder & Tramline’ tactile paving should be provided at the start and end of shared pedestrian/cycle facilities.

4.1.12 Discontinuous Cycle Facilities

At number of locations cycle facilities start or end abruptly with no safe transition to/from the adjacent carriageway. In addition, at number of locations existing cycle facilities end with facilities provided on the opposite side of the carriageway with no crossing provided. An absence of appropriate transitions/crossings for cyclists may lead to cyclists choosing to remain within the carriageway where there are at an increased risk of being struck by vehicle, or to unsafe crossing manoeuvres.



Suggested Treatment

Continuous cycle facilities should be provided along the key cycle routes, with appropriate transitions to/from the carriageway at the commencement/termination. Where cycle facilities cross a carriageway an appropriate crossing should be provided.

4.1.13 Cycle Lane Pavement Condition

At number of locations along the existing cycle lanes and shared pedestrian/cyclist facilities the pavement condition was noted as being poor. The poor surface condition within the cycle lanes could lead to erratic cyclist manoeuvres as they undertake avoidance measures with resulting increased risk of vehicle/cyclist collisions.



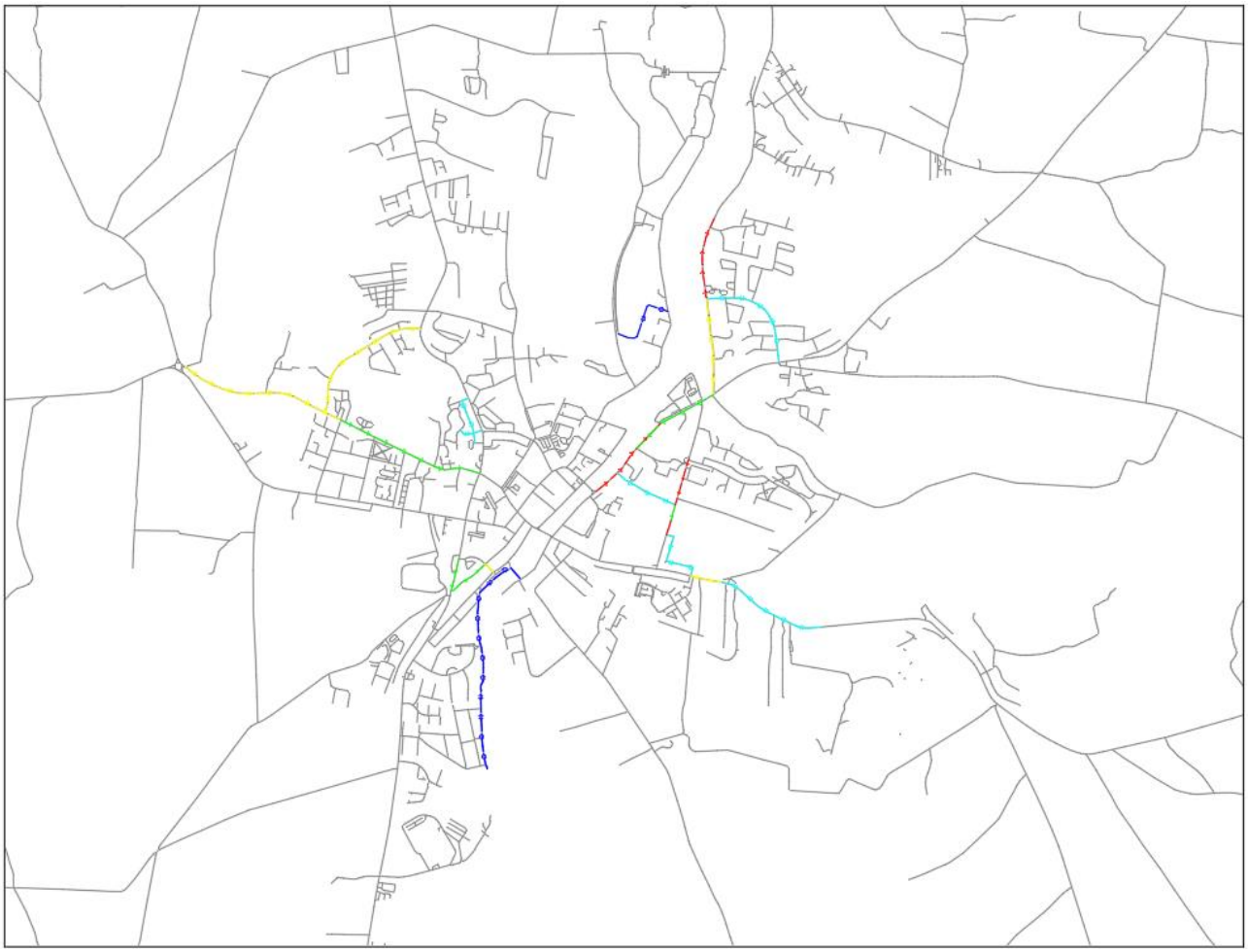
Suggested Treatment

The pavement should be repaired within the cycle lanes and where new cycle facilities are provided the pavement condition should be assessed and improved where necessary.

4.1.14 Absence of Continuous Cycle Facilities to/from Main Trip Attractors

Within Ballina the existing cycle facilities are relatively short & discontinuous, and exist primarily in the periphery of the Town. The existing facilities don't extend to the Town Centre and don't link the main amenities (i.e. schools, shops, recreational areas) to residential areas.

This results in cyclists using the carriageway for many of the journeys, making cycling and unattractive mode of transport for the young or inexperienced, and increasing cyclists exposure to the risk of being struck by a vehicle. Alternatively, some cyclists may choose to travel within the footpaths, with a resulting increased risk of collisions between cyclists & pedestrians.



Suggested Treatment

Cycle facilities should be provided which provide suitable links between the residential areas, the town centre and the main amenities (e.g. schools, shops and recreational areas).

4.2 Location-Specific Findings

4.2.1 Clare Street

There is an existing shared pedestrian and cyclist facility along Clare Street (N59) with trees positioned within the shared path. The effective width of the shared path may be insufficient to safely cater for both pedestrians & cyclists, which is further reduced at the tree locations.

Insufficient width of the shared path could result in conflicts between cyclists and pedestrians, or to cyclists choosing to travel within the carriageway to avoid pedestrians where they are at an increased risk of being struck by a vehicle.

Suggested Treatment

Segregated pedestrian & cyclist facilities should be provided along this route.

4.2.2 N59 Sligo Road Roundabout

The existing Sligo Road (N59)/Quignalecka/Behy Road junction consists of a mini-roundabout with four approach arms.

There are no pedestrian crossings or cyclist facilities on any of the arms at the junction, creating difficulties for the mobility-impaired and visually-impaired in navigating the road layout. Similarly, less confident cyclists may not be able to navigate the heavily-trafficked roundabout.

Issues 4.1.1, 4.1.4, 4.1.8 and4.1.9 were also identified at this location.

Suggested Treatment

The road layout at the junction should be amended to include facilities, including crossings, catering for non-motorised road users.

4.2.3 Service Station, Sligo Road (N59)

The footpath on the northern side of the N59, north of the Sligo Road (N59)/Quignalecka/Behy Road mini-roundabout, terminates abruptly without any crossing to the footpath on the opposite side of the road.

Similarly, the footpath on the opposite side of the road terminates at the entrance to the service station forecourt. Both footpaths terminate flush with the carriageway, without any tactile paving, which could result in visually-impaired pedestrians entering the carriageway inadvertently where they are at risk of being struck.

There is no footpath across the entrance to the forecourt, exposing pedestrians travelling along this side of the road to vehicles turning into/out of the petrol station.

Examples



Suggested Treatment

The entrance and exit area of the service station should be rationalised and continuous footpaths should be provided across the entry/exit. Pedestrian crossings should be provided from the new/extended footpath along the southern side of the N59 and the existing footpath on the opposite side of the road.

4.2.4 Riverside Grove\Riverslade Junction

A number of issues identified at the at the Riverside Grove\Riverslade junction, as follows: -

- vehicular priority at the junction is clearly indicated with priority for southbound traffic on Riverslade turning left onto Riverside Grove & westbound traffic on Riverside Grove turning right onto Riverslade. The southern arm is for one-way northbound traffic only, which must give way to the other two arms at the junction. However, the priority for cyclists is less clear, due to faded coloured surfacing/road markings at the junction, and may result in northbound drivers failing to give way to cyclists from Riverside Grove;

- the junction layout does not appear to be able to accommodate the swept path of all vehicles using the junction, and tyre marks were noted within the grass verge on the inside of the bend at the junction.

- no tactile paving has been provided at the dropped kerbs on the entry to the shared surface;

- the placement of some of the existing signs and bollards reduce the effective width of the footpath and may constitute a hazard for the visually-impaired; and

- Other issues identified: 4.1.4, 4.1.5, 4.1.11, 4.1.12 and 4.1.13.

Examples

Suggested Treatment

Refresh the coloured surfacing and road markings within the junction for the cyclist route from Riverside Grove to the shared surface along Riverslade. Reposition bollards and other items of roadside furniture to ensure that the effective width of the footpath is not reduced, and provide tactile paving at all dropped kerbs, including transitions between the off-road & on-road elements of the cycle facilities.

4.2.5 Quay Road

The following issues were identified on Quay Road in the vicinity of the Ice House Hotel: -

- a lack of pedestrian/cyclist crossing at the vehicular access south of the Hotel;
- the footpath at the parking area has no level difference to the adjacent carriageway;
- parking is located behind the footpath where parking manoeuvres may occur over the path; and
- parked vehicles encroaching into the path.

Examples

Suggested Treatment

A continuous footpath should be provided behind the parking area with measures to prevent parked vehicles overhanging the new footpath and measures should be provided to guide pedestrians to/from the new footpath.

4.2.6 Quay Road

The following issues were identified on Quay Road in the vicinity of Keane's Pub/Shop: -

- short discontinuous sections of footpath near shop/public house with crossings to the footpath on the western side of Quay Road;
- no footpath on the eastern side of the Quay Road in the vicinity of Bistro;
- wide hard-standing area in the vicinity of the shops which is used as a parking area, but which lacks safe areas/routes for pedestrians; and
- the footpath terminates abruptly on the western side of Quay Road where the carriageway widens and lacks edge definition.

Examples

Suggested Treatment

The parking area around the shops should be rationalised and a continuous footpath should be provided along this section of the road. In addition, a crossing should be provided between the western footpath and the shops.

4.2.7 One-way System along Quays

There is a one-way system for traffic between the two bridges within the town centre. At either end of the bridges, where they meet Cathedral Road and Emmet Street, uncontrolled pedestrian crossings are provided. The width of the carriageways on the one-way system results in relatively high vehicle speeds which can create difficulties for the elderly or mobility-impaired safely crossing the roads at these uncontrolled crossing locations.

Some of the crossings are located where inter-visibility between approaching drivers and pedestrians about to commence a crossing is poor. In addition, the relatively low kerb heights in the vicinity of the crossings, and the sharp horizontal change in the direction of travel, results in some vehicles over-running the crossing waiting areas, presenting a risk to pedestrians waiting to cross.

Examples

Suggested Treatment

Controlled crossings should be provided, ensuring adequate inter-visibility between drivers approaching the crossing and pedestrian about to use the crossing. In addition, the kerbs on the footpaths in the vicinity of the crossings should have a minimum upstand of 125mm, except at the dropped kerbs at the crossings.

4.2.8 Footpath at Ballina Civic Offices

Parking was observed within the footpath at the northern extent of Dillon Terrace (N59). Parking within the footpath would constitute an obstacle for the mobility impaired and a potential hazard for visually-impaired or partially-sighted pedestrians, preventing them from being able to access the town centre using this route. The footpath surface was noted as deteriorating in places, possibly as a result of vehicles parking on the footpath, creating potential trip hazards.

In addition, there is a lack of vertical separation between the footpath and the carriageway, creating potential safety issues for visually-impaired pedestrians who will not be able to detect the transition between the footpath and the carriageway.

Examples

Suggested Treatment

The parking arrangements at this location should be relocated/rationalised, with measures provided to deter inappropriate parking. A continuous footpath with a full-height kerb should be provided.

4.2.9 Brook Street/Humbert Street (N59) Junction

The Brook Street/Humbert Street (N59) junction mouth is wide and includes both a left-turn and a right-turn lane for traffic exiting the side road. The uncontrolled pedestrian crossing of the side road is offset from the primary NMU desire line, leading to pedestrians choosing to cross the road away from the crossing provided. Parking on the side road at the loading area for the adjacent business obscures pedestrians from the view of an approaching driver.

Examples

Suggested Treatment

The junction layout should be amended to reduce the number of lanes from Brook Street to a single lane, reducing the width of the junction mouth. A pedestrian crossing should be provided along the likely pedestrian desire line, and a pedestrian refuge island included.

4.2.10 Circular Road/Bohernasup/Humbert Street/Market Square Roundabout

A number of issues were identified at the Circular Road/Bohernasup/Humbert Street/Market Square Roundabout:

- no cyclist facilities;
- wide approach arms and a lack of deflection resulting in inappropriate speeds;
- Only two controlled crossings for NMUs at the roundabout, on the Bohernasup & Humbert Street arms, with no controlled crossing facilities of the Circular Road and Market Square arms; and
- Parking on the approach to the roundabout and in the vicinity of the pedestrian crossings reduces inter-visibility between pedestrian and drivers.

Examples

Suggested Treatment

The existing junction layout should be amended, with an alternative junction type provided which includes safer and more accessible arrangements for non-motorised road users.

4.2.11 Service Station on Circular Road (N59)

An existing service station is located at the Circular Road (N59) which has a wide entrance onto the forecourt. The footpath along the public road is discontinuous across the full width of the service station forecourt, albeit a route for pedestrians has been marked out.

The existing arrangement would prevent visually-impaired pedestrians from travelling along this side of the road, and the length over which other pedestrians are exposed to traffic entering/exiting the forecourt increases the risk of pedestrians being struck by vehicles entering/exiting the service station.

In addition, due to the lack of height definition between the footpath and the forecourt, cars were observed travelling within the footpath while entering the carriageway from the forecourt.

Examples

Suggested Treatment

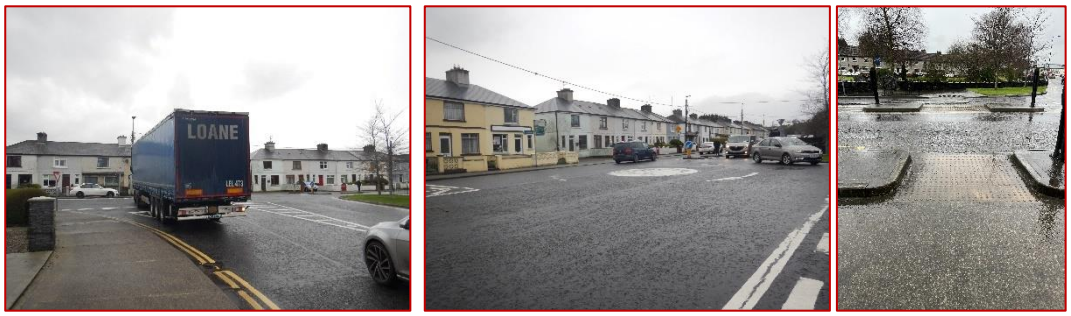
The entrance and exit area of the service station should be rationalised and continuous footpaths should be provided across the entry/exit.

4.2.12 Killala Road/ Circular Road (N59)/ Pound street (N59) Roundabout

A number of issues were identified at the Killala Road/Circular Road (N59)/Pound Street (N59) Roundabout, as follows: -

- no cyclist facilities;
- wide approach arms and a lack of deflection resulting in inappropriate speeds; and
- insufficient pedestrian crossings, with a single uncontrolled pedestrian crossing provided of Killala Road at the junction.

Examples



Suggested Treatment

The existing junction layout should be amended, with an alternative junction type provided which includes safer and more accessible arrangements for non-motorised road users.

4.2.13 Pound Street/ McDermott Street/ Garden Street/ Teeling Street Signalised Junction

A number of issues were identified at the Pound Street/ McDermott Street/ Garden Street/ Teeling Street Signalised junction, as follows: -

- cyclist facilities are provided on McDermott Street only;
- narrow footpaths within the junction corners where pedestrians would wait prior to crossing;
- incorrect layout tactile paving layouts on Garden Street with no corresponding dropped kerb on the opposite footpath; and
- Incorrect tactile paving colour at the pedestrian crossing of Pound Street.

Examples



Suggested Treatment

Cyclist facilities should be provided on all arms connecting to the existing facilities on McDermott Street. In addition, footpath widths should be increased and pedestrian crossings should be provided on all arms with dropped kerbs and the correct tactile paving layout and colour.

4.2.14 Salmon Weir Bridge

Location: Salmon Weir Bridge

At the southern side of Salmon Weir Bridge (pedestrian and cyclist bridge), there are connections from the bridge to the footpaths or cyclist facilities. A dropped kerb is provided within the existing footpath along Lower Bridge Road, however, there is no footpath on the opposite side of the road. Parking along Lower Bridge Road could impede inter-visibility at the locations where (able-bodied) pedestrians are likely to cross.

Examples






Suggested Treatment

A footpath should be provided along the south-eastern side of Lower Bridge Road, connecting with the existing footpaths to the north-east & south-west on this side of the road. A zebra crossing should be provided in the vicinity of the Salmon Weir Bridge to cater for pedestrian access to/from the bridge.

Existing roadside parking along the north-western side of Lower Bridge Road should be curtailed in the vicinity of the new zebra crossing, and the existing roadside parking along the south-eastern side of the road, where the new footpath is to be provided, should be rationalised.

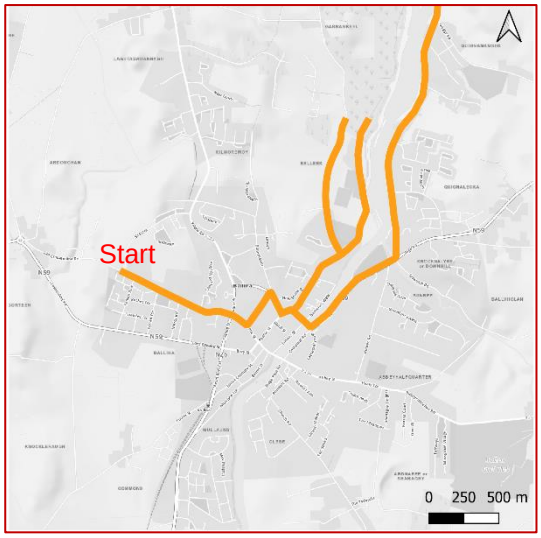
5 Route Issues and Priority

Route	Main Roads	Related Issues	Summary	Priority
Core Route A	• Riverslade/Quay Road • N59 (Sligo Road): • Convent Hill	• 4.1 • 4.1.2 • 4.1.3 • 4.1.4 • 4.1.5 • 4.1.6 • 4.1.8 • 4.1.9 • 4.1.11 • 4.1.12 • 4.1.13 • 4.1.14	Core Route A would form a main route linking the major trip attractors. The route would require a high Level of Service and hence segregation. A number of issues were identified along the route including: • a lack of footpaths on some sections or footpaths ending abruptly; • an absence of cyclist facilities over the majority of the route; • unrestricted/uncontrolled parking; • an absence of level difference between the footpath and the carriageway; • narrow shared paths; • lack of pedestrian/cyclist crossings at key locations; and • poor pavement condition.	1
Core Route B	• Abbey Street (R294) • N59 (Cathedral Road)	• 4.1 • 4.1.2 • 4.1.3 • 4.1.4 • 4.1.5 • 4.1.6 • 4.1.9 • 4.1.11 • 4.1.12 • 4.1.13 • 4.1.14	Core Route B would form a main route linking a number of the residential areas to Core Route A. The route would require a high level of service and hence segregation. A number of issues were identified along the route including: • a lack of footpaths on some sections or footpaths ending abruptly; • a lack of cyclist facilities on some sections of the route; • unrestricted/uncontrolled parking; • an absence of level difference between the footpath and the carriageway at some locations; • narrow shared paths; • a lack of pedestrian/cyclist crossings at key locations; and • poor pavement/footpath surface condition.	2

Route	Main Roads	Related Issues	Summary	Priority
Core Route C	• Lower Bridge Road	• 4.1 • 4.1.2 • 4.1.3 • 4.1.5 • 4.1.6 • 4.1.7 • 14.1.10 • 4.1.11 • 4.1.12	Core Route C would form a link to an existing Greenway located to the south-west of the River Moy. The link would also provide a potential alternative route for travel to/from the residential areas located southeast of River Moy. The route would require a high level of service and hence full segregation. The route would link the green way to Core Route B. A number of issues were identified along the route including: • A lack of connections between the Salmon Weir Bridge to footpaths on the adjacent road network; • an absence of cyclist facilities on the eastern side of the Salmon Weir Bridge; and • Parking on Lower Bridge Road which could impede inter-visibility between drivers and crossing NMUs.	3
Route 1	• Greenway facility	• 4.1.5 • 4.1.6 • 4.1.10 • 4.1.11 • 4.1.12 • 4.1.3 • 4.1.14	Route 1 would cater for active travel to existing residential properties on the N26 and the Childers Heights and Moy Heights housing estates. Crossing facilities with directional signage to Route 1 would cater for properties located to the west of the N26 (however, should the alternative route be used the crossings and signage may not be required).	3
Route 2	• N59 (Sligo Road) • Market Square	• 4.1.2 • 4.1.3 • 4.1.4 • 4.1.5 • 4.1.6 • 4.1.9 • 4.1.11 • 4.1.12 • 4.1.13 • 4.1.14	Route 2 would cater for active travel to existing residential properties on the N59 (Sigo Road) and the Knocknalyre housing estate.	3

Route	Main Roads	Related Issues	Summary	Priority
Route 3	• Bunree Road	• 4.1.4 • 4.1.5 • 4.1.6 • 4.1.7 • 4.1.11 • 4.1.12	Route 3 would cater for active travel to/from the Oakwood Drive and Greenhills housing estates and would link the industrial area with the other core routes.	3
Route 4	• Killala Road	• 4.1 • 4.1.2 • 4.1.3 • 4.1.4 • 4.1.5 • 4.1.6 • 4.1.9 • 4.1.11 • 4.1.12 • 4.1.13	Route 4 would cater for active travel to existing residential properties on Killala Road and the Marian Crescent and Libadoré housing estates.	4
Route 5	• Bohernasup	• 4.1 • 4.1.2 • 4.1.3 • 4.1.4	Route 5 would cater for active travel to existing residential properties on Bohernasup Road and the Woodlands, Libadoré and Lansyn housing estates.	4

Appendix A - Residential Area Active Travel Routes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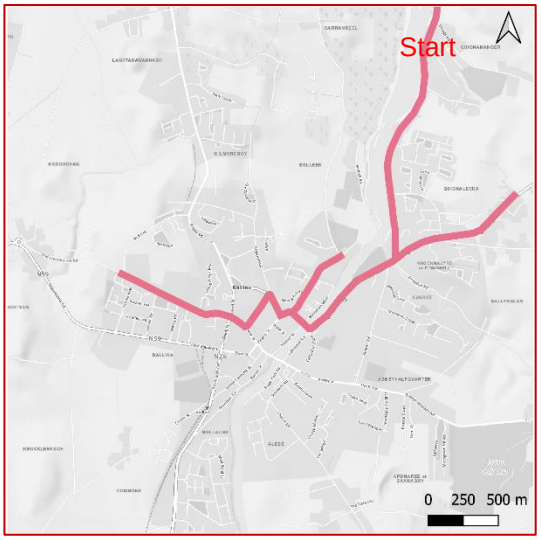
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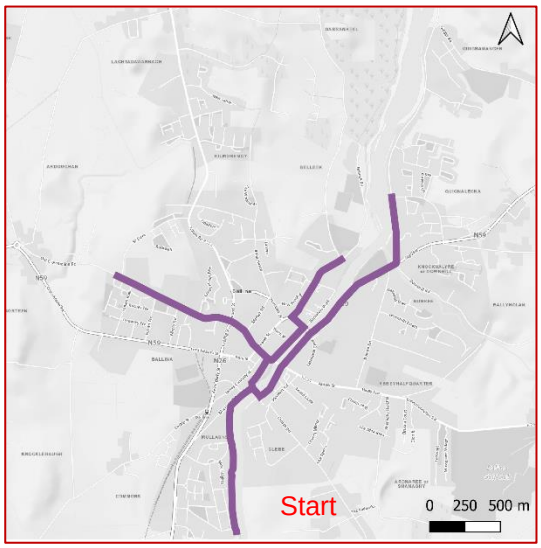
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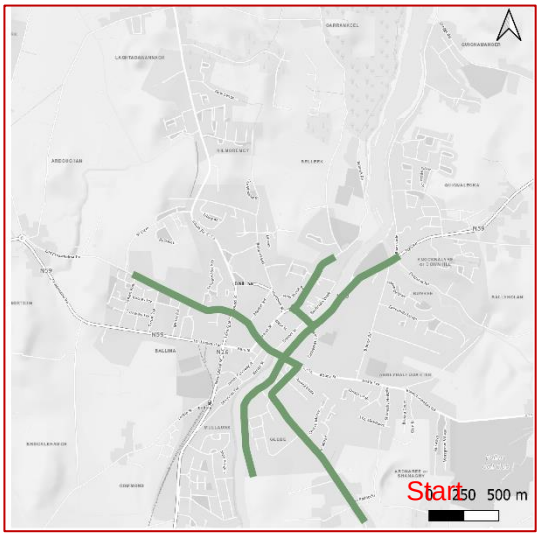
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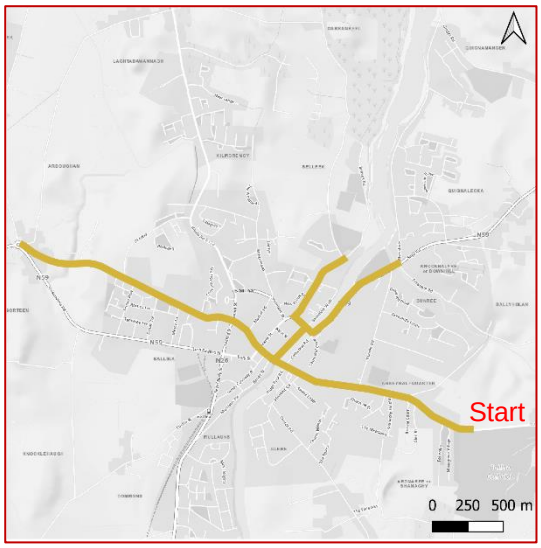
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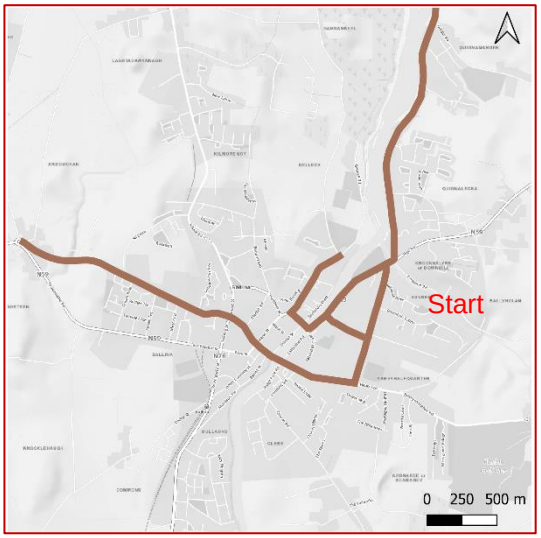
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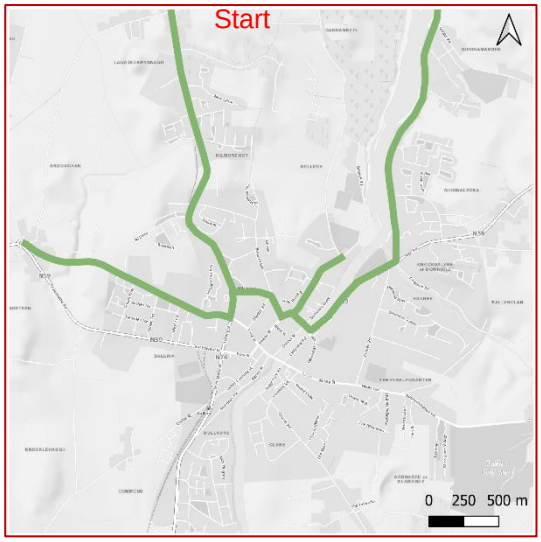
Start
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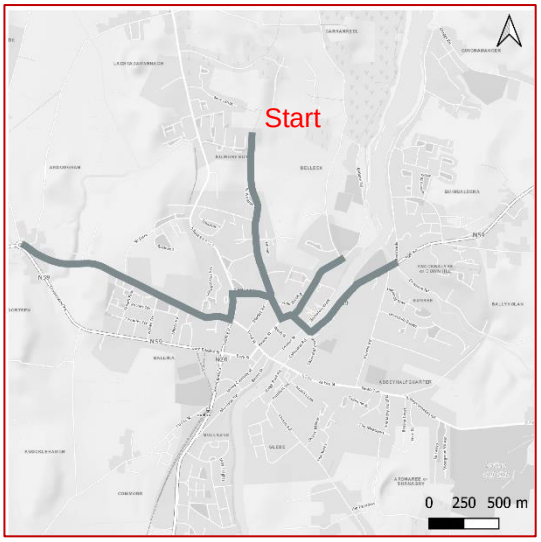
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Appendix 4

Options Development

4. Options Development

Initial Option Generation by Mode

Walking

- Upgrades and repairs to “day to day” key routes between residential areas and local education, employment and community facilities to include resurfacing, kerb repairs, widening, drainage and landscaping.
- Installation of new crossing facilities along main roads and at major junctions, particularly along the N59, N26, Abbey Street, Church Road, Castle Road and McDermott Street.
- Provision of infrastructure which can directly serve “partial” journeys on foot, such as Park and Stride to include the following:
    - Moyne College – Cathedral Road Car Park
    - St. Muredach's College – Cathedral Road Car Park
    - Gaelscoil na gCeithre Maol - Market Square Street Park
    - Cormaic Naofa National School- Market Square Street Park
    - Belmont Montessori School - Humbert Street Car Park
    - Scoil Iosa - Convent Hill Car Park
    - St. Dymphna’s School - Convent Hill Car Park
    - St. Mary’s Secondary School- Convent Hill Car Park
- Improved filtered permeability through the use of laneways and the opening up of cul-de-sacs for pedestrians to increase directness and connectivity.
- Improved accessibility for vulnerable population cohorts within the town centre to include priority parking, handrails at gradients, public seating, footpath widening, public toilets and public bins.
- New or improved public lighting, security and signage for walking routes.

Cycling

- Maintenance of the existing infrastructure to include resurfacing, kerb repairs, widening and drainage.
- Development of a connected and continuous cycle network comprised of greenway, primary, secondary and feeder routes to connect the residential, education, employment, retail, commercial, healthcare and community centres. The infrastructure required will be determined for a route-by-route basis and depend on existing conditions/constraints and will be delivered to NTA standard for cycle facilities.
- Provision of dedicated cycle facilities at junctions.
- Create a network that can cater for demand from commuter, delivery and leisure cyclists that is accessible to all population cohorts.
- Provision of safe and secure covered cycle parking within the town centre and at major trip attractors.

- Provision of charging infrastructure for electric bikes within the town centre.
- Improved filtered permeability through the use of laneways and the opening up of cul-de-sacs for cyclists to increase directness and connectivity.
- New or improved public lighting, security and signage for cycling routes.

Public Transport

- Enhance connectivity of Ballina Train Station with the provision of improved active travel connections and ‘Park and Ride’ infrastructure.
- Expand the ‘Local Link’ bus network to include short distance trips within the Ballina Town Area.
- Enhance the existing bus services through co-ordinated timetabling to facilitate quick interchange between local and regional services.
- Development of a bus interchange at Busáras with covered and secure waiting area and welfare facilities.

Road Network

- Provision of Electric Vehicle charging infrastructure within the town centre.
- Promote car sharing.
- Transport demand management measures/parking strategies.
- Traffic management measures such as traffic calming and junction redesign.
- Provide partial trip infrastructure.

Complementary Measures

- Partial trip incentives such as ‘Park and Ride’ and ‘Park and Stride’.
- Provide a mobility hub with charging facilities for electric bikes and scooters, covered waiting area, secure bicycle parking and welfare facilities.
- Mobility Management Plans for planned developments.
- Monitoring of existing travel patterns and introducing behavioural change programmes.
- Liaising with local businesses to promote the ‘Bike to Work’ scheme.
- Promotion of active travel in schools and community groups.

Existing Conditions by Area

The study area in Ballina is divided into six key areas for the ease of screening and assessment of network options, as shown in Figure 3-11.

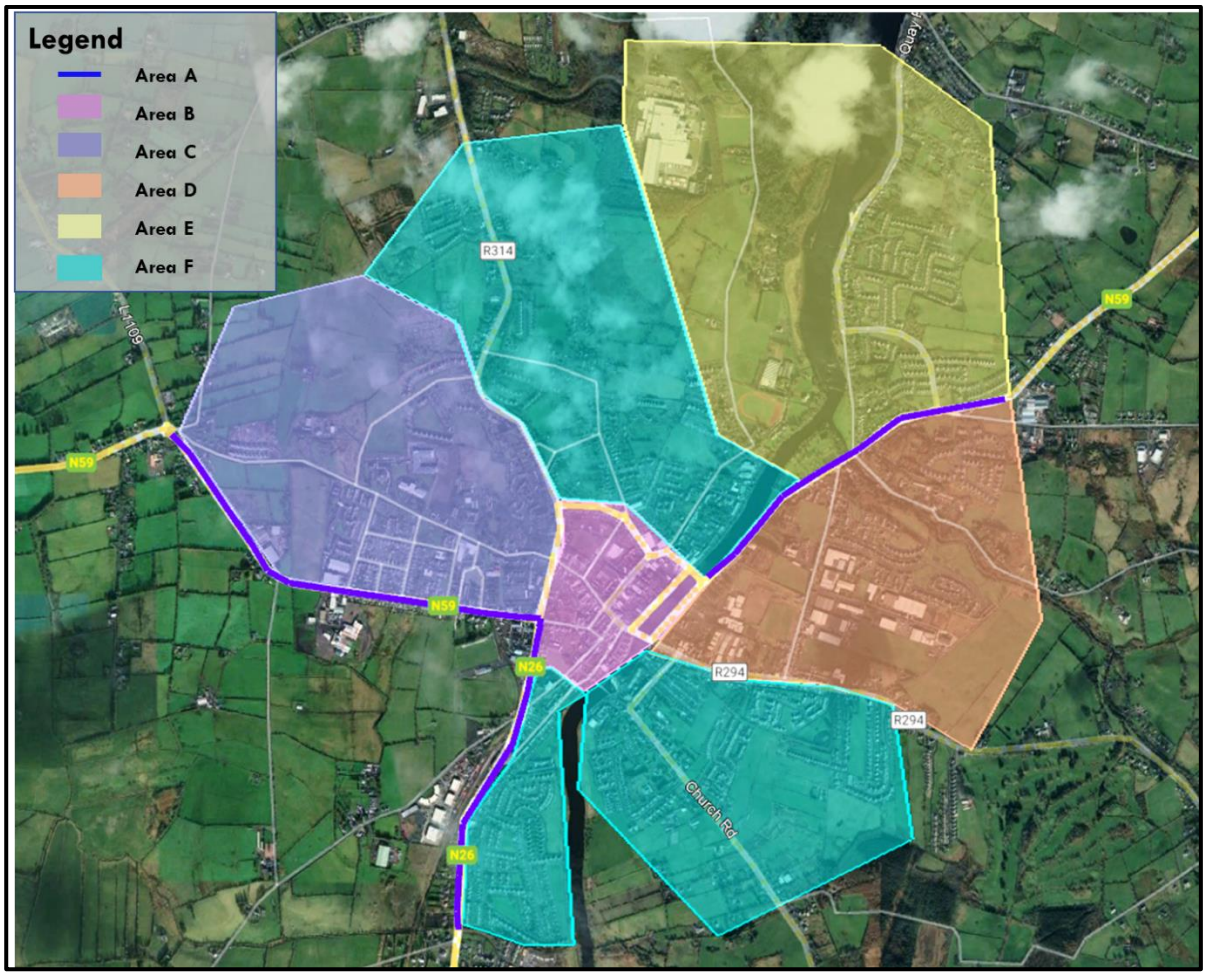

Figure 3-1 Area Map for Screening

Area	Location	Existing Conditions
Area A	N26 (Station Road)	• National road (Single carriageway) • Cycle facilities not provided • Carriageway width is around 9.5 m, and total cross-section width of 16 m available
	N59 (Crossmolina Road)	• National road (Single carriageway) • Cycle facilities not provided • Carriageway width is around 9.5 m, and total cross-section width of 13-14 m available ▪ Possibility of acquiring more land
	N59 (Sligo Road)	• National Road (Single Carriageway) • Pedestrian and Cyclist shared surface present on one side

		• Carriageway width of 9.5 m
	Town Centre (Burry St/ Tone Street/ Pearse Street/ Emmet Street/Cathedral Road)	• One way street for motor vehicles • Carriageway is approximately 5.5 m, parking is present in certain stretches and is 2.5 m wide and footpaths are 2.5-5 m wide.
Area B	Town Centre (Humbert Street)	• Two -way carriageway • Varying footpath from 2 to 2.5 m • On-street car parking at few locations, and designated car park adjacent to the road Total cross-section width available varies from 18-20 m
	Market Square	• Two -way carriageway • Footpath approximately 2m • On-street car parking at few locations, and designated car park adjacent to the road • Total cross-section width available varies from 11.5-19 m.
	James Connolly Street/Barrett Street	• One way street for motor vehicles • Total cross-section width varies from 9-12 m, parking is present in certain stretches and is 2.5 m wide and footpaths are 1.5-2 m wide.
Area C	McDermott Street & Convent Hill	• Two -way carriageway • Existing one-directional cycle lane • Lane marking disappears after a stretch • Total cross section width is approximately 12.5 m
	Pound Street	• Two-way carriageway and footpath • No cycle facilities • Carriageway width is approximately 7.5 m • Total cross-section width varies between 11.5-14.5 m
Area D	Abbey Street	• Two -way carriageway • One side on-street car parking at few locations • Total cross-section width available 12.5m
	R294	• Single Carriageway Regional Road • No cycle facilities • Car parking on both/one side of the street
	Bunree Road	• Single Carriageway Road • Pedestrian and cyclist shared surface present for

		• Advisory cycle lanes present in some stretches
Area E	Castle Road	• Narrow carriageway • No cycle facilities • Possibility of acquiring land
	(Riverslade	• Two-way carriageway • Verges, footpath, and pedestrian and cyclist shared facility present
Area F	Church Road	• Narrow two-way carriageway • Sharp blind turn • Narrow footpath on one side
	Bohernasup	• Two-way carriageway • Width of cross-section is around 13.5-14m • Wide verges and footpath present

Key junctions in the town lack pedestrian and cycle facilities. Table 1-1 shows the Options Development to provide active travel facilities for several key junctions.

Table 1-1: Options Development - Key Junctions

Option 1	Do Nothing	Retain the existing
Option 2	Do Minimum	• Upgrade the existing facilities (cycle lanes) though resurfacing, kerb adjustments, line markings, drainage and signage as necessary.
Option 3	Do something	• Retain existing roundabout junctions
		• Provide dedicated pedestrians facilities
		• Provide dedicated cycle facilities
Option 4	Do something	• Retain existing priority/signalised
		• Provide dedicated pedestrians facilities
		• Provide dedicated cycle facilities
Option 5	Do something	• Signalise existing roundabout junction • Provide dedicated pedestrians facilities
		• Provide dedicated cycle facilities

Table 3-2 shows area specific Options Development for the junctions shown in Figure 3-2.

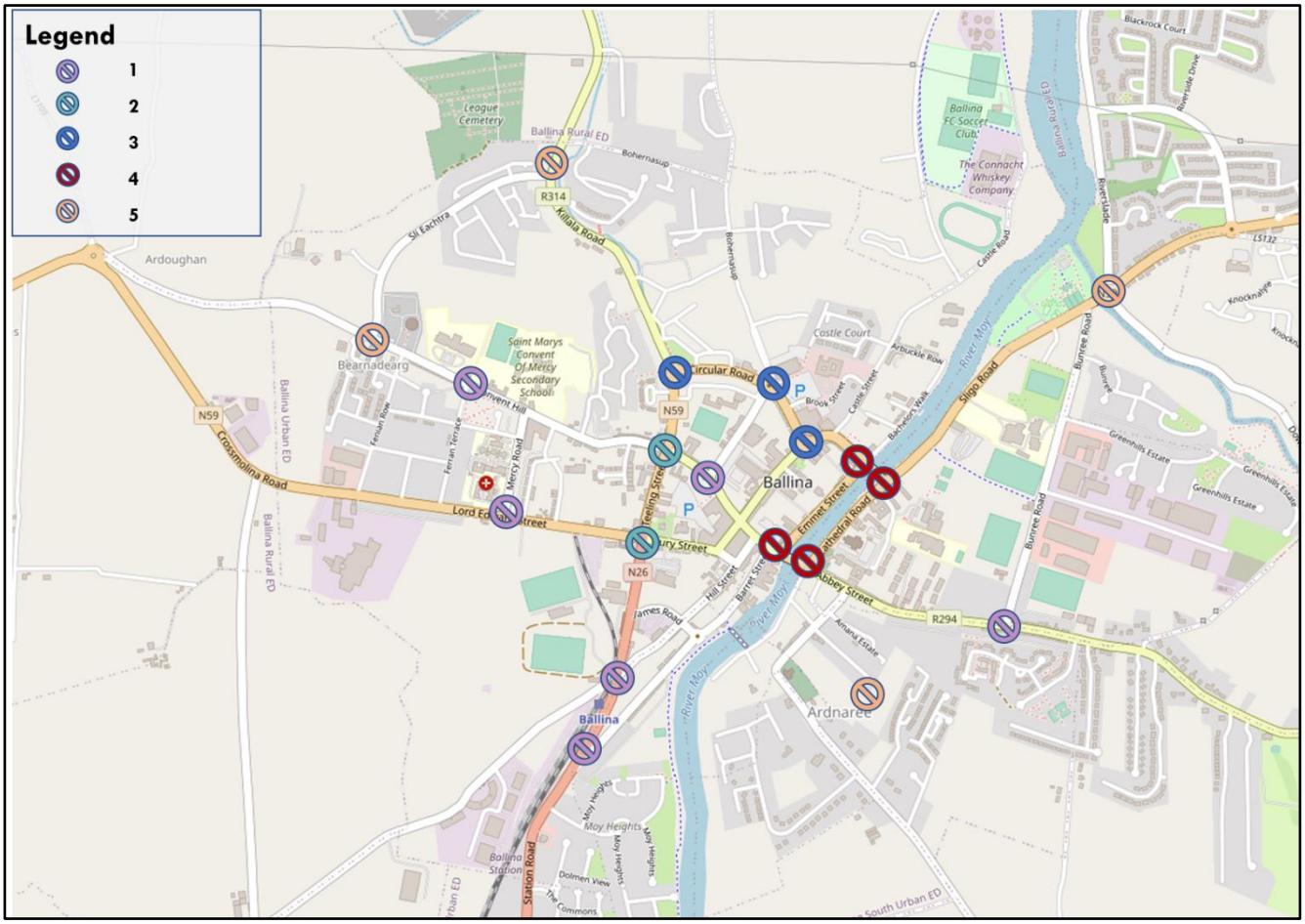

Figure 3-2 Area Specific Options Development – Key Junctions

Table 3-2 Area Specific Options Development – Key Junctions

Area	Existing Conditions
1. Junctions along N26-Station Road, Raheen Road; N59-Mercy Road; Convent Hill-St. Marys School Entrance; Tone Street-Market Street; R294-Bunree Road	• Priority junction • No dedicated pedestrian/cyclists crossing facilities across some arms.
2. Junctions along Kevin Barry-Lord Edward-Bury-Teeling Street; Teeling-Mc Dermott-Pund-Garden Street	• Signalized junction. • Dedicated pedestrian crossing facilities. • No dedicated cyclists crossing facilities across most arms
3. Three Roundabouts along Circular Road/Humbert Street/Pearse Street	• Priority controlled roundabout with good vehicular capacity • Dedicated pedestrian crossing facilities at some/no arms. • No dedicated facility for cyclists to cross
4. Junctions along Upper and Lower Bridges	• Priority junction with island • Important and busy link to national roads • Sub-standard pedestrian crossing facilities

	• No dedicated facility for cyclists to cross
5. Junctions along Convent Hill-Sil Eachtra; Sil Eachtra-Killala Road; Sligo-Downhill-Riveslade-N59 roads	• Priority junction • Cycle lanes present • Cycle crossing facilities at few legs • No dedicated pedestrian crossing facility

Options Development By Mode

Walking

Table 1-3 shows the Options Development for the pedestrian network.

Table 1-3 Options Development - Pedestrian Network

Option 1	Do Nothing	Retain the existing.
Option 2	Do Minimum	Upgrade the existing facilities though resurfacing, kerb adjustments, line markings, drainage and landscaping as necessary.
Option 3	Do Something	Provide a continuous pedestrian footpaths and dedicated crossing facilities along the route, where there is available space without the need for landtake from the carriageway/private owners.
Option 4	Do Something	Provide continuous 2m wide pedestrian footpaths and dedicated crossing facilities along the route, with landtake from the carriageway/private owners where required.

Cycling

Table 1-4 shows the Options Development for the cycle network.

Table 1-4: Options Development – Cycle Network

Option 1	Do Nothing	Retain the existing.
Option 2	Do Minimum	Upgrade the existing facilities though resurfacing, kerb adjustments, line markings, drainage and signage as necessary.
Option 3	Do Something	• Provide a **cycle track/lane** in each direction
Option 4	Do Something	Provide a **two-way cycle** track/lane
Option 5	Do Something	• Provide a **contra-flow cycle track/lane** on one-way streets. • Provide a shared carriageway for cyclists travelling in the direction of traffic.
Option 6	Do Something	• **No facilities for contra-flow cyclists** • Provide a **shared carriageway between** on a one-way street to facilitate cyclists travelling in the direction of traffic. • 30km/hr speed limit for vehicular traffic. • Resurface the carriageway to facilitate safe shared usage between cyclists and cars. • Provide traffic calming and road signage.
Option 7	Do Something	• Provide a **shared carriageway between cyclists and vehicular traffic** on a two-way streets. • 30km/hr speed limit for vehicular traffic. • Resurface the carriageway to facilitate safe shared usage between cyclists and cars. • Provide traffic calming and road signage.
Option 8	Do Something	• **Provide a shared surface**

Public Transport

Table 1-5 shows the Options Development for the public transport network.

Table 1-5 Options Development - Public Transport Network

Option 1	Do Nothing	Retain the existing.
Option 2	Do Minimum	• Enhance the existing services (ie; expand on the existing Local Link routes to serve local trips) • Improve the connectivity of Ballina Train Station and Bus depot at Kevin Barry Street for Active Travel Modes
Option 3	Do Something	• Enhance the existing services • Improve the connectivity of Ballina Train Station, Bus depot at Kevin Barry Street for Active Travel Modes • Provide a local bus network with 2 linear routes and bus interchange at Market Square Street
Option 4	Do Something	• Enhance the existing services • Improve the connectivity of Ballina Train Station and Bus depot at Kevin Barry Street for Active Travel Modes • Provide a local bus network with 2 circular routes and bus interchange at Market Square Street

Road Network

Table 1-6 shows the Options Development for the general vehicular network.

Table 1-6 Options Development – General Vehicular Network

Option 1	Do Nothing	Retain the existing
Option 2	Do Minimum	Resurface the existing carriageway
Option 3	Do Something	• Implement 'Park and Stride' to reduce 'school-run' traffic congestion in the town centre. Feasible car parks and schools are: – Moyne College – Cathedral Road Car Park – St. Muredach's College – Cathedral Road Car Park – Gaelscoil na gCeithre Maol School - Market Square Street Park – Cormaic Naofa National School- Market Square Street Park – Belmont Montessori School - Humbert Street Car Park – Scoil Iosa - Convent Hill Car Park – St. Dymphna's School - Convent Hill Car Park – St. Mary's Secondary School- Convent Hill Car Park
Option 4	Do Something	• Provide Electric Vehicle charging points in the town centre. • Provide car sharing services (ie; GoCar)
Option 5	Do Something	• Transport demand management measures/parking strategies.
Option 6	Do Something	• Provide infrastructure for multi-modal trips
Option 7	Do Something	• Support bidirectional traffic movement along Upper/Lower bridges to redistribute traffic on some links within the town, • Traffic volume within the town is envisaged to reduce with the introduction of N26 Ballina bypass.

4.1
Options Development: Proposal 1

Location	Feasible Options		
	Pedestrian Network	Cycle Network	Road Network
N26	Option 1 Option 2 Option 3 Option 4	Option 1 Option 2 Option 3	Option 1 Option 2 Option 5
L1127	Option 1 Option 2 Option 3 Option 4	Option 1 Option 2 Option 3	Option 1 Option 2 Option 5
R310	Option 1 Option 2 Option 3 Option 4	Option 1 Option 2 Option 3	Option 1 Option 2 Option 5
N26 Kevin Barry Street	Option 1 Option 2 Option 3 Option 4	Option 1 Option 2 Option 3	Option 1 Option 2 Option 5
James Connolly Street/Hill Street	Option 1 Option 2 Option 3 Option 4	Option 1 Option 5 Option 6	Option 1 Option 2 Option 5
Water Lane	Option 1 Option 2 Option 3 Option 4	Option 1 Option 5 Option 6	Option 1 Option 2 Option 5
Morrison Terrace/Barrett Street	Option 1 Option 2 Option 3 Option 4	Option 1 Option 5 Option 6	Option 1 Option 2 Option 5
Tone Street (Lower)	Option 1 Option 2 Option 3 Option 4	Option 1 Option 2 Option 3	Option 1 Option 2 Option 5
Tolan Street	Option 1 Option 2 Option 3 Option 4	Option 1 Option 2 Option 3	Option 1 Option 2 Option 5

Permeability Links	Feasible Options - Active Travel Links
Existing Permeability Links to be Upgraded	• Morrison Terrace and N26 • James Connolly Street and Barrett Street • Barrett Street and Wesley Ct • Link from Church Road to Salmon Weir Bridge
Proposed Permeability Link	• Hollister and Proposed Greenway

4.2
Options Development: Proposal 2

Location	Feasible Options		
	Pedestrian Network	Cycle Network	Road Network
N59 Dillon Terrace	Option 1 Option 2 Option 3 Option 4	Option 1 Option 2 Option 3	Option 1 Option 2 Option 5
N59 Humbert Street	Option 1 Option 2 Option 3 Option 4	Option 1 Option 2 Option 3	Option 1 Option 2 Option 5
Market Square	Option 1 Option 2 Option 3 Option 4	Option 1 Option 2 Option 3	Option 1 Option 2 Option 5
Tone Street (Upper)	Option 1 Option 2 Option 3 Option 4	Option 1 Option 2 Option 3	Option 1 Option 2 Option 5
McDermott Street	Option 1 Option 2 Option 3 Option 4	Option 1 Option 2 Option 3	Option 1 Option 2 Option 5
Slí Ectra	Option 1 Option 2 Option 3 Option 4	Option 1 Option 2 Option 3	Option 1 Option 2 Option 5
Fenian Row	Option 1 Option 2 Option 3 Option 4	Option 1 Option 2 Option 3	Option 1 Option 2 Option 5
Fenian Terrace	Option 1 Option 2 Option 3 Option 4	Option 1 Option 2 Option 3	Option 1 Option 2 Option 5
Mercy Road	Option 1 Option 2 Option 3 Option 4	Option 1 Option 2 Option 3	Option 1 Option 2 Option 5
Killala Road North	Option 1 Option 2 Option 3 Option 4	Option 1 Option 2 Option 3	Option 1 Option 2 Option 5

Crossmolina Road	Option 1 Option 2 Option 3 Option 4	Option 1 Option 2 Option 3	Option 1 Option 2 Option 5

Permeability Links	Feasible Options - Active Travel Links
Existing Permeability Links to be Upgraded	• McAndrew Lane • Emmet Street and Pearse Street • Teeling Street • Bury Street
Proposed New Permeability Link	• Abbey Street to The Spires
Proposed as part of Safe Routes to School Programme	• St Patricks Estate • Link from Mercy Road to Roces Terrace • Link from Balllina Train Station to Lord EDWARD Stret (via the back of Stephenites GAA Club) • Link from Church Rod to St. Michaels NS

4.3
Options Development: Proposal 3

Location	Feasible Options		
	Pedestrian Network	Cycle Network	Road Network
Creggs Road	Option 1 Option 2 Option 3 Option 4	Option 1 Option 2 Option 3	Option 1 Option 2 Option 5
Quay Road	Option 1 Option 2 Option 3 Option 4	Option 1 Option 2 Option 3	Option 1 Option 2 Option 5
Riverslade	Option 1 Option 2 Option 3 Option 4	Option 1 Option 2 Option 3	Option 1 Option 2 Option 5
Quignalecka	Option 1 Option 2 Option 3 Option 4	Option 1 Option 2 Option 3	Option 1 Option 2 Option 5
N59 Clare Street	Option 1 Option 2 Option 3 Option 4	Option 1 Option 2 Option 3	Option 1 Option 2 Option 5
N59 Lower Bridge	Option 1 Option 2 Option 3 Option 4	Option 1 Option 2 Option 3	Option 1 Option 2 Option 5
N59 Cathedral Street	Option 1 Option 2 Option 3 Option 4	Option 1 Option 2 Option 3	Option 1 Option 2 Option 5
N59 Upper Bridge	Option 1 Option 2 Option 3 Option 4	Option 1 Option 2 Option 3	Option 1 Option 2 Option 5
N59 Emmet Street	Option 1 Option 2 Option 3 Option 4	Option 1 Option 2 Option 3	Option 1 Option 2 Option 5

Permeability Links	Feasible Options - Active Travel Links
Existing Permeability Links to be Upgraded	• Link from Bunree Road to Sligo Road • Links from Sligo Road • Link to St Muredachs College

Proposed New Permeability Link	• New Active Travel crossing of River Brusna at Bunree Bridge • Riverslade (park)

4.4
Options Development: Proposal 4

Location	Feasible Options		
	Pedestrian Network	Cycle Network	Road Network
Pearse Street	Option 1 Option 2 Option 3 Option 4	Option 1 Option 2 Option 3	Option 1 Option 2 Option 5
O'Rahilly Street	Option 1 Option 2 Option 3 Option 4	Option 1 Option 2 Option 3	Option 1 Option 2 Option 5
Bury Street	Option 1 Option 2 Option 3 Option 4	Option 1 Option 2 Option 3	Option 1 Option 2 Option 5
N59 Lord Edward Street	Option 1 Option 2 Option 3 Option 4	Option 1 Option 2 Option 3	Option 1 Option 2 Option 5
N59 Crossmolina Road	Option 1 Option 2 Option 3 Option 4	Option 1 Option 2 Option 3	Option 1 Option 2 Option 5

4.5
Options Development: Auxiliary Proposal 5

Location	Feasible Options		
	Pedestrian Network	Cycle Network	Road Network
Church Road	Option 1 Option 2 Option 3 Option 4	Option 1 Option 2 Option 3	Option 1 Option 2 Option 5
Abbey Street/Healys Terrace	Option 1 Option 2 Option 3 Option 4	Option 1 Option 2 Option 3	Option 1 Option 2 Option 5
Bunree Road	Option 1 Option 2 Option 3 Option 4	Option 1 Option 2 Option 3	Option 1 Option 2 Option 5
Lower Bridge Road	Option 1 Option 2 Option 3 Option 4	Option 1 Option 2 Option 3	Option 1 Option 2 Option 5
Nally Street/Castle Road	Option 1 Option 2 Option 3 Option 4	Option 1 Option 2 Option 3	Option 1 Option 2 Option 5
Bohernasup	Option 1 Option 2 Option 3 Option 4	Option 1 Option 2 Option 3	Option 1 Option 2 Option 5
Libradore	Option 1 Option 2 Option 3 Option 4	Option 1 Option 2 Option 3	Option 1 Option 2 Option 5
Castlefield Manor	Option 1 Option 2 Option 3 Option 4	Option 1 Option 2 Option 3	Option 1 Option 2 Option 5
N59 Circular Road	Option 1 Option 2 Option 3 Option 4	Option 1 Option 2 Option 3	Option 1 Option 2 Option 5
N59 Pound Street	Option 1 Option 2 Option 3 Option 4	Option 1 Option 2 Option 3	Option 1 Option 2 Option 5
N59 Teeling Street	Option 1 Option 2 Option 3 Option 4	Option 1 Option 2 Option 3	Option 1 Option 2 Option 5
Killala Road South	Option 1 Option 2 Option 3 Option 4	Option 1 Option 2 Option 3	Option 1 Option 2 Option 5

Bachelors Walk	Option 1 Option 2 Option 3 Option 4	Option 1 Option 2 Option 3	Option 1 Option 2 Option 5
Quay Lane	Option 1 Option 2 Option 3 Option 4	Option 1 Option 2 Option 3	Option 1 Option 2 Option 5

Permeability Links	Feasible Options - Active Travel Links
Existing Permeability Links to be Upgraded	• Riverslade (Tom Ruane Park) • Link to Ballina Soccer Club • Link to Beleek Castle • Beleek Lodge to Lansyn • Link to Coca-Cola Factory • Link from proposed Greenway to Castlefield Manor • Libradore • Link from Beleek Manor to Bohernasup • Bachelors Walk to Ashhpool • Link along ESB Access Road to Downhill Road
Proposed New Permeability Link	• Link along ESB Access Road to Downhill Road • Link from R294 to Bunree Road • Link from R294 to Church Road through Ballina Golf Course • Link from Killala Road to Convent Hill Crescent
Proposed Permeability Link to Tie-In with SRTS	• The Moorings to Quay Lane • Quay Lane to Creggs Road (Quay School) • Quay Road to Rathmeel Lawns

Appendix 5

Options Assessment: Sifting

5 Options Assessment: Sifting

The assessment is based on a two-stage approach:

- Initially a sifting ("Screening of Options Long List") assessment was carried out on all possible route options. This process was a high-level assessment whereby routes were appraised on their ability to provide a bus corridor, and whether they could practically be delivered. A simple pass/fail result was given for each route at this stage.
- The routes that passed Stage 1 were then taken forward and combined into a number of feasible longer routes between points. These were then assessed by a "Multi-Criteria Analysis" process, in which routes were ranked in a comparative manner under a number of criteria.

Screening of Options Long List

The options list generated within Appendix 4: Options Development was measured against the SWOT analysis from Section 4: Baseline Assessment to identify all weaknesses.

The Do Nothing, Do Minimum and Do Something options are assessed for key routes within each area/designation. Broad cross sections were developed for each scenario and assessed for each route.

These options per area of the route, were then assessed as part of a high level "screening" process in order to determine their suitability and the feasibility of their implementation. The sifting exercise identifies whether the cross sections would achieve the scheme objectives and if they would be subject to significant cost and/or impact to achieve these objectives. This assessment stage focused on the immediate constraints by means of the identification of undue traffic delays, environmental issues, economically unjustifiable and require extensive land take.

A simple pass/fail result was given for each option at this stage. This was determined using a high-level qualitative method based on professional judgement and a general appreciation for existing physical conditions/constraints within the study area from available survey information and site visits. Options were considered to fail the sifting process if there were immediate and apparent design issues, economic, social or environmental issues that made them impracticable.

5.1
Options Assessment: Sifting
Proposal 1

Location	Option		Design Feasibility	Pass/Fail
N26	Option 1	Do Nothing	Feasible	**Pass**
	Option 2	Do Minimum	Feasible	**Pass**
	Option 3	Do Something	Feasible	**Pass**
	Optiion 4	Do Something	Feasible	**Pass**
	Option 5	Do Something	Unfeasbile - New link/ Traffic Management is not nessecary or too expensive	**Fail**
L1127	Option 1	Do Nothing	Feasible	**Pass**
	Option 2	Do Minimum	Feasible	**Pass**
	Option 3	Do Something	Feasible	**Pass**
	Optiion 4	Do Something	Feasible	**Pass**
	Option 5	Do Something	Unfeasbile - New link/ Traffic Management is not nessecary or too expensive	**Fail**
R310	Option 1	Do Nothing	Feasible	**Pass**
	Option 2	Do Minimum	Feasible	**Pass**
	Option 3	Do Something	Feasible	**Pass**
	Optiion 4	Do Something	Feasible	**Pass**
	Option 5	Do Something	Unfeasbile - New link/ Traffic Management is not nessecary or too expensive	**Fail**
N26 Kevin Barry Street	Option 1	Do Nothing	Feasible	**Pass**
	Option 2	Do Minimum	Feasible	**Pass**
	Option 3	Do Something	Feasible	**Pass**
	Optiion 4	Do Something	Feasible	**Pass**
	Option 5	Do Something	Unfeasbile - New link/ Traffic Management is not nessecary or too expensive	**Fail**
James Connolly Street/Hill Street	Option 1	Do Nothing	Feasible	**Pass**
	Option 2	Do Minimum	Feasible	**Pass**
	Option 3	Do Something	Feasible	**Pass**
	Option 4	Do Something	Feasible	**Pass**
	Option 5	Do Something	Feasible	**Pass**
Water Lane	Option 1	Do Nothing	Feasible	**Pass**
	Option 2	Do Minimum	Feasible	**Pass**
	Option 3	Do Something	Feasible	**Pass**
	Optiion 4	Do Something	Feasible	**Pass**
	Option 5	Do Something	Unfeasbile - New link/ Traffic Management is not nessecary or too expensive	**Fail**
Morrison Terrace/Barret Street	Option 1	Do Nothing	Feasible	**Pass**
	Option 2	Do Minimum	Feasible	**Pass**
	Option 3	Do Something	Feasible	**Pass**
	Option 4	Do Something	Feasible	**Pass**
	Option 5	Do Something	Feasible	**Pass**
Tone Street (Lower)	Option 1	Do Nothing	Feasible	**Pass**
	Option 2	Do Minimum	Feasible	**Pass**
	Option 3	Do Something	Unfeasbile - available cross section is too narrow	**Fail**
	Optiion 4	Do Something	Feasible	**Pass**
	Option 5	Do Something	Unfeasbile - New link/ Traffic Management is not nessecary or too expensive	**Fail**
Tolan Street	Option 1	Do Nothing	Feasible	**Pass**
	Option 2	Do Minimum	Feasible	**Pass**
	Option 3	Do Something	Unfeasbile - available cross section is too narrow	**Fail**
	Optiion 4	Do Something	Feasible	**Pass**
	Option 5	Do Something	Unfeasbile - New link/ Traffic Management is not nessecary or too expensive	**Fail**

Location	Design Feasibility	Pass/Fail
Morrison Terrace and N26	Feasbile - Existing permeability link to be upgraded	**Pass**
James Connolly Street and Barrett Street	Feasbile - Existing permeability link to be upgraded	**Pass**
Barrett Street and Wesley Ct	Feasbile - Existing permeability link to be upgraded	**Pass**
Link from Church Road to Salmon Weir Bridge	Feasbile - Existing permeability link to be upgraded	
Hollister and Proposed Greenway	Feasbile - Proposed Permeability Link	**Pass**

5.2
Options Assessment: Sifting
Proposal 2

Location	Option		Design Feasibility	Pass/Fail
N59 Dillon Terrace	Option 1	Do Nothing	Feasible	**Pass**
	Option 2	Do Minimum	Feasible	**Pass**
	Option 3	Do Something	Feasible	**Pass**
	Option 4	Do Something	Feasible	**Pass**
	Option 5	Do Something	Unfeasbile - New link/ Traffic Management is not nessecary or too expensive	**Fail**
N59 Humbert Street	Option 1	Do Nothing	Feasible	**Pass**
	Option 2	Do Minimum	Feasible	**Pass**
	Option 3	Do Something	Feasible	**Pass**
	Option 4	Do Something	Feasible	**Pass**
	Option 5	Do Something	Unfeasbile - New link/ Traffic Management is not nessecary or too expensive	**Fail**
Market Square	Option 1	Do Nothing	Feasible	**Pass**
	Option 2	Do Minimum	Feasible	**Pass**
	Option 3	Do Something	Feasible	**Pass**
	Option 4	Do Something	Feasible	**Pass**
	Option 5	Do Something	Unfeasbile - New link/ Traffic Management is not nessecary or too expensive	**Fail**
Tone Street (Upper)	Option 1	Do Nothing	Feasible	**Pass**
	Option 2	Do Minimum	Feasible	**Pass**
	Option 3	Do Something	Feasible	**Pass**
	Option 4	Do Something	Feasible	**Pass**
	Option 5	Do Something	Unfeasbile - New link/ Traffic Management is not nessecary or too expensive	**Fail**
McDermott Street	Option 1	Do Nothing	Feasible	**Pass**
	Option 2	Do Minimum	Feasible	**Pass**
	Option 3	Do Something	Feasible	**Pass**
	Option 4	Do Something	Unfeasbilbe - this represnts the Do Minimum	**Fail**
	Option 5	Do Something	Unfeasbile - New link/ Traffic Management is not nessecary or too expensive	**Fail**
Slí Ectra	Option 1	Do Nothing	Feasible	**Pass**
	Option 2	Do Minimum	Feasible	**Pass**
	Option 3	Do Something	Unfeasbilbe - this represents the Do Nothing	**Fail**
	Option 4	Do Something	Unfeasbilbe - this provides a lower level of service then the Do Nothing	**Fail**
	Option 5	Do Something	Unfeasbile - New link/ Traffic Management is not nessecary or too expensive	**Fail**
Fenian Row	Option 1	Do Nothing	Feasible	**Pass**
	Option 2	Do Minimum	Feasible	**Pass**
	Option 3	Do Something	Feasible	**Pass**
	Option 4	Do Something	Feasible	**Pass**
	Option 5	Do Something	Unfeasbile - New link/ Traffic Management is not nessecary or too expensive	**Fail**
Fenian Terrace	Option 1	Do Nothing	Feasible	**Pass**
	Option 2	Do Minimum	Feasible	**Pass**
	Option 3	Do Something	Feasible	**Pass**
	Option 4	Do Something	Feasible	**Pass**
	Option 5	Do Something	Unfeasbile - New link/ Traffic Management is not nessecary or too expensive	**Fail**
Mercy Road	Option 1	Do Nothing	Feasible	**Pass**
	Option 2	Do Minimum	Feasible	**Pass**
	Option 3	Do Something	Feasible	**Pass**
	Option 4	Do Something	Feasible	**Pass**
	Option 5	Do Something	Unfeasbile - New link/ Traffic Management is not nessecary or too expensive	**Fail**
Killala Road North	Option 1	Do Nothing	Feasible	**Pass**
	Option 2	Do Minimum	Feasible	**Pass**
	Option 3	Do Something	Unfeasbilbe - this represents the Do Nothing	**Fail**
	Option 4	Do Something	Unfeasbilbe - this provides a lower level of service then the Do Nothing	**Fail**
	Option 5	Do Something	Unfeasbile - New link/ Traffic Management is not nessecary or too expensive	**Fail**
Corssmolina Road	Option 1	Do Nothing	Feasible	**Pass**
	Option 2	Do Minimum	Feasible	**Pass**
	Option 3	Do Something	Feasible	**Pass**
	Option 4	Do Something	Feasible	**Pass**
	Option 5	Do Something	Unfeasbile - New link/ Traffic Management is not nessecary or too expensive	**Fail**

Location	Design Feasibility	Pass/Fail
McAndrew Lane	Feasbile - Existing permeability link to be upgraded	**Pass**
Emmet Street and Pearse Street	Feasbile - Existing permeability link to be upgraded	**Pass**
Teeling Street	Feasbile - Existing permeability link to be upgraded	**Pass**
Bury Street	Feasbile - Existing permeability link to be upgraded	**Pass**
Abbey Street to Church Manor/The Spires	Feasible - Proposed permeability link	**Pass**
Link along ESB Access Road to Downhill Roa	Feasible - Proposed permeability link	**Pass**
St Patricks Estate	Feasbile - Proposed as part of Safe Routes to School Programme	**Pass**
Link from Mercy Road to Roces Terrace	Feasbile - Proposed as part of Safe Routes to School Programme	**Pass**
Link from Balllina Train Station to Lord EDW	Feasbile - Proposed as part of Safe Routes to School Programme	**Pass**
Link from Church Rod to St. Michaels NS	Feasbile - Proposed as part of Safe Routes to School Programme	**Pass**

5.3
Options Assessment: Sifting
Proposal 3

Location	Option		Design Feasibility	Pass/Fail
Creggs Road	Option 1	Do Nothing	Feasible	**Pass**
	Option 2	Do Minimum	Feasible	**Pass**
	Option 3	Do Something	Feasible	**Pass**
	Option 4	Do Something	Feasible	**Pass**
	Option 5	Do Something	Unfeasbile - New link/ Traffic Management is not nessecary or too expensive	**Fail**
Quay Road	Option 1	Do Nothing	Feasible	**Pass**
	Option 2	Do Minimum	Feasible	**Pass**
	Option 3	Do Something	Unfeasible - available cross section is too narrow	**Fail**
	Option 4	Do Something	Unfeasible - available cross section is too narrow	**Fail**
	Option 5	Do Something	Unfeasbile - New link/ Traffic Management is not nessecary or too expensive	**Fail**
Riverslade	Option 1	Do Nothing	Feasible	**Pass**
	Option 2	Do Minimum	Feasible	**Pass**
	Option 3	Do Something	Unfeasible - This provides a lower level of service then the Do Minimum Scenario	**Fail**
	Option 4	Do Something	Unfeasible - This provides a lower level of service then the Do Minimum Scenario	**Fail**
	Option 5	Do Something	Unfeasible - This represents the Do Minimum Scenario	**Fail**
Quignalecka	Option 1	Do Nothing	Feasible	**Pass**
	Option 2	Do Minimum	Feasible	**Pass**
	Option 3	Do Something	Unfeasible - This provides a lower level of service then the Do Minimum Scenario	**Fail**
	Option 4	Do Something	Unfeasible - This represents the Do Minimum Scenario	**Fail**
	Option 5	Do Something	Unfeasible - The route is two-way for traffic	**Fail**
N59 Clare Street	Option 1	Do Nothing	Feasible	**Pass**
	Option 2	Do Minimum	Feasible	**Pass**
	Option 3	Do Something	Feasible	**Pass**
	Option 4	Do Something	Feasible	**Pass**
	Option 5	Do Something	Unfeasbile - New link/ Traffic Management is not nessecary or too expensive	**Fail**
N59 Lower Bridge	Option 1	Do Nothing	Feasible	**Pass**
	Option 2	Do Minimum	Feasible	**Pass**
	Option 3	Do Something	Unfeasible - available cross section is too narrow	**Fail**
	Option 4	Do Something	Unfeasible - available cross section is too narrow	**Fail**
	Option 5	Do Something	Feasible	**Pass**
59 Cathedral Stre	Option 1	Do Nothing	Feasible	**Pass**
	Option 2	Do Minimum	Feasible	**Pass**
	Option 3	Do Something	Feasible	**Pass**
	Option 4	Do Something	Feasible	**Pass**
	Option 5	Do Something	Feasible	**Pass**
N59 Upper Bridge	Option 1	Do Nothing	Feasible	**Pass**
	Option 2	Do Minimum	Feasible	**Pass**
	Option 3	Do Something	Unfeasible - available cross section is too narrow	**Fail**
	Option 4	Do Something	Unfeasible - available cross section is too narrow	**Fail**
	Option 5	Do Something	Feasible	**Pass**
N59 Emmet Stree	Option 1	Do Nothing	Feasible	**Pass**
	Option 2	Do Minimum	Feasible	**Pass**
	Option 3	Do Something	Feasible	**Pass**
	Option 4	Do Something	Feasible	**Pass**
	Option 5	Do Something	Feasible	**Pass**

Location	Design Feasibility	Pass/Fail
Link from Bunree Road to Sligo Road	Feasbile - Existing permeability link to be upgraded	**Pass**
Links from Sligo Road	Feasbile - Existing permeability link to be upgraded	
Link to St Muredachs College	Feasbile - Existing permeability link to be upgraded	**Pass**
New Active Travel crossing of River Brusna at	Feasible - Proposed permeability link	**Pass**
Riverslade (park)	Feasible - Proposed permeability link	**Pass**

5.4
Options Assessment: Sifting
Proposal 4

Location	Option		Design Feasibility	Pass/Fail
Pearse Street	Option 1	Do Nothing	Feasible	**Pass**
	Option 2	Do Minimum	Feasible	**Pass**
	Option 3	Do Something	Feasible - with reallocation of parking	**Pass**
	Option 4	Do Something	Feasible - with reallocation of parking	**Pass**
	Option 5	Do Something	Unfeasbile - New link/ Traffic Management is not nessecary or too expensive	**Fail**
O'Rahilly Street	Option 1	Do Nothing	Feasible	**Pass**
	Option 2	Do Minimum	Feasible	**Pass**
	Option 3	Do Something	Feasible - with reallocation of parking	**Pass**
	Option 4	Do Something	Feasible - with reallocation of parking	**Pass**
	Option 5	Do Something	Unfeasbile - New link/ Traffic Management is not nessecary or too expensive	**Fail**
Bury Street	Option 1	Do Nothing	Feasible	**Pass**
	Option 2	Do Minimum	Feasible	**Pass**
	Option 3	Do Something	Feasible - with reallocation of parking	**Pass**
	Option 4	Do Something	Feasible - with reallocation of parking	**Pass**
	Option 5	Do Something	Unfeasbile - New link/ Traffic Management is not nessecary or too expensive	**Fail**
N59 Lord Edward Street	Option 1	Do Nothing	Feasible	**Pass**
	Option 2	Do Minimum	Feasible	**Pass**
	Option 3	Do Something	Unfeasbible - Available cross section width is too narrow	**Fail**
	Option 4	Do Something	Unfeasbible - Available cross section width is too narrow	**Fail**
	Option 5	Do Something	Feeasible	**Pass**
N59 Crossmolina Road	Option 1	Do Nothing	Feasible	**Pass**
	Option 2	Do Minimum	Feasible	**Pass**
	Option 3	Do Something	Feasible	**Pass**
	Option 4	Do Something	Feasible	**Pass**
	Option 5	Do Something	Unfeasible - The route is two-way for traffic	**Fail**

5.5
Options Assessment: Sifting
Auxiliary Proposal

Location	Option		Design Feasibility	Pass/Fail
Church Road	Option 1	Do Nothing	Feasible	**Pass**
	Option 2	Do Minimum	Feasible	**Pass**
	Option 3	Do Something	Unfeasbible - Available cross section width is too narrow	**Fail**
	Option 4	Do Something	Unfeasbible - Available cross section width is too narrow	**Fail**
	Option 5	Do Something	Unfeasbile - New link/ Traffic Management is not nessecary or too expensive	**Fail**
Abbey Street/Healys Terrace	Option 1	Do Nothing	Feasible	**Pass**
	Option 2	Do Minimum	Feasible	**Pass**
	Option 3	Do Something	Unfeasbible - Available cross section width is too narrow	**Fail**
	Option 4	Do Something	Unfeasbible - Available cross section width is too narrow	**Fail**
	Option 5	Do Something	Unfeasbible - Available cross section width is too narrow	**Fail**
Bunree Road	Option 1	Do Nothing	Feasible	**Pass**
	Option 2	Do Minimum	Feasible	**Pass**
	Option 3	Do Something	Unfeasbible - Available cross section width is too narrow	**Fail**
	Option 4	Do Something	Unfeasbible - Available cross section width is too narrow	**Fail**
	Option 5	Do Something	Unfeasbible - Available cross section width is too narrow	**Fail**
Lower Bridge Road	Option 1	Do Nothing	Feasible	**Pass**
	Option 2	Do Minimum	Feasible	**Pass**
	Option 3	Do Something	Unfeasbible - Available cross section width is too narrow	**Fail**
	Option 4	Do Something	Unfeasbible - Available cross section width is too narrow	**Fail**
	Option 5	Do Something	Unfeasbible - Available cross section width is too narrow	**Fail**
Nally Street	Option 1	Do Nothing	Feasible	**Pass**
	Option 2	Do Minimum	Feasible	**Pass**
	Option 3	Do Something	Unfeasbible - Available cross section width is too narrow	**Fail**
	Option 4	Do Something	Unfeasbible - Available cross section width is too narrow	**Fail**
	Option 5	Do Something	Unfeasbible - Available cross section width is too narrow	**Fail**
Bohernasup	Option 1	Do Nothing	Feasible	**Pass**
	Option 2	Do Minimum	Feasible	**Pass**
	Option 3	Do Something	Unfeasbible - Available cross section width is too narrow	**Fail**
	Option 4	Do Something	Unfeasbible - Available cross section width is too narrow	**Fail**
	Option 5	Do Something	Unfeasbible - Available cross section width is too narrow	**Fail**
Libradore	Option 1	Do Nothing	Feasible	**Pass**
	Option 2	Do Minimum	Feasible	**Pass**
	Option 3	Do Something	Feasible	**Pass**
	Option 4	Do Something	Feasible	**Pass**
	Option 5	Do Something	Unfeasbile - New link/ Traffic Management is not nessecary or too expensive	**Fail**
Castlefield Manor	Option 1	Do Nothing	Feasible	**Pass**
	Option 2	Do Minimum	Feasible	**Pass**
	Option 3	Do Something	Feasible	**Pass**
	Option 4	Do Something	Feasible	**Pass**
	Option 5	Do Something	Unfeasbile - New link/ Traffic Management is not nessecary or too expensive	**Fail**
N59 Circular Road	Option 1	Do Nothing	Feasible	**Pass**
	Option 2	Do Minimum	Feasible	**Pass**
	Option 3	Do Something	Unfeasbible - Available cross section width is too narrow	**Fail**
	Option 4	Do Something	Unfeasbible - Available cross section width is too narrow	**Fail**
	Option 5	Do Something	Unfeasbible - Available cross section width is too narrow	**Fail**
N59 Pound Street	Option 1	Do Nothing	Feasible	**Pass**
	Option 2	Do Minimum	Feasible	**Pass**
	Option 3	Do Something	Unfeasbible - Available cross section width is too narrow	**Fail**
	Option 4	Do Something	Unfeasbible - Available cross section width is too narrow	**Fail**
	Option 5	Do Something	Unfeasbible - Available cross section width is too narrow	**Fail**
Kilala Road South	Option 1	Do Nothing	Feasible	**Pass**
	Option 2	Do Minimum	Feasible	**Pass**
	Option 3	Do Something	Unfeasbible - Available cross section width is too narrow	**Fail**
	Option 4	Do Something	Unfeasbilbe - this represents the Do Nothing	**Fail**
	Option 5	Do Something	Unfeasbile - New link/ Traffic Management is not nessecary or too expensive	**Fail**
Bacehlors Walk	Option 1	Do Nothing	Feasible	**Pass**
	Option 2	Do Minimum	Feasible	**Pass**
	Option 3	Do Something	Unfeasbible - Available cross section width is too narrow	**Fail**
	Option 4	Do Something	Feasible	**Pass**
	Option 5	Do Something	Unfeasbile - New link/ Traffic Management is not nessecary or too expensive	**Fail**
Quay Lane	Option 1	Do Nothing	Feasible	**Pass**
	Option 2	Do Minimum	Feasible	**Pass**
	Option 3	Do Something	Unfeasbible - Available cross section width is too narrow	**Fail**
	Option 4	Do Something	Feasible	**Pass**
	Option 5	Do Something	Unfeasbile - New link/ Traffic Management is not nessecary or too expensive	**Fail**

Location	Design Feasibility	Pass/Fail
Riverslade (Tom Ruane Park)	Feasbile - Existing permeability link to be upgraded	**Pass**
Link to Ballina Soccer Club	Feasbile - Existing permeability link to be upgraded	**Pass**
Link to Beleek Castle	Feasbile - Existing permeability link to be upgraded	**Pass**
Beleek Lodge to Lansyn	Feasbile - Existing permeability link to be upgraded	**Pass**
Link to Coca-Cola Factory	Feasbile - Existing permeability link to be upgraded	**Pass**
Link from proposed Greenway to Castlefield M	Feasbile - Existing permeability link to be upgraded	**Pass**
Libradore	Feasbile - Existing permeability link to be upgraded	**Pass**
Link from Beleek Manor to Bohernasup	Feasbile - Existing permeability link to be upgraded	**Pass**
Bachelors Walk to Ashhpool	Feasbile - Existing permeability link to be upgraded	**Pass**
Link along ESB Access Road to Downhill Road	Feasbile - Existing permeability link to be upgraded	**Pass**
Link along ESB Access Road to Downhill Road	Feasbile - Existing permeability link to be upgraded	**Pass**
Link from R294 to Bunree Road	Feasible - Proposed permeability link	**Pass**
Link from R294 to Church Road through Ballina	Feasible - Proposed permeability link	**Pass**
Link from Killala Road to Convent Hill Crescent	Feasible - Proposed permeability link	**Pass**
The Moorings to Quay Lane	Feasible - Proposed permeability link	**Pass**
Quay Lane to Creggs Road (Quay School)	Feasible - Proposed permeability link	**Pass**
Quay Road to Rathmeel Lawns	Feasible - Proposed permeability link	**Pass**

Appendix 6

Options Assessment: MCA

6 Options Assessment MCA

The assessment is based on a two-stage approach:

- Initially a sifting ("Screening of Options Long List") assessment was carried out on all possible route options. This process was a high-level assessment whereby routes were appraised on their ability to provide a bus corridor, and whether they could practically be delivered. A simple pass/fail result was given for each route at this stage.
- The routes that passed Stage 1 were then taken forward and combined into a number of feasible longer routes between points. These were then assessed by a "Multi-Criteria Analysis" process, in which routes were ranked in a comparative manner under a number of criteria.

Packaging of Land Use and Transport Options (Scenarios)

Individual measures involving land use, transport demand, transport network, traffic management and demand management that are compatible with the ABTA process have been incorporated into the Options Assessment. This association will support a collective scenario that contribute to achieving the ABTA objectives.

There are no planned land use changes of a substantial scales within the study area that would be deemed influence the existing transport demand patterns. Future development will fundamentally build on the strength of established development areas and hence demand patterns.

Transport Network

Primarily, the N5 Westport to Turlough Road project, due to be completed in 2023, will create a bypass of Castlebar for through traffic travelling along the N5. The LAM was modelled to account for the opening of this bypass and associated traffic redistribution for through traffic, long distance traffic and internal traffic. Due to the near-completion of this scheme, it is included in any scenario testing.This traffic redistribution and projected flows have been accounted for in the MCA process to allow for the delivery of future proofed design proposals and the introduction of fit for purpose infrastructure.

Systra were engaged to carry out detailed traffic modelling to inform the scheme. The baseline assessment included the collection of extensive traffic and POWSCAR data to develop a Local Area Model (LAM) for the Castlebar town area. This LAM is integrated with the Western Regional Model (WRM).

The LAM developed has been calibrated and validated in-line with TII Project Appraisal Guidelines and meets all specified criteria for both the AM and PM showing that the model is fit for purpose. The model represents AM and PM peak period base year traffic conditions well, as demonstrated statistically through calibration and validation. The model realistically represents journey times and the modelled traffic flows match observed count data. It therefore provides a robust basis for assessing transport scheme options.

The N5 Westport to Turlough Road project is the only major road project that has either under construction, undergoing the planning process, options process or been allocated funding/timelines within the study area. However, it is noted that MCC are assessing the feasibility of a northern ring road to the west of the study

area. Due to the known timelines associated with projects of this scale, the direct impact of the proposed link is not assessed but the proposals do account for future proofing and tie-ins with this additional scheme.

MCC are currently reviewing the active travel network within the study area. Most notably, the Castlebar Urban Greenway is currently undergoing upgrade works which is improving the at standard of the existing infrastructure and increasing the length of the greenway. This has been taken as the baseline for the cycling network.

Additionally, MCC are progressing the County Cycle Network Plan with proposals to connect towns via greenways. This plan is at development stage. Tie-ins for this plan are accounted for.

Transport Demand

The Castlebar Local Area Model (LAM) was developed in line with the National Demand Forecasting Model (NDFM) which takes input attributes such as land-use data, population etc., and estimates the total quantity of daily travel demand produced by, and attracted to, the Study Area. Therefore, transport demand characteristics have been fully accounted for in the Options Assessment process.

Multi Criteria Analysis

The full MCA analysis for the study areas is shown in Appendix 4.

This section outlines the methodology used in the assessment of five scheme options. The proposed options were assessed using ‘Multi Criteria Analysis’ (MCA) as outlined in the ‘Common Appraisal Framework for Transport Projects and Programmes’ published by the Department of Transport, July 2019.

The required criteria are as follows:

- Economy
- Safety
- Physical Activity
- Environment
- Accessibility and Social Inclusion
- Integration

Each option will be appraised under the criteria outlined above and compared based on a five-point scale, ranging from having significant advantages to having significant disadvantages over other route options. Table 0-1 shows the colour coding of the five-point scale, with advantageous routes graded “dark green” and disadvantageous routes graded “red”.

Table 0-1 Options Colour Coded Ranking Scale

Colour	Description
	Significant advantages over other options.
	Some advantages over other options.
	Neutral compared to other options.
	Some disadvantages to other options.
	Significant disadvantages to other options.

Assessment Criterion

Economy

Capital Cost and Value for Money

Capital cost estimates are determined from both the indicative high-level infrastructure cost estimate and land acquisition cost. Indicative cost estimate is established to assess options for their likely capital infrastructure cost.

Each option has been assessed relative to the nature and extent of infrastructure works requirements to deliver the scheme objectives. The indicative cross-section for each option was used to determine the extent of the works required to provide the pedestrian and cycle facilities.

Access for All, Transport Reliability and Efficiency, and Quality of Service

This sub-criterion assesses the extent to which new users will be attracted to the cycle facilities, creating a mode shift that results in journey time savings for all users including and especially those choosing cycling and public transport.

The safer, more consistent and higher quality the cycling facilities are, the more new users will be attracted to these route.

Safety

Pedestrian Safety

This criterion considers the safety of pedestrians along the route. The safety of access, location, availability and crossing facilities and the junctions and between then are the items considered when assessing safety of those walking on the routes.

Cyclist Safety

This criterion assesses the safety of cyclists within the study area. This assessment is predominately concerned with the level of segregation provided between cyclists and motorised traffic.

Road Safety

In general, road collisions may be reduced along a dedicated cycle route due to modal shift. The speed of motorised vehicles is influenced by carriageway width. For the purposes of comparing the proposed options, the proposed cross-section is used to assess road safety.

Physical Activity

This criterion identifies the potential impact of each proposed option in facilitating a healthier lifestyle. This assessment considers how each option provides measures which support walking and cycling.

Environment

The scope and methodology for the environmental assessment was established by considering what environmental aspects are likely to be impacted and are, therefore, of importance in evaluating the route options. The potential impacts of route options are assessed at desktop study level. The environmental constraints considered are outlined in the following sections.

Landscape and Visual Quality

This criterion assesses the possible effects of each route on the surrounding streetscapes and considers whether the proposed option provides opportunities for better integration between transport and urban form. It also considered whether the proposed option may result in reduced traffic volumes.

Air Quality

The potential of each option to affect air quality as a result of mode shift, required diversions, etc. is assessed in this section. An option's potential to minimise harmful transport related emissions is considered.

Noise and Vibration

This criterion assesses the noise and vibration impact of each option.

Land Use

The potential impact on lands use through land-take, severance or reduction of viability, or which prevents or reduces its value for intended use is considered under this heading.

Accessibility and Social Inclusion

Key trip attractors are also considered in this criterion. The following land-uses have been considered as key trip attractors for the purposes of this assessment:

- Education (schools, universities, community centre, etc.)
- Retail and leisure (shopping centres, town centre, etc.)
- Health (hospitals, clinics, etc.)
- Employment (business parks, office developments, etc.)
- Residential (housing estates and predominantly residential roads and streets, etc.)

Multi-modal

This criterion assesses how the proposed options will improve multi-modal accessibility within residential, employment, educational and retail centres by improving accessibility by walking and cycling, public transport, car and HGV.

Socially Inclusive

Consideration is given to whether an option helps provide a socially inclusive transport network and whether it will benefit vulnerable groups in society such as people on low income, non-car owners, people with disabilities and the young and the old.

Integration

Land Use Integration

This criterion identifies the extent to which an option supports or encourages planned future development or provides economic opportunities. It considers whether an option supports integration between sustainable transport and land-use planning and policies. As part of this assessment, cognisance was taken of the ability of each option to offer opportunities to regenerate particular streets or areas or enhance the urban environment in general.

Transport Network Integration

This criterion identifies the possible links between each option and existing and proposed sustainable transport modes. Additionally, major effects on general traffic are also considered.

Cycling Integration

This criterion identifies the integration of the proposed options with the existing and proposed adjacent routes, and the quality of infrastructure along the route.

6.1
Options Assessment: MCA
Proposal 1

Proposal 1		N26				
		Option 1	Option 2	Option 3	Option 4	Option 5
		Do Nothing	Do Minimum	Do Something	Do Something	Do Something
Assessment Criteria	Assessment Sub-Criteria	Retain the existing	*Retain the exsiting cross section layout * Improve surfacing, reduce vehcular speed limit, signage and road markings * Provide dedicated crossing points to improve pedestrian safety	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Dedicated 2 - way cycle facilities to be provided for through narrowing of the vehicular lanes/kerb adjustments * Provide continous footpath along each extent * Provide dedicated crossing points	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Dedicated 1 - way cycle facilities to be provided for through narrowing of the vehicular lanes/kerb adjustments * Provide continous footpath along each extent * Provide dedicated crossing points	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Provdie a new link or traffic manamgemnt alternative to provide for active travel modes * Provide a cycle lane on the western extent * Provide footpath in each direction * Provide dedicated crossing points
Economy	Capital Cost					
	Transport Reliability					
Safety	Pedestrian Safety					
	Cyclist Safety					
	Road Safety					
Physical Activity	Physical Activity					
Environment	Landscape					
	Air Quality					
	Noise & Vibration					
	Land Use Character					
Accessibility & Social Inclusion	Multi-modal					
	Socially Inclusive					
Integration	Land Use Integration					
	Transport Network					
	Cycling Integration					

Proposal 1		L1127				
		Option 1	Option 2	Option 3	Option 4	Option 5
		Do Nothing	Do Minimum	Do Something	Do Something	Do Something
Assessment Criteria	Assessment Sub-Criteria	Retain the existing	*Retain the exsiting cross section layout * Improve surfacing, reduce vehcular speed limit, signage and road markings * Provide dedicated crossing points to improve pedestrian safety	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Dedicated 2 - way cycle facilities to be provided for through narrowing of the vehicular lanes/kerb adjustments * Provide continous footpath along each extent * Provide dedicated crossing points	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Dedicated 1 - way cycle facilities to be provided for through narrowing of the vehicular lanes/kerb adjustments * Provide continous footpath along each extent * Provide dedicated crossing points	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Provdie a new link or traffic manamgemnt alternative to provide for active travel modes * Provide a cycle lane on the western extent * Provide footpath in each direction * Provide dedicated crossing points
Economy	Capital Cost					
	Transport Reliability					
Safety	Pedestrian Safety					
	Cyclist Safety					
	Road Safety					
Physical Activity	Physical Activity					
Environment	Landscape					
	Air Quality					
	Noise & Vibration					
	Land Use Character					
Accessibility & Social Inclusion	Multi-modal					
	Socially Inclusive					
Integration	Land Use Integration					
	Transport Network					
	Cycling Integration					

Proposal 1		R310				
		Option 1	Option 2	Option 3	Option 4	Option 5
		Do Nothing	Do Minimum	Do Something	Do Something	Do Something
Assessment Criteria	Assessment Sub-Criteria	Retain the existing	*Retain the exsiting cross section layout * Improve surfacing, reduce vehcular speed limit, signage and road markings * Provide dedicated crossing points to improve pedestrian safety	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Dedicated 2 - way cycle facilities to be provided for through narrowing of the vehicular lanes/kerb adjustments * Provide continous footpath along each extent * Provide dedicated crossing points	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Dedicated 1 - way cycle facilities to be provided for through narrowing of the vehicular lanes/kerb adjustments * Provide continous footpath along each extent * Provide dedicated crossing points	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Provdie a new link or traffic manamgemnt alternative to provide for active travel modes * Provide a cycle lane on the western extent * Provide footpath in each direction * Provide dedicated crossing points
Economy	Capital Cost					
	Transport Reliability					
Safety	Pedestrian Safety					
	Cyclist Safety					
	Road Safety					
Physical Activity	Physical Activity					
Environment	Landscape					
	Air Quality					
	Noise & Vibration					
	Land Use Character					
Accessibility & Social Inclusion	Multi-modal					
	Socially Inclusive					
Integration	Land Use Integration					
	Transport Network					
	Cycling Integration					

Proposal 1		Kevin Barry Street				
		Option 1	Option 2	Option 3	Option 4	Option 5
		Do Nothing	Do Minimum	Do Something	Do Something	Do Something
Assessment Criteria	Assessment Sub-Criteria	Retain the existing	*Retain the exsiting cross section layout * Improve surfacing, reduce vehcular speed limit, signage and road markings * Provide dedicated crossing points to improve pedestrian safety	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Dedicated 2 - way cycle facilities to be provided for through narrowing of the vehicular lanes/kerb adjustments * Provide continous footpath along each extent * Provide dedicated crossing points	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Dedicated 1 - way cycle facilities to be provided for through narrowing of the vehicular lanes/kerb adjustments * Provide continous footpath along each extent * Provide dedicated crossing points	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Provdie a new link or traffic manamgemnt alternative to provide for active travel modes * Provide a cycle lane on the western extent * Provide footpath in each direction * Provide dedicated crossing points
Economy	Capital Cost					
	Transport Reliability					
Safety	Pedestrian Safety					
	Cyclist Safety					
	Road Safety					
Physical Activity	Physical Activity					
Environment	Landscape					
	Air Quality					
	Noise & Vibration					
	Land Use Character					
Accessibility & Social Inclusion	Multi-modal					
	Socially Inclusive					
Integration	Land Use Integration					
	Transport Network					
	Cycling Integration					

Proposal 1		James Connolly Street/Hill Street				
		Option 1	Option 2	Option 3	Option 4	Option 5
		Do Nothing	Do Minimum	Do Something	Do Something	Do Something
Assessment Criteria	Assessment Sub-Criteria	Retain the existing	*Retain the exsiting cross section layout * Improve surfacing, reduce vehcular speed limit, signage and road markings * Provide dedicated crossing points to improve pedestrian safety	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Dedicated 2 - way cycle facilities to be provided for through narrowing of the vehicular lanes/kerb adjustments * Provide continous footpath along each extent * Provide dedicated crossing points	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Dedicated 1 - way cycle facilities to be provided for through narrowing of the vehicular lanes/kerb adjustments * Provide continous footpath along each extent * Provide dedicated crossing points	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Provdie a new link or traffic manamgemnt alternative to provide for active travel modes * Provide a cycle lane on the western extent * Provide footpath in each direction * Provide dedicated crossing points
Economy	Capital Cost					
	Transport Reliability					
Safety	Pedestrian Safety					
	Cyclist Safety					
	Road Safety					
Physical Activity	Physical Activity					
Environment	Landscape					
	Air Quality					
	Noise & Vibration					
	Land Use Character					
Accessibility & Social Inclusion	Multi-modal					
	Socially Inclusive					
Integration	Land Use Integration					
	Transport Network					
	Cycling Integration					

Proposal 1		Water Lane				
		Option 1	Option 2	Option 3	Option 4	Option 5
		Do Nothing	Do Minimum	Do Something	Do Something	Do Something
Assessment Criteria	Assessment Sub-Criteria	Retain the existing	*Retain the exsiting cross section layout * Improve surfacing, reduce vehcular speed limit, signage and road markings * Provide dedicated crossing points to improve pedestrian safety	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Dedicated 2 - way cycle facilities to be provided for through narrowing of the vehicular lanes/kerb adjustments * Provide continous footpath along each extent * Provide dedicated crossing points	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Dedicated 1 - way cycle facilities to be provided for through narrowing of the vehicular lanes/kerb adjustments * Provide continous footpath along each extent * Provide dedicated crossing points	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Provdie a new link or traffic manamgemnt alternative to provide for active travel modes * Provide a cycle lane on the western extent * Provide footpath in each direction * Provide dedicated crossing points
Economy	Capital Cost					
	Transport Reliability					
Safety	Pedestrian Safety					
	Cyclist Safety					
	Road Safety					
Physical Activity	Physical Activity					
Environment	Landscape					
	Air Quality					
	Noise & Vibration					
	Land Use Character					
Accessibility & Social Inclusion	Multi-modal					
	Socially Inclusive					
Integration	Land Use Integration					
	Transport Network					
	Cycling Integration					

Proposal 1		Morrison Terrace/Barret Street				
		Option 1	Option 2	Option 3	Option 4	Option 5
		Do Nothing	Do Minimum	Do Something	Do Something	Do Something
Assessment Criteria	Assessment Sub-Criteria	Retain the existing	*Retain the exsiting cross section layout * Improve surfacing, reduce vehcular speed limit, signage and road markings * Provide dedicated crossing points to improve pedestrian safety	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Dedicated 2 - way cycle facilities to be provided for through narrowing of the vehicular lanes/kerb adjustments * Provide continous footpath along each extent * Provide dedicated crossing points	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Dedicated 1 - way cycle facilities to be provided for through narrowing of the vehicular lanes/kerb adjustments * Provide continous footpath along each extent * Provide dedicated crossing points	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Provdie a new link or traffic manamgemnt alternative to provide for active travel modes * Provide a cycle lane on the western extent * Provide footpath in each direction * Provide dedicated crossing points
Economy	Capital Cost					
	Transport Reliability					
Safety	Pedestrian Safety					
	Cyclist Safety					
	Road Safety					
Physical Activity	Physical Activity					
Environment	Landscape					
	Air Quality					
	Noise & Vibration					
	Land Use Character					
Accessibility & Social Inclusion	Multi-modal					
	Socially Inclusive					
Integration	Land Use Integration					
	Transport Network					
	Cycling Integration					

Proposal 1		Tone Street (Lower)				
		Option 1	Option 2	Option 3	Option 4	Option 5
		Do Nothing	Do Minimum	Do Something	Do Something	Do Something
Assessment Criteria	Assessment Sub-Criteria	Retain the existing	*Retain the exsiting cross section layout * Improve surfacing, reduce vehcular speed limit, signage and road markings * Provide dedicated crossing points to improve pedestrian safety	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Dedicated 2 - way cycle facilities to be provided for through narrowing of the vehicular lanes/kerb adjustments * Provide continous footpath along each extent * Provide dedicated crossing points	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Dedicated 1 - way cycle facilities to be provided for through narrowing of the vehicular lanes/kerb adjustments * Provide continous footpath along each extent * Provide dedicated crossing points	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Provdie a new link or traffic manamgemnt alternative to provide for active travel modes * Provide a cycle lane on the western extent * Provide footpath in each direction * Provide dedicated crossing points
Economy	Capital Cost					
	Transport Reliability					
Safety	Pedestrian Safety					
	Cyclist Safety					
	Road Safety					
Physical Activity	Physical Activity					
Environment	Landscape					
	Air Quality					
	Noise & Vibration					
	Land Use Character					
Accessibility & Social Inclusion	Multi-modal					
	Socially Inclusive					
Integration	Land Use Integration					
	Transport Network					
	Cycling Integration					

Proposal 1		Tolan Street				
		Option 1	Option 2	Option 3	Option 4	Option 5
		Do Nothing	Do Minimum	Do Something	Do Something	Do Something
Assessment Criteria	Assessment Sub-Criteria	Retain the existing	*Retain the exsiting cross section layout * Improve surfacing, reduce vehcular speed limit, signage and road markings * Provide dedicated crossing points to improve pedestrian safety	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Dedicated 2 - way cycle facilities to be provided for through narrowing of the vehicular lanes/kerb adjustments * Provide continous footpath along each extent * Provide dedicated crossing points	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Dedicated 1 - way cycle facilities to be provided for through narrowing of the vehicular lanes/kerb adjustments * Provide continous footpath along each extent * Provide dedicated crossing points	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Provdie a new link or traffic manamgemnt alternative to provide for active travel modes * Provide a cycle lane on the western extent * Provide footpath in each direction * Provide dedicated crossing points
Economy	Capital Cost					
	Transport Reliability					
Safety	Pedestrian Safety					
	Cyclist Safety					
	Road Safety					
Physical Activity	Physical Activity					
Environment	Landscape					
	Air Quality					
	Noise & Vibration					
	Land Use Character					
Accessibility & Social Inclusion	Multi-modal					
	Socially Inclusive					
Integration	Land Use Integration					
	Transport Network					
	Cycling Integration					

6.2
Options Assessment: MCA
Proposal 2

Proposal 2		Dillon Terrace				
		Option 1	Option 2	Option 3	Option 4	Option 5
		Do Nothing	Do Minimum	Do Something	Do Something	Do Something
Assessment Criteria	Assessment Sub-Criteria	Retain the existing	*Retain the exsiting cross section layout * Improve surfacing, reduce vehcular speed limit, signage and road markings * Provide dedicated crossing points to improve pedestrian safety	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Dedicated 2 - way cycle facilities to be provided for through narrowing of the vehicular lanes/kerb adjustments * Provide continous footpath along each extent * Provide dedicated crossing points	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Dedicated 1 - way cycle facilities to be provided for through narrowing of the vehicular lanes/kerb adjustments * Provide continous footpath along each extent * Provide dedicated crossing points	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Provdie a new link or traffic manamgemnt alternative to provide for active travel modes * Provide a cycle lane on the western extent * Provide footpath in each direction * Provide dedicated crossing points
Economy	Capital Cost					
	Transport Reliability					
Safety	Pedestrian Safety					
	Cyclist Safety					
	Road Safety					
Physical Activity	Physical Activity					
Environment	Landscape					
	Air Quality					
	Noise & Vibration					
	Land Use Character					
Accessibility & Social Inclusion	Multi-modal					
	Socially Inclusive					
Integration	Land Use Integration					
	Transport Network					
	Cycling Integration					

Proposal 2		Humbert Street				
		Option 1	Option 2	Option 3	Option 4	Option 5
		Do Nothing	Do Minimum	Do Something	Do Something	Do Something
Assessment Criteria	Assessment Sub-Criteria	Retain the existing	*Retain the exsiting cross section layout * Improve surfacing, reduce vehcular speed limit, signage and road markings * Provide dedicated crossing points to improve pedestrian safety	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Dedicated 2 - way cycle facilities to be provided for through narrowing of the vehicular lanes/kerb adjustments * Provide continous footpath along each extent * Provide dedicated crossing points	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Dedicated 1 - way cycle facilities to be provided for through narrowing of the vehicular lanes/kerb adjustments * Provide continous footpath along each extent * Provide dedicated crossing points	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Provdie a new link or traffic manamgemnt alternative to provide for active travel modes * Provide a cycle lane on the western extent * Provide footpath in each direction * Provide dedicated crossing points
Economy	Capital Cost					
	Transport Reliability					
Safety	Pedestrian Safety					
	Cyclist Safety					
	Road Safety					
Physical Activity	Physical Activity					
Environment	Landscape					
	Air Quality					
	Noise & Vibration					
	Land Use Character					
Accessibility & Social Inclusion	Multi-modal					
	Socially Inclusive					
Integration	Land Use Integration					
	Transport Network					
	Cycling Integration					

Proposal 2		Market Square				
		Option 1	Option 2	Option 3	Option 4	Option 5
		Do Nothing	Do Minimum	Do Something	Do Something	Do Something
Assessment Criteria	Assessment Sub-Criteria	Retain the existing	*Retain the exsiting cross section layout * Improve surfacing, reduce vehcular speed limit, signage and road markings * Provide dedicated crossing points to improve pedestrian safety	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Dedicated 2 - way cycle facilities to be provided for through narrowing of the vehicular lanes/kerb adjustments * Provide continous footpath along each extent * Provide dedicated crossing points	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Dedicated 1 - way cycle facilities to be provided for through narrowing of the vehicular lanes/kerb adjustments * Provide continous footpath along each extent * Provide dedicated crossing points	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Provdie a new link or traffic manamgemnt alternative to provide for active travel modes * Provide a cycle lane on the western extent * Provide footpath in each direction * Provide dedicated crossing points
Economy	Capital Cost					
	Transport Reliability					
Safety	Pedestrian Safety					
	Cyclist Safety					
	Road Safety					
Physical Activity	Physical Activity					
Environment	Landscape					
	Air Quality					
	Noise & Vibration					
	Land Use Character					
Accessibility & Social Inclusion	Multi-modal					
	Socially Inclusive					
Integration	Land Use Integration					
	Transport Network					
	Cycling Integration					

Proposal 2		Tone Street (Upper)				
		Option 1	Option 2	Option 3	Option 4	Option 5
		Do Nothing	Do Minimum	Do Something	Do Something	Do Something
Assessment Criteria	Assessment Sub-Criteria	Retain the existing	*Retain the exsiting cross section layout * Improve surfacing, reduce vehcular speed limit, signage and road markings * Provide dedicated crossing points to improve pedestrian safety	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Dedicated 2 - way cycle facilities to be provided for through narrowing of the vehicular lanes/kerb adjustments * Provide continous footpath along each extent * Provide dedicated crossing points	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Dedicated 1 - way cycle facilities to be provided for through narrowing of the vehicular lanes/kerb adjustments * Provide continous footpath along each extent * Provide dedicated crossing points	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Provdie a new link or traffic manamgemnt alternative to provide for active travel modes * Provide a cycle lane on the western extent * Provide footpath in each direction * Provide dedicated crossing points
Economy	Capital Cost					
	Transport Reliability					
Safety	Pedestrian Safety					
	Cyclist Safety					
	Road Safety					
Physical Activity	Physical Activity					
Environment	Landscape					
	Air Quality					
	Noise & Vibration					
	Land Use Character					
Accessibility & Social Inclusion	Multi-modal					
	Socially Inclusive					
Integration	Land Use Integration					
	Transport Network					
	Cycling Integration					

Proposal 2		McDermott Street				
		Option 1	Option 2	Option 3	Option 4	Option 5
		Do Nothing	Do Minimum	Do Something	Do Something	Do Something
Assessment Criteria	Assessment Sub-Criteria	Retain the existing	*Retain the exsiting cross section layout * Improve surfacing, reduce vehcular speed limit, signage and road markings * Provide dedicated crossing points to improve pedestrian safety	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Dedicated 2 - way cycle facilities to be provided for through narrowing of the vehicular lanes/kerb adjustments * Provide continous footpath along each extent * Provide dedicated crossing points	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Dedicated 1 - way cycle facilities to be provided for through narrowing of the vehicular lanes/kerb adjustments * Provide continous footpath along each extent * Provide dedicated crossing points	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Provdie a new link or traffic manamgemnt alternative to provide for active travel modes * Provide a cycle lane on the western extent * Provide footpath in each direction * Provide dedicated crossing points
Economy	Capital Cost					
	Transport Reliability					
Safety	Pedestrian Safety					
	Cyclist Safety					
	Road Safety					
Physical Activity	Physical Activity					
Environment	Landscape					
	Air Quality					
	Noise & Vibration					
	Land Use Character					
Accessibility & Social Inclusion	Multi-modal					
	Socially Inclusive					
Integration	Land Use Integration					
	Transport Network					
	Cycling Integration					

Proposal 2		Slí Ectra				
		Option 1	Option 2	Option 3	Option 4	Option 5
		Do Nothing	Do Minimum	Do Something	Do Something	Do Something
Assessment Criteria	Assessment Sub-Criteria	Retain the existing	*Retain the exsiting cross section layout * Improve surfacing, reduce vehcular speed limit, signage and road markings * Provide dedicated crossing points to improve pedestrian safety	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Dedicated 2 - way cycle facilities to be provided for through narrowing of the vehicular lanes/kerb adjustments * Provide continous footpath along each extent * Provide dedicated crossing points	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Dedicated 1 - way cycle facilities to be provided for through narrowing of the vehicular lanes/kerb adjustments * Provide continous footpath along each extent * Provide dedicated crossing points	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Provdie a new link or traffic manamgemnt alternative to provide for active travel modes * Provide a cycle lane on the western extent * Provide footpath in each direction * Provide dedicated crossing points
Economy	Capital Cost					
	Transport Reliability					
Safety	Pedestrian Safety					
	Cyclist Safety					
	Road Safety					
Physical Activity	Physical Activity					
Environment	Landscape					
	Air Quality					
	Noise & Vibration					
	Land Use Character					
Accessibility & Social Inclusion	Multi-modal					
	Socially Inclusive					
Integration	Land Use Integration					
	Transport Network					
	Cycling Integration					

Proposal 2		Fenian Row				
		Option 1	Option 2	Option 3	Option 4	Option 5
		Do Nothing	Do Minimum	Do Something	Do Something	Do Something
Assessment Criteria	Assessment Sub-Criteria	Retain the existing	*Retain the exsiting cross section layout * Improve surfacing, reduce vehcular speed limit, signage and road markings * Provide dedicated crossing points to improve pedestrian safety	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Dedicated 2 - way cycle facilities to be provided for through narrowing of the vehicular lanes/kerb adjustments * Provide continous footpath along each extent * Provide dedicated crossing points	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Dedicated 1 - way cycle facilities to be provided for through narrowing of the vehicular lanes/kerb adjustments * Provide continous footpath along each extent * Provide dedicated crossing points	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Provdie a new link or traffic manamgemnt alternative to provide for active travel modes * Provide a cycle lane on the western extent * Provide footpath in each direction * Provide dedicated crossing points
Economy	Capital Cost					
	Transport Reliability					
Safety	Pedestrian Safety					
	Cyclist Safety					
	Road Safety					
Physical Activity	Physical Activity					
Environment	Landscape					
	Air Quality					
	Noise & Vibration					
	Land Use Character					
Accessibility & Social Inclusion	Multi-modal					
	Socially Inclusive					
Integration	Land Use Integration					
	Transport Network					
	Cycling Integration					

Proposal 2		Fenian Terrace				
		Option 1	Option 2	Option 3	Option 4	Option 5
		Do Nothing	Do Minimum	Do Something	Do Something	Do Something
Assessment Criteria	Assessment Sub-Criteria	Retain the existing	*Retain the exsiting cross section layout * Improve surfacing, reduce vehcular speed limit, signage and road markings * Provide dedicated crossing points to improve pedestrian safety	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Dedicated 2 - way cycle facilities to be provided for through narrowing of the vehicular lanes/kerb adjustments * Provide continous footpath along each extent * Provide dedicated crossing points	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Dedicated 1 - way cycle facilities to be provided for through narrowing of the vehicular lanes/kerb adjustments * Provide continous footpath along each extent * Provide dedicated crossing points	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Provdie a new link or traffic manamgemnt alternative to provide for active travel modes * Provide a cycle lane on the western extent * Provide footpath in each direction * Provide dedicated crossing points
Economy	Capital Cost					
	Transport Reliability					
Safety	Pedestrian Safety					
	Cyclist Safety					
	Road Safety					
Physical Activity	Physical Activity					
Environment	Landscape					
	Air Quality					
	Noise & Vibration					
	Land Use Character					
Accessibility & Social Inclusion	Multi-modal					
	Socially Inclusive					
Integration	Land Use Integration					
	Transport Network					
	Cycling Integration					

Proposal 2		Mercy Road				
		Option 1	Option 2	Option 3	Option 4	Option 5
		Do Nothing	Do Minimum	Do Something	Do Something	Do Something
Assessment Criteria	Assessment Sub-Criteria	Retain the existing	*Retain the exsiting cross section layout * Improve surfacing, reduce vehcicular speed limit, signage and road markings * Provide dedicated crossing points to improve pedestrian safety	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Dedicated 2 - way cycle facilities to be provided for through narrowing of the vehicular lanes/kerb adjustments * Provide continous footpath along each extent * Provide dedicated crossing points	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Dedicated 1 - way cycle facilities to be provided for through narrowing of the vehicular lanes/kerb adjustments * Provide continous footpath along each extent * Provide dedicated crossing points	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Provdie a new link or traffic manamgemnt alternative to provide for active travel modes * Provide a cycle lane on the western extent * Provide footpath in each direction * Provide dedicated crossing points
Economy	Capital Cost					
	Transport Reliability					
Safety	Pedestrian Safety					
	Cyclist Safety					
	Road Safety					
Physical Activity	Physical Activity					
Environment	Landscape					
	Air Quality					
	Noise & Vibration					
	Land Use Character					
Accessibility & Social Inclusion	Multi-modal					
	Socially Inclusive					
Integration	Land Use Integration					
	Transport Network					
	Cycling Integration					

Proposal 2		Killala Road North				
		Option 1	Option 2	Option 3	Option 4	Option 5
		Do Nothing	Do Minimum	Do Something	Do Something	Do Something
Assessment Criteria	Assessment Sub-Criteria	Retain the existing	*Retain the exsiting cross section layout * Improve surfacing, reduce vehcicular speed limit, signage and road markings * Provide dedicated crossing points to improve pedestrian safety	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Dedicated 2 - way cycle facilities to be provided for through narrowing of the vehicular lanes/kerb adjustments * Provide continous footpath along each extent * Provide dedicated crossing points	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Dedicated 1 - way cycle facilities to be provided for through narrowing of the vehicular lanes/kerb adjustments * Provide continous footpath along each extent * Provide dedicated crossing points	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Provdie a new link or traffic manamgemnt alternative to provide for active travel modes * Provide a cycle lane on the western extent * Provide footpath in each direction * Provide dedicated crossing points
Economy	Capital Cost					
	Transport Reliability					
Safety	Pedestrian Safety					
	Cyclist Safety					
	Road Safety					
Physical Activity	Physical Activity					
Environment	Landscape					
	Air Quality					
	Noise & Vibration					
	Land Use Character					
Accessibility & Social Inclusion	Multi-modal					
	Socially Inclusive					
Integration	Land Use Integration					
	Transport Network					
	Cycling Integration					

Proposal 2		Crossmolina Road				
		Option 1	Option 2	Option 3	Option 4	Option 5
		Do Nothing	Do Minimum	Do Something	Do Something	Do Something
Assessment Criteria	Assessment Sub-Criteria	Retain the existing	*Retain the exsiting cross section layout * Improve surfacing, reduce vehcicular speed limit, signage and road markings * Provide dedicated crossing points to improve pedestrian safety	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Dedicated 2 - way cycle facilities to be provided for through narrowing of the vehicular lanes/kerb adjustments * Provide continous footpath along each extent * Provide dedicated crossing points	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Dedicated 1 - way cycle facilities to be provided for through narrowing of the vehicular lanes/kerb adjustments * Provide continous footpath along each extent * Provide dedicated crossing points	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Provdie a new link or traffic manamgemnt alternative to provide for active travel modes * Provide a cycle lane on the western extent * Provide footpath in each direction * Provide dedicated crossing points
Economy	Capital Cost					
	Transport Reliability					
Safety	Pedestrian Safety					
	Cyclist Safety					
	Road Safety					
Physical Activity	Physical Activity					
Environment	Landscape					
	Air Quality					
	Noise & Vibration					
	Land Use Character					
Accessibility & Social Inclusion	Multi-modal					
	Socially Inclusive					
Integration	Land Use Integration					
	Transport Network					
	Cycling Integration					

6.3
Options Assessment: MCA
Proposal 3

Proposal 3		Creggs Road				
		Option 1	Option 2	Option 3	Option 4	Option 5
		Do Nothing	Do Minimum	Do Something	Do Something	Do Something
Assessment Criteria	Assessment Sub-Criteria	Retain the existing	*Retain the exsiting cross section layout * Improve surfacing, reduce vehcular speed limit, signage and road markings * Provide dedicated crossing points to improve pedestrian safety	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Dedicated 2 - way cycle facilities to be provided for through narrowing of the vehicular lanes/kerb adjustments * Provide continous footpath along each extent * Provide dedicated crossing points	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Dedicated 1 - way cycle facilities to be provided for through narrowing of the vehicular lanes/kerb adjustments * Provide continous footpath along each extent * Provide dedicated crossing points	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Provdie a new link or traffic manamgemnt alternative to provide for active travel modes * Provide a cycle lane on the western extent * Provide footpath in each direction * Provide dedicated crossing points
Economy	Capital Cost					
	Transport Reliability					
Safety	Pedestrian Safety					
	Cyclist Safety					
	Road Safety					
Physical Activity	Physical Activity					
Environment	Landscape					
	Air Quality					
	Noise & Vibration					
	Land Use Character					
Accessibility & Social Inclusion	Multi-modal					
	Socially Inclusive					
Integration	Land Use Integration					
	Transport Network					
	Cycling Integration					

Proposal 3		Quay Road				
		Option 1	Option 2	Option 3	Option 4	Option 5
		Do Nothing	Do Minimum	Do Something	Do Something	Do Something
Assessment Criteria	Assessment Sub-Criteria	Retain the existing	*Retain the exsiting cross section layout * Improve surfacing, reduce vehcular speed limit, signage and road markings * Provide dedicated crossing points to improve pedestrian safety	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Dedicated 2 - way cycle facilities to be provided for through narrowing of the vehicular lanes/kerb adjustments * Provide continous footpath along each extent * Provide dedicated crossing points	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Dedicated 1 - way cycle facilities to be provided for through narrowing of the vehicular lanes/kerb adjustments * Provide continous footpath along each extent * Provide dedicated crossing points	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Provdie a new link or traffic manamgemnt alternative to provide for active travel modes * Provide a cycle lane on the western extent * Provide footpath in each direction * Provide dedicated crossing points
Economy	Capital Cost					
	Transport Reliability					
Safety	Pedestrian Safety					
	Cyclist Safety					
	Road Safety					
Physical Activity	Physical Activity					
Environment	Landscape					
	Air Quality					
	Noise & Vibration					
	Land Use Character					
Accessibility & Social Inclusion	Multi-modal					
	Socially Inclusive					
Integration	Land Use Integration					
	Transport Network					
	Cycling Integration					

Proposal 3		Riverslade				
		Option 1	Option 2	Option 3	Option 4	Option 5
		Do Nothing	Do Minimum	Do Something	Do Something	Do Something
Assessment Criteria	Assessment Sub-Criteria	Retain the existing	*Retain the exsiting cross section layout * Improve surfacing, reduce vehcular speed limit, signage and road markings * Provide dedicated crossing points to improve pedestrian safety	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Dedicated 2 - way cycle facilities to be provided for through narrowing of the vehicular lanes/kerb adjustments * Provide continous footpath along each extent * Provide dedicated crossing points	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Dedicated 1 - way cycle facilities to be provided for through narrowing of the vehicular lanes/kerb adjustments * Provide continous footpath along each extent * Provide dedicated crossing points	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Provdie a new link or traffic manamgemnt alternative to provide for active travel modes * Provide a cycle lane on the western extent * Provide footpath in each direction * Provide dedicated crossing points
Economy	Capital Cost					
	Transport Reliability					
Safety	Pedestrian Safety					
	Cyclist Safety					
	Road Safety					
Physical Activity	Physical Activity					
Environment	Landscape					
	Air Quality					
	Noise & Vibration					
	Land Use Character					
Accessibility & Social Inclusion	Multi-modal					
	Socially Inclusive					
Integration	Land Use Integration					
	Transport Network					
	Cycling Integration					

Proposal 3		Quignalecka				
		Option 1	Option 2	Option 3	Option 4	Option 5
		Do Nothing	Do Minimum	Do Something	Do Something	Do Something
Assessment Criteria	Assessment Sub-Criteria	Retain the existing	*Retain the exsiting cross section layout * Improve surfacing, reduce vehcular speed limit, signage and road markings * Provide dedicated crossing points to improve pedestrian safety	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Dedicated 2 - way cycle facilities to be provided for through narrowing of the vehicular lanes/kerb adjustments * Provide continous footpath along each extent * Provide dedicated crossing points	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Dedicated 1 - way cycle facilities to be provided for through narrowing of the vehicular lanes/kerb adjustments * Provide continous footpath along each extent * Provide dedicated crossing points	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Provdie a new link or traffic manamgemnt alternative to provide for active travel modes * Provide a cycle lane on the western extent * Provide footpath in each direction * Provide dedicated crossing points
Economy	Capital Cost					
	Transport Reliability					
Safety	Pedestrian Safety					
	Cyclist Safety					
	Road Safety					
Physical Activity	Physical Activity					
Environment	Landscape					
	Air Quality					
	Noise & Vibration					
	Land Use Character					
Accessibility & Social Inclusion	Multi-modal					
	Socially Inclusive					
Integration	Land Use Integration					
	Transport Network					
	Cycling Integration					

Proposal 3		N59 Clare Street				
		Option 1	Option 2	Option 3	Option 4	Option 5
		Do Nothing	Do Minimum	Do Something	Do Something	Do Something
Assessment Criteria	Assessment Sub-Criteria	Retain the existing	*Retain the exsiting cross section layout * Improve surfacing, reduce vehcular speed limit, signage and road markings * Provide dedicated crossing points to improve pedestrian safety	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Dedicated 2 - way cycle facilities to be provided for through narrowing of the vehicular lanes/kerb adjustments * Provide continous footpath along each extent * Provide dedicated crossing points	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Dedicated 1 - way cycle facilities to be provided for through narrowing of the vehicular lanes/kerb adjustments * Provide continous footpath along each extent * Provide dedicated crossing points	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Provdie a new link or traffic manamgemnt alternative to provide for active travel modes * Provide a cycle lane on the western extent * Provide footpath in each direction * Provide dedicated crossing points
Economy	Capital Cost					
	Transport Reliability					
Safety	Pedestrian Safety					
	Cyclist Safety					
	Road Safety					
Physical Activity	Physical Activity					
Environment	Landscape					
	Air Quality					
	Noise & Vibration					
	Land Use Character					
Accessibility & Social Inclusion	Multi-modal					
	Socially Inclusive					
Integration	Land Use Integration					
	Transport Network					
	Cycling Integration					

Proposal 3		N59 Lower Bridge				
		Option 1	Option 2	Option 3	Option 4	Option 5
		Do Nothing	Do Minimum	Do Something	Do Something	Do Something
Assessment Criteria	Assessment Sub-Criteria	Retain the existing	*Retain the exsiting cross section layout * Improve surfacing, reduce vehcular speed limit, signage and road markings * Provide dedicated crossing points to improve pedestrian safety	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Dedicated 2 - way cycle facilities to be provided for through narrowing of the vehicular lanes/kerb adjustments * Provide continous footpath along each extent * Provide dedicated crossing points	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Dedicated 1 - way cycle facilities to be provided for through narrowing of the vehicular lanes/kerb adjustments * Provide continous footpath along each extent * Provide dedicated crossing points	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Provdie a new link or traffic manamgemnt alternative to provide for active travel modes * Provide a cycle lane on the western extent * Provide footpath in each direction * Provide dedicated crossing points
Economy	Capital Cost					
	Transport Reliability					
Safety	Pedestrian Safety					
	Cyclist Safety					
	Road Safety					
Physical Activity	Physical Activity					
Environment	Landscape					
	Air Quality					
	Noise & Vibration					
	Land Use Character					
Accessibility & Social Inclusion	Multi-modal					
	Socially Inclusive					
Integration	Land Use Integration					
	Transport Network					
	Cycling Integration					

Proposal 3		N59 Cathedral Street				
		Option 1	Option 2	Option 3	Option 4	Option 5
		Do Nothing	Do Minimum	Do Something	Do Something	Do Something
Assessment Criteria	Assessment Sub-Criteria	Retain the existing	*Retain the exsiting cross section layout * Improve surfacing, reduce vehcular speed limit, signage and road markings * Provide dedicated crossing points to improve pedestrian safety	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Dedicated 2 - way cycle facilities to be provided for through narrowing of the vehicular lanes/kerb adjustments * Provide continous footpath along each extent * Provide dedicated crossing points	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Dedicated 1 - way cycle facilities to be provided for through narrowing of the vehicular lanes/kerb adjustments * Provide continous footpath along each extent * Provide dedicated crossing points	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Provdie a new link or traffic manamgemnt alternative to provide for active travel modes * Provide a cycle lane on the western extent * Provide footpath in each direction * Provide dedicated crossing points
Economy	Capital Cost					
	Transport Reliability					
Safety	Pedestrian Safety					
	Cyclist Safety					
	Road Safety					
Physical Activity	Physical Activity					
Environment	Landscape					
	Air Quality					
	Noise & Vibration					
	Land Use Character					
Accessibility & Social Inclusion	Multi-modal					
	Socially Inclusive					
Integration	Land Use Integration					
	Transport Network					
	Cycling Integration					

Proposal 3		N59 Upper Bridge				
		Option 1	Option 2	Option 3	Option 4	Option 5
		Do Nothing	Do Minimum	Do Something	Do Something	Do Something
Assessment Criteria	Assessment Sub-Criteria	Retain the existing	*Retain the exsiting cross section layout * Improve surfacing, reduce vehcular speed limit, signage and road markings * Provide dedicated crossing points to improve pedestrian safety	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Dedicated 2 - way cycle facilities to be provided for through narrowing of the vehicular lanes/kerb adjustments * Provide continous footpath along each extent * Provide dedicated crossing points	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Dedicated 1 - way cycle facilities to be provided for through narrowing of the vehicular lanes/kerb adjustments * Provide continous footpath along each extent * Provide dedicated crossing points	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Provdie a new link or traffic manamgemnt alternative to provide for active travel modes * Provide a cycle lane on the western extent * Provide footpath in each direction * Provide dedicated crossing points
Economy	Capital Cost					
	Transport Reliability					
Safety	Pedestrian Safety					
	Cyclist Safety					
	Road Safety					
Physical Activity	Physical Activity					
Environment	Landscape					
	Air Quality					
	Noise & Vibration					
	Land Use Character					
Accessibility & Social Inclusion	Multi-modal					
	Socially Inclusive					
Integration	Land Use Integration					
	Transport Network					
	Cycling Integration					

Proposal 3		N59 Emmet Street				
		Option 1	Option 2	Option 3	Option 4	Option 5
		Do Nothing	Do Minimum	Do Something	Do Something	Do Something
Assessment Criteria	Assessment Sub-Criteria	Retain the existing	*Retain the exsiting cross section layout * Improve surfacing, reduce vehcular speed limit, signage and road markings * Provide dedicated crossing points to improve pedestrian safety	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Dedicated 2 - way cycle facilities to be provided for through narrowing of the vehicular lanes/kerb adjustments * Provide continous footpath along each extent * Provide dedicated crossing points	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Dedicated 1 - way cycle facilities to be provided for through narrowing of the vehicular lanes/kerb adjustments * Provide continous footpath along each extent * Provide dedicated crossing points	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Provdie a new link or traffic manamgemnt alternative to provide for active travel modes * Provide a cycle lane on the western extent * Provide footpath in each direction * Provide dedicated crossing points
Economy	Capital Cost					
	Transport Reliability					
Safety	Pedestrian Safety					
	Cyclist Safety					
	Road Safety					
Physical Activity	Physical Activity					
Environment	Landscape					
	Air Quality					
	Noise & Vibration					
	Land Use Character					
Accessibility & Social Inclusion	Multi-modal					
	Socially Inclusive					
Integration	Land Use Integration					
	Transport Network					
	Cycling Integration					

6.4
Options Assessment: MCA
Proposal 4

Proposal 4		Pearse Street				
		Option 1	Option 2	Option 3	Option 4	Option 5
		Do Nothing	Do Minimum	Do Something	Do Something	Do Something
Assessment Criteria	Assessment Sub-Criteria	Retain the existing	*Retain the exsiting cross section layout * Improve surfacing, reduce vehcular speed limit, signage and road markings * Provide dedicated crossing points to improve pedestrian safety	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Dedicated 2 - way cycle facilities to be provided for through narrowing of the vehicular lanes/kerb adjustments * Provide continous footpath along each extent * Provide dedicated crossing points	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Dedicated 1 - way cycle facilities to be provided for through narrowing of the vehicular lanes/kerb adjustments * Provide continous footpath along each extent * Provide dedicated crossing points	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Provdie a new link or traffic manamgemnt alternative to provide for active travel modes * Provide a cycle lane on the western extent * Provide footpath in each direction * Provide dedicated crossing points
Economy	Capital Cost					
	Transport Reliability					
Safety	Pedestrian Safety					
	Cyclist Safety					
	Road Safety					
Physical Activity	Physical Activity					
Environment	Landscape					
	Air Quality					
	Noise & Vibration					
	Land Use Character					
Accessibility & Social Inclusion	Multi-modal					
	Socially Inclusive					
Integration	Land Use Integration					
	Transport Network					
	Cycling Integration					

Proposal 4		O'Rahilly Street				
		Option 1	Option 2	Option 3	Option 4	Option 5
		Do Nothing	Do Minimum	Do Something	Do Something	Do Something
Assessment Criteria	Assessment Sub-Criteria	Retain the existing	*Retain the exsiting cross section layout * Improve surfacing, reduce vehcular speed limit, signage and road markings * Provide dedicated crossing points to improve pedestrian safety	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Dedicated 2 - way cycle facilities to be provided for through narrowing of the vehicular lanes/kerb adjustments * Provide continous footpath along each extent * Provide dedicated crossing points	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Dedicated 1 - way cycle facilities to be provided for through narrowing of the vehicular lanes/kerb adjustments * Provide continous footpath along each extent * Provide dedicated crossing points	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Provdie a new link or traffic manamgemnt alternative to provide for active travel modes * Provide a cycle lane on the western extent * Provide footpath in each direction * Provide dedicated crossing points
Economy	Capital Cost					
	Transport Reliability					
Safety	Pedestrian Safety					
	Cyclist Safety					
	Road Safety					
Physical Activity	Physical Activity					
Environment	Landscape					
	Air Quality					
	Noise & Vibration					
	Land Use Character					
Accessibility & Social Inclusion	Multi-modal					
	Socially Inclusive					
Integration	Land Use Integration					
	Transport Network					
	Cycling Integration					

Proposal 4		Bury Street				
		Option 1	Option 2	Option 3	Option 4	Option 5
		Do Nothing	Do Minimum	Do Something	Do Something	Do Something
Assessment Criteria	Assessment Sub-Criteria	Retain the existing	*Retain the exsiting cross section layout * Improve surfacing, reduce vehcular speed limit, signage and road markings * Provide dedicated crossing points to improve pedestrian safety	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Dedicated 2 - way cycle facilities to be provided for through narrowing of the vehicular lanes/kerb adjustments * Provide continous footpath along each extent * Provide dedicated crossing points	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Dedicated 1 - way cycle facilities to be provided for through narrowing of the vehicular lanes/kerb adjustments * Provide continous footpath along each extent * Provide dedicated crossing points	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Provdie a new link or traffic manamgemnt alternative to provide for active travel modes * Provide a cycle lane on the western extent * Provide footpath in each direction * Provide dedicated crossing points
Economy	Capital Cost					
	Transport Reliability					
Safety	Pedestrian Safety					
	Cyclist Safety					
	Road Safety					
Physical Activity	Physical Activity					
Environment	Landscape					
	Air Quality					
	Noise & Vibration					
	Land Use Character					
Accessibility & Social Inclusion	Multi-modal					
	Socially Inclusive					
Integration	Land Use Integration					
	Transport Network					
	Cycling Integration					

Proposal 4		N59 Lord Edward Street				
		Option 1	Option 2	Option 3	Option 4	Option 5
		Do Nothing	Do Minimum	Do Something	Do Something	Do Something
Assessment Criteria	Assessment Sub-Criteria	Retain the existing	*Retain the exsiting cross section layout * Improve surfacing, reduce vehcular speed limit, signage and road markings * Provide dedicated crossing points to improve pedestrian safety	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Dedicated 2 - way cycle facilities to be provided for through narrowing of the vehicular lanes/kerb adjustments * Provide continous footpath along each extent * Provide dedicated crossing points	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Dedicated 1 - way cycle facilities to be provided for through narrowing of the vehicular lanes/kerb adjustments * Provide continous footpath along each extent * Provide dedicated crossing points	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Provdie a new link or traffic manamgemnt alternative to provide for active travel modes * Provide a cycle lane on the western extent * Provide footpath in each direction * Provide dedicated crossing points
Economy	Capital Cost					
	Transport Reliability					
Safety	Pedestrian Safety					
	Cyclist Safety					
	Road Safety					
Physical Activity	Physical Activity					
Environment	Landscape					
	Air Quality					
	Noise & Vibration					
	Land Use Character					
Accessibility & Social Inclusion	Multi-modal					
	Socially Inclusive					
Integration	Land Use Integration					
	Transport Network					
	Cycling Integration					

Proposal 4		N59 Crossmolina Road				
		Option 1	Option 2	Option 3	Option 4	Option 5
		Do Nothing	Do Minimum	Do Something	Do Something	Do Something
Assessment Criteria	Assessment Sub-Criteria	Retain the existing	*Retain the exsiting cross section layout * Improve surfacing, reduce vehcular speed limit, signage and road markings * Provide dedicated crossing points to improve pedestrian safety	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Dedicated 2 - way cycle facilities to be provided for through narrowing of the vehicular lanes/kerb adjustments * Provide continous footpath along each extent * Provide dedicated crossing points	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Dedicated 1 - way cycle facilities to be provided for through narrowing of the vehicular lanes/kerb adjustments * Provide continous footpath along each extent * Provide dedicated crossing points	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Provdie a new link or traffic manamgemnt alternative to provide for active travel modes * Provide a cycle lane on the western extent * Provide footpath in each direction * Provide dedicated crossing points
Economy	Capital Cost					
	Transport Reliability					
Safety	Pedestrian Safety					
	Cyclist Safety					
	Road Safety					
Physical Activity	Physical Activity					
Environment	Landscape					
	Air Quality					
	Noise & Vibration					
	Land Use Character					
Accessibility & Social Inclusion	Multi-modal					
	Socially Inclusive					
Integration	Land Use Integration					
	Transport Network					
	Cycling Integration					

6.5
Options Assessment: MCA
Auxiliary Proposal

Auxilary Proposal		Church Road				
		Option 1	Option 2	Option 3	Option 4	Option 5
		Do Nothing	Do Minimum	Do Something	Do Something	Do Something
Assessment Criteria	Assessment Sub-Criteria	Retain the existing	*Retain the exsiting cross section layout * Improve surfacing, reduce vehcular speed limit, signage and road markings * Provide dedicated crossing points to improve pedestrian safety	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Dedicated 2 - way cycle facilities to be provided for through narrowing of the vehicular lanes/kerb adjustments * Provide continous footpath along each extent * Provide dedicated crossing points	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Dedicated 1 - way cycle facilities to be provided for through narrowing of the vehicular lanes/kerb adjustments * Provide continous footpath along each extent * Provide dedicated crossing points	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Provdie a new link or traffic manamgemnt alternative to provide for active travel modes * Provide a cycle lane on the western extent * Provide footpath in each direction * Provide dedicated crossing points
Economy	Capital Cost					
	Transport Reliability					
Safety	Pedestrian Safety					
	Cyclist Safety					
	Road Safety					
Physical Activity	Physical Activity					
Environment	Landscape					
	Air Quality					
	Noise & Vibration					
	Land Use Character					
Accessibility & Social Inclusion	Multi-modal					
	Socially Inclusive					
Integration	Land Use Integration					
	Transport Network					
	Cycling Integration					

Auxilary Proposal		Abbey Street/Healys Terrace				
		Option 1	Option 2	Option 3	Option 4	Option 5
		Do Nothing	Do Minimum	Do Something	Do Something	Do Something
Assessment Criteria	Assessment Sub-Criteria	Retain the existing	*Retain the exsiting cross section layout * Improve surfacing, reduce vehcular speed limit, signage and road markings * Provide dedicated crossing points to improve pedestrian safety	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Dedicated 2 - way cycle facilities to be provided for through narrowing of the vehicular lanes/kerb adjustments * Provide continous footpath along each extent * Provide dedicated crossing points	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Dedicated 1 - way cycle facilities to be provided for through narrowing of the vehicular lanes/kerb adjustments * Provide continous footpath along each extent * Provide dedicated crossing points	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Provdie a new link or traffic manamgemnt alternative to provide for active travel modes * Provide a cycle lane on the western extent * Provide footpath in each direction * Provide dedicated crossing points
Economy	Capital Cost					
	Transport Reliability					
Safety	Pedestrian Safety					
	Cyclist Safety					
	Road Safety					
Physical Activity	Physical Activity					
Environment	Landscape					
	Air Quality					
	Noise & Vibration					
	Land Use Character					
Accessibility & Social Inclusion	Multi-modal					
	Socially Inclusive					
Integration	Land Use Integration					
	Transport Network					
	Cycling Integration					

Auxilary Proposal		Bunree Road				
		Option 1	Option 2	Option 3	Option 4	Option 5
		Do Nothing	Do Minimum	Do Something	Do Something	Do Something
Assessment Criteria	Assessment Sub-Criteria	Retain the existing	*Retain the exsiting cross section layout * Improve surfacing, reduce vehcular speed limit, signage and road markings * Provide dedicated crossing points to improve pedestrian safety	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Dedicated 2 - way cycle facilities to be provided for through narrowing of the vehicular lanes/kerb adjustments * Provide continous footpath along each extent * Provide dedicated crossing points	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Dedicated 1 - way cycle facilities to be provided for through narrowing of the vehicular lanes/kerb adjustments * Provide continous footpath along each extent * Provide dedicated crossing points	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Provdie a new link or traffic manamgemnt alternative to provide for active travel modes * Provide a cycle lane on the western extent * Provide footpath in each direction * Provide dedicated crossing points
Economy	Capital Cost					
	Transport Reliability					
Safety	Pedestrian Safety					
	Cyclist Safety					
	Road Safety					
Physical Activity	Physical Activity					
Environment	Landscape					
	Air Quality					
	Noise & Vibration					
	Land Use Character					
Accessibility & Social Inclusion	Multi-modal					
	Socially Inclusive					
Integration	Land Use Integration					
	Transport Network					
	Cycling Integration					

Auxilary Proposal		Lower Bridge Road				
		Option 1	Option 2	Option 3	Option 4	Option 5
		Do Nothing	Do Minimum	Do Something	Do Something	Do Something
Assessment Criteria	Assessment Sub-Criteria	Retain the existing	*Retain the exsiting cross section layout * Improve surfacing, reduce vehcular speed limit, signage and road markings * Provide dedicated crossing points to improve pedestrian safety	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Dedicated 2 - way cycle facilities to be provided for through narrowing of the vehicular lanes/kerb adjustments * Provide continous footpath along each extent * Provide dedicated crossing points	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Dedicated 1 - way cycle facilities to be provided for through narrowing of the vehicular lanes/kerb adjustments * Provide continous footpath along each extent * Provide dedicated crossing points	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Provdie a new link or traffic manamgemnt alternative to provide for active travel modes * Provide a cycle lane on the western extent * Provide footpath in each direction * Provide dedicated crossing points
Economy	Capital Cost					
	Transport Reliability					
Safety	Pedestrian Safety					
	Cyclist Safety					
	Road Safety					
Physical Activity	Physical Activity					
Environment	Landscape					
	Air Quality					
	Noise & Vibration					
	Land Use Character					
Accessibility & Social Inclusion	Multi-modal					
	Socially Inclusive					
Integration	Land Use Integration					
	Transport Network					
	Cycling Integration					

Auxilary Proposal		Nally Street				
		Option 1	Option 2	Option 3	Option 4	Option 5
		Do Nothing	Do Minimum	Do Something	Do Something	Do Something
Assessment Criteria	Assessment Sub-Criteria	Retain the existing	*Retain the exsiting cross section layout * Improve surfacing, reduce vehcular speed limit, signage and road markings * Provide dedicated crossing points to improve pedestrian safety	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Dedicated 2 - way cycle facilities to be provided for through narrowing of the vehicular lanes/kerb adjustments * Provide continous footpath along each extent * Provide dedicated crossing points	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Dedicated 1 - way cycle facilities to be provided for through narrowing of the vehicular lanes/kerb adjustments * Provide continous footpath along each extent * Provide dedicated crossing points	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Provdie a new link or traffic manamgemnt alternative to provide for active travel modes * Provide a cycle lane on the western extent * Provide footpath in each direction * Provide dedicated crossing points
Economy	Capital Cost					
	Transport Reliability					
Safety	Pedestrian Safety					
	Cyclist Safety					
	Road Safety					
Physical Activity	Physical Activity					
Environment	Landscape					
	Air Quality					
	Noise & Vibration					
	Land Use Character					
Accessibility & Social Inclusion	Multi-modal					
	Socially Inclusive					
Integration	Land Use Integration					
	Transport Network					
	Cycling Integration					

Auxilary Proposal		Bohernasup				
		Option 1	Option 2	Option 3	Option 4	Option 5
		Do Nothing	Do Minimum	Do Something	Do Something	Do Something
Assessment Criteria	Assessment Sub-Criteria	Retain the existing	*Retain the exsiting cross section layout * Improve surfacing, reduce vehcular speed limit, signage and road markings * Provide dedicated crossing points to improve pedestrian safety	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Dedicated 2 - way cycle facilities to be provided for through narrowing of the vehicular lanes/kerb adjustments * Provide continous footpath along each extent * Provide dedicated crossing points	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Dedicated 1 - way cycle facilities to be provided for through narrowing of the vehicular lanes/kerb adjustments * Provide continous footpath along each extent * Provide dedicated crossing points	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Provdie a new link or traffic manamgemnt alternative to provide for active travel modes * Provide a cycle lane on the western extent * Provide footpath in each direction * Provide dedicated crossing points
Economy	Capital Cost					
	Transport Reliability					
Safety	Pedestrian Safety					
	Cyclist Safety					
	Road Safety					
Physical Activity	Physical Activity					
Environment	Landscape					
	Air Quality					
	Noise & Vibration					
	Land Use Character					
Accessibility & Social Inclusion	Multi-modal					
	Socially Inclusive					
Integration	Land Use Integration					
	Transport Network					
	Cycling Integration					

Auxilary Proposal		Libradore				
		Option 1	Option 2	Option 3	Option 4	Option 5
		Do Nothing	Do Minimum	Do Something	Do Something	Do Something
Assessment Criteria	Assessment Sub-Criteria	Retain the existing	*Retain the exsiting cross section layout * Improve surfacing, reduce vehcular speed limit, signage and road markings * Provide dedicated crossing points to improve pedestrian safety	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Dedicated 2 - way cycle facilities to be provided for through narrowing of the vehicular lanes/kerb adjustments * Provide continous footpath along each extent * Provide dedicated crossing points	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Dedicated 1 - way cycle facilities to be provided for through narrowing of the vehicular lanes/kerb adjustments * Provide continous footpath along each extent * Provide dedicated crossing points	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Provdie a new link or traffic manamgemnt alternative to provide for active travel modes * Provide a cycle lane on the western extent * Provide footpath in each direction * Provide dedicated crossing points
Economy	Capital Cost					
	Transport Reliability					
Safety	Pedestrian Safety					
	Cyclist Safety					
	Road Safety					
Physical Activity	Physical Activity					
Environment	Landscape					
	Air Quality					
	Noise & Vibration					
	Land Use Character					
Accessibility & Social Inclusion	Multi-modal					
	Socially Inclusive					
Integration	Land Use Integration					
	Transport Network					
	Cycling Integration					

Auxilary Proposal		Castlefield Manor				
		Option 1	Option 2	Option 3	Option 4	Option 5
		Do Nothing	Do Minimum	Do Something	Do Something	Do Something
Assessment Criteria	Assessment Sub-Criteria	Retain the existing	*Retain the exsiting cross section layout * Improve surfacing, reduce vehcular speed limit, signage and road markings * Provide dedicated crossing points to improve pedestrian safety	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Dedicated 2 - way cycle facilities to be provided for through narrowing of the vehicular lanes/kerb adjustments * Provide continous footpath along each extent * Provide dedicated crossing points	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Dedicated 1 - way cycle facilities to be provided for through narrowing of the vehicular lanes/kerb adjustments * Provide continous footpath along each extent * Provide dedicated crossing points	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Provdie a new link or traffic manamgemnt alternative to provide for active travel modes * Provide a cycle lane on the western extent * Provide footpath in each direction * Provide dedicated crossing points
Economy	Capital Cost					
	Transport Reliability					
Safety	Pedestrian Safety					
	Cyclist Safety					
	Road Safety					
Physical Activity	Physical Activity					
Environment	Landscape					
	Air Quality					
	Noise & Vibration					
	Land Use Character					
Accessibility & Social Inclusion	Multi-modal					
	Socially Inclusive					
Integration	Land Use Integration					
	Transport Network					
	Cycling Integration					

Auxilary Proposal		N59 Circular Road				
		Option 1	Option 2	Option 3	Option 4	Option 5
		Do Nothing	Do Minimum	Do Something	Do Something	Do Something
Assessment Criteria	Assessment Sub-Criteria	Retain the existing	*Retain the exsiting cross section layout * Improve surfacing, reduce vehcular speed limit, signage and road markings * Provide dedicated crossing points to improve pedestrian safety	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Dedicated 2 - way cycle facilities to be provided for through narrowing of the vehicular lanes/kerb adjustments * Provide continous footpath along each extent * Provide dedicated crossing points	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Dedicated 1 - way cycle facilities to be provided for through narrowing of the vehicular lanes/kerb adjustments * Provide continous footpath along each extent * Provide dedicated crossing points	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Provdie a new link or traffic manamgemnt alternative to provide for active travel modes * Provide a cycle lane on the western extent * Provide footpath in each direction * Provide dedicated crossing points
Economy	Capital Cost					
	Transport Reliability					
Safety	Pedestrian Safety					
	Cyclist Safety					
	Road Safety					
Physical Activity	Physical Activity					
Environment	Landscape					
	Air Quality					
	Noise & Vibration					
	Land Use Character					
Accessibility & Social Inclusion	Multi-modal					
	Socially Inclusive					
Integration	Land Use Integration					
	Transport Network					
	Cycling Integration					

Auxilary Proposal		N59 Pound Sreet				
		Option 1	Option 2	Option 3	Option 4	Option 5
		Do Nothing	Do Minimum	Do Something	Do Something	Do Something
Assessment Criteria	Assessment Sub-Criteria	Retain the existing	*Retain the exsiting cross section layout * Improve surfacing, reduce vehcular speed limit, signage and road markings * Provide dedicated crossing points to improve pedestrian safety	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Dedicated 2 - way cycle facilities to be provided for through narrowing of the vehicular lanes/kerb adjustments * Provide continous footpath along each extent * Provide dedicated crossing points	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Dedicated 1 - way cycle facilities to be provided for through narrowing of the vehicular lanes/kerb adjustments * Provide continous footpath along each extent * Provide dedicated crossing points	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Provdie a new link or traffic manamgemnt alternative to provide for active travel modes * Provide a cycle lane on the western extent * Provide footpath in each direction * Provide dedicated crossing points
Economy	Capital Cost					
	Transport Reliability					
Safety	Pedestrian Safety					
	Cyclist Safety					
	Road Safety					
Physical Activity	Physical Activity					
Environment	Landscape					
	Air Quality					
	Noise & Vibration					
	Land Use Character					
Accessibility & Social Inclusion	Multi-modal					
	Socially Inclusive					
Integration	Land Use Integration					
	Transport Network					
	Cycling Integration					

Auxilary Proposal		Kilalla Road South				
		Option 1	Option 2	Option 3	Option 4	Option 5
		Do Nothing	Do Minimum	Do Something	Do Something	Do Something
Assessment Criteria	Assessment Sub-Criteria	Retain the existing	*Retain the exsiting cross section layout * Improve surfacing, reduce vehcular speed limit, signage and road markings * Provide dedicated crossing points to improve pedestrian safety	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Dedicated 2 - way cycle facilities to be provided for through narrowing of the vehicular lanes/kerb adjustments * Provide continous footpath along each extent * Provide dedicated crossing points	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Dedicated 1 - way cycle facilities to be provided for through narrowing of the vehicular lanes/kerb adjustments * Provide continous footpath along each extent * Provide dedicated crossing points	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Provdie a new link or traffic manamgemnt alternative to provide for active travel modes * Provide a cycle lane on the western extent * Provide footpath in each direction * Provide dedicated crossing points
Economy	Capital Cost					
	Transport Reliability					
Safety	Pedestrian Safety					
	Cyclist Safety					
	Road Safety					
Physical Activity	Physical Activity					
Environment	Landscape					
	Air Quality					
	Noise & Vibration					
	Land Use Character					
Accessibility & Social Inclusion	Multi-modal					
	Socially Inclusive					
Integration	Land Use Integration					
	Transport Network					
	Cycling Integration					

Auxilary Proposal		Bachelors Walk				
		Option 1	Option 2	Option 3	Option 4	Option 5
		Do Nothing	Do Minimum	Do Something	Do Something	Do Something
Assessment Criteria	Assessment Sub-Criteria	Retain the existing	*Retain the exsiting cross section layout * Improve surfacing, reduce vehcular speed limit, signage and road markings * Provide dedicated crossing points to improve pedestrian safety	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Dedicated 2 - way cycle facilities to be provided for through narrowing of the vehicular lanes/kerb adjustments * Provide continous footpath along each extent * Provide dedicated crossing points	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Dedicated 1 - way cycle facilities to be provided for through narrowing of the vehicular lanes/kerb adjustments * Provide continous footpath along each extent * Provide dedicated crossing points	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Provdie a new link or traffic manamgemnt alternative to provide for active travel modes * Provide a cycle lane on the western extent * Provide footpath in each direction * Provide dedicated crossing points
Economy	Capital Cost					
	Transport Reliability					
Safety	Pedestrian Safety					
	Cyclist Safety					
	Road Safety					
Physical Activity	Physical Activity					
Environment	Landscape					
	Air Quality					
	Noise & Vibration					
	Land Use Character					
Accessibility & Social Inclusion	Multi-modal					
	Socially Inclusive					
Integration	Land Use Integration					
	Transport Network					
	Cycling Integration					

Auxilary Proposal		Quay Lane				
		Option 1	Option 2	Option 3	Option 4	Option 5
		Do Nothing	Do Minimum	Do Something	Do Something	Do Something
Assessment Criteria	Assessment Sub-Criteria	Retain the existing	*Retain the exsiting cross section layout * Improve surfacing, reduce vehcular speed limit, signage and road markings * Provide dedicated crossing points to improve pedestrian safety	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Dedicated 2 - way cycle facilities to be provided for through narrowing of the vehicular lanes/kerb adjustments * Provide continous footpath along each extent * Provide dedicated crossing points	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Dedicated 1 - way cycle facilities to be provided for through narrowing of the vehicular lanes/kerb adjustments * Provide continous footpath along each extent * Provide dedicated crossing points	* Improve surfacing, reduce vehicular speed limit, signage and road markings * Provdie a new link or traffic manamgemnt alternative to provide for active travel modes * Provide a cycle lane on the western extent * Provide footpath in each direction * Provide dedicated crossing points
Economy	Capital Cost					
	Transport Reliability					
Safety	Pedestrian Safety					
	Cyclist Safety					
	Road Safety					
Physical Activity	Physical Activity					
Environment	Landscape					
	Air Quality					
	Noise & Vibration					
	Land Use Character					
Accessibility & Social Inclusion	Multi-modal					
	Socially Inclusive					
Integration	Land Use Integration					
	Transport Network					
	Cycling Integration					

Appendix 7

EPO

8.1
Objectives Achieved: Proposal 1

Table 8.1: Objectives Achieved: Proposal 1

Pedestrian Network	Cycle Network	Public Transport Network	General Vehicular Network
P1: To enhance the existing facilities within town centre streets to create a people-first environment that encourages increased footfall in the area.	**C1:** To develop a continuous and linked cycling network within the town of Ballina comprised of greenway, primary, secondary and feeder routes to connect the residential, education, employment, retail, commercial, healthcare and community centres..	**PT1:** Improve the active travel connection between Ballina Train Station and Busáras to the town centre.	**R2:** Retain the capacity of the road network to cater for the through-traffic trips that are utilising the N26 and N59. .
P2: To improve crossing points within the town at major junctions and along N59, N26, Abbey Street, Church Road, Killala Road, Castle Road, Bohernasup and McDermott Street.	**C2:** Create a network that can cater for predicted current and future demand for commuter, delivery, leisure and tourist cyclists that is accessible to all population cohorts.		
P3: To provide continuous pedestrian facilities along the N26 to connect Rehins NS, Hollister, Grand National Hotel and Rehins Housing Estate to the town centre.	**C3:** Make streets more conducive to cycling through reallocating space to provide the cross section to NCM standard.		
P5: Improve the pedestrian connection between Ballina Train Station and Busáras to the town centre.	**C4:** Provision of dedicated cycle facilities at major junctions (Upper Bridge, Lower Bridge, Circular Road Roundabout, Market Square, Pearse Street, The Font, and Sligo Road Roundabout)		
P7: Improved filtered permeability through the use of laneways and the opening up of	**C5:** Provide dedicated cycle facilities along the N26 to connect Rehins NS, Hollister, Grand		

Pedestrian Network	Cycle Network	Public Transport Network	General Vehicular Network
cul-de-sacs for pedestrians to increase directness and connectivity.to enhance access to homes, jobs, schools, shops, public transport and services.	National Hotel and Rehins Housing Estate to the town centre.		
	C6: Improve the cycle connection between Ballina Train Station and Busáras to the town centre.		
	C10: Provide cycle infrastructure throughout the town centre to include covered cycle parking, parking for adapted bikes and e-bike charging points.		
	C11: Create permeability links to provide direction cycle routes and alternative cycle routes to main roads.		

8.2
Objectives Achieved: Proposal 2

Table 8-3: Objectives Achieved: Proposal 2

Pedestrian Network	Cycle Network	Public Transport Network	General Vehicular Network
P1: To enhance the existing facilities within town centre streets to create a people-first environment that encourages increased footfall in the area.	**C1:** To develop a continuous and linked cycling network within the town of Ballina comprised of greenway, primary, secondary and feeder routes to connect the residential, education, employment, retail, commercial, healthcare and community centres..	**PT1:** Improve the active travel connection between Ballina Train Station and Busáras to the town centre.	**R2:** Retain the capacity of the road network to cater for the through-traffic trips that are utilising the N26 and N59. .
P2: To improve crossing points within the town at major junctions and along N59, N26, Abbey Street, Church Road, Killala Road, Castle Road, Bohernasup and McDermott Street.	**C2:** Create a network that can cater for predicted current and future demand for commuter, delivery, leisure and tourist cyclists that is accessible to all population cohorts.		**R3:** Formalising the through link from Tesco to Pearse Street, through the Penneys Car Park, to allow for the pedestrianisation of Market Square and Pearse Street.
P6: To enhance the current pedestrian facilities on McDermott Street so that it can adequately cater for the demand at school times and to tie in with SRTS.	**C3:** Make streets more conducive to cycling through reallocating space to provide the cross section to NCM standard.		
P7: Improved filtered permeability through the use of laneways and the opening up of cul-de-sacs for pedestrians to increase directness and connectivity.to enhance access to homes, jobs, schools, shops, public transport and services.	**C4:** Provision of dedicated cycle facilities at major junctions (Upper Bridge, Lower Bridge, Circular Road Roundabout, Market Square, Pearse Street, The Font, and Sligo Road Roundabout)		
P6: To enhance the current pedestrian facilities on McDermott Street so	**C7:** To provide two-way cycle facilities on McDermott Street so that it can adequately cater for		

Pedestrian Network	Cycle Network	Public Transport Network	General Vehicular Network
that it can adequately cater for the demand at school times and to tie in with SRTS.	the demand at school times and to tie in with SRTS.		
P8: To remove traffic from town centre streets to allow for potential pedestrianisation (ie; Market Square and Pearse Street)	**C8:** To remove traffic from town centre streets to allow for the provision of adequate cycle facilities in key areas of high-demand levels(ie; Lord Edward Street and Market Square)		
	C10: Provide cycle infrastructure throughout the town centre to include covered cycle parking, parking for adapted bikes and e-bike charging points.		
	C11: Create permeability links to provide direction cycle routes and alternative cycle routes to main roads.		

8.3
Objectives Achieved: Proposal 3

Table 8-6: Objectives Achieved: Proposal 3

Pedestrian Network	Cycle Network	Public Transport Network	General Vehicular Network
P1: To enhance the existing facilities within town centre streets to create a people-first environment that encourages increased footfall in the area.	**C1:** To develop a continuous and linked cycling network within the town of Ballina comprised of greenway, primary, secondary and feeder routes to connect the residential, education, employment, retail, commercial, healthcare and community centres..	**PT1:** Improve the active travel connection between Ballina Train Station and Busáras to the town centre.	**R1:** Introduce traffic management measures to more effectively route vehicles to the N59 and N26 rather than the town centre streets (traffic management measures to allow 2-way traffic on Lower Bridge to keep traffic on the N59).
P2: To improve crossing points within the town at major junctions and along N59, N26, Abbey Street, Church Road, Killala Road, Castle Road, Bohernasup and McDermott Street.	**C2:** Create a network that can cater for predicted current and future demand for commuter, delivery, leisure and tourist cyclists that is accessible to all population cohorts.		**R2:** Retain the capacity of the road network to cater for the through-traffic trips that are utilising the N26 and N59.
P4: To improve pedestrian facilities across the River Moy, at the Upper and Lower Bridges through a new active travel link and dedicated pedestrian facilities at the junctions.	**C3:** Make streets more conducive to cycling through reallocating space to provide the cross section to NCM standard.		
P7: Improved filtered permeability through the use of laneways and the opening up of cul-de-sacs for pedestrians to increase directness and connectivity.to enhance access to homes, jobs, schools, shops,	**C4:** Provision of dedicated cycle facilities at major junctions (Upper Bridge, Lower Bridge, Circular Road Roundabout, Market Square, Pearse Street, The Font, and Sligo Road Roundabout)		

Pedestrian Network	Cycle Network	Public Transport Network	General Vehicular Network
public transport and services.			
P9: To create new active travel links to reduce severance caused by the River Moy, particularly to improve connectivity to the north-east (The Quays/Quignalecka) of the town.	**C9:** To reduce traffic volumes within the town to make the road network more conducive to cycling. Particularly on routes where the available width is too narrow to provide dedicated cycle facilities for low-medium demand levels (ie; Sligo road, Abbey Street, Killalla Road, Church Road and Castle Road)		
	C10: Provide cycle infrastructure throughout the town centre to include covered cycle parking, parking for adapted bikes and e-bike charging points.		
	C11: Create permeability links to provide direction cycle routes and alternative cycle routes to main roads.		

8.4
Objectives Achieved: Proposal 4

Table 8-8: Objectives Achieved: Proposal 4

Pedestrian Network	Cycle Network	Public Transport Network	General Vehicular Network
P1: To enhance the existing facilities within town centre streets to create a people-first environment that encourages increased footfall in the area.	**C1:** To develop a continuous and linked cycling network within the town of Ballina comprised of greenway, primary, secondary and feeder routes to connect the residential, education, employment, retail, commercial, healthcare and community centres..	**PT1:** Improve the active travel connection between Ballina Train Station and Busáras to the town centre.	**R2:** Retain the capacity of the road network to cater for the through-traffic trips that are utilising the N26 and N59.
P2: To improve crossing points within the town at major junctions and along N59, N26, Abbey Street, Church Road, Killala Road, Castle Road, Bohernasup and McDermott Street.	**C2:** Create a network that can cater for predicted current and future demand for commuter, delivery, leisure and tourist cyclists that is accessible to all population cohorts.		**R4:** Provision of alternative routes for bypassing traffic to allow for enhanced active travel, public realm and public transport facilities in key areas of high-demand levels by means of the N26 Ballina Bypass Phase 1 Phase 1 and consideration of the long-term indicative proposal to provide an eastern bypass
P7: Improved filtered permeability through the use of laneways and the opening up of cul-de-sacs for pedestrians to increase directness and connectivity.to enhance access to homes, jobs, schools, shops, public transport and services.	**C3:** Make streets more conducive to cycling through reallocating space to provide the cross section to NCM standard.		
	C4: Provision of dedicated cycle facilities at major junctions (Upper Bridge, Lower Bridge, Circular Road Roundabout, Market		

Pedestrian Network	Cycle Network	Public Transport Network	General Vehicular Network
	Square, Pearse Street, The Font, and Sligo Road Roundabout)		
	C8: To remove traffic from town centre streets to allow for the provision of adequate cycle facilities in key areas of high-demand levels(ie; Lord Edward Street and Market Square)		
	C10: Provide cycle infrastructure throughout the town centre to include covered cycle parking, parking for adapted bikes and e-bike charging points.		
	C11: Create permeability links to provide direction cycle routes and alternative cycle routes to main roads.		

8.4
Objectives Achieved: Proposal 5

Table 8-8: Objectives Achieved: Proposal 5

Pedestrian Network	Cycle Network	Public Transport Network	General Vehicular Network
P1: To enhance the existing facilities within town centre streets to create a people-first environment that encourages increased footfall in the area.	**C1:** To develop a continuous and linked cycling network within the town of Ballina comprised of greenway, primary, secondary and feeder routes to connect the residential, education, employment, retail, commercial, healthcare and community centres..	**PT1:** Improve the active travel connection between Ballina Train Station and Busáras to the town centre.	**R2:** Retain the capacity of the road network to cater for the through-traffic trips that are utilising the N26 and N59.
	C2: Create a network that can cater for predicted current and future demand for commuter, delivery, leisure and tourist cyclists that is accessible to all population cohorts.		**R4:** Provision of alternative routes for bypassing traffic to allow for enhanced active travel, public realm and public transport facilities in key areas of high-demand levels by means of the N26 Ballina Bypass Phase 1 Phase 1 and consideration of the long-term indicative proposal to provide an eastern bypass
	C3: Make streets more conducive to cycling through reallocating space to provide the cross section to NCM standard.		
	C9: To reduce traffic volumes within the town to make the road network more conducive to cycling. Particularly on routes where the available width is too narrow to provide dedicated cycle facilities for low-medium demand levels (ie; Sligo road, Abbey Street, Killalla Road, Church Road and Castle Road)		

8.6
Objectives Achieved: Auxiliary Proposal

Table 8-8: Objectives Achieved: Auxiliary Proposal

Pedestrian Network	Cycle Network	Public Transport Network	General Vehicular Network
P1: To enhance the existing facilities within town centre streets to create a people-first environment that encourages increased footfall in the area.	**C1:** To develop a continuous and linked cycling network within the town of Ballina comprised of greenway, primary, secondary and feeder routes to connect the residential, education, employment, retail, commercial, healthcare and community centres..	**PT1:** Improve the active travel connection between Ballina Train Station and Busáras to the town centre.	**R2:** Retain the capacity of the road network to cater for the through-traffic trips that are utilising the N26 and N59.
P2: To improve crossing points within the town at major junctions and along N59, N26, Abbey Street, Church Road, Killala Road, Castle Road, Bohernasup and McDermott Street.	**C2:** Create a network that can cater for predicted current and future demand for commuter, delivery, leisure and tourist cyclists that is accessible to all population cohorts.		
P7: Improved filtered permeability through the use of laneways and the opening up of cul-de-sacs for pedestrians to increase directness and connectivity.to enhance access to homes, jobs, schools, shops, public transport and services.	**C3:** Make streets more conducive to cycling through reallocating space to provide the cross section to NCM standard.		
P9: To create new active travel links to reduce severance caused by the River Moy, particularly to improve connectivity to the north-east (The Quays/Quignalecka) of the town.	**C4:** Provision of dedicated cycle facilities at major junctions (Upper Bridge, Lower Bridge, Circular Road Roundabout, Market Square, Pearse Street, The Font, and Sligo Road Roundabout)		
	C9: To reduce traffic volumes within the town to		

Pedestrian Network	Cycle Network	Public Transport Network	General Vehicular Network
	make the road network more conducive to cycling. Particularly on routes where the available width is too narrow to provide dedicated cycle facilities for low-medium demand levels (ie; Sligo road, Abbey Street, Killalla Road, Church Road and Castle Road)		
	C10: Provide cycle infrastructure throughout the town centre to include covered cycle parking, parking for adapted bikes and e-bike charging points.		
	C11: Create permeability links to provide direction cycle routes and alternative cycle routes to main roads.		

Appendix 8

Objectives Achieved

8.1
Objectives Achieved: Proposal 1

Table 8.1: Objectives Achieved: Proposal 1

Pedestrian Network	Cycle Network	Public Transport Network	General Vehicular Network
P1: To enhance the existing facilities within town centre streets to create a people-first environment that encourages increased footfall in the area.	**C1:** To develop a continuous and linked cycling network within the town of Ballina comprised of greenway, primary, secondary and feeder routes to connect the residential, education, employment, retail, commercial, healthcare and community centres..	**PT1:** Improve the active travel connection between Ballina Train Station and Busáras to the town centre.	**R2:** Retain the capacity of the road network to cater for the through-traffic trips that are utilising the N26 and N59. .
P2: To improve crossing points within the town at major junctions and along N59, N26, Abbey Street, Church Road, Killala Road, Castle Road, Bohernasup and McDermott Street.	**C2:** Create a network that can cater for predicted current and future demand for commuter, delivery, leisure and tourist cyclists that is accessible to all population cohorts.		
P3: To provide continuous pedestrian facilities along the N26 to connect Rehins NS, Hollister, Grand National Hotel and Rehins Housing Estate to the town centre.	**C3:** Make streets more conducive to cycling through reallocating space to provide the cross section to NCM standard.		
P5: Improve the pedestrian connection between Ballina Train Station and Busáras to the town centre.	**C4:** Provision of dedicated cycle facilities at major junctions (Upper Bridge, Lower Bridge, Circular Road Roundabout, Market Square, Pearse Street, The Font, and Sligo Road Roundabout)		
P7: Improved filtered permeability through the use of laneways and the opening up of	**C5:** Provide dedicated cycle facilities along the N26 to connect Rehins NS, Hollister, Grand		

Pedestrian Network	Cycle Network	Public Transport Network	General Vehicular Network
cul-de-sacs for pedestrians to increase directness and connectivity.to enhance access to homes, jobs, schools, shops, public transport and services.	National Hotel and Rehins Housing Estate to the town centre.		
	C6: Improve the cycle connection between Ballina Train Station and Busáras to the town centre.		
	C10: Provide cycle infrastructure throughout the town centre to include covered cycle parking, parking for adapted bikes and e-bike charging points.		
	C11: Create permeability links to provide direction cycle routes and alternative cycle routes to main roads.		

8.2
Objectives Achieved: Proposal 2

Table 8-3: Objectives Achieved: Proposal 2

Pedestrian Network	Cycle Network	Public Transport Network	General Vehicular Network
P1: To enhance the existing facilities within town centre streets to create a people-first environment that encourages increased footfall in the area.	**C1:** To develop a continuous and linked cycling network within the town of Ballina comprised of greenway, primary, secondary and feeder routes to connect the residential, education, employment, retail, commercial, healthcare and community centres..	**PT1:** Improve the active travel connection between Ballina Train Station and Busáras to the town centre.	**R2:** Retain the capacity of the road network to cater for the through-traffic trips that are utilising the N26 and N59. .
P2: To improve crossing points within the town at major junctions and along N59, N26, Abbey Street, Church Road, Killala Road, Castle Road, Bohernasup and McDermott Street.	**C2:** Create a network that can cater for predicted current and future demand for commuter, delivery, leisure and tourist cyclists that is accessible to all population cohorts.		**R3:** Formalising the through link from Tesco to Pearse Street, through the Penneys Car Park, to allow for the pedestrianisation of Market Square and Pearse Street.
P6: To enhance the current pedestrian facilities on McDermott Street so that it can adequately cater for the demand at school times and to tie in with SRTS.	**C3:** Make streets more conducive to cycling through reallocating space to provide the cross section to NCM standard.		
P7: Improved filtered permeability through the use of laneways and the opening up of cul-de-sacs for pedestrians to increase directness and connectivity.to enhance access to homes, jobs, schools, shops, public transport and services.	**C4:** Provision of dedicated cycle facilities at major junctions (Upper Bridge, Lower Bridge, Circular Road Roundabout, Market Square, Pearse Street, The Font, and Sligo Road Roundabout)		
P6: To enhance the current pedestrian facilities on McDermott Street so	**C7:** To provide two-way cycle facilities on McDermott Street so that it can adequately cater for		

Pedestrian Network	Cycle Network	Public Transport Network	General Vehicular Network
that it can adequately cater for the demand at school times and to tie in with SRTS.	the demand at school times and to tie in with SRTS.		
P8: To remove traffic from town centre streets to allow for potential pedestrianisation (ie; Market Square and Pearse Street)	**C8:** To remove traffic from town centre streets to allow for the provision of adequate cycle facilities in key areas of high-demand levels(ie; Lord Edward Street and Market Square)		
	C10: Provide cycle infrastructure throughout the town centre to include covered cycle parking, parking for adapted bikes and e-bike charging points.		
	C11: Create permeability links to provide direction cycle routes and alternative cycle routes to main roads.		

8.3
Objectives Achieved: Proposal 3

Table 8-6: Objectives Achieved: Proposal 3

Pedestrian Network	Cycle Network	Public Transport Network	General Vehicular Network
P1: To enhance the existing facilities within town centre streets to create a people-first environment that encourages increased footfall in the area.	**C1:** To develop a continuous and linked cycling network within the town of Ballina comprised of greenway, primary, secondary and feeder routes to connect the residential, education, employment, retail, commercial, healthcare and community centres..	**PT1:** Improve the active travel connection between Ballina Train Station and Busáras to the town centre.	**R1:** Introduce traffic management measures to more effectively route vehicles to the N59 and N26 rather than the town centre streets (traffic management measures to allow 2-way traffic on Lower Bridge to keep traffic on the N59).
P2: To improve crossing points within the town at major junctions and along N59, N26, Abbey Street, Church Road, Killala Road, Castle Road, Bohernasup and McDermott Street.	**C2:** Create a network that can cater for predicted current and future demand for commuter, delivery, leisure and tourist cyclists that is accessible to all population cohorts.		**R2:** Retain the capacity of the road network to cater for the through-traffic trips that are utilising the N26 and N59.
P4: To improve pedestrian facilities across the River Moy, at the Upper and Lower Bridges through a new active travel link and dedicated pedestrian facilities at the junctions.	**C3:** Make streets more conducive to cycling through reallocating space to provide the cross section to NCM standard.		
P7: Improved filtered permeability through the use of laneways and the opening up of cul-de-sacs for pedestrians to increase directness and connectivity.to enhance access to homes, jobs, schools, shops,	**C4:** Provision of dedicated cycle facilities at major junctions (Upper Bridge, Lower Bridge, Circular Road Roundabout, Market Square, Pearse Street, The Font, and Sligo Road Roundabout)		

Pedestrian Network	Cycle Network	Public Transport Network	General Vehicular Network
public transport and services.			
P9: To create new active travel links to reduce severance caused by the River Moy, particularly to improve connectivity to the north-east (The Quays/Quignalecka) of the town.	**C9:** To reduce traffic volumes within the town to make the road network more conducive to cycling. Particularly on routes where the available width is too narrow to provide dedicated cycle facilities for low-medium demand levels (ie; Sligo road, Abbey Street, Killalla Road, Church Road and Castle Road)		
	C10: Provide cycle infrastructure throughout the town centre to include covered cycle parking, parking for adapted bikes and e-bike charging points.		
	C11: Create permeability links to provide direction cycle routes and alternative cycle routes to main roads.		

8.4
Objectives Achieved: Proposal 4

Table 8-8: Objectives Achieved: Proposal 4

Pedestrian Network	Cycle Network	Public Transport Network	General Vehicular Network
P1: To enhance the existing facilities within town centre streets to create a people-first environment that encourages increased footfall in the area.	**C1:** To develop a continuous and linked cycling network within the town of Ballina comprised of greenway, primary, secondary and feeder routes to connect the residential, education, employment, retail, commercial, healthcare and community centres..	**PT1:** Improve the active travel connection between Ballina Train Station and Busáras to the town centre.	**R2:** Retain the capacity of the road network to cater for the through-traffic trips that are utilising the N26 and N59.
P2: To improve crossing points within the town at major junctions and along N59, N26, Abbey Street, Church Road, Killala Road, Castle Road, Bohernasup and McDermott Street.	**C2:** Create a network that can cater for predicted current and future demand for commuter, delivery, leisure and tourist cyclists that is accessible to all population cohorts.		**R4:** Provision of alternative routes for bypassing traffic to allow for enhanced active travel, public realm and public transport facilities in key areas of high-demand levels by means of the N26 Ballina Bypass Phase 1 Phase 1 and consideration of the long-term indicative proposal to provide an eastern bypass
P7: Improved filtered permeability through the use of laneways and the opening up of cul-de-sacs for pedestrians to increase directness and connectivity.to enhance access to homes, jobs, schools, shops, public transport and services.	**C3:** Make streets more conducive to cycling through reallocating space to provide the cross section to NCM standard.		
	C4: Provision of dedicated cycle facilities at major junctions (Upper Bridge, Lower Bridge, Circular Road Roundabout, Market		

Pedestrian Network	Cycle Network	Public Transport Network	General Vehicular Network
	Square, Pearse Street, The Font, and Sligo Road Roundabout)		
	C8: To remove traffic from town centre streets to allow for the provision of adequate cycle facilities in key areas of high-demand levels(ie; Lord Edward Street and Market Square)		
	C10: Provide cycle infrastructure throughout the town centre to include covered cycle parking, parking for adapted bikes and e-bike charging points.		
	C11: Create permeability links to provide direction cycle routes and alternative cycle routes to main roads.		

8.4
Objectives Achieved: Proposal 5

Table 8-8: Objectives Achieved: Proposal 5

Pedestrian Network	Cycle Network	Public Transport Network	General Vehicular Network
P1: To enhance the existing facilities within town centre streets to create a people-first environment that encourages increased footfall in the area.	**C1:** To develop a continuous and linked cycling network within the town of Ballina comprised of greenway, primary, secondary and feeder routes to connect the residential, education, employment, retail, commercial, healthcare and community centres..	**PT1:** Improve the active travel connection between Ballina Train Station and Busáras to the town centre.	**R2:** Retain the capacity of the road network to cater for the through-traffic trips that are utilising the N26 and N59.
	C2: Create a network that can cater for predicted current and future demand for commuter, delivery, leisure and tourist cyclists that is accessible to all population cohorts.		**R4:** Provision of alternative routes for bypassing traffic to allow for enhanced active travel, public realm and public transport facilities in key areas of high-demand levels by means of the N26 Ballina Bypass Phase 1 Phase 1 and consideration of the long-term indicative proposal to provide an eastern bypass
	C3: Make streets more conducive to cycling through reallocating space to provide the cross section to NCM standard.		
	C9: To reduce traffic volumes within the town to make the road network more conducive to cycling. Particularly on routes where the available width is too narrow to provide dedicated cycle facilities for low-medium demand levels (ie; Sligo road, Abbey Street, Killalla Road, Church Road and Castle Road)		

8.6
Objectives Achieved: Auxiliary Proposal

Table 8-8: Objectives Achieved: Auxiliary Proposal

Pedestrian Network	Cycle Network	Public Transport Network	General Vehicular Network
P1: To enhance the existing facilities within town centre streets to create a people-first environment that encourages increased footfall in the area.	**C1:** To develop a continuous and linked cycling network within the town of Ballina comprised of greenway, primary, secondary and feeder routes to connect the residential, education, employment, retail, commercial, healthcare and community centres..	**PT1:** Improve the active travel connection between Ballina Train Station and Busáras to the town centre.	**R2:** Retain the capacity of the road network to cater for the through-traffic trips that are utilising the N26 and N59.
P2: To improve crossing points within the town at major junctions and along N59, N26, Abbey Street, Church Road, Killala Road, Castle Road, Bohernasup and McDermott Street.	**C2:** Create a network that can cater for predicted current and future demand for commuter, delivery, leisure and tourist cyclists that is accessible to all population cohorts.		
P7: Improved filtered permeability through the use of laneways and the opening up of cul-de-sacs for pedestrians to increase directness and connectivity.to enhance access to homes, jobs, schools, shops, public transport and services.	**C3:** Make streets more conducive to cycling through reallocating space to provide the cross section to NCM standard.		
P9: To create new active travel links to reduce severance caused by the River Moy, particularly to improve connectivity to the north-east (The Quays/Quignalecka) of the town.	**C4:** Provision of dedicated cycle facilities at major junctions (Upper Bridge, Lower Bridge, Circular Road Roundabout, Market Square, Pearse Street, The Font, and Sligo Road Roundabout)		
	C9: To reduce traffic volumes within the town to		

Pedestrian Network	Cycle Network	Public Transport Network	General Vehicular Network
	make the road network more conducive to cycling. Particularly on routes where the available width is too narrow to provide dedicated cycle facilities for low-medium demand levels (ie; Sligo road, Abbey Street, Killalla Road, Church Road and Castle Road)		
	C10: Provide cycle infrastructure throughout the town centre to include covered cycle parking, parking for adapted bikes and e-bike charging points.		
	C11: Create permeability links to provide direction cycle routes and alternative cycle routes to main roads.		

Appendix 9

Stakeholder Consultation

9.1
Response to Stakeholder Consultation

File Note

Clifton Scannell Emerson Associates

Project:	21_132 : Ballina Active Travel Mobility & Transportation Plan	**File No:**	21_132MEMO-21_132-003
Subject:	Response to Stakeholder Consultation	**Date:**	25/07/2023

1. Introduction

A period of non-statutory stakeholder consultation that took place for the draft Ballina Local Transport Plan (LTP) in April 2022.
Interested organisations were invited to submit observations/recommendations on the towns sustainable transport network.
Stakeholders were asked for information that maybe relevant to consider in relation to the preparation of the LTP including existing proposals or plans that the organisations may already be promoting. The data collected was used to enable the development of a safe network for pedestrians and cyclists. The information provided was for research purpose only.

Organisations contacted include:

- Public Representatives;
- Schools;
- Staff Based in other departments of MCC;
- Bus Operators;
- Irish Rail;
- State Agencies and Government Departments;
- Utility Companies;
- Large Employers;
- Retail Groups;
- Sports Clubs;
- Local Community Organisations; and
- Service Providers.

5 no. responses were received, and the feedback was considered throughout the options development process.

9.2
Submissions to Stakeholder Consultation

museum
presidential archive
research facility
events venue

THE
MARY ROBINSON
CENTRE

Victoria House, Ballina,
County Mayo, Ireland, F26 NT93

info@maryrobinsoncentre.ie
www.maryrobinsoncentre.ie

Clifton Scannell Emerson Associates
3rd Floor The Highline
Bakers Point,
Pottery Road,
Dun Laoghaire,
Co. Dublin. A96 KW29

21 May 2022

Re: 21_132 Ballina Active Mobility & Transport Plan

Dear Geoff, Jyotsna,

We are glad to learn that work is underway on the development of an Active Travel Plan for Ballina.

Ballina Green Town has a vision for Ballina to become Ireland's greenest town. Here at the Mary Robinson Centre, we support that ambition. We recognise that, for our town to achieve net zero, considerable behaviour change is required, and that this must be supported in every way possible.

In that light, we warmly welcome consultation on an Active Travel Plan for Ballina, recognising the transformative effect such work has had in other Mayo towns. We believe there is room for this plan to be ambitious and develop a progressive vision for Ballina with a people-centred, rather than car-centred approach.

While our town centre is compact, there is scope to shift its focus from vehicle traffic in its centre to pedestrian and cycle-friendly spaces. At present, the town centre is a harsh, unwelcoming place to visit as a cyclist, and basic infrastructure to support cycling is scarce. Similarly, access to Ballina's schools and workplaces is focused on road access, with little utilisation of existing infrastructure to encourage cyclists or pedestrians. It is our hope that the Active Travel Plan will support a shift in focus away from reliance on cars to walking, cycling, public and shared transport options, and in doing so, will create a more welcoming, town centre space that is focused on people and community rather than traffic and town centre car parks.

museum
presidential archive
research facility
events venue

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In the environs of The Mary Robinson Centre, we recognise that the public spaces directly outside the Centre are challenging for pedestrians to navigate. The Centre's opening will bring increased numbers of pedestrians to the area, including school tours. The Centre's focus is as a Centre for change, focused on the themes of Mary Robinson's work, and we believe there is scope to explore international best practice examples in reimagining the public space around the Centre that will support the Centre's goal to inspire its visitors to make changes towards sustainability, equality and reduced individual carbon footprints.

It is our view that this Active Travel Plan is key to the future development of Ballina in a way that will help realise its ambition to be people-centric and to achieve a net zero carbon target. We welcome the opportunity to be part of the overall plan consultation process and are happy to support your work in any way we can.

Regards,

Susan Heffernan

Project Manager

Geoff Emerson
Clifton Scannell Emerson Associates
3rd Floor The Highline
Bakers Point
Pottery Road
Dun Laoghaire
Co. Dublin
A96 KW29

Iascach Intíre Éireann
Inland Fisheries Ireland

6th May 2022

Re: Ballina Active Mobility & Transport Plan

Dear Mr Emerson,

Inland Fisheries Ireland (IFI) is the state body responsible for the protection, management and conservation of the inland fisheries and sea angling resource in Ireland. Protection of the aquatic environment and habitat is a vitally important element of IFI's work. IFI is mandated to ensure that the fisheries of the State are protected. "Fisheries" includes all inland fisheries recreational and commercial, sea angling and mollusc fisheries stipulated under the Fisheries Acts, the physical habitat upon which the fishery relies, the facilities and access, the quantity and quality of the water and the plant and animal life on which fish depend for shelter and food and the spawning areas where in fish deposit their eggs.

The River Moy flows through Ballina Town and is a nationally important salmon and trout fishery. This fishery is popular with local anglers as well as attracting anglers from throughout Ireland and abroad and supports local business including tackle shops and hospitality. In recognition of the importance of the River Moy fishery Ballina has been designated as the Salmon Capital of Ireland. Fish stocks are monitored by IFI to ensure angling is carried out in a sustainable manner.

The River Moy forms part of the River Moy Special Area of Conservation which is designated for the protection of Atlantic salmon, white-clawed crayfish and lamprey species. The River Moy is a migratory route for salmon, sea trout, eel and sea lamprey. This catchment is under environmental pressure and has been allocated moderate ecological status in the River Basin Management Plan. This status must be improved to good to comply with the Water Framework Directive.

IFI supports the promotion of active travel; climate change poses a significant challenge to Irish wildlife including aquatic and fish species. IFI request that the Ballina Active Mobility & Transport Plan takes the following into consideration.

1 The riparian habitat running along the River Moy and it tributaries is an integral part of the river environment. Riparian trees and vegetation provide shelter for fish from heat and sunshine in warmer weather and protection from predators particularly for vulnerable salmon smolts and elvers. The destruction of riparian areas along riverbanks results in fragmentation of riparian habitat within the river corridor, loss of cover for fish and aquatic animals and can reduce the value of waterways as amenity areas.

Intact, vegetated riparian buffers from development provide water quality benefits including bank stabilisation, interception of nutrients, sediments and pesticides. IFI request that the Ballina Active Mobility & Transport Plan incorporate the Planning for Watercourses in the Urban Environment guidance which is available to view at: http://www.fisheriesireland.ie/Download-document/86-Planning-for-Watercourses-in-the-Urban-Environment.html.

2 IFI request that the Nature-based Solutions to the Management of Rainwater and Surface Water Runoff in Urban Areas, Water Sensitive Urban Design Best Practice Interim Guidance Document be incorporated into Plan. This document can be viewed at https://lawaters.ie/app/uploads/2021/12/20211216_SUDS_Interim_Guidance.pdf IFI request that green infrastructure features are used to attenuate surface water drainage such as the inclusion of swales, permeable paving/car park surfacing and green roofs, as required. These measures will filter surface waters, reduce stormwater runoff rates and improve flood alleviation.

3 IFI must be consulted in relation to any development that could potentially impact on the River Moy and associated riparian habitat. IFI can provide guidance on site specific measures to enhance, protect, rehabilitate or establish riparian and aquatic habitats. Where construction or development works are proposed there must be no discharge of silted or polluted waters.

4 Measures should be put in place to prevent the spread of invasive species as a result of this plan and any resulting development.

5 The design or designation of active transport routes along the River Moy must take the action of Anglers flyfishing within the River Moy channel into consideration. It is essential that adequate distance is provided between anglers and the public to prevent any risk from angling hooks.

Yours sincerely,

_____

Aisling Donegan
Senior Fisheries Environmental Officer

csea-bat-0422

Iascach Intíre Éireann
Inland Fisheries Ireland

Active Travel plan submission – Mayo North Tourism

23 May 2022

Aim of plan: *To encourage Active and Sustainable Travel (i.e., walking, cycling, use of public transport, electric vehicles, Go-Car etc.) for feasible trips within the Ballina Town area. The overall aim is to support increase in use of sustainable modes of transport, thereby supporting a high quality of life for all to enjoy by setting policies to promote walking and cycling, support pedestrianisation and permeability of town and village centres, and provide improved facilities for Active Travel.*

Thank you for the opportunity to submit to the Ballina Active Travel Plan. Mayo North Tourism or MayoNorth.ie is an independent, not-for profit organisation that supports the development and promotion of the tourism offering in Ballina, North Mayo and West Sligo. Mayo North works collaboratively with stakeholders to promote North Mayo and its hinterlands as a year-round tourism destination, showcasing its culture, heritage and natural landscape, and supporting the development of new experiences in an ethical, sustainable manner, to best benefit the region and its people.

It is commonly recognised that great places to visit are first and foremost great places to live. If we are to become a highly regarded tourism destination, we need to focus first and foremost on the needs of our locals. With that in mind, below we have outlined some key points for consideration i the formulation of the Active Travel Plan.

Overall observations

- The plan must be ambitious and should not just aim to get us where we should be now, rather it should look outside of Ireland for examples of best practice, be bold and brave and aim to get us ahead of where we should be and lead the way in active travel in Ireland.
- The plan should become a document that will then in turn help enable access to public funds outside of the Dept for Transport – e.g. URDF funding. For example, this plan should support applications for funding the development of a new pedestrian/cycling bridge linking Belleek and the Quay as outlined in Moy Estuary Feasibility study. A pedestrian/cycle bridge across the Moy is desperately needed to reduce the dependence on cars by people from the Quay trying to access Killala Road and Belleek Woods.
- Ballina has set an ambition to become Ireland's Greenest Town by 2025. There is a strong grassroots community movement demanding more green and pedestrian/bike-friendly infrastructure, but similarly there is likely to be lots of volunteer and community support available to support and promote new active travel initiatives.
- Plan should not just focus on the town and should also take into account sustainable transport links into Ballina from elsewhere e.g. development of public transport routes into Ballina from Ireland West Airport, establishment of a Go-Car network across the county, promotion and digitalisation of Local Link bus routes
- Much of the existing infrastructure in the town actively discourages walking and cycling, particularly on the periphery – it is disjointed and often unsafe despite the fact that most

workplaces are located on the edge of towns, meaning many people need to unnecessarily drive through town to access them, contributing to congestion

- Community workshops could be convened to address current attitudes towards car parking versus walking/cycling in the town? When in the car it is easy to prioritise car travel, and feel an entitlement to both road space and speed. Yet many motorists also walk and cycle and are aware of both the dangers and the unpleasantness of the experience when cars are prioritised e.g. noise, vulnerability, air pollution. It all depends on your perspective, which can alter depending on where you are sitting or standing! How can we change the discussion away from the prioritisation of car parking and car access, to the benefits, enjoyment, and convenience of bike and pedestrian access?
- Urban sprawl outside of the town centre is highly car dependent due to the lack of alternative options and safe cycling infrastructure. This necessitates many people using cars that might consider alternatives if space was made for them to do so safely.
- The plan should outline how we can look at **linking and connecting existing roads and walkways** rather than building new ones in order to create new road, cycling and pedestrian routes. Creating new access points and shortcuts for pedestrians and cyclist can reduce travel time and make them more attractive alternatives.

Here are two excellent articles from IrishCycle.com to inform the development of cycling infrastructure on the Killala Road:

- https://irishcycle.com/2020/09/07/can-you-retrofit-for-walking-and-cycling-on-ribbon-development-in-an-irish-town-part-1-the-problem/
- https://irishcycle.com/2021/02/20/can-you-retrofit-for-walking-and-cycling-on-ribbon-development-in-an-irish-town-part-2-the-solution/

Accessibility

- Accessibility is so often an afterthought and catering to the needs of people with additional mobility needs should be at the core of this Active Travel plan and on transport infrastructure of every kind in future.
- Frequently we hear from potential visitors to the area who might have a family member with limited mobility trying to plan their trip in advance. Ballina should be aiming to be a town that is friendly to people with disabilities of all types.
- A full audit of accessibility to be carried out with wheelchair users/people with limited mobility to identify problematic areas of the town and more importantly, develop and implement solutions.
- This also applies to parents of small children who struggle to navigate poor pedestrian infrastructure – a large proportion of our population.
- This may not fall within the scope of the Active Travel Plan but should be noted; where cars or vans are parked on footpaths or on designated crossings impeding access, this should be strongly penalised. This is a frequent occurrence particularly at the crossing at the top of O'Rahilly Street and on Walsh Street and prevents wheelchair users from crossing safely.

- Care needs to be given to the placement of street furniture and signage infrastructure, of which there is an abundance. All of these form barriers on already busy streets and create obstacles. Do we really need so many poles, bins, boxes, sandwich boards, signs etc, and how can we look at minimising obstructions on our streets or placing such items in an alternative manner?
- Businesses and homeowners must be reminded to move their refuse bins when collection has been made so as not to impede access.
- The pedestrian crossing linking lower Pearse Street to Dunnes Stores is highly dangerous – it is too close to the corner and to the crossing at Humbert Street meaning that many drivers do not see it until they have driven through it.
- The pedestrian crossing at St Augustine's Nursing home is not just dangerous for pedestrians being so close to the corner, it is deadly dangerous for wheelchair users who are lower to the ground and therefore invisible to people turning the corner from the bridge onto Cathedral Road
- Where repair or remediation works are taking place in the town, either public or private, a safe access route must be provided that accommodates not just pedestrians but people with limited mobility and wheelchair users
- **It is imperative** that a representative with limited mobility is consulted at design stage for any future public realm works, even something so simple as building a new footpath.
- This would prevent issues such as the following from occurring in the first place (these are just some examples of many):
    - Lack of wheelchair friendliness on the Bachelor's walk footpaths (both sides) which necessitates wheelchair users using the road as the path is unfit for purpose
    - The courtesy crossings at the Upper Bridge are not accessible in all directions despite not being raised
    - There is only one safe space for wheelchair users on Tolan Street and Garden Street to cross. It would be unacceptable if a pedestrian wanting to cross the road at Shaws had to walk all the way to the Junction to find a safe spot to do so, therefore it should not be the case for a wheelchair user.
    - Eason's courtesy crossing is unsafe for wheelchair users
    - The dips for wheelchair users at the Font need to be sorted
    - Cobbles on Pearse Street are not wheelchair friendly
    - It is impossible to navigate the footpath on Lower Pearse St outside the Gem

  It is simply not acceptable that locals or visitors to the town with limited mobility should have to encounter such issues, especially in new infrastructure.

Cycling

- Cycling tourism will flourish if cycling becomes a way of life for locals and this should be the focus, however in the town's current situation vehicular transport is prioritised to the detriment of safe cycling routes.
- Creating safe and segregated routes to and from schools from housing estates would ensure that cycling becomes second nature from an early age. Cycling could be encouraged via the Cycle Bus Network, facilitated by the ChangeX platform.

- Cycling as a means of transport could be encouraged by the removal of some on-street parking to facilitate safe and connect cycle lanes. Parking should be condensed in a multi-story car park in the town centre that will allow access to major outlets in the town centre.
- Any new car park space should not be developed at the expense of green space.
- Priority should be given to working from the centre out - focus on ensuring safe and connected routes within town centre to link approach roads will enable safe access to longer leisure cycling routes
- Cycle lanes should have a clear function, with a clear start and finish point. Current lanes are disjointed, start and end abruptly and spit people out into junctions and intersections in a dangerous manner.
- Cycling signage needs to clearly direct cyclists to relevant route information. Current signage is meaningless if you are a visitor to the region.
- For safety reasons, cycle lanes should be physically segregated from vehicular traffic where possible; there are a number of means of doing this.
- If traffic flow on the bridges over the Moy remains as is, cycling infrastructure needs to be prioritised as the first link between the Quay and Belleek Woods. This is the main tourist route. There is a bike hire company operating in the town, based at the Quay, and their most common issue is that they cannot send families by bike from the Quay to Belleek Woods due to the unclear and dangerous cycling route. E.g. the cycle lane at the junction of Sligo Road and Riverslade ends abruptly with no clear and safe route to cross onto Sligo Road. Families cannot in all honesty be expected to safely navigate the current system around the bridges which would involve multiple lane crossings with no traffic calming measures and to encourage this in its current form would be downright dangerous.
- The shared cycle route on the Sligo Road on the path is also extremely dangerous – there is not sufficient room for pedestrians, bicycles and trees and there is no separation of cyclists and pedestrians. It also makes no allowances for people with mobility issues or people with hearing impairments who may not hear an approaching bicycle. In addition, the path surface is dangerous for people with wheelchair users
- Is there potential for a Dublin Bikes style project linking town and the Quay, if a proper and safe route is created?
- Development of cycling infrastructure to link existing manufacturing hubs (Coca-Cola, Hollister, Lionbridge) with town centre, possibly with existing routes – e.g. the Falcon Trail, Monasteries of the Moy Greenway. Expansion of bike rental scheme to these commercial hubs.
- Appropriate bicycle parking needs to be provided in safe spaces in the town centre. Not only does this encourage cycling, but it also discourages dangerous placement of bikes (e.g. chained to lamp posts) which in turn proves dangerous to people with limited mobility.

Pedestrians and pedestrianisation

- A pedestrianisation plan should be developed for the four main streets in the town centre in consultation with businesses, and efforts should be made to communicate the benefits of same with case studies from other towns. Efforts should then be made to develop the town centre as a pedestrian friendly space with appropriate shelters, street furniture etc (but with accessibility in mind.

- Traffic calming measures urgently need to be implemented on the route around the bridges. The pedestrian crossings there are almost always ignored; a raised crossing would ensure a safer passage for pedestrians and would serve to calm traffic.
- Consideration should be given to implementing a 30km/hour speed limit in the town centre.
- The opening of the new Mary Robinson Centre on Emmet Street will necessitate additional pedestrian/public space on the path outside the Centre. Additional coach parking will be required and it is likely that the centre will be busy with group tours, including schools. Provisions must be made to ensure that access is safe and comfortable for visitors to the centre, and the pedestrian access via Moy Lane must be clearly marked and segregated from traffic on that lane.
- Abolish shared pedestrian/cycle routes – they are unsafe
- It is unclear to pedestrians in town that the courtesy crossings throughout town do not confer a right of way. This results not just in frustration among drivers and pedestrians but also dangerous situations. Abolish the courtesy crossings and put in raised pedestrian crossings where feasible so there is no ambiguity and pedestrians are prioritised.
- Currently the noise and pollution from vehicles on many of the walking routes around town makes walking unpleasant at busy times, but in particular, from the town centre to the Quay makes conversation among pedestrians almost impossible due to the volume and speed of traffic. Is there potential for the development of off-road cycle/walk route from town centre to the Quay, perhaps inside the river wall?
- Ballina's laneways form a network throughout the town that is currently underutilised. These laneways should be prioritised for pedestrian use, and should be visually enhanced and lit where appropriate, either by Mayo County Council or by willing community groups.
- There is no safe space to cross the road at the Quay in Ballina and the lack of paths on the side opposite the river makes it dangerous for families and impossible for wheelchair users to navigate independently.

EPA: Information which may be useful as part of your consultation is available from the EPA's latest State of Environment report and of particular interest may be the Transport chapter available at https://clicktime.symantec.com/38pxks44hZAGC19svgDAKcb7GS?u=https%3A%2F%2Fwww.epa.ie%2Fpublications%2Fmonitoring--assessment%2Fassessment%2Fstate-of-the-environment%2Firelands-environment-2020---chapter-11---environment-and-transport.php

Further reading includes the following: Chapter 16
All Key Messages are available in the full report and also as a stand alone booklet: **the Key Messages Booklet**.

Hi Jyotsna,

I am emailing you with reference to the Active Travel Investment Programme, I wish for points outlined below to act as a submission.

My name is Avril Greham. I live and work in Ballina Town. I am a full time wheelchair user and I hope that those of us with mobility issues will be considered in all plans going forward.

The first few points identify the need for all work on roads and paths to be stress tested by people with limited mobility prior to signing off, for example, so that they are definitely fit for purpose. An active consultation group with people of various mobility issues could come together in an advisory capacity.

These points are specifically related to the Ballina Urban District:

- Cars parked on footpaths blocking the way through;
- Cars parked across courtesy crossings - examples of this the crossing at Curry's butchers and The Broken Jug but all courtesy crossing in town centre suffer from this fate;
- Bikes parked/ chained in precarious positions;
- Refuse bins outside retail stores/ businesses - not removed when collection has been made

As a wheelchair user I have to always map out my route before leaving my front door. I have tried to list as many problem areas that I can think of as follows:

1. Bachelor's Walk (town side) - footpath is not continuous with very little dips/ dishes to alight safely from one path to the next. I have to go on the road until I almost reach 'Euro Giant' building;
2. Bachelor's Walk (Riverside) - the path is continuous however broken up at several points along the way;
3. Bachelor's Walk - Water Pump - as a resident to the area this water pump is a necessary facility during the winter month to ease flooding concerns. However when this in place there is no dip/ dish to allow a wheelchair is safely alight path and circumnavigate the pump. Once again being forced on to the road not being able to use either footpath;
4. Following on from Bachelor's walk crossing the bridge on to Clare St down to ABC park (Playground). Footpath is in dire condition. Broken up and with many holes;
5. Courtesy crossings at Upper Bridge - not accessible in all directions;
6. Pedestrian crossing at St Augustine's Nursing Home - grossly unsafe. Being a wheelchair means the person sits lower to the ground and the cars on the outside may not be able to see the person attempting to cross;
7. Footpath on Cathedral side in woeful condition;
8. Tolan Street/ Garden Street - only 1 safe place to cross at. This is at the Junction Restaurant. If was doing business in Gavin's Opticians and perhaps wished to go to Shaws. I have to travel back down the street to safe cross and once again travel up the entire length of the street just to get to where I want to go;
9. Dip/ dish directly out Eason's does not offer as safe or an easy place to cross;
10. Market Square Carpark - drains they are very hard to navigate
11. Font junction (near to where I work) all dips are not level so again I often have to dangerously cut across traffic to find a point that I can access path;
12. Junction at Shaw's and Convent Hill not all path are accessible and difficult to cross at.

Thank you for taking the time to read this. If I can be of help at any instance through out this programme please don't not hesitate to contact me.

Kind regards,
Avril Greham

Clifton Scannell Emerson Associates Limited, Civil & Structural Consulting Engineers
3rd Floor The Highline, Bakers Point, Pottery Road, Dun Laoghaire, Co Dublin, Ireland A96 KW29

T. +353 1 288 5006 E. info@csea.ie W. www.csea.ie