Comhairle Contae Mhaigh Eo
Mayo County Council

Údarás Náisiúnta Iompair
National Transport Authority

Mayo County Council

WESTPORT LOCAL TRANSPORT PLAN

Plan Preparation

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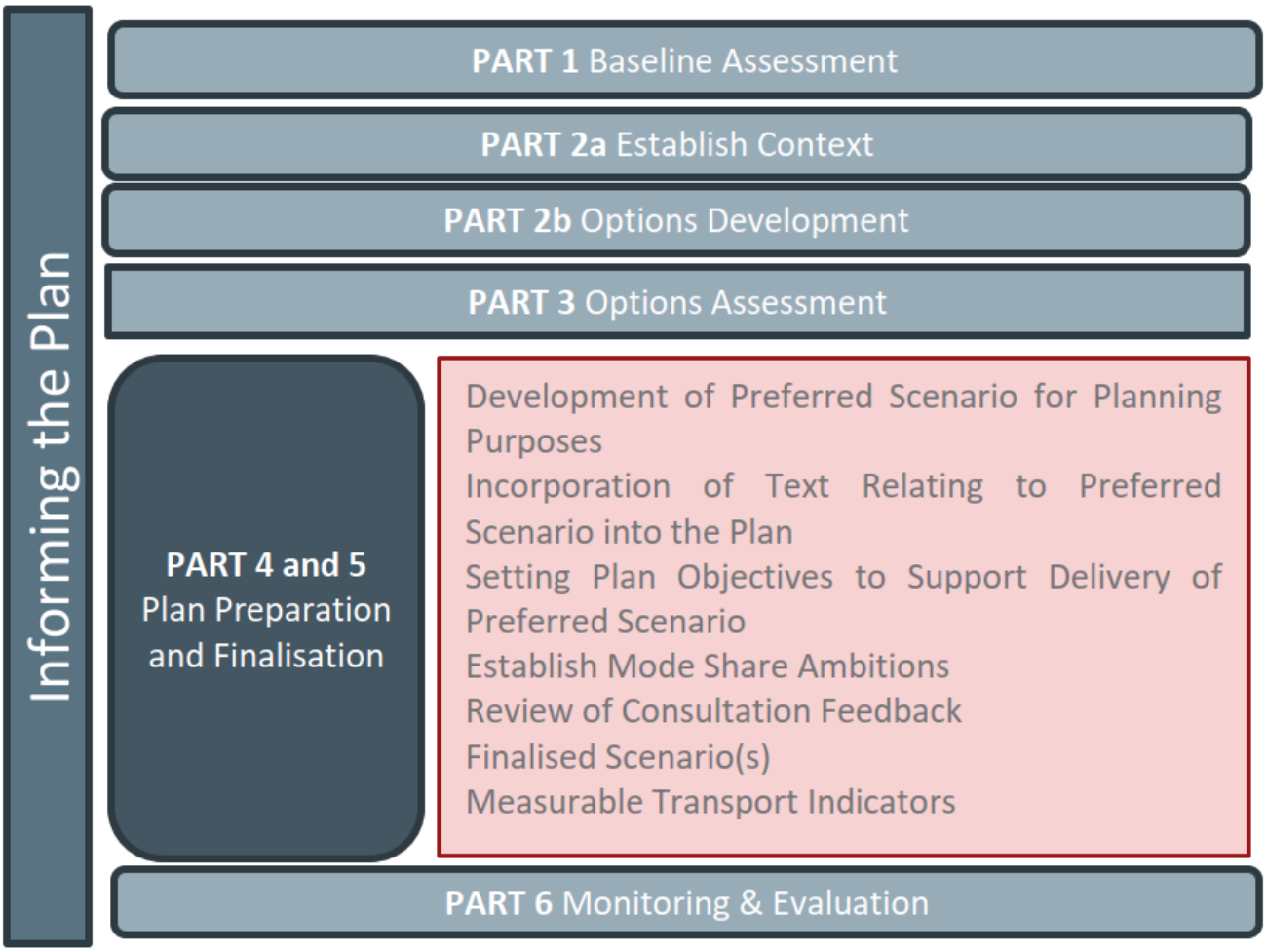
1 INTRODUCTION

1.1 BACKGROUND

1.1.1 WSP and Transport Insights have been appointed by Mayo County Council (MCC) to produce a Local Transport Plan (LTP) for Westport, following the Area Based Transport Assessment (ABTA) process. This ABTA will seek to facilitate and inform the integration of land use and transport planning at the earliest possible stage in the preparation of the emerging Local Area Plan (LAP), with an emphasis on enabling sustainable transport outcomes for the Plan area.

1.1.2 This report builds on two previous reports ("Summary Report Part 1 and 2" and "Part 3 – Options Assessment" which aligned with Stages 1 to 3 of the ABTA process. This report aligns with Part 4 and 5 of the key six stages of the process illustrated in Figure 1-1. Parts 4 and 5 consider plan preparation and finalisation.

Figure 1-1 – Plan Preparation and Finalisation as part of the ABTA process



1.2 VISION FOR WESTPORT

1.2.1 The Local Transport Plan for Westport envisions the development of a transport system that embodies sustainability, accessibility, and community wellbeing. By integrating land use planning and transport planning, the plan aims to create a vibrant and inclusive environment that prioritises people and

encourages a shift away from private car usage. The vision is to establish a network of streets that provide seamless connectivity, reduce traffic, and vehicle emissions, while enhancing the quality of public spaces. Through the promotion of active travel and sustainable modes, the plan seeks to improve accessibility for all individuals and journey types, fostering a more inclusive environment.

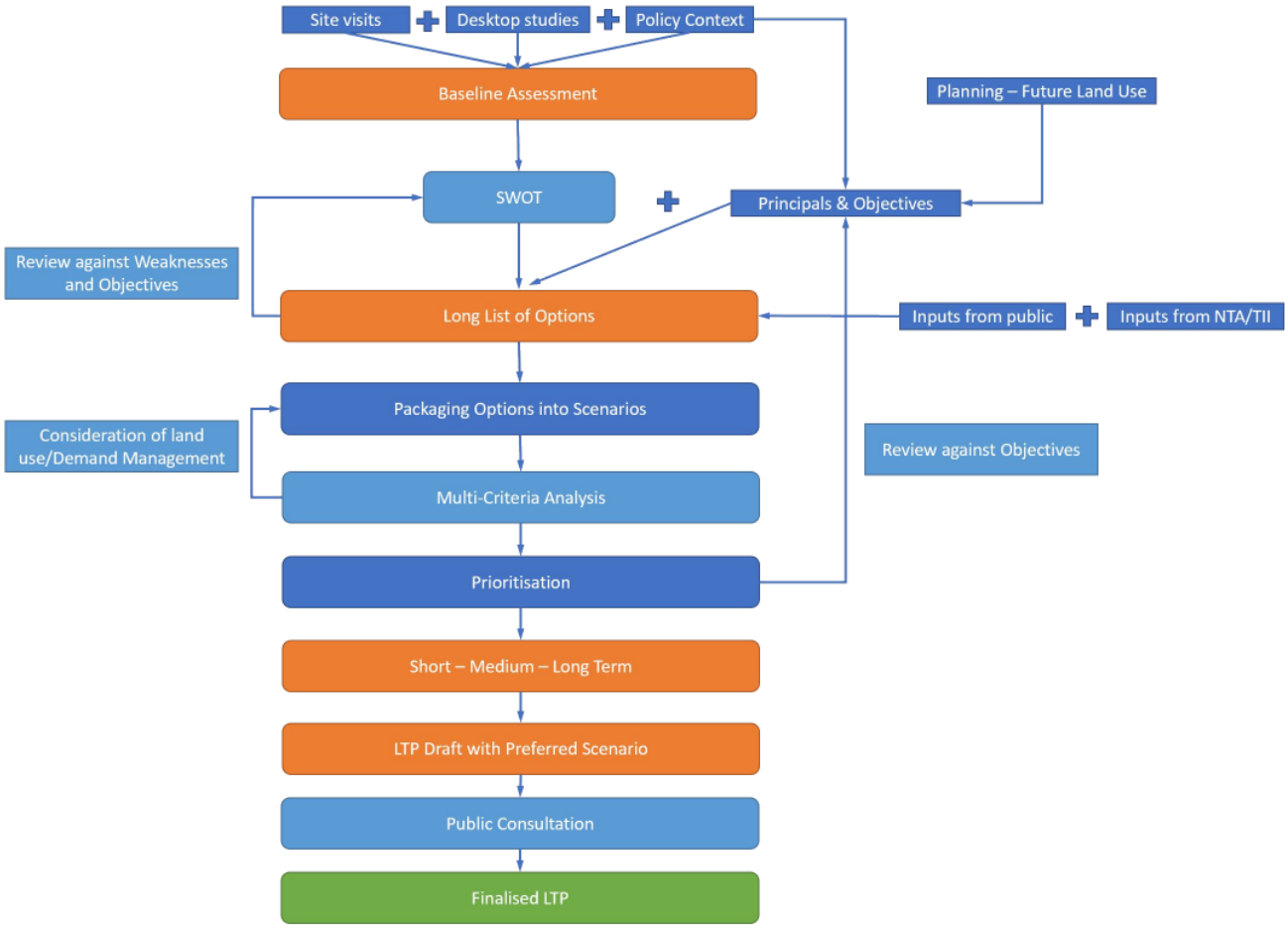
1.2.2 Through the appropriate management of parking and considering the needs of local businesses and residents, the LTP strives to strike a balance that accommodates everyone's requirements. Ensuring road safety, with a particular focus on vulnerable users, is a fundamental aspect of the vision. By establishing clear objectives and adhering to the principles of climate change mitigation, sustainable development, and community engagement, the Westport LTP aims to create a transport system that enhances the overall quality of life in the town.

1.2.3 Furthermore, the LTP recognises the importance of protecting designated areas of natural and heritage value. Therefore, proposals within or adjacent to these areas will be designed to minimise any negative impacts.

2 PLAN DEVELOPMENT

This plan has been developed in line with the Area Based Transport Assessment process which is outlined in Figure 2-1 below. As can be seen, an iterative approach has been taken where each step informs the next. The integration of land use and transport planning enables greater consistency and effectiveness at local level. The LTP has been developed in tandem with the Local Area Plan to ensure trip origins and destinations are connected by sustainable transport modes and interventions are identified to address the gaps in the networks. This helps to future proof transport provision and ensure transport facilitates the movement of people in line with the Local Area Plan.

Figure 2-1 - Process Flowchart



Maps have been developed to show the proposed network for each mode of transport including walking, cycling, public transport and general vehicle traffic. As can be seen, these maps portray a connected and coherent network which have informed the development of the interventions.

Figure 2-2 - Pedestrian Network

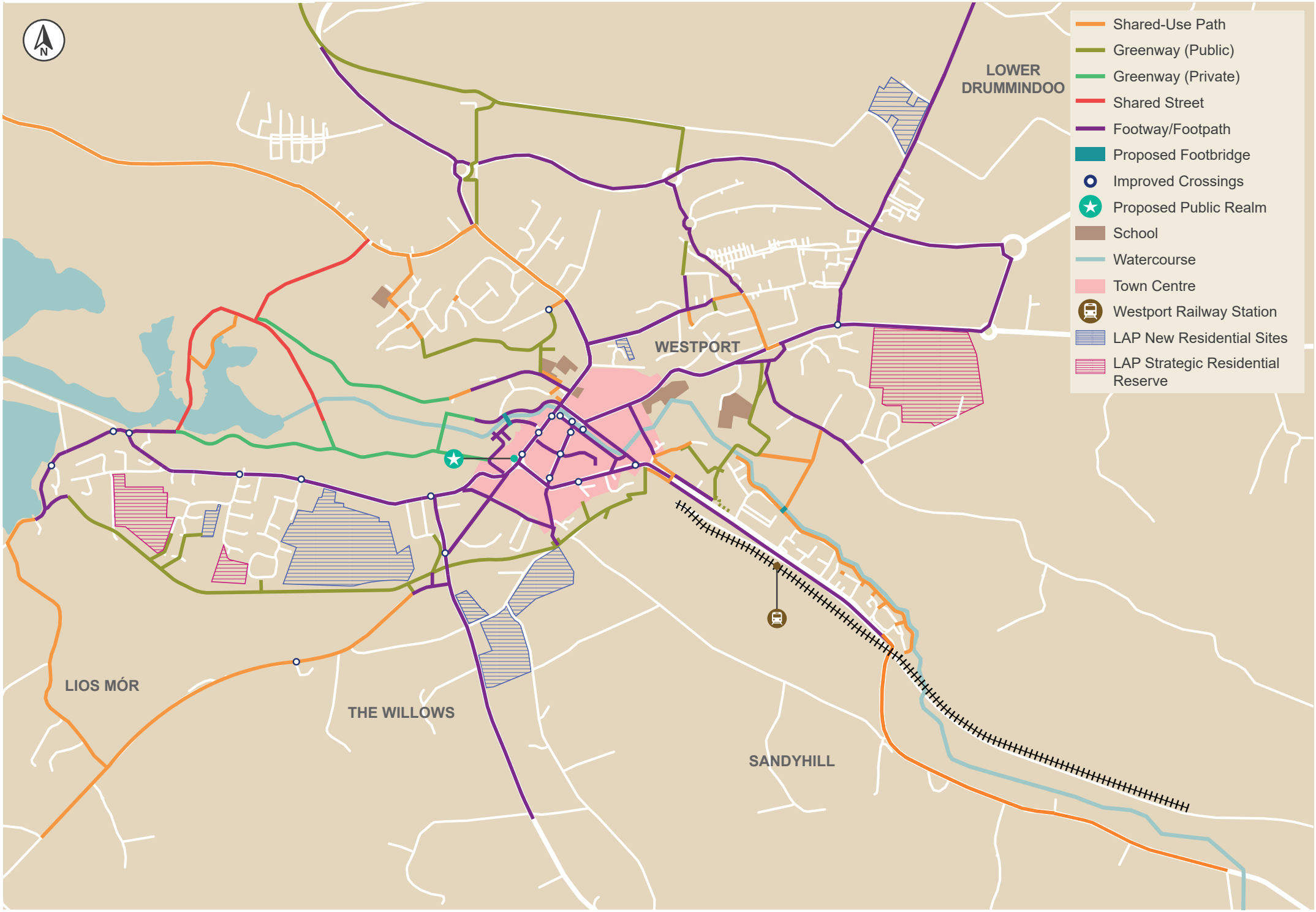


Figure 2-3 - Cycle Network

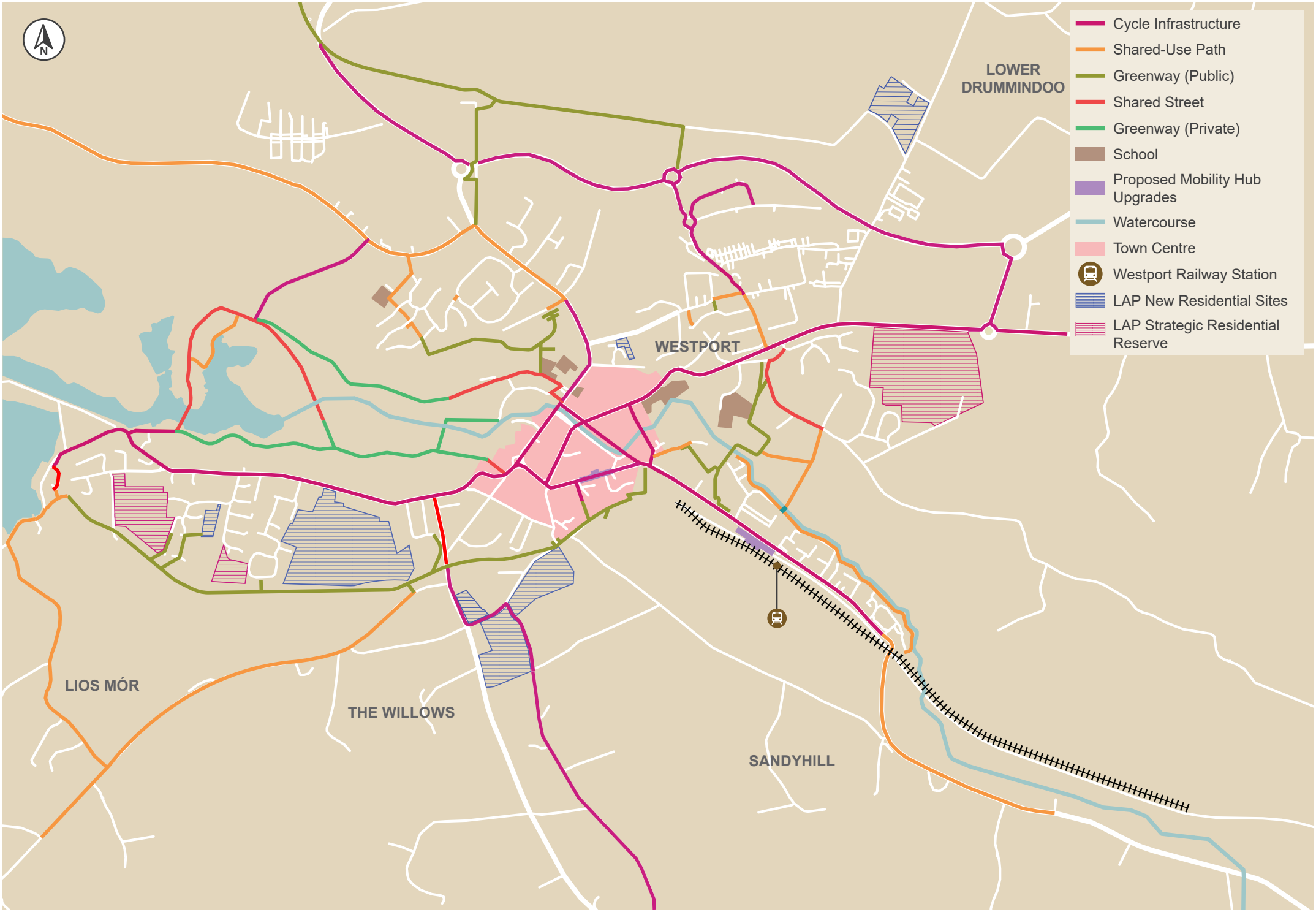


Figure 2-4 - Public Transport Network

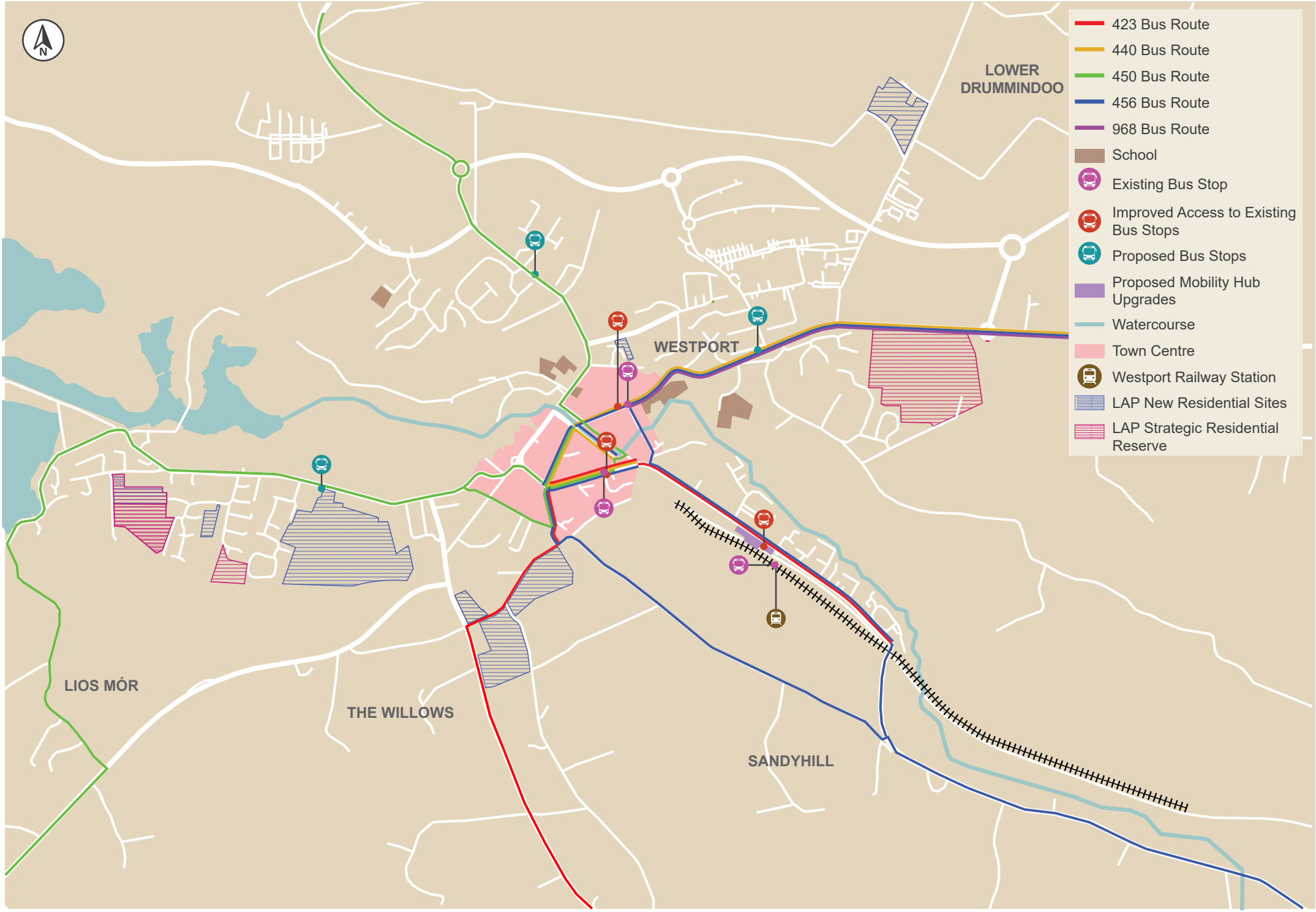
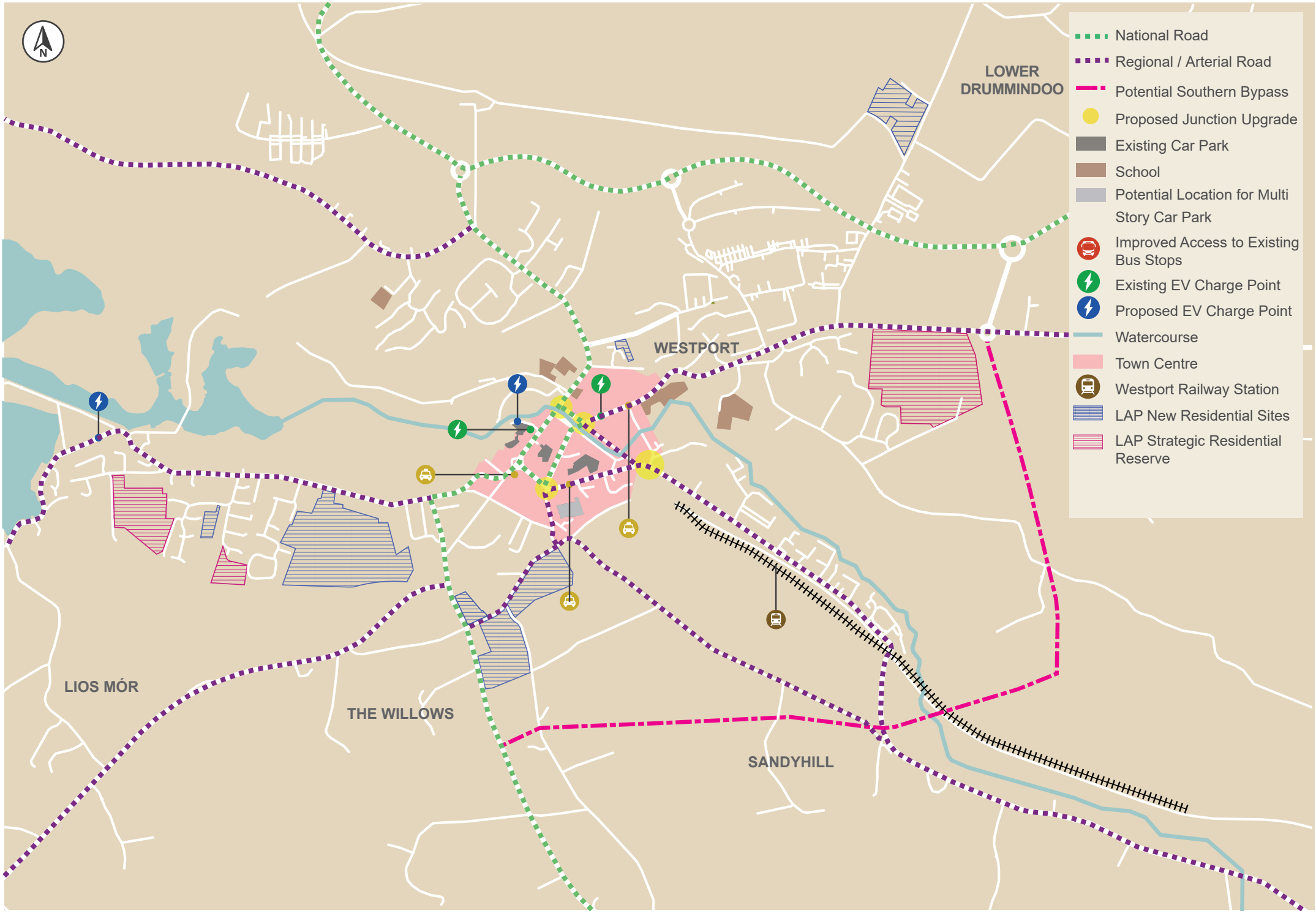


Figure 2-5 - Road Network



3 PREFERRED SCENARIO DEVELOPMENT

3.1 SCENARIOS CONSIDERED

3.1.1 In Part 3 of the ABTA process, potential interventions were organised into separate packages on a deliverability criterion. Options were categorised into “Do Minimum”, “Do Medium” and “Do Maximum” scenarios. High level assumptions were carried out to predict the capital investment and timescale required to implement the upgrades.

Table 3-1 – Scenario Definitions

Category	Definitions
Do Nothing	Interventions already planned / designed by MCC are assumed to go ahead with no other upgrades to existing infrastructure.
Do Minimum	Low cost (<€500k). This will comprise of low profile, quick wins by upgrading some existing infrastructure to improve accessibility for existing connections. Soft measures such as Town wide policy and guidance notes will provide a basis for future investment strategies.
Do Medium	Medium cost (<€10M). This scenario will aim to provide new infrastructure and connectivity throughout Westport with minimal impact on road space and parking.
Do Maximum	High Cost (>€10M). This scenario provides infrastructure that creates most opportunity for modal shift towards active travel. This will have the greatest impact on existing road space and parking.

3.1.2 Additional information on these scenarios can be found in the Stage 3 Report.

3.2 PREFERRED SCENARIO

3.2.1 The ‘Do Maximum’ scenario is the preferred scenario identified from the results of the Multi Criteria Assessment Framework (MCAF). It builds upon and incorporates the “Do Minimum” and “Do Medium” scenarios and proposes delivery of all interventions. The proposed interventions included in the “Do Maximum” are summarised in Table 3-2 below.

3.2.2 All modes of transport within Westport have been addressed but with a focus on Active Travel incentives. The standard of walking within the centre of Westport will be improved following pedestrian permeability upgrades through existing car parks. Localised widening of footpaths across the town will aim to improve accessibility. Cycling interventions have been proposed to provide a more complete network throughout the study area. This includes segregated cycle tracks and an increased area of shared-use paths.

3.2.3 The measures have been categorised based on the delivery time framework as follows:

- **Short-term:** Within 5 years
- **Medium-term:** 6-10 years
- **Long-term:** More than 10 years

Table 3-2 – Proposed Interventions

Category	Short Term Measures	Rationale	Medium Term Measures	Long Term Measures
Town-Wide Complimentary Measures	▪ Develop a Local Area Model of Westport Town (based on NTA's Western Regional Model). ▪ Establish Mobility Management Plans for 7 schools in main study area to include: • Continue to promote and support green schools initiative; • Establish walking and cycling buses to primary schools; and • Provide School Zones interventions in front of all schools including area of influence. ▪ Ensure Workplace Travel Plans are developed for new developments and extensions to existing residential areas. ▪ Deliver Mobility Hubs including cycle parking, public car share, bike share etc. (Mill Street, Train Station, Town Centre). ▪ Implement findings from accessibility review and parking management plan. ▪ Work with partner organisations to facilitate the development of a delivery hub location on the edge of Westport, enabling freight consolidation and a reduction in the number of vans circulating the constrained town centre. ▪ Relocate and increase railway station cycle parking to avoid conflict with car park use. ▪ Ensure streets are clutter free and at least 2m is clear for pedestrians by engaging with business owners and enforcement where required.	Along with providing hard infrastructure to facilitate sustainable travel modes, changes to existing travel behaviours are essential for the full benefits of the new and enhanced infrastructure to be realised. In addition, changes in travel behaviour help support a reduction in private car reliance and help towards national climate action objectives. The interventions identified in this plan mainly target utility journeys such as trips to school and work and will encourage and inform people about alternative travel options for these everyday journeys.	▪ Rejuvenate land located on the junction between Mill Road and Altamont Street (old convent grounds) ▪ Consider provision of additional public toilets, including at least one Changing Place toilet. This will enable people to access the town centre by sustainable modes without being dependent on private bathrooms.	
Walking	▪ New footpaths: • Leenaun Road (N59) from Pound Road to Daybreak at Carrowbaun; • High Street – provide accessible pedestrian link from greenway to John's Row on the west side of street with new footpath provision and removal of steps; • Lodge Road from its junction with the N5 (Castlebar Rd) to Slogger / Carrownaclea / Fahy crossroads. This work would be a combination of new footpath sections and enhancements to the existing, narrow sections; • Greenway to Mill Street via High Street car park; • Mill Street to Laneway connecting to Bridge Street, via Mill Street car park; • James St to Bridge St via James St Car Park and Distillery Ct; • Knockranny Road footpath extension from Knockranny Lodge B&B to Drummindoo Stud farm junction; and • Horkan's Hill to Carrowbeg Estate. ▪ Upgrade existing footpaths: • Tober Hill – address local pinch points to provide continuous footpath; • Leenaun Road – footpath widening from Quay Road to Toberhill; • Peter Street – steps and accessibility improvements; • Hillside – footpath widening, relocate street furniture blocking the footpath; • Johns Row – footpath widening (minimum footpath width), continue raised footpath; • Church Street – provide accessible pedestrian access to Westport House, tactile paving, widening of footpath; • High Street – footpath widening and resurfacing on north end; • Altamont Street – provide footpath widening and provision on both sides of the road;	The new or enhanced footpaths have been identified through a gap analysis in the pedestrian network and through community engagement. There are no existing footpaths in some of the locations such as Leenaun Road. In other locations such as Lodge Road, there is a need to upgrade some sections and provide new footpath in others. Permeability links have been identified to formalise and provide for desire lines that make it easier for people to walk by remove barriers. This could include providing links between residential areas or within the town centre to make the walking more attractive and accessible. In terms of wayfinding, there is existing signage which could be expanded throughout the town, particularly for visitors. Safety can be improved by enhancing street lighting on some of the main roads. This was identified during a night audit of the town. Although there are a number of areas for resting and gathering, opportunities exist to	Extend shared use path on Golf Course Road to the Golf Course and Rugby club	▪ Explore the potential to pedestrianise Bridge Street following a reduction in through traffic. The recently opened Northern Relief Road and the development of a Southern Bypass would present opportunities to provide alternative routes for through traffic.

Category	Short Term Measures	Rationale	Medium Term Measures	Long Term Measures
	• Distillery Road – Provide at least 1.8m wide footpath to address pinch points (bridge) and provision on both sides of the road; • Castlebar Road (east of distillery Road to Father Angelus Park) – provide wider footpaths, relocate street furniture, highlight route through Father Angelus Park; • New Road – footpath widening; • Newport Road (Scoil Phadraig to Pinewoods) – footpath widening; • Horkans Hill – provide accessible continuous footpath to Upper Carrowbeg Estate; • Harbour View – dropped kerbs, tactile paving, localised widening, improved crossings; • Quay Road (The Octagon to N59) – Footpath widening and improved crossing over Church Street; and • Increase footway width on South Mall. ▪ Potential Permeability Improvements: • Upper Carrowbeg Estate to the Greenway; • King's Hill to Fairways; • Upper Carrowbeg Estate and Carrowbeg Estate/Glenlara Park; • St. Mary's Crescent (Order of Malta) to provide improved connection to the Greenway from the town centre (filtered permeability with shared use path); and • Direct link from Octagon to leisure centre car park. ▪ Expand the signage / wayfinding strategy. ▪ Enhance street lighting on Altamont Street, Quay Road, Castlebar Road, Newport Road, Leenaun Road, West Road and the Greenway to improve safety. ▪ Consider the feasibility of providing increased public realm opportunities in the western half of The Octagon by reallocating parking spaces. ▪ Explore the potential for active travel infrastructure along Ardmore and Harbour View, tying in with existing infrastructure on the R335. ▪ Develop a monitoring / audit process for identifying and reporting ongoing accessibility issues. ▪ Update parklet design guide. ▪ Consider converting existing raised pedestrian courtesy crossings to formal zebra or signalised crossings in areas of high pedestrian footfall. ▪ Review and standardise provision of drop kerbs, tactile paving and consider the potential to reduce corner radii to enable a consistent access experience for people with disabilities. ▪ Provide an enhanced east – west pedestrian connection from High Street Car Park to the Leisure Centre Car Park • New footpath in High Street car park from Greenway access to Mill Street; • Introduction of new signalised pedestrian crossing on Mill Street between High Street car park and Mill Street car park; • New footpath in Mill Street car park from Mill Street to laneway connecting to Bridge Street; • New footpath through James Street car park; • Reallocate car parking spaces either side of the entrance to James St car park; and • Improved footpath in the Leisure Centre car park including improved pedestrian access.	enhance and increase these areas. One prominent location is the Octagon which would provide a focal point for the town centre if the public realm was redesigned to prioritise people.		

Category	Short Term Measures	Rationale	Medium Term Measures	Long Term Measures
Cycling	▪ Greenway / off road paths • Develop a Carrowbeg Riverside path from Ashwood to Tesco (Phase 1) with potential northern connection through Knockranny Woods / Colonel's Wood (Phase 2); • Develop a Greenway through Westport House from Church Street to Cloonmonad; and • Improved connection through Pairc Na Coille connecting Greenway Golf Course Road ▪ Greenway improvements: • Pinewoods accessibility improvements to greenway; • Provide a new crossing on R335 at Slí Na Miséan housing development to access greenway; • Provide a new crossing on Leenaun Road near the junction with Tober Hill Street to access greenway; • Increase the width of the offroad path between Church Street and Leisure Centre car park to make it accessible to cycling; • Provide resting places and benches at longer walking routes / key approaches into town; • Provide accessible connection from the Greenway to Altamont Street; and • High Street car park accessible access to Greenway (switchback ramp). Provide new shared use paths on: • Golf Course Road to new GAA pitches; • Newport Road from Pinewoods to King's Hill; • Carrowbeg Estateand • R330 (Ballinrobe Road) from Ashwood residential area to L5863. ▪ Provide a Primary Cycle Network consisting of segregated cycleways on: • North Mall from Mill Street to Newport Road (including junction upgrades); • Altamont Street / R330 from Distillery Road junction to Asshwood residential area at local road L5864, via the railway station (requires existing roundabout to be upgraded to signalised T junction with cycle phase); • Bridge Street from Castlebar Road to Circle K / Spar; • Castlebar Road from North Mall to Corrib Oil service station; • Shop Street from The Octagon to Mill Street; • Mill Street from Bridge Street to High Street Car Park; and • Quay Road from The Octagon to The Quay. ▪ Provide secure sheltered cycle parking throughout the town. ▪ Relocate and increase railway station cycle parking to avoid conflict with car park use. ▪ Investigate the potential and feasibility of providing a new bridge across the Carrowbeg River at St. Mary's Crescent. The recently delivered Castlebar Riverwalk project demonstrated that such infrastructure can be delivered at a reasonable cost. ▪ Explore the potential for active travel infrastructure along Ardmore and Harbour View, tying in with existing infrastructure on the R335. ▪ MCC to provide support for the delivery of public cycle hire scheme including e-bikes. A similar scheme was introduced in Castlebar in September 2022.	There is an existing greenway and off-road cycling network in Westport that this plan proposes to expand and improve. Gaps have been identified through engagement and network reviews which have informed the interventions set out in this plan. The opportunity for improving the whole journey experience was also identified which focuses on the connections from the greenway and into the centre of town. This leads onto the need for the primary cycle network. The primary cycle network will consist of protected cycle tracks on the corridors identified. These locations have been identified to provide cycle connections into the town centre from the north west, north east, south west and south east. These interventions also tie into new residential site and strategic residential reserves identified in the Local Area Plan. Interventions have also been developed to provide missing links, facilitate desire and reduce the length of journeys including bridges and permeability links. The plan also aims to improve accessibility for all users including adapted cycles and cargo bikes. This will be a key consideration in the design of any infrastructure.	▪ Continue to increase the cycle network reflecting the CycleConnects Plan. ▪ Extend the shared use path on Golf Course Road from GAA pitches to Rugby Club ▪ Provide cycle connections in and to new residential areas identified in the LAP including sites adjacent to Leenaun Road	Ensure that walking and cycling corridors aren't severed by the Northern Relief Road and connect with existing facilities and sustainable infrastructure associated with new developments in the area.

Category	Short Term Measures	Rationale	Medium Term Measures	Long Term Measures
	▪ Incentivise the use of cargo bikes for short freight journeys within the town by providing allocated on street parking bays and facilities. There is also potential to establish a 'bicycle library' at local schools for families to trial or include cargo bikes in a public bike hire scheme.			
Public Transport	▪ Formalise and provide accessible bus stops on Mill Street, Castlebar Road (outside The Castlecourt Hotel) and at the railway station. This would include, at minimum, provision for level boarding, a flag marking the stop and a timetable for relevant services. Additional infrastructure could include real time passenger information (RTPI), seats and shelters. ▪ Consider the provision of additional bus stops in collaboration with key stakeholders to increase the portion of the town with access to public transport services. ▪ Engage with Bus Éireann and other operators to encourage a bus network and schedule which is fit for purpose, supports a thriving economy and provides an attractive alternative to the car	The short term measures identified in this plan primarily focus on the interventions within Mayo County Council remit while also highlighting opportunities for partnership working with other organisations and providers. From a review of the existing infrastructure, a need for improved and accessible bus stops was identified. There is also opportunity to work with providers and operators to review the existing network and timetable to provide more options and flexibility for users.	▪ Assess the potential of providing a dedicated Westport town bus service through engagement with the National Transport Authority.	
Parking & Highway	▪ Work with partner organisations where required to introduce a town wide 30 km/h speed limit. ▪ Develop a Parking Management Plan (PMP) for Westport including the following: • Provide additional electric vehicle charging points in off-street car parks supported by the Electric Vehicles Charging Infrastructure Strategy 2022 - 2025; • Provide taxi ranks on Castlebar Road, The Octagon, Mill Street (Interchange); • Consider cost increases and further restrictions; • Formalise the provision of temporary car parks in schools for the tourist season with temporary mobility hubs including bike share, shuttle buses etc. The temporary mobility hubs will occupy off-street car parks such as James Street, and make use of school parking facilities such as Holy Trinity car park. The shuttle bus could loop through the town to provide stops throughout the town; • Review accessible parking provision in off-street car parks and on street – design improvement to bring to standard; • Enhance and strengthen enforcement of loading and parking violations; and • Provide new and improved existing park and ride / park and stride facilities.	Parking has been identified as an issue through engagement to date. The PMP would provide the framework to fully understand parking requirements in the town centre and enable informed decisions to be made to provide essential parking and improve access to businesses and the town centre. It would also inform the development of the other interventions proposed in this plan.	▪ Consider the potential to convert off-street ground level car park to multi-storey, enabling greater capacity for relieving on-street car parking subject to robust analysis and informed by the PMP.	▪ Explore the feasibility of providing an alternative route for through traffic to bypass the town centre with a Southern Bypass linking the N5-N59 ▪ Explore price-based demand management policies to discourage single occupancy car journeys

Figure 3-1 - Short Term Measures

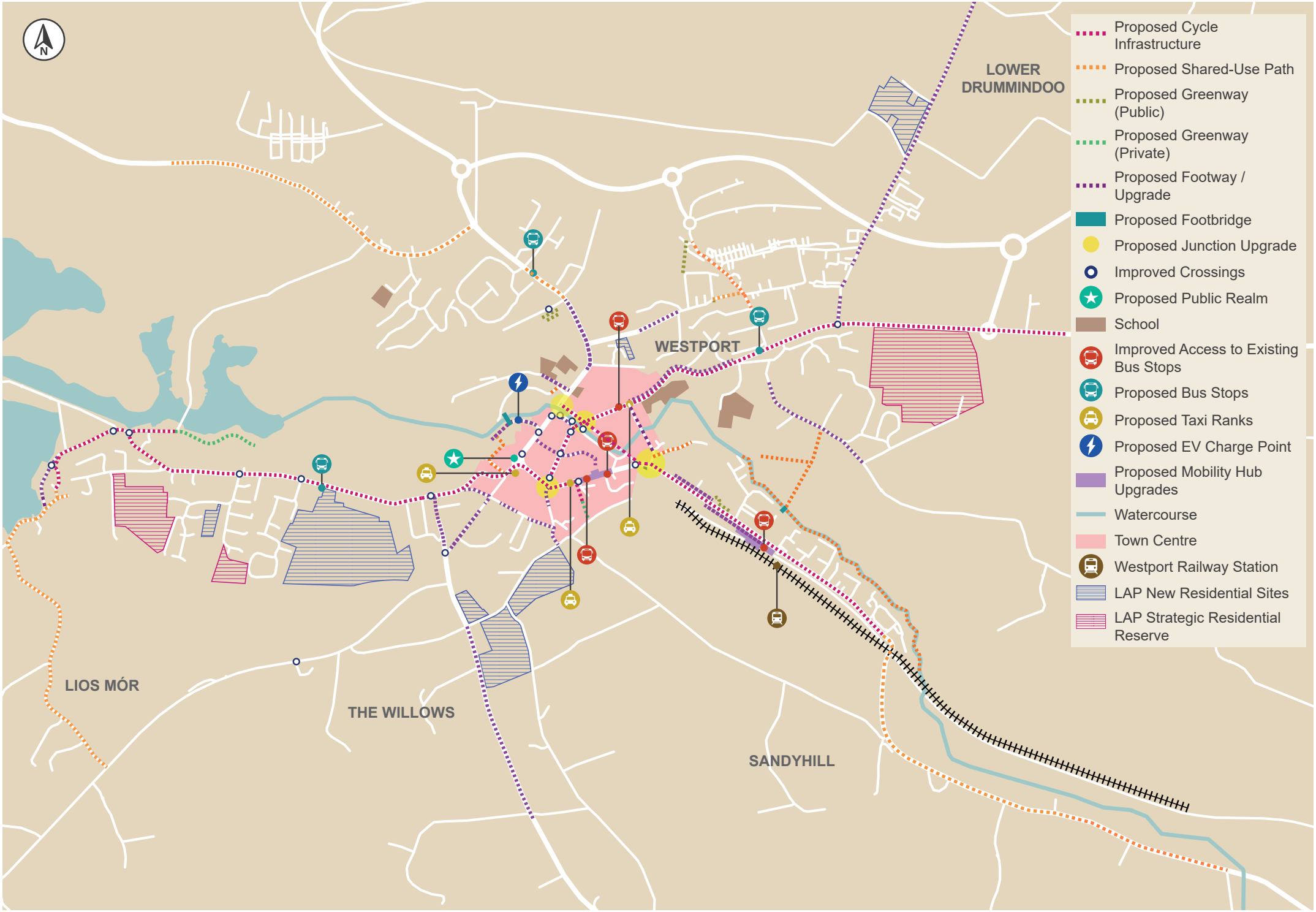


Figure 3-2 - Medium Term Measures

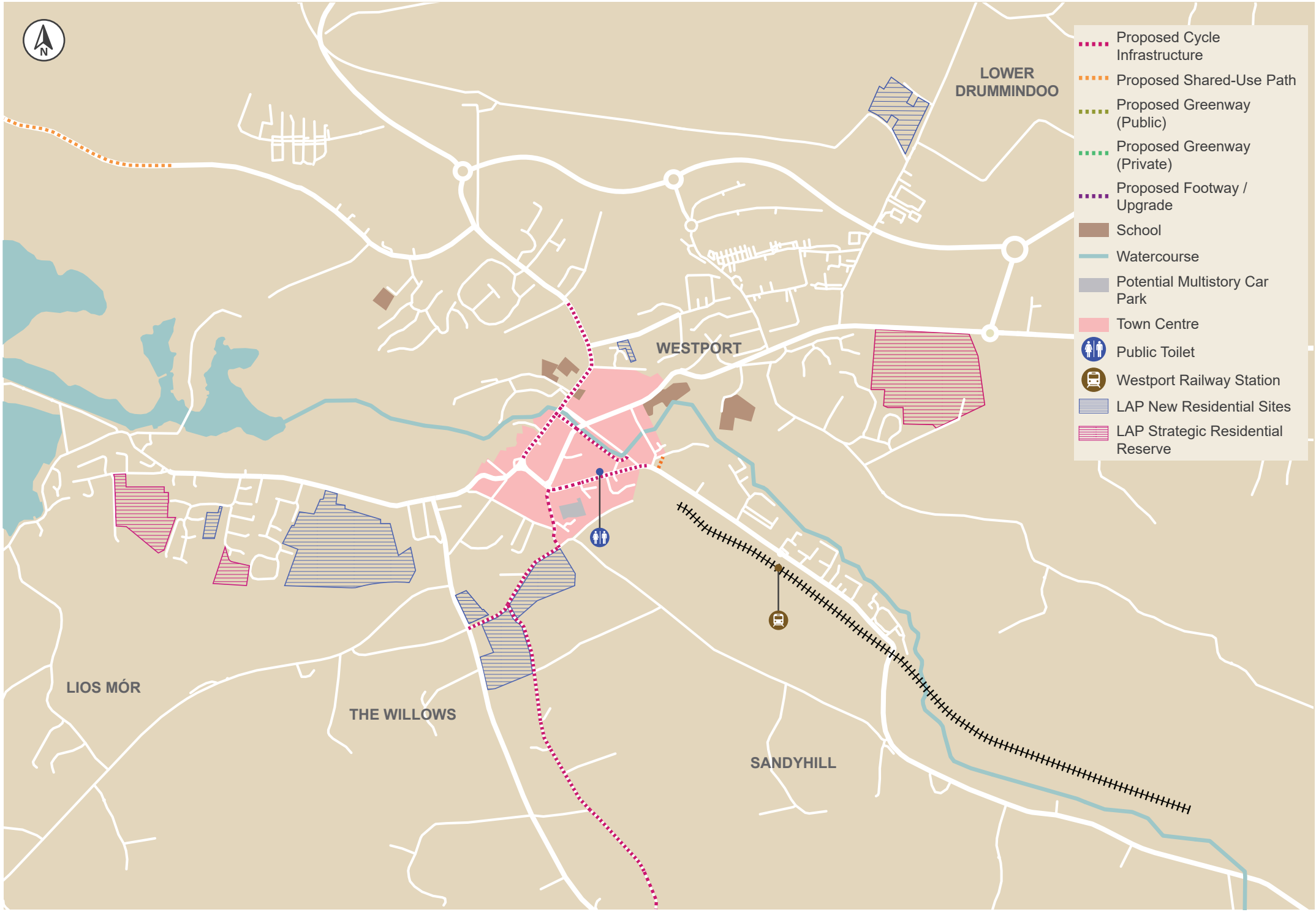
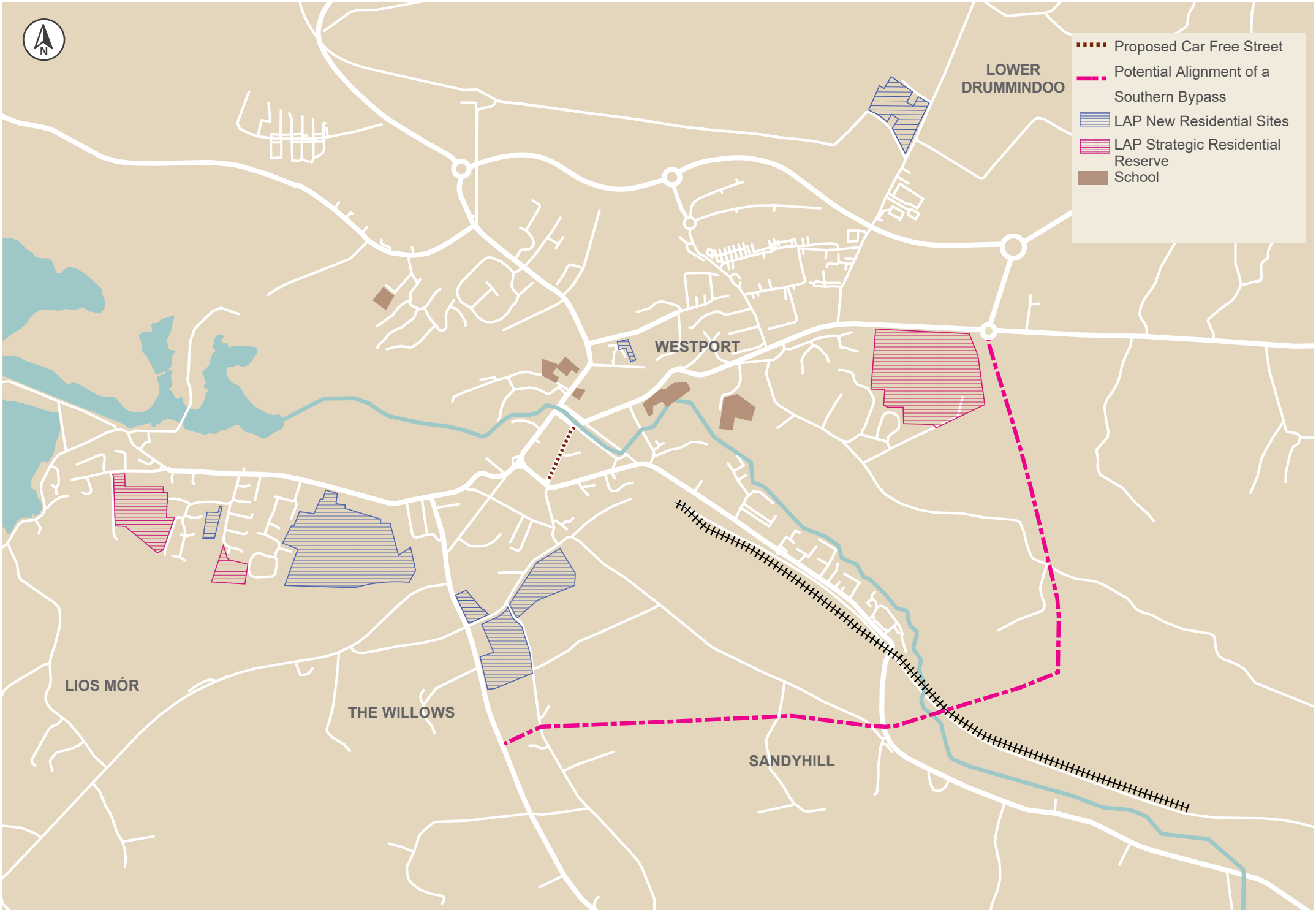


Figure 3-3 - Long Term Measures



4 CONTEXT OF OPTIONS

4.1 NETWORK PERFORMANCE

4.1.1 All proposed packages of measures (Do Minimum, Do Medium, Do Maximum) have been assessed using the forecast 2028 local area model. The assessment of the three scenarios (i.e. package options) was undertaken using network statistics, flow differences, journey time changes along key routes within the model, and network performance indicators (i.e. Volume / Capacity, junction delay).

4.1.2 There is a general increase in traffic across the network due to the background growth and rerouting due to the new N5 to the north of the Town. Overall, the network operates under capacity in the preferred "Do Maximum" scenario. However, there are a few cases of links with V/C above 70% such as the High Street and Distillery Road. It is also noted that the N59 Newport Road / Westport Industrial Park junction, N59 / N5 junction, N5 Castlebar Street / Distillery Road junction, and the R335 Louisburgh Road / Slí Na Misean junction, in both time periods, experience an increase in delays.

4.1.3 Delivery of a Southern Bypass would open up opportunities in the long term for further implementation of Active Travel measures (e.g. part/ fully pedestrianisation in the town centre / relocation road space) within Westport Town. The Southern Bypass would offer an alternative route for through traffic and would likely facilitate rerouting of some of these vehicle movements from the Town Centre to the Southern Bypass, similar to the potential rerouting of traffic to the recently opened N5 if proposed Active Travel measures on Castlebar Road were implemented as per the Do Maximum scenario.

4.1.4 Full details on the modelling can be found in **"Part 3 – Options Assessment" – Appendix B (Model Development Report)**.

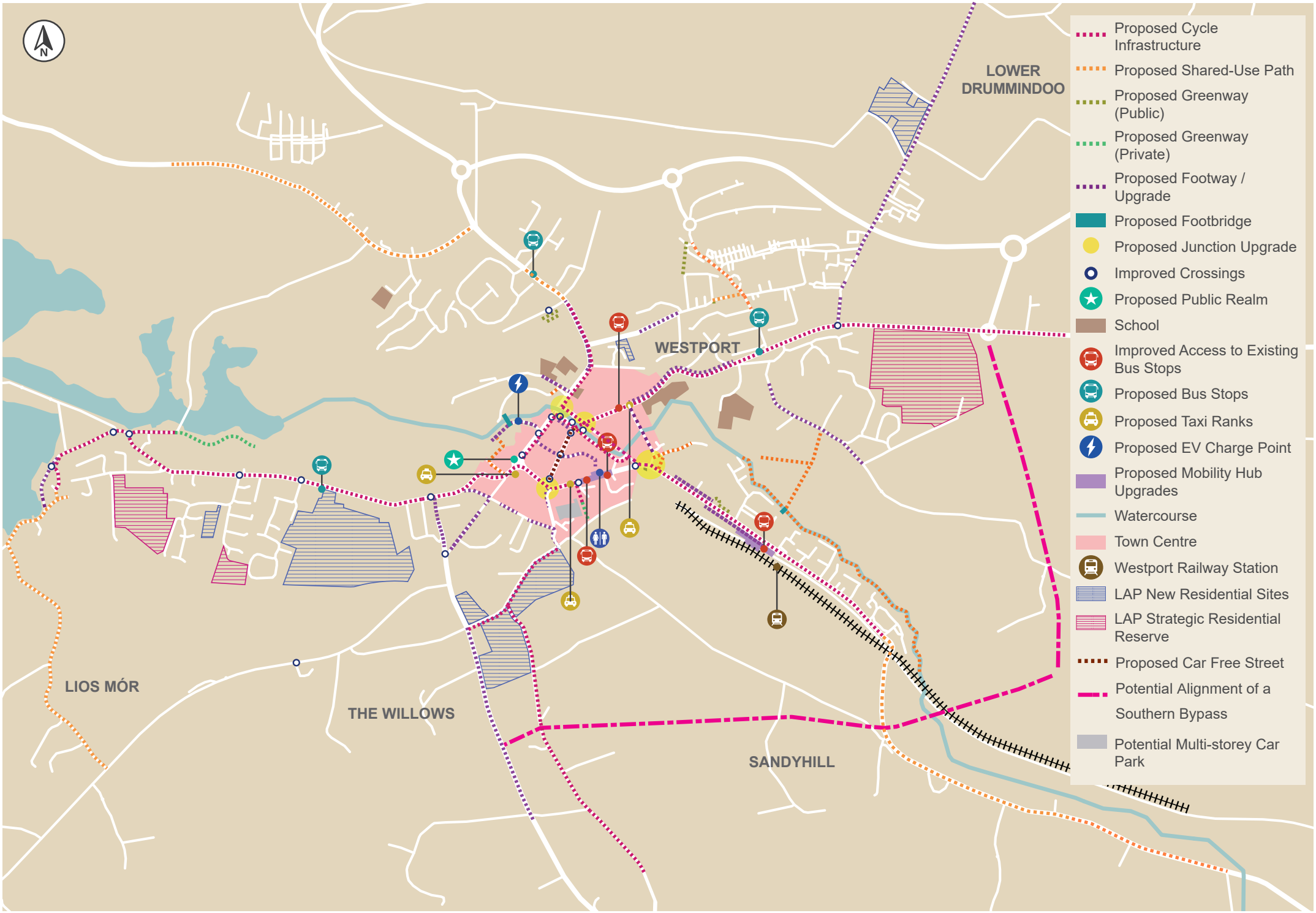
4.2 PLAN OF THE PREFERRED SCENARIO

4.2.1 The suggested improvements have been mapped as shown in Figure 4-1, overleaf.

4.2.2 The plan includes the existing active travel infrastructure, the improvements which will lead to a well connected network, as well as development sites as identified in the emerging Westport LAP. Although the Parking Management Plan is not mapped it will complement the proposed schemes in Figure 4-1 by considering their impacts on parking and identifying solutions where required.

4.2.3 To support the shift towards sustainable development, the introduction of sustainable urban drainage (SUDs) could also be incorporated into preferred scenario. This consists of measures that emulate natural drainage processes to reduce the concentration of pollutants and reduce the rate of urban run-off into natural water systems.

Figure 4-1 – Combined Measures



5 SHORT TERM PACKAGED MEASURES

5.1 Short Term

5.1.1 The short-term interventions have been packaged into four corridors which provide an outline delivery sequence. As can be seen from Figure 5-1, the four corridors are:

1. R309 Castlebar Rd to Town Centre
2. Quay Rd & N59 Leenaun Rd to Town Centre
3. N59 Newport Rd to Town Centre
4. R330 to Town Centre

5.1.2 The proposals for these corridors generally include protected cycle infrastructure, improved footpaths and upgraded junctions. There are also a number of interventions outside these corridors which are considered ancillary proposals that could be developed alongside the four corridors. Figures 5-2, 5-3 and 5-4 show the potential design approaches that could be taken to provide segregated cycle infrastructure throughout Westport. It should be noted that these are indicative only and each project would be brought through each stage of design and consultation before a design would be finalised.

5.2 Short Term Capital Cost

The National Transport Authority Cost Management Guidelines provide insight into the typical costs associated with active travel infrastructure. Table 5-1 below provides an indication into the costs associated with different types of active travel infrastructure. A full build segregated cycle track would have the highest capital cost, whereas a rapid build approach would be more cost effective but may not be suitable for every environment.

Table 5-1 - Typical Costs for Active Travel Infrastructure

Infrastructure	Cost per km
Segregated Cycle Track	€4 - €7 million per km
Urban Greenway	€1 - €4 million per km
Rapid Build Cycle Track[1]	€0.25 - €1 million per km

Once interventions and corridors progress to the design stage, there may be opportunity to explore rapid build solutions where the existing cross sections allow. This may result in corridors being designed and delivered in sections or taking a hybrid approach of full build and rapid depending on the constraints of each location.

[1] Rapid Build Cycle Tracks deliver quick and cost-effective interventions to provide segregated cycle infrastructure within existing boundaries while generally avoiding significant changes to kerbs, drainage and utilities.

Figure 5-1 - Short Term Packaged Measures

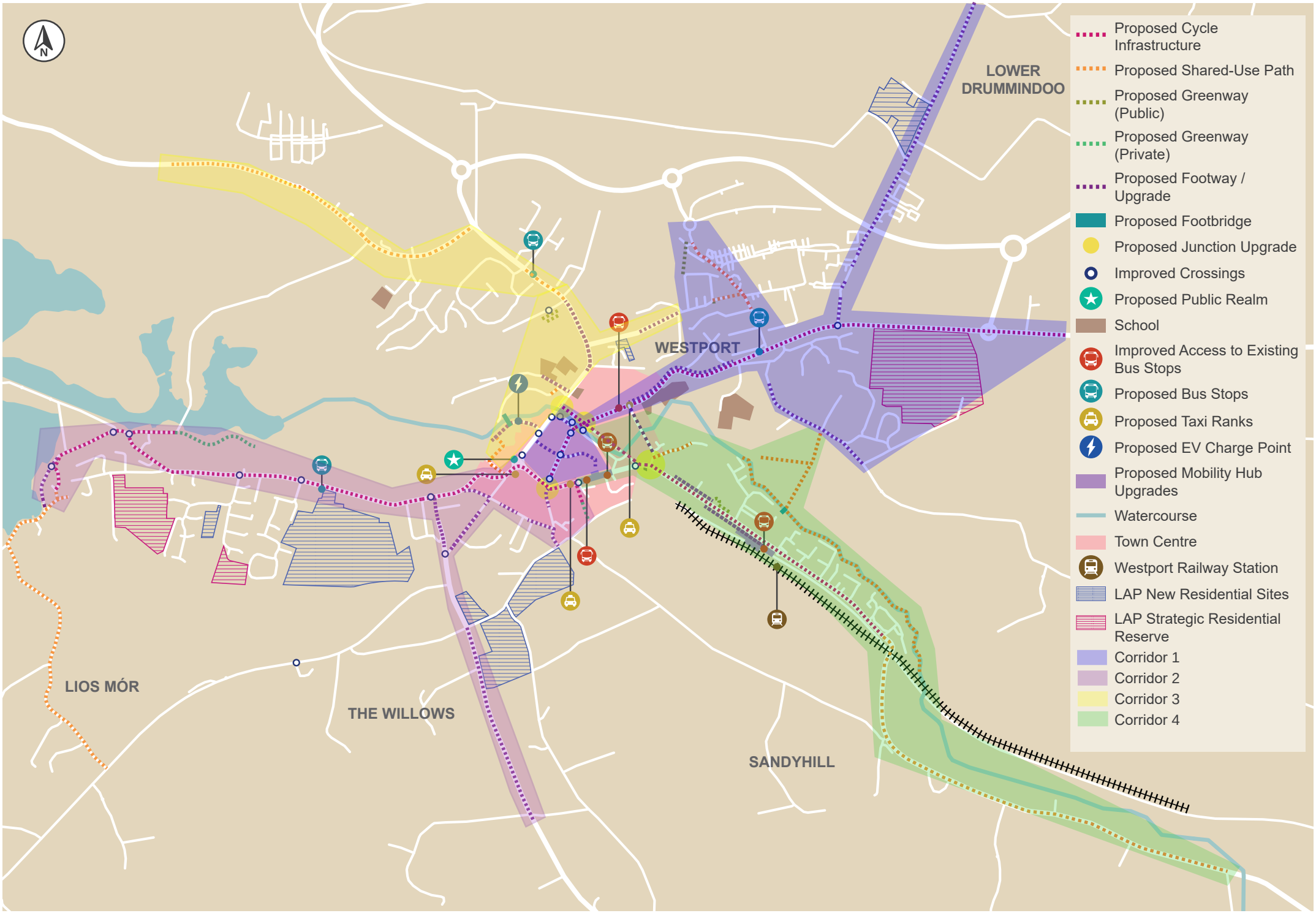


Figure 5-2 - Altamont Street – Existing and Potential Layout

Figure 5-3 - Quay Road – Existing and Potential Layout

Figure 5-4 - Castlebar Road – Existing and Potential Layout

6 PLAN OBJECTIVES

6.1 INTRODUCTION

6.1.1 In Part 2 of the ABTA process, a suite of objectives were developed to enable significant modal shift to walking, cycling and public transport in order to reduce emissions and align with national policies.

1. More effective integration of land use and transport planning to reduce number of car trips;
2. Reduce traffic movements through and within the town to reduce vehicle emissions and create opportunities to enhance placemaking by roadspace reallocation;
3. Encourage mode shift to active travel and sustainable modes and improve accessibility for all users and all journey types;
4. Accommodate the needs of businesses and local residents by suitable provision and appropriate allocation and management of parking; and
5. Enhance road safety with focus on vulnerable users.

6.2 PREFERRED SCENARIO MEETING THE OBJECTIVES

6.2.1 The overall aim of the objectives is to benefit the health, environment, and economy of Westport. The schemes will also align with respected regional and national policies that involve future infrastructure, environment, and economic advice

OBJECTIVE 1: More effective integration of land use and transport planning to reduce number of car trips

6.2.1 As shown in Figure 4-1, the preferred scenario connects the existing land uses as well as considers the future development sites to ensure they are incorporated in the urban area and supported by high-quality active travel infrastructure.

6.2.2 Furthermore, there are proposed interventions which will increase permeability of the town and subsequently shorten the trip lengths. Examples of these measures include new footbridges across the Carrowbeg River at St. Mary's Crescent and behind the railway station.

6.2.3 A Local Area Model of Westport Town has been developed to identify network locations which might come under pressure in future years.

6.2.4 The following interventions will aid the LTP to meet Objective 1:

- Extend provision of footways out to surrounding communities, particularly where new developments are proposed and / or existing centres aren't served.
- Undertake a review of wayfinding and signage to encourage walking among residents and visitors. By introducing improved wayfinding, residents can be made aware of active mode opportunities between their homes and destinations.
- Review off-street car parking for locations where better pedestrian permeability can be provided.
- The provision of additional bus stops will make bus services more accessible from current land uses, therefore reducing people's likelihood of using the private car for trips
- Working with public transport operators to review the existing bus services (including their routes and timetables) will help to ensure that they are fit for purpose, link people to their

destinations, support the evening economy and are a more attractive alternative to the private car.

OBJECTIVE 2: Reduce traffic movements through and within the town to reduce vehicle emissions and create opportunities to enhance placemaking by road space reallocation

6.2.5 Placemaking has been encouraged by pursuing the feasibility of increased public realm opportunities in the western half of The Octagon. This will remove a significant amount of traffic from the area providing a safe space for entertainment, reducing traffic noise, and lowering emissions in the area.

6.2.6 The preferred scenario details an alternative route for through traffic to bypass the town centre which would reduce the number of vehicles driving through the town and provide an opportunity for road space reallocation and reduced emissions. Reallocation of road space would provide an opportunity for better placemaking, and the space could be used for other uses than solely private car.

6.2.7 Decluttering road space will also help to create more attractive places. Equally, providing additional benches on key walking routes will help create a more inclusive environment.

6.2.8 These measures could be supported by an enhanced public transport offering, with increased service frequency[2] and operating hours in conjunction with more competitive fares. Encouraging modal shift will decrease the need for parking in the centre of town.

6.2.9 The following intervention will aid the LTP to meet Objective 2:

- Consider the feasibility of providing increased public realm opportunities in the Western half of The Octagon by reallocating parking spaces;
- Review street lighting on key routes for enhanced pedestrian safety;
- Continue development of a Southern Bypass between the N5 and the N59 south of Westport which would enable through traffic to avoid Westport town centre. This would also support Objective 3, as detailed below;
- Engage with business owners to reduce instances where street furniture blocks pedestrian movements or other uses;
- Reduce on-street parking and encourage use of off-street parking in order to allow better urban realm. Additionally, the potential conversion of an off street ground level car park to multi-storey, enabling greater capacity for relieving on-street car parking; and
- Work with public transport operators on a review of bus and rail fares to provide a competitive, integrated public transport alternative to the car.

OBJECTIVE 3: Encourage mode shift to active travel and sustainable modes and improve accessibility for all users and all journey types

6.2.10 By providing measures such as segregated cycle tracks and increased greenway connectivity to the centre of town, the preferred scenario supports the uptake of active travel in the study area in line with the Safe Routes to School and Workplace Travel Plan concepts. These concepts cover education for

[2] Particularly for connections to surrounding towns and villages that form Westport's catchment area for work and leisure.

the community regarding active and sustainable travel opportunities in their area, with potential for the inclusion of incentive schemes such as trial bus tickets or supported bicycle purchase.

6.2.11 Along with providing hard infrastructure to facilitate sustainable travel modes, changes to existing travel behaviours are essential for the full benefits of the new and enhanced infrastructure to be realised. In addition, changes in travel behaviour help support a reduction in private car reliance and help towards national climate action objectives.

6.2.12 A reduced speed limit of 30km/h throughout the town will provide a more pleasant and safer environment for active travel mode users, thereby encouraging modal shift[3].

6.2.13 A high-profile cycle hire scheme can encourage cycle use for trips around town previously made by private car, releasing parking spaces for modal shift, and reducing vehicular emissions. By providing electric cycles, less physically able users will also be able to use the scheme, improving its accessibility across the population and potential visitors.

6.2.14 By improving the quality and visibility of the existing bus stop locations, additional people might be made aware of the services and / or encouraged to use them, thereby driving modal shift. Real time passenger information could also assist in encouraging public confidence that a bus was on the way.

6.2.15 Providing proper level access and improved public realm at the Mill Street stops will enable a wider range of users to access bus services, whilst also providing a better experience from passing pedestrians who no longer conflict with bus passengers waiting / boarding / alighting. As such, modal shift will be encouraged through greater ambience and accessibility.

6.2.16 The proposition of a shuttle bus between the town centre and the railway station, timed to connect with trains, would increase accessibility to / from the railway station, allowing more people to use rail as part of their sustainable transport journey and enabling modal shift.

6.2.17 The following interventions will aid the LTP to meet Objective 3:

- Reduce speed limits to 30km/h throughout central Westport;
- Convert “Speed Tables” into formal zebra crossings, to provide greater pedestrian priority and safety;
- Engage with business owners to reduce instances where street furniture blocks pedestrian movements or other uses;
- Consider Cycle Hire Scheme providing electric cycles to compensate for the town’s hills;
- Increase the cycle network by providing safe cycle routes through off-street car parks;
- Develop existing bus stops or provide new bus stops with full facilities to enable access for people with disabilities;

[3] Implementing this on the N5/N59 in the town centre would require an exception to the TII policy regarding 50km/h being the minimum speed limit on National Road Network routes. However, given the urban nature of the town centre, we consider this a reasonable suggestion. One long term solution would be the provision of a new N5/N59 link to the southeast of Westport, as identified in Objective 2, providing a National Route for through traffic and enabling the town centre routes to be transferred to local use only, allowing for greater placemaking opportunities.

- Provide formal taxi space at key destinations in town. These should support taxi use by passengers with reduced mobility;
- Review town for locations where additional electric vehicle charging could be provided;
- Complimentary measures including workplace travel plans, mobility management plans and An Taisce Green Schools programme; and
- Consider provision of additional public toilets, including at least one Changing Place toilet.

OBJECTIVE 4: Accommodate the needs of businesses and local residents by suitable provision and appropriate allocation and management of parking

6.2.18 The scheme will aim to provide improved parking arrangements to vulnerable residents by supporting higher quality disabled parking bays. Local businesses will benefit from cargo bike incentives with proposed allocated on street parking bays and facilities.

6.2.19 Cycle parking is less space demanding than car parking. Up to ten bikes can fit in the space of one car and, with the average car carrying only 1.2 people, significantly more shopping power can be served per m^2 with cycle parking than with car parking. Reduction of on-street parking can create higher quality public spaces with parklets etc can also increase footfall on the shopping streets.

6.2.20 However, it is important to retain access for those who do not have any other option than a car. The potential to convert an off street ground level car park to a multi-storey car park, would provide off street space for parking whilst also allowing reallocation of road space to facilitate other interventions identified in the plan.

6.2.21 The development of a Parking Management Plan will provide a coordinated approach to review and identify opportunities to provide appropriate parking facilities in the town centre. It will also facilitate the development of the other interventions identified in the plan.

6.2.22 The following interventions will aid the LTP to meet Objective 4:

- Provide additional, preferably sheltered, cycle parking at various locations across the town;
- Develop a Parking Management Plan for the town;
- Enforce existing loading bays to ensure they’re not blocked by parked cars;
- Provide temporary parking spaces in underused areas such as schools during the holiday period with agreement from landowners to accommodate parking demand in the tourist season;
- Explore opportunities to provide new or improve existing Park and Ride / Park and Stride facilities;
- Review accessible parking provision within the town;
- Relocate railway station cycle parking to avoid conflict with car park use; and
- Provide car sharing facilities.

OBJECTIVE 5: Enhance road safety with focus on vulnerable users

6.2.23 Measures have been included which will aim to reduce risk to vulnerable road users by segregating them from other road traffic. Pedestrians will benefit from new signalised crossings and reduced speed restrictions to help limit conflicts.

6.2.24 A reduced speed limit of 30km/h throughout central Westport will enhance the road safety and reduce the likelihood of collisions.

6.2.25 Providing new cycle tracks on key roads to encourage modal shift will reduce possible road user conflicts by segregating cyclists from general traffic.

6.2.26 Reducing the traffic generated by vehicles moving to/from on-street parking would reduce the risk of conflict with vulnerable mode users. This would also reduce the level of circulating traffic from those looking for a parking space. In all, reducing the number of vehicle movements associated with parking on the main shopping streets will reduce the likelihood of conflict and enhance pedestrian safety.

6.2.27 The following intervention will aid the LTP to meet Objective 5:

- 30km/h speed limits
- Convert “Speed Tables” into formal zebra crossings, to provide greater pedestrian priority and safety;
- Review street lighting on key routes for enhanced pedestrian safety to ensure vulnerable road users are more visible in the dark and / or poor weather conditions;
- Provide new cycle tracks on key roads to encourage modal shift;
- Consider on-street parking charges or restrictions, to encourage use of off-street parking;
- This shift from on-street to off-street would enable urban realm improvements;
- Work with partner organisations to facilitate the development a delivery hub location on the edge of Westport, enabling freight consolidation and a reduction in the number of vans circulating the constrained town centre; and
- Consider support for cargo bikes for short freight journeys within town.

7 CONSULTATION FEEDBACK

7.1 INTRODUCTION

7.1.1 The input and perspectives shared by stakeholders, including residents, businesses, community organisations and state transport authority have played a crucial role in shaping the plan's objectives, strategies, and priorities. This section highlights the key themes and insights gathered from the consultation process, providing a comprehensive understanding of the community's needs, concerns, and aspirations for the future of local transportation. The incorporation of this feedback ensures that the LTP reflects a collaborative and inclusive approach, serving as a roadmap for sustainable and accessible transport solutions tailored to our community's unique requirements.

7.2 INITIAL PUBLIC CONSULTATION

7.2.1 A public presentation introducing the Westport LTP was held on Tuesday, 4th April 2023 at the Westport Town Hall Theatre. The public presentation outlined work done in Part 1 and 2 of the ABTA process and outlined next steps. The Council then invited submissions/observations in order to ensure that issues raised at this stage are taken into consideration on further development of the LTP.

7.2.2 The Council received more than 50 written responses in total. These came from individual residents, local businesses as public groups and schools. Dominating topics of the responses were walking / cycling, safety, public transport and parking.

7.2.3 These responses highlighted locations and proposed interventions to improve the transport provision throughout Westport. These included improved cycle and pedestrian infrastructure on the approach roads into town including Castlebar Road, Ballinrobe Road, Leenaun Road and Newport Road. The opportunity to expand and improve the existing greenway including access points was also highlighted. Respondents also identified the opportunity to improve bus services, traffic access and parking availability. All the submissions received to date have been considered and incorporated into the plan. This includes proposals for a cycle network, improvements and extensions to footpaths, development of a parking management plan and measures to manage traffic more sustainably.

7.2.4 A summary report of the received comments is included in **Appendix A – Public Consultation Report.**

7.3 PUBLIC CONSULTATION ON THE LTP DRAFT

7.3.1 Public consultation on the LTP draft is currently scheduled for late summer 2023. Upon receiving consultation feedback from all key stakeholders on the proposed interventions, this feedback will be reviewed, and updates will be made accordingly.

7.3.2 The final recommendations and associated changes will be agreed following this review.

8 MODE SHARE AMBITIONS

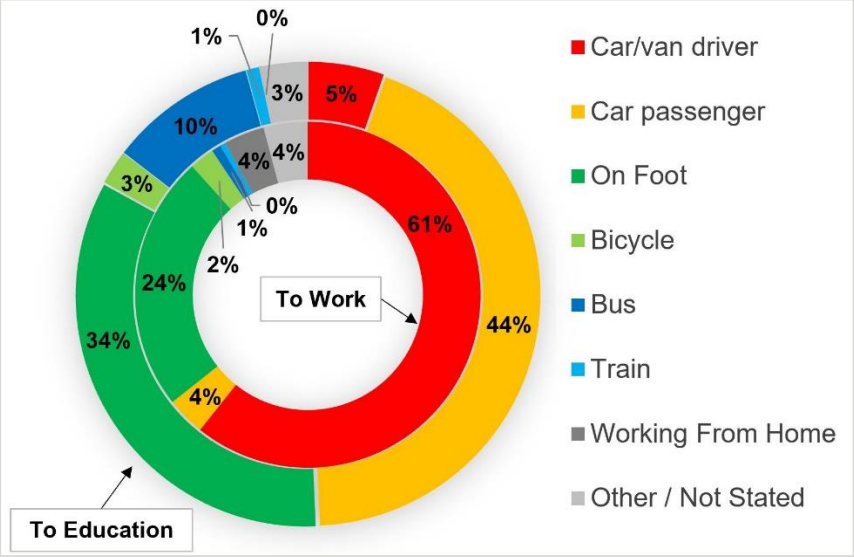
8.1 INTRODUCTION

8.1.1 The definition of mode share ambitions should reflect the amount of change which would be considered to broadly reflect a "successful" outcome of one or more objectives. It must also be recognised that many of the factors which influence mode choices are not within the direct influence of LAP/LTP. The monitoring of these ambitions should therefore look at how change has come about, rather than simply whether an ambition has been met.

8.2 BASELINE MODE SHARES

8.2.1 According to the National Household Survey, trips to and from work are the predominant trip purpose accounting for about 24% of all trips, trips to and from education are about 18% of all trips. Figure 8-1 shows travel to work and school/college mode shares recorded by Westport residents in the 2016 Census.

Figure 8-1 – 2016 Census Mode Shares



8.3 TARGET MODE SHARES

8.3.1 This LTP has been developed with the aim to encourage a modal shift from car to active travel as a viable alternative thanks to both infrastructure improvements and incentives to support a behavioural change. By prioritising walking and cycling as a first choice for everyday journeys, Westport can create a more liveable and vibrant community while reducing the negative impacts of excessive car usage. This shift towards sustainable and healthier transport options will lead to numerous social, environmental, and economic benefits for the community.

8.3.2 It is recommended the LTP set out the following mode shares targets, informed national policy, to be achieved within the next 10 years (in line with the medium-term measures):

1. Walking will be the first choice for everyday journeys within Westport. This will include trips to leisure, shopping, visiting friends, journeys to work for people both living and working in Westport and journeys to school.

2. The number of wheeling and cycling trips to work and education will be increased to 10% for those living and working in Westport.
3. The number of children driven to school will be reduced by 20% in favour of sustainable modes (walking, cycling, wheeling, public transport) and 80% of children within 1km will walk, cycle or wheel.
4. There will be a 20% reduction in the number of kilometres driven by fossil fuelled cars within Westport.

8.4 MEASURABLE TRANSPORT INDICATORS

8.4.1 Measurable performance indicators have been developed in Part 2 of the ABTA process for each of the Plan Objectives which will be used to measure and assess the performance of the Plan. Table 8-1 outlines:

- **Why?** – Objectives and targets of the Plan which are monitored;
- **How?** – What performance indicators will be used; and
- **From where?** – What data will be used for the monitoring and where it will be obtained from.

Table 8-1 – Objectives MPIs

Objective	MPI	Source of data
1. More effective integration of land use and transport planning to reduce number of car trips	▪ Average journey length ▪ Number of services within a certain catchment	▪ Census data ▪ Origin-Destination travel Surveys ▪ Land Use Information
2. Reduce traffic movements through and within the town to reduce vehicle emissions and create opportunities to enhance placemaking by roadspace reallocation	▪ Number of vehicles in Westport ▪ Air quality monitoring ▪ Carbon assessment of traffic data ▪ Availability of electric vehicle charging points and other low emission modes ▪ Low emission public transport fleet	▪ Automatic Traffic Counts ▪ Air quality monitoring ▪ Traffic Surveys comparing against a baseline ▪ Transport infrastructure information ▪ Public transport operators' information
3. Encourage mode shift to active travel and sustainable modes and improve accessibility for all users and all journey types	▪ Number of vehicles in Westport ▪ Number of pedestrians, cyclists, public transport users ▪ Number of safe and secure cycle parking ▪ Quantity of dedicated pedestrian/cycle network ▪ Quantity of facilities for people with mobility impairment and/or disabilities ▪ Number of accessible bus stops ▪ Number of bus services / routes ▪ Quantity of delivery options e.g. cargo bikes, last mile delivery etc.	▪ Traffic surveys ▪ Cycle /pedestrian count surveys ▪ Bus/train passenger information from operators ▪ Parking surveys ▪ Cycle infrastructure information ▪ National Travel Household Survey ▪ Hands-up surveys at schools ▪ Travel Plan monitoring at major employment sites ▪ Census data

Objective	MPI	Source of data
4. Accommodate the needs of businesses and local residents by suitable provision and appropriate allocation and management of parking	▪ Number of on-street/off-street car parking spaces within walking distance from the town centre ▪ Number of accessible parking spaces ▪ Car park occupancy ▪ Car park turnover ▪ Number of cycle parking spaces	▪ Parking surveys ▪ Data from parking meters ▪ Transport infrastructure information
5. Enhance road safety with focus on vulnerable users	▪ Number of Personal Injury Collisions ▪ Quantity of segregated cycle infrastructure ▪ Quantity of well-lit pedestrian/cycle network ▪ Number of dedicated pedestrian crossings	▪ Police records ▪ Road infrastructure information

8.4.2 Whilst this ABTA has investigated a number of the datasets listed in Table 8-1, above, it is recommended that MCC regularly review and identify gaps obtain further surveys to establish a baseline and keep collating the statistics for use in Part 6 of the ABTA process.

9 NEXT STEPS

9.1.1 The Westport LTP is currently in the draft form, which will be subject to a public consultation as well as discussed with stakeholders.

9.1.2 It is anticipated that the consultation will be undertaken as part of the statutory LAP consultation process, ensuring that both Transport and Development plans are integrated.

9.1.3 The LTP should continue to be closely aligned and integrated with the LAP, but it should also be viewed as a standalone plan, and considered as an input to the LAP. The NTA recommend that as part of the finalisation of the Westport LTP, the LTP should consider but not be bound by, final amendments made to the LAP. This consideration should look to incorporate changes, as far as possible, where they would complement and enhance the LTP, but any changes should not materially impact on the draft LTP design or proposals, and should align with the key transport planning principles of the plan.

9.1.4 Upon receiving consultation feedback from all key stakeholders on the proposed options, this feedback will be reviewed, and updates will be made accordingly.

9.1.5 The Draft Plan will be updated following the public consultation process to include their recommendations and to reflect their thoughts.

10 SUMMARY AND CONCLUSION

10.1 PART 4 AND 5 COMPLETION

10.1.1 This report has built upon the previous work done up to date and focused on the developed preferred scenario. It supports the integration of land use and transport planning, as well as the identification of transport objectives and measures.

10.1.2 Parts 4 & 5 will be completed when the LTP and LAP are adopted. The ABTA approach will ensure the delivery of sustainable transport objectives to meet the existing and future transport needs of the area will be supported by the Plan.

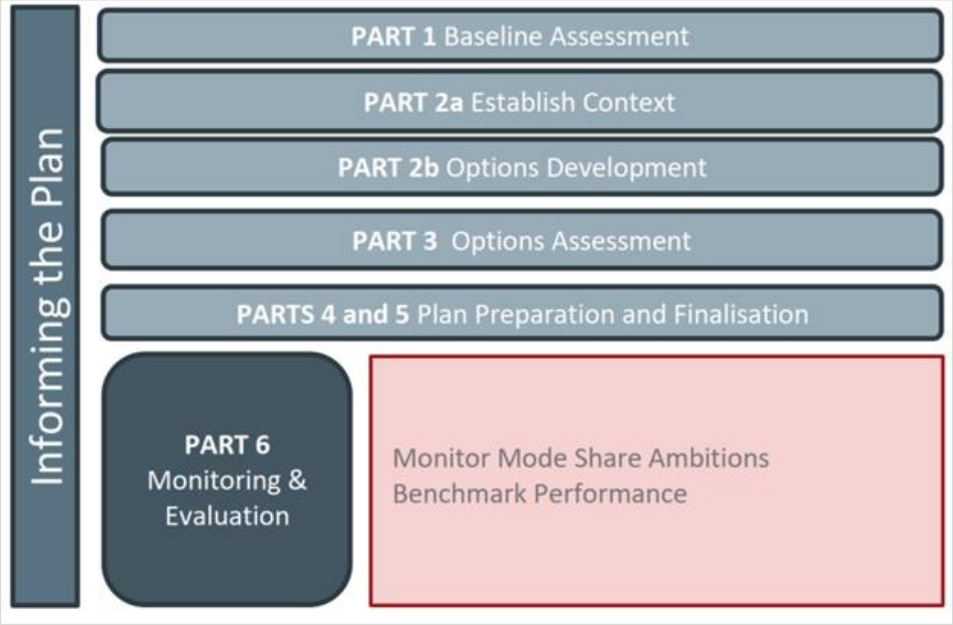
10.2 LAST STAGE OF THE ABTA PROCESS

10.2.1 As illustrated in Figure 10-1 below, Part 6 of the ABTA process is Monitoring and Evaluation.

10.2.2 Given the intrinsic role of the ABTA as part of the LAP preparation, a monitoring and review process should encompass the assumptions and objectives underpinning the ABTA's preparation. It is recommended that a monitoring and review strategy is developed for the ABTA itself as a supplemental element to the LAP monitoring and review process.

10.2.3 Monitoring related specifically to the ABTA will help identify if the ABTA requires amendment; for example, if any changes occur, through the Plan variations, or in light of different outcomes to those anticipated in relation to traffic changes.

Figure 10-1 – Part 6 of the ABTA Process 2016 Census Mode Shares



APPENDIX A

PUBLIC CONSULTATION REPORT

WESTPORT LTP – PUBLIC CONSULTATION REPORT

DATE:	09 May 2023	**CONFIDENTIALITY:**	Public
SUBJECT:	Westport Consultation		
PROJECT:	70096287 Westport	**AUTHOR:**	A Sharma
CHECKED:	P Jandik	**APPROVED:**	D Keane

INTRODUCTION

The Mayo County Council (MCC) appointed consultants WSP and Transport Insights to develop a Local Transport Plan (LTP) for the town of Westport. The LTP will have a specific focus on sustainable and active travel, making it easier and safer for people to walk and cycle around the town and have better access to public transport services.

A public presentation introducing the Westport LTP was held on **Tuesday, 4th April 2023** between 7 and 8:30pm at the Westport Town Hall Theatre. The public presentation outlined work done so far and next steps to be taken in the LTP development process.

The Council then invited submissions/observations in order to ensure that issues raised at this stage are taken into consideration on further development of the LTP. Written submissions were made to MCC during a specified two-week period between Tuesday 28th March & Tuesday 18th April 2023. This report summarises the received submissions.

RESPONSES

MCC provided a Q&A form where people could comment whether they support the ideas of LTP and use their own words on specific themes. Additionally, some respondents wrote a letter with their views. A letter with the identical text was received by MCC from multiple residents. A total of 55 responses were received and the number of responses in each category is shown in Table 1.

Table 1: Number of received responses

Category	Number of responses
Number of letter responses	52
Number of unique letter responses	11
Number of Q&A	3

LETTER RESPONSES

Around 55 responses were received in total as indicated above and among that 95% (52 of 55) of them were letter responses signed by local residents/stakeholders. Of the 52 letters, most of them included the same response but were signed by different individuals to show their involvement. The participation from different categories of people of Westport can be classified as follows in Table 2.

Table 2: Respondents categories

Category	Number of respondents
Number of Residents/Individuals	20
Number of Businesses/Companies	28
Number of Public groups/communities	2*
Number of Schools	1
Number of Student groups	1*

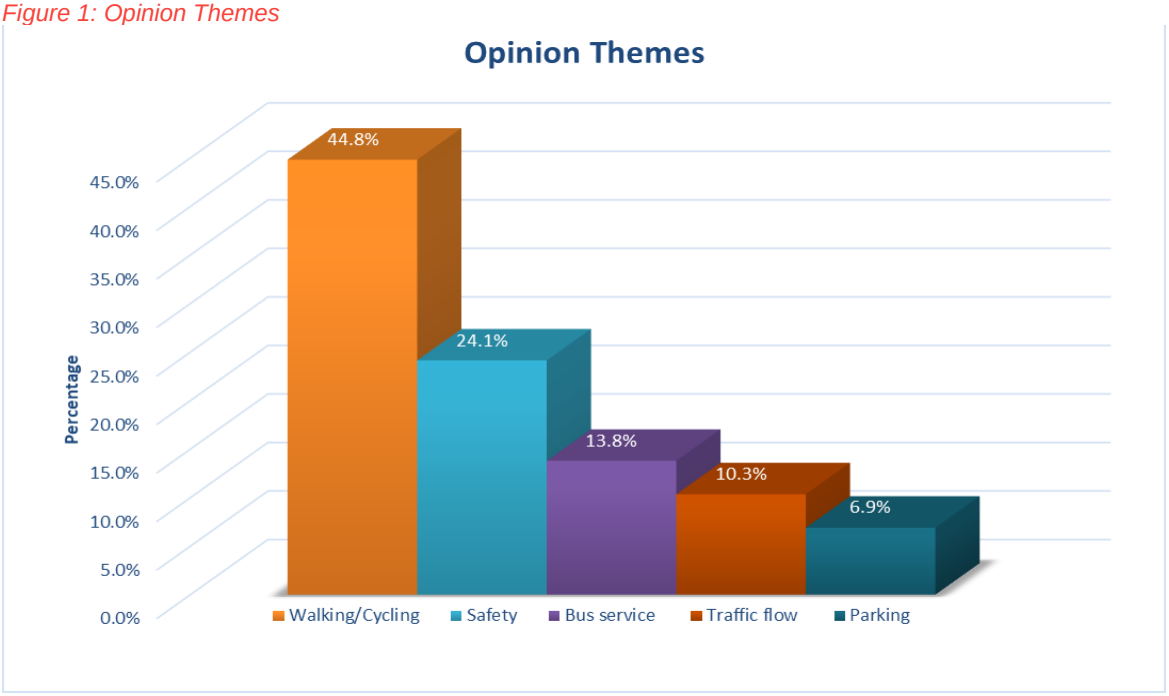
2 - 1. Ballinrobe Rd/Sandyhill Committee & 2. Westport Eco Congregation (TII is not included)*
1 - #AndSheCycles ambassadors (Sacred Heart School)*

Among the 52 letters, 11 unique letters were received which pointed out various suggestions or their observations about the proposal. The suggestions or observations were grouped together under a set of opinions themes which can be classified as shown in Table 3 and Figure 1.

Table 3: Respondents categories

Opinions	Number of suggestions	Percentage
Walking/Cycling	13	44.8%
Safety	7	24.1%
Bus service	4	13.8%
Traffic flow	3	10.3%
Parking	2	6.9%

Figure 1: Opinion Themes



The suggestions have been on issues as broken down in Table 4 below.

Table 4: Themes included in the letter responses

WALKING/CYCLING
▪ Designated cycle lanes on approach roads (Ballinrobe Rd, Leenaun Rd, Newport Rd, Castlebar Rd) and main streets to ensure safety. Cycle lanes on the approach to schools to ensure safety of pupils ▪ Linking of Greenways ▪ Cycle lanes to clubs on the Newport Road (Tennis Club, Athletics Club, Soccer Club, Squash Club, GAA, Golf Club and Rugby Club) ▪ Roads leading into the town should be accessible for pedestrians and cyclists ▪ Need for a safe walkway/footpath and street lighting (Ballinrobe Rd/Sandyhill Rd) ▪ Pedestrian/cycle paths (and lighting) on the approach roads to the town ▪ To build on the existing greenway infrastructure, by completing an integrated network of linked cycleways and put safe, segregated cycle and Walking/Cycling routes in place through the centre of town, through the junctions, and on all the radial routes to schools in the Westport area to a 5km distance ▪ More convenient Greenway access points ▪ Bike lanes ▪ Build a footpath to connect Willow Lane to the town ▪ Better access to town to walk/cycle and to access public transport easier ▪ Safe pedestrian access linking Willow Lane Road with the town centre and the green way ▪ Better access from the Greenway on the west side of town to the Newport Road/Golf Course Roadside of town
ROAD SAFETY
▪ Designated cycle lanes on approach roads (Ballinrobe Rd, Leenaun Rd, Newport Rd, Castlebar Rd) and main streets to ensure safety. Cycle lanes on the approach to schools to ensure safety of pupils ▪ To build on the existing greenway infrastructure, by completing an integrated network of linked cycleways and put safe, segregated cycle and Walking/Cycling routes in place through the centre of town, through the junctions, and on all the radial routes to schools in the Westport area to a 5km distance ▪ Pedestrian/cycle paths (and lighting) on the approach roads to the town ▪ Need for a safe walkway/footpath and street lighting (Ballinrobe Rd/Sandyhill Rd) ▪ Lack of suitable shelter on streets to allow people to walk to shops when the weather is inclement ▪ Safe pedestrian access linking Willow Lane Road with the town centre and the green way ▪ Safer crossing points
BUS SERVICES
▪ Bus service to the Newport Road (clubs) at weekends ▪ More frequent bus services from outlying areas ▪ A park and ride service ▪ A local public shuttle bus service b/w the town and the key locations in the hinterland
TRAFFIC FLOWS
▪ Traffic access to the town should be maintained and improved ▪ No form of disruption to the flow of vehicular traffic through the town ▪ A southern ring road, linking the Castlebar Rd with the West Rd/Leenaun Rd
PARKING
▪ Adequate public parking availability to include the provision of a multi-storey car park ▪ Requirement of parking availability close to the pharmacy as access is crucial to the survival of the business

Q&A Responses

Only around 5% (3 out of 55) of the received responses were submitted the Q&A forms. Of the three, two were in support of the proposal whereas the third was neutral.

Table 5: Opinion of Q&A responses

Category	Number of responses
Supporting the emerging LTP	2
No comments	1
Negative	0

The Q&A respondents were given four questions to answer:

- comments on the LTP objectives
- key transport issues now and in the future
- suggested improvements and proposals that would make Westport easier, safer and more accessible to travel around
- any specific measures and proposals they would like to see in the LTP

In addition to these questions, there was a space where they could provide any additional comments.

A summary of the feedback is presented in Table 6 below.

Table 6: Feedback from Q&A forms

SUGGESTIONS
▪ Free town centre parking in car parks. ▪ School transport needs to be addressed, shuttle bus for local children ▪ A taxi designated area off the main street/allocated pickup & drop-off areas ▪ Take speed ramps down ▪ The joining of the West Road to the Castlebar Road must be a future priority
EXISTING ISSUES
▪ Lack of parking on Bridge St ▪ Greenway to Louis burger not being completed fully ▪ Delivery trucks in the morning /afternoon and total lack of respect from taxis/hackneys in the evening/night-time ▪ Dangerous Courtesy crossing ▪ Road surfaces are quite poor along with dangerous cobbled speed ramp
IMPROVEMENTS TO SAFER AND EASIER TRANSPORT IN WESTPORT
▪ A one lane system around the town ▪ Encourage more use of bicycles/cycle lanes ▪ Completion of Greenway
MEASURES/PROPOSALS TO BE INCLUDED IN THE LTP
▪ More designated parking to be clearly marked out ▪ New guidelines for taxis/hackneys regarding double parking and pulling up in the middle of the street.

TRANSPONT INFRASTRUCUTRE IRELAND

In addition to the general public, Transport Infrastructure Ireland (TII) have also provided their comments on the emerging LTP. They issued a letter to MCC on 5th April 2023.

Their feedback is neutral, focusing elements they wish to be included rather than providing a positive or negative response to the LTP. Their key comments are:

- TII welcome that the LTP is being prepared based on the ABTA guidance. The LTP should also provide additional information on how it aligns with other policy considerations, particularly Section 28 Ministerial Guidelines "Spatial Planning and National Roads Guidelines for Planning Authorities" (DoECLG, 2012). TII also recommend elaboration on how measures proposed will safeguard the function and safety of the national road network.
- The LTP (and measures proposed therein) should align with Local Area Plan (LAP) objectives and support the LAPs land use zoning strategy.
- The LTP should acknowledge the N5 Westport to Turlough scheme and that measures should be included to provide for and safeguard its strategic functions.
- The maintenance of the existing national road network, including junctions, and safeguarding the Exchequer investment in national roads to date in accordance with the requirements of official policy should also be reflected in the LTP.
- TII acknowledges that the opening of the N5 Westport to Turlough Scheme will provide significant opportunity to implement LTP measures within the town, including at existing national road junctions.
- Pending reclassification/downgrading of the existing national road network in the LTP area, TII requests acknowledgment of TII publication 'The Treatment of Transition Zones to Towns and Villages on National Roads' in relation to design standards to be applied to national roads and national road junctions in the LTP.
- Greenway proposals should engage with the Council's internal project and/or design staff.

TII expressed their request for the preceding comments to be addressed in the LTP and that they are engaged further going forward.

SUMMARY

The public consultation received a combination of 52 descriptive letter responses and three Q&A responses from Westport participants. The responses have been analysed to understand the participants' opinion on existing transport issues in Westport and the LTP.

The letter respondents majorly pointed out suggestions regarding walking & cycling along with safety requirements while the Q&A respondents highlighted the issues regarding parking majorly and the improvements needed to overcome the same.

APPENDIX B

PART 1 & 2 SUMMARY REPORT: ESTABLISH CONTEXT & OPTIONS DEVELOPMENT

Mayo County Council

WESTPORT LOCAL TRANSPORT PLAN

Summary Report Part 1 and 2

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1 INTRODUCTION

1.1 BACKGROUND

1.1.1 WSP and Transport Insights have been appointed by Mayo County Council to produce a Local Transport Plan for Westport, following the Area Based Transport Assessment (ABTA) process.

1.1.2 This ABTA will seek to facilitate and inform the integration of land use and transport planning at the earliest possible stage in the preparation of the emerging Local Area Plan, with an emphasis on enabling sustainable transport outcomes for the Plan area.

1.1.3 The report provides findings of a baseline conditions assessment which identifies the current travel patterns and outlines strengths, weaknesses, opportunities, and threats to inform the development of potential transport objectives and measures within the Plan.

1.2 THE LOCATION

1.2.1 Westport is located in County Mayo on Ireland's west coast as shown in **Figure 1-1**. With over 5,750 inhabitants in the Westport Urban area and more than 1,500 in the immediate Rural area around it (**Figure 1-2)**, Westport is the third largest town in the county. It lies approximately 17km to the southwest of Castlebar, County Mayo's largest town, and about 250km to the west of Dublin. It is a popular tourist destination providing a tourist gateway for West Mayo and the wider region.

Figure 1-1 – Location plan

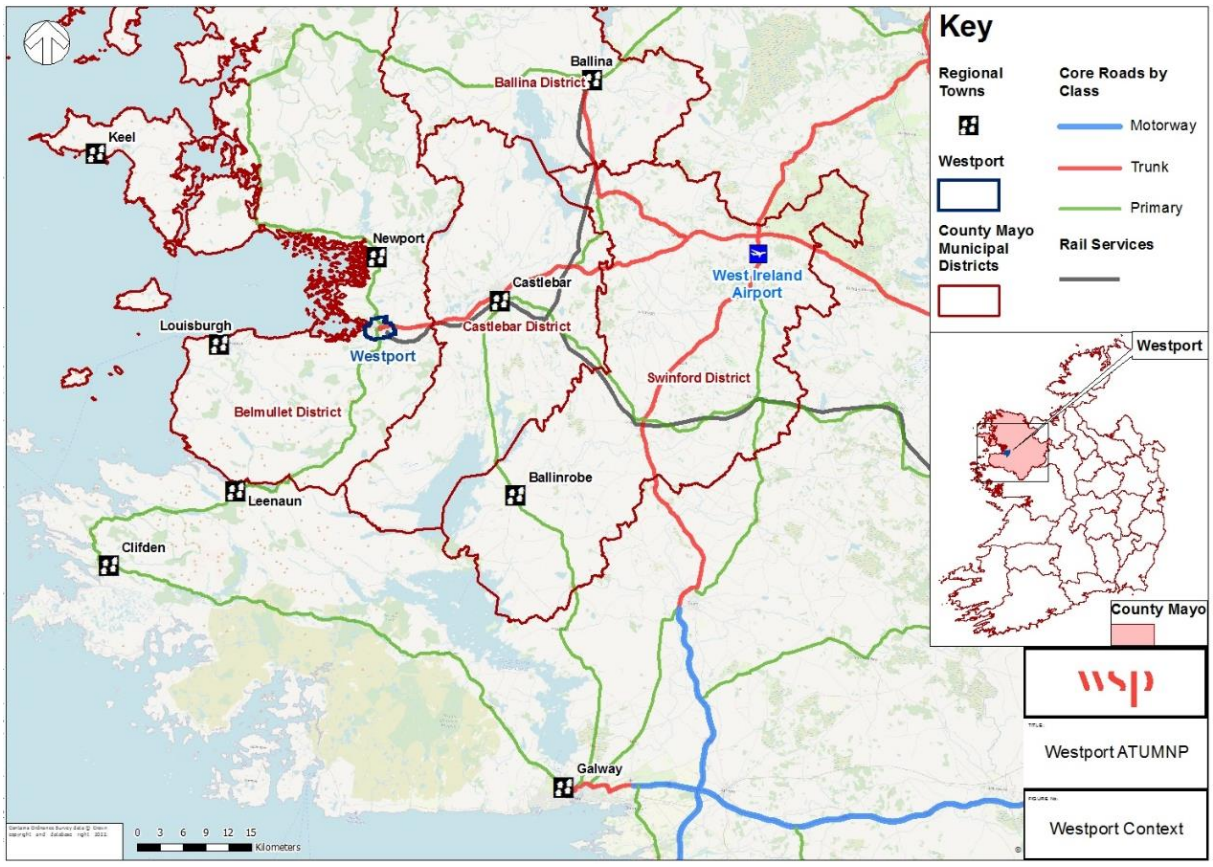
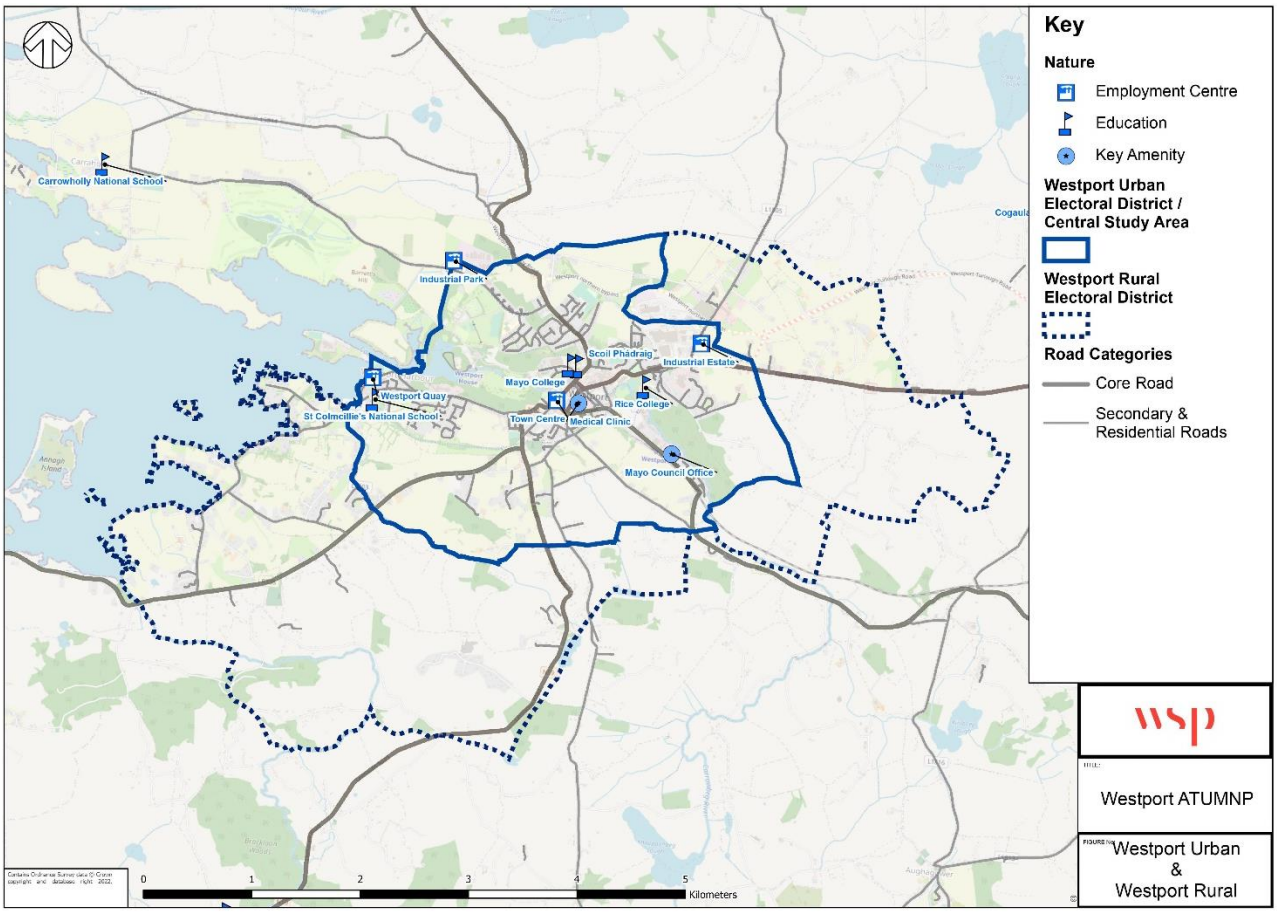


Figure 1-2 - Westport urban and rural boundaries

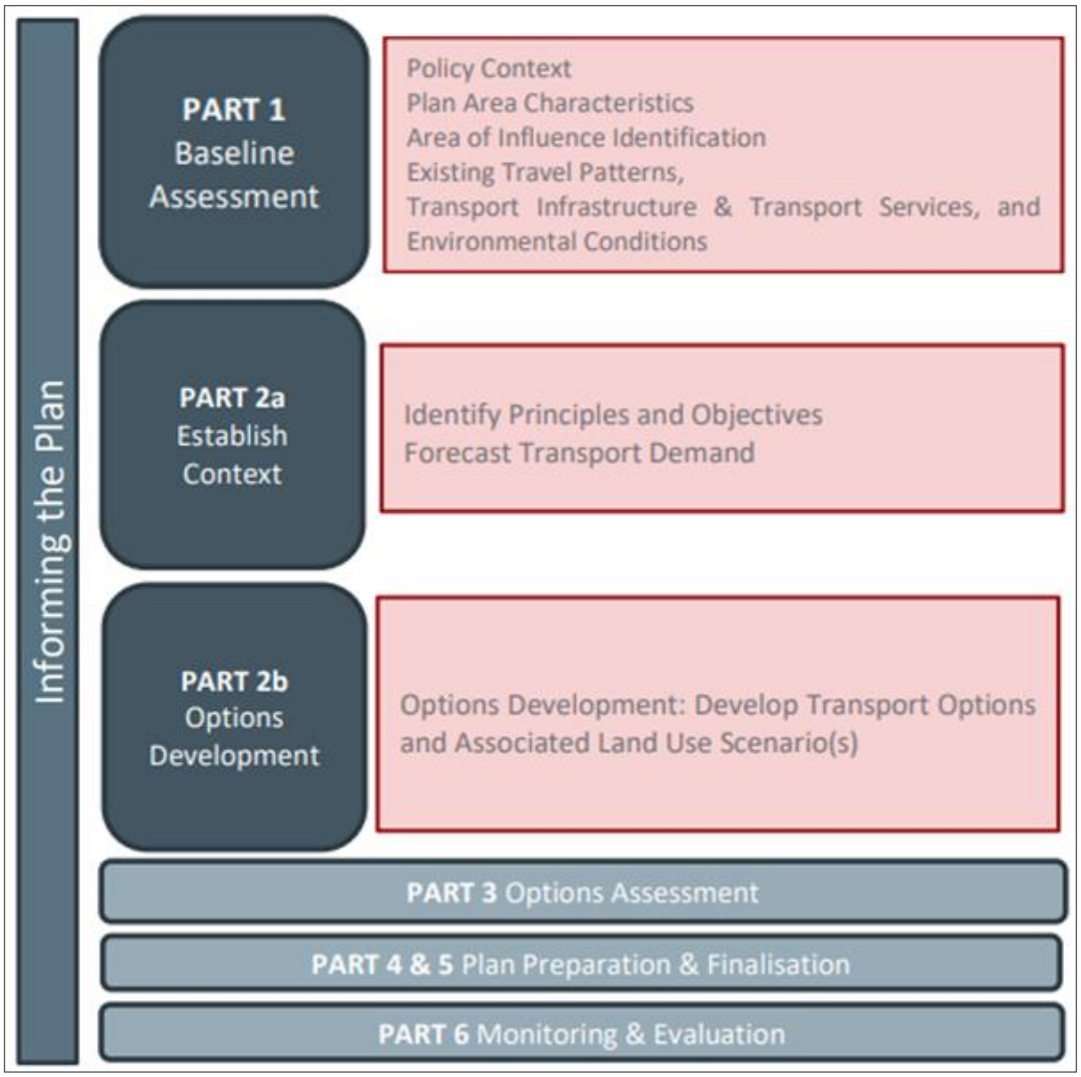


1.3 ABTA PROCESS OVERVIEW

1.3.1 This report has been developed in accordance with ABTA 'How to' Guide issued by the National Transport Authority (NTA) and Transport Infrastructure Ireland (TII). The document provides a guide and practical advice to enable a consistent approach in undertaking transport assessments.

1.3.2 As shown in **Figure 1-3**, the preparation of an ABTA includes six key stages. Part 1 of the process, which is the key subject of this report, establishes the receiving plan area characteristics in terms of transport demand and travel patterns, mode split and infrastructure provision. Part 2 then establishes the main principles and objectives and outlines options of possible interventions.

Figure 1-3 – Baseline assessment as part of the ABTA process



PART 1: BASELINE ASSESSMENT

2 POLICY CONTEXT

2.1 OVERVIEW

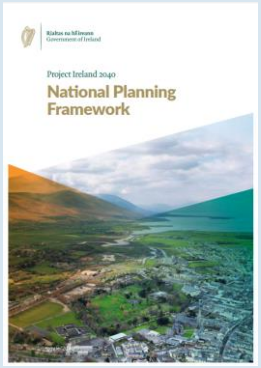
2.1.1 National and regional policy and legislation (including the NPF and RSES) set out a clear requirement to increase travel by sustainable modes – walking, cycling and public transport – and to reduce demand for travel by private car in order to meet climate change goals.

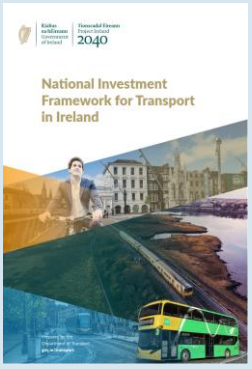
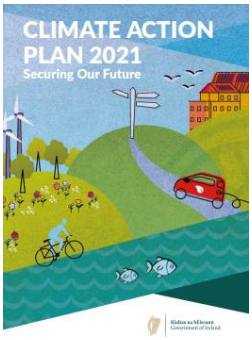
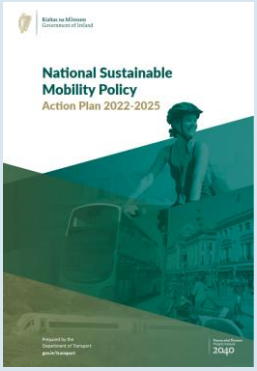
2.1.2 This section of the report details the policies, strategies and documents that are applicable to the Westport ABTA.

2.2 NATIONAL POLICIES

2.2.1 **Table 2-1** lists the national policies and documents that have been reviewed as part of the ABTA process:

Table 2-1 – National policies

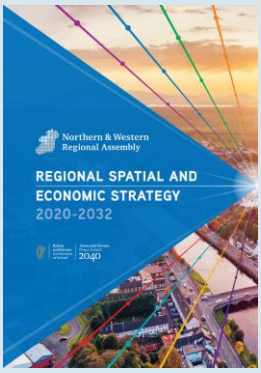
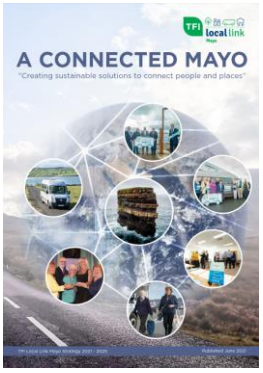
Policy Document	Summary
Project Ireland 2040: National Planning Framework 	Project Ireland 2040 is the overarching policy and planning framework for the social, economic and cultural development in Ireland set out in seventy national policy objectives. This project aims to directly align with National Policy Objective 28, to "ensure the integration of safe and convenient alternatives to the car into the design of our communities, by integrating physical activity facilities for all ages, particularly prioritising walking and cycling accessibility to both existing and proposed future development, in all settlements."
National Development Plan 2021-2030 	This plan sets out a number of National Strategic Outcomes (NSO) including NSO – 2 which seeks to enhance intra-regional accessibility through improving transport links between key urban centres of population and their respective regions, as well as improving transport links between the regions themselves. This also identifies active travel as the top strategic investment priority.

Policy Document	Summary
National Investment Framework for Transport in Ireland (NIFTI) 	This is the strategic framework for future investment decision making in land transport. It will guide transport investment in the years ahead to enable the National Planning Framework, support the Climate Action Plan, and promote positive social, environmental and economic outcomes throughout Ireland. Active travel is at the top of the modal hierarchy in terms of investment which aligns with this project.
Climate Action Plan 2021 	The Climate Action Plan (CAP) 2021 recognises that Ireland must achieve a significant modal shift from car to active travel and public transport if the country is to achieve the target of a 51% reduction in greenhouse gas emissions by 2030 and ultimately net zero by 2050. CAP sets a target for 500,000 additional daily active travel and public transport journeys by 2030 and investment planned under the current NDP will be directed toward achieving that challenging target.
National Sustainable Mobility Policy 	This sets outs a framework to 2030 for active travel and public transport to support Ireland's overall requirement to achieve a 51% reduction in greenhouse gas emissions by 2030.

2.3 REGIONAL POLICIES

2.3.1 **Table 2-2** lists the regional policies and documents that have been reviewed as part of the ABTA process:

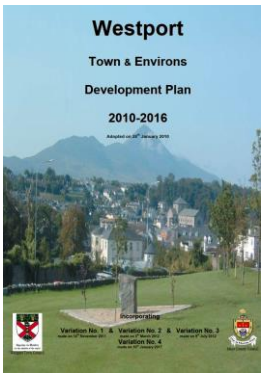
Table 2-2 – Regional policies

Policy Document	Summary
Regional Spatial & Economic Strategy (2020-2032) 	The strategy seeks to anticipate and plan for jobs growth and economic development at the regional level. The RSES identifies Westport as a location with strategic development potential of a regional scale, a potential which is best achieved by building on the existing economic, transport, commercial, and social links with the nearby Castlebar. These links will be strengthened by the upgrading of the N5, which will reduce the commuting time between both towns. It also advocates for the need to improve rail services to Dublin and the potential to provide rail connectivity to the south which would enhance sustainable transport connections to Ireland West Airport and its associated nearby SDZ. The upgrading of the entirety of the N5 to a TEN-T 'High-quality Road' and the provision of relief roads to the north and south of the town would enable the potential of the town and remove service barriers.
A Connected Mayo: TFI Local Link Strategy (2021-2025) 	A Connected Mayo - "Creating sustainable solutions to connect people and places" sets out the priorities for TFI Local Link Mayo until 2025. The document describes the plans to create a responsive, integrated, and accessible transport network to serve the population of County Mayo. It envisages a network where access to transport is available to enhance the quality of life to all who live, work, visit and socialise in the county and advocates for improvements to transport accessibility in both rural and urban areas.
Mayo County Development Plan 2022-2028 	The Mayo County Development Plan 2022-2028 sets out the roadmap for the overall proper planning and sustainable development of County Mayo over the plan period. It informs decisions on where public services such as roads and water infrastructure are to be provided and affects the type of buildings that can be constructed and how land is utilised. It influences many facets of daily economic and social life, in terms of where people can live, what services and facilities are available and where job opportunities are to be sited. The plan also sets out policies to support sustainable mobility and promote the transition to a low carbon integrated transport system.

2.4 LOCAL POLICIES

2.4.1 **Table 2-3** lists the local policies and documents that have been reviewed as part of the ABTA process:

Table 2-3 – Local policies

Policy Document	Summary
Westport Town & Environs Local Area Plan (2021-2027) Pre-Draft Issues Paper 	The purpose of this document is to set out a land use strategy for the proper planning and sustainable development of the area, incorporating a framework for the development of transportation, housing, retail, heritage, employment, social and community facilities. It outlines how the co-ordination of transport and land use planning will play a pivotal role in the sustainable development of the local economy. Where and how residential and work environments are built and integrated with transport infrastructure including roads, footpaths, cycle ways, buses, and rail infrastructure, is fundamental for sustainable communities, climate action and quality of life considerations. The document includes a new focus on the importance of urban design and placemaking to the future of the town and requires the examination of all elements that contribute to the identity of a place, such as buildings and their uses, streets, footpaths, open spaces and ensuring that these elements blend harmoniously to create an attractive and distinct public realm. Public realm is defined as all external spaces that are publicly accessible, including streets, parking areas, footpaths, squares, and parks.
Westport Town & Environs Development Plan (2010-2016) 	This development plan formed the basis for the progressive and sustainable development of the area until 2016. When the Town Councils were abolished in 2014, the lifetime of these plans was automatically extended in accordance with the provisions of section 11A of the Planning and Development Act 2000 (as amended). The document which supersedes it is still to be adopted. The principal objectives of the plan pertinent to this report are: - To provide a framework which will allow for a balanced and coordinated development of the plan area in the interests of the common good and the proper planning and sustainable development of the area. - To reinforce the existing strong urban structure and to consolidate and extend the urban core while protecting the unique drumlin topography of the town. - To clearly indicate the overall development strategy for the plan area including areas capable of accommodating built development, the conservation of certain areas and the provision of passive and active amenity and recreation spaces. - To provide for a mix of uses within the plan area which will increase the viability and the sustainability of residential areas, and which will allow for the efficient provision of social and community infrastructure as well as the efficient use of existing services and utilities infrastructure. - To identify the requirement for new roads and other infrastructure and to indicate the routing and/or land requirements for such proposals.

Policy Document	Summary
	- To identify lands for employment and enterprise uses. - To control the spread of uncoordinated ribbon development in the environs of Westport in the interests of the common good and the proper planning and sustainable development of the area.

3 PLAN AREA CHARACTERISTICS

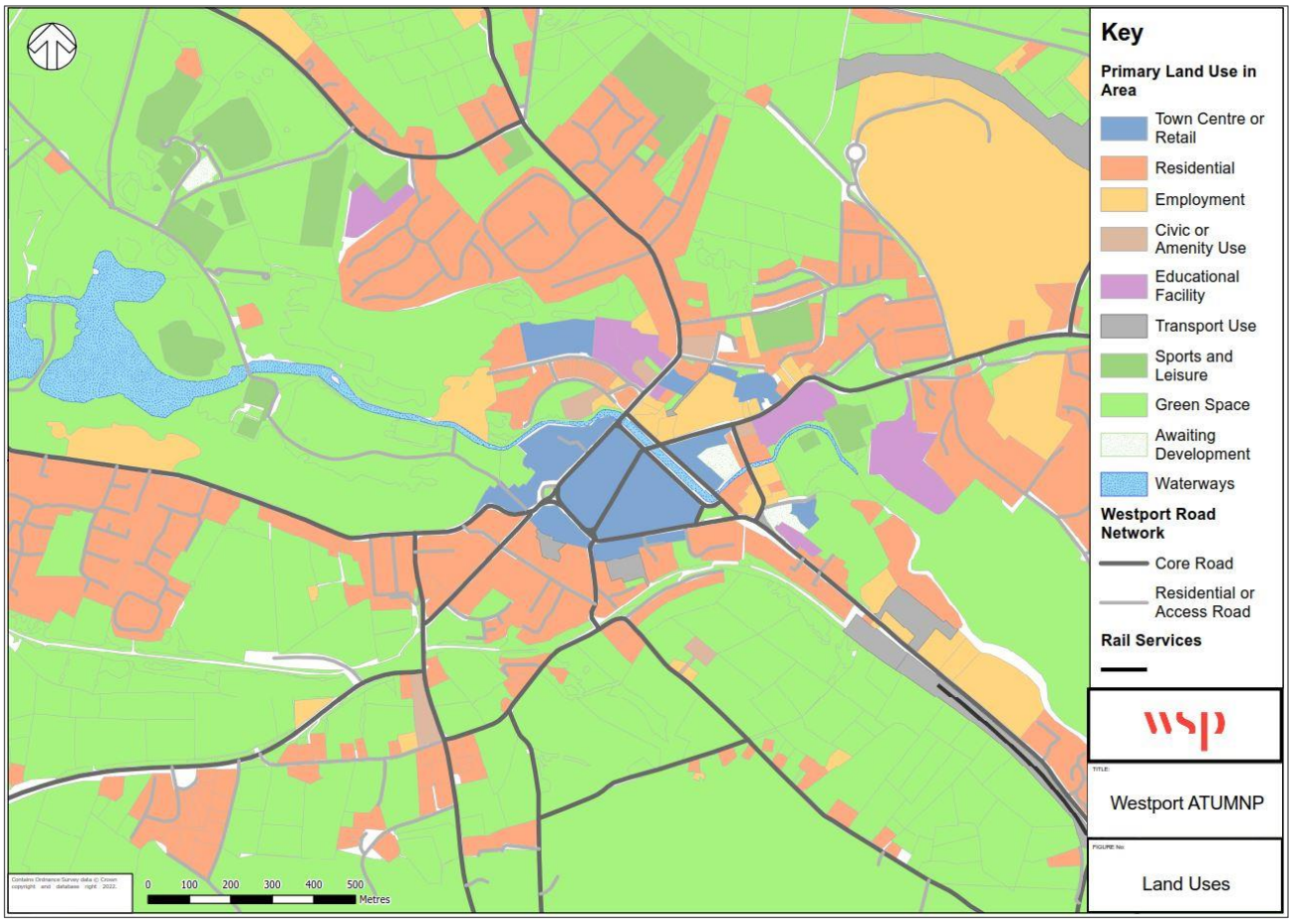
3.1 OVERVIEW

3.1.1 A review of existing land uses within the study area has been undertaken to identify the locations and intensities of land uses categorised as trip generators (residential) and trip attractors (destinations). The review extends to settlements which are external to the town, to consider movements to/from settlements around Westport that generate cross boundary inter-settlement movements.

3.2 LAND USES

3.2.1 Within Westport town centre the primary land use is retail, with shops and hospitality businesses occupying most of the land encircled by and adjacent to the informal ring road formed between Mill Street, North Mall, Shop Street and James Street. Retail premises beyond the town centre are typically large footprint stores with surface level parking, e.g. the Lidl located north of the town.

Figure 3-1 – Land uses



Source: OpenStreetMap

3.2.2 In addition to the town centre sites, there are two large hospitality employers at the Knockranny House (to the east of the town centre) and Westport Wood Hotel (to the west). Further out-of-town-centre employment is provided by several light industrial sites distributed around the town, including a large

industrial estate north of Castlebar Road[1], a site opposite Westport's Railway Station and Westport Industrial Park off of the N5 to the northwest of town. Further details of the employment land distribution can be found in paragraph 3.4.1.

3.2.3 In addition to the employment sites, the town has several educational facilities. As shown in **Figure 3-1** the larger facilities are located to the north and northeast of the town centre. Significantly, these include Sacred Heart Scholl (circa 560 pupils) and Mayo Higher Education College[2].

3.2.4 Residential development extends beyond the town centre in all directions, surrounding it and typically following key arterial routes. While residential development is limited south of the town, it consists of older, terraced properties which extend up the hills surrounding the southern approach to the town. This form of development is reflected by the higher population density identified in **Figure 3-2**.

3.2.5 North and east of the town has seen more recent residential development where detached and semidetached housing arranged on estates and cul-de-sacs are the norm. Vehicular access to the town from the north and east is limited to Newport Road and Castlebar Road respectively. These cul-de-sac designs have limited pedestrian permeability, potentially encouraging car usage to avoid needing to walk around the estate to reach the main roads.

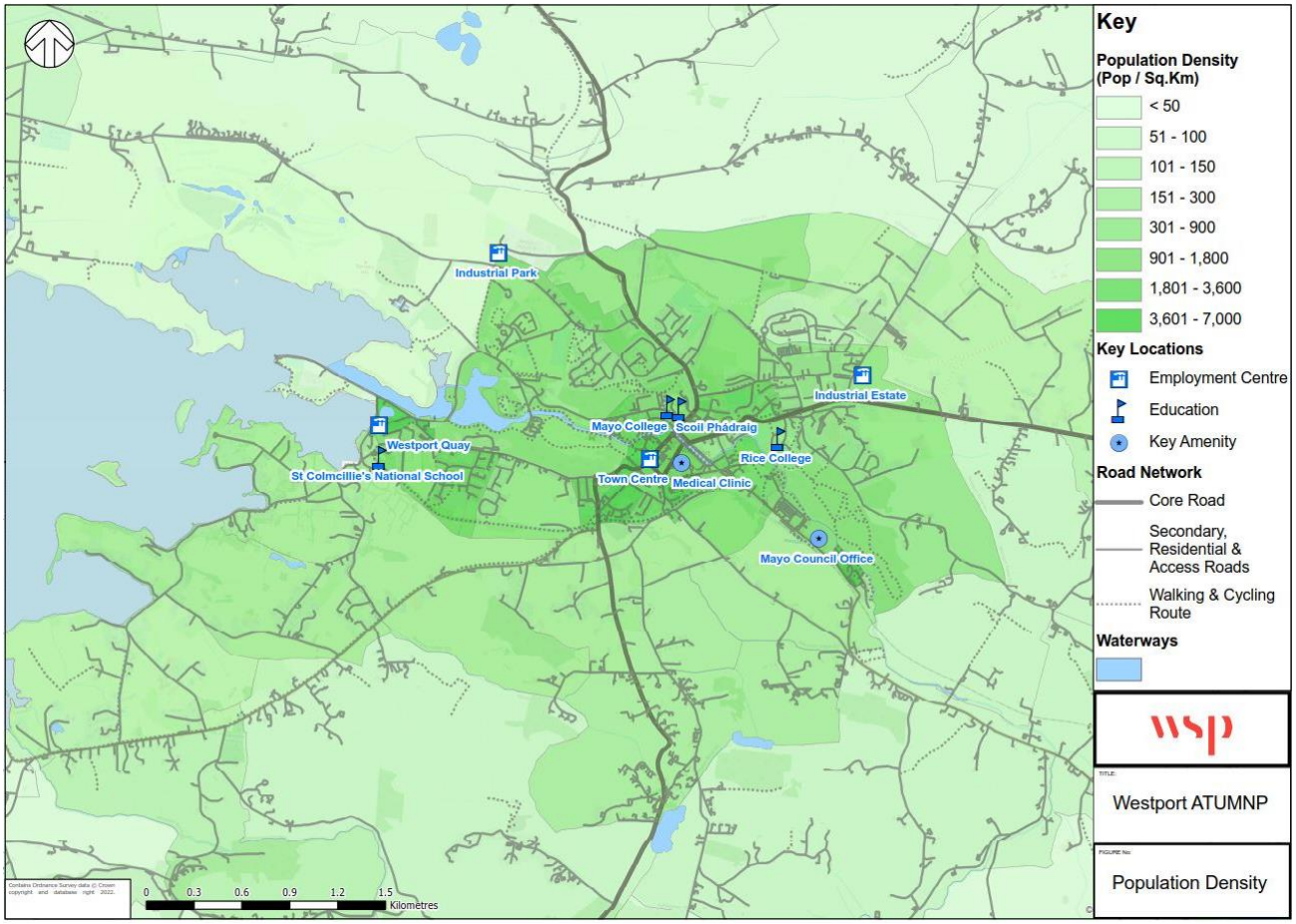
3.2.6 Development west of the town centre is concentrated on several estates south of Quay Road with Westport House to the north occupying a wooded green space of a similar size to the town centre itself.

3.3 TRIP GENERATORS

3.3.1 Trip generators are locations where people live and start their journeys to work, school or other destinations. **Figure 3-2** shows the population density across Westport.

[1] This site is dominated by the headquarters of AbbVie, a biopharmaceutical company which employs approximately 1,400 people in the area.
[2] Mayo College of Further Education has circa 1.000 students, however these are split over multiple hubs, with the exact distribution of students between campuses not easily available.

Figure 3-2 – Population density



Source: Data obtained from the Central Statistics Office 2016 Census Data. Presented at Small Area Population Statistics (SAPS) level.

3.3.2 The most densely populated areas of the town are the historic streets of the town centre and the area around Westport Quay. The next key population areas are to the north of the town in the estates astride the N59 corridor and to the east of the town centre in the Carrowbeg Estate area.

3.3.3 The concentration of population in the town centre supports walking and cycling access to employment and amenities located in the area, as well as the transport hubs. Similarly, the population density in Westport Quay allows access to the employment and amenities present in the area, whilst the Carrowbeg Estate is in walking distance of the town centre and the industrial estate to its east.

3.3.4 Overall, the compact nature of Westport, with the centrally concentrated population and amenity location, should enable a considerable portion of trips to be made by walking and cycling, as well as providing critical mass for public transport services[3]. There are several issues that might currently be reducing people's ability or inclination to use these modes, which are discussed in greater detail in Chapter 7 (regarding infrastructure) and Chapter 8 (regarding the town's topography).

[3] Public transport usage generally correlates with the population within walking distance of stops.

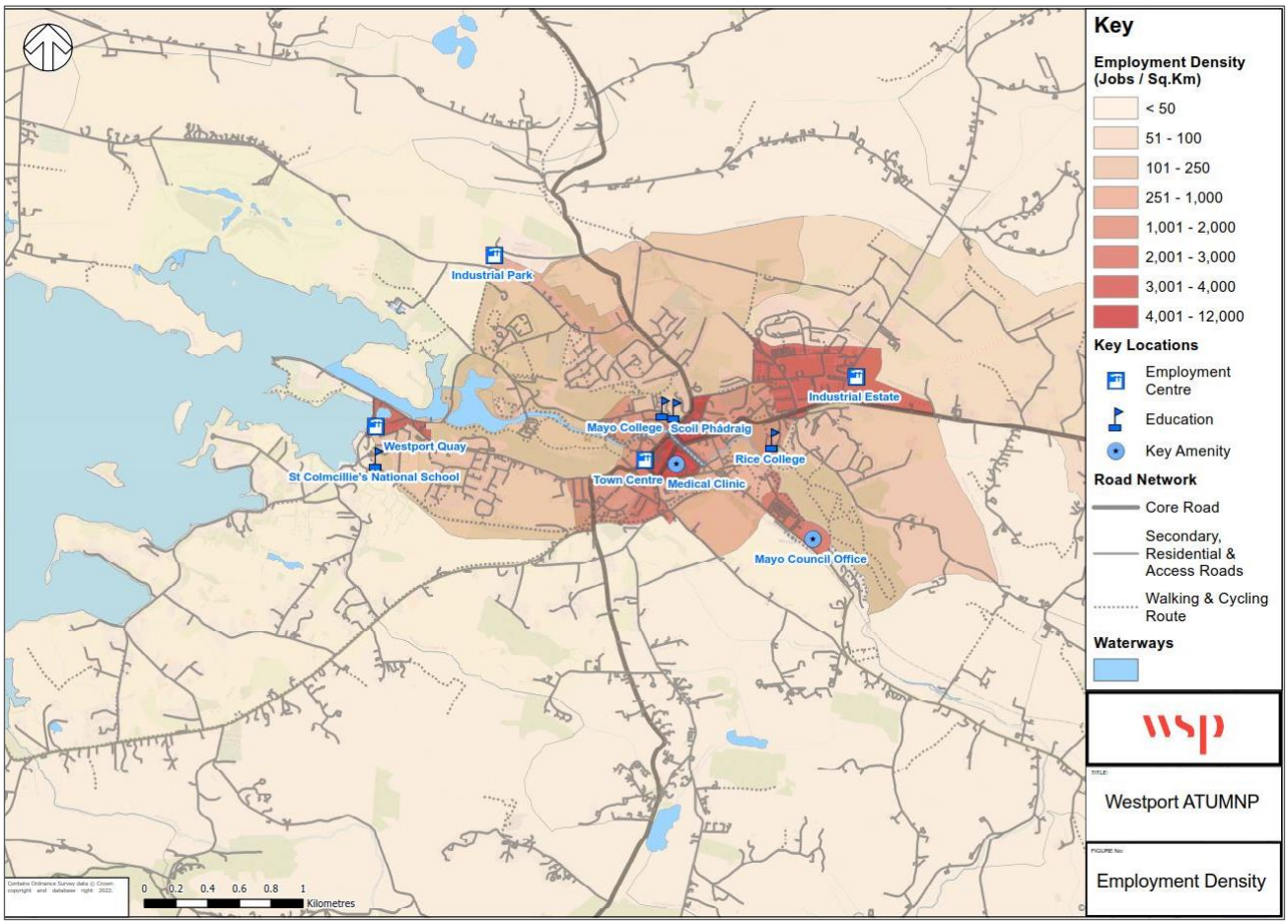
3.4 TRIP ATTRACTORS

3.4.1 Employment density is most highly concentrated in the town centre and the previously identified industrial estate north of Castlebar Road and adjacent to the railway station. The estate is dominated by the headquarters of AbbVie, a biopharmaceutical company which employs approximately 1,400 people in the area.

3.4.2 Westport Quay also hosts a number of leisure employment, particularly hotels and water sports activity businesses.

3.4.3 While beyond the areas of higher employment density, employment sites are located fairly evenly of a lower density throughout the town, contributing to an activated, mixed use town centre.

Figure 3-3 – Employment density



Source: Data obtained from the Central Statistics Office 2016 Census Data. Presented at Small Area Population Statistics (SAPS) level.

4 AREA OF INFLUENCE IDENTIFICATION

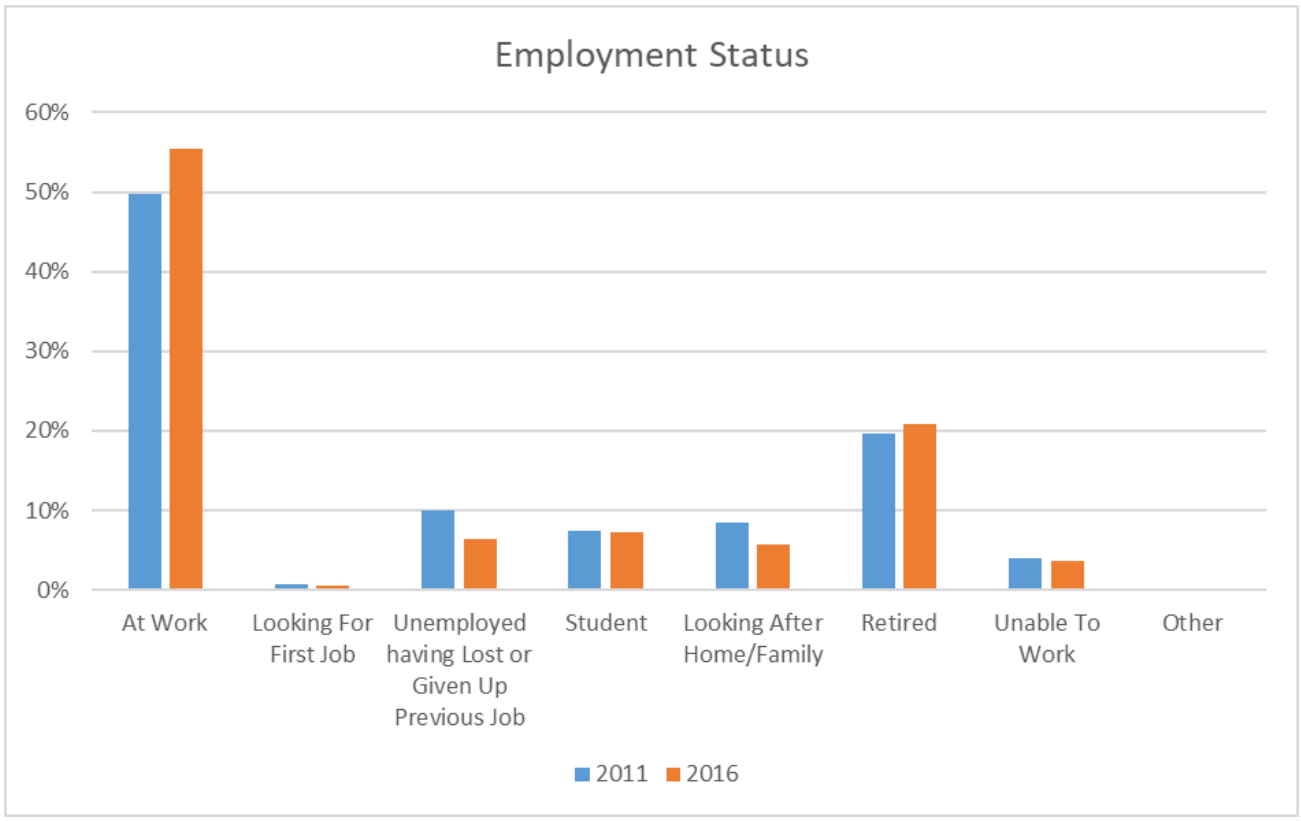
4.1 DEMOGRAPHICS

4.1.1 Demographics are a key influencer in people's decision to travel and the modes which they are likely to use. **Figure 4-1** to **Figure 4-3** set out several key demographic features of Westport, at "Westport Urban Electoral District" level. Data has been obtained from the Central Statistics Office (CSO) Place of Work, School or College - Census of Anonymised Records (POWSCAR) for 2011 and 2016, with the 2022 Census data yet to be released at local detail level.

4.1.2 The population of Westport's Urban area increased from 5,543 in 2011 to 5,847 in 2016, an increase of 5%. Over the same period, the number of households in the town increased from 2,018 to 2,105, an increase of 4.3%. This means that the number of occupants per household increased marginally between the two censuses.

4.1.3 **Figure 4-1** shows local employment statuses.

Figure 4-1 – Employment status

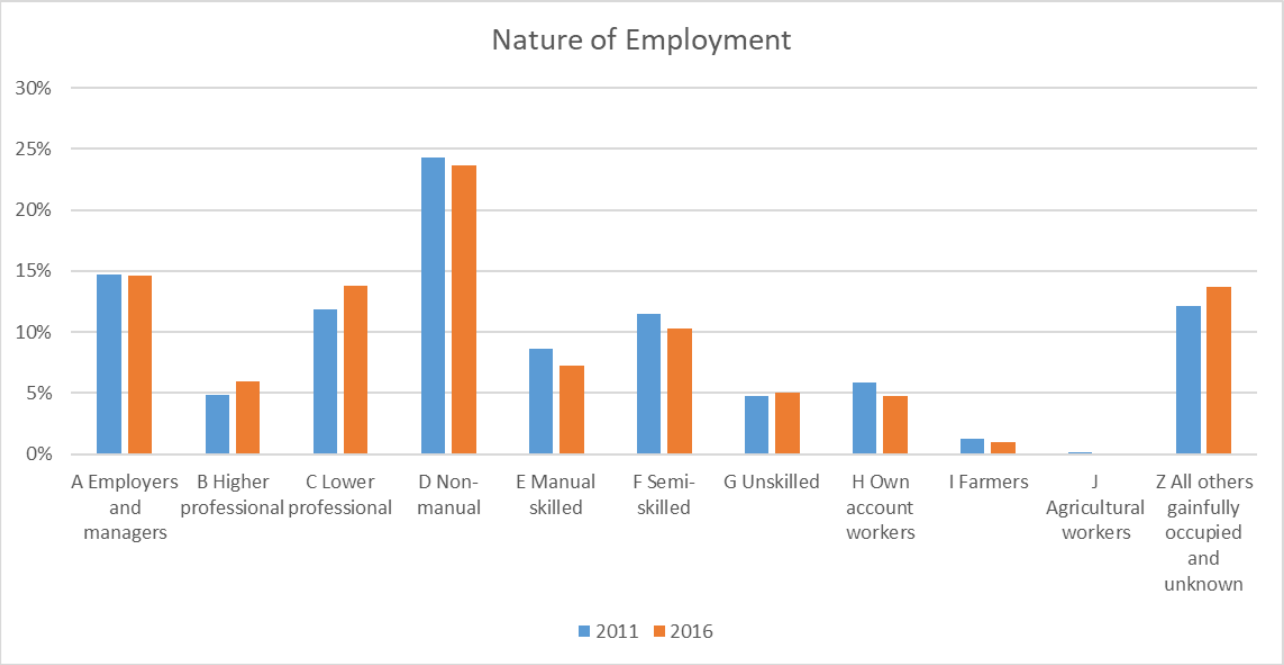


4.1.4 As can be observed, the percentage of the population in employment rose between 2011 and 2016, with concurrent reductions in those unemployed. Increased employment could drive increased trips to and from work, though this might have changed following the COVID-19 pandemic.

4.1.5 The number of people living in Westport who were retired increased between 2011 and 2016. This group generates different travel demand, with more leisure travel alongside trips to/from medical facilities. With the general tendency for those of retirement age to have reduced mobility, this also increases the importance of short, high quality walking routes between dwellings and public transport stops and other amenities as well as good public transport provision.

4.1.6 **Figure 4-2** shows the make-up of employment in Westport in 2011 and 2016.

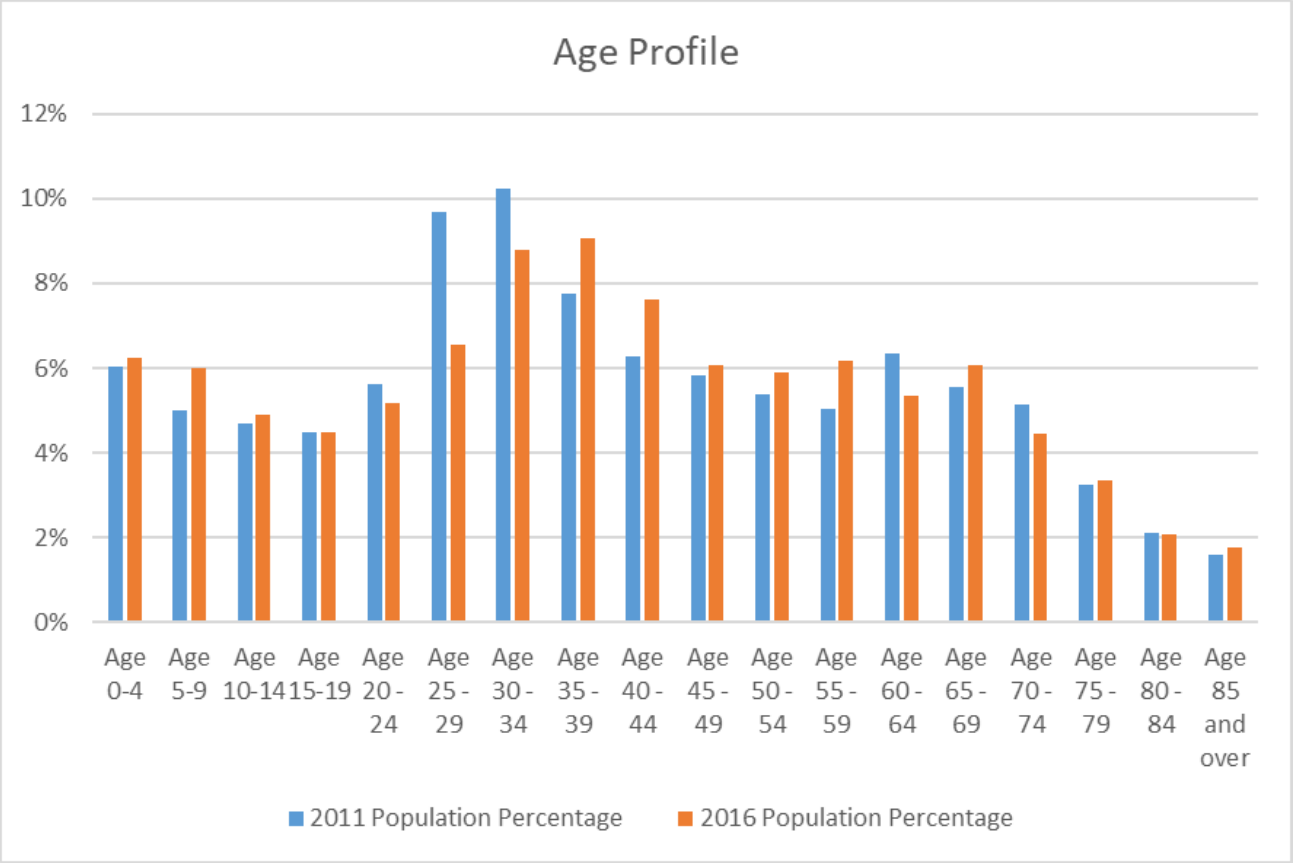
Figure 4-2 – Nature of employment



4.1.7 As can be observed, there has been a shift towards employment in non-manual, proffessional, office jobs, away from independent (own account) work or farming. This could drive additional trips into Westport's urban area, though may have changed again following the COVID-19 pandemic and the subsequent rise in home working.

4.1.8 **Figure 4-3** shows the percentage of population in each five year age band in 2011 and 2016.

Figure 4-3 – Population age profile

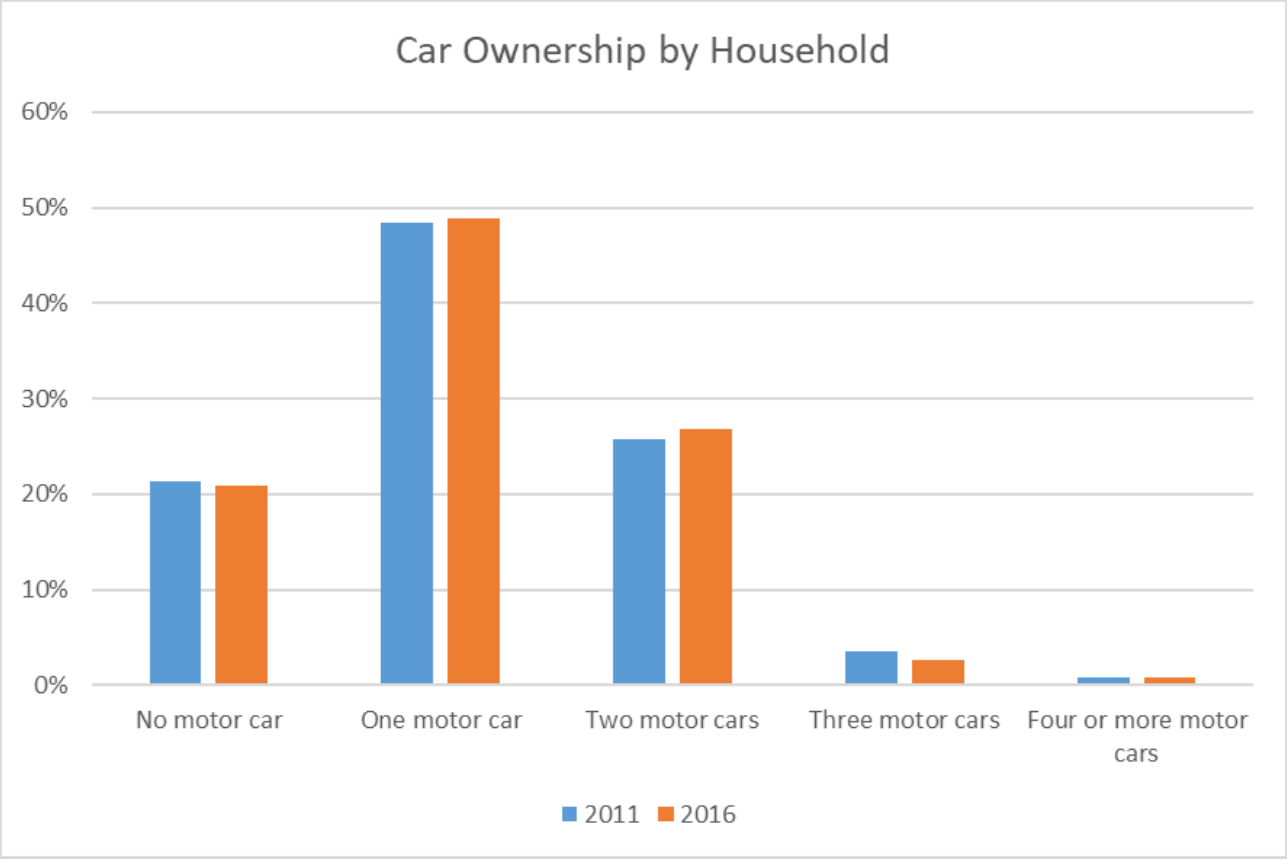


4.1.9 The figure shows that Westport has quite a varied population, with a significant portion of both young people and those of working age.The high proportion of younger people could inform improvements to walking, cycling and public transport, to reduce the dependence on lifts from those with car access, and/or to deter sedentary lifestyles and subsequent ill health. However, **Figure 4-3** also shows an aging population. Whilst the young people remain a considerable portion of the population, comparison of 2011-2016 shows a decrease in population ages 20-34 offset by an increase in the population ages 45+.

4.1.10 There is also an increase in the portion of the population who are in retirement age (65+). This reinforces the observation made in relation to **Figure 4-2** that providing for the mobility needs of the elderly is likely to be of increasing importance in the near future.

4.1.11 **Figure 4-4** below, shows access to cars among households in Westport for 2011 and 2016. As can be observed, there has been a reduction in households without car access and a concurrent increase in households with one and particularly two cars. Households with three cars has declined slightly, whilst households with four cars has remained stable.

Figure 4-4 – Car ownership



4.1.12 The overall trend towards households having one or more cars could potentially produce additional vehicle trips on the network, particularly in the off peak period for non work trips. This trend has been observed elsewhere where rising car ownership has been recorded.

4.2 TRIP TYPES

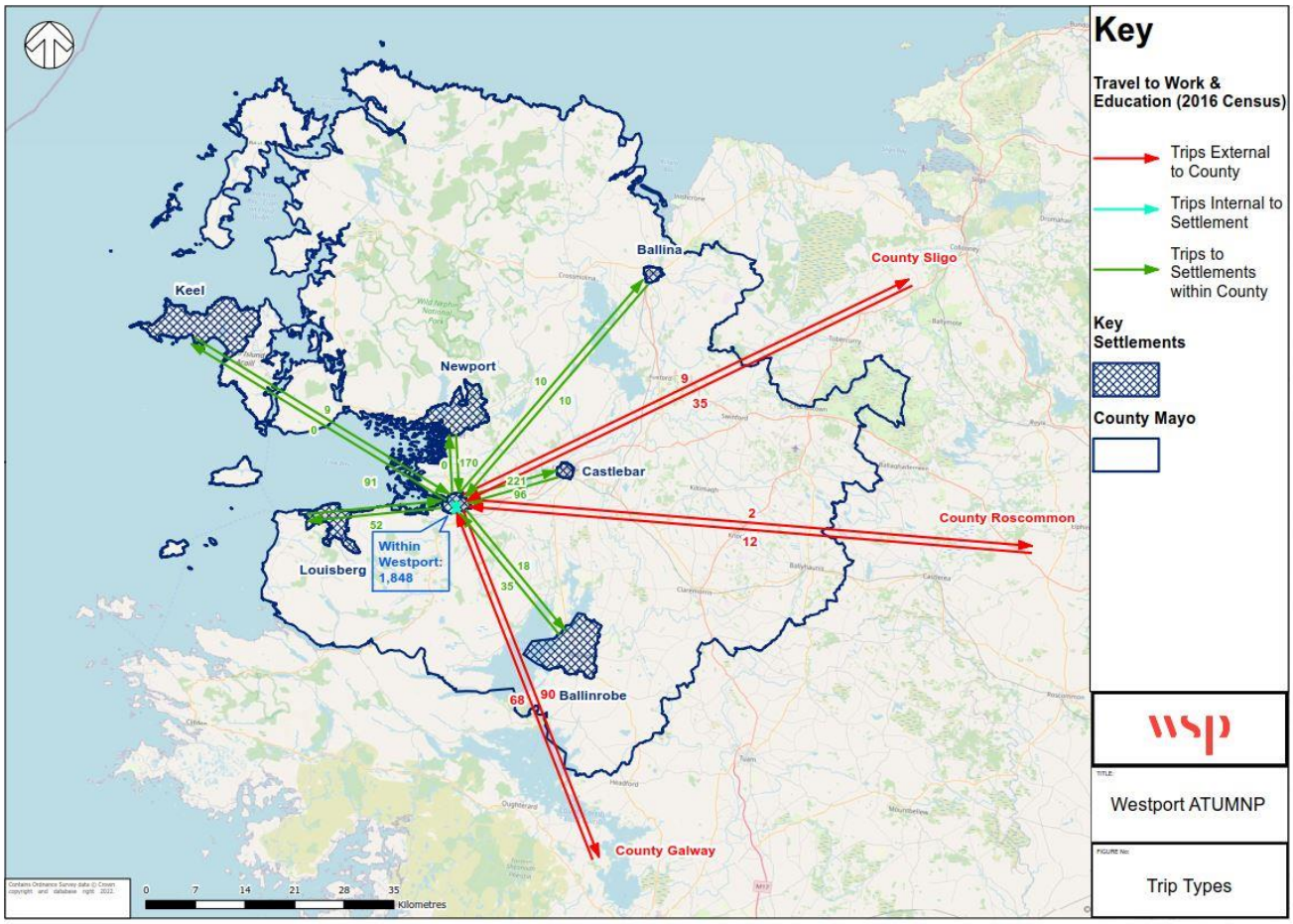
4.2.1 There are two main areas of influence when considering transport demand: internal trips and external trips:

- **Intra-Settlement trips** are internal trips with both origin and destination within Westport.
- **Inter-Settlement trips** are trips with either origin or destination outside Westport. They are therefore external to the study area.

4.2.2 **Figure 4-5** shows travel to work and education movements associated with Westport[4], extracted from POWSCAR data[5].

[4] This data set excludes leisure movements.
[5] For this Origin/Destination analysis, Westport is represented by the Westport Urban Electoral District

Figure 4-5 – Trip types



4.2.3 In total, there are 1,848 internal trips for work or education. It represents 67.5% of trips made by local residents (i.e., “From Westport”) and 31.7% of trips for employment and schools located in Westport (i.e., “To Westport”). Given the compact nature of Westport, this means there is considerable potential for increasing walking and cycling mode share, rather than the dominant private car.

4.2.4 The remaining trips are to/from the settlements set out in **Table 4-1**, overleaf.

Table 4-1 – Trips to/from Westport

	Trips to Westport		Trips from Westport		All trips to/from Westport	
	Number of trips	Portion %	Number of trips	Portion %	Number of trips	Portion %
Internal	1,848	31.7%	1,848	67.5%	1,848	27.5%
Westport Rural	496	8.5%	48	1.8%	544	8.1%
Kilmeena	358	6.2%	87	3.2%	445	6.6%
Castlebar Urban	96	1.6%	221	8.1%	317	4.7%
Aghagower North	268	4.6%	33	1.2%	301	4.5%
Castlebar Rural	230	4.0%	52	1.9%	282	4.2%
Clogher	242	4.2%	14	0.5%	256	3.8%
Knappagh	199	3.4%	36	1.3%	235	3.5%
Newport East	170	2.9%	9	0.3%	179	2.7%
Kilmaclasser	150	2.6%	5	0.2%	155	2.3%
Louisburgh	91	1.6%	52	1.9%	143	2.1%

4.2.5 From **Table 4-1**, it is evident that the majority of external trips "To Westport" originate in the town's rural hinterland (8.5%), followed by Kilmeena (6.2%) and Aghagower (4.6%).

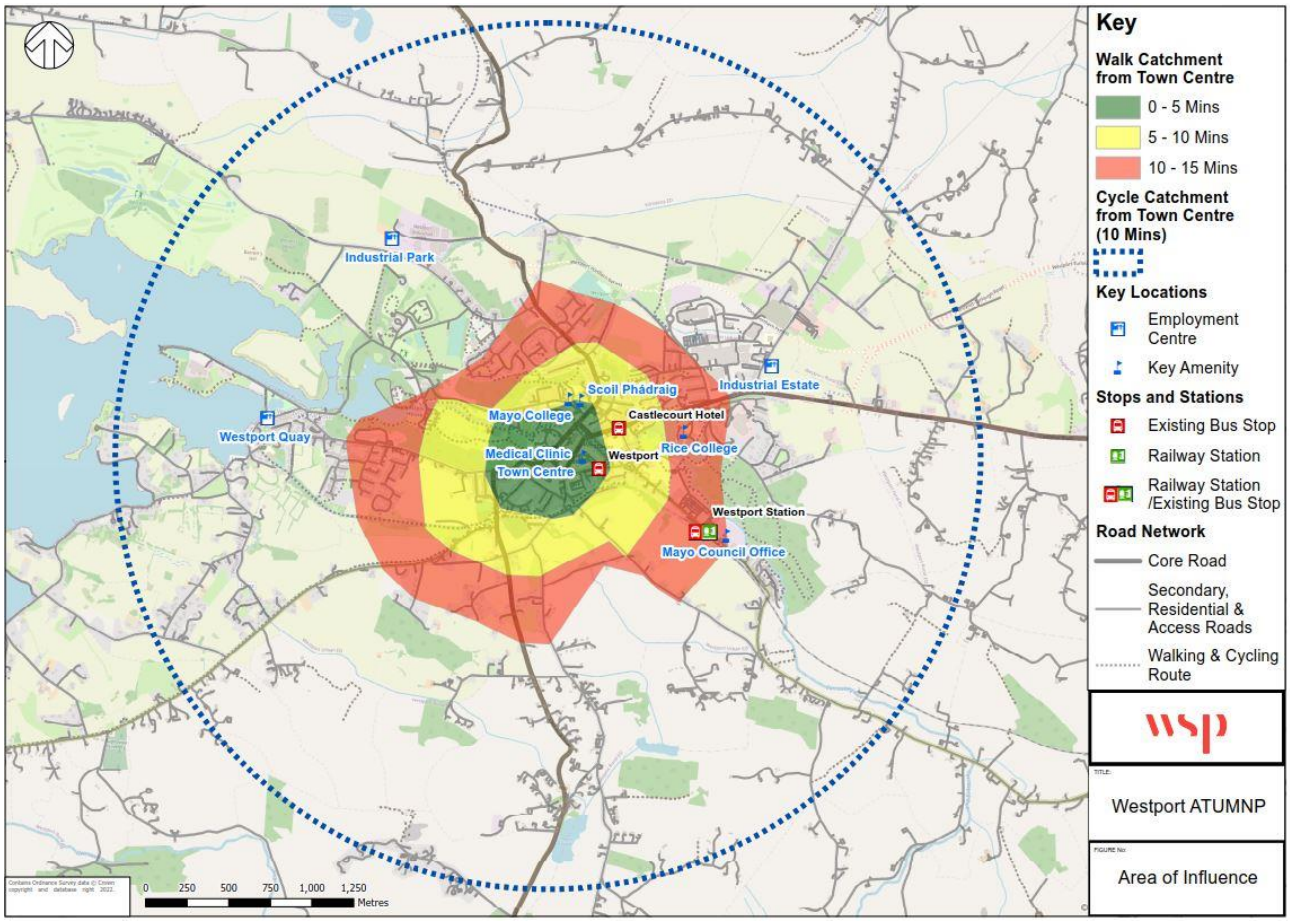
4.2.6 The primary destination for travel to work external trips "From Westport" is Castlebar Urban, followed by Kilmeena (3.2%) and then Castlebar Rural and Westport Rural (1.9% and 1.8%, respectively). These areas are mapped in

4.2.7 **Figure** 4-5 elaborating travel to work patterns further.

4.3 15-MINUTE NEIGHBOURHOODS

4.3.1 At a local level, the concept of "15-minute neighbourhoods" can be used to show the accessibility of local amenities. This concept suggests that residents of an area should be able to access key services such as schools, shops, healthcare etc. along with high quality public transport services within a 15-minute walk. **Figure 4-6** shows the area of Westport within 15 minutes' walk and a 10 minutes' crow-flies cycle catchment (at 14kph) of the town centre area.

Figure 4-6 – 15-minute walk & 10-minute cycle catchment areas



4.3.2 Viewed in conjunction with trip generators (locations where people live and start their journeys to work, school or other destinations) shown in **Figure 3-2**, it is evident that the majority of Westport's population live within 15 minutes' walk of the town centre and essentially the whole town is within 10 minutes' cycle ride.

4.3.3 As shown in **Figure 3-3**, the town centre is the location of the majority of employment opportunities, as well as key amenities such as Westport Medical Centre and 2/3 of the town's primary schools.

4.3.4 Additionally, the town's primary bus facility is centrally located. This places it within 5 minutes' walk of The Octagon, as well as a 15 minutes' walk of much of the town's population.

4.3.5 However, some significant employment locations are more than 15 minutes' walk from the central facilities, such as the Westport Industrial Park to the northwest and the employment site between Carrowbeg Estate and Lodge Road to the northeast.

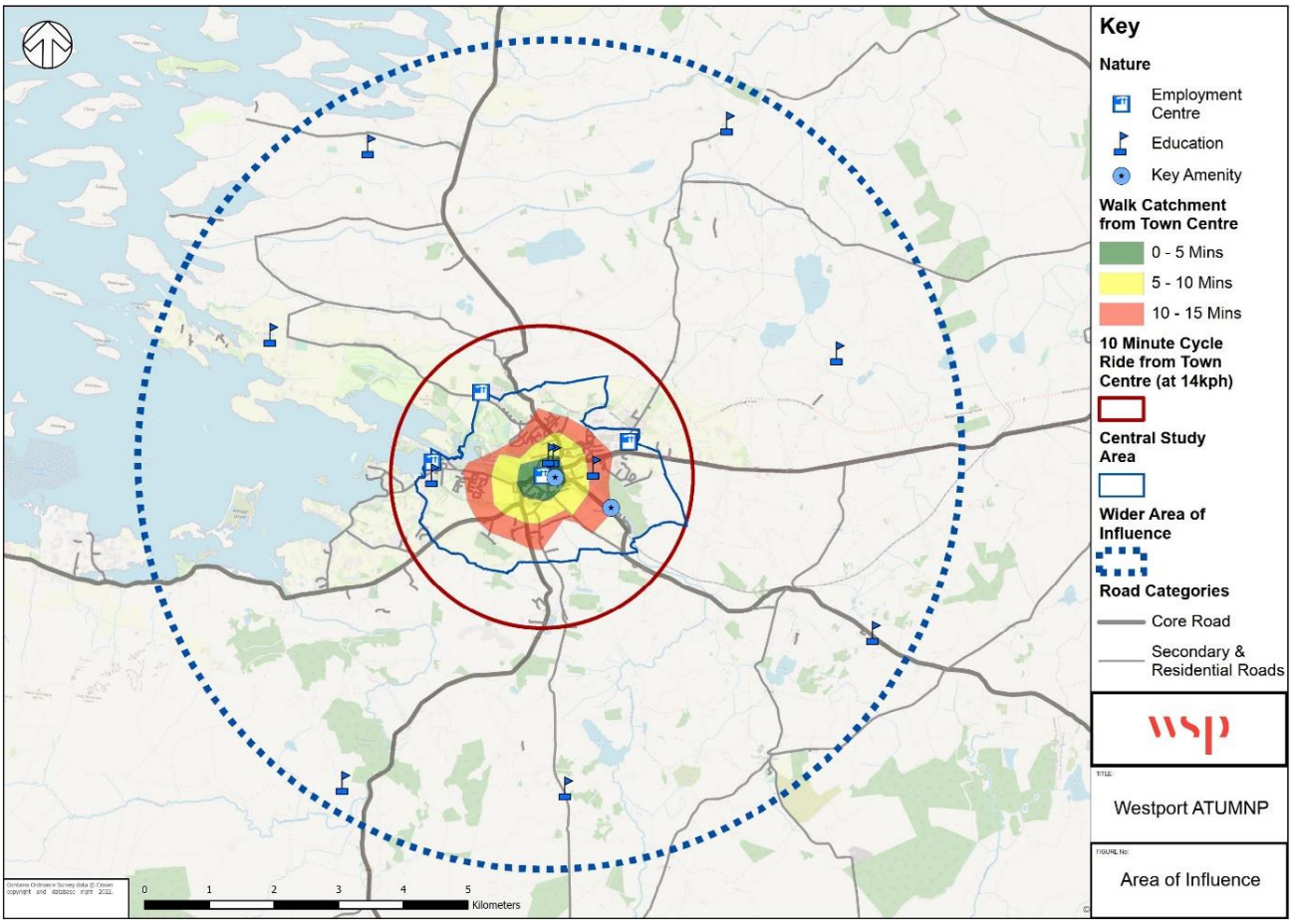
4.4 MAIN STUDY AREA AND AREA OF INFLUENCE

4.4.1 Considering the data available and following discussions with Mayo County Council, it has been determined that two study areas will be considered in the future stages of the ABTA process (these are illustrated in **Figure 4-7**):

- **Main Study Area** – covering the town of Westport and broadly corresponding with the 10-minute crow-flies cycle catchment; and

- **Wider Area of Influence** – covering an area within approximately 6.5km radius from the town centre (about 25-minute cycle ride) to cover schools in the wider area.

Figure 4-7 – Main Study Area and Area of Influence



4.5 LOCAL AREA MODEL INTEGRATION

4.5.1 A Local Area Model (LAM) is to be developed as part of the ABTA process. The LAM is a highway assignment modelling tool which will be utilised to assess baseline and future conditions on the road network, in addition to testing potential measures/ interventions in the future year scenarios. In accordance with best practice, the LAM is based on National Transport Authority's West Regional Model, which has then been further developed to reflect local conditions in Westport including ensuring all relevant road links and junctions are coded into the LAM, and that the zonal configuration enables an assessment of local demand patterns. The extent of the LAM has been aligned with the main study area to enable an assessment of the performance of the road network and potential Local Transport Strategy interventions within the main study area. As has been noted, the main study area is aligned with the boundaries of the Small Census Areas which have also been used to define the zone structure with the LAM.

PLACE HOLDER

5 EXISTING TRAVEL PATTERNS

5.1 TRAVEL DEMAND

5.1.1 Travel demand is derived from the need for people to access employment, schools, goods and services, as well as social and leisure trips. The amount and spread of travel demand, known as the 'trip distribution', is largely defined by the amount and location of population (trip generators as described in section 3.3) and the scale and location of the goods and services that they need (trip attractors as identified in section 3.4). How this demand is met is a function of the availability and quality of both the transport infrastructure (by all modes) and the service provision.

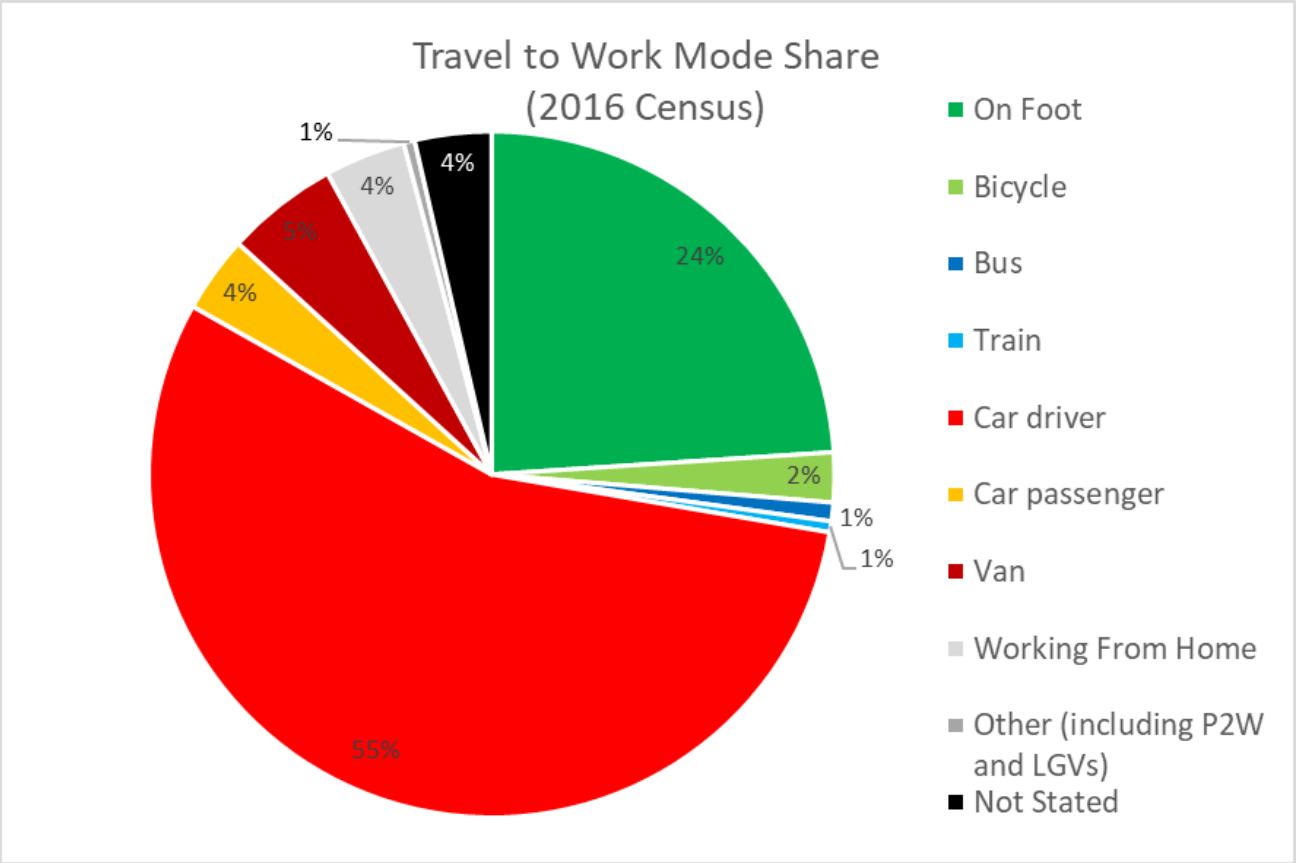
5.1.2 Information derived from POWSCAR data has been to assess the existing baseline, in terms of travel demand and trip distribution, as it provides trip data and mode split information for journeys to work, school or college.

5.2 MODAL SPLIT

Travel to Work

5.2.1 **Figure 5-1** shows travel to work mode share recorded by Westport residents in the 2016 Census.

Figure 5-1 – Travel to work mode share (2016 Census)



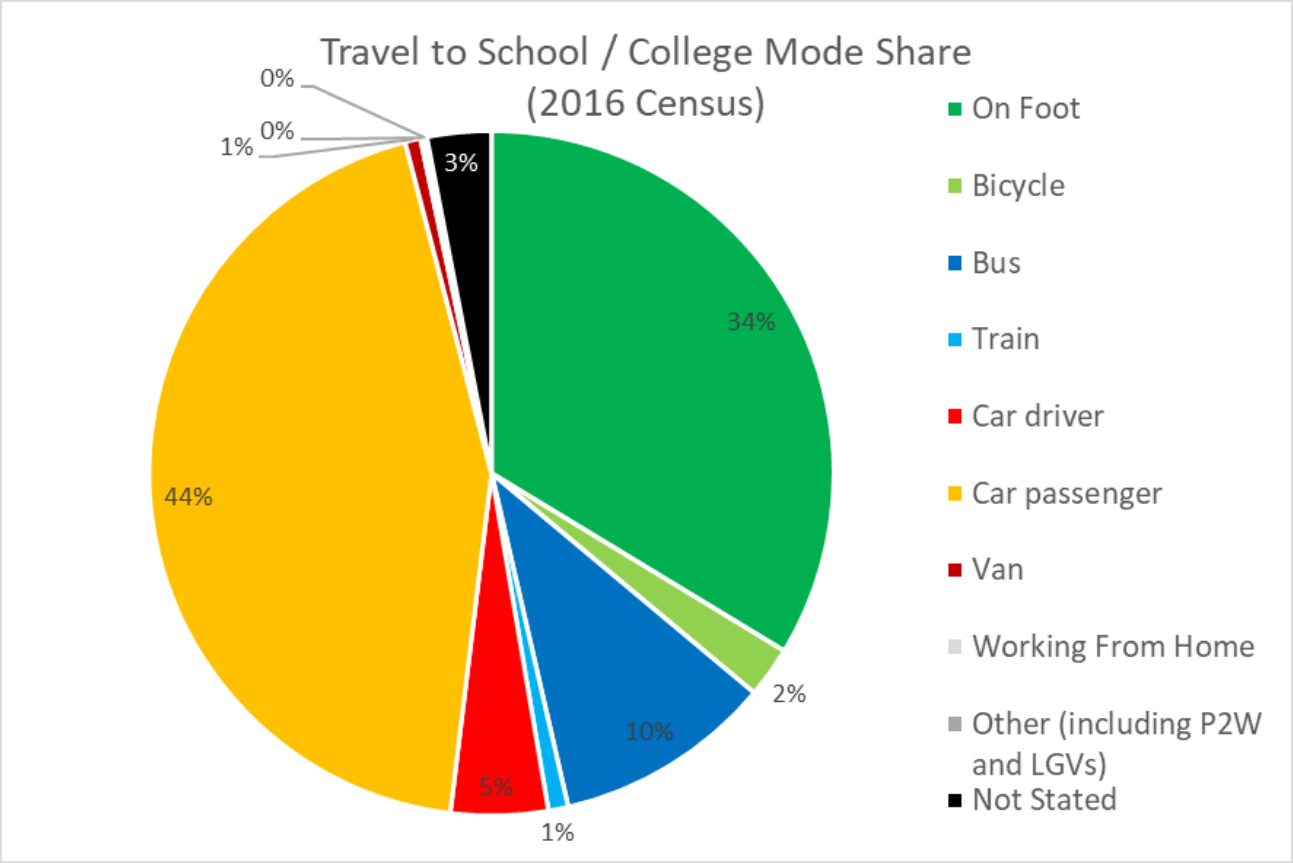
5.2.2 In 2016, car was Westport resident's dominant travel to work mode at over 50%, followed by walking (24%) and then vans (5%). Given the town's compact nature and the large portion of trips that remain

internal to Westport (see **Table 4-1**) there is considerable potential for modal shift in favour of walking and cycling, as well as for public transport on trips associated with the neighbouring town of Castlebar.

Travel to School

5.2.3 **Figure 5-2** shows travel to school trips recorded by Westport residents in the 2016 Census.

Figure 5-2 – Travel to education (school/college) mode share (2016 Census)



5.2.4 As shown in **Figure 5-2**, travel to school trips at the time of the 2016 census were dominated by car passengers, forming either a linked trip with car travel to work, or a dedicated 'school run' trip adding additional traffic to the network in the AM peak.

5.2.5 The next most important mode is "on foot", at 34%. This supports the delivery of improved infrastructure and improved safety for pedestrians, to support those already walking and encourage greater modal shift.

5.2.6 The third most important is bus. Students are deemed to be eligible for supported school transport when their home is 3.2km or more from their nearest suitable primary school and a distance of over

4.8km is necessary for secondary school[6], effectively allowing them to travel to school for no cost or at reduced cost. Bus Éireann is required to provide a bus pick-up within 2.4km of a student's home.

5.2.7 Students can either utilise the public bus services, or dedicated school buses. School buses associated with Rice College and Sacred Heart School serve a set of stops adjacent to the college entrance[7].

5.2.8 To encourage the uptake of bus routes as a method of accessing education, it is important to provide high-quality routes between bus stops and schools and colleges, something identified in the *Safe Routes to School Design Guide (2021)*. For students using the public bus network to reach school, additional bus stops could aid in reducing the walking distance on the 'last mile' section of a trip; Mill Street being to the south of the town centre whilst the schools are generally to the north.

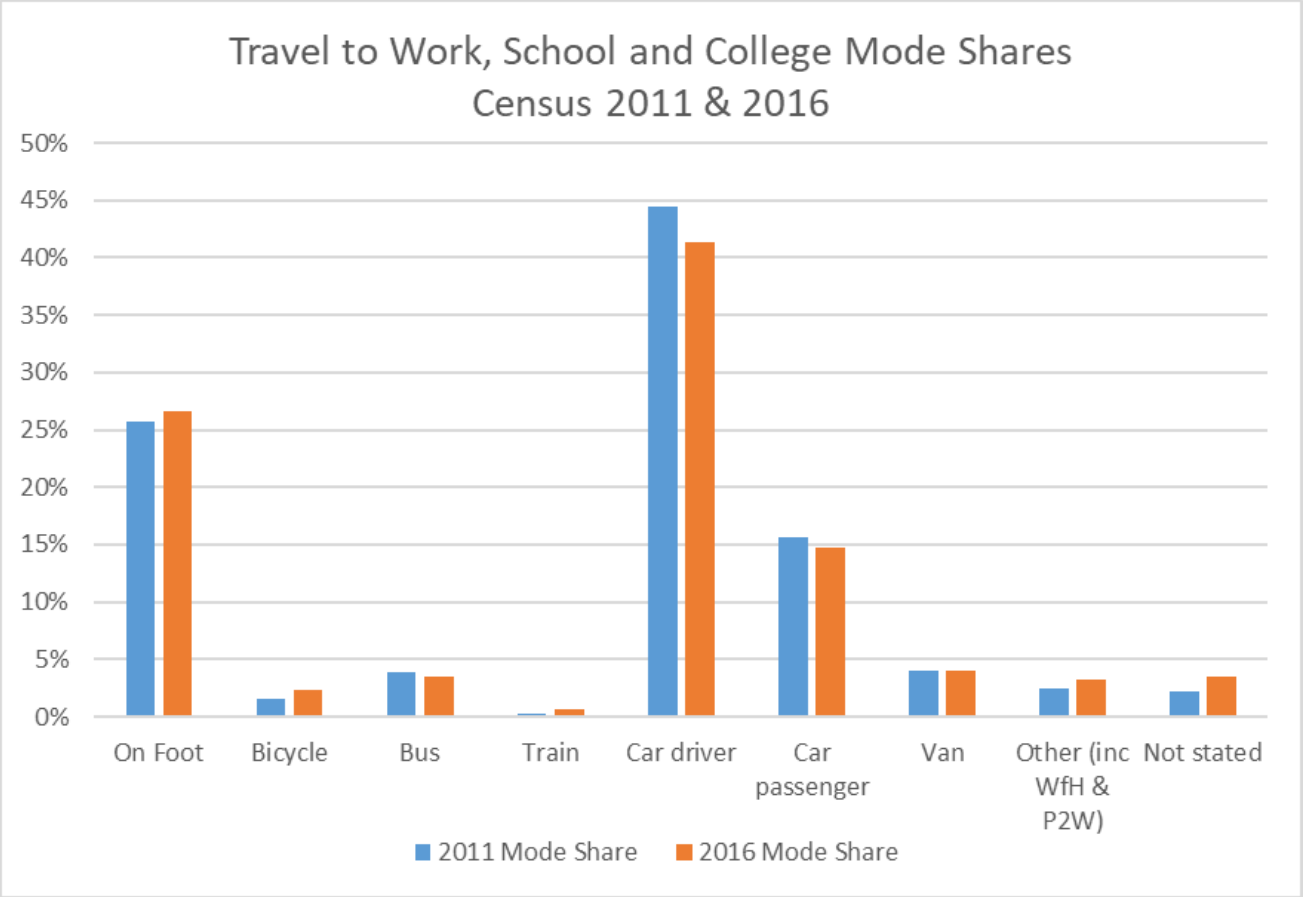
Trends

5.2.9 The 2011 Census doesn't distinguish Travel to Work from Travel to School & College, instead presenting them as one group of movements. **Figure 5-3** compares mode shares from Census 2011 and Census 2016 for Travel to Work, School & College.

[6] Citizens Information 2022, *Primary School Transport Scheme*, Department of Education, Accessed 03/11/2022 https://www.citizensinformation.ie/en/education/primary_and_post_primary_education/going_to_primary_school/primary_school_transport_scheme.html & Citizens Information 2022, *School transport for post-primary students*, Department of Education, Accessed 03/11/2022 https://www.citizensinformation.ie/en/education/primary_and_post_primary_education/going_to_post_primary_school/school_transport.html

[7] A "School Bus" parking space is also present on Castlebar Road, between Sacred Heart School and Scoil Padraig. Information on services using this stop is pending.

Figure 5-3 – Travel to Work, School & College – Comparison of 2011 and 2016 Census data



5.2.10 Between 2011 and 2016 there is a slight increase in people walking and cycling to work, as well as a small increase in rail mode share. This is against a decrease in car mode share (for both driver and passenger) as well as a reduction in bus patronage. Unfortunately, the portion of respondents whose movements are “not stated” also increased, providing less usable data for comparison.

5.2.11 To reduce the traffic observed in the town centre area, it would be beneficial to continue the trend towards more walking and cycling and concurrent reduction in car mode share.

5.3 TRIP LENGTH

5.3.1 There is a general association between trip length and mode choice as there are distances which the average person may be willing to walk or cycle to access goods, services or employment, and there are distances at which these modes are less attractive options than alternative modes. Similarly, short distance trips by public transport may be unattractive compared to alternative modes as the wait time could be a significant proportion of overall journey time. In terms of distance, trips generally break down into:

- **Short** – generally serviceable by walking or cycling;
- **Medium** – generally serviceable by cycling, public transport or car; and
- **Long** – generally serviceable by public transport or car.

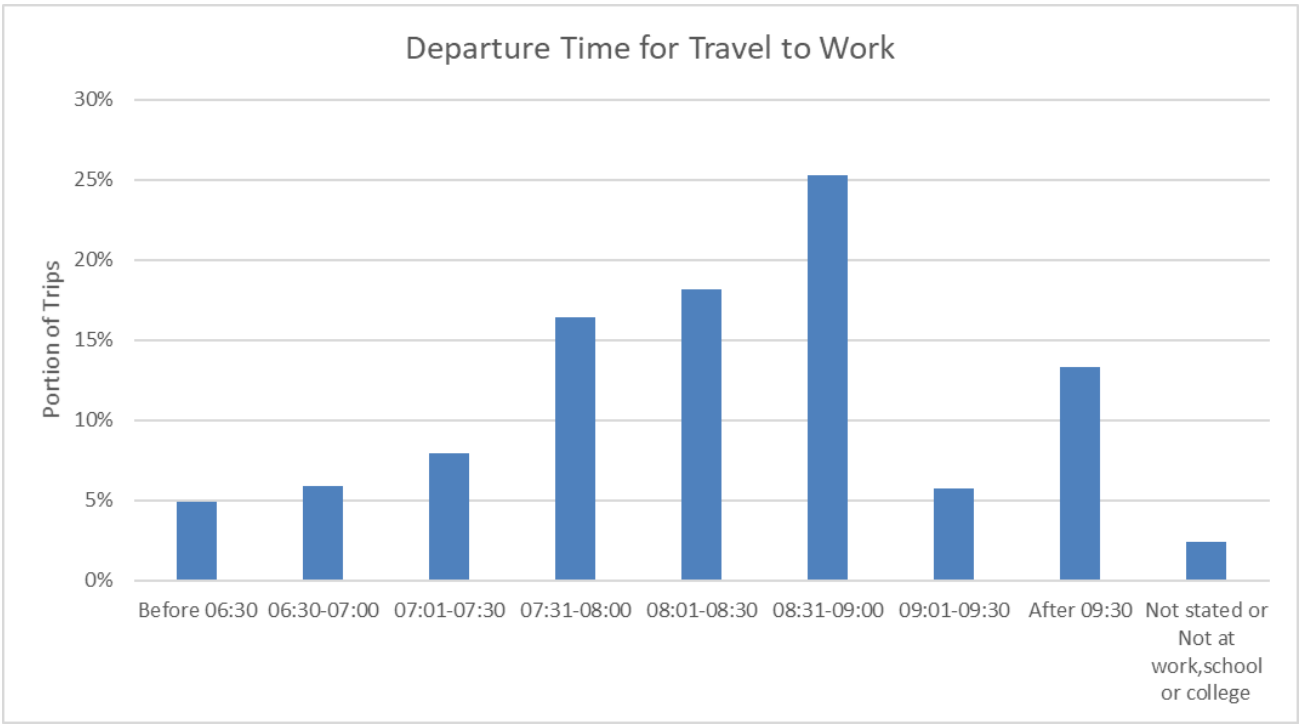
5.3.2 WSP are currently working with Central Statistics Office to understand what mode people choose based on the distance they travel to work and education. This section will be updated when the data is received.

Figure 5-4 – Trip length distribution data from POWSCAR

5.4 TRAVELLING TO WORK

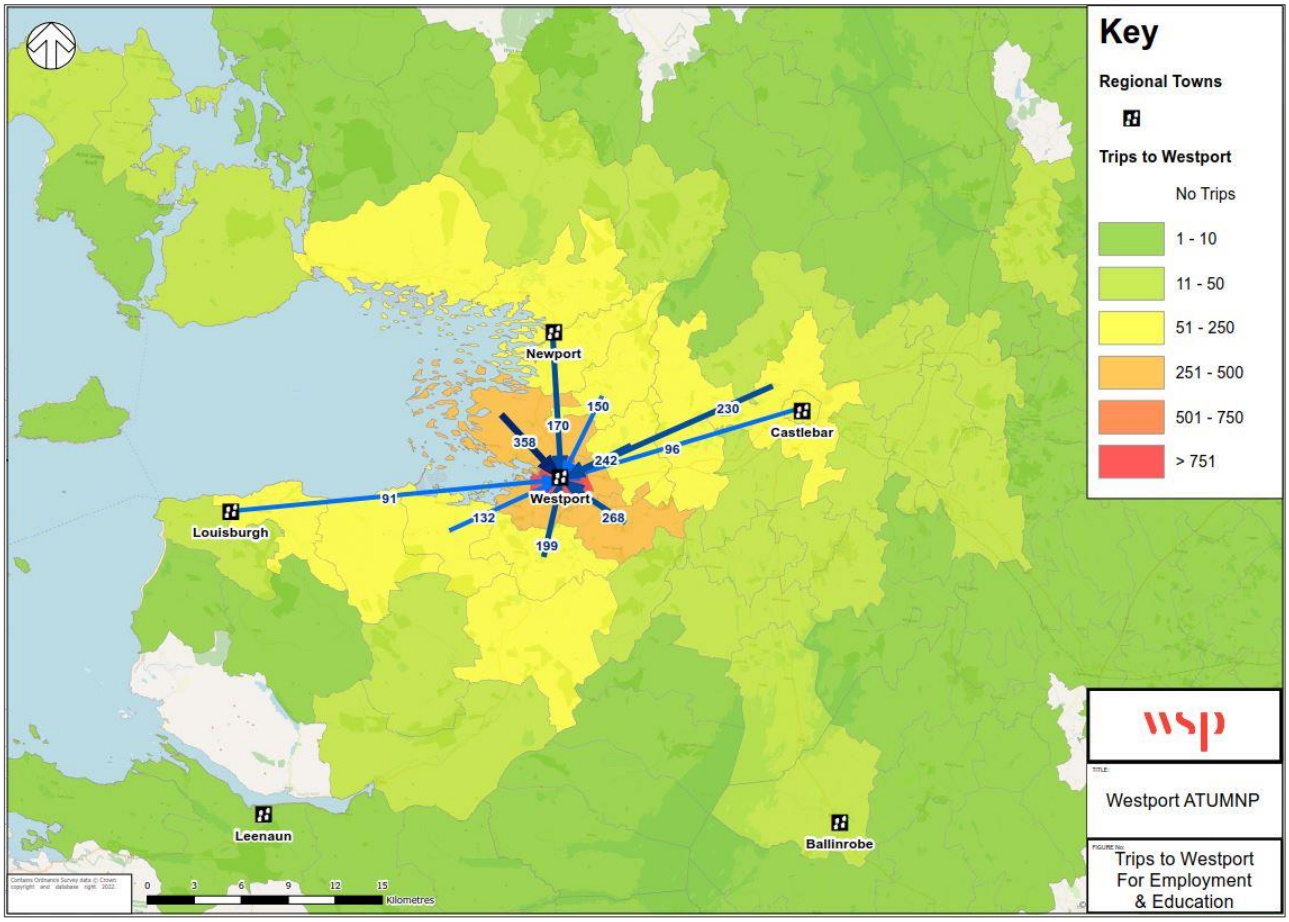
5.4.1 Travel to and from work forms a considerable proportion of trips, particularly in the AM Peak period. **Figure 7-5** shows the time people generally depart for travel to work in Westport, demonstrating a marked peak between 07:30 and 09:00; particularly the 30-minute period between 08:30 and 09:00.

Figure 5-5 – Departure time for trips to Westport



5.4.2 **Figure 5-6** shows the origin locations of people travelling to work in Westport, whilst **Figure 5-7** shows the destination of those travelling to work from Westport. This data is at Electoral District Level and obtained from POWSCAR data provided by CSO Ireland.

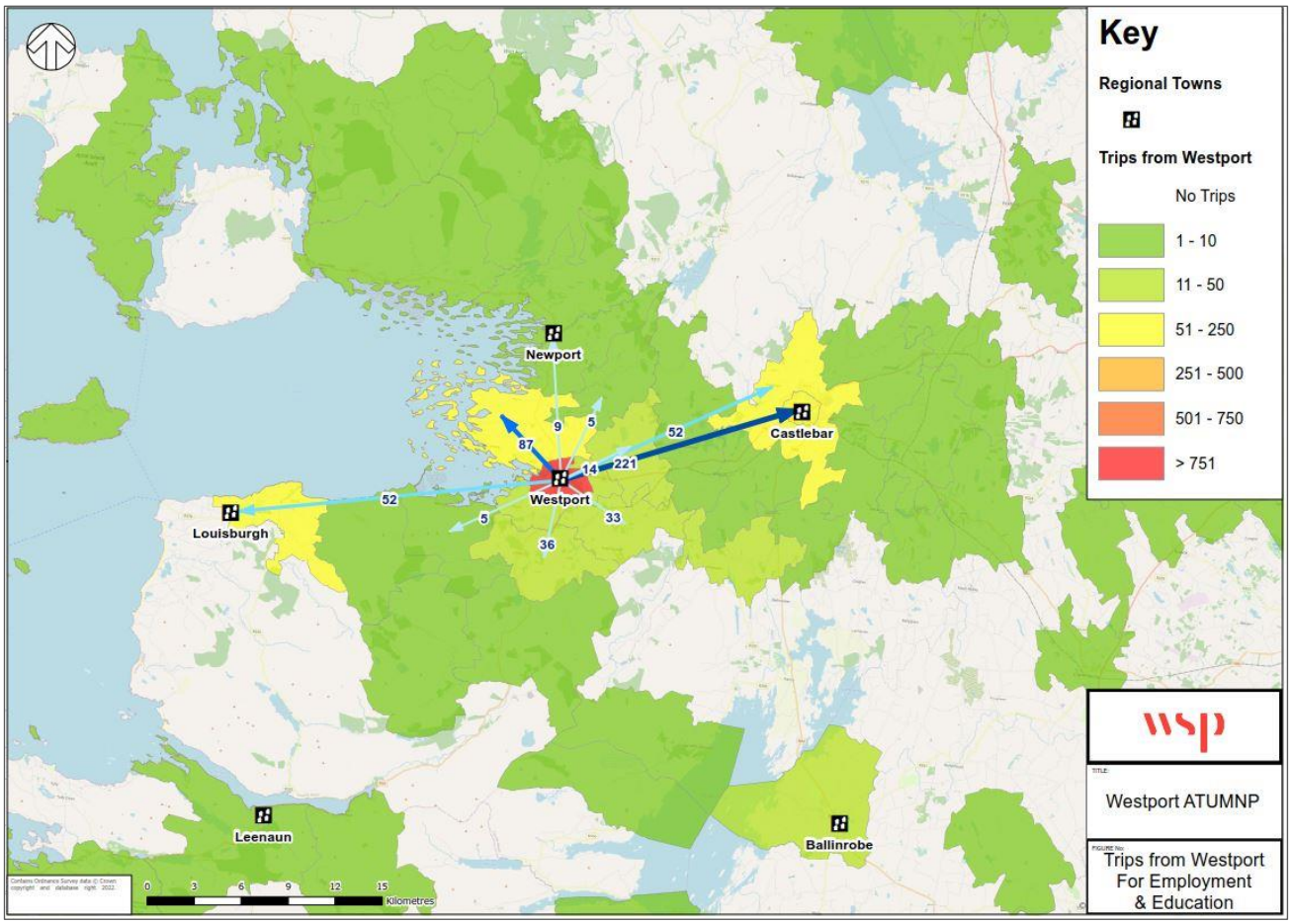
Figure 5-6 – Origins for journeys to work in Westport



5.4.3 As indicated previously in

5.4.4 **Figure** 4-5 and **Table 4-1**, the largest portion of trips to Westport are from within Westport. **Figure 5-6** shows that the next key origin districts are Westport Rural (covering the east and west of the Urban district), Kilmeena (north) and Aghagower North (south). Westport Rural district contains Westport Quay, and is served by a connecting bus service, as well as forming the western end of the Great Western Greenway walking and cycling corridor (detailed further in Section 7.5). The remaining districts, however, are broadly rural in nature with less opportunities for sustainable travel due to distance and infrastructure constraints; though a section of the Great Western Greenway parallels the N59 north of the town providing an off-road alternative to the primary road; albeit one that isn't lit.

Figure 5-7 – Destinations of journeys to work from Westport



5.4.5 **Figure 5-7** shows that, outside of Westport itself, the key destination districts for trips from Westport are Castlebar Urban, Kilmeena and Louisburgh. Castlebar has strong rail, bus and highway links with Westport, whilst Louisburgh is also on a regional bus route and the R335 road. Kilmeena is more rural in nature, with a more diffuse population.

5.4.6 The trip distribution observed in the preceding figures suggests that:

- There is considerable potential for walking and cycling within the Westport Urban area, as well as to/from Westport Quay;
- Longer trips could be shifted to public transport between the urban centres such as Louisburgh, Castlebar and Newport;
- Trips from the rural areas could be harder to shift to active travel modes, due to the low density of population making public transport less viable and distances not favouring cycling. This puts the onus on the previous two trip groups, where modal shift can be achieved, to release capacity for trips where limited alternatives are available.

5.4.7 The transport network currently available for these movements is considered further in Chapter 7.

5.5 LEISURE TRIPS

5.5.1 In addition to the movements associated with travel to work, school or amenities, travel demand is also derived from social, leisure and exercise trips. This is particularly true in a town such as Westport,

with considerable numbers of visitors wishing to experience the town's many historic features and the scenic hinterland beyond.

5.5.2 Whilst leisure and social uses aren't picked up by the Census data, information from Strava has been used to understand the main patterns of leisure trips. Strava is a popular online application for people recording their activities (mostly running and cycling) with GPS tracks.

5.5.3 It should be noted that the dataset does not cover all trips in the area but only those what are uploaded to the app. However, multiple studies show that there is a strong correlation between the travel patterns of Strava users and general public. Although people can also record cycle rides when they commute to work or to shops as well, it is more typically used by leisure riders.

5.5.4 Whilst **Figure 5-8** includes a snapshot from Strava heatmap illustrating popular cycle routes, **Figure 5-9** illustrates where people go running.

Figure 5-8 – Strava heatmap (cycling)

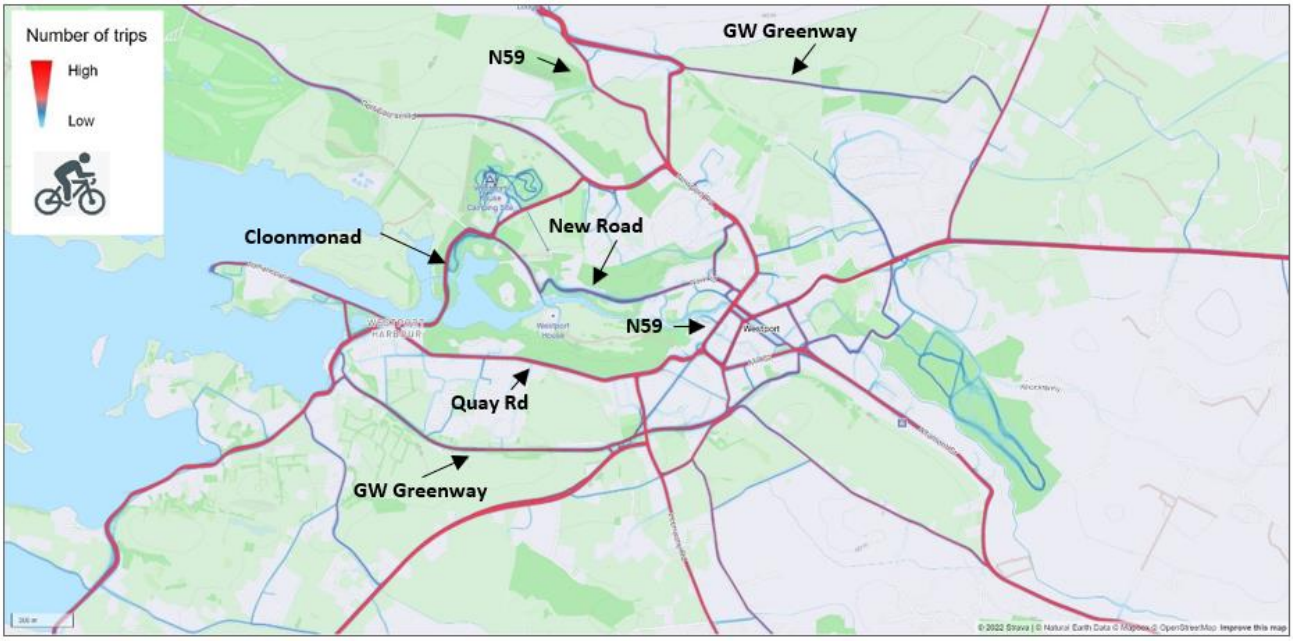
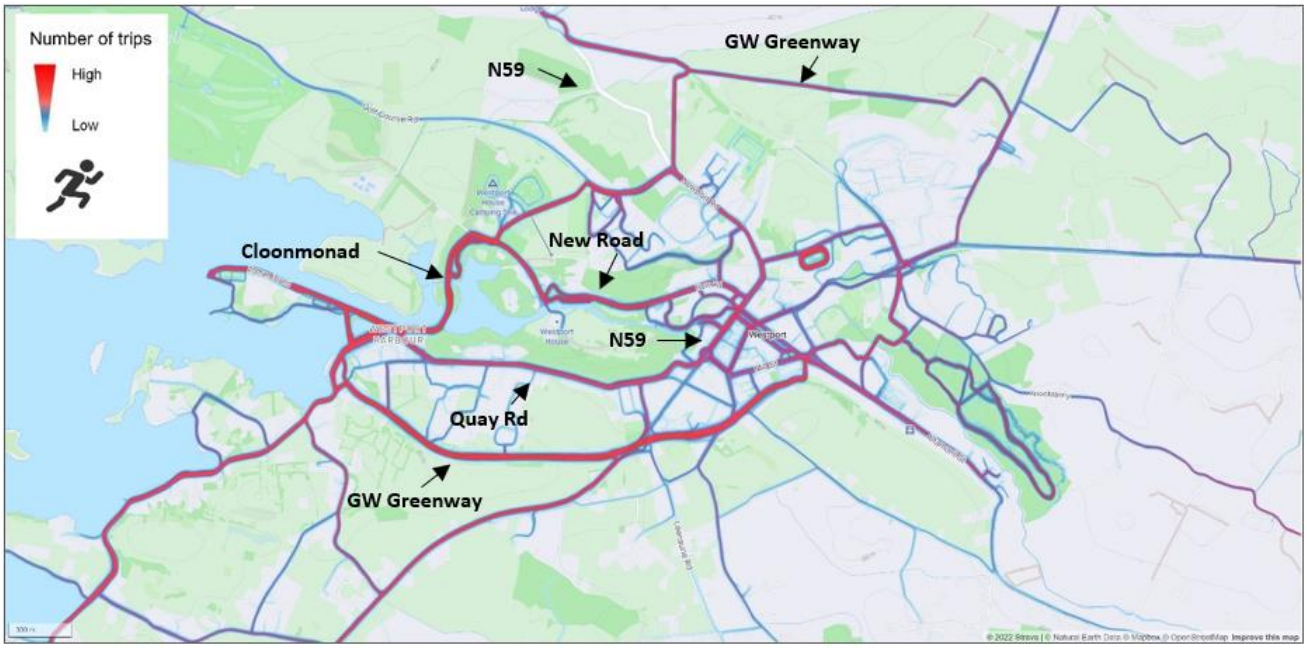


Figure 5-9 – Strava heatmap (running)



5.5.5 Both of the preceding figures show concentrations of active mode users on three east-west axes between Westport Quay and Westport Town Centre, with extensions southwest into the rural hinterland and some cycle trips continuing east into the more rural areas surrounding the town. The core corridors are, from north to south:

- **New Road/Cloonmonad/Quay Coast Road**, the most scenic route but also the longest;
- **Quay Road**, the most direct route; and
- **The Great Western Greenway**, a former railway track with relatively easy gradients.

5.5.6 Of these, New Road/ Cloonmonad and the Great Western Greenway are best suited to Leisure use rather than commuting; being less direct but more scenic, with sections of the route via Cloonmonad lacking streetlights and the provision for cyclists along Quay Coast Road further to the southwest is generally poor. Another east-west route is also indicated outside the town to the north on a mixture of former railway and rural roads. The nature of this route again indicates leisure use as there are no key origin or destination points served by this alignment.

5.5.7 The topography of Westport, detailed further in Chapter 8, restricts north south movements to two primary corridors; the N59 through the town centre and the Cloonmonad Road and several unnamed roads to the west. Of these, the N59 provides the most direct link to employment centres, whilst the Cloonmonad Road and connections provide a less trafficked corridor with several scenic opportunities. It is reasonable to infer the N59 would be used more for commuting whilst the Cloonmonad Road and the connecting rural network are more used for leisure, particularly in the summer months due to the route's lack of lighting.

5.5.8 North of Westport, running and cycling use of the Great Western Greenway towards Newport is also indicated, as well as use of the N59 by cyclists[8].Pedestrian and Cycling infrastructure are considered further in Section 7.4 and Section 7.5, respectively.

5.6 SEASONALITY

5.6.1 There is a considerable degree of Seasonality to traffic in Westport, driven by the town's attractiveness as a tourist destination with considerable heritage value. The town also hosts a range of events across the year[9], that peak over the summer season, each of which drawing more visitors to the town. This raises a challenge of providing for these movements in a way that doesn't adversely impact traffic in the town, ideally providing sustainable access options and methods to move around Westport once in town.

5.6.2 Seasonality of transport demand in Westport is supported by the findings of the 15 Minute Westport study undertaken by West Sustainable Energy Community, a local community group advocating for sustainable and healthy policies in Westport. The study included counts of car parking space availability on days across 2022 with the most recent data set being published in August. The study shows that the number of publicly accessible and private spaces available within 5 minutes walk of Bridge Street (on and off street) declines sharply on April 16th (Easter Half Term/Bank Holiday) and then again across July and August (Summer Holiday). This supports the theory that a large number of visitors are present in the town during these periods, though a considerable number of parking spaces are still available. In turn, this could enable road space reallocation to further improve the urban realm offered to visitors.

5.6.3 Furthermore, Westport is a key destination on a range of Coach/Bus tours around Ireland. The number of tours available increases from 5-13 in winter months, to 33 in March and then to 58-66 in the summer[10]. Providing for these tours with a high quality, accessible, coach/bus facility could provide a positive 'welcome' experience for visitors to Westport and encourage them to return again. Further review of tour coach/bus facilities is set out in Section 7.3.

5.6.4 Finally, at the time of the 2016 Census, 7% of Westport's residents (who worked) were employed in the *Leisure or Care sector*, whilst circa 11% of those employed in the town (including those who commute in) work in *Skilled Trades Occupations, Leisure and Other Service Occupations*[11]. From this it is reasonable to infer that leisure and tourism is a key part of the town's economy, likely supporting employment in other sectors such as retail. As such, provision of efficient transport for visitors to ensure they keep coming back and supporting the town's economy is essential.

5.7 DELIVERIES AND SERVICING

Loading bays in central Westport are allocated at strategic locations throughout the town centre.

[8] No pavement is provided on the N59 north of Westport, making it less appealing to pedestrians.
[9] Examples include Mayo Pride parade (July), the Westport Sea Angling Festival (August) and the Westport Music and Arts Festival (August), among many others.
[10] These figures were calculated from the availability of bus tours calling at Westport on the *Tour Radar* travel site. Source: https://www.tourradar.com/i/ireland-coach-bus
[11] Unfortunately, the Workplace Zone data uses different categories to the wider SAPS dataset, making a direct comparison harder.

However, they are often occupied by parked vehicles (for longer than 30 minutes as indicated by recent on-street surveys) which prevent their use by couriers instead pull over and block the carriageway to make their deliveries.

5.8 ROAD SAFETY

5.8.1 WSP have requested Personal Injury Collision (PIC) data for the latest 5-year period in order to analyse any road safety related matters. This section will be developed upon the receipt of the data from County Mayo/Road Safety Authority.

6 EXISTING TRAVEL PATTERNS ANALYSIS

6.1 BASELINE SURVEY COLLECTION

6.1.1 To gain an understanding of existing travel patterns for all modes with the main study area a number of traffic surveys were undertaken including Automated Traffic Counts (ATCs), Junction Turning Counts (JTCs) including pedestrian and cyclist movements, Automatic Number Plate Recognition (ANPR) surveys as well as on-street and off-street parking surveys. Delivery and servicing activity in the main study area was observed to gain an understanding off existing habits. In addition, travel surveys were undertaken at 7 no. school locations to observe existing travel behaviour and seek an indication of possible changes to improve access to the schools (and also benefit to the wider public). The following sub-sections summarise the various sources of survey data collected, outline results and note potential implications of the survey results.

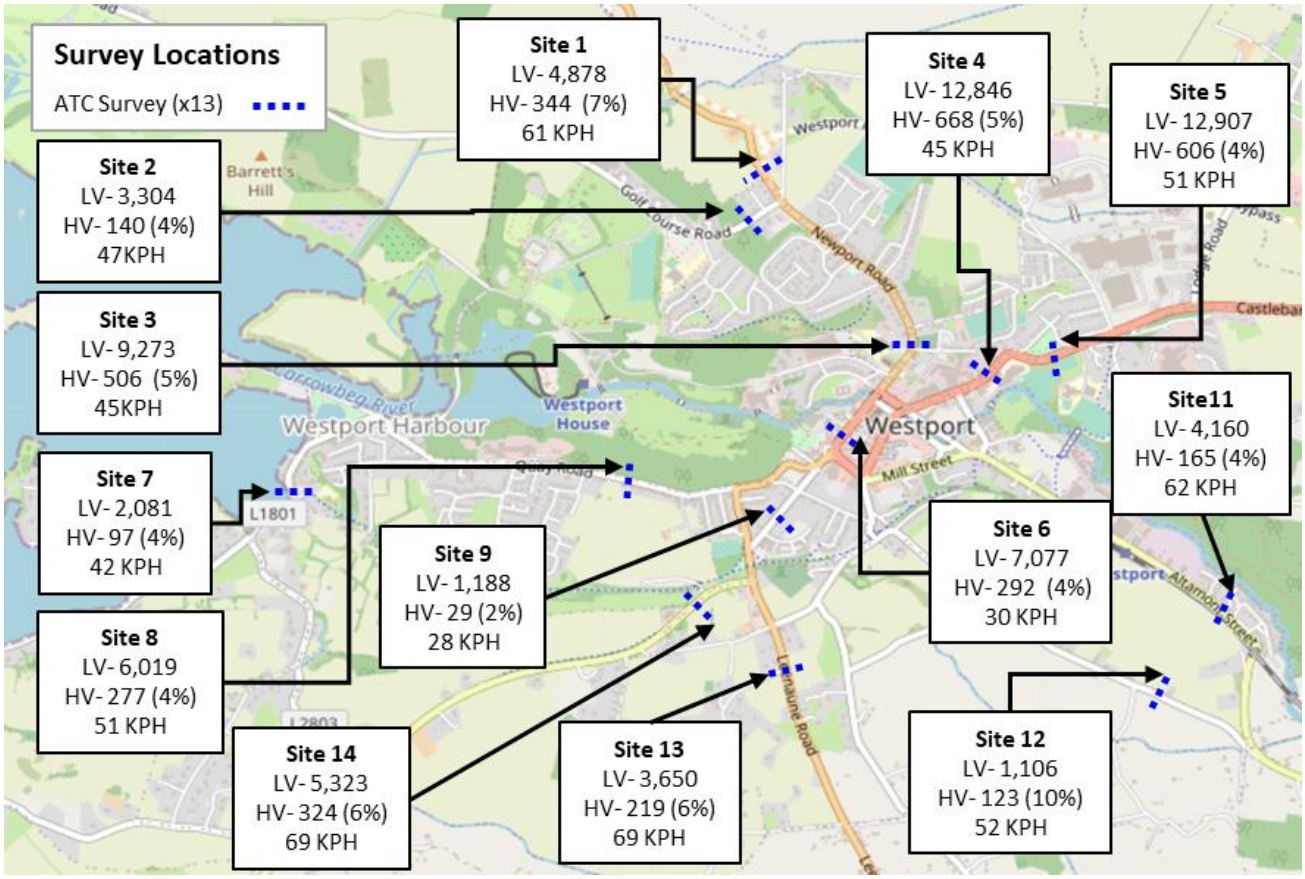
6.1.2 It is also noted that the various traffic survey databases collected will also be utilised to calibrate and validate a Local Area Model (LAM) which is being developed for the main study area. A separate LAM Modelling Report will be produced as part of the ABTA process however a summary of the development of the baseline LAM is outlined within this section as it will be one of the main tools utilised to analyses existing travel patterns within the main study area.

6.2 AUTOMATIC TRAFFIC COUNT SURVEYS

6.2.1 Automatic Traffic Count Surveys were undertaken at 13 no. locations within the main study area. The ATCs were undertaken on the 20th of September and recorded vehicle flows and speeds over 24hrs. The locations cover a number of roads in the Town, roads in proximity to schools and approach roads into Westport Town. The ATCs are intended to give an overall picture of traffic volumes and speeds in Westport.

6.2.2 **Figure 6-1** illustrates the 13 no. ATC locations and provides the 85th percentile recorded speed, in addition to total Light Vehicle (LV) and total Heavy Vehicle (HVs) for each location. Note there is no ATC 10 (original ATC location replaced by a junction survey) although the Figure does include an ATC 14.

Figure 6-1 – ATC survey locations and summary results

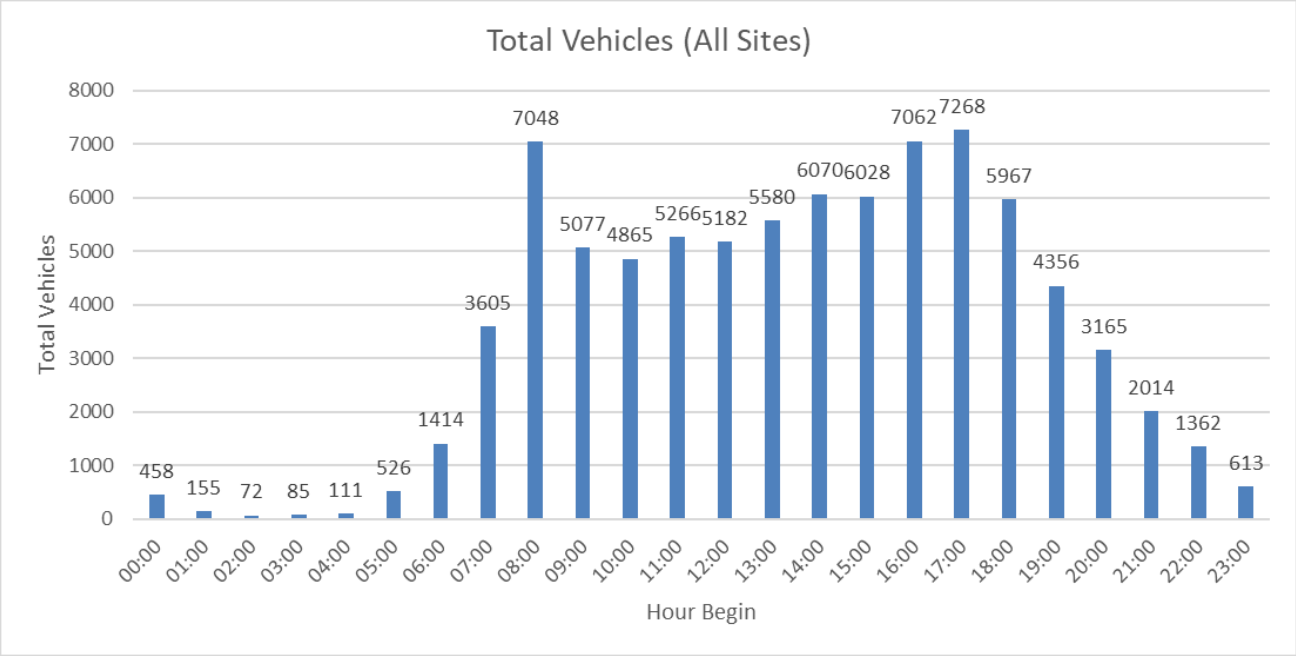


6.2.3 As can be seen from Figure 6-1 ATCs 4 and 5 on the N5 recorded the highest volume of traffic flow at ca. 13,500 vehicles. The lowest vehicle flow was ca. 1,300 recorded at ATC 12 to the southeast of Westport although notably ATC 12 had the highest percentage of HVs at 10%. Except for ATCs 9 and 12, HVs percentages generally range between 4% and 6% of total vehicle flows.

6.2.4 Regarding 85th percentile speeds, the majority of ATC locations recorded speeds under the posted speed limit (e.g. under 50 km/h at ATCs 3,6,9 etc.). ATCs 1, 5 and 8 had 85th percentile speeds marginally, i.e. ca. 1-2 km/h, over the posted speed limit. ATCs 13 and 14 are noted to have recorded higher 85th percentile speeds than the posted speed limit with ATC 13, in particular, being ca. 19 km//h over the posted speed limit.

6.2.5 Traffic volume data from the 13 no. ATCs locations were utilised to determine a network AM and PM peak hour for the main study area. Given the number of locations surveyed, especially in relation to the 27 no. JTCs undertaken and detailed in the subsequent sub-section, identification of common network peak hours is necessary for analyses and modelling purposes. The following graph indicates the aggregated total vehicle flows (two-way) for each hour survey (00:00-23:00hrs) across the 13 no. ATC locations.

Figure 6-2 – Aggregated total vehicle flow from ATC locations

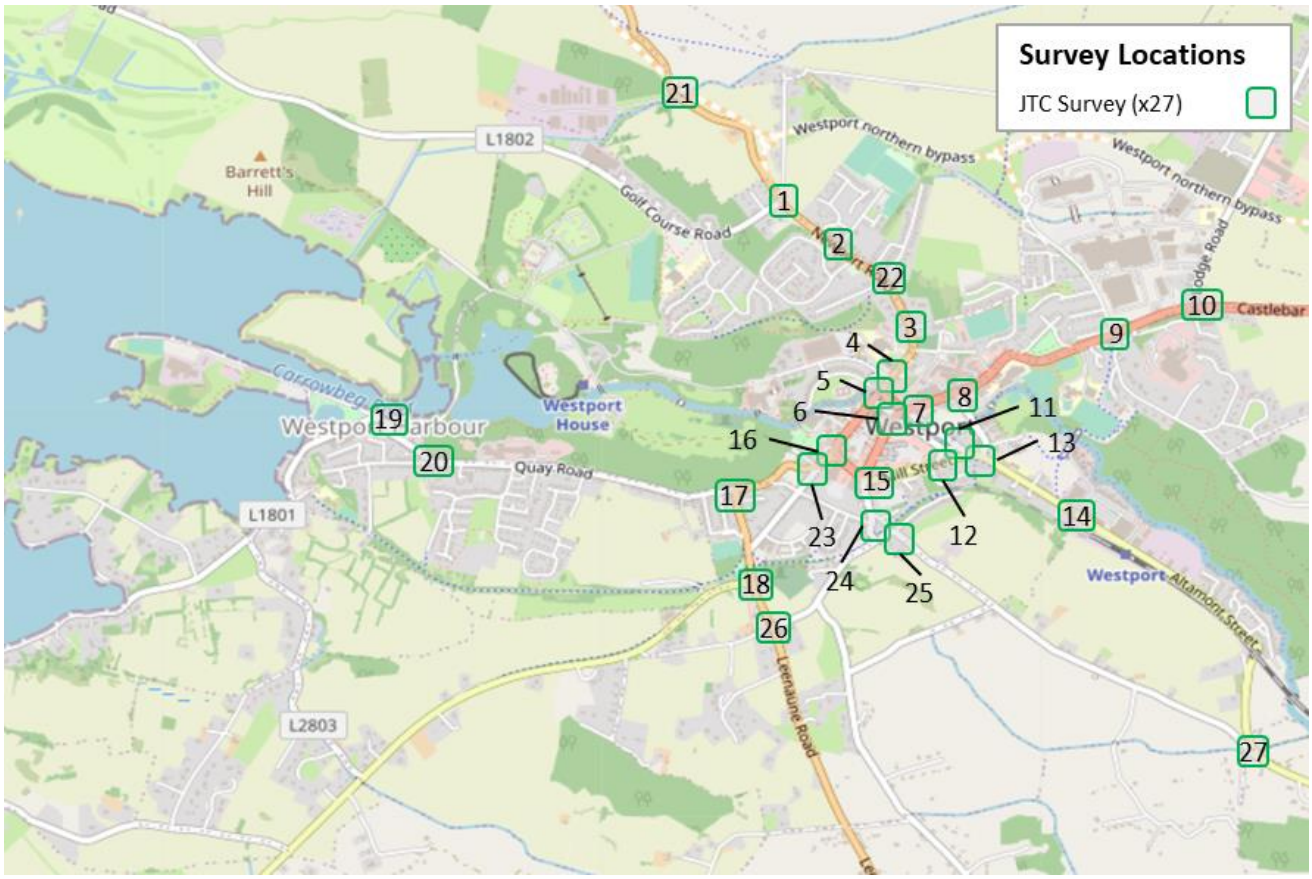


6.2.6 As indicated in Figure 6-2, the AM peak hour of 7,048 vehicles occurs from 08:00-09:00hrs with the PM peak hour of 7,268 vehicles occurring between 17:00-18:00hrs. These network AM and PM peak hours will be utilised when assessing the various JTCs and will also inform scenarios assessed within the LAM.

6.3 JUNCTION TURNING COUNT SURVEYS

6.3.1 JTCs were undertaken at 27 no. locations within the main study area. The surveys were undertaken on the 20th September 2022 and run for 12hrs between 07:00 and 19:00hrs. The locations cover a number of junctions in the Town Centre, junctions in proximity to schools in addition to key junctions on approach roads to Westport Town. The JTCs provide a breakdown of activity at each individual junction including turning movements per arm and vehicle type (including cyclist movements). The JTCs provide an indication of which junctions within Westport accommodate the highest traffic volumes, and the collected data will be utilised to calibrate the LAM. **Figure 6-3** illustrates the 27 no. JTC locations.

Figure 6-3 – JTC survey locations



6.3.2 The following **Figure 6-4** and **Figure 6-5** provide a graphical summary of the total approach movements (between 07:00-19:00hrs) at each of the 27 no. locations.

Figure 6-4 – JTCs total approach movements – town centre

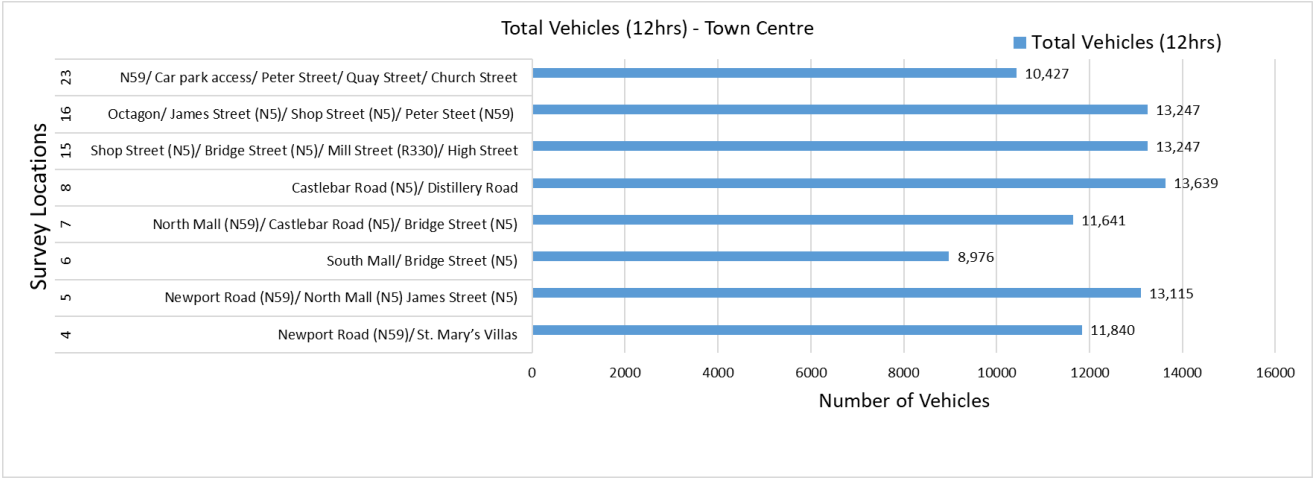
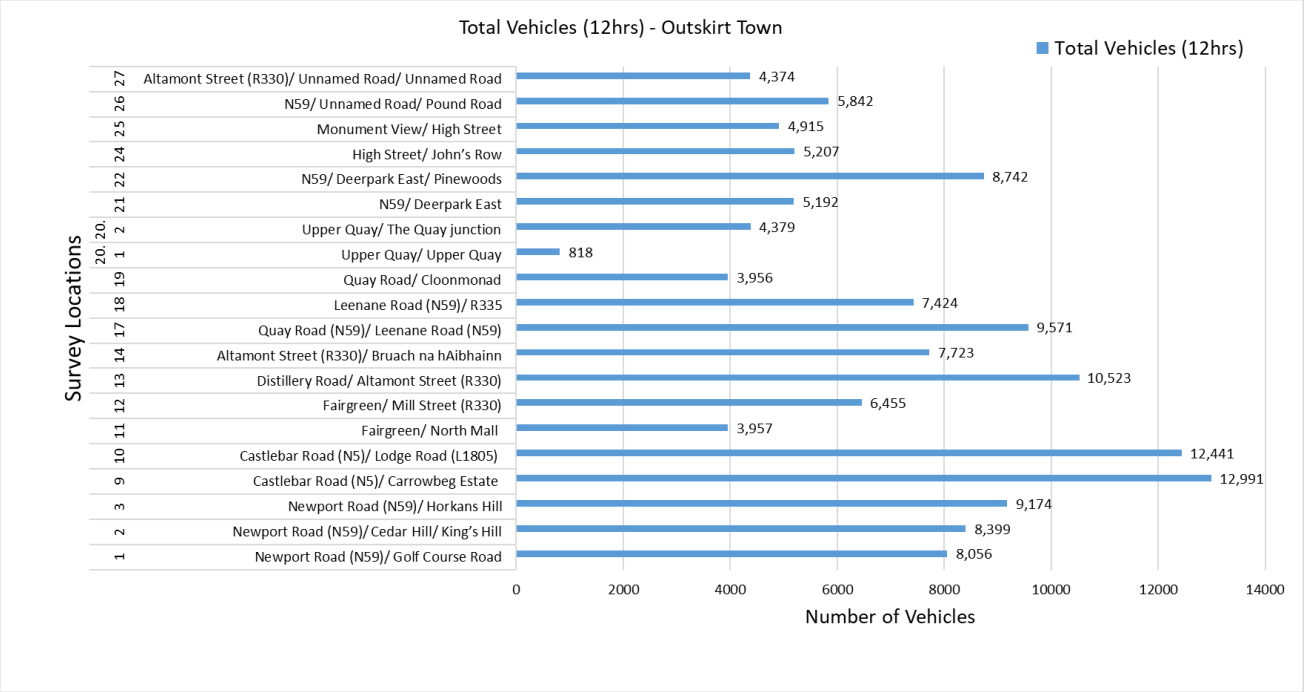


Figure 6-5 – JTCs total approach movements – outskirt town

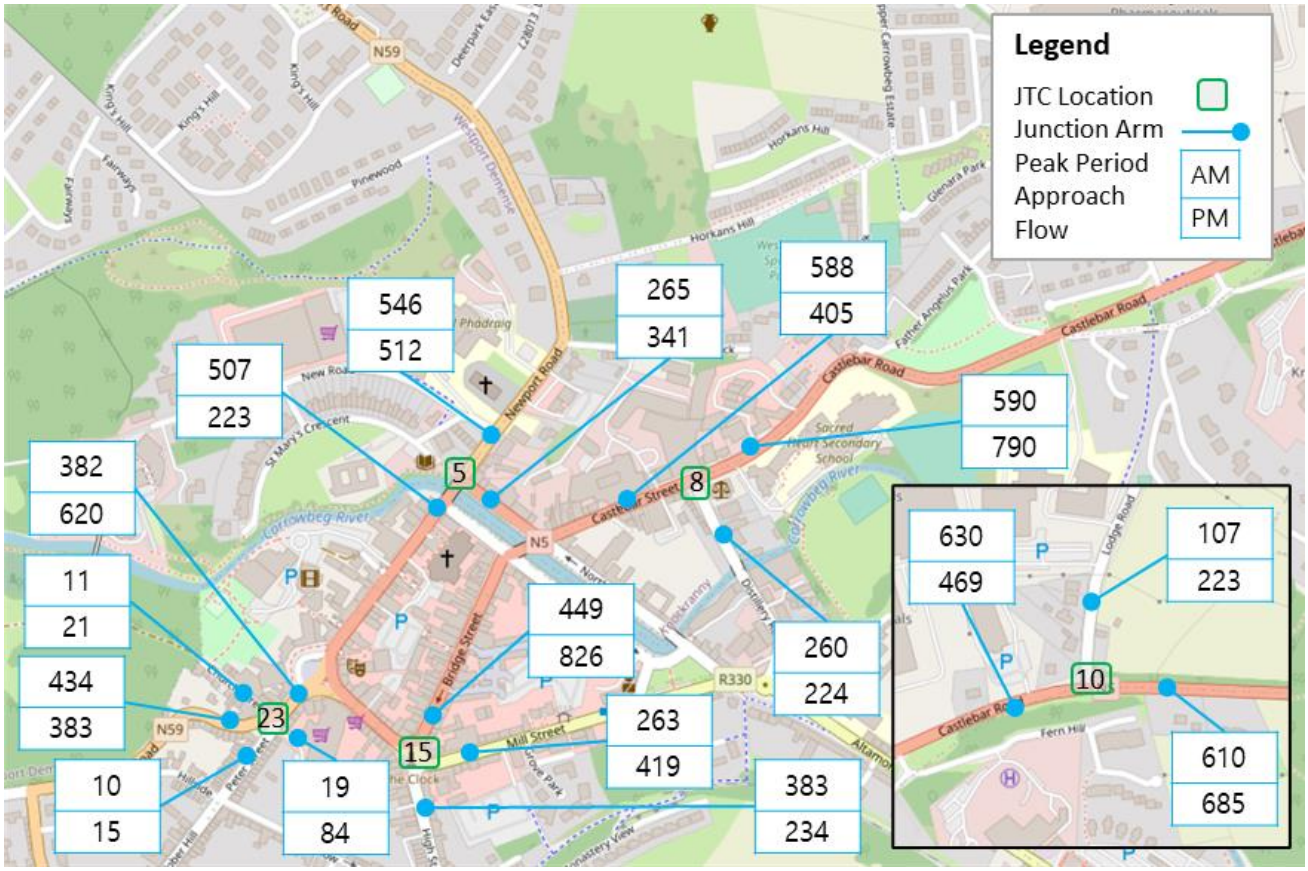


Note due to the junction layout of JTC 20, this site was split into two JTC locations, 20.1 and 20.2.

6.3.3 As illustrated in **Figure 6-4** and **Figure 6-5** there is a wide variation in the total recorded vehicle flows at each junction which given the range of locations surveyed is to be expected. JTC 19 Quay Road/ Cloonmonad has the lowest value of 3,956 vehicles while JTC 8 Castle Road (N5)/ Distillery Road has the highest value of 13,639 vehicles. For several of the Town Centre junctions (Figure 6-4), total vehicles for the survey period were above 10,000 with JTC locations 4, 5, 8, 15 and 16 handling large volumes of vehicles. Junctions on approach roads to Westport, e.g. JCT 9 and 10 on the N5, also indicate large volumes of vehicles. Key Town Centre and approach road junctions recorded the highest level of vehicle flows likely reflecting the network layout within Westport which currently does not offer any high quality by-pass routes, instead funnelling traffic through the Town Centre.

6.3.4 Further commentary is provided below on JTCs 5, 7, 8, 10, 15, 23 which the survey data indicates has a high number of vehicle movements and are considered key junctions (although not an exhaustive list) on the overall road network in the main study area. Data illustrated on **Figure 6-6** relates to the AM peak hour (08:00-09:00hrs) and PM peak hour (17:00-18:00hrs).

Figure 6-6 – AM and PM peak hour approach flows



6.3.5 The following summary is provided in relation to the data presented in Figure 6-6:

- **Junction 5** – the main approach flows are on the James Street (N5) arm and Newport Road (N59) arm with North Mall arm experiencing a small approach flow. AM and PM peak hour flows on Newport Road are similar whereas the PM peak hour flow on James Street is notably lower than the AM peak hour flow. During the AM peak hour a total of 6 cyclists were recorded with a total of 5 cyclists recorded during the PM peak hour. To the north of junction 5 are two primary schools whose opening times are similar to the AM peak hour which would add additional traffic that may otherwise not be present in the PM peak hour.
- **Junction 8** – the main approach flows are on the N5 arms of the junction, i.e. east-west and vice versa. AM peak hour flows on the N5 are similar in both directions however the PM peak hour eastbound flow is notably higher than the PM peak hour equivalent N5 westbound flow, likely due to the concentration of employment to the east of the Town. Distillery Road approach flows are relatively similar in both peaks. It is also noted that the vast majority of vehicle movements to/ from Distillery Road (ca. 85-95%) are to the N5 eastbound for both peak hours, suggesting Distillery Road's use by traffic avoiding the Core Town Centre road network. During the AM peak hour, a single cyclist was recorded with a total of 2 cyclists recorded during the PM peak hour.
- **Junction 10** – the main approach flows are on the N5 arms of the junction. Eastbound and westbound flows are similar in the AM peak hour whereas during the PM peak hour the eastbound flow is higher than the westbound flow. The vast majority (ca. 70%) of vehicle movements from Lodge Road are to/ from the N5 westbound arm for both peak hours with

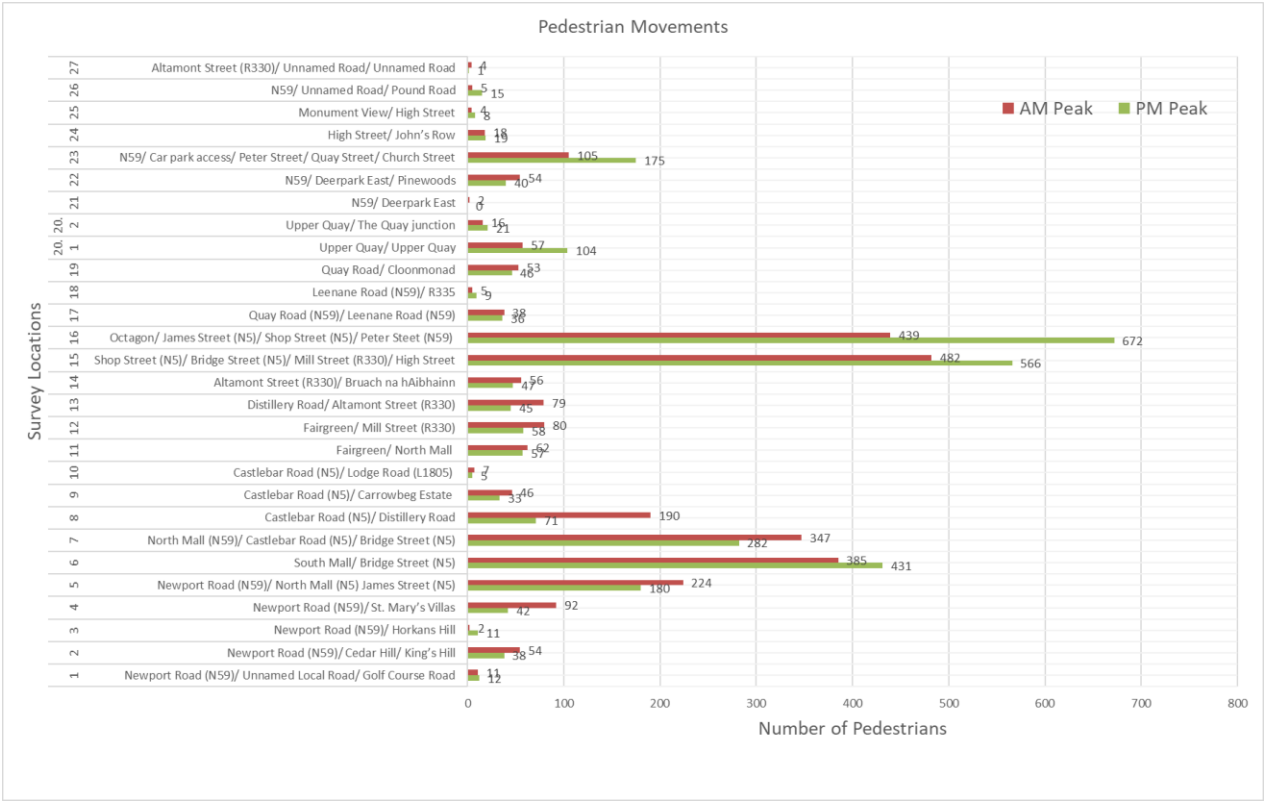
such traffic, largely commuter in nature due to the surrounding land use characteristics, largely travelling through the Town Centre road network. During the AM peak hour 7 cyclists were recorded with a total of 3 cyclists recorded during the PM peak hour.

- **Junction 15** – Bridge Street has the highest approach flow for both peak hours with the PM peak hour flow nearly double the AM peak hour flow. The majority of vehicles on the Bridge Street arm are turning right onto Shop Street (reflecting the gyratory operation of the Town Centre road network) with High Street the next highest destination. During the AM peak hour, a single cyclist was recorded with a total of 5 cyclists were recorded during the PM peak hour. No approach flow is provided for Shop Street as it is an exit only arm at the junction. JTC 16, ca. 50 metres to the northwest of JTC 15, is noted to indicate a similar level of vehicle flow as JTC 15.
- **Junction 23** – the main approach flows are the N59 arms of the junction with vehicle flows considerably higher than the other three non N59 arms. The highest approach flow was during the PM peak hour period on the northern N59 arm of the junction. The three other arms are considered minor and serve a commercial car park, an access to Westport House and the short residential street of Peter Street. During the AM and PM peak hours 5 cyclists were recorded per peak.

6.4 PEDESTRIAN SURVEYS

6.4.1 Pedestrian activity at each of the 27 no. junctions set out in **Figure 6-3** above was also recorded between 07:00-19:00hrs, on the 20th of September 2022, concurrently with the JTC surveys. The following **Figure 6-7** provides a graphical summary of the total pedestrian movements during the AM peak window and PM peak window, note peak times may differ to the traffic network peak times identified earlier, at each of the junctions.

Figure 6-7 – Total pedestrian movements



6.4.2 As illustrated in the preceding **Figure 6-7**, the is a wide variation in the number of pedestrian movements at each junction with Town Centre locations (e.g. location 5, 6, 7, 8, 15 and 16) showing high levels of activity compared to junction locations (e.g. 9, 10, 21 and 27) on approach roads to Westport.

6.5 AUTOMATIC NUMBER PLATE RECOGNITION (ANPR) SURVEYS

6.5.1 In addition to the traffic survey information detailed in preceding sections, ANPR surveys were also conducted as part of the background data gathering exercise. ANPR surveys capture vehicle registration plates and create a time stamp for each vehicle 'triggered' at a location. The surveys were undertaken over two days (20th & 21st September 2022), starting concurrently with the JTCs and recording data between 07:00-19:00hrs. The ANPR locations are as follows:

- **ANPR 1** – N59 North in proximity to the Westport Industrial Estate
- **ANPR 2** – N5 East in proximity to Lodge Road;
- **ANPR 3** – N5 north river bridge adjacent Westport Library;
- **ANPR 4** – Quay Road (L1801) in proximity to Admore Road;
- **ANPR 5** – R335 to the north of the junction with Lios Mót;
- **ANPR 6** – N59 South in proximity to the Maxol N59 Garage; and
- **ANPR 7** – R330 south of the Welcome to Westport Tourist Sign.

6.5.2 The seven ANPR survey locations were selected as they covered the main approach roads into Westport and a single location within the Town Centre. The ANPR locations were informed by a review of road network characteristics within the main study area. The collected data was anonymised, collated and analysed to provide origin-destination (OD) and average journey time data. The collected ANPR survey data will be utilised to develop and calibrate the LAM with further detail provided in Section 6.11.

6.5.3 The ANPR data is also used to provide an initial indication of vehicle OD travel patterns in Westport. By 'tracking' a vehicle registration across the 7 no. locations, it is possible to capture the origin and destination of a given vehicle within the ANPR cordon (i.e. main study area). This data can indicate potential volumes and proportions of through traffic and local traffic within the Town's road network. **Table 6-1** outlines origin percentage breakdown by ANPR location while **Table 6-2** presents the destination breakdown by ANPR location. For consistency with survey data present in preceding sections, the ANPR data shown in the subsequent tables and figures relates to movements recorded on Tuesday 20th September 2022.

Table 6-1 – Origin percentage breakdown by ANPR site

		To ANPR Location						
		1	2	3	4	5	6	7
From ANPR Location	1	20%	15%	40%	2%	9%	7%	8%
	2	12%	31%	9%	5%	25%	12%	5%
	3	25%	34%	17%	3%	9%	5%	7%
	4	9%	14%	25%	33%	11%	5%	4%

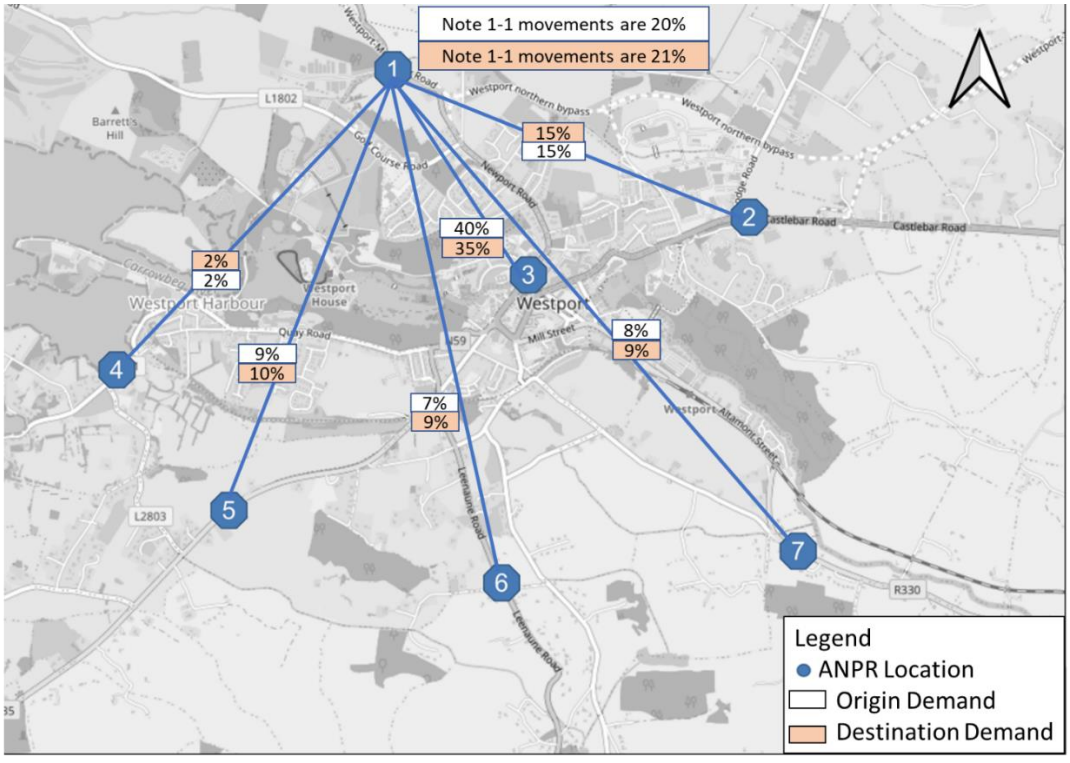
	5	9%	30%	27%	4%	13%	6%	12%
	6	12%	26%	25%	2%	12%	18%	5%
	7	15%	13%	12%	3%	22%	5%	29%

Table 6-2 – Destination percentage breakdown by ANPR site

		From ANPR Location						
		1	2	3	4	5	6	7
To ANPR Location	1	21%	10%	30%	6%	10%	14%	14%
	2	15%	23%	8%	23%	34%	28%	11%
	3	35%	28%	17%	12%	14%	14%	16%
	4	2%	2%	5%	32%	3%	3%	2%
	5	10%	21%	22%	14%	16%	12%	24%
	6	9%	11%	13%	6%	10%	24%	6%
	7	9%	5%	5%	6%	14%	5%	27%

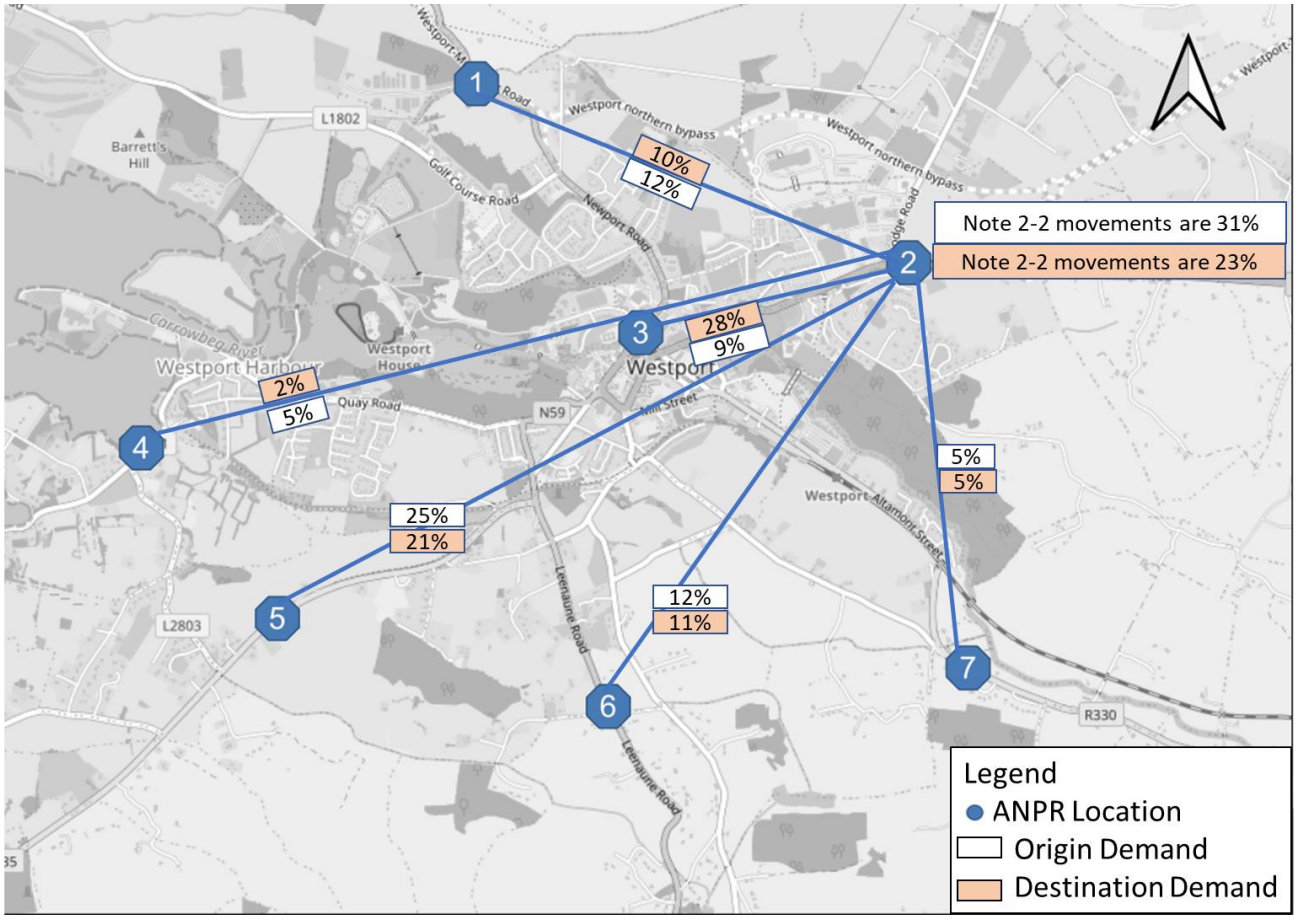
6.5.4 The following **Figure 6-8** to **Figure 6-11** illustrate OD desire lines for four key ANPR sites, namely, ANPR 1, 2, 3 & 6 to/ from the other ANPR sites (and trips at the same ANPR site).

Figure 6-8 – ANPR 1 Origin Destination



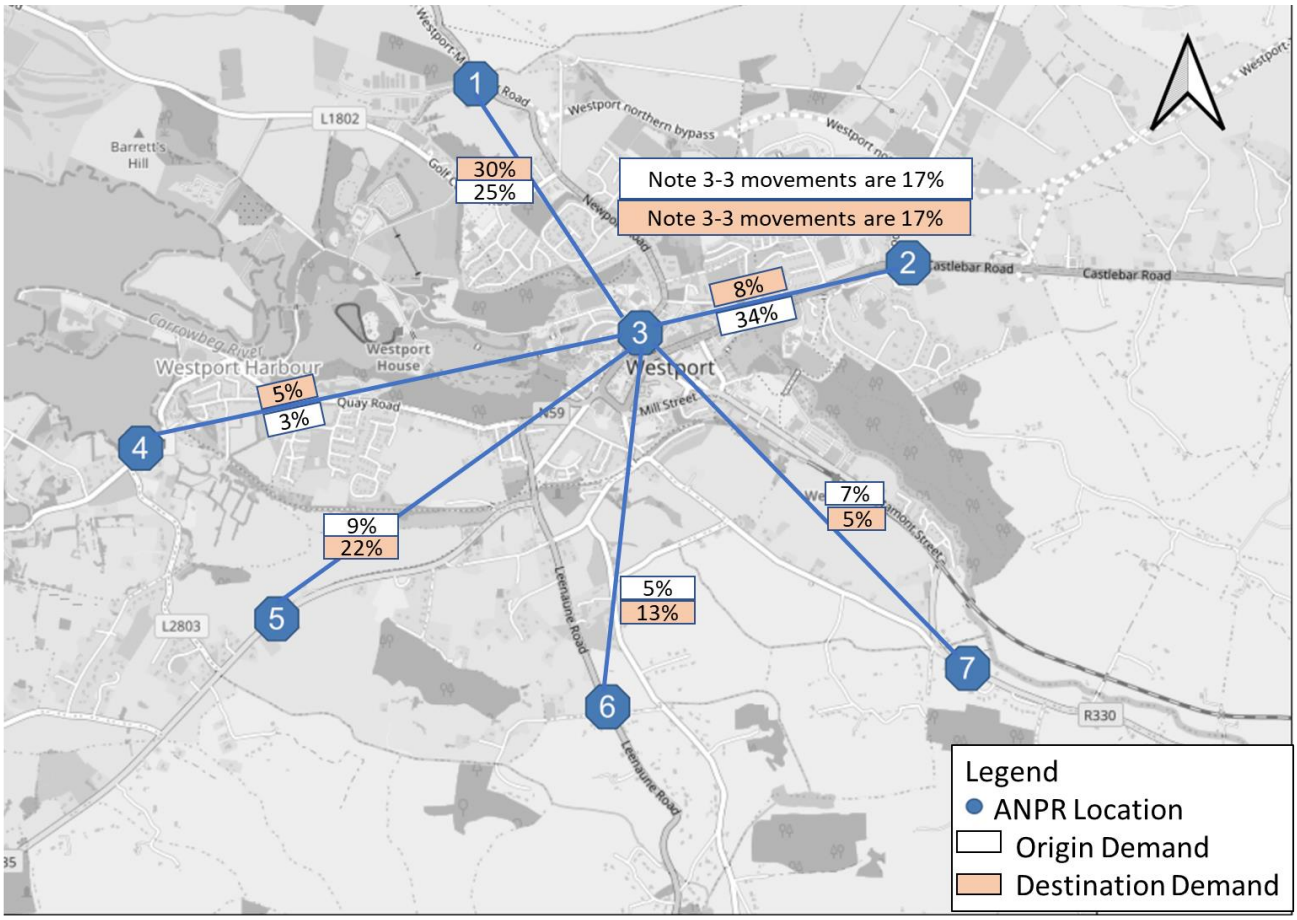
6.5.5 The preceding **Figure 6-8** illustrates OD and Destination Origin (DO) demand from site 1. The majority of demand is towards the centre of Westport with the second largest share of demand towards the N5 to the east of Westport. Demand is more evenly spread between ANPR locations a, 5, 6 & 7 with a minimal level of demand for site 4.

Figure 6-9 – ANPR 2 Origin Destination



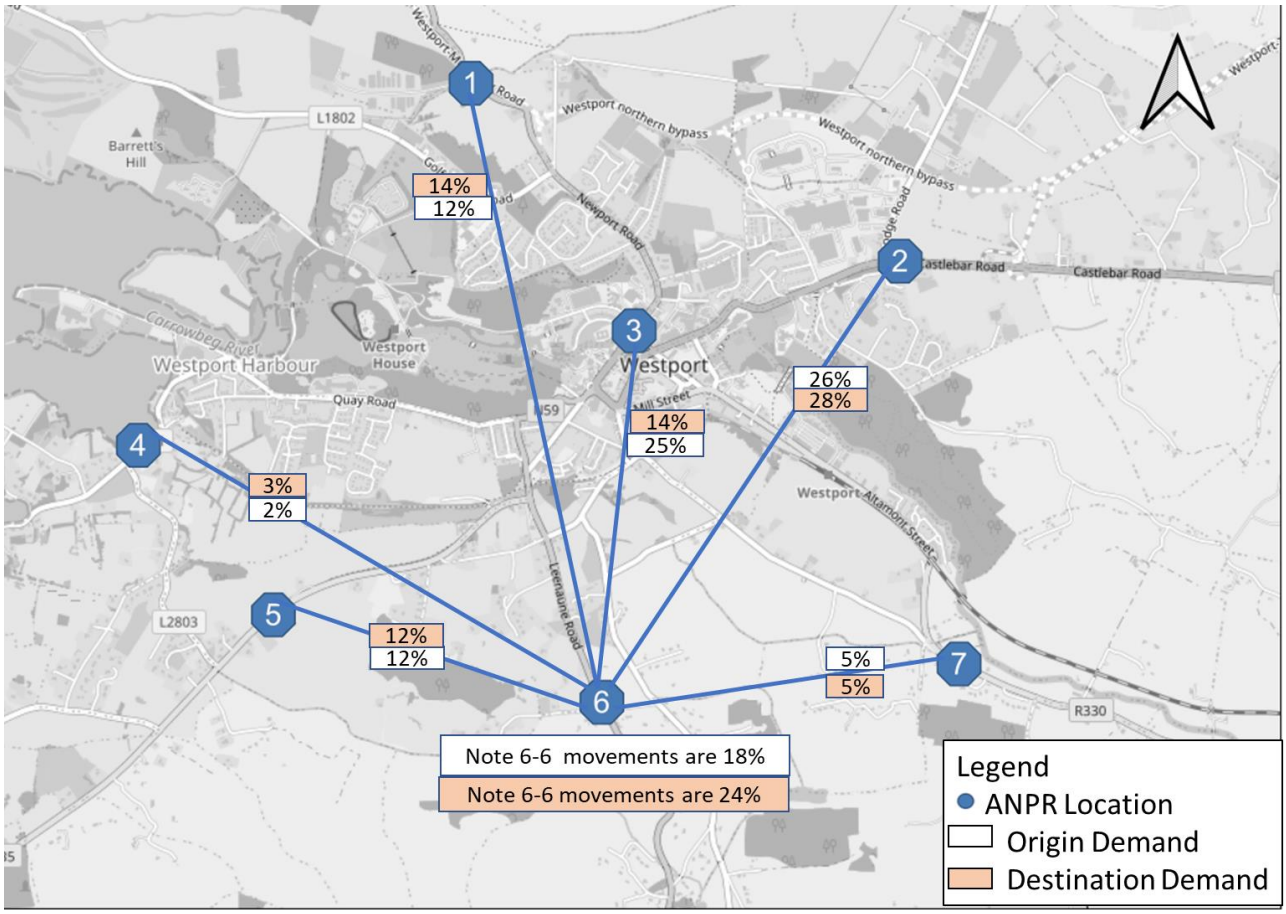
6.5.6 The preceding **Figure 6-9** illustrates OD and DO demand from ANPR 2. A similar level of demand is evident towards the centre of Westport as well as towards the west (i.e. R335) of Westport. ANPR locations 1 and 6 indicate a similar level of demand with ANPR 4 and 7 indicating a minimal level of demand.

Figure 6-10 – ANPR 3 Origin Destination



6.5.7 The preceding **Figure 6-10** illustrates OD and DO demand from ANPR 3. The main demand is east towards the N5 with a high level of demand also indicated to the north on the N59. Other sites have a similar level of demand, ranging between 6 to 10% with ANPR 4 indicating the lowest demand of 3%. ANPR 5 is noted to have a strong level of destination demand at 22%.

Figure 6-11 – ANPR 6 Origin Destination



6.5.8 The preceding **Figure 6-11** illustrates OD and DO demand from ANPR 6. The main demand is northeast towards the N5 with a high level of demand also indicated towards the centre of Westport. ANPR 1 and 5 indicate a similar level of demand of ca. 11-12% with ANPR locations 4 and 7 indicating a lower level of demand (ca. 2-5%).

6.5.9 Considering the data set out in **Figure 6-8** to **Figure 6-11**. (and also in **Table 6-1** and **Table 6-2**) over a quarter of indicated demand appears to be towards the centre of Westport with a similar level towards ANPR location 5 on the N5 to the east of Westport. This would suggest a relatively even split between through traffic and local traffic. Although it is noted, localised demand for each site (i.e. demand which did not pass through another site) was ca. 20-30% which would indicate significant short-distance vehicular trip making within Westport Town and its immediate surrounds.

6.5.10 Following on from the OD & DO data set out in the preceding figures, journey times on three key potential routes through Westport have been established, with the main concentration being on the strategic road network (i.e. the N5 and N59). **Figure 6-12** illustrates the potential routes with average journey times (based on ANPR data) detailed in the subsequent **Table 6-3.**

Figure 6-12 – Key routes based on ANPR data

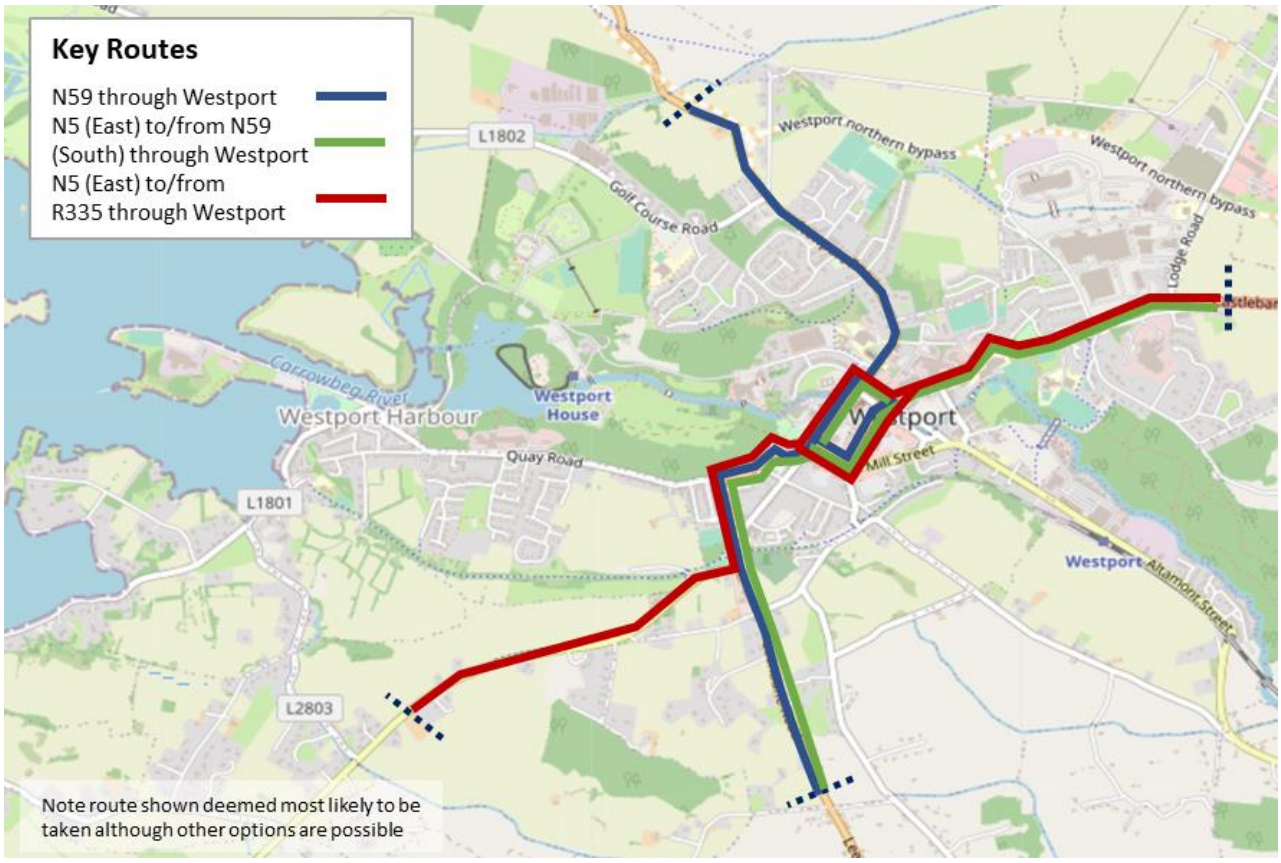


Table 6-3 – Average journey times

Route	Direction	Average Journey Time (hh:mm:ss)	Max Journey Time (hh:mm:ss)
N59 through Westport	Southbound	00:10:16	00:16:08
	Northbound	00:09:35	00:11:21
N5 (East) to/from N59 (South) through Westport	Eastbound	00:08:43	00:10:15
	South Westbound	00:08:40	00:11:42
N5 (East) to/from R335 through Westport	Eastbound	00:08:25	00:10:19
	Westbound	00:09:05	00:11:06

6.5.11 From the data presented in **Table 6-3,** it is noted the average journey time in either direction for each route is relatively similar. The maximum journey time for each direction is also provided in **Table 6-3**. It is noted that there is limited variability in the average and maximum journey time, suggesting that the road network in Westport is relatively uncongested at present. It is also noted that the average journey times in **Table 6-3** were checked against journey times on Google Maps which provided similar journey times as the ANPR data.

6.6 PARKING SURVEYS

6.6.1 In addition to the traffic surveys detailed above, parking surveys (including observations of on-street loading activities) were also undertaken in Westport Town with both on-street and off-street parking activity being observed during the survey period on Tuesday 20th of September 2022. The table below lists the locations surveyed, parking controls and survey specification.

Table 6-4 – Parking survey locations

Type	Location	Existing Parking Control	Survey Specification
On-Street Parking	James Street (Zone 1)	Designated paid parking (09:30-18:30hrs) with 1st hour free	Two 4 hr periods comprising 30-minute beats, between 07:00-11:00hrs and 15:00-19:00hrs
	South Mall (Zone 2)		
	Bridge Street (Zone 3)		
	Shop Street (Zone 4)		
	Mill Street (Zone 5)		
	Octagon incl. parking on N59 & N5 (Zone 6*)		
Off-Street Parking	Westport Leisure Park Car Park	Designated paid parking (08:30-18:30hrs)	1 day entry/ exit accumulation count, 15-minute intervals
	James Street Car Park	Designated paid parking (11:00-18:30hrs)	
	Mill Street Car Park	Designated paid parking (08:30-18:30hrs)	
	High Street Car Park	Designated paid parking (08:30-18:30hrs)	

*Zone 6 is the combined raw data of zone 6,7 & 8.

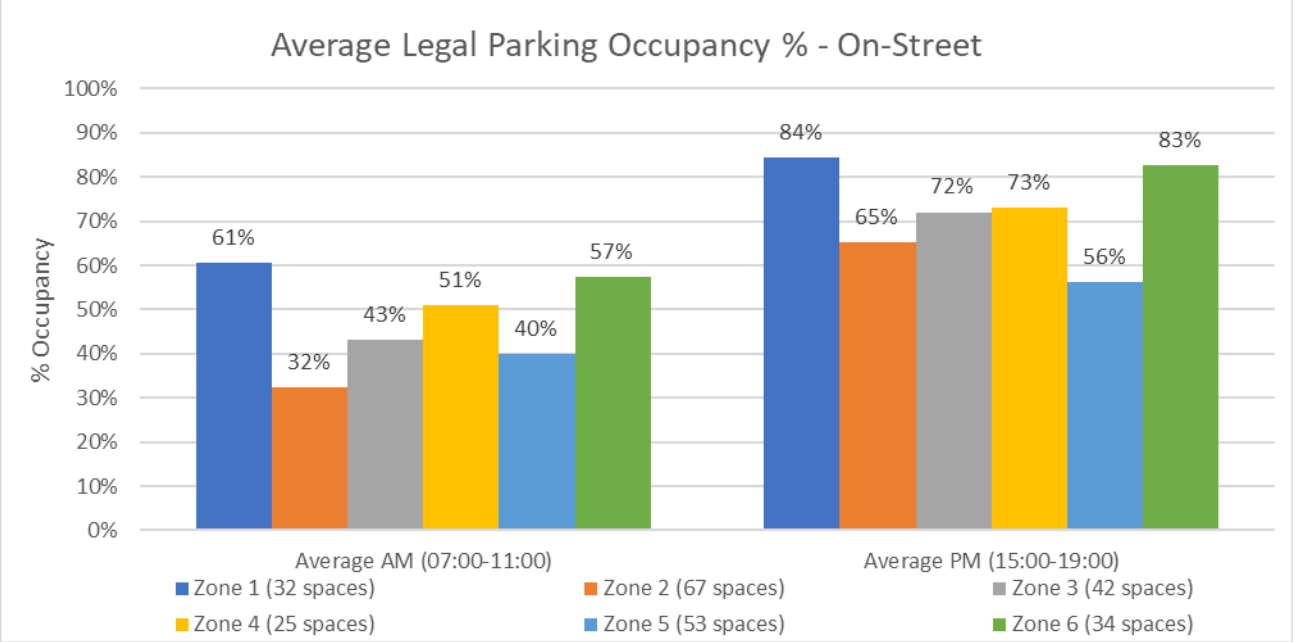
6.6.2 The raw survey data included legal spaces (e.g. designated paid parking, loading bays etc.) and illegal spaces (e.g. double yellow lines). The following sections provide a summary of the data collected with accompanying figures. Outline conclusions drawn from the survey data are also set out below.

6.6.3 Mayo County Council also provided a dataset of car park related data sourced from the car parking payment machines within the Town Centre. In addition, an interim parking survey report from 15-Minute Westport, a local interest group, was also provided by Mayo County Council. These data sources will form part of the background data collected as part of this stage of the ABTA process.

6.7 ON-STREET PARKING PROVISION

6.7.1 On-street parking activity was surveyed along key roads within the centre of Westport. **Figure 6-13** outlines the average occupancy of each zone during the AM and PM peak periods. Note percentages shown on **Figure 6-13** only relate to legally parked vehicles and the total legal capacity of a zone is indicated in brackets.

Figure 6-13 – Average legal occupancy percentage – on-street



6.7.2 As **Figure 6-13** outlines, the average occupancy of the various zones in the AM period ranges between 32% to 61%, with zone 1 indicating the highest average occupancy. In terms of the PM period, the average occupancy ranges between 56% to 84%, with zone 1 indicating the highest percentage of average occupancy. When compared to the AM period, occupancy during the PM period indicates a different pattern of parking around the Town with a generally higher level of occupancy. The average percentage occupancy gives an indication of the usage of on-street car parking throughout each of the four hour AM and PM peak periods, however it is noted that all of the zones had relatively modest parking capacities.

6.7.3 **Figure 6-14** and **Figure 6-15** summarise the maximum occupancy per zone and the 30 minute segment during which it occurred for the AM and PM periods.

Figure 6-14 - AM Period Legal Parking Occupancy % – On-Street

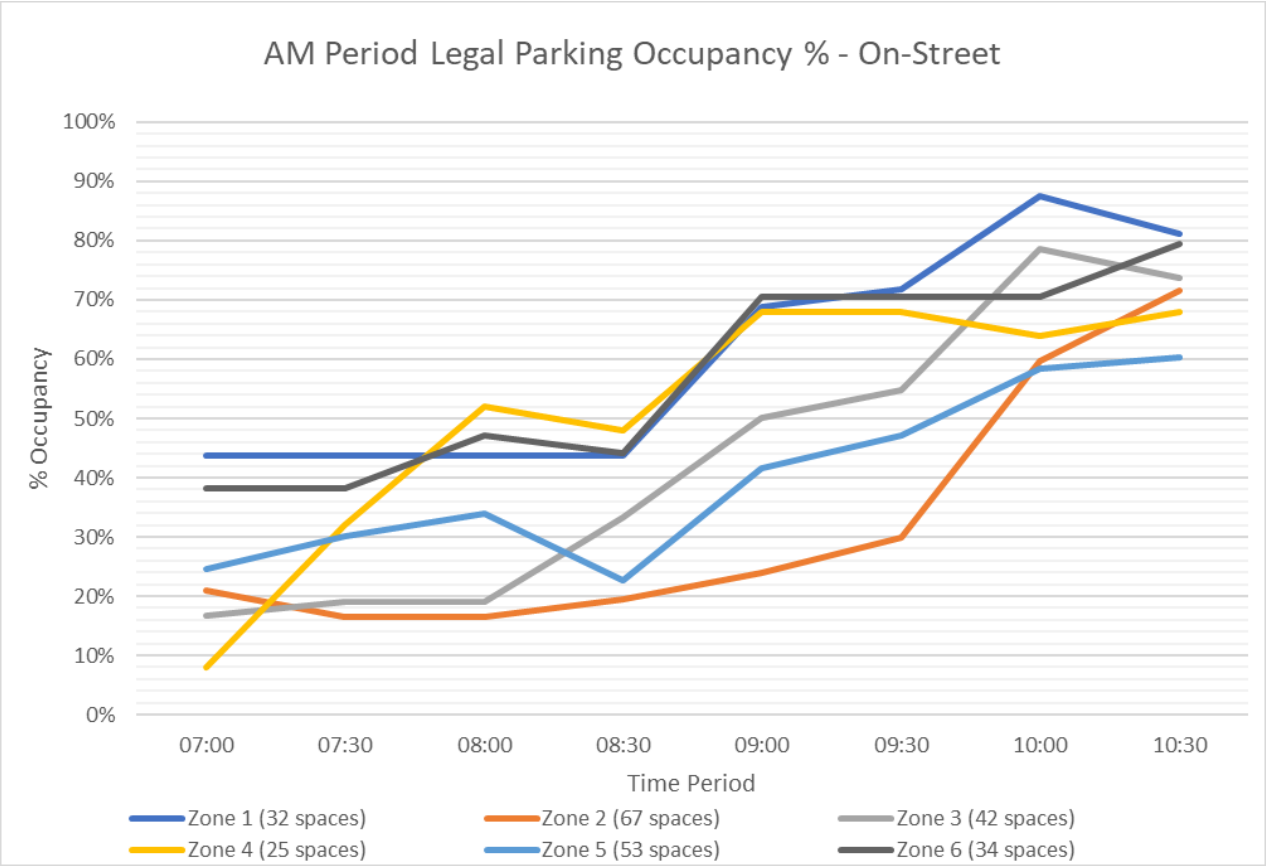
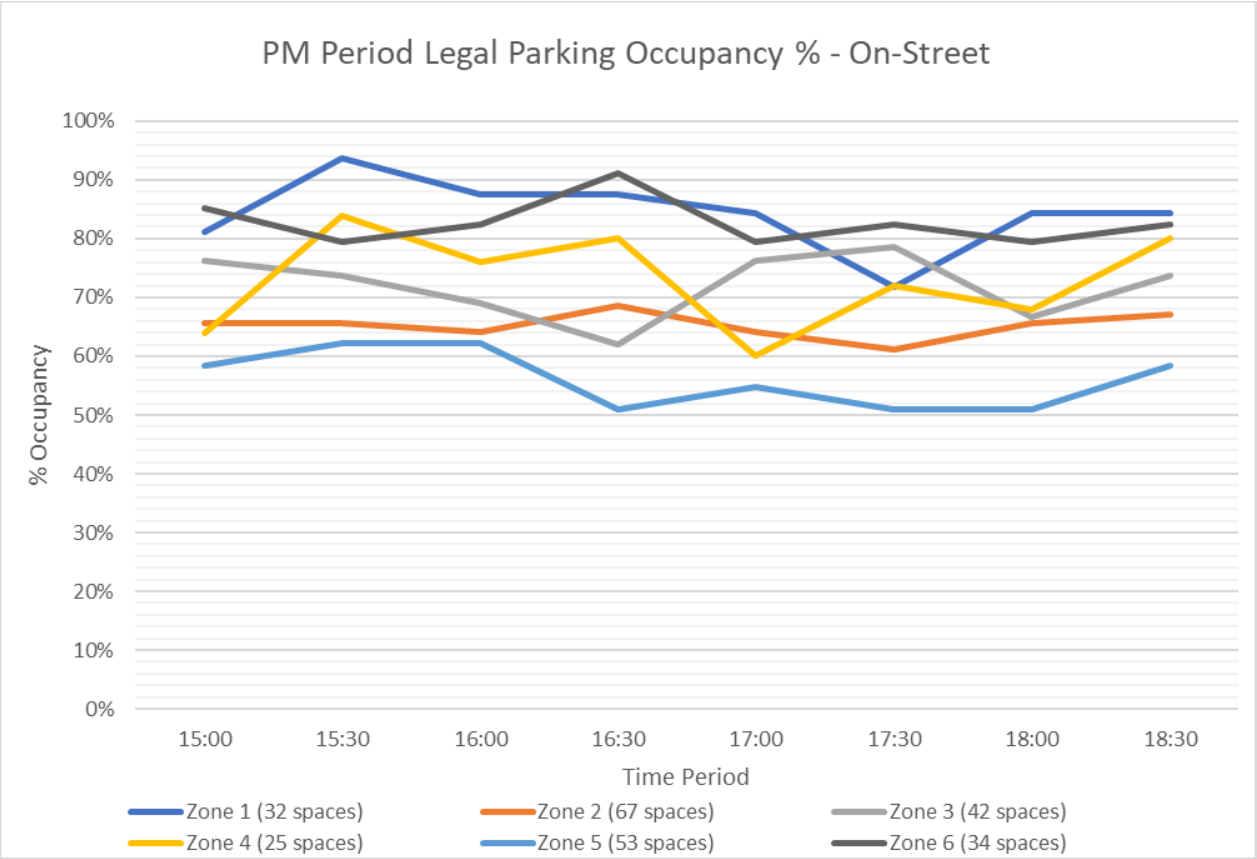


Figure 6-15 - PM Period Legal Occupancy Percentage – On-Street



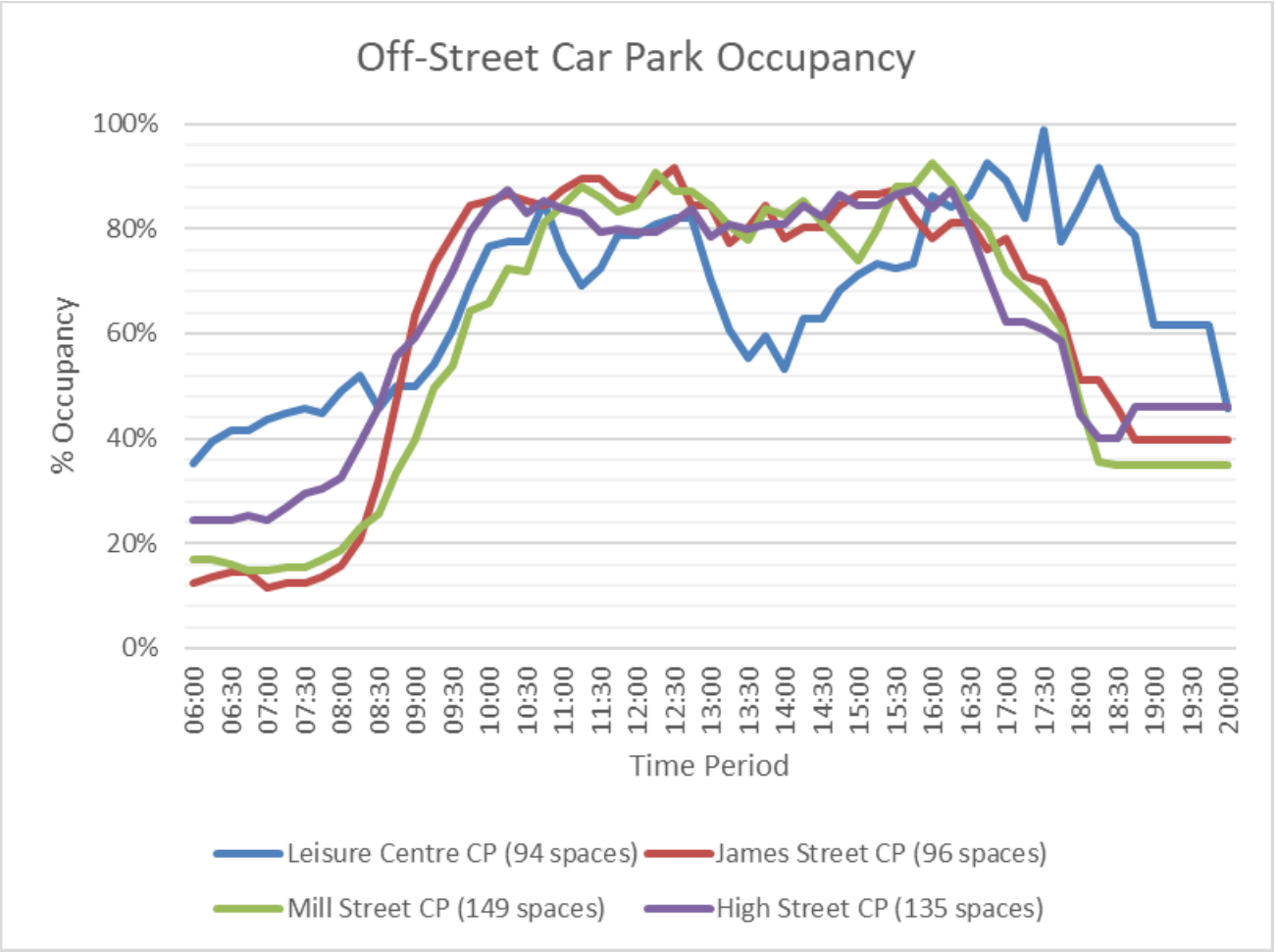
6.7.4 As per the preceding **Figure 6-14** and **Figure 6-15**, no zone in either the AM or PM period reached full occupancy. In the AM period, maximum occupancy across the 6 zones generally occurs from 10:00-11:00hrs. In the PM period, maximum occupancy across the 6 zones is more spread out across the two hour period from 15:30-17:30hrs.

6.8 OFF-STREET PARKING PROVISION

6.8.1 Four off-street public car parks in the centre of Westport Town were also surveyed on Tuesday 20th of September 2022. The survey observed entry and exits movements at each car park at 15-minute intervals which is then collated and used to calculate occupancy across the day.

6.8.2 **Figure 6-16** illustrates the occupancy level at each car park from 07:00-19:00hrs. Note the survey was recorded for 24hrs however before 07:00hrs and after 19:00hrs occupancy of each car park was minimal hence for ease of viewing (and consistency with the on-street result already presented) the figure does not include the early-morning or late-night hours.

Figure 6-16 – Car park occupancy – off-street

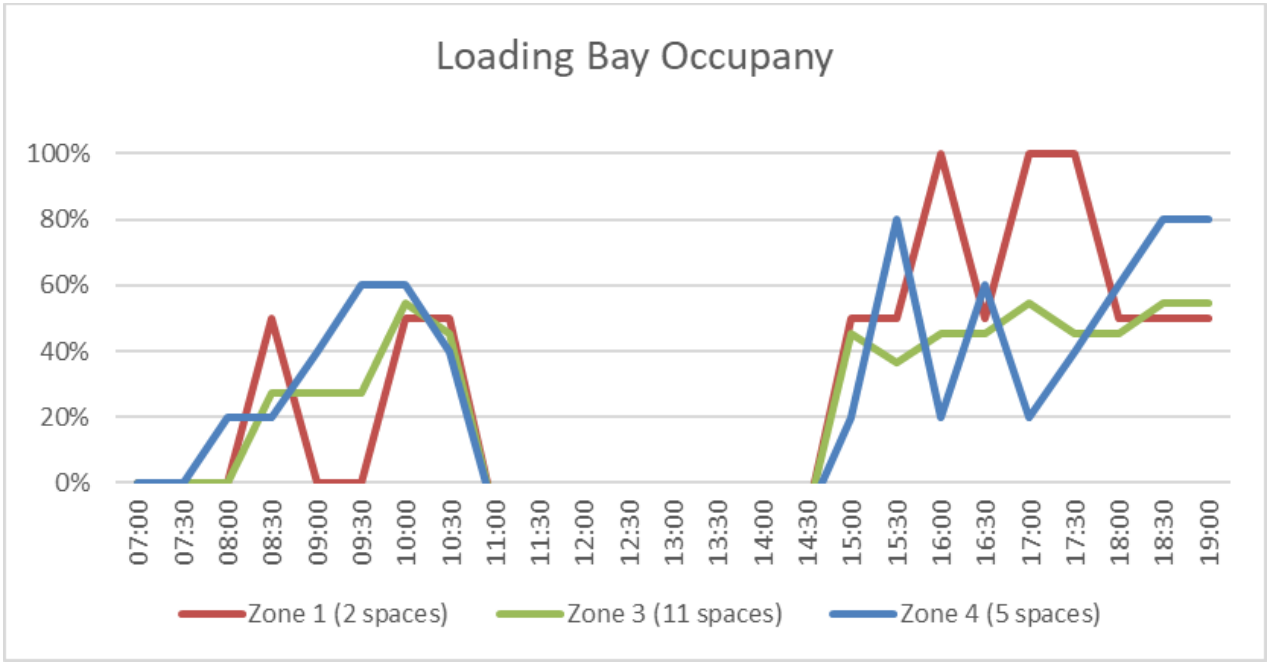


6.8.3 As **Figure 6-16** indicates the occupancy profile at three out of four of the car parks can generally be summarised as rising from early morning to peak at about 85-95% in the evening before occupancy begins to drop as night-time approaches. The occupancy profile for the Leisure Centre car park indicates a slightly different profile, with occupancy rising in the morning before dropping off in the early afternoon to rise again in the evening (peaking ca. 1 hour after the other three car parks). These results are line with the surveys undertaken by the 15 Minute Westport Campaign Group parking survey.

6.9 LOADING DELIVERY & REFUSE

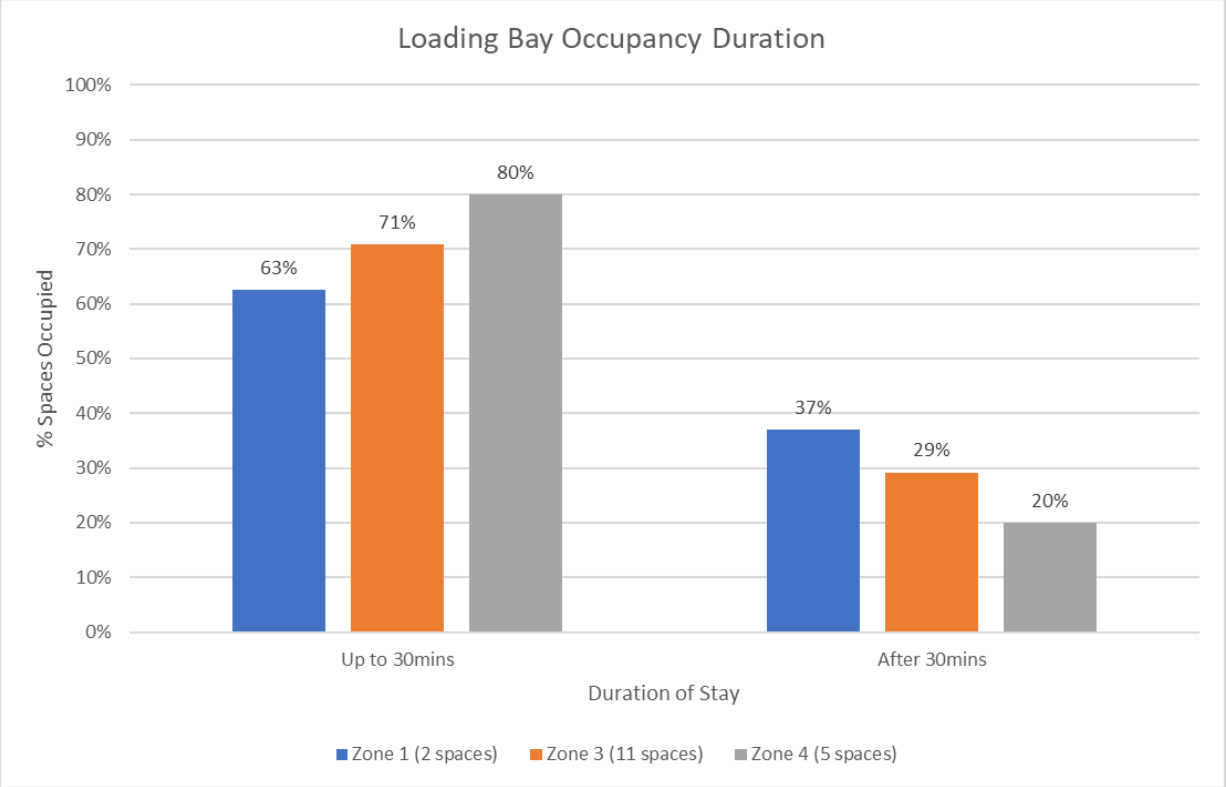
Existing loading and delivery activity was observed during a site visit to Westport as well as activity being picked up during the on-street survey. Within the centre of Westport, a number of designated loading bays are present on James Street (zone 1), Bridge Street (zone 3) and Shop Street (zone 4). These bays serve a mix of commercial properties including retail, leisure and tourist businesses etc. **Figure 6-17** illustrates the occupancy profile of the loading bays per zone and **Figure 6-18** indicates the duration of occupancy per zone. The number of loading bays are indicated in brackets on each figure.

Figure 6-17 – Loading bay occupancy



6.9.1 **Figure 6-17** illustrates occupancy of the on-street loading bays is higher during the PM period (14:30-19:00hrs) compared to the AM period (07:00-11:00hrs). Zone 1, which is the only zone to reach full occupancy, did so twice during the PM survey period – it is noted however to only have 2 no. spaces thereby making such an occurrence more likely. The occupancy profile over the survey period indicates zone 3 has a relatively flat profile (ca. 45%) whereas zones 1 and 4 vary more by time of day. During the PM period, zone 4 recorded its highest occupancy of ca. 80%.

Figure 6-18 – Loading bay occupancy duration



6.9.2 **Figure 6-18** indicates a strong level of occupancy for the first 30 minutes which reduces beyond 30 minutes but still indicates bays are being occupied for longer than 30 minutes. The legal time limit permitted for a loading bay is 30 minutes.

6.9.3 On-site observations (**Figure 6-19**) noted loading bays on Bridge Street (and to a lesser extent James Street) were at times being used as a 'double stack' loading bay, in that, two vehicles would stop at the bay side by side effectively blocking one lane of traffic on the adjoining vehicular carriageway. It was also observed on a couple of occasions incidents where a delivery vehicle would park up away from a designated loading bay, thereby blocking one lane of traffic to undertake delivery/ collection activities. This observed behaviour could suggest the turnover of vehicles in the delivery bay is too slow and drivers are not prepared to wait. It could also suggest delivery drivers see the two traffic lanes as an opportunity for additional parking and from experience understand blocking a lane would not adversely impact traffic flow.

Figure 6-19 – Loading bay, Bridge Street

6.9.4 Existing delivery activities outside of the Town centre were also observed during the site assessment. For instance, Westport Industrial Park to the northwest of the Town, delivery activities were observed to take place within the yard of industrial units and/ or kerb side adjacent to the units on the estate road. The road layout within the Park is suitability designed for an industrial estate with a wide carriageway, and kerbside delivery activity (for HVs) did not therefore adversely impact on the function of the estate road. In addition, traffic volumes on the estate road are minor as the estate is a trip destination and does not form part of a through route (although proposed expansion plans are noted which will eventually provide a link to the Golf Course Road) with minor traffic volumes (Estate Road Link Flow: AM Peak 124 vehicles, PM Peak 26 vehicles) recorded by the JTC (site 21) survey of the estate access with the N59. Delivery activities at other outlying locations such as the Abbvie site and Westport Business Park were observed and found to exhibit similar delivery behaviour with activities generally contained within the curtilage of a site/ industrial yard.

6.10 REFUSE COLLECTION

6.10.1 Information on existing refuse collection activities in Westport was collected including on-site observations and through stakeholder engagement. Bourke Waste Removal Limited (BWRL) provides

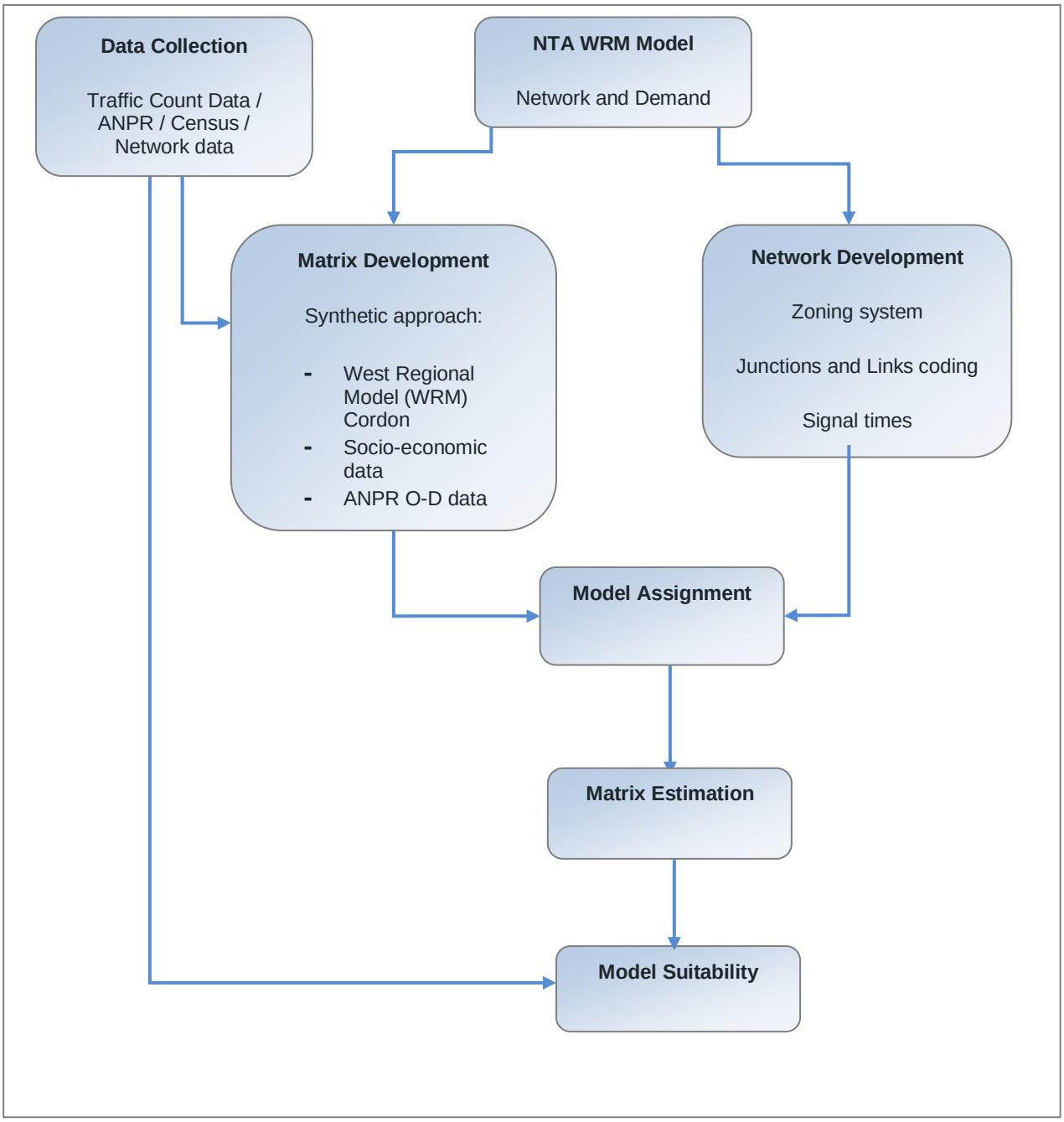
waste collection facilities for households in Westport and surrounding areas. An outline of collection activities including waste types, collection days and vehicle types has been collated. BWRL coverage area includes several locations in the main study area and area of influence such as (not an exhaustive list) Westport Town Centre, Westport Harbour/ The Quay, Golf Course Road, The Fairways Estate, Knockranny, Tonranny etc. BWRL collets three waste types, landfill waste, dry recyclable waste and organic waste with landfill waste and recyclable (and organic) waste collected on alternative weeks. The type of waste collected for each hold depends on the service option signed up for.

6.11 TRAFFIC MODEL DEVELOPMENT

6.11.1 As part of the ABTA process, a Local Area Model (LAM) is being developed. The transport model will help to identify potential highway network performance issues in addition to having the ability to test relevant mitigation strategies to accommodate growth in sustainable and manageable way as part of the Local Transport Plan's development.

6.11.2 This section provides a summary of the spatial coverage, model specification, years and time periods modelled. **Figure 6-20** gives an overview of the Westport LAM development process, from data collection through to a final calibrated model.

Figure 6-20 – Model development process



6.12 MODEL SPECIFICATION AND BASELINE DATA INPUT

6.12.1 The Westport LAM will be developed using the traffic modelling SATURN software. The use of SATURN as the highway assignment model platform was made because:

- it is the software platform used for the National Transport Authority (NTA) Regional Models, including specifically the West Regional Model which represents the starting point for the LAM's development; and
- it is considered tried and tested for similar projects in Ireland and internationally.

6.12.2 It should be noted that the model will be developed with reference to national guidance, particularly Transport Infrastructure Ireland (TII) guidance and the NTA Coding Guide for transport models, and sought to accord with this guidance where possible in modelling principles.

6.12.3 Base Year and Time Periods

WLAM will be developed to 2022 base year for two modelled time periods (based on the network peaks identified from survey data):

- Morning peak hour (08:00 to 09:00hrs); and
- Evening peak hour (17:00 to 18:00hrs).

6.12.4 Vehicle Types and Journey Purpose

The model will be built to represent four vehicle types:

- Light Vehicles (LVs including Cars and LGVs); and
- Heavy Vehicles (HVs including OGV1 and OGV2).

6.12.5 Passenger Car Units

The identified passenger car units (pcu) factors to convert vehicles to their equivalent unit values for modelling purposes are as follows:

- Light Vehicles: 1.0; and
- Heavy Vehicles: 2.2.

6.12.6 Assignment Method

The assignment model is Wardrop's Principle of Traffic (or User) Equilibrium. Further details can be found in the NTA WRM Model Development Report.

6.12.7 Zone structure

The zone system for LAM will be based upon 2016 Census geography following some basic principles:

- Generally, each zone should be as homogenous as possible.
- Zones within the main study area should ideally be roughly equal in terms of trip generation.
- Zones should be consistent with geographical boundaries to be used in obtaining zonal data.
- Zones should be consistent with natural boundaries such as rivers, railways, motorways or other major roads.
- Zones should anticipate, where practicable, future significant changes in land-use.
- From the perspective of the supply model, zones should be spatially defined around a convenient and realistic loading point, that is, land-use within a zone should have reasonably homogeneous access to the transport networks.
- The zoning should take account of model size and run times.

6.13 BASE YEAR MODEL DEVELOPMENT

6.13.1 The study area is currently covered by the NTA West Regional Model (WRM). However, the review of the WRM within the main study area revealed that the Westport area is in a buffer network with very few road links representing the local network. Therefore, the simulation network will be built from scratch, in order to ensure consistency throughout the model and to use the most recent coding

standards available. All coding will be based on the NTA RMS coding guide to ensure consistency throughout, with any deviations explained in the model file.

6.13.2 The demand matrices for the Base Year models will be built from three primary sources:

- Census data (Employment, Population);
- ANPR Origin-Destination data; and
- WRM cordon matrices.

6.13.3 It should be noted that the NTA WRM includes very few and coarse zones within the main study area (and the area of influence) with little representation of the local travel patterns.

6.13.4 The model will be calibrated and validated in accordance with the standards and procedures set out in the PAG. A number of key calibration/validation checks will be made between the modelled and observed data:

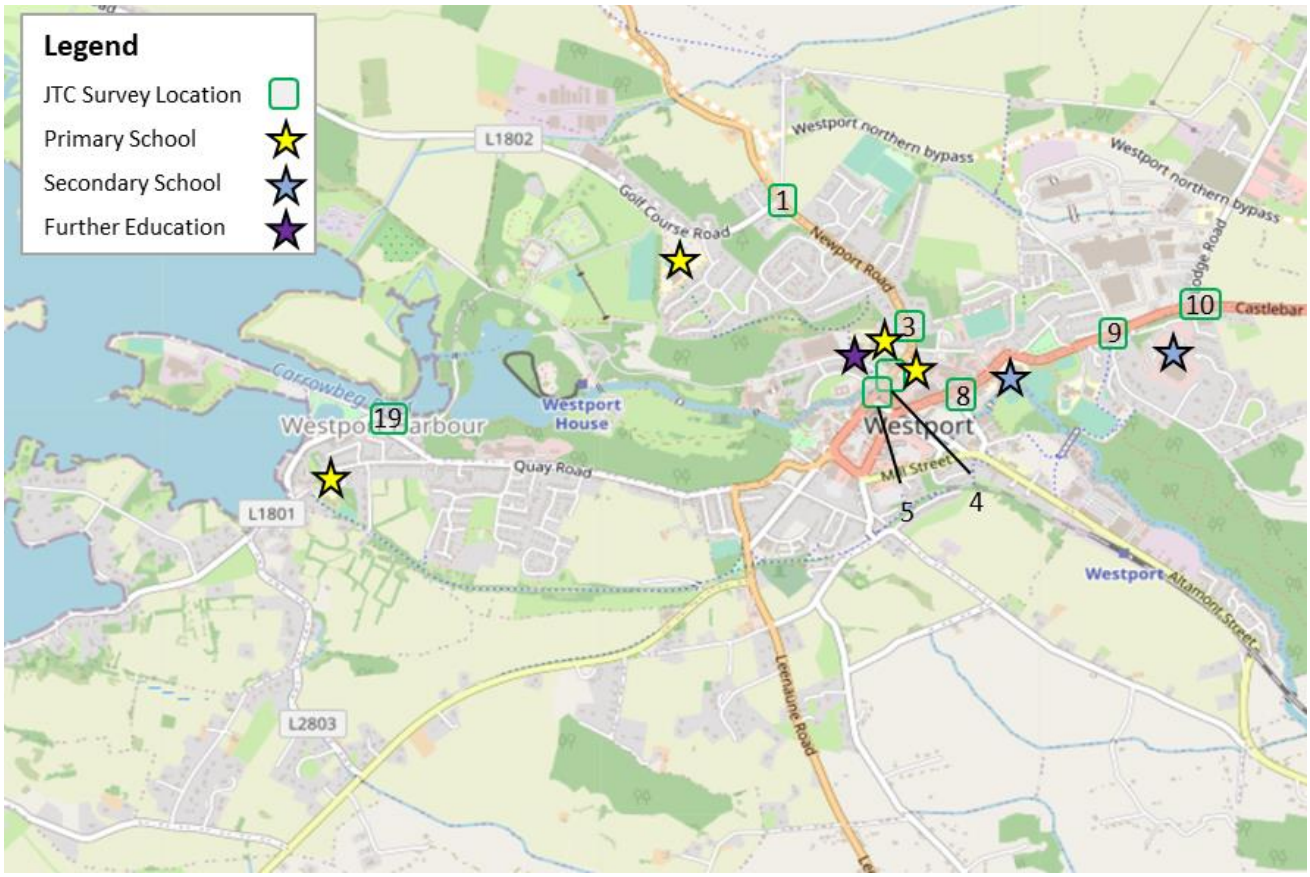
- Network calibration to assess routing between zones in different locations of the network;
- Comparison between modelled and observed traffic flows at the calibration count sites; and
- Comparison between modelled and observed traffic flows at the validation count sites.

6.13.5 Following on from development, calibration and validation of the base year LAM a number of future year scenarios will be considered and test within the LAM. Potential interventions/ measures identified as part of the ABTA process will be coded into the future year model and tested to understand the potential impact.

6.14 MAIN STUDY AREA SCHOOL SURVEYS

6.14.1 To understand the existing travel habits of students and schools' staff, a travel survey was issued to seven schools within the main study area. From which four primary schools (i.e. Holy Trinity National School, Scoil Phádraig, Gaelscoil na Cruaiche and The Quay National School), two secondary schools (i.e. Rice College and Sacred Heart School) and one further education college (i.e. Mayo College of Further Education). **Figure 6-21** illustrates the location and type of school as well as identifying the locations and traffic surveys in the vicinity of each school.

Figure 6-21 – School locations in the main study area



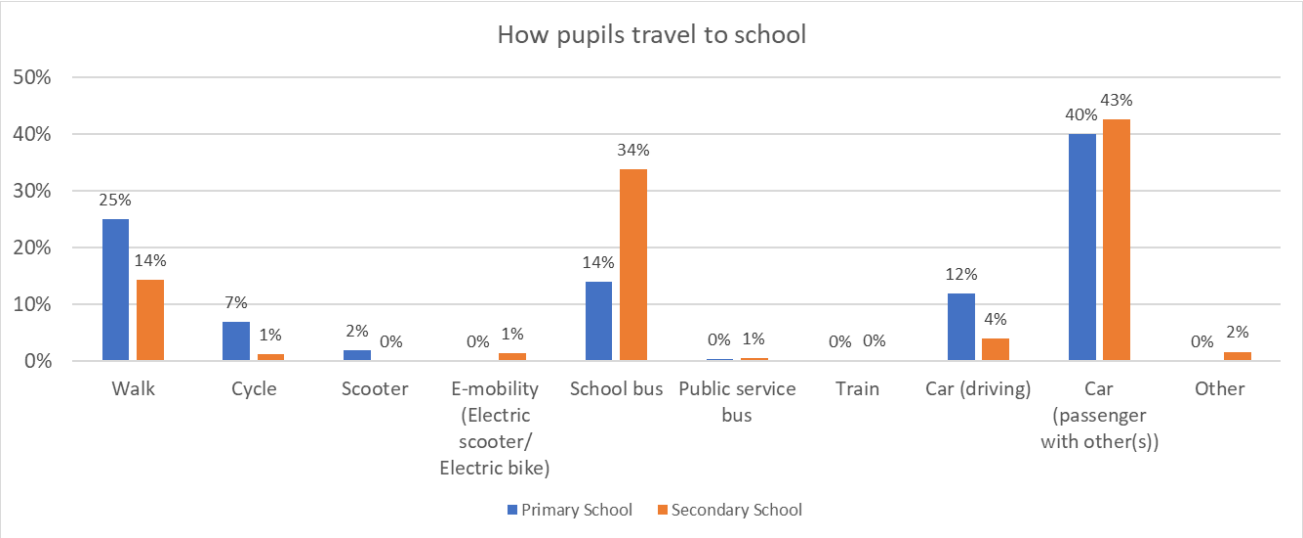
6.14.2 The seven schools are spread across Westport on a general east to west alignment. Three schools, Holy Trinity National School, Scoil Phádraig and Mayo College of Further Education are located in close proximity to each other. The two secondary schools are located along the N5 to the west of the Town Centre. The two other schools are more isolated from the Town Centre, with Gaelscoil na Cruaiche located to the northwest and The Quay National School located to the west.

6.14.3 Two separate questionnaires were devised, one for students and one for staff. The following paragraphs outline the questions and provide a summary of the results.

6.15 STUDENT TRAVEL QUESTIONNAIRE OUTLINE RESULTS

6.15.1 For students, four questions were asked by means of a 'hands-up survey undertaken by teachers in class. The questions seek to gain an outline of where students were travelling from, their primary means of transport and what changes they would like to see to improve travel to/ from school. Given the different types of schools surveyed, individual school results were aggregated and also split by school type (i.e. primary or secondary). Note Mayo College of Further Education is considered a secondary school for the purposes of this data. **Figure 6-22** presents results of students existing model of travel question.

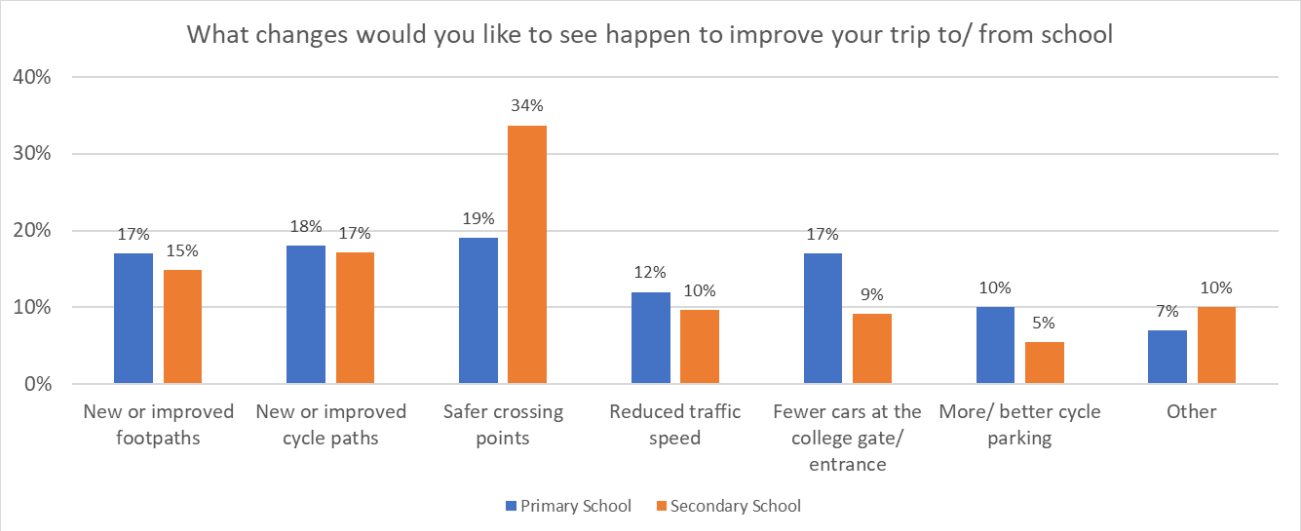
Figure 6-22 – Students existing travel modes



Travel by car, whether driving or passenger with other(s), was the main mode of travel for primary school students, equating to ca. 52% of all answers. Regarding the 12% of car (driving) for primary school students, this relates to a student been driven to school by a parent. For secondary school students, travel by car equates to 47% of responses. High levels of walking and moderate levels of cycling are notable findings for the primary schools whereas travel by school bus was notably higher for the secondary schools. More recent forms of personal mobility such as scooters/ E-scooters were also indicated as modes of travel utilised by a small proportion of students.

6.15.2 **Figure 6-23** presents results of students changes they would like to see happen question.

Figure 6-23 – Possible changes to improve travel



6.15.3 For primary schools, 17% of respondents wish to see new or improved footpaths and fewer cars at the school gate. In terms of new or improved cycle paths, ca. 18% of responses for both primary and secondary support this change. Provision of more cycle parking was noted by 10% of primary school respondents (and 5% of secondary schools). School management at Holy Trinity School noted a lack of available cycle parking and the management at the Quay National school noted recently adding more cycle parking on-site. Safe crossing points was the overwhelming choice for secondary school

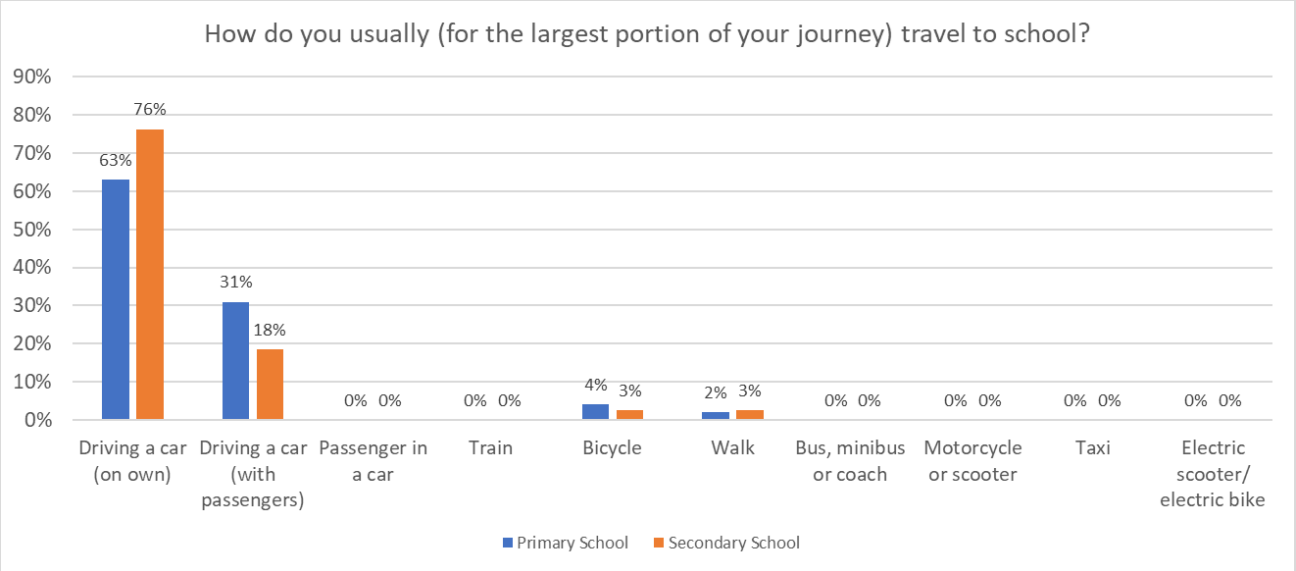
responses – considering two of the three secondary schools are located on the N5, which can represent a permeability barrier and related challenges for pedestrians trying to cross, this result is not surprising. School management at the Sacred Heart School noted the N5/ Distillery Road junction (JTC 8) is particularly problematic for students to cross at school opening and closing times. During the site assessment of Westport, issues for pedestrian crossing at this junction were observed as well as a lack of crossing opportunities on the N5 between Rice College and Sacred Heart School. Some responses provided did not fall within the suggested answers and included suggestions such as wider greenways, bus parking, more drop-off points, more on-site parking for students etc.

6.16 STAFF TRAVEL QUESTIONNAIRE OUTLINE RESULTS

6.16.1 For staff, nine questions were asked with each individual staff member asked to fill out a form. The questions seek to gain an outline of the primary means of transport used by staff, an indication of distance travelled, workdays, arrival and departure times and what improvements/ changes staff would like to see to improve travel to /from school. As with the student results, staff results have been aggregated and are presented in terms of primary and secondary school.

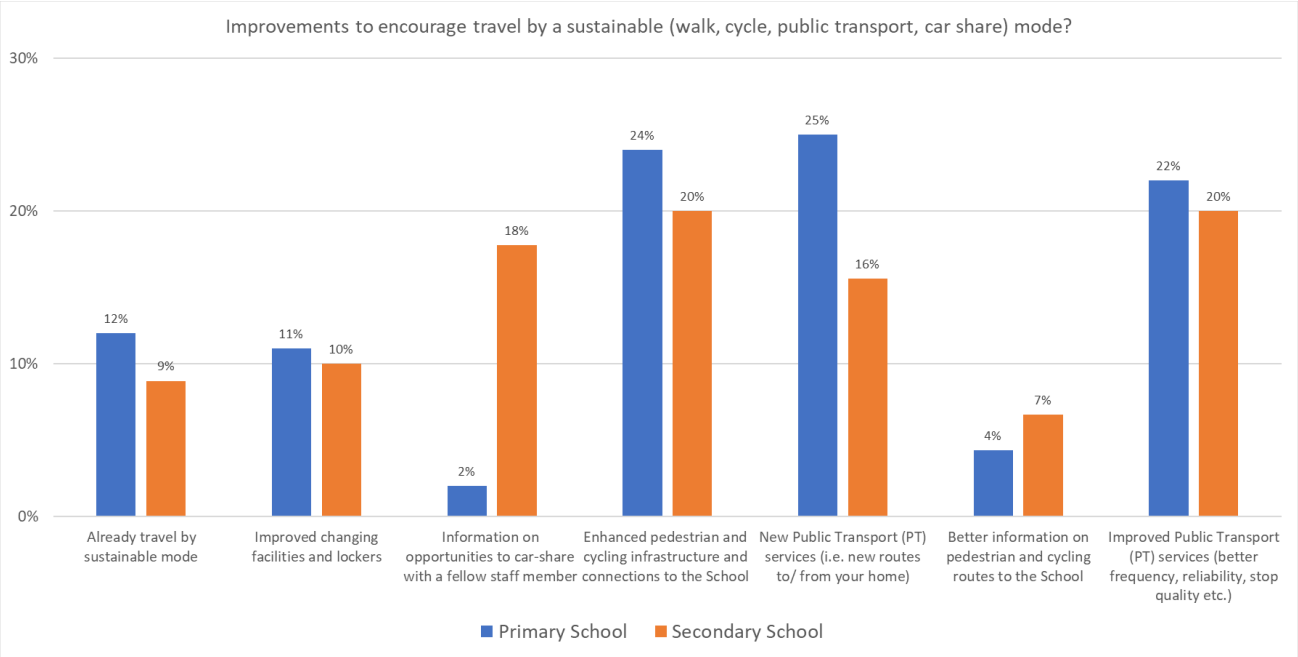
6.16.2 **Figure 6-24** presents results of staffs existing mode of travel question.

Figure 6-24 – Staff existing travel modes



6.16.3 Travel by car, whether driving or passenger with other(s), were the overwhelming mode of travel for primary and secondary school staff, equating to 94% of all answers. Minimum levels (2 to 4%) of cycling and walking were also recorded. The survey results indicate a high level of car usage for staff which is likely to be unstainable in the future and would not align with climate change goals to reduce overall travel by car. **Figure 6-23** presents results of changes staff would like to see happen question.

Figure 6-25 – Possible changes to improve travel



6.16.4 For staff at primary and secondary schools, a similar number of responses wish to see enhanced pedestrian and cycle infrastructure as well as new and improved public transport services. For staff at secondary schools, 18% of responses wish to have more information on car sharing with 2% of staff at primary schools indicating for such information. Improved changing facilities and lockers was also noted as a response, with a similar level of responses for primary and secondary schools.

6.17 SCHOOL RUN PEAK HOURS

6.17.1 While preceding sections have detailed survey results from a general network viewpoint, focusing on an AM and PM peak hour common across all the survey sites (ATCs, JTCs etc.) consideration of 'school run' traffic is also provided. Based on the opening and closing times of the seven schools within the main study area, common school peak hours were designated. A common AM peak hour between 08:15-09:15hrs was selected for the seven schools (this is noted to be similar to the network peak hour 08:00-09:00hrs). For a common school PM peak hour, two time periods were chosen due to the difference in closing times between the primary and secondary schools. For primary schools (and Mayo College of Further Education due to its proximity to near-by primary schools) the selected PM peak hour is 14:00-15:00hrs. For the two secondary schools, Sacred Heart School and Rice College a PM peak hour of 15:15-16:15hrs was selected. The following **Table 6-5** lists the junctions near each school, related traffic flows, total pedestrian and cyclists movements during the 'school run' AM and PM peak hours.

Table 6-5 – Summary traffic and total pedestrians flows

School	Junction Location	'School Run' Peak Hour	Traffic Flows	Total Pedestrian Movements	Total Cyclist Movements
	JTC 1	AM (08:15-09:15hrs)	520	10	6

Gaelscoil na Cruaiche		PM (14:00-15:00hrs)	779	14	13
Scoil Phádraig, Holy Trinity National School and Mayo College of Further Education*	JTC 3	AM (08:15-09:15hrs	875	2	9
		PM (14:00-15:00hrs)	830	4	6
	JTC 4	AM (08:15-09:15hrs)	1,171	92	11
		PM (14:00-15:00hrs)	1,120	77	7
	JTC 5	AM (08:15-09:15hrs)	1,331	115	7
		PM (14:00-15:00hrs)	1,188	204	6
Sacred Heart School	JTC 8	AM (08:15-09:15hrs)	1,421	158	2
		PM (15:15-16:15hrs)	1,298	351	4
Rice College	JTC 9	AM (08:15-09:15hrs)	1,301	37	7
		PM (15:15-16:15hrs)	1,232	37	7
	JTC 10	AM (08:15-09:15hrs)	1,279	3	6
		PM (15:15-16:15hrs)	1,144	10	7
St. Colmcille's National School	JTC 19	AM (08:15-09:15hrs)	357	32	17
		PM (14:00-15:00hrs)	448	67	10

** Note three schools grouped due to the proximity to three selected junctions*

6.17.2 JTC 1 indicates a low level of pedestrian and cyclist activity during the 'school run' peaks. JTC 3 is located to the north of the relevant schools, heading out of the Town Centre on the N59 and comparatively has lower values than JTCs 4 and 5 which are more towards the Town Centre. JTCs 4 and 5 have a higher level of pedestrian movements than cyclist movements for both peaks, with JTC 5 illustrating a high level of pedestrian activity. It is also noted that JTC 5 is a 3-arm signal-controlled junction although only two arms provide signalised pedestrian crossing points.

6.17.3 JTC 8 in proximity to the Sacred Heart School has a low level of cycle movements during the school run peak hours. Regarding pedestrian movements, the PM school run hour has a high level of pedestrian activity, with more than double the movements compared to the AM school run peak. As

noted previously, this particular junction has been identified as problematic for pedestrians, especially around school drop-off and pick-up times.

6.17.4 JTC 9 and 10 which are located on the N5 to the east of the Rice College indicate similar traffic and cyclist levels between each. Pedestrian movements are more evident at JTC 9 which is closer to the school and also has a signal-controlled crossing point on the westbound arm of the N5. JTC 19 is not as close to the relevant school as other JTCs outlined in **Table 6-5** however is included for completeness. Overall volumes of traffic at this junction are notably lower than other junctions whereas pedestrian and cyclist movements would be higher than other junctions. The junction provides access to Westport House and the Greenway which likely influence the number of pedestrian and cyclist movements recorded. At present there is no dedicated greenway infrastructure between JTC 19 and The Quay School where individual sections of the greenway terminate. Providing a dedicated greenway link between these two points will be explored as part of potential measures within the Local Transport Plan's development.

6.17.5 The preceding paragraphs have outlined the results of the school travel surveys and identified 'school run' peak hours. The travel survey results indicate car is the dominant mode of transport for students and staff however there is opportunity/ demand for new and improved active and sustainable travel infrastructure and services to be provided in Westport. In addition, overall cyclist movements at each junction during the 'school run' were low whereas higher levels of pedestrian activity was recorded, especially at Town Centre junction. Potential interventions/ measures arising from the Local Transport Plan should seek to encourage more walking and cycling movements.

7 TRANSPORT INFRASTRUCTURE AND SERVICES

7.1 HIGHWAY NETWORK

Existing Road Infrastructure

7.1.1 The N5 National Primary Road forms an east-west corridor across the north of Ireland. It originates in Dublin and arrives in Westport from the east via Castlebar. It provides connection to other Primary and Secondary roads and forms the principal route for trips between Westport and the rest of the country. The N5 also provides access to/from West Ireland Airport (Knock) located around 55 km to the east of Westport. Presently, the N5 west of Castlebar is a single carriageway, though this will change with the Westport to Turlough road project detailed in the next section.

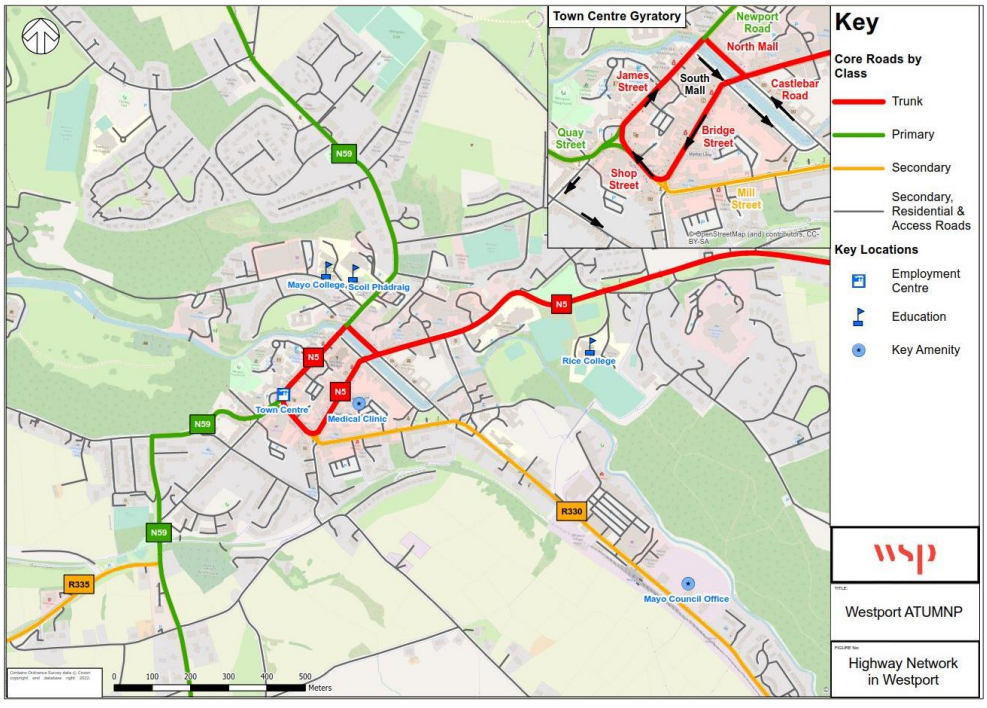
7.1.2 The N59 National Secondary Road crosses Westport north-south, providing links to Newport to the north, as well as Westport's rural hinterland. The road also forms part of the Wild Atlantic Way, a famous scenic route that appeals to leisure drivers. This road is a single carriageway for its length.

7.1.3 The N5 and the N59 intersect in Westport, where a gyratory is formed around the town centre as shown in

7.1.4 **Figure 7-1**.

7.1.5 The east (Bridge Street), south (Shop Street) and west (James Street) sides of the gyratory contain two lanes of one-way traffic with on-street parking on both sides for much of the corridor. The north side is split between the single carriageway, single direction South Mall and the bi-directional North Mall. Aside from the Primary and Secondary roads, the R330 road provides cross country links towards Ballinrobe, Galway and the town's south-east, as well as providing the principal access road for the town's railway station.

7.1.6 **Figure 7-1 – Road network hierarchy (existing)**



7.1.7 One notable feature of Westport's roads is the provision of on-street car parking bays on the majority of roads in the town centre, including both the N5 and N59. The manoeuvring of vehicles to/from these bays can cause disruption to traffic flow in peak periods.

Existing Road Network Operation

7.1.8 Traffic surveys have been commissioned and reviewed by Transport Insight to understand the current operation of Westport's traffic network. The key findings of these surveys are provided in **Section 6**.

7.1.9 Observed evidence gathered by WSP staff on visiting Westport suggested that one point of congestion in the town was the junction of Newport Road, North Mall and James Street[12], where extensive queuing was observed on Newport Road approaching the junction.

7.1.10 The Octagon, at the south-western corner of the gyratory, was also observed as having issues regarding vehicles making illegal turns.

Current and Potential Road Schemes

N5 Westport to Turlough Road Project

7.1.11 The proposed N5 road project stretches from northwest of Westport in the townland of Deerpark East to a point East of Castlebar in the townland of Ballyneggin. The design of the proposed N5 mainline is a Type 2 Dual Carriageway with major junctions proposed at the intersection of the N59, existing N5, N84 and N60. The alignment is illustrated in **Figure 7-2**.

7.1.12 This road was initially scheduled to open in October 2022 but is now expected to open in Q2 2023.

Southern Bypass

7.1.13 There has been initial discussion of a bypass road which would connect the Westport to Turlough Road (N5) with the R330 and N59 south of Westport. This road is only at high level concept stage presently. If delivered, it would reduce the need for traffic to use the N5 town centre gyratory, by providing a new east-west link which would allow the following movements, among others, to avoid the town centre:

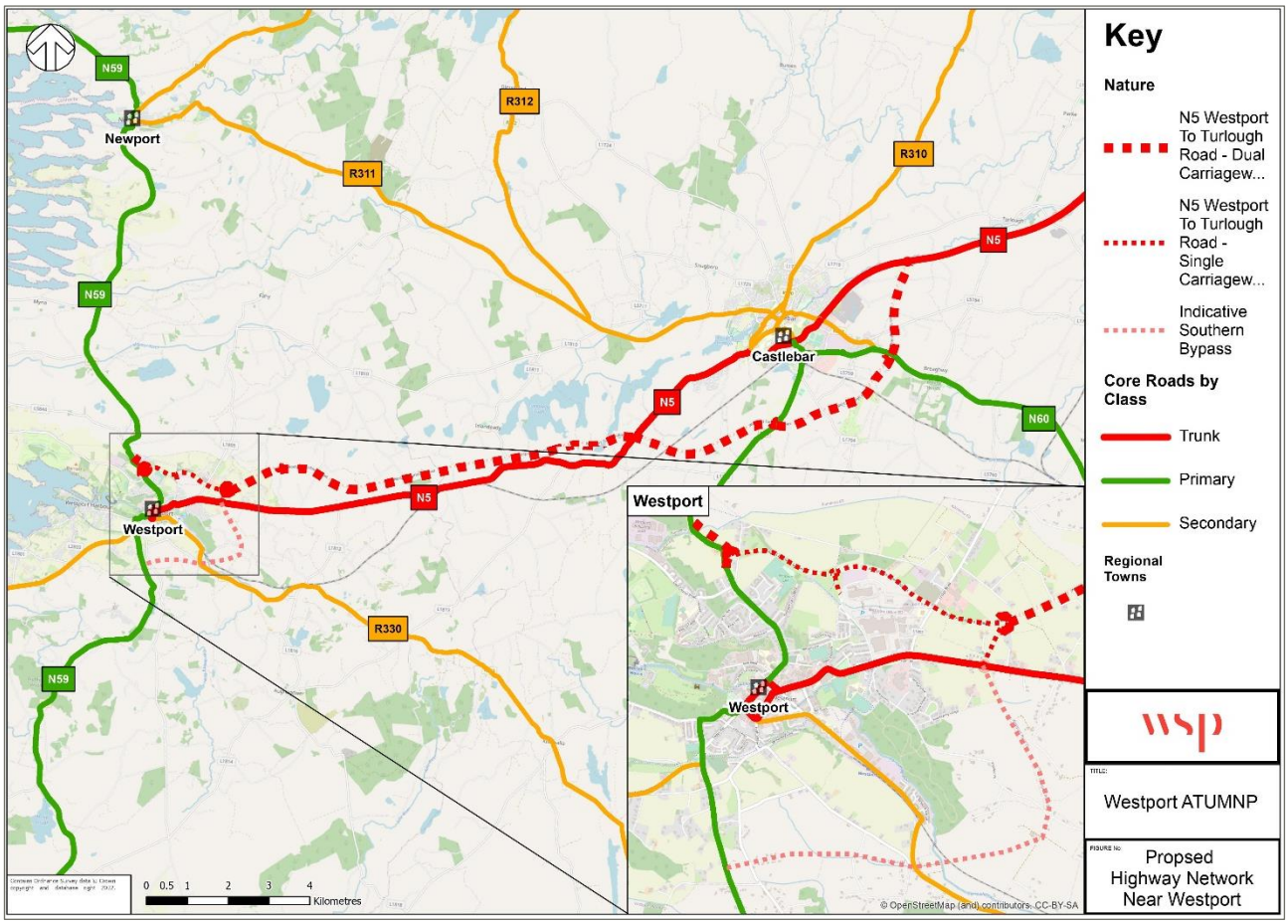
- Trips from points east, including West Ireland Airport, towards scenic locations and tourist destinations southwest of Westport, such as Croagh Patrick.
- Trips identified in the preceding flow analysis moving between Southeast and Northeast that currently route via central Westport due to the indirect nature of existing cross-country routes.
- Residents of new developments in south and east Westport towards Castlebar and points east.

7.1.14 Both indicative alignments are shown in **Figure 7-2**[13].

[12] See inset of **Figure 7-1**

[13] The Southern Bypass Road line is purely indicative and may change significantly should the project be taken forward.

Figure 7-2 – Road network hierarchy (proposed Westport to Turlough road and potential Southern Bypass)

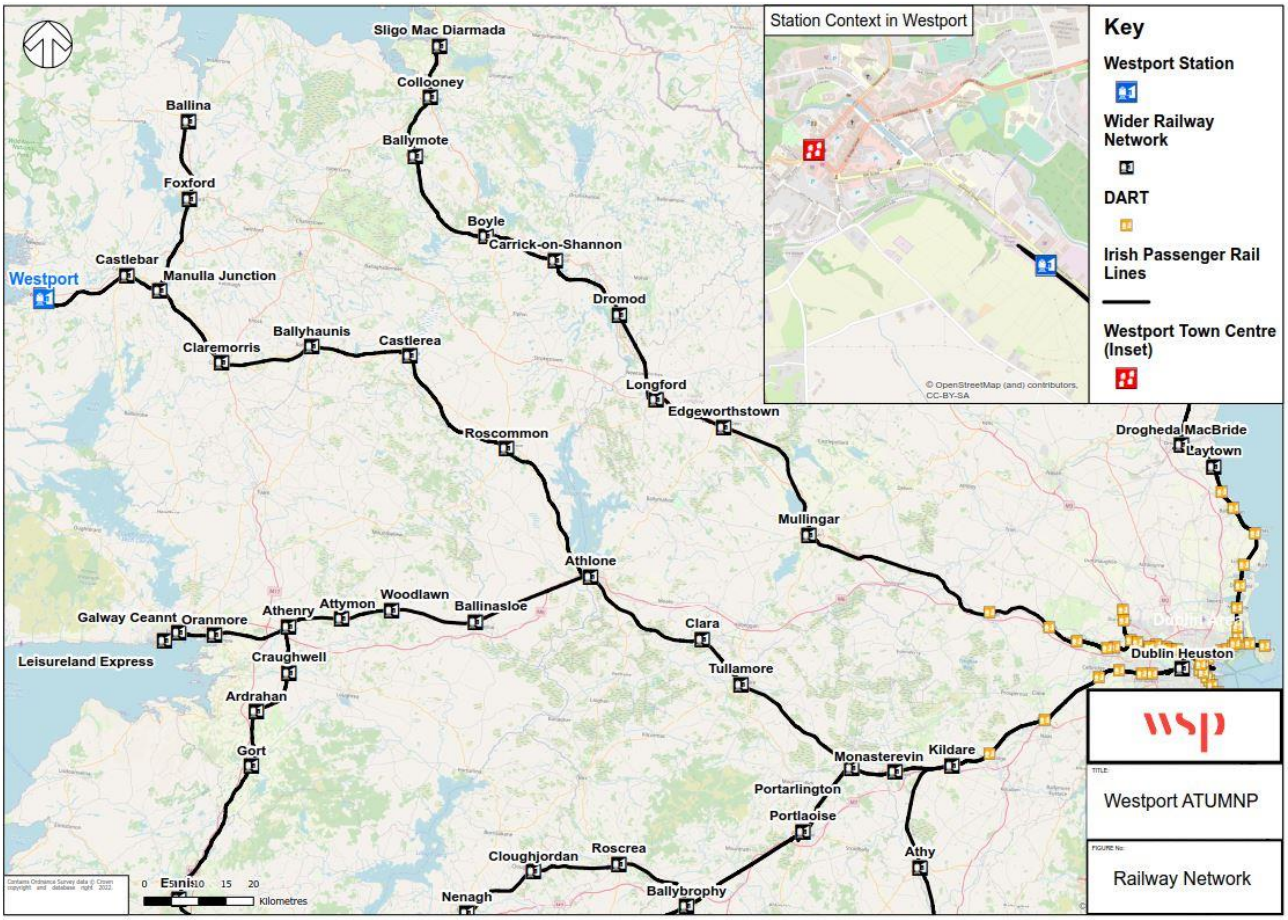


7.2 RAIL SERVICES

Overview

7.2.1 Westport is the western terminus of the Dublin-Westport railway line and is served by trains from Dublin. On route, trains call at Castlebar– Manulla Junction (*change for Ballina*) – Claremorris – Castlerea – Athlone (*change for Galway*) and other locations shown in **Figure 7-3**.

Figure 7-3 – Railway infrastructure



7.2.2 **Table 7-1** below shows journey times to key locations:

Table 7-1 – Rail journey times

Destination	Journey Time	Trains from Westport		Trains to Westport	
		First	Last	First	Last
Castlebar	13 min	05:20 - 05:33	18:20 - 18:33	10:39 - 10:56	21:09 - 21:26
Ballina (change at Manulla Junction)	50 min	07:15 - 08:04	18:20 - 19:09	09:35 - 10:56	20:32 - 21:26
Claremorris	31 min	05:20 - 05:50	18:20 - 18:52	10:19 - 10:56	20:49 - 21:26
Castlerea	59 min	05:20 - 06:15	18:20 - 19:19	09:48 - 10:56	20:20 - 21:26
Dublin	3 hrs 10 min	05:20 - 08:31	18:20 - 21:36	07:35 - 10:56	18:15 - 21:26

7.2.3 Train services operate every three hours. The first train leaves Westport at 05:20, whilst the last departs at 18:20. The first train to arrive in Westport is at 10:56, whilst the last arrival is at 21:26. There is a five hour gap in arrivals and departures between 13:10 and 18:12[14].

7.2.4 Historically, railway services continued north to Newport and west to Westport Quay. Both of these lines closed in stages between 1960 and 1970, with their trackbeds now being used in large part for walking and cycling routes; detailed in Sections 7.4 and 7.5.

Fares

7.2.5 Rail fares to the key locations on the line from Westport are generally more expensive than driving and parking in the relevant centre, whilst train fares to Westport are considerably more than the existing parking fare.

Station Location and Facilities

7.2.6 As shown in inset within **Figure 7-3**, the town's railway station is located in the southeast of the town, approximately 12 minutes' walk from the town centre. The R330, which is the primary corridor to/from the station, has several sections of narrow footpath that could prove an issue to those with reduced mobility.

7.2.7 The station is a well-maintained historic building. It has a booking office staffed before the first train of the day leaves and after the last train arrives. The station also provides toilets, covered waiting facilities and free wi-fi for users.

Freight

7.2.8 In addition to the passenger rail services, timber from the nearby Colonel's Wood is shipped from a yard immediately adjacent to the passenger rail station. The yard for timber loading is accessed via the station car park.

Policy and Strategy

7.2.9 Iarnród Éireann / Irish Rail are responsible for operating Ireland's railways. *The Iarnród Éireann Strategy 2027*, published in 2021, set out the organisation's intent to enhance rail service frequency to both Westport and Ballina to a regular two hour service across the day, with enhanced operating hours. This will enhance direct rail connectivity to Castlebar and Dublin, as well as Ballina via a change at Manulla junction.

7.3 BUS SERVICES

Primary Bus Services

7.3.1 Westport serves as a regional bus hub and interchange for a mixture of long distance and regional bus services. An overview of these routes is set out in **Table 7-2**:

[14] The December 2022 timetable put out for consultation in October 2022 remains broadly similar. There is one additional inbound service in the AM, whilst the 18:12 weekday service moves back to depart Westport 18:20.

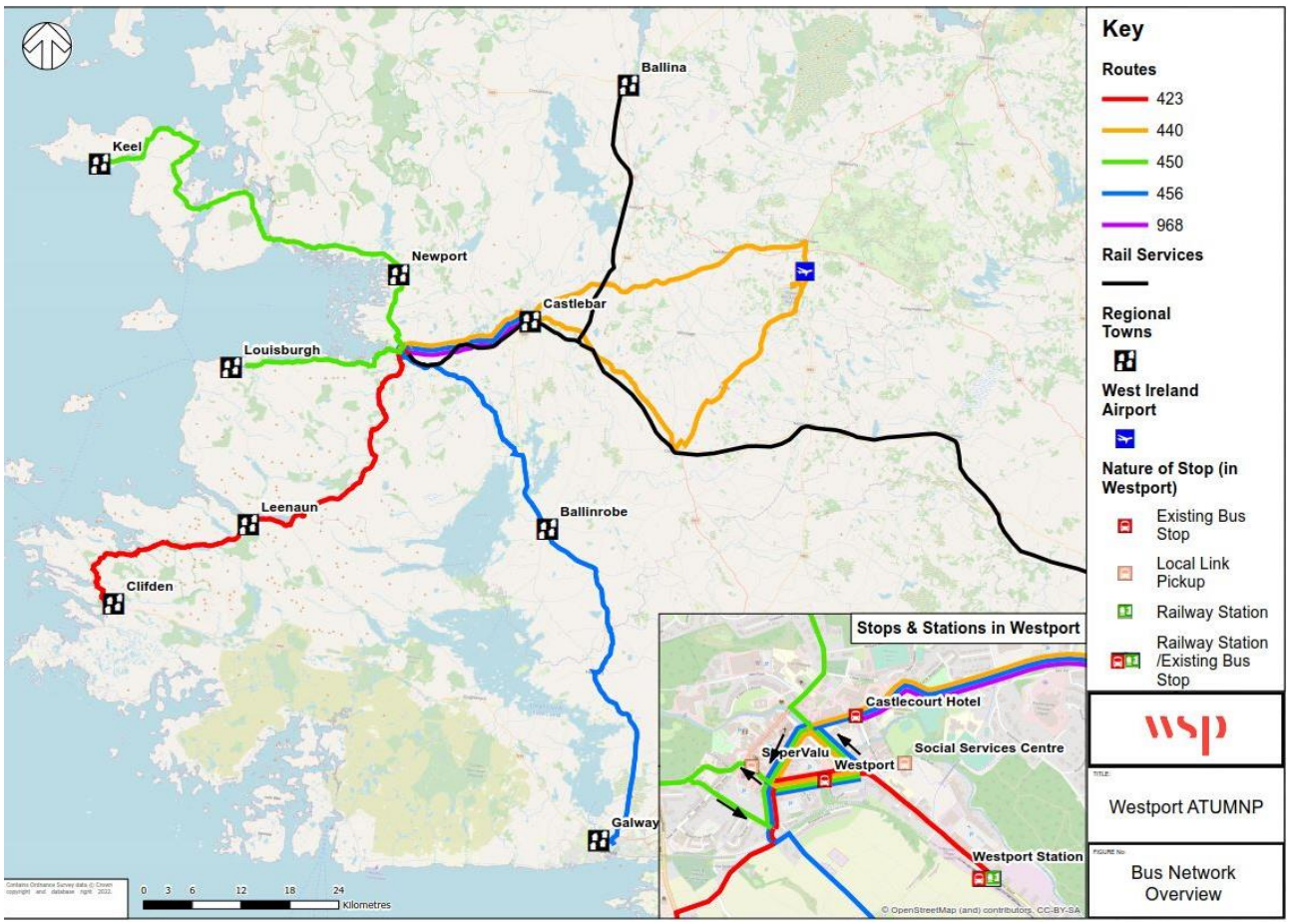
Table 7-2 – Bus services summary

Route	Operator	Terminus	Key Stops	Services Per Day (Weekday)	First Bus (Weekday)	Last Bus (Weekday)
440	Bus Éireann	Athlone	Ireland West Airport, Castlerea, Castlebar	4	06:55	19:20
		Ireland West Airport (Knock)	Castlebar	2	09:00	16:00
		Castlebar	*None*	1	08:05	
450	Bus Éireann	Dooagh	Newport, Keel	6	05:30	17:47
		Louisburgh	Westport Quay	6	07:25	18:12
454	Bus Éireann	Ballina	Castlebar	1	13:30	
423	Bus Éireann	Clifden	Knappagh	3	08:54	18:08
		Westport Railway Station	*None*	3	08:28	17:33
456	Bus Éireann	Galway	Liscarney, Leenaun	5	06:18	18:19
		Castlebar	Sheehaun, Islandeady	5	10:58	22:47
968	Michael Moran	Castlebar	*None*	9 (Monday) [15]	07:45	18:50
				5 (Tues-Thurs)	07:15	18:00
				19 (Friday)	07:45	03:45 (Sat)

[15] The majority of services operate at regular intervals across the day. Service 968 is an exception. Two services operate in the morning, with the remainder operating from 16:00 onward. Route 968 also operates past midnight on Friday, Saturday and Sunday.

7.3.2 **Figure 7-4** shows the regional connectivity provided by these bus services.

Figure 7-4 – Bus services in Westport



Local Link Bus Services

7.3.3 In addition to the six regular bus services set out above, Westport is also served by three Friday Only services and one Wednesday Only to a wide range of small communities surrounding Westport. These are operated by Local Link Mayo on a charitable basis, with the aim of providing access to those in rural, more isolated, communities without car access, particularly those who're less advantaged.

School Bus Services

7.3.4 School buses are operated for students of Rice College and the Quay School, reflecting the wider catchment of the college / school. Spaces on Rice College buses are also available for students of the Sacred Heart School, though that is further from the stops (circa 350m).

Public Bus Stops

7.3.5 The majority of the routes serving Westport start, end or pass through the town's primary bus stop at Mill Street. The exceptions to this are Service 968, which operates from a stop outside the Castlecourt Hotel and Castlebar and the Local Link services. Local Link services 4991 and 818 operate from Westport Social Services Centre, whilst 817 and 858 pickup and drop off at Westport SuperValu. All stop locations are shown in the inset included in **Figure 7-4**.

Figure 7-5 – Mill street bus stops

7.3.6 There are several challenges related to the town centre stops. The Mill Street facility was identified in the Westport Accessibility Audit as having particularly narrow pavement adjacent to the stops, illustrated in **Figure 7-5**. This could potentially lead to conflict with passing pedestrians, as well as being difficult to traverse for people with reduced mobility.

7.3.7 Whilst both the Castlecourt Hotel and Westport Railway stations are served by buses, neither of these locations has any bus stand, information or boarding facility provided.

School Bus Stop

7.3.8 There are four locations identified for the use of school buses in Westport. The first is located near the entrance to Rice College, providing for the service described in Paragraph 7.3.4. They are adjacent to a dedicated section of pavement, which should mitigate conflict with other users. The stop also provides level access and is lit.

7.3.9 The second stop is on the north side of Castlebar Road, illustrated in **Figure 7-6**.

Figure 7-6 – School bus bay on Castlebar Road

Source: Google Street View (2019)

7.3.10 Discussion with the local schools indicated that there is no regular school service associated with this stop. Given that it is close to the terminus of the No968 public bus service, mentioned above, it might be beneficial to reallocate the bay. One challenge to doing this would be the lack of street width for pedestrian / passenger movement, as well as boarding / alighting of passengers with reduced mobility.

7.3.11 The remaining two stops are located to the southeast of South Mall and northwest of North Mall. Similar to the stop on Castlebar Road, discussion with Westport's schools suggests that these stops are not currently in use. As such, the spaces might be better used to provide alternative layovers for tour vehicles on the historic Mall, or to provide additional public realm.

Tour Vehicle Facilities

7.3.12 Westport hosts a considerable number of bus and coach tours each year. Three layover facilities are provided for these tours:

- Mill Street (near the main Bus/Coach stops);
- James Street (in the town centre, limited to 15 minutes layover); and
- Leisure Centre (west of the town centre).

7.3.13 Whilst the James Street stop is well located for access to/from the town centre, the stop has a relatively narrow pavement area to its rear, meaning passengers boarding and alighting will disrupt the general pedestrian flow. The James Street and Mill Street facilities also have limited provision for passengers with disability.

7.3.14 Given their location, the Leisure Centre is likely primarily used for vehicle layover following unloading at other stops.

7.3.15 As identified previously, providing a high-quality tour vehicle facility could serve to encourage additional or repeat visitors by providing a welcome to the town.

Bus Policy and Strategy

7.3.16 In regard to the future of the network, the Mayo County Development Plan includes a Policy of "supporting and encouraging public transport providers and rural community transport initiatives and

programmes, such as the Local Link Rural Transport Programme, to enhance to provision of public transportation services linking rural villages to the main towns of Mayo."

7.3.17 This is followed by an Objective "To support the operation of existing bus services, by facilitating the provisions of improved facilities and services for bus users in towns and villages, including the provision of set down areas for coaches and bus shelters at all bus stops, where feasible". The policy and related objective will be considered in future proposals.

7.4 WALKING

Town Centre

7.4.1 The town has a fairly attractive, car-dominated streetscape, with street trees planted on pavement build outs softening parts of the gyratory. Pavements in central Westport are generally well maintained and largely paved. Street furniture in the centre is well considered.

7.4.2 A number of junctions in the town centre have been designed to give priority to pedestrians and improve the streetscape with low level planting. In places, most notably around the Octagon and the junction between Mill Street and High Street, this has resulted in limiting pedestrian movement (**Figure 7-7**) to informal, uncontrolled crossings on raised tables.

Figure 7-7 – Public realm in the Octagon

7.4.3 The town centre features a number of these similar, paved raised table crossings (shown in **Figure 7-8**) with pavement build outs either side which give the impression of additional pedestrian safety; however, it is unclear whether pedestrians or motorists must give way at these crossings. One such crossing on Newport Road has included in its design a central zebra crossing giving clear priority to pedestrians.

7.4.4 Further evidence of the confusion in their design can be found in how local businesses have chosen to use the adjacent improved footway as spill out space. It is unclear whether such a use is intended or in fact obstructing the crossing (shown in **Figure 7-9**).

Figure 7-8 – Examples of raised uncontrolled crossings and James Street zebra crossing in the town centre

7.4.5 Some hospitality businesses benefit from outdoor seating in the form of 'parklets' that have been created from former parking spaces (examples in **Figure 7-9**). Their design and conditions vary but they generally appear to be well used and popular with venues that are able to provide them.

Figure 7-9 – Examples of 'parklets'

7.4.6 Establishing the popularity of the parklets is crucial to developing a long-term plan for road-space reallocation as well as a standardised parklet design.

7.4.7 Street lighting in the town can be considered insufficient, with streetlamps failing to adequately illuminate crossing points in particular during the hours of darkness (**Figure 7-10**). A denser distribution of brighter lampposts may increase perceptions of safety in the evenings and enable easier navigation.

Figure 7-10 – Examples of poor street lighting

Outside Town Centre

7.4.8 Beyond the town centre Westport is primarily residential and far steeper in gradient. The need to accommodate large coaches through these more topographically complex parts of the town has resulted in a number of large bell mouth junctions which impede pedestrian movement.

7.4.9 The hillier parts of the town pose further challenges for pedestrians and along many arterial routes into the town pavements are in poor condition with sett paving being replaced by tarmac and large concrete paving slabs. Here, footways are steep, stepped and/or narrow and accommodate chevron or bay parking rather than the parallel parking found in the town centre. Some examples of the pedestrian facilities beyond the town centre are shown in **Figure 7-11**.

Figure 7-11 – Examples of the comparatively poor public realm beyond the town centre

Wider Connections

7.4.10 As shown in Chapter 4, a considerable portion of trips in Westport originate surrounding villages. At present, the pedestrian generally end at the edges of the urban areas, isolating locations such as Carragh Close and Carrabaun despite them being within a fifteen-twenty minute walk of the town centre. Similarly, the Westport Industrial Park is within walking distance of the town but isn't provided with connecting pavement north of the edge of town. With considerable development proposed around the edges of the town (see Section 2.4) there is a need to improve walking connectivity beyond its current extents.

7.5 CYCLING

Great Western Greenway

7.5.1 Westport is located on the Great Western Greenway, the longest off-road cycling and walking trail in Ireland. It follows the path of the old Westport to Achill Midland Great Western Railway line which closed in 1937.

7.5.2 The quality of the cycling and walking infrastructure associated with the Greenway varies and influences the number of people using it (as can be seen in the Strava heatmaps in **Figure 5-8**. Whilst **Figure 7-12** shows the advertised Greenway route, **Figure 7-13** shows the various forms of provision.

Figure 7-12 – Route map of the Great Western Greenway in Westport town centre

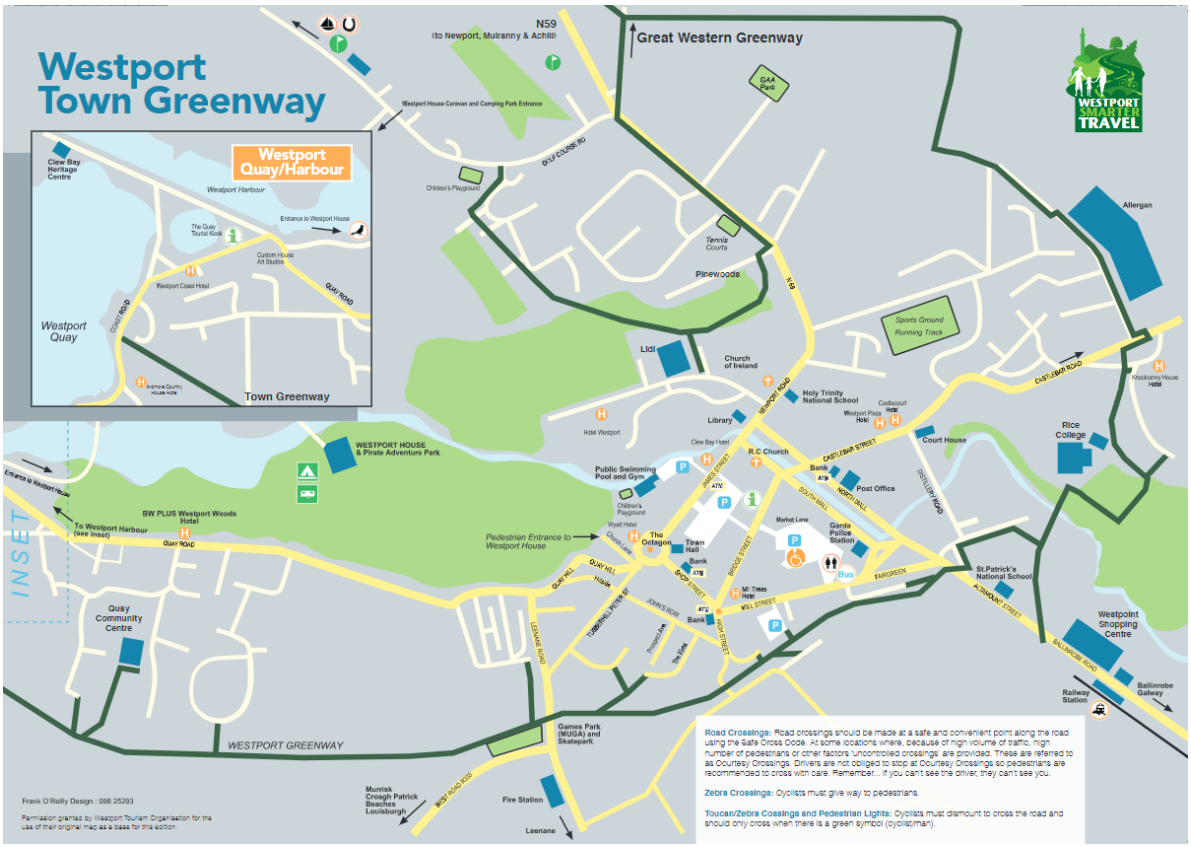
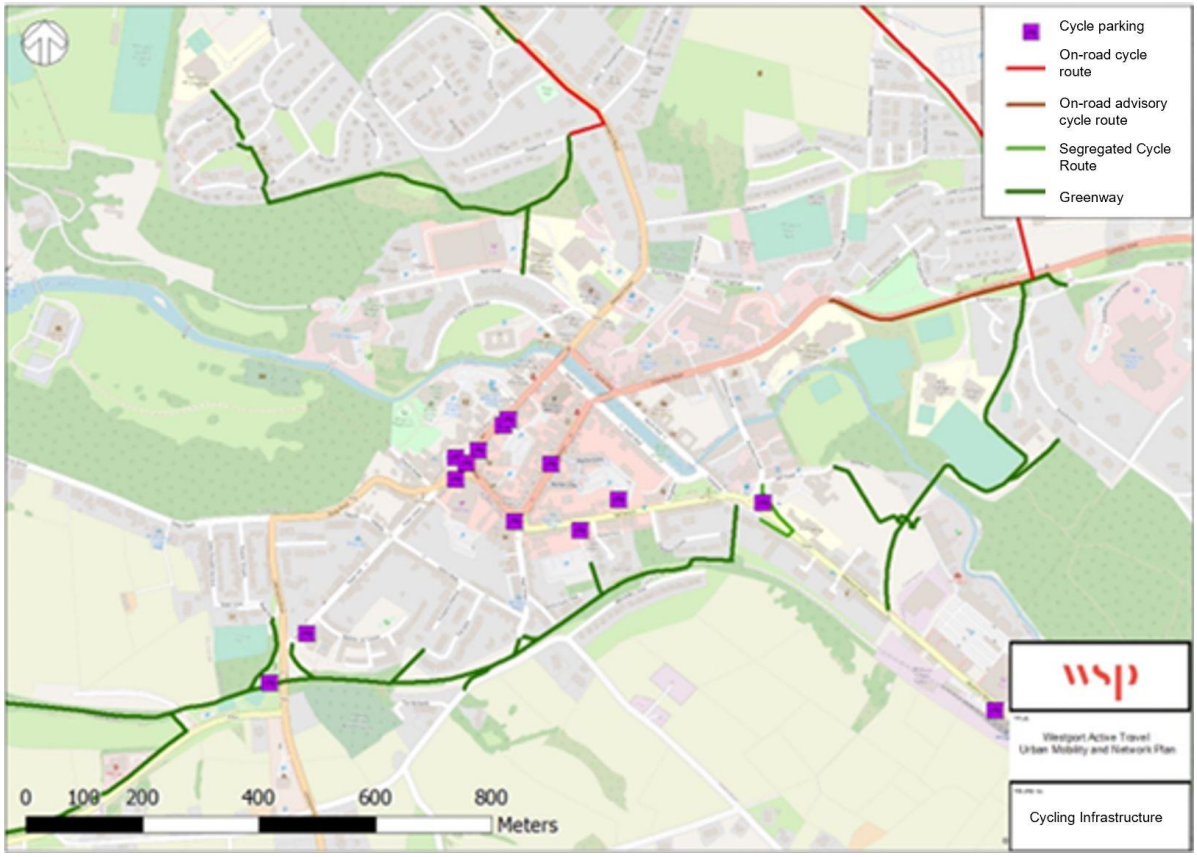


Figure 7-13 – Great Western Greenway infrastructure



7.5.3 The characteristics of the Great Western Greenway are as follows:

- Within Westport itself, the **southern section** of the Greenway connects Harbour view in Westport Quay to Altamont Street, where it emerges into a car park approximately 600m from Westport Station. The route continues for another 150m before ending at Distillery Road following a convoluted turnback crossing on Altamont Street.
- The **northern and eastern sections** of the Greenway form a loose network of on-road and off-road infrastructure. Many of the segregated routes are much narrower than the southern 'spine' and are predominately used by pedestrians rather than cyclists. The off-road northern sections are also typically more poorly lit than the southern section which is lit by lampposts distributed at 30m intervals.
- **Entrances and exits** to the segregated parts of the Greenway are typically announced using coloured tarmac with red indicating the pedestrian path and green indicating the cycle route, however, beyond these entry points the surface treatment is undifferentiated black tarmac (**Figure 7-14**).

Figure 7-14 – Surfaces Greenway surface in the southern section (left) and steep inclines connecting it to the town centre (middle and right)

7.5.4 Although the Greenway itself is a high-quality route between Westport Quay and Westport town centre, onward connections and connectivity between its entry and exit points and the town centre are absent. There is a sense that the route ends abruptly without adequate provision to carry users to their end destinations across the town. This may impact its attractiveness as a transport corridor.

7.5.5 The network frequently ends in car parks adjoining the town centre, risking conflict with vehicles. Onward journeys require users to negotiate particularly steep sections with elevations that would be tricky or dangerous to traverse on an ordinary pushbike or by the average cyclist (as shown in **Figure 7-14** above). However, electric bikes may be able to contend with the inclines.

7.5.6 Where onward connections are available, they are disjointed, lead to potential conflict with other road users or end suddenly:

- Altamont Street north of the Railway Station (**Figure 7-15 left**): ends suddenly, is squashed dangerously between the carriageway and retaining walls without footways in places and is frequently obstructed by parking.
- The link between the northbound Greenway and Altamont Street is via a flight of steps (**Figure 7-15 middle left**) from the historic railway embankment to street level. This requires cyclists to push their bikes up a ramp which runs along the sides of the stairs and reduces the usability of the route by those with reduced mobility or using prams.

- A section of advisory on-road cycle route runs for approximately 400 metres along Castlebar Road (N5) from the junction between Knockranny Road where it connects to the Greenway and Father Angelus Park. It ends abruptly and dangerously as it approaches the town centre (**Figure 7-15 middle right**).
- When departing the former railway alignment, the Greenway narrows as it passes through a poorly lit underpass (**Figure 7-15 right**). The tightness of the underpass may result in collisions.

Figure 7-15 – Absent connections between the Greenway and the town centre on Altamont Street

Cycle Parking

7.5.7 Cycle parking is distributed throughout the town centre (as shown in **Figure 7-13** on page 76), typically in the form of two or three Sheffield stands and a stylised stand in the shape of a bicycle advertising 'smarter travel' in Westport. (Examples provided in **Figure 7-16**). The location of these stands is usually on pavement buildout or adjacent to the raised table crossings, enabling cyclists to join the footway very easily from the carriageway to park safely.

Figure 7-16 – Examples of cycle parking in Westport

7.5.8 There are five Sheffield stands at the Railway Station, however ease of access is limited by their arrangement being obstructed by an adjacent parking space (**Figure 7-17**).

Figure 7-17 – Cycle parking at Westport Station

7.6 PARKING

7.6.1 The majority of parking in Westport is managed by Mayo County Council and consists of both on-street and off-street parking. Public parking locations are outlined in **Figure 7-18**.

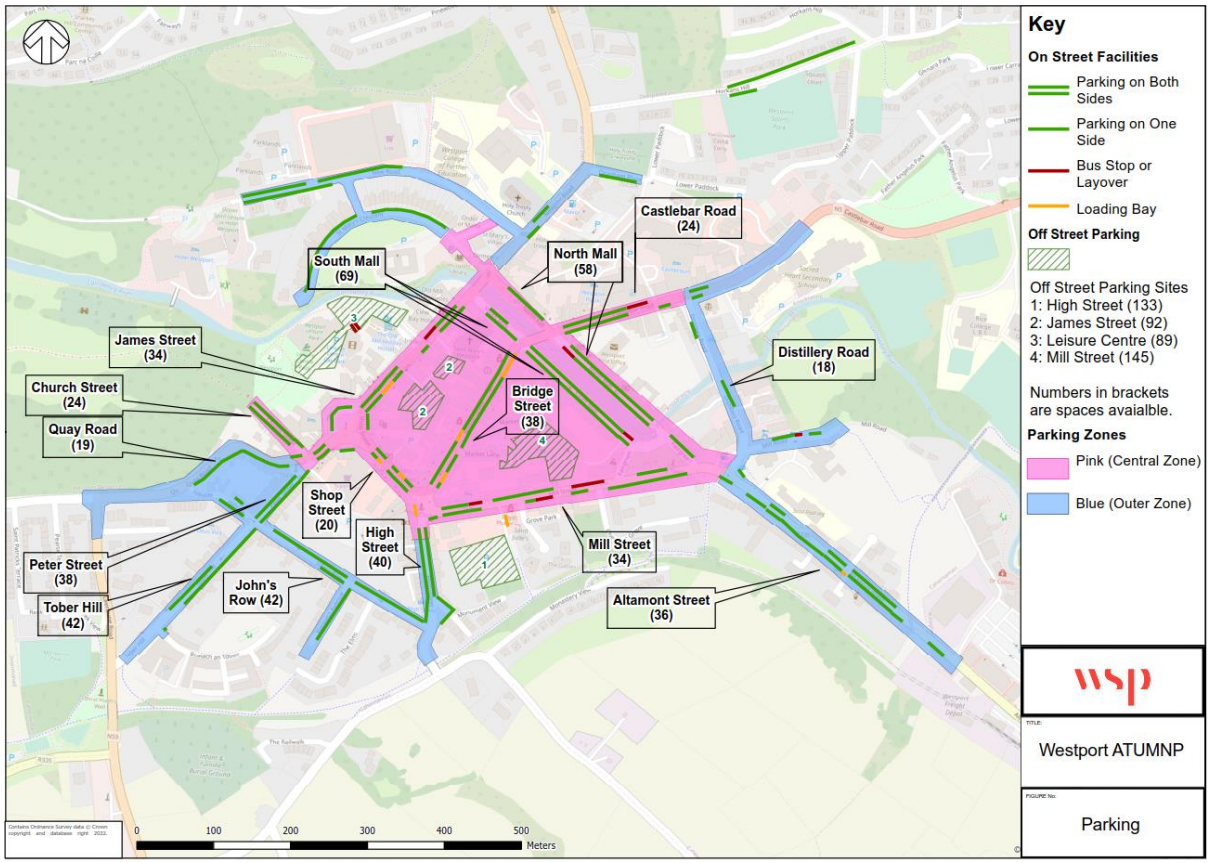
On-street Parking

7.6.2 There are two on-street parking zones in the town:

- **Pink Zone** – offers free parking for the first hour and Pink Disc (€1) is required after. Maximum stay of 2 hours is permitted. There are **451 parking spaces** within the central zone. Of these, 21 spaces (i.e., 4.7%) are for disabled users; and
- **Blue Zone** – charged at rate of 60c per hour (requires Blue Disc), with no restriction on length of stay provided a valid disc is displayed. Yellow Disc (€3) provides for all day parking. There are **432 parking spaces** within the peripheral zone in the town centre. Of these, 8 spaces (i.e., 1.9%) are for disabled users. There are also circa 750m of roads in Westport Quay/Harbour to the west of the town charged at the Blue Zone rates.

7.6.3 Parking can be paid for by cash or card, with both on and off-street parking free after 18:30. It has been observed that enforcement is limited.

Figure 7-18 – Parking in the town centre



7.6.4 The majority of on-street parking are parallel bays on either side of the road (as indicated by the green lines in **Figure 7-18** above). Exceptions to this include the Octagon, where perpendicular and chevron bays are present.

7.6.5 There are two on-street electric vehicle charging spaces provided on Castlebar Street in the Pink Zone.

Off-street Parking

7.6.6 There are four publicly owned off-street car parks in Westport, as shown in **Figure 7-18,** providing 459 parking spaces in total:

- **High Street – 133 spaces**, 2 disabled spaces, 60c per hour / €2 per day;
- **James Street – 92 spaces**, 4 disabled spaces, 70c per hour / €3 per day.
- **Leisure Centre – 89 spaces**, 5 disabled spaces, 70c per hour / €3 per day; and
- **Mill Street – 145 spaces**, 4 disabled spaces, 70c per hour / €3 per day;

7.6.7 The car parks are typically well maintained and well-lit but poorly signposted, with entrances obscured by buildings or on-street parking bays. Improved signage and live updates on available spaces on signs entering the town would improve awareness of their existence and encourage their use.

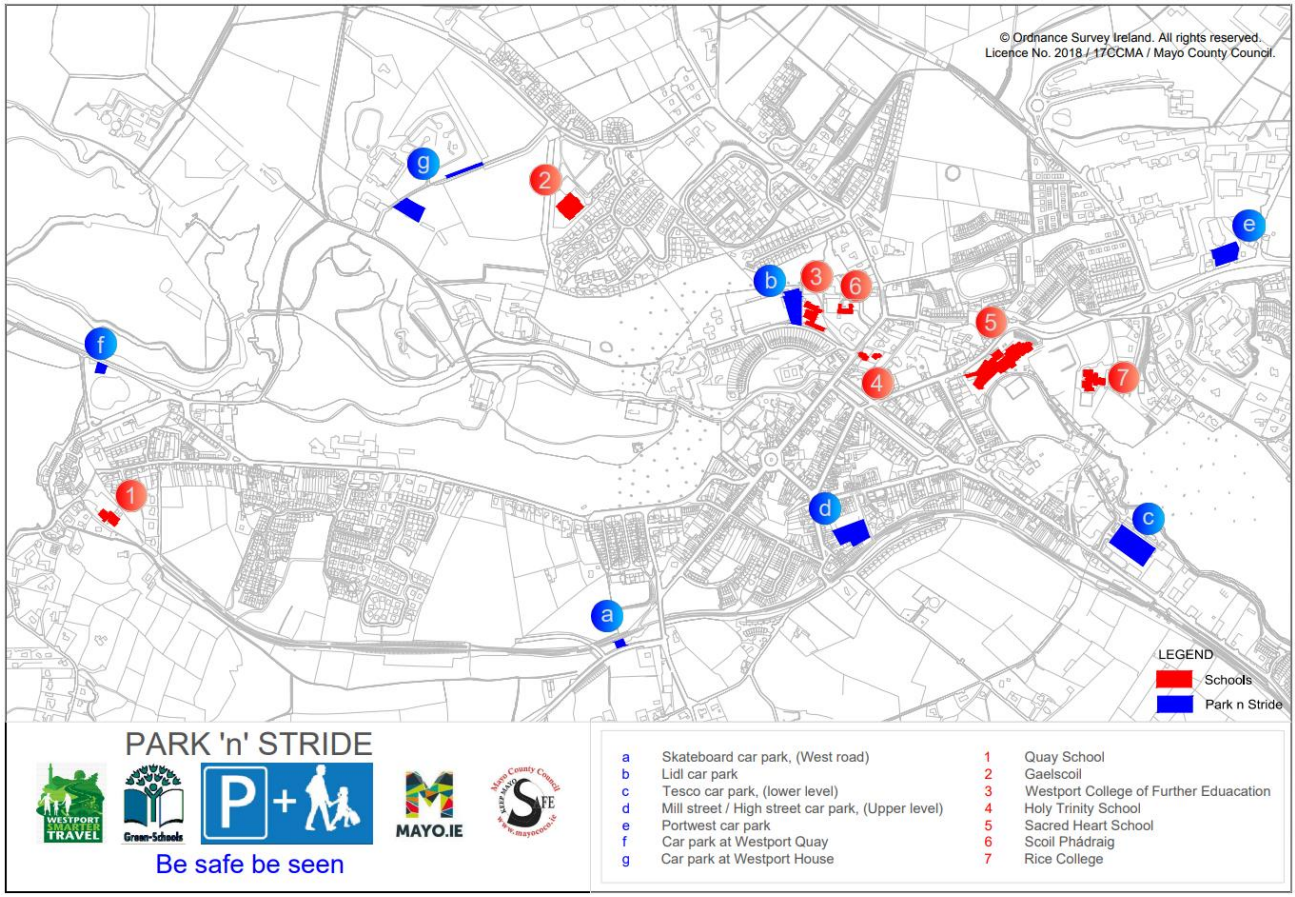
7.6.8 The Leisure Centre car park includes 2 charging points.

Park and Stride

7.6.9 Mayo County Council, in conjunction with the majority of schools in Westport, are operating a Park and Stride scheme in order to reduce the number of vehicles driving outside of the schools.

7.6.10 Under this scheme, public and private car parks within walking distance of the school are made available to those dropping off or picking up school children at certain times of the day. The location of the car parks and their counterpart schools are shown in are shown in **Figure 7-19**.

Figure 7-19 – Location of 'Park and Stride' locations in Westport



7.7 TAXI SERVICES

7.7.1 Taxi services in Westport are provided by three operators. The largest of these is *Westport Taxis*, followed by *Brendan Needham Cab Service* and *Adrian & Brendan McGing*. There are also several companies, such as *Westport Scenic Tours – Ollie's Cabs*, which offer a mixture of taxi and scenic tour services.

7.7.2 There are no formal taxi ranks in the town centre area. This lack of facilities could pose a particular challenge for those with reduced mobility. Additionally, the lack of facilities at key locations such as the Mill Street Bus Stops and Westport Railway Station form a last mile barrier to those arriving in town by rail or bus and not wishing or able to walk to their destination.

7.8 CONSTRAINTS AND OPPORTUNITIES FOR DISABLED USERS

7.8.1 While parking for disabled people is spread out throughout the town centre (**Figure 7-20**), there are considerably fewer spaces around the periphery.

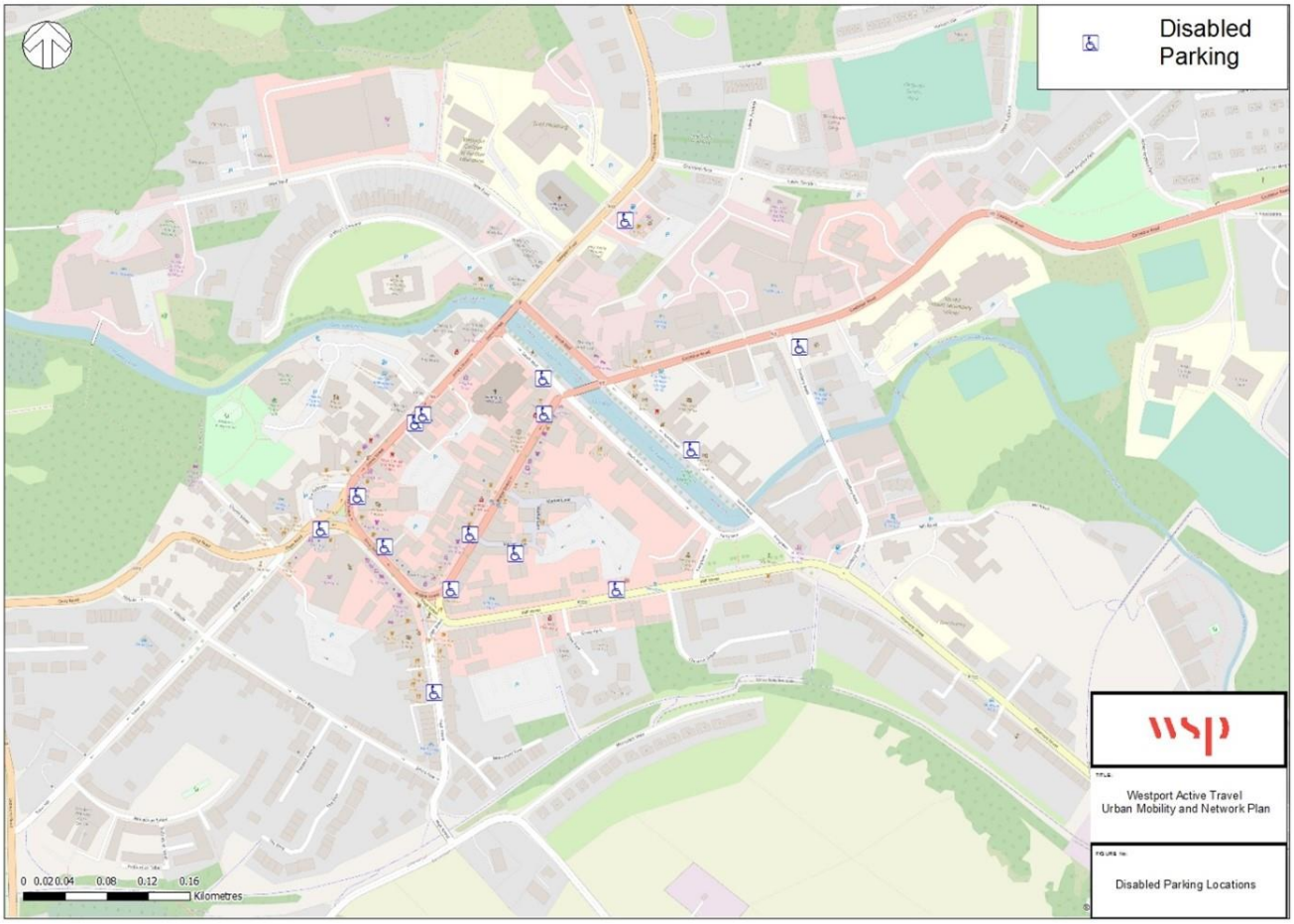
7.8.2 As described in Section 7.6 there are:

- **On-street** – 29 disabled spaces (i.e.,3.3% of the total of 883 spaces);
- **Off-street** – 15 disabled spaces (i.e., 3.3% of the total of 459 spaces);

- **Total (public car parking)** – 44 spaces (i.e., 3.3% of the total of 1,342 spaces)

7.8.3 Whilst the disabled spaces are located in prominent central areas, many are of low quality and do not meet the current accessible parking good practice guidelines provided by the IWA Best Practice Access Guidelines Designing Accessible Environments 2020, (pages 53-59) or the Building Regulations 2010 Technical Guidance Document M Access and Use (pages 34-37).

Figure 7-20 – Location of on-street disabled parking in Westport



7.8.4 Heavy traffic poses a danger to those of limited mobility getting into and around the town, particularly in light of the absence of policy compliant disabled spaces in the town centre. Where there is provision, the spaces are simply allocated a disabled but are identical in size to unallocated spaces, potentially making them difficult to use. Additionally, although the spaces in the town centre are typically located next to raised table crossings, across the town dropped curbs and tactile paving is absent, making it unnecessarily difficult for disabled people to move about the town.

8 ENVIRONMENTAL CONDITIONS

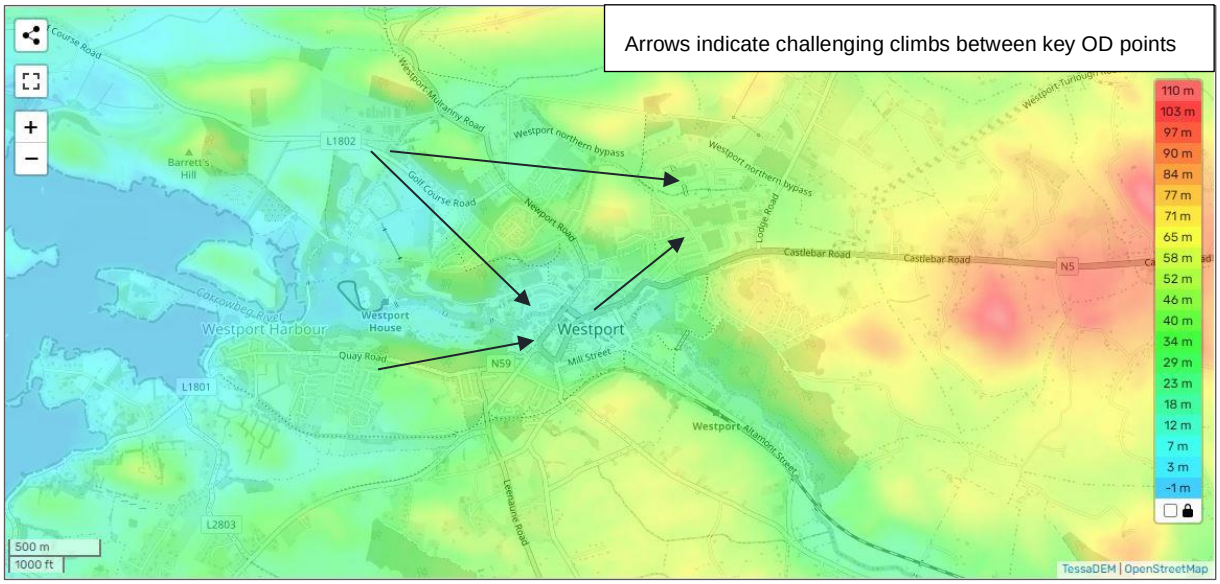
8.1 ENVIRONMENTAL CONSTRAINTS

8.1.1 Physical constraints can often relate to the topography of an area influencing active mode choice, or gaps in the walking and cycling network due to physical features. Information on the presence of significant constraints to certain options has been therefore gathered as part of the baseline assessment.

8.2 TOPOGRAPHY

8.2.1 **Figure 8-1** shows that the majority of the town centre, as well as the railway station, are around 7m above sea level. This is surrounded by a ridge line between 29m and 60m above sea level. As such, whilst walking within the town centre is relatively level, accessing/egressing the centre requires traversing of at least one substantial gradient, with notable high points located between the town's north-western estates and both the centre and the employment to the town's north-east, as well as between the town centre and Westport Quay.

Figure 8-1 – Topography of Westport



Source: https://en-gb.topographic-map.com/

8.2.2 These gradients might propose a barrier to the use of walking or cycling in accessing the town centre, particularly for those with reduced mobility. As such, this supports the case for providing bus facilities on Quay Road and to the northwest of the centre, to enable intra-town bus movements as an alternative to the dominant private car use present in the town. It also presents a case for supporting electric bike provision in any hire scheme, to provide a 'boost' over the gradients.

8.3 NATURAL BARRIERS

8.3.1 The Carrowbeg River rises to the northeast of the town centre, widening to form a barrier dividing the north and south of the town, before continuing west and widening prior to joining the Atlantic near Westport Quay. A summary of the town's bridges is below, by street name:

- **Distillery Road:** narrow two lane bridge lacking pavement, which could form a barrier to movement for those approaching the railway station on foot from the north.

- **North Mall:** Single traffic lane with narrow pavements over the hump-backed bridge. This could form a barrier to people with reduced mobility and/or those using buggies.
- **Castlebar Road (N5 Southbound) / Westport Bridge:** Two lanes, one direction southbound with broad pavement.
- **N59 Northbound:** Two lanes, one direction northbound with broad pavement. This and Westport bridge are the most pedestrian friendly bridges in the town centre area.
- **Westport House:** This bridge is located on the grounds of Westport House and as such isn't usable by general traffic.
- **Cloonmonad:** The bridge located furthest west, connecting Westport Quay with the northwest of the town. This bridge is single track with no formal pedestrian facilities, as well as being accessed by secondary roads. As such, north-south traffic is more likely to use the bridges in the town centre

8.3.2 As set out above, the two bridges from the town centre towards the east have minimal pedestrian facilities and might form a barrier to movement to/from the railway station. Additionally, the nature of the bridges west of the town centre serve to focus traffic via the main roads and the town centre. This might add impetus to a desire for modal shift for intra-town movements, as it would reduce traffic in town and release capacity for longer distance movements.

8.3.3 In addition to the Carrowbeg River, Colonel's Wood covers a considerable area of land north of Westport Railway Station, forming a barrier between the station (and the neighbouring shopping and light industry areas) and Knockranny Village, the Knockranny House Hotel and the industrial area to the north.

8.3.4 The wood is proposed to be opened up for recreational[16] under the *Knockranny – Colonels Wood NeighbourWood Plan*[17]*.* This will include development of several walking and cycling trails and the provision of a small car park for visitors, which could improve local health outcomes. However, it doesn't include provision for north-south movements to improve pedestrian permeability; rather being accessed primarily from the Greenway on the site's western border. Improved permeability between Knockranny/Colonel Woods/Westport Retail Park/Train Station with an additional link along Carrowbeg River to the housing estates along Ballinrobe Road.

Westport House, a Georgian era estate used for outdoor sporting pursuits is inaccessible from Quay Road as it is partially encircled by a wall. The amount of land belonging to the estate is considerable, and although there is a publicly accessible route through the estate between Church Street and Cloonmonad, the estate is a barrier to north south connectivity in this part of the town.

[16] It's currently used for forestry, with product being shipped out by rail as mentioned previously.
[17] Tirenan, Dr D (2019) *Knockranny – Colonels Wood NeighbourWood Plan*, Knockranny-Neighbourwood-Plan-2019.pdf (coillte.ie)

9 STRENGTHS, WEAKNESSES, OPPORTUNITIES AND THREATS ANALYSIS

9.1.1 Part 1 of the ABTA process concludes with a SWOT analysis summarising the key findings regarding the existing provision for each transport mode as shown in **Table 9-1**.

Table 9-1 – SWOT analysis

STRENGTH	WEAKNESSES	OPPORTUNITIES	THREATS
GENERAL / MULTI-MODAL			
G-S1 Attractive urban environment, architecture, and shop frontages. **G-S2** Westport is a popular tourist destination. **G-S3** Between 2011 and 2016, walking, cycling and rail mode shares increased. **G-S4** Between 2011 and 2016, car mode share declined	**G-W1** Many streets dominated by on-street car parking. **G-W2** Limited integration of sustainable modes. **G-W3** No formal taxi ranks. **G-W4** Limited electric vehicle charging infrastructure. **G-W5** Lack of public toilets near key public locations such as The Octagon or The Mall. **G-W6** Issues for people with disabilities have been identified. **G-W7** Traffic congestion in the town centre, particularly in the holiday season. **G-W8** Car is the dominant mode share for travel to work	**G-O1** Roadspace reallocation would reduce car-dominance. **G-O2** Create design standards for street furniture and wayfinding. **G-O3** Consider delivery of a Mobility Hub to provide alternative to private car. **G-O4** Formal taxi ranks at key locations within town would make them easier to access and reduce disruptions to traffic movements. **G-O5** More EV charging points would encourage their uptake. **G-O6** Additional public toilets, including accessible toilets, would make the centre more user-friendly, especially for tourists. **G-O7** Development of a tool to report potential barriers would allow direct inputs from individuals with lived experience of disability. G-O8 Raising awareness of sustainable transport options and promoting active travel would increase its use and tackle potential negative publicity. G-09 Consider alternative routes for essential traffic to avoid driving through the town centre	**G-T1** Availability of funding. **G-T2** Public response to big changes
WALKING			
W-S1 Some road space reallocation initiatives have been already installed in the town centre and residents are familiar with them. **W-S2** Small schemes (such as parklets) appear to be well-received and well-utilised. **W-S3** The town centre has several raised “speed tables” providing both traffic calming and level access between pavements.	**W-W1** Steep gradients make walking difficult for some. **W-W2** Car-dominated streets are unattractive for walking. **W-W3** Narrow footways in places. **W-W4** Obstacles on pedestrian desire lines in places. **W-W5** Inconsistent design and quality of public realm/street furniture. **W-W6** Lack of/inconsistent pedestrian wayfinding. **W-W7** Some car parks create a barrier/unpleasant environment on pedestrian desire lines. **W-W8** Lacking footways to some locations such as south of Westport Fire Station, the N59 north of the town or the villages to the southeast of the town. **W-W9** Street lighting of variable quality can lead to security concerns for some. **W-W10** Hospitality business provision of outdoor seating forms an obstruction to pedestrians in some locations. **W-W11** The raised speed tables aren’t marked as formal crossings, meaning that it is unclear who has priority. **W-W12** Some wide bell mouth junctions are unpleasant for pedestrians. **W-W13** Walking and Cycling routes have limited provision of benches and similar rest stops for those with reduced mobility or other needs.	**W-O1** Delivery of the N5 Westport to Turlough Road Project will relieve some of the traffic currently using the town centre gyratory, the Newport Road and Castlebar Road and the roadspace could be used to wider footways or other road space reallocation. **W-O2** Decluttering the streetscape would make it more attractive. **W-O3** Revising and standardising the streetscape design, improvements would make them easier to roll out and more legible to all road users. **W-O4** Standardise and coordinate wayfinding would make it easier to use, especially to tourists. **W-O5** Provide high-quality pedestrian routes across or around car parks where appropriate. **W-O6** Provide high-quality footpaths to communities that currently lack pedestrian provision. **W-O7** Improved lighting would enhance perceived security. **W-O8** Narrow the wider bell mouth junctions to facilitate pedestrian movement where appropriate. **W-O9** Provision of additional seating on walking corridors will enable rest breaks. **W-O10** Provision of quiet spaces would allow neurodiverse individuals to rest away from busy areas. **W-011** Increased permeability and connectivity in the town centre.	**W-T1** Delays to the Southern bypass delivery. **W-T2** N5 Westport to Turlough Road Project might form barrier to walking between the town and existing and proposed settlements north of the town.

STRENGTH	WEAKNESSES	OPPORTUNITIES	THREATS
CYCLING			
C-S1 Plenty of cycle parking stands spread out across the town centre. **C-S2** The Greenway forms a good quality cycling spine around Westport's southern edge and provides a link to the coast. **C-S3** The Greenway towards Newport provides a scenic off-road walking and cycle route.	**C-W1** Steep gradients make cycling challenging for some. **C-W2** Vehicular traffic reduces the attractiveness of cycling in the town. **C-W3** Cycling rental is limited to a few shops that are not necessarily visible to visitors. **C-W4** Most cycle parking is not sheltered. **C-W5** Cycle parking at the railway station is easily obstructed by parked cars. **C-W6** Links between the Greenway and town centre and limited. **C-W7** Visibility of the Westport to Westport Quay Greenway from the town centre. **C-W8** Limited lighting on the Greenway and other roads	**C-O1** Introducing an electric bike hire scheme will help to tackle the hilly topography. **C-O2** Roadspace reallocation in the town centre would create space for safe, segregated cycle infrastructure and links to the Greenway could be created **C-O3** Provide additional high-quality cycle parking with covered facilities at more origins/destinations. **C-O4** Enhanced cycle parking at the railway station will encourage multi-modal journeys. **C-O5** Consider contra-flow cycle tracks on key roads, which would link the Greenway into the centre and offer greater permeability for cyclists. **C-O6** Redesign of the current timber loading station to the north of the railway station would allow the Greenway to be a fully off-road link into the railway station. **C-O7** Improved and standardised signage and wayfinding would be easier to use, especially for tourists. **C-O8** Improved lighting would enhance perceived security.	**C-T1** Available funding and stakeholder engagement. **C-T2** Contra-flow cycle tracks are currently not present in town and residents would not be familiar with them.
PUBLIC TRANSPORT			
PT-S1 The town centre is accessible to long-distance coaches. **PT-S2** Several bus services meet at Mill Street which forms a regional interchange. **PT-S3** High number of bus/coach tours in the summer season. **PT-S4** Dedicated bus stop provided for students of Rice College at gateway to facility. Also available to students of Sacred Heart School, though this is further away. **PT-S5** Public toilets provided near Mill Street bus stops. **PT-S6** Rail and Bus Fares between Westport and Castlebar are competitive with parking charges. **PT-S7** Presence of a railway station. **PT-S8** Rail demand on the line between Dublin and Westport / Ballina was showing long-term growth prior to the COVID-19 pandemic.	**PT-W1** Mill Street Bus stops are narrow and difficult to access for people with mobility impairments. **PT-W2** The concentration of bus services on Mill Street places the majority of the town outside of the 350m guideline for access to bus facilities. **PT-W3** Very limited options for intra-town bus journeys. **PT-W4** The town centre gyratory means that buses accessing/egressing the bus stops on Mill Street need to drive additional distance through a highly trafficked area to reach the stop. **PT-W5** Some bus stops in the town (Westport Station and Castlecourt Hotel) lack clear signage, service information or boarding facilities. **PT-W6** Bus bay labelled "School Bus Only" on Castlebar Road isn't used by any school service. **PT-W7** School bus stops on North and South Mall have no associated services and are remote from any of the current schools. **PT-W8** Bus services generally end around 19:00. Limited timetables do not make bus a viable alternative for journeys to/from evening venues and for shift workers. **PT-W9** Bus services are infrequent – hourly at best. Infrequent rail services with a five-hour gap in PM. Low frequency of bus/train services make them unattractive. **PT-W10** Rail and Bus Fares between Westport and wider destinations are non-competitive, particularly when groups of people are travelling together. **PT-W11** Westport Railway Station is remote from the town centre. **PT-W12** Only one bus service connects with the railway station, leading to a lack of connectivity between modes. **PT-W13** Between 2011 and 2016, bus mode share declined	**PT-O1** Enhance the primary bus/coach facility on Mill Street to provide accessibility for older people, visually impaired people, wheelchair users, people with young children, people with pushchairs. **PT-O2** Additional bus stops would bring public transport closer to residents. **PT-O3** Revisions of bus/coach routes with respect to other road users. **PT-O4** Provision of a contra flow bus lane on Bridge Street or James Street would: ▪ shorten route for north-south buses towards Newport or Castlebar, ▪ reduce the need for additional trips around the town centre gyratory, ▪ provide a more visible bus stop in the town centre, with better access to key amenities, ▪ have a degree of usability for cyclists when not occupied by buses. **PT-O5** Consider providing new bus facilities on The Mall if space isn't available to deliver accessibility improvements on Mill Street, following a significant reduction in traffic. **PT-O6** Improve bus/coach facilities in town to provide a gateway facility for those visiting the town on a coach tour, to increase the town's offering as a tourist destination, following a significant reduction in traffic **PT-O7** Providing bus facilities closer to the schools to would offer a more direct link for students. **PT-O8** Formalising bus stop provision at the railway station and Castlecourt Hotel, potentially repurposing unused school bus stop near the latter. **PT-O9** Providing additional bus services leaving Westport later in the day, to allow more flexible use of the services. **PT-O10** Iarnród Éireann Strategy (2021) sets out plans to provide trains ever two hours across the day between Dublin and Westport, as well as increasing operating hours. **PT-O11** Widening the pavement and/or adding traffic calming measures along Altamont Road would improve connectivity between the town centre and the railway station.	**PT-T1** Potentially slow recovery of passenger demand from the COVID-19 pandemic. **PT-T2** The need to walk or cycle into town to take a bus makes inter-town bus journeys less attractive. **PT-T3** Resourcing additional services whilst establishing demand can be costly. **PT-T4** Implementation of the bus stop revisions has been considered challenging previously. **PT-T5** Any changes to rail services may require cooperation of the rail operator or changes to national legislation. **PT-T6** December 2022 timetable alterations do not include the revisions recommended in Iarnród Éireann Strategy, instead maintaining the status quo.

STRENGTH	WEAKNESSES	OPPORTUNITIES	THREATS
PARKING			
P-S1 Two parking zones in town with different charges. **P-S2** Bays for disabled users provided across the town.	**P-W1** On-street parking occupies space which might be better used by other modes. **P-W2** Car parking in Westport is primarily ground level only. This isn't doesn't necessarily make the best use of land or provide the optimal number of spaces. **P-W3** Some disabled parking bays are not compliant with best practice or legal guidelines.	**P-O1** Underutilised off-street parking capacity allows potential reallocation of on-street parking for other uses and/or capacity for future demand. **P-O2** On-street car parking spaces could be replaced by multiple cycle stands to increase the parking supply. **P-O3** Parking within walking distance to the centre would reduce the need for parking in the centre itself. **P-O4** Revising parking cost could lead to changes how people use them, manage demand and enable road space reallocation. **P-O5** Changes to parking could reduce car idling. **P-O6** Car sharing facilities spaces would encourage shared use and reduce the demand for parking spaces. **P-O7** On-line information of available parking and responsive signs around town would help drivers plan ahead and find a space easily. **P-O8** An additional deck, where appropriate, would increase capacity and enable a reduction in on-street parking. **P-O9** Revision and redesign of accessible bays could make them safer and more convenient to use.	**P-T1** Parking charges are unpopular.
FREIGHT AND LOGISTICS			
F-S1 Loading bays distributed across the town. **F-S2** Rail freight facility north of Westport Station reduces the road traffic.	**F-W1** Lack of enforcement of loading bays means that they are often occupied by parked cars. **F-W2** Large numbers of vans for small deliveries adding to local traffic.	**F-O1** Better parking management and enforcement would enable couriers to use designated spaces and instead of blocking traffic. **F-O2** Provision of a freight consolidation centre would reduce the number of vehicle movements. **F-O3** Consider parcels transport by rail to reduce the number of vans on the highway network. Onward distribution could then be undertaken by small electric vehicles. **F-O4** Provision of a new rail freight facility to the southwest of Colonel's Wood would enable the former goods yard to be repurposed as part of the Greenway network.	**F-T1** Consolidation centres require cooperation of many parties.

PART 2: ESTABLISH CONTEXT AND OPTIONS DEVELOPMENT

10 PRINCIPLES AND OBJECTIVES

10.1 INTRODUCTION

10.1.1 The purpose of this part of the process is to identify the principles and objectives for the plan based on the information gathered from the baseline assessment. The principles and objectives have been developed to enable significant modal shift to walking, cycling and public transport in order to reduce emissions and align with national policy.

10.2 PRINCIPLES

10.2.1 The following principles have been established:

- Developing a transport system that will consider the climate change;
- Integrating land use planning and transport planning to create fully sustainable developments;
- Improve quality of life by creating attractive public spaces that are vibrant, distinctive, safe and accessible for all;
- Applying a user hierarchy to the design process with pedestrians at the top and encouraging a modal shift from private car;
- Creating networks of streets that provide permeability and connectivity to improve access to key services;
- Promoting an inclusive environment;
- Recognising the importance of the community function of streets as spaces for social interactions;
- Establishing a clear vision and setting objectives for schemes.

10.3 OBJECTIVES

10.3.1 Based upon the principles, national policies and baseline assessment, the following objectives have been set:

1. More effective integration of land use and transport planning to reduce number of car trips;
2. Reduce traffic movements through and within the town to reduce vehicle emissions and create opportunities to enhance placemaking by roadspace reallocation;
3. Encourage mode shift to active travel and sustainable modes and improve accessibility for all users and all journey types;
4. Accommodate the needs of businesses and local residents by suitable provision and appropriate allocation and management of parking; and
5. Enhance road safety with focus on vulnerable users.

10.4 MEASURABLE PERFORMANCE INDICATORS

10.4.1 Measurable performance indicators have been developed for each objective which will be used for later scenario assessment and to measure and assess the performance of the Plan. **Table 10-1** outlines:

- **Why?** – Objectives and targets of the Plan which are monitored;
- **How?** – What performance indicators will be used; and
- **From where?** – What data will be used for the monitoring and where it will be obtained from.

Table 10-1 – Objectives MPIs

Objective	MPI	Source of data
1. More effective integration of land use and transport planning to reduce number of car trips	▪ Average journey length ▪ Number of services within a certain catchment	▪ Census data ▪ Origin-Destination travel Surveys ▪ Land Use Information
2. Reduce traffic movements through and within the town to reduce vehicle emissions and create opportunities to enhance placemaking by roadspace reallocation	▪ Number of vehicles in Westport ▪ Air quality monitoring ▪ Carbon assessment of traffic data ▪ Availability of electric vehicle charging points and other low emission modes ▪ Low emission public transport fleet	▪ Automatic Traffic Counts ▪ Air quality monitoring ▪ Traffic Surveys comparing against a baseline ▪ Transport infrastructure information ▪ Public transport operators' information
3. Encourage mode shift to active travel and sustainable modes and improve accessibility for all users and all journey types	▪ Number of vehicles in Westport ▪ Number of pedestrians, cyclists, public transport users ▪ Number of safe and secure cycle parking ▪ Quantity of dedicated pedestrian/cycle network ▪ Quantity of facilities for people with mobility impairment and/or disabilities ▪ Number of accessible bus stops ▪ Number of bus services / routes ▪ Quantity of delivery options e.g. cargo bikes, last mile delivery etc.	▪ Traffic surveys ▪ Cycle /pedestrian count surveys ▪ Bus/train passenger information from operators ▪ Parking surveys ▪ Cycle infrastructure information ▪ National Travel Household Survey ▪ Hands-up surveys at schools ▪ Travel Plan monitoring at major employment sites ▪ Census data
4. Accommodate the needs of businesses and local residents by suitable provision and appropriate allocation and management of parking	▪ Number of on-street/off-street car parking spaces within walking distance from the town centre ▪ Number of accessible parking spaces ▪ Car park occupancy ▪ Car park turnover ▪ Number of cycle parking spaces	▪ Parking surveys ▪ Data from parking meters ▪ Transport infrastructure information
5. Enhance road safety with focus on vulnerable users	▪ Number of Personal Injury Collisions ▪ Quantity of segregated cycle infrastructure ▪ Quantity of well-lit pedestrian/cycle network Number of dedicated pedestrian crossings	▪ Garda records ▪ Road infrastructure information

11 FORECAST TRANSPORT DEMAND

11.1 INTRODUCTION

11.1.1 The Local Transport Strategy is to consider the current transport needs of Westport and plan for future sustainable travel needs until 2040. Preceding chapters have set out the existing land-use and demographic characteristics of the main study area along with various surveys giving a baseline understanding of existing travel demand. To consider the potential future travel demand, a high-level analysis of potential growth in transport demand was undertaken at this stage of the ABTA process.

11.2 FORECAST GROWTH

11.2.1 The National Planning Framework (NPF) sets out the national spatial planning policy over the period to 2040. The NPF (and RSES) includes future population targets which are to be transcribed into county and local level policies. A new Local Area Plan (LAP) is currently being drafted for Westport (which this Local Transport Strategy will ultimately inform) and will set out the land-use development strategy for Westport, providing an overall vision for the area and guide future development to achieve population targets set out in the NPF. Until such time as the LAP is adopted, the Mayo County Development Plan 2022 – 2028 (with some aspects of the Plan subject of a Draft Ministerial Direction) is the primary planning document to guide development in Mayo and policies to achieve the targets and objectives of the NPF. As part of the evidence base for the County Development Plan, the Mayo Housing Strategy 2021-2027 Report was produced which set out projected populations for the county based on growth scenarios that aligned with NPF targets. The population forecasts set out in the Housing Strategy Report have been utilised to forecast growth for Westport for the purposes of this high-level analysis of future travel demand.

11.3 WESTPORT FORECAST GROWTH

11.3.1 The Housing Strategy Report provides yearly county population growth figures up to 2031 which indicates an average year on year population growth of 1% between 2016 and 2031. The Report does not indicate separate yearly population growth figures for Westport. However, the County Development Plan details population figures for Westport for the years 2016, 2021 and forecast year 2028 (2.7.7 Core Strategy Table). The average year on year growth for these figures is 1.7%. The year on year growth average is similar between both sources, however a conservative approach to forecasting population growth is assumed for this high-level demand analysis hence the higher value of 1.7% will be utilised.

11.3.2 To convert the forecast population growth to potential future trips during a short and medium year horizon, the National Daily Trip Rate for Other Urban Districts (Figure 22, National Household Survey Final Report, National Transport Authority, December 2018) of 2.16 trips per day per person was applied.

Table 11-1 – Forecast daily trips

Horizon Year	Short (2025)	Medium (2030)
Forecast Westport Population	7,020	7,770
Forecast Trips/ Day (based on Daily Trip Rate of 2.16)	15,583	16,783

11.3.3 Based on a conservative approach, applying the National Daily Trip Rate to forecast population growth for Westport indicates a total of 15,583 all mode trips per day in the short-term and 16,783 all mode trips per day during the long-term horizon.

11.4 FORECAST TRIP PURPOSE AND DISTRIBUTION

11.4.1 To provide further context to the daily trips set out in Table 11-1 above, the National Household Survey also provides a breakdown of trip purpose and time of trips in Other Urban Areas. **Figure 11-1** presents an excerpt of Figure 118 from the National Household Survey which indicates trip purpose.

Figure 11-1 – National Household Survey, trip by reason

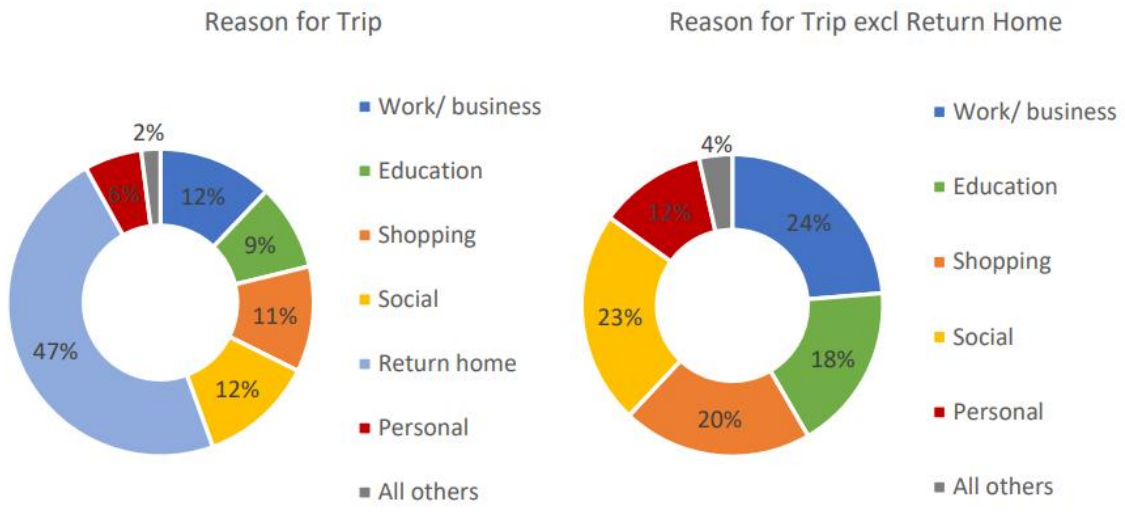
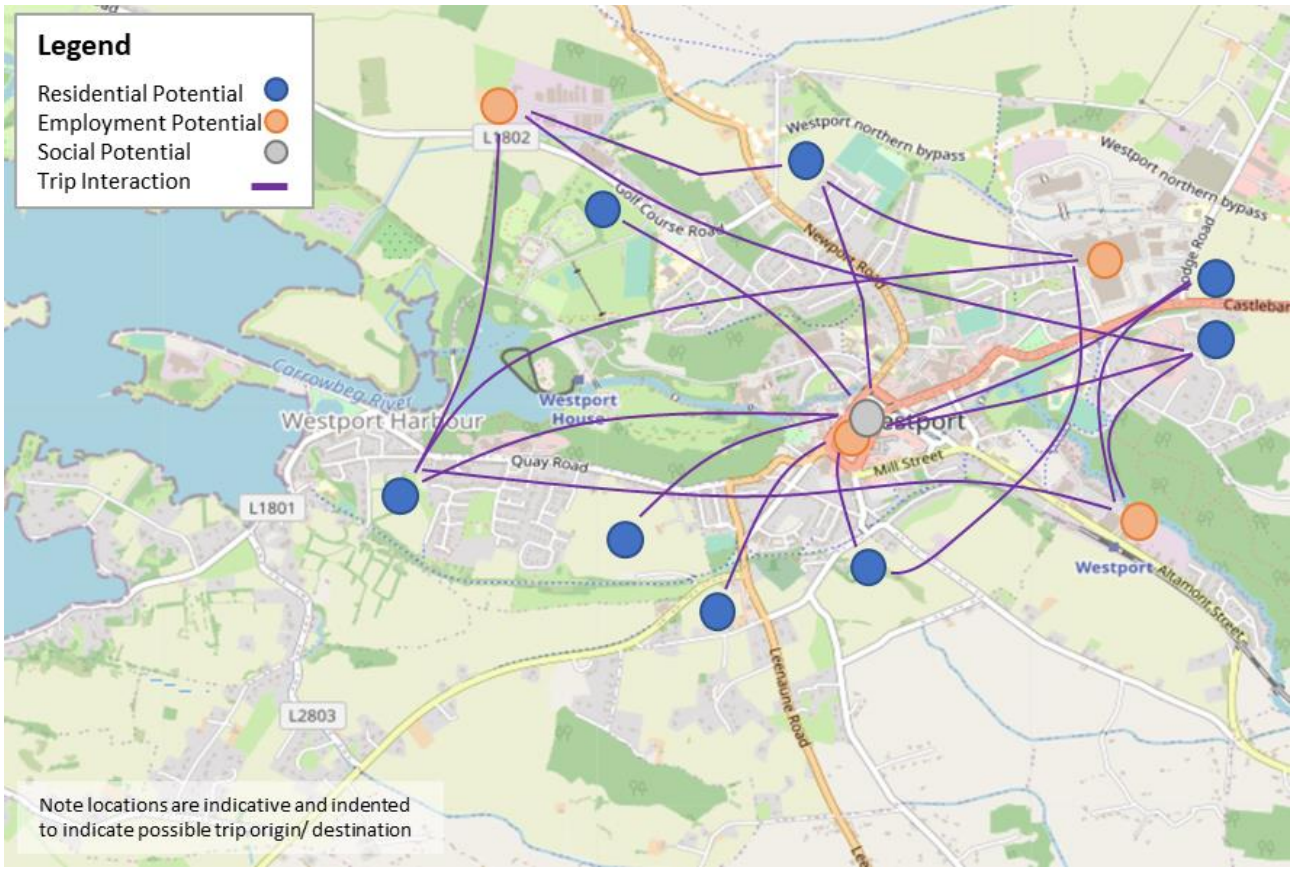


Figure 118: Trip by Reason: Other Urban Areas

11.4.2 Excluding trips returning to home, work/ business trips are the predominant trip purpose with social trips being the second most popular trip purpose. Educational and shopping trips account for a similar level of trip purpose.

11.4.3 As noted previously a new LAP is being drafted for Westport which will set out the future land-use strategy and zone mapping. In the meantime, to gain an understanding of where future trip demand may be distributed within the main study area land-use zoning from the Westport Town and Environs Development Plan 2010-2016 was reviewed. The NPF requirement that a "minimum of 30% of all new development on infill and brownfield sites within the existing built footprint of urban settlements over 1,500" is also important to note as this will influence the designation of new development land within Westport. **Figure 11-2** is a high-level interpretation of potential future land-uses in the main study area and indicative trip interactions between potential zones.

Figure 11-2 – Potential future land-uses within Westport



11.4.4 As **Figure 11-2** illustrates, several under-developed areas to the north, east, south and west of the Town Centre could be utilised to support future residential development over the course of the LAP (and Local Transport Strategy). The suggested areas are generally near existing infrastructure and services and would include infill and brownfield sites. Regarding employment areas, it is likely future development will be focused on existing employment areas which would be intensified and/ or expanded to accommodate potential growth demands – while utilising the existing (and planned future, e.g. N5) transport network. It would be expected that social related trip generators would maintain a similar land-use pattern to the existing situation with a focus on expansion of existing areas rather than excessive use of new undeveloped areas.

11.5 LAM FORECAST GROWTH

The preceding paragraphs have sought to present a high-level analysis of potential future demand within the main study area. As development of the Local Transport Strategy proceeds this potential future demand analysis will be further developed to provide a more detailed breakdown of potential trip growth/ demand in the future years. Future year horizons, based on future development demand in Westport and informed by analysis within this report, will be developed for the LAM and will be utilised to assess potential impacts from proposed measures/ interventions.

12 PART 2B: OPTIONS DEVELOPMENT

12.1 INTRODUCTION

12.1.1 Part 2b identifies a series of measures which have potential to address the identified issues in Part 1 and address the objectives set out in Part 2a.

12.2 OPTION DEVELOPMENT TABLE

12.2.1 **Table 12-1** presents a "long-list" of options that could be assessed further is Part 3.

12.2.2 Each option is categorised by its nature whether it:

- **Avoid (A)** – avoid the need to travel and reduce the travel demand;
- **Shift (S)** – influence travel behaviour to more sustainable transport modes;
- **Improve (I)** – environmental sustainability of residual vehicular traffic; or
- **Manage (M)** – to address the residual traffic movements.

12.2.3 Each option is matched against the weaknesses/opportunities/threats form the SWOT analysis elaborated in **Table 9-1**.

12.2.4 Each option meets one or more objectives set out in Part 2 (see Section 10.3). The last column describes how the objective will be met by anticipated outcome.

Table 12-1 – Option Development Table

ID	ASIM	Option	Locations	Issues Addressed (from SWOT)	Objectives Met	Outcomes
ALL MODES						
AM-1	S,I	Reduce speed limits to 30km/hr throughout central Westport.	Town Centre Altamont Street	W-W2	3	This Option will provide a more pleasant and safer environment for active travel mode users, thereby encouraging modal shift.
					5	Reduced vehicle speed will both reduce the likelihood of collisions and the severity should they still occur.
AM-2	S	Provide Mobility Hubs at key transport nodes. The Mobility Hub concept provides a focal point for interchange between sustainable transport modes, such as e-bikes/e-scooters, share cars and public transport or between public transport modes. Hubs can include features such as: ▪ Facilities for cycle hire and storage, as well as route maps ▪ Bus and rail timetables ▪ Walking route maps ▪ Bathrooms ▪ Waiting areas ▪ Cafes	Mill Street Railway Station Town Centre	G-W2, G-O3	2	This option will encourage modal shift and reduce traffic movements in town. This option will also include the opportunity for placemaking around the Mobility Hub.
					3	Providing a dedicated interchange point for sustainable modes will aid in providing an integrated, visible network and therefore encourage modal shift. This impact can be boosted through the provision of the additional amenities and features suggested at left.
AM-3	S	Improve signage and coherence of the Greenway / redesign the area around High Street car park to provide better access to The Greenway from Mill Street and the south of the town centre.	High Street Car Park Mill Street Car Park	C-W6	3	This option will make available active travel options more visible to potential users, therefore encouraging modal shift.
AM-4	A,S	Ensure that walking and cycling corridors aren't severed by the N5 Westport to Turlough Road Project and connect with existing facilities and sustainable infrastructure associated with new developments in the area.	N5 Westport to Turlough Road Project Corridor	W-T2	1	By supporting walking and cycling from the delivery of new developments, potential car trips can be deterred.
AM-5	A,S	Consider redesigning or relocating rail freight terminal north of Westport Railway Station. This would enable the Greenway to be extended directly to the station, providing a wholly traffic free route for pedestrians and cyclists. A freight consolidation centre could be located there.	Railway Station / South East of Colonel's Wood	F-O2, F-O3, F-O4	1	If a new rail freight facility is provided closer to Colonel's Wood, the source of the majority of the traffic, truck movements can be reduced.
					3	By providing a direct traffic free link to the railway station, less confident active mode users might be encouraged to shift away from their cars.
					5	This Option would provide a key component in a traffic free route between residential areas of Westport and the railway station, reducing risk of collisions.

ID	ASIM	Option	Locations	Issues Addressed (from SWOT)	Objectives Met	Outcomes
AM-6	M	Provide an alternative route for through traffic to bypass the town centre	South of Westport Town	G-W7	2	This would reduce the number of vehicles driving through the town and provide an opportunity for roadspace reallocation and reduced emissions within the town.
AM-7	S	Improve links to the greenway from housing estates, places of work and schools. Explore options to provide a bridge over the river to create a connection from the Library/Order of Malta building to the Leisure Centre carpark	Town Wide	C-W6	3	Making the greenway more accessible may result in more people choosing to walk and cycle rather than drive.
AM-8	S	Improve and increase opportunities for filtered permeability throughout the town	Town Centre	C-W2 W-W2	3	This would make walking and cycling easier within the town by providing more direct and shorter routes to destinations.
WALKING						
Walk-1	S	Undertake a review of parking and/or traffic lanes to identify where road space can be reallocated to provide wider pavements and a more pleasant pedestrian experience.	Across Town, e.g. Bridge Street James Street Mill Street Shop Street South Mall Newport Road Ballinrobe Road	G-W1, W-W2, W-W3, W-W5	2	Reallocation of road spaces would provide an opportunity for better placemaking and the space could be used for other uses than solely private car.
					3	By providing a better pedestrian environment, people will be encouraged to walk rather than drive into town.
					4	Attractive public realm spaces which business and people can use rather than cars would encourage people to use the town more and local businesses would benefit from increased footfall.
					5	Pedestrian oriented environment reduces vehicle speeds and wider footways reduce conflicts between users.
Walk-2	S	Redesign access to the Westport Leisure Centre from James Street to ensure that pedestrians do not have to walk on the car park access road to reach the Leisure Centre, the Children's Playground or Westport House.	James Street	W-W7	2	This Option will deliver improved urban realm (place making) around key amenities and encourage modal shift (see below), therefore reducing traffic in and around town.
					3	This Option provides a better environment for active travel users, thereby encouraging additional users.
					5	This Option would reduce the potential for conflict between vulnerable road users and traffic, therefore increasing safety.
Walk-3	S	Convert "Speed Tables" into formal zebra crossings, to provide greater pedestrian priority and safety.	The Octagon Bridge Street Shop Street	W-W11	5	This Option will remove any ambiguity as to who has priority at these pedestrian crossings, therefore reducing the risk of conflict between vehicles and pedestrians and improving safety for all users, especially vulnerable users.
					3	By improving the safety of pedestrians, less confident users might be encouraged to shift modes. This Option will also provide clarity and priority for people with disabilities, improving the town centre's accessibility.
Walk-4	S	Engage with business owners to reduce instances where street furniture blocks pedestrian movements or other uses.	The Octagon	W-W10, W-W3, W-W4	2	Decluttering would help to create more attractive places.
					3	This Option will improve the town's accessibility for people with mobility issues or pushchairs. Street furniture might be also a trip hazard for users with visual impairments.
					5	By reducing instances where vulnerable road users may need to enter the traffic lanes to avoid street furniture, the risk of collision is reduced.
Walk-5	S	Pedestrianize the Western half of The Octagon to provide a true town centre with enhanced amenity value.	The Octagon	W-W2, W-W5	2	There is a potential to improve place making at the Octagon. Reducing in traffic movements would help reduce transport emissions in the area.
					3	By providing a more attractive environment for active travel mode users, people may be encouraged to shift modes.
					5	The present layout of the Octagon has many potential points of conflict between vulnerable road users and traffic. This Option would provide additional space for vulnerable road users whilst also reducing possible conflict points.
Walk-7	S	Provide additional benches on key walking routes to encourage the less able.	The Greenway Newport Road Castlebar Road Quay Street	W-W13, G-W6	2	This Option will help to create more inclusive environment.
					3	By providing additional benches and rest locations, users with a wider range of ability level can be encouraged to walk rather than use their cars.

ID	ASIM	Option	Locations	Issues Addressed (from SWOT)	Objectives Met	Outcomes
Walk-8	S	Undertake a review of wayfinding and signage to encourage walking among residents and visitors	Town Centre – Public Transport Hubs Castlebar Road – Railway Station Future Housing and Employment – Town Centre / Transport Hubs	W-W6, W-O4, C-O7	1	By introducing improved wayfinding, residents can be made aware of active mode opportunities between their homes and destinations, and help them to find shortcuts. This should be also considered for new developments.
					2	By encouraging modal shift (see below) vehicle traffic in town can be reduced, thereby releasing space for place making as well as reducing vehicular emissions.
					3	By making people more aware of the sustainable mode options available, their use of such modes can be encouraged.
Walk-9	S	Review street lighting on key routes for enhanced pedestrian safety.	Altamont Street Quay Road Castlebar Road Newport Road Leenane Road The Greenway	W-W9, W-O7	2	This Option will encourage modal shift (see below), as well as highlighting good placemaking and enable opportunities for its development. By encouraging modal shift, traffic and emissions in town will be reduced.
					3	By providing a safer, more attractive walking/cycling environment this Option can encourage less confident users to shift modes.
					5	This option will vulnerable road users more visible in the dark and/or poor weather conditions, thereby increasing their safety.
Walk-10	S	Westport Station Link – Package of improvements on Altamont Street with signage, street widening to improve pedestrian space and enhanced lighting.	Altamont Street	PT-W11, PT-O11	2	This Option contains improved place making on Altamont Street to encourage modal shift towards walking and cycling for those travelling to the station or the adjacent shops and employment area. This will reduce traffic and open further place making opportunities.
					3	This Option improves urban realm on Altamont Street. This will make the route more appealing for pedestrians and cyclists, as well as delivering the Accessibility improvements identified in the Accessible Westport study. As such, this will encourage shift to sustainable roads among a range of possible users.
					5	By providing a wider pavement and better lighting, this Option will reduce the risk of conflict between vulnerable road users and general traffic.
Walk-11	S	Identify locations in town where junction bell mouths could be narrowed to provide easier pedestrian crossings. Dropped kerbs and tactile paving should be included.	Town Centre	W-W12	3	This Option will reduce car domination of street design and make a more pleasant pedestrian environment, thereby encouraging modal shift.
					5	By reducing the bell mouths at select junctions, the crossing distance for pedestrians will be reduced, reducing time in which conflict with traffic might occur.
Walk-12	S,M	Review off-street car park for locations where better pedestrian permeability can be provided. This should be supported by a traffic-free footway and enhanced signposting.	High Street Leisure Centre Mill Street	W-W7	1	By improving pedestrian permeability of existing land uses, short distance trips between other land uses may be made by active travel modes, therefore reducing traffic.
					2	Reducing town centre traffic and enabling more car parking spaces to be shifted to high quality urban realm.
					3	By enabling shorter, more pleasant, walking opportunities modal shift can be encouraged,
Walk-13	S	Extend provision of footways out to surrounding communities, particularly where new developments are proposed and/or existing centres aren't served. The footways should be of high quality and good width. Street lighting, signage and dropped kerbs/tactile paving should be provided.	Westport Industrial Park Carrowbaun to South of Westport Fire Station Altamont Road/Ballinrobe Road (R330) Newport Road / GAA Pitch Octagon to Quay Quay School to Westport House	W-W8, W-W9	1	This Option will support active modes as a first choice for those travelling to/from new developments, thereby reducing car trips.
					2	This Option will provide a more pleasant walking environment for those travelling into the town centre, thereby encouraging modal shift and reducing traffic and associated emissions.
					3	This Option will increase the number of residents with paved routes to/from the town centre, thereby encouraging increased walking mode share.
					5	By providing pavements at locations where there currently aren't any, conflict between traffic and pedestrians can be reduced.

ID	ASIM	Option	Locations	Issues Addressed (from SWOT)	Objectives Met	Outcomes
			Lodge Road[18] West Road Attireesh Rural villages within 6km			
CYCLING						
Cyc-1	S	Provide new cycle tracks on key roads to encourage modal shift.	Castlebar Road Altamont Road High Street (from Greenway to Town Centre) James Street and/or Bridge Street (through town centre) Newport Road Ballinrobe Road Octagon to Quay Quay School to Westport House West Road Westport Industrial Park Lodge Road Attireesh Rural villages within 6km	C-W2, C-O2, C-O5	2	By encouraging modal shift (see below) this option will reduce traffic within town, thereby enabling improved urban realm beside the cycle lanes. As a result of reduced traffic, vehicle emissions will also be reduced.
					3	By providing safer and more visible cycle infrastructure, a wider range of users might be encouraged to bike rather than use their car; rather than just the more confident cyclists.
					5	This will reduce possible road user conflicts by segregating cyclists from general traffic.
Cyc-2	S,M	Relocate railway station cycle parking to avoid conflict with car park use.	Railway Station	C-W5, C-O4	3	Better cycle parking at the station would encourage multi-modal journeys.
					4	Relocating the cycle parking will better accommodate the needs of existing cyclists by reducing conflict with other users of the station.
Cyc-3	S	Consider Cycle Hire Scheme providing electric cycles to compensate for the town's hills.	Town Centre Railway Station	C-W1, C-W3	2	A high profile cycle hire scheme can encourage cycle use for trips around town previously made by private car, releasing parking spaces for modal shift and reducing vehicular emissions.
					3	As above, this Option will encourage modal shift to sustainable modes. By providing *electric* cycles, less physically able users will also be able to use the scheme, improving its accessibility across the population and potential visitors.
Cyc-4	S	Provide additional, preferably sheltered, cycle parking at various locations across the town	Westport Main Study Area	C-W4, C-O3	2	High quality cycle parking can help with placemaking.
					3	More secure cycle parking would encourage more people to cycle more and shelter would shield
					4	Cycle parking is less space demanding than car parking and if on-street parking is replaced by cycle stands it could increase footfall for business.
Cyc-5	S	Increase the cycle network by providing safe cycle routes through off street car parks	Car parks	C-W2 C-W6	3	Increasing the coverage of a safe segregated cycle network may encourage more people to cycle.
PUBLIC TRANSPORT						

[18] Providing a pedestrian link here would support the proposed bus stop on Castlebar Road (see intervention PT-2)

ID	ASIM	Option	Locations	Issues Addressed (from SWOT)	Objectives Met	Outcomes
PT-1	S	Formalise bus stop provision at locations currently served by regular buses but lacking 'true' stops. This should include: Bus stop flag/sign; Level access for people with reduced mobility; and Timetable information for the relevant service/s	Castlebar Road Railway Station	PTW1 PT-W4 PT-W5 PT-W7	1	One option for the stop on Castlebar Road is a currently unused School Bus Stop. By providing a formal stop for the operating public bus, better use is made of existing land in the town centre in a way which, as set out below, can reduce car trips.
					2	Enhanced bus facilities can encourage modal shift that releases road space for place making, as well as forming a natural focus *for* that place making.
					3	By improving the quality and visibility of the existing bus stop locations, additional people might be made aware of the services and/or encouraged to use them, thereby driving modal shift.
					5	Providing a formalised, level access facility should reduce the need to walk between parked cars to board buses, improving the safety of passengers as they board/alight.
PT-2	S,I	Provide additional bus stops to increase the portion of the town with access to public transport services.	Castlebar Road Newport Road Quay Road	PT-W2 PT-W5	1	This Option will make bus services more accessible from current land uses, therefore reducing people's likelihood of using the private car for trips.
					2	This Option will enable trips into Westport town centre from surrounding residential areas to be made by bus, rather than the private car. Therefore, traffic and transport emissions in town can be reduced. Some stop pairs will enable cross-town movements, reducing through traffic.
					3	This Option will reduce the walking distance between bus stops and a range of other land uses, making them easier to access and use for a wider range of trips, thereby encouraging modal shift.
PT-3	S	Develop existing bus stops *or* provide new bus stops with full facilities to enable access for people with disabilities.	The Mall Mill Street New Locations	PT-W1	2	By encouraging increased bus use (see below), traffic into/through town can be reduced, enabling delivery of enhanced placemaking as well as reducing emissions.
					3	Providing proper level access and improved public realm at the Mill Street stops will enable a wider range of users to access bus services, whilst also providing a better experience from passing pedestrians who no longer conflict with bus passengers waiting/boarding/alighting. As such, modal shift will be encouraged through greater ambience and accessibility. A new bus stop will provide similar features, potentially in a more central locations such as Bridge Street or James Street.
PT-4	S,I	Consider Distillery Road as a north/south route for bus 440 and/or 456 to reduce the need for the service to circulate the town centre.	Distillery Street	PT-W4	2	This re-routing would reduce the number of buses traversing the town centre. As some of the undesirable road features (e.g. broad bell mouths) have been justified for their role in enabling bus operation, this Option could allow such features to be reviewed/reduced.
					3	This re-routing could deliver reduced bus journey times, making them more competitive with the private car and encouraging modal shift.
PT-5	S,M	Provide Contra-Flow Bus Lane on Bridge Street to enable cross-town buses to avoid the gyratory following a reduction in traffic This could include new stop facilities on Bridge Street	Bridge Street	PT-W4	3	This intervention would reduce the amount of time buses spend interacting with general traffic and enable them to bypass queuing at key locations in the town centre. As such, journey times could be reduced and reliability improved. This would boost bus's competitiveness with the private car, encouraging modal shift.
					5	When not in use by buses, the lanes provided could be used as low traffic lanes by cyclists, reducing their conflict with general traffic and improving safety.
PT-6	S,M	Provide Contra-Flow Bus Lane on Shop Street to enable cross-town buses to avoid the gyratory following a reduction in traffic.	Shop Street	PT-W4	3	This intervention would reduce the amount of time buses spent interacting with general traffic and enable them to bypass queuing at key locations in the town centre. As such, journey times could be reduced and reliability improved. This would boost bus's competitiveness with the private car, encouraging modal shift.
					5	When not in use by buses, the lanes provided could be used as low traffic lanes by cyclists, reducing their conflict with general traffic and improving safety.
PT-7	S	Re-route bus No456 via Altamont St, past the railway station. This would increase bus frequency between the station to the town centre and could be synched to integrate with rail arrivals.	Altamont Street (for Railway Station)	PT-W12	3	This Option would increase accessibility to/from the railway station by providing a better connection with bus services and, through them, the town centre. In turn, this would encourage modal shift.
PT-8	S	Provide the infrastructure to encourage Iarnród Éireann to deliver on their proposed uplift of service frequency and operation hours.	Railway Station	PT-W8	1	Increasing rail service frequency would make greater use of the existing railway station asset in a way that encouraged modal shift and thereby reduced car trips.

ID	ASIM	Option	Locations	Issues Addressed (from SWOT)	Objectives Met	Outcomes
				PT-W11 PT-W12	2	By encouraging modal shift towards rail (see below) car traffic to/from Westport could be reduced, particularly from the neighbouring town of Castlebar that's a key trip generator/attractor as identified in the census data. This modal shift can enable town centre parking for inter-town car trips to be converted to place making purposes.
					3	The improved rail frequency and increased operational hours proposed in the IE strategy would form a step change in rail's usability for a range of trip purposes, thus encouraging modal shift.
PT-9	S	Trial a shuttle bus between the town centre and the railway station, timed to connect with trains. This could be extended northwest (to reach residential areas) or northeast (to link employment areas).	Railway Station Town Centre Onward Links	PT-W12	3	This Option would increase accessibility to/from the railway station, allowing more people to use rail as part of their sustainable transport journey and enabling modal shift.
PT-10	S	Extend bus service hours and frequency to support the evening economy.	Town Wide	PT-W8	1	Bus services operate from circa 06:00 to circa 19:00. Many land uses generate trips outside of these periods. Expanding bus operation hours will allow more trips to be made by sustainable transport and reduce car trips from existing land uses.
					2	By enabling use of the bus for a wider range of trips across the day, modal shift can be encouraged that will reduce traffic into town, thereby enabling land use reallocation and place making, as well as reducing vehicular emissions.
					3	By enabling use of the bus for a wider range of trips across the day, modal shift can be encouraged.
PT-11	S	Increase bus service frequency to provide a more attractive alternative to the private car	Town Wide	PT-W8 PT-W9	1	Increasing bus service frequency will increase their attractiveness for use for a variety of trip purposes, thereby encouraging modal shift and reducing car trips associated with existing land use.
					2	By encouraging modal shift (see below), enhanced bus services can reduce traffic to/through the town and release land for non-parking uses.
					3	Increasing bus service frequency will make bus services more attractive against the turn-up-and-go option of the private car, as well as making services more accessible for a wider range of trip purposes where the previous wait between services would have made bus an unviable option.
PT-12	S	Review bus and rail fares to provide a competitive, integrated public transport alternative to the car.	Railway Services Bus Services	PT-W10	2	Pricing public transport competitively with parking fares could encourage modal shift which will, in turn, reduce the need for parking within the town.
					3	By reducing the price of public transport tickets in comparison to the cost of parking, more people can be attracted to use public transport for their journeys, driving modal shift. By integrating bus and rail ticketing, through trips from the railhead at Westport to locations north and west (e.g. Newport, Westport Quay) can be promoted.
GENERAL TRAFFIC						
GT-1	S,I,M	Provide formal taxi space at key destinations in town. These should support taxi use by passengers with reduced mobility.	Castlebar Road (for hotels) The Octagon (town centre) Mill Street (interchange with Long Distance Bus/Coach) Railway Station	G-W3	3	Providing formal taxi spaces will increase access to taxi services, encouraging modal shift to shared use vehicles and reducing the overall number of vehicle movements.
GT-2	I,M	Explore the potential to pedestrianize Bridge Street following a reduction in traffic	Distillery Road	W-W2 W-W3 W-W5	1	This Option will make walking a more attractive option for short distance car trips between existing land uses.
					2	This Option will remove traffic from the town's shopping and employment centre, allowing a step-change in placemaking. The associated modal shift will result in reduced vehicle emissions.
					3	By providing a greatly enhanced pedestrian and cycling experience in the town centre, modal shift towards active travel modes can be encouraged.

ID	ASIM	Option	Locations	Issues Addressed (from SWOT)	Objectives Met	Outcomes
					5	This Option can deliver enhanced safety for visitors to the town centre by removing the risk of conflict with general traffic.
GT-3	I	Review town for locations where additional electric vehicle charging could be provided.	Publicly owned parking facilities	G-W4	3	By encouraging the uptake of electric vehicles, emissions within Westport can be reduced.
GT-4	S,I,M	Consider on-street parking charges or restrictions, to encourage use of off-street parking. This shift from on-street to off-street would enable urban realm improvements.	Town Centre	P-W1	2	As set out below, this Option will encourage modal shift and therefore reduce vehicle emissions in the town centre. It will also directly provide road space for enhanced place making.
					3	By making on-street parking less cost competitive against other modes (such as public transport) people could be persuaded to consider alternative modes for their journeys, thereby driving modal shift.
					5	Reducing the traffic generated by vehicles moving to/from on-street parking would reduce the risk of conflict with vulnerable mode users. This would also reduce the level of circulating traffic from those looking for a parking space.
GT-4	I	Provide car sharing facilities	Town Centre	G-W1 P-W1	2	This could reduce the number of vehicles in the town centre
					4	Increasing access to publicly available cars could reduce the demand for parking of private vehicles in the town centre
PARKING						
Park-1	S	Reduce on-street parking and encourage use of off-street parking in order to allow better urban realm.	Bridge Street James Street North Mall South Mall	P-W1	2	As set out below, this Option will encourage modal shift and therefore reduce vehicle emissions in the town centre. It will also directly provide road space for enhanced place making.
					3	By making on-street parking less available, people could be persuaded to consider alternative modes for their journeys, thereby driving modal shift.
					5	Reducing the traffic generated by vehicles moving to/from on-street parking would reduce the risk of conflict with vulnerable mode users.
Park-2	I,M	Convert off street ground level car park to multi-story, enabling greater capacity for relieving on-street car parking.	Mill Street High Street	P-W1 P-W2	2	Providing additional off-street parking in known locations could reduce the number of vehicles travelling the town seeking on-street spaces and subsequently causing further congestion on the gyratory This would enable smoother traffic movement which reduces emissions. Also, providing alternatives to on-street parking enables the road space that the parking currently occupies to be repurposed for enhanced place-making.
					4	This option would provide suitable space for parking to access residences and businesses whilst also allowing revision of road spaces to place making as set out above.
					5	Reducing the number of vehicle movements associated with parking on the main shopping streets will reduce the likelihood of conflict and enhance pedestrian safety.
Park-3	M	Provide temporary parking spaces in underused areas such as schools during the holiday period with agreement from landowners to accommodate parking demand in the tourist season.	Outside Town Centre	GW-1 GW-7	4	Accommodate the demand for parking during the peak tourist season without over allocating parking throughout the town.
Park-4	I,M	Explore opportunities to provide new or improve existing Park and Ride / Park and Stride facilities	Outside Town Centre	C-W1 P-W1	4	Provide an opportunity for people driving to make part of their journey more sustainable.
PUBLIC AMENITIES						
PA-1	S	Consider provision of additional public toilets, including at least one Changing Place toilet (this is a 12m2 or larger toilet room/space that also has a hoist and an adult sized changing table fitted that provides fully accessible toileting facilities for people who are unable to use a standard toilet).	The Octagon North Mall / South Mall	G-W5	3	Providing additional public toilets will make the town centre accessible to a greater range of travellers.
					5	Providing a centrally located public bathroom facility will increase user safety by being in an area with increased footfall nearby.
PA-2	S,I,M	Implement a “Parklet” design guide, to reduce instances where new public realm also blocks pavements.	Town Centre Area	W-W4	2	This Option will aid in delivering modal shift (see below) and encourage better placemaking.
					3	An improved, standardised Parklet design will provide a better experience for active mode users, thereby encouraging modal shift.
					5	Bringing parklets to a uniform high quality will enable vulnerable users to utilise them with greater confidence and security.

ID	ASIM	Option	Locations	Issues Addressed (from SWOT)	Objectives Met	Outcomes
ACCESSIBILITY						
Acc-1	S	Improve access from the train station on Altamont Street to the town centre.	Railway Station	G-W6	3	Improving the railway station entrance to enable easier use by people with reduced mobility will increase accessibility to rail travel for these users and encourage a mode shift to rail.
Acc-2	S	Review accessible parking provision within the town	Town Wide	G-W6	3	Delivering accessible parking spaces to standard will increase the accessibility of the town centre for people requiring such spaces.
					4	Providing disabled bays which align with national guidelines will allow them to better accommodate the needs of disabled business users and residents.
Acc-3	S,I	Develop a monitoring / audit process including individuals with the lived experience of disability to report potential barriers in the built town environment to Mayo County Council and become part of the process to rectify them.	Town Wide	G-W6	3	By engaging people with disabilities travelling to or living in Westport ways can be identified to increase the town's accessibility for them.
					4	By engaging disabled business users and residents with an opportunity to discuss their needs, they can be better accommodated in the town, including discussion of appropriate parking provision and other amenities.
Acc-4	S	Review and standardise provision of drop kerbs and tactile paving to enable a consistent access experience for people with disabilities	Town Wide	G-W6 W-W5	3	By providing standardised, accessible, drop kerbs people reliant on level road crossing locations will be able to access the town more easily. Creating improved walking facilities for all users can contribute to a mode shift.
FREIGHT & LOGISTICS						
F&L-1	I,M	Develop a delivery hub location on the edge of Westport, enabling freight consolidation and a reduction in the number of vans circulating the constrained town centre.	Town Centre	F-W2	2	This Option would reduce the number of van and light goods vehicle (LGV) movements using Westport's highway network, thereby reducing emissions.
					5	Reducing the number of vans and particularly LGVs on the road will reduce the potential for conflict between such traffic and vulnerable road users, thereby enhancing safety.
F&L-2	M	Enforce existing loading bays to ensure they're not blocked by parked cars.	Town Wide	F-W1	4	This Option will improve management of existing parking facilities, befitting businesses, and residents.
					5	By enabling loading goods vehicles to park in their designated stops, ad-hoc parking and blocking of traffic lanes will be reduce, leading to a decrease in congestion in the town centre This can benefit safety by reducing the likelihood of conflict between different road users and reduce emissions.
F&L-3	S	Consider the use of passenger rail services to deliver light cargo into town, as being trialled in the UK.	Railway Station	F-W2	2	By replacing the trunk haul of the trip to Westport with rail, vehicle emissions could be reduced, particularly if parcel/cargo distribution onward from the station is made by electric vans or cargo bikes.
F&L-4	S	Consider support for Cargo Bikes for short freight journeys within town.	Town Wide	F-W2	2	This Option would reduce the number of van and light goods vehicle movements using Westport's highway network, thereby reducing emissions. Increased use of bicycles could also add impetus to investment in cycle lanes and similar road space reallocation.
					5	Reducing the number of vans on the road will reduce the potential for conflict between such traffic and vulnerable road users, thereby enhancing safety.
COMPLEMENTARY MEASURES						
CM-1	S	Establish Mobility Management Plans for 7 no. schools in main study area (and include a requirement for an MMP for any future schools)	Rice College, Sacred Heart School, The Quay School, Scoil Phádraig, Holy Trinity Primary School, Mayo College of Further Education (Westport) & Gaelscoil na Cruaiche	G-W1 PT-W7	3	This would identify and enable alternative modes of travel for students, teachers and parents encouraging a modal shift
CM-2a	S	Continue Green Schools activities in Schools	Rice College, Sacred Heart School, The Quay School, Scoil Phádraig, Holy Trinity Primary School, Mayo	G-W1 PT-W7	3	This option continues to promote the initiative for long-term, whole-school action to benefit the environment. This would lead to highlighting the benefits of sustainable travel and encourage a modal shift. Programmes such as Walk on Wednesday and Cycle on Wednesday encourage sustainable travel.

ID	ASIM	Option	Locations	Issues Addressed (from SWOT)	Objectives Met	Outcomes
			College of Further Education (Westport) & Gaelscoil na Cruaiche (also, where applicable, schools in Area of Influence)			
CM-3	S	Provide improvements to Front of School and Routes to School environment	Newport Road, Castlebar Road, General improved Active Travel links in main study area	G-W1 W-W2	2	This option would provide the infrastructure to make wheeling, walking and cycling to school a more attractive mode to travel to school and reduce traffic movements, particularly at school drop off and pick up.
CM-4	A	Ensure coordination between land-use zoning and destinations, removing the need to travel in the first instance	Westport, main study area and Area of Influence	G-W1 PT-W9 PT-W10	1	This option would provide the opportunity to reduce the number of car trips by locating schools and residential developments within walking distance.
CM-5	S	Workplace Travel Plans for new development and extensions to existing	Westport, main study area	P-W1	3, 4	Establish behavioural change in workplaces, encouraging sustainable travel choices to/from the workplace and accommodate the needs of businesses.
CM-6	M	Explore price based demand management policies to discourage single occupancy car journeys	Westport, main study area	G-W1	2, 3	Encourage more sustainable travel mode choice by exploring price based policy options (e.g. car parking pricing) which discourage excessive use of single occupancy car journeys

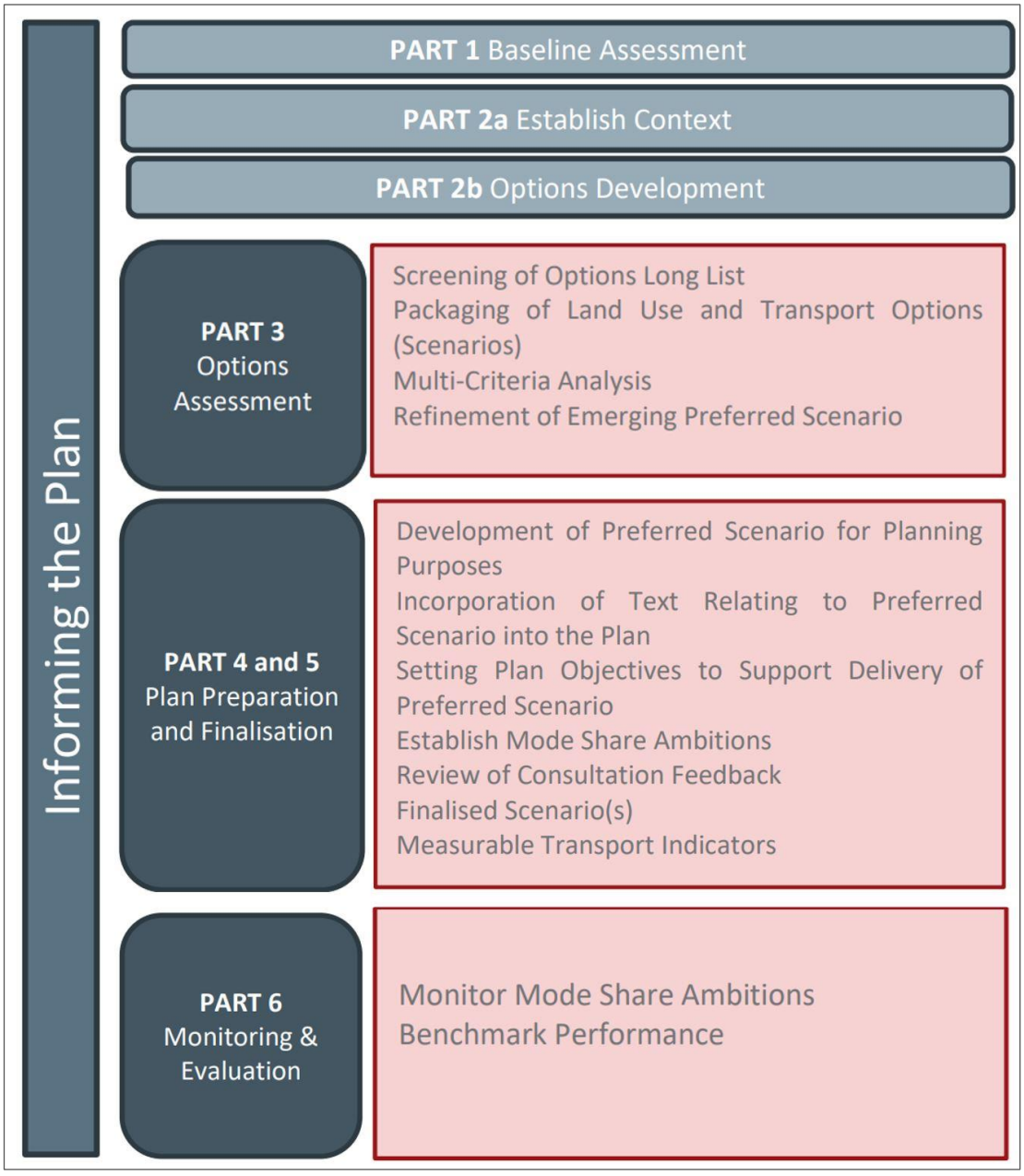
13 NEXT STEPS

13.1 FURTHER STAGES OF THE ABTA PROCESS

13.1.1 This report details the Baseline Assessment as part of Part 1 of the ABTA process and has developed potential transport options in Part 2.

13.1.2 The work will continue with screening and assessment of the Long List of Options included in **Table 12-1**. The possible interventions will be tested and refined in Part 3. Parts 4 and 5 will develop the preferred scenarios informing the Plan. Part 6 is a long-term monitoring and evaluation of the implemented measures as shown in the overview of the future stages set out in **Figure 13-1**:

Figure 13-1 – Next steps of the ABTA process



APPENDIX C

PART 3 SUMMARY REPORT: OPTIONS ASSESSMENT

Mayo County Council

WESTPORT LOCAL TRANSPORT PLAN

Part 3 – Options Assessment

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1 INTRODUCTION

1.1 BACKGROUND

1.1.1 WSP and Transport Insights have been appointed by Mayo County Council to produce a Local Transport Plan for Westport, following the Area Based Transport Assessment (ABTA) process. This ABTA will seek to facilitate and inform the integration of land use and transport planning at the earliest possible stage in the preparation of the emerging Local Area Plan, with an emphasis on enabling sustainable transport outcomes for the Plan area.

1.2 THE LOCATION

1.2.1 Westport is located in County Mayo on Ireland's west coast and has over 5,750 inhabitants in the Westport urban area and more than 1,500 in the immediate rural area around it (**Figure 1-1)**, Westport is the third largest town in the county. It lies approximately 17km to the southwest of Castlebar, County Mayo's largest town, and approximately 250km to the west of Dublin. It is a popular tourist destination providing a tourist gateway for West Mayo and the wider region. For the purposes of this project, a main study area has been identified and an area of influence as can be seen in **Figure 1-2**.

Figure 1-1 - Westport urban and rural boundaries

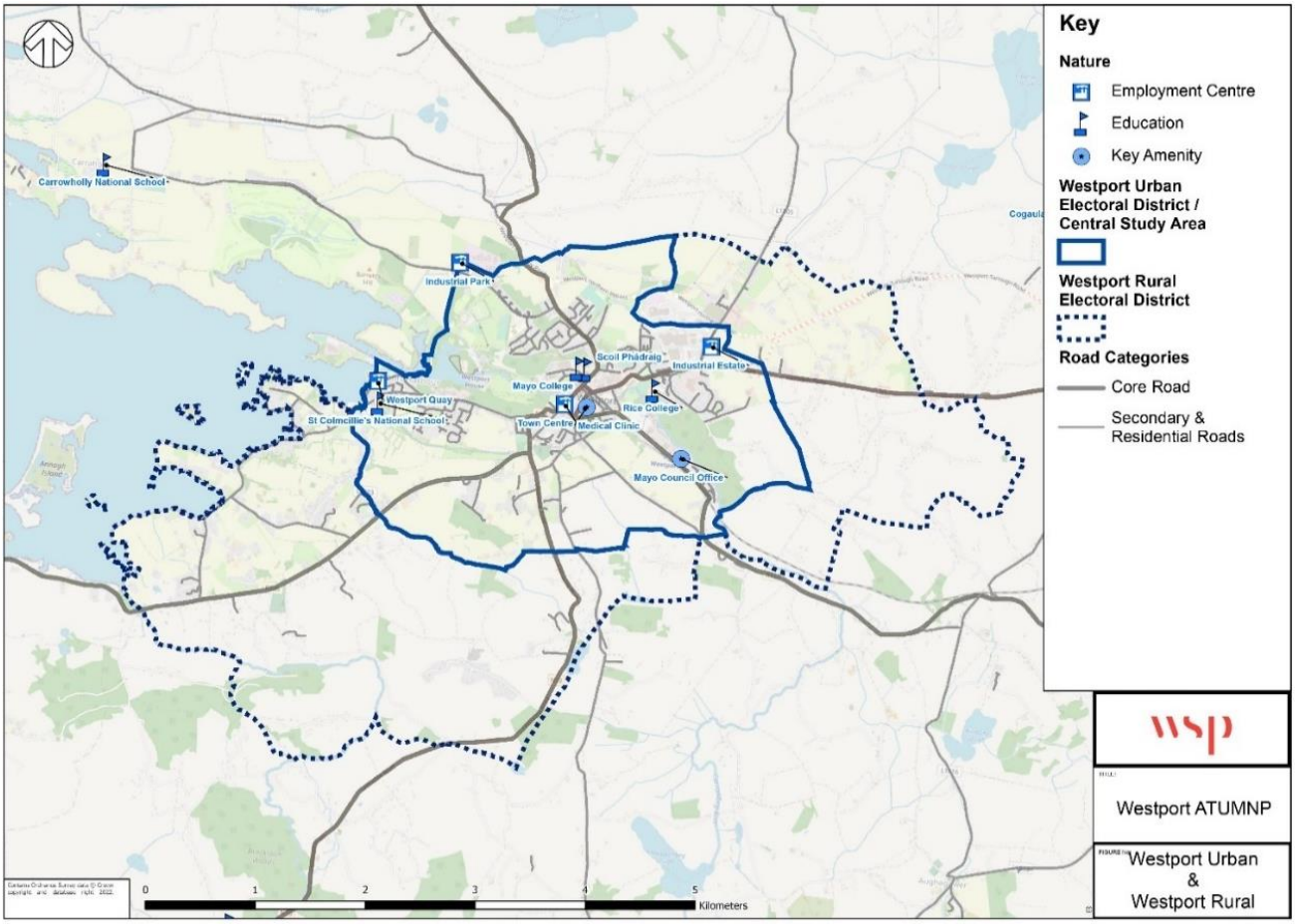
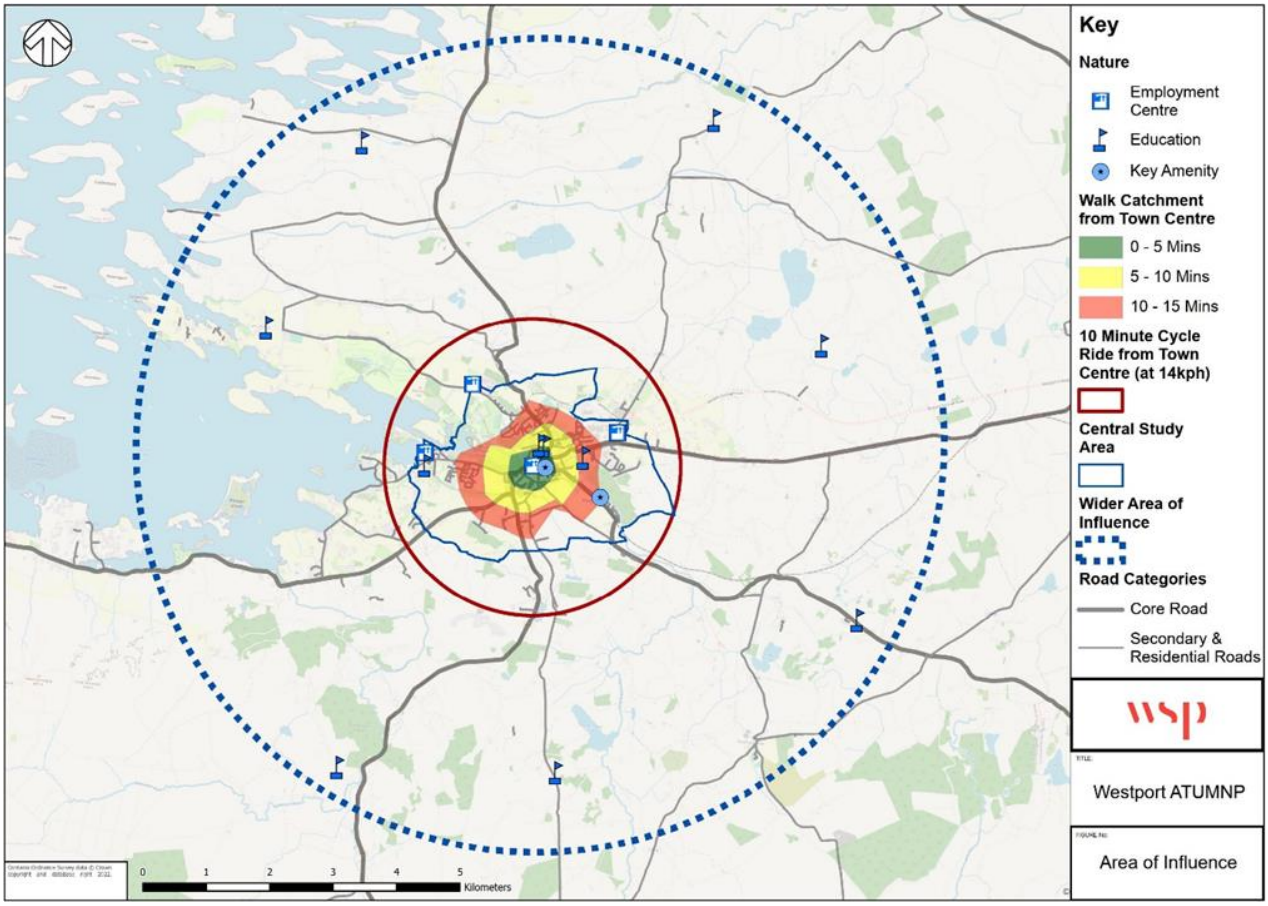


Figure 1-2 - Main Study Area and Area of Influence

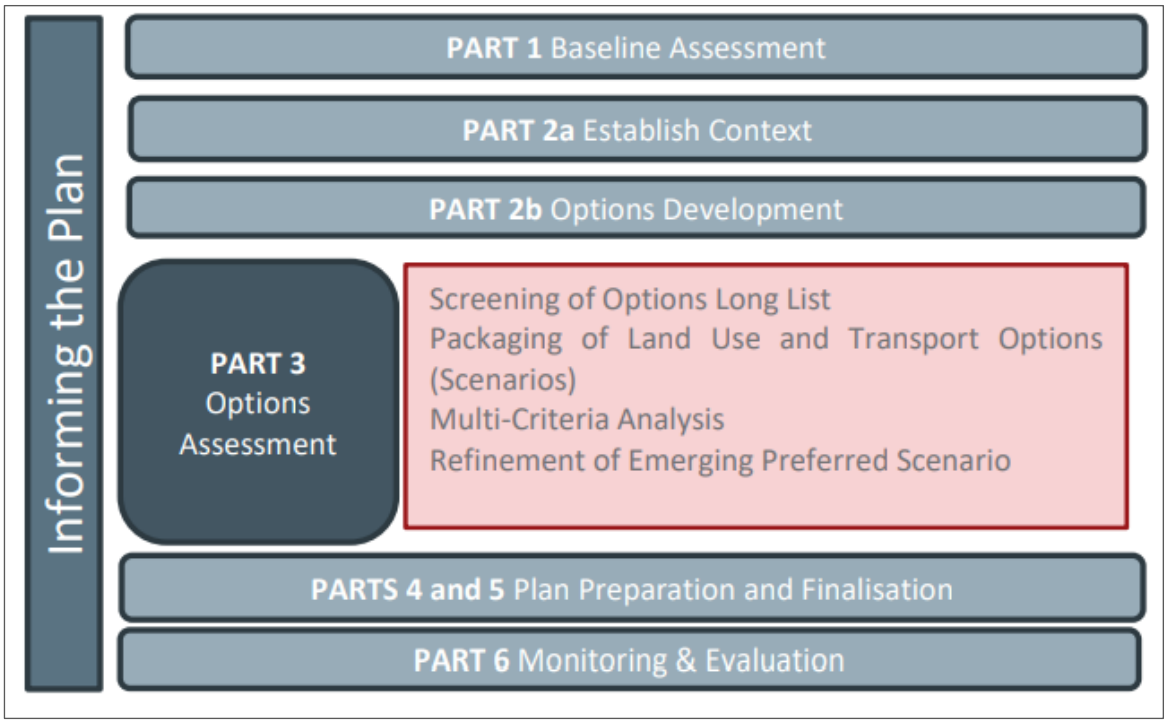


1.3 ABTA PROCESS OVERVIEW

1.3.1 This report has been developed in accordance with ABTA 'How to' Guide issued by the National Transport Authority (NTA) and Transport Infrastructure Ireland (TII). The document provides a guide and practical advice to enable a consistent approach in undertaking transport assessments.

1.3.2 This report builds on the Stage 1 and 2 Summary Report that addressed Part 1, 2a and 2b. As shown in **Figure 1-3**, the preparation of an ABTA includes six key stages. Part 3 of the process establishes an Emerging Preferred Scenario through the screening of the Options Long List and Multi-Criteria Analysis of proposed measures and alternative transport and land use scenarios.

Figure 1-3 – Options Assessment as part of the ABTA process



2 SCREENING

2.1 OVERVIEW

2.1.1 Step 1 of the Options Assessment seeks to take the "long list" of options and examine them individually to see whether they address one or more of the weaknesses identified in the SWOT analysis undertaken within Part 1. Options that do not sufficiently address the weaknesses should be discounted. Discounted options will also be examined to see if they would perform better in combination with other options or along with demand management options and checked again using the SWOT. Similarly, an outcome of this screening can be the modification or clarification of an option rather than its outright removal.

2.1.2 Individual options and combinations that are considered to sufficiently address the weaknesses will be brought forward to be packaged together and alongside land use scenarios.

2.1.3 This section of the report details the screening of the "long list" of options that are applicable to the Westport ABTA.

2.2 INDIVIDUAL TRANSPORT OPTIONS (LONG LIST)

2.2.1 This section of the ABTA presents the options brought forward to achieve the transportation objectives envisioned for Westport. The baseline analysis and travel demand has been analysed in line with the relevant transport and settlement policies to create a list of holistic options across the following travel modes:

1. General / Multi-Modal;
2. Walking;
3. Cycling;
4. Public Transport;
5. Parking;
6. Freight and logistics.

2.2.2 Future developments and growth in Westport have been accounted for in these options to ensure that the land-use strategy is in line with sustainable transport objectives.

2.2.3 Once the options have been assessed and the preferred strategy interventions have been identified in the following sections, they will be then subject to a more detailed categorisation according to their estimated delivery timescale. In this regard, the following categories will be used to define the implementation timescale for each measure:

- Short term: Measure intended for implementation within 1-5 years (2023 – 2028)
- Medium term: Measure intended for implementation within 6-10 years (2029 – 2034)
- Long term: Measure intended for implementation within 11- 16 years (2035 - 2040)

2.2.4 These timescales are indicative only and will be subject to funding and resource availability. For the purposes of this study, the short-term interventions have been packaged into scenarios and will be assessed through the multi criteria analysis. Medium term and long term measures will be discussed

at a higher level in this report with a view to understanding the future transport options while focusing on deliverable interventions that can be delivered in the short term.

3 PACKAGE OPTIONS (SCENARIOS)

3.1 OVERVIEW

3.1.1 Potential interventions were organised into separate packages on a deliverability criterion. Options were categorised in to “Do Minimum”, “Do Medium” and “Do Maximum” (Appendix A). The “Do Maximum” scenario builds upon and incorporates the other scenarios and proposes delivery of all interventions. High level assumptions were carried out to predict the capital investment and timescale required to implement the upgrades. See Table 3-1 below:

Table 3-1 – Scenario Definitions

Category	Definitions
Do Nothing	Interventions already planned / designed by MCC are assumed to go ahead with no other upgrades to existing infrastructure.
Do Minimum	Low cost (<€500k). This will comprise of low profile, quick wins by upgrading some existing infrastructure to improve accessibility for existing connections. Soft measures such as Town wide policy and guidance notes will provide a basis for future investment strategies.
Do Medium	Medium cost (<€10M). This scenario will aim to provide new infrastructure and connectivity throughout Westport with minimal impact on road space and parking.
Do Maximum	High Cost (>€10M). This scenario provides infrastructure that creates most opportunity for modal shift towards active travel. This will have the greatest impact on existing road space and parking.

3.2 DO NOTHING

3.2.1 As part of the ‘Do Nothing’ strategy the existing infrastructure will be used as a qualitative benchmark for the MCA. This section will also help identify current land use plans in Westport’s existing transport network that may impact movement within the study area.

3.2.2 Current Projects

- Westport House – €75.5M investment plan, including Hotel Westport.
- N5 Westport to Turlough Road Project – currently under construction connecting Castlebar Road to the N59 with connections to Portwest.

3.2.3 Maintain existing infrastructure

- Mandatory Cycle lanes – Existing marked cycle lanes on Castlebar Road and Altamont Street (outside Train Station). Castlebar Road cycle lanes being extended to the east following N5 upgrades.
- Great Western Greenway – expansive greenway connecting Westport to The Quay to the West and the N59 to the North with limited connections to the town centre.
- Share-use paths – moderate network of mixed-use paths throughout Westport.

3.3 DO MINIMUM

3.3.1 The "Do Minimum" scenario (**Table 3-2**) primarily focuses on quick wins that should be relatively straightforward to deliver. This will mostly address gaps in existing infrastructure and improve safety for vulnerable road users.

Table 3-2 – Do Minimum Interventions

Ref	Westport Short Term Options	Mode	Category	Long List ID
1.1	Introduce a town wide 30 kmh speed limit	Town Wide	Do Minimum	AM-1
1.2	Expand the signage / wayfinding strategy	Town Wide	Do Minimum	AM-3, Walk-8
1.3	Consider converting existing raised pedestrian courtesy crossings to formal zebra or signalised crossings in areas of high pedestrian footfall.	Walking	Do Minimum	Walk-3
1.4	Enhance street lighting on Altamont Street, Quay Road, Castlebar Road, Newport Road, Leenane Road, West Road and the Greenway to improve safety	Town Wide	Do Minimum	Walk-9
1.5	Relocate and increase railway station cycle parking to avoid conflict with car park use	Cycling	Do Minimum	Cyc-2
1.6	MCC to provide support for the delivery of public cycle hire scheme including ebikes	Cycling	Do Minimum	Cyc-3
1.7	Formalise and provide accessible bus stops on Mill Street, Castlebar Road (outside The Castlecourt Hotel) and at the Train Station	Public Transport	Do Minimum	PT-1, PT-3
1.8	Consider providing taxi ranks in collaboration with the taxi regulator in the following locations on Castlebar Road, The Octagon, and Mill Street (Interchange)	Town Wide	Do Minimum	GT-1
1.9	**"Develop a Parking Management Plan for Westport including the following:** - Provide additional electric vehicle charging points in off-street car parks - Provide taxi ranks on Castlebar Road, The Octagon, Mill Street (Interchange) - Consider cost increases and further restrictions - Formalise the provision of temporary car parks in schools for the tourist season with temporary mobility hubs including bike share, shuttle buses etc. The temporary mobility hubs will occupy off-	Parking	Do Minimum	GT-1, GT-4, Park-1, Park-3, Park-4, Acc-2, F&L-2

	street car parks such as James Street, and make use of school parking facilities such as Holy Trinity car park. The shuttle bus could loop through the town to provide stops throughout the town. - Review accessible parking provision in off-street car parks and on street – design improvement to bring to standard - Enhance and strengthen enforcement of loading and parking violations - Provide new and improved existing park and ride / park and stride facilities			
1.10	Update parklet design guide	Town Wide	Do Minimum	PA-2
1.11	Develop a monitoring / audit process for identifying and reporting ongoing accessibility issues	Town Wide	Do Minimum	Acc-3
1.12	Incentivise the use of cargo bikes for short freight journeys within the town by providing allocated on street parking bays and facilities. There is also potential to establish a 'bicycle library' at local schools for families to trial or include cargo bikes in a public bike hire scheme (1.6).	Town Wide	Do Minimum	F&L-1, F&L-4
1.13	**Establish Mobility Management Plans for 7 no. schools in main study area to include:** - Continue to promote and support green schools initiative - Establish walking and cycling buses to primary schools - Provide School Zones interventions in front of all schools including area of influence	Town Wide	Do Minimum	CM-1, CM-2, CM-3
1.14	Ensure Workplace Travel Plans are developed for new developments and extensions to existing residential areas	Town Wide	Do Minimum	CM-5
1.15	**Greenway improvements** - Pinewoods accessibility improvements to greenway - Provide a new pedestrian crossing on R335 at Sli Na Miséan housing development to access greenway - Provide a new pedestrian crossing on Lenanne Road near the junction with Tober Hill Street to access greenway - Increase the width of the offroad path between Church Street and Leisure Centre car park to make it accessible to cycling	Cycling	Do Minimum	AM-7, Walk 7

	- Provide resting places and benches at longer walking routes / key approaches into town			
1.16	Ensure streets are clutter free and at least 2m is clear for pedestrians by engaging with business owners and enforcement where required	Walking	Do Minimum	Walk-4
1.17	**Upgrade existing footpaths:** Review and standardise provision of drop kerbs, tactile paving and consider the potential to reduce corner radii to enable a consistent access experience for people with disabilities - Tober Hill – address local pinch points to provide continuous footpath - Leenane Road – footpath widening from Quay Road to Toberhill - Peter Street – steps and accessibility improvements - Hillside – footpath widening, relocate street furniture blocking the footpath - Johns Row – footpath widening (minimum footpath width), continue raised footpath - Church Street – provide accessible pedestrian access to Westport House, tactile paving, widening of footpath - High Street – footpath widening and resurfacing on north end - Altamont Street – provide footpath widening and provision on both sides of the road - Distillery Road – Provide at least 1.8m wide footpath to address pinch points (bridge) and provision on both sides of the road - Castlebar Road (east of distillery Road to Father Angelus Park) – provide wider footpaths, relocate street furniture, highlight route through Father Angelus Park - New Road – footpath widening - Newport Road (Scoil Phadraig to Pinewoods) – footpath widening - Horkans Hill – provide accessible continuous footpath to Upper Carrowbeg Estate - Harbour View – dropped kerbs, tactile paving, localised widening, improved crossings - Quay Road (The Octagon to N59) – Footpath widening and improved crossing over Church Street	Walking	Do Minimum	Acc-4, Walk-1, Walk-11, Walk-13
1.18	Develop a Local Area Model of Westport Town (based on NTA's Western Regional Model)	Town Wide (Traffic)	Do Minimum	AM-1, Walk-1, Walk-3, Walk-10 & 11, Walk-13, Cyc-1, PT-2, Park-1,CM-4

3.4 DO MEDIUM

3.4.1 The do medium interventions list (**Table 3-3**) aims to meet all objectives whilst building on the existing network with the introduction of localised permeability enhancements and policies. This approach will aim to improve permeability and accessibility by providing new and upgraded localised infrastructure schemes.

Table 3-3 – Do Medium Interventions

Ref	Westport Short Term Options	Mode	Category	Long List ID
2.1	Deliver Mobility Hubs including cycle parking, public car share, bike share etc. (Mill Street, Train Station, Town Centre)	Town Wide	Do Medium	AM-2, GT-4
2.2	Provide secure sheltered cycle parking throughout the town	Cycling	Do Medium	Cyc-4
2.3	Implement findings from accessibility review and parking management plan	Town Wide	Do Medium	GT-4, Park-1, Park-3, Park-4, Acc-2, F&L-2, Acc-3, Acc-4
2.4	Investigate the potential and feasibility of providing a new bridge across the Carrowbeg River at St Mary's Crescent	Cycling	Do Medium	AM-7
2.5	**Provide an enhanced east – west pedestrian connection from High Street Car Park to the Leisure Centre Car Park** - New footpath in High Street car park from Greenway access to Mill Street - Introduction of new signalised pedestrian crossing on Mill Street between High Street car park and Mill Street car park - New footpath in Mill Street car park from Mill Street to laneway connecting to Bridge Street - New footpath through James Street car park - Reallocate car parking spaces either side of the entrance to James St car park - Improved footpath in the Leisure Centre car park including improved pedestrian access	Walking	Do Medium	Walk-1, Walk-2, Walk-12
2.6	Consider the provision of additional bus stops in collaboration with key stakeholders to increase the portion of the town with access to public transport services	Public Transport	Do Medium	PT-2
2.7	**Greenway / off road paths** - Develop a Carrowbeg Riverside path from Ashwood to Tesco (Phase 1) with potential northern connection through Knockranny Woods / Colonel's Wood (Phase 2) - Develop a Greenway through Westport House from Church Street to Cloonmonad	Walking	Do medium	AM-7

2.8	**New footpaths:** - Leenane Road (N59) from Pound Road to Daybreak - High Street – provide accessible pedestrian link from greenway to Johns Row on the west side of street, new footpath provision, remove steps - Lodge Road (N5) to Kearneys Road – some existing sections of footpath to be upgraded alongside new sections to provide continuous footpath - Knockranny Road Footpath extension from Knockranny Lodge to Drummindoo Stud farm junction	Walking	Do Medium	Walk-13
2.9	**Potential Permeability Improvements:** - Upper Carrowbeg Estate to Greenway - Horkans Hill to Carrowbeg Estate - Kings Hill to Fairways - Upper Carrowbeg Estate and Carrowbeg Estate - St Mary's Crescent (Order of Malta) to provide improved connection to the Greenway from the town centre (filtered permeability with shared use path) - Octagon with direct link to leisure centre car park	Walking	Do Medium	AM-7/AM-8

3.5 DO MAXIMUM

3.5.1 The do maximum interventions list (**Table 3-4**) focuses on reallocating road space to provide segregated cycle tracks to encourage and enable the mode shift around Westport to active and sustainable modes. The options will aim to provide new transport solutions that promote user safety and accessibility.

Table 3-4 – Do Maximum Interventions

Ref	Westport Short Term Options	Mode	Category	Long List ID
3.1	**Greenway accessibility** - Provide accessible connection from the Greenway to Altamont Street - High Street car park accessible access to Greenway (Switchback ramp)	Cycling	Do Maximum	AM-5, AM-3
3.2	Consider the feasibility of providing increased public realm opportunities in the Western half of The Octagon by reallocating parking spaces.	Walking	Do Maximum	Walk-5
3.3	Increase footpath width on South Mall	Walking	Do Maximum	Walk-1
3.4	Work with multiple agencies to facilitate the development of a delivery hub location on the edge of Westport, enabling freight consolidation and a reduction in the number of vans circulating the constrained town centre.	Town Wide	Do Maximum	F&L-1
3.5	**Provide a Primary Cycle Network consisting of segregated cycle tracks on:** - North Mall from Mill Street to Newport Road (including junction upgrades) - Altamont Street / R330 from Distillery Road junction to the housing development at local road L5864, via the train station (requires existing roundabout to be upgraded to signalised T junction with cycle phase) - Bridge Street from Castlebar Road to Shop Street - Castlebar Road from North Mall to Spar service station - Shop Street from The Octagon to Mill Street - Mill Street from Bridge Street to High Street Car Park - Quay Road from The Octagon to The Quay	Cycling	Do Maximum	Cyc-1, Acc-1,
3.6	Explore the potential for active travel infrastructure along Ardmore and Harbour View, tying in with existing infrastructure on the R335.	Cycling/Walking	Do Maximum	Acc-4, Walk-1, Walk-11, Walk-13

4 MULTI CRITERIA ANALYSIS

4.1 INTRODUCTION

4.1.1 The scenarios that progressed to this stage were compared against one another using a detailed Multi-Criteria Analysis (MCA) in accordance with the Department of Transport Document "Common Appraisal Framework for Transport Projects and Programmes". The multi-criteria analysis considered Economy; Integration; Accessibility and Social Inclusion; Safety; Environment; and Physical Activity.

4.1.2 Additional criteria and sub criteria have also been incorporated alongside the general framework criteria in order to assess scenarios against the objectives and deliverability. The criteria are split into sub-criteria to better evaluate the impact each scenario has on specific subject matters. This will also help differentiate some options where additional measures are put in place to cater for specific needs i.e., cycle integration. Each sub-criteria will have the same weighting meaning the framework is slightly biased towards integration and environmental objectives. Overlapping criteria from the framework and ABTA objectives will be removed or developed into greater detail.

4.1.3 The scenarios are comparatively assessed and qualitatively scored against each sub-criteria within a defined five-point scale (**Table 4-1**). The dark green represents the most beneficial approach and accepts the sub-criteria to be fully realised. Dark red represents the most adverse approach and represents a scenario that has significant disadvantages compared to other scenarios. To help compare the matrix accurately a numbered scale was attached to the colour scale ranging from +2 to -2 and will identify the Emerging Preferred Scenario. This will also allow for weighting of criteria / sub-criteria if required.

Table 4-1 - Assessment Ranking Criteria

Rating	Criteria
+2	**Significant advantages over the other scenarios:** The proposal is expected to have a clear and considerable benefit or positive impact, which should be a principal consideration when assessing a proposal's eligibility for funding
+1	**Some advantages over the other scenarios:** The proposal is expected to have a moderate benefit or positive impact, which taken in isolation may not determine a proposal's eligibility for funding, but considered collectively may do so
0	**Neutral compared to other scenarios:** Overall, the proposal is expected to have neither a positive or negative impact
-1	**Some disadvantages compared to the other scenarios:** The proposal is expected to have a moderate disbenefit or negative impact, which taken in isolation may not determine a proposal's eligibility for funding, but considered collectively may do so
-2	**Significant disadvantages compared to the other scenarios:** The proposal is expected to have a clear and considerable disbenefit or negative impact, which should be a principal consideration when assessing a proposal's eligibility for funding

NOTE: Where all scenarios assessed are considered comparatively equal in terms of advantage / disadvantage they all ranked as neutral

4.2 CRITERIA SUMMARY

4.2.1 In accordance with the Department of Transport "Guidelines on a Common Appraisal Framework for Transport Projects", the multi-criteria analysis considered Economy; Integration; Accessibility and Social Inclusion; Safety, Environment and Physical Activity. **Table 4-2** presents a summary of the assessment criteria and sub criteria used as part of the Multi Criteria Analysis.

Table 4-2 - Assessment Criteria

Assessment Criteria	Sub-Criteria
Economy: This criterion covers the capital investment required to deliver a scenario as well as potential economic impacts in the study area.	Capital Cost
	Transport Reliability and Quality
Integration: This criterion considers how a scenario integrates into existing infrastructure networks and future land use plans.	Land Use Integration
	Residential Population & Employment Catchments
	Public Transport Network Integration
	Cycle Network Integration
	Traffic Network Integration
	Pedestrian Network Integration
Accessibility and Social Inclusion: This criterion will evaluate how a scenario may improve accessibility throughout the study area.	Key Trip Attractors
	Deprived Geographic Areas
Safety: An assessment of a scenario's ability to implement safety measures and increase road user safety.	Road User Safety
Environment: This criterion will assess the potential impacts a scenario will have on the existing landscape and ecosystems.	Archaeology, Cultural & Architectural Heritage
	Flora & Fauna
	Soils & Geology
	Hydrology
	Landscape & Visual
	Noise, Vibration and Air Quality
	Land Use Character
Physical Activity: An assessment of how a scenario may benefit physical activity in localised areas.	Physical Activity

Project Objectives: Criteria derived from the Project Objectives that have not yet been identified in the common appraisal framework will be assessed.	Opportunities For Placemaking and Roadspace Reallocation
	Quality of service
	Parking (Quality, accessibility, number of spaces)
Deliverability: This criterion will aim to identify feasibility disadvantages in the proposed scenarios. It will also take in to account any potential political pushback.	Engineering Feasibility
	Acceptability

4.3 ECONOMY

4.3.1 Capital Cost

The Capital Cost of a scenario is comprised of the estimated infrastructure costs and the required land acquisition costs for design proposals within the scheme. The short-term scenarios have been categorised into three packages based on a number of considerations including their potential capital cost.

Scenarios that require road space reallocation, land acquisition or new structures are assumed to have a higher capital cost than those that can be delivered within the existing carriageway.

4.3.2 Transport Reliability and Quality

Scenarios that provide more reliable journey times will have advantages over scenarios that do not. Priority measures for pedestrians, dedicated cycle tracks and bus lanes provide the opportunity for more reliable journey times. Consideration will also be paid to the reliability of vehicular journey times.

4.4 INTEGRATION

4.4.1 Land Use Integration

This criterion assesses how a scenario would integrate with any future planned developments in the catchment area and how it might enhance the economic opportunities in the area. This criterion includes how a scenario fits into local area plans or any other area / county policies.

4.4.2 Residential Population & Employment Catchments

This considers how a scenario will impact the catchment areas addressed in Part 1 of the ABTA report for Westport. For example, providing new or upgraded sustainable transport options that better connect areas of residential and employment.

4.4.3 Public Transport Network Integration

Under this criterion, integration with the wider transport network is assessed and compared for each scheme. This includes transport modes such as rail, coaches, public bike schemes, and public bus operators.

4.4.4 Cycle Network Integration

This criterion assesses the coherence and connectivity of the cycle network.

4.4.5 Traffic Network Integration

The anticipated traffic impact, particularly at a network-wide level, expected as a result of the different scenarios will be considered. For example, reducing junction capacity and/or restricting traffic movement may have a negative impact on traffic flow throughout the town centre and may increase journey times for private vehicle users.

4.4.6 Pedestrian Network Integration

The impact of a scenario against the objectives of the Walking Strategy in Mayo Walks will be examined under this criterion such as the upgrading of existing linear walks, the development of new linear walks and the development of localised loops. The quality of service of practically achievable pedestrian facilities is assessed under this criterion.

4.5 ACCESSIBILITY AND SOCIAL INCLUSION

4.5.1 Key Trip Attractors

This assessment criterion considers how a scenario may cater for key trip attractors such as education, healthcare, and commercial destinations. This will identify accessibility enhancements for wheelchair and other vulnerable users such as ramped accesses.

4.5.2 Deprived Geographic Areas

The possible impact of the scenarios on deprived geographic areas as set out in the The Pobal HP Deprivation Index which measures the relative affluence or disadvantage of a particular geographical area using various datasets from the 2016 census.

4.6 SAFETY

4.6.1 Road User Safety

Under this criterion, the separation of different users and lower relative speeds are considered to assess the safety of each scenario. It will particularly focus on vulnerable users.

4.7 ENVIRONMENT

4.7.1 Archaeology, Cultural & Architectural Heritage

Effects on archaeological heritage can be considered in terms of impacts on below ground archaeological remains, and historic landscapes and parks. The construction, presence and operation of transport infrastructure can impact directly on such cultural and architectural heritage resources through physical impacts resulting from direct loss or damage, or indirectly through changes in setting, noise and vibration levels, air quality, and water levels.

4.7.2 Flora & Fauna

The provision of a scenario may have negative impacts on biodiversity, for example, through construction of new infrastructure through green field sites or removal of trees/hedges. These impacts are compared for each scheme under this criterion.

The potential for planting replacement trees along each route option is also assessed under this criterion.

4.7.3 Soils & Geology

Construction of infrastructure necessary for the provision of the scenarios has the potential to negatively impact on soils and geology. For example, through land acquisition and ground excavation. There is also the potential to encounter ground contamination from historical industries. These considerations are compared for each scheme under this criterion.

4.7.4 Hydrology

The provision new transport infrastructure may include aspects (for example bridge structures) with the potential to impact on hydrology or water resources. Any such structures and potential impacts are considered under this criterion.

4.7.5 Landscape & Visual

Provision of new or upgraded infrastructure has the potential to impact on the landscape and visual aspects of the area. This can be positive through the provision of public realm and streetscape improvements, or negative, for example, by the removal of front gardens, green spaces or adverse changes to streetscapes, character, and features.

4.7.6 Noise, Vibration and Air Quality

Provision of new or upgraded infrastructure has the potential to impact on noise and vibration. These effects are compared for each scenario under this criterion. The impact is quantified on whether the source of noise, vibration or air pollution (road) is moving closer to or further from sensitive receptors, for example through road widening or a new road alignment. Increasing the proportion of trips made by active travel modes and reducing traffic congestion will have air quality benefits.

4.7.7 Land Use Character

This criterion assesses the impact of each scenario option on land use character, and measures impacts which prevent land from achieving its intended use, for example through land acquisition, reallocation of road space, severance of land, removal of parking or loading spaces, or changes to access arrangements.

4.8 PHYSICAL ACTIVITY

4.8.1 Physical Activity

This criterion assesses the degree to which a scenario supports more physical activity, for example, new cycle infrastructure will directly support physical activity.

4.9 OBJECTIVES

4.9.1 This section discusses how the scenarios have been assessed against the objectives identified in Part 2.

4.9.2 **Objective 1:** More effective integration of land use and transport planning to reduce number of car trips.

This objective is assessed under sub-criteria ‘Land Use Integration’ with how well proposed land use proposals are integrated into the Local Area Plan.

4.9.3 **Objective 2:** Reduce traffic movements through and within the town to reduce vehicle emissions and create opportunities to enhance placemaking by road space reallocation

- Opportunities For Placemaking and Road space Reallocation

The criteria will aim to highlight how a scheme will incorporate street design with the intention of improving public wellbeing in the centre of Westport. This will include street furniture, resting areas and improved connectivity throughout the town centre. This this will also consider any reallocation of road space to create new areas of public realm, reducing vehicle traffic in the town centre.

4.9.4 **Objective 3:** Encourage mode shift to active travel and sustainable modes and improve accessibility for all users and all journey types

- Quality of Service

An assessment will be carried out regarding how the proposed scenarios will accommodate the needs of cyclists in relation to the Quality of Service Assessment by the National Cycle Manual. This will include the extent to which the following characteristics pedestrians and cyclists are exposed to; Pavement Condition; Number of adjacent Cyclists; Number of conflicts per 100m of Routes; Journey Time Delay; and HGV Influence.

4.9.5 **Objective 4:** Accommodate the needs of businesses and local residents by suitable provision and appropriate allocation and management of parking

1. Parking

This criterion will assess the total number of disabled parking bays, taxi ranks, and loading bays available in the town centre. This will also take into account their quality by addressing NTA guidance. Any alleviation schemes such as Park & Rides will also be assessed under this criterion.

4.9.6 **Objective 5:** Enhance road safety with focus on vulnerable users

This objective criterion has been addressed in the common appraisal framework 'Road User Safety' which will assess a scenario's measures to protect vulnerable road users by methods of separation etc. Any introduction of signalised crossings and junction upgrades (that favour vulnerable users) will be assessed by this criterion. A signalised crossing and junction provides better facilities for all users.

4.10 DELIVERABILITY

4.10.1 Engineering Feasibility

This criterion will assess the scenarios on buildability. A scenario that has more special engineering difficulty than other scenarios will be less favourable in the short term.

4.10.2 Acceptability

The criteria for acceptability will be based on the likely political and social acceptance of a scenario. For example, a scenario that appears to reduce parking or increase traffic flows may be less acceptable.

4.11 MULTI-CRITERIA ANALYSIS

4.11.1 A multi-criteria analysis has been carried out on the short term scenarios and the relative ranking of scenarios is summarised in **Table 4-3** below.

Table 4-3 - Multi-Criteria Analysis

Criteria	Sub-Criteria	Scenario			
		Do Nothing	Do Minimum	Do Medium	Do Maximum
Economy	Capital Cost	2	1	-1	-2
	Transport Reliability & Quality	-2	-1	1	2
Integration	Land Use Integration	-2	-1	1	2
	Residential Population & Employment Catchments	-1	-1	1	1
	Public Transport Network Integration	-2	1	1	2
	Cycle Network Integration	-2	-2	1	2
	Traffic Network Integration	2	1	1	-2
	Pedestrian Network Integration	-2	1	2	2
Accessibility and Social Inclusion	Key Trip Attractors (Education/Health/Commercial)	-2	1	1	2
	Deprived Geographic Areas	-1	1	1	1
Safety	Road User Safety	-2	1	1	2
Environment	Archaeology, Cultural & Architectural Heritage	0	0	0	0
	Flora & Fauna	1	1	-1	-1
	Soils & Geology	0	0	0	0
	Hydrology	1	1	-1	-1
	Landscape & Visual	1	-1	1	2
	Noise, Vibration and Air Quality	0	0	0	0
	Land Use Character	0	0	0	0
Physical Activity	Physical Activity	-2	1	2	2
Project Objectives	Opportunities for Placemaking and Road space Reallocation	-2	-1	1	2
	Quality of Service	-2	-1	1	2
	Parking	1	2	-1	-2
Deliverability	Engineering feasibility	2	1	-1	-2
	Acceptability	-1	1	1	-1
Total		**-13**	**6**	**12**	**13**

4.11.2 Economy

In terms of economy the “Do Maximum” scenario would have the highest capital cost and therefore has significant disadvantages when compared to other scenarios. Conversely, the “Do Nothing” scenario has significant disadvantages in terms of transport reliability and quality as it does not propose any meaningful interventions to improve journey time of all modes when compared to other options.

4.11.3 Integration

The “Do Maximum” scenario is considered to have significant advantages over other scenarios in terms of most sub criteria. It aligns with future proposed land uses by providing sustainable transport connections, providing links to the train station, and creating a segregated cycle network. However, it has a significant disadvantage on traffic integration as proposed major works will require reallocation of road space and increased number of signalised junctions, reducing traffic flow. The “Do Minimum” scenario has some advantages and some disadvantages compared to other scenarios. For example, it has some advantages in terms of traffic and the pedestrian network but disadvantages in terms of land use and catchments as it doesn’t provide interventions to connect origins and destinations. Further detail on Traffic Integration can be found in Appendix B.

4.11.4 Accessibility and Social Inclusion

The “Do Nothing” scenario is considered to have significant disadvantages in terms of trip attractors as it does not provide any new interventions. According to Pobal deprivation index by small area 2016, Westport has a mixture of affluent, marginally above average, marginally below average and three areas considered disadvantaged. As all ‘Do Something’ scenarios provide some improvement on a town wide scale they are all considered to have some advantages in terms of dealing with areas of deprivation.

4.11.5 Safety

The “Do Maximum” scenario has significant advantages in terms of safety as it provides the highest level of intervention to separate users in time and space by providing segregated cycle tracks, signalised crossings and lower vehicle speeds. The “Do Minimum” and “Do Medium” scenarios also provide advantages but not to the same extent as the “Do Maximum” scenario.

4.11.6 Environment

All scenarios are considered comparatively equal under a number of sub criteria where they are not considered as having advantages or disadvantages over the other scenarios. For example, scenarios are not considered to have an impact in terms of land use character as they are assumed to not change the landscape character significantly. The “Do Medium” and “Do Maximum” scenarios are considered to have some disadvantages in terms of hydrology due to their potential impact on existing water courses from new proposed bridges or riverside paths. In terms of landscape and visual, the “Do Maximum” option is considered to provide the biggest opportunity to enhance the existing public realm by providing new public spaces through road space reallocation. The “Do Minimum” scenario is considered to have some disadvantages in terms of landscape and visual as it requires small scale interventions which may appear uncoordinated in terms of the overall urban fabric.

4.11.7 Physical Activity

The “Do Medium” and “Do Maximum” scenarios are considered to provide significant advantages over other scenarios as they provide the best opportunity to enable people to become more physically active in terms of walking and cycling.

4.11.8 Project Objectives

The “Do Maximum” scenario provides significant advantages by proposing the highest level of road space reallocation and the highest quality of service in terms of walking and cycling. However, the “Do Minimum” scenario provides significant advantages over other scenarios when considering parking as it improves the standard of the existing accessible parking within Westport.

4.11.9 Deliverability

The “Do Nothing” scenario has significant advantages over other scenarios in terms of engineering feasibility whereas the “Do Maximum” would be more complex and involve the design and construction of structures, switchback ramps etc. The “Do Minimum” and “Do Medium” scenarios are considered to be the most acceptable as they propose improvements across Westport without significantly impacting on the existing road space or on street parking.

5 EMERGING PREFERED SCENARIO

5.1 INTRODUCTION

5.1.1 This Chapter presents the final conclusions from the assessment process of the options considered and recommends a preferred scenario. A description of the preferred scenario is given together with ancillary measures required on other roads/streets and key issues to be addressed through the scheme design development.

5.2 EMERGING PREFERRED SCENARIO

5.2.1 The 'Do Maximum' scenario is the emerging preferred scenario as per the results of the MCA. The do maximum proposes major cycle network upgrades in the form of segregated cycle tracks to improve active travel connections to the town centre of Westport. This also includes all proposals set out in preceding scenarios such as new footways, greenway improvements and pedestrian permeability improvements found in **Tables 3-1, 3-2 and 3-3**.

5.2.2 All modes of transport within Westport have been addressed but with a focus on Active Travel incentives. The standard of walking within the centre of Westport will be improved following pedestrian permeability upgrades through existing car parks. Localised widening of footpaths across the town will aim to improve accessibility. Cycling interventions have been proposed to provide a more complete network throughout the study area. This includes segregated cycle tracks and an increased area of shared-use paths.

5.3 SCHEME BENEFITS

5.3.1 The preferred scenario will benefit active travel by addressing the objectives set out in Part 2 of the ABTA. The overall aim of the objectives is to benefit the health, environment, and economy of Westport. The scheme will also align with respected regional and national policies that involve future infrastructure, environment, and economic advice.

5.3.2 Alignment to Project Objectives:

1. More effective integration of land use and transport planning to reduce number of car trips

The preferred scenario addresses possible interventions to improve public transport and active travel around the town with the aim of decreasing car trips with infrastructure upgrades such as accessible bus stop locations and supporting a new public ebike hire scheme. A Local Area Model of Westport Town will help indicate network locations which come under pressure in future years.

2. Reduce traffic movements through and within the town to reduce vehicle emissions and create opportunities to enhance placemaking by roadspace reallocation

Placemaking has been encouraged by pursuing the feasibility of increased public realm opportunities in the Western half of The Octagon. This will remove a significant amount of traffic from the area providing a safe space for entertainment, reducing traffic noise and lowering emissions in the area.

3. Encourage mode shift to active travel and sustainable modes and improve accessibility for all users and all journey types

By providing measures such as segregated cycle tracks and increased greenway connectivity to the centre of town, the preferred scenario supports the uptake of active travel in the study area. Safe Routes to School and Workplace Travel Plans have been adopted to provide education in relation to active travel in the community.

4. Accommodate the needs of businesses and local residents by suitable provision and appropriate allocation and management of parking

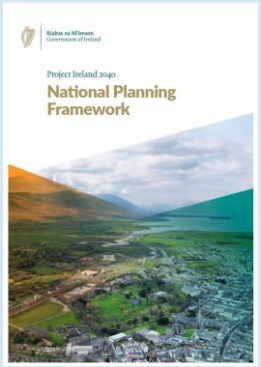
The scheme will aim to provide improved parking arrangements to vulnerable residents by supporting higher quality disabled parking bays. Local businesses will benefit from cargo bike incentives with proposed allocated on street parking bays and facilities.

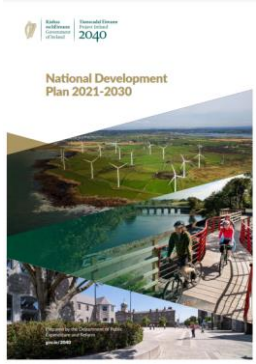
5. Enhance road safety with focus on vulnerable users

Measures have been included which will aim to reduce risk to vulnerable road users by segregating them from other road traffic. Pedestrians will benefit from new signalised crossings and reduced speed restrictions to help limit future accidents.

5.3.3 **Table 5-1** identifies the alignment between the Emerging Preferred Scenario and National and Regional Policies

Table 5-1 – National policies

Policy Document	Summary
Project Ireland 2040: National Planning Framework 	Project Ireland 2040 is the overarching policy and planning framework for the social, economic and cultural development in Ireland set out in seventy national policy objectives. The 'Do Maximum' scenario directly aligns with National Policy Objective 28, to "ensure the integration of safe and convenient alternatives to the car into the design of our communities, by integrating physical activity facilities for all ages, particularly prioritising walking and cycling accessibility to both existing and proposed future development, in all settlements."

Policy Document	Summary
National Development Plan 2021-2030 	This plan sets out a number of National Strategic Outcomes (NSO) including NSO – 2 which seeks to enhance intra-regional accessibility through improving transport links between key urban centres of population and their respective regions, as well as improving transport links between the regions themselves. This also identifies active travel as the top strategic investment priority. The 'Do Maximum' scenario highlights numerous opportunities to improve active travel links between residential areas and places of work and education within Westport Town.
National Investment Framework for Transport in Ireland (NIFTI) 	This is the strategic framework for future investment decision making in land transport. It will guide transport investment in the years ahead to enable the National Planning Framework, support the Climate Action Plan, and promote positive social, environmental and economic outcomes throughout Ireland. Active travel is at the top of the modal hierarchy in terms of investment which is a core objective in the preferred scenario.
Climate Action Plan 2021 	The Climate Action Plan (CAP) 2021 recognises that Ireland must achieve a significant modal shift from car to active travel and public transport if the country is to achieve the target of a 51% reduction in greenhouse gas emissions by 2030 and ultimately net zero by 2050. CAP sets a target for 500,000 additional daily active travel and public transport journeys by 2030 and investment planned under the current NDP will be directed toward achieving that challenging target. The preferred scenario will aim to upgrade Westport's active travel infrastructure to be capable of achieving these targets.

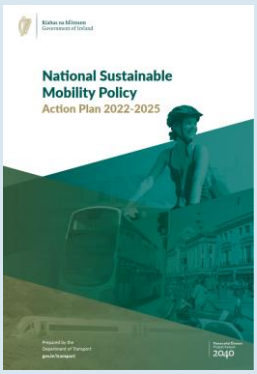
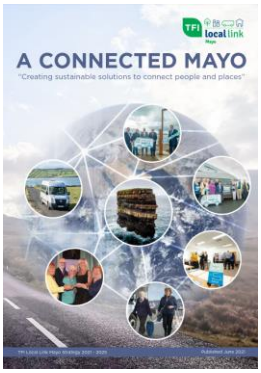
Policy Document	Summary
National Sustainable Mobility Policy 	This sets outs a framework to 2030 for active travel and public transport to support Ireland's overall requirement to achieve a 51% reduction in greenhouse gas emissions by 2030. The 5 year development proposals set out in the 'Do Maximum' scenario will aim to reduce private vehicle use by giving more priority to active travel users.

Table 5-2 – Regional policies

Policy Document	Summary
Regional Spatial & Economic Strategy (2020-2032) 	The strategy seeks to anticipate and plan for jobs growth and economic development at the regional level. The RSES identifies Westport as a location with strategic development potential of a regional scale, a potential which is best achieved by building on the existing economic, transport, commercial, and social links with the nearby Castlebar. These links will be strengthened by the upgrading of the N5, which will reduce the commuting time between both towns. It also advocates for the need to improve rail services to Dublin and the potential to provide rail connectivity to the south which would enhance sustainable transport connections to Ireland West Airport and its associated nearby SDZ. The upgrading of the entirety of the N5 to a TEN-T 'High-quality Road' and the provision of relief roads to the north and south of the town would enable the potential of the town and remove service barriers. This allows for the pre-existing N5 route into the town centre to be utilised for active travel by providing segregated cycle tracks on Castlebar Road and connections throughout Westport Town.
A Connected Mayo: TFI Local Link Strategy (2021-2025)	A Connected Mayo - "Creating sustainable solutions to connect people and places" sets out the priorities for TFI Local Link Mayo until 2025. The document describes the plans to create a responsive, integrated, and accessible transport network to serve the population of County Mayo.

Policy Document	Summary
	It envisages a network where access to transport is available to enhance the quality of life to all who live, work, visit and socialise in the county and advocates for improvements to transport accessibility in both rural and urban areas.
Draft County Development Plan (2021-2027) 	The core strategy provides for an increase in population of 1,027 people over the plan period to be accommodated in an additional 470 homes. Mayo County Council are required to identify and reserve an appropriate amount of land in the correct locations to meet housing and population targets. Future housing supply in the town must be provided in a sustainable manner, aligning with the provisions of the Core Strategy of the County Development Plan, and having regard to established and sustainable settlement patterns and the natural environment. The emerging preferred scenario aims to cater for new and existing residential settlements, as well as providing new active travel links to key areas in the centre of town.

5.4 COST ESTIMATE

5.4.1 The National Transport Authority produced a document in April 2022 which set out the typical timeline and costs for active travel infrastructure. An overview of the costs is available in **Table 5-3**. These examples consider key factors such as: land costs, drainage, services, traffic management, new street lighting, part/full road reconstruction. It is noted that this is an assumption and more complex schemes will require greater capital and timeframes.

Table 5-3 – Typical Costs for Active Travel Infrastructure

Active Travel Infrastructure	Typical Cost*
New Footpath	€0.25 - €0.5M/km
Full Build Segregated Cycle Track	€2 - €4M/km
Greenway	€1 - €2M/km
Signalised Pedestrian Crossing	€50k
Zebra Crossing	€30k
Junction Upgrade	€0.5M - €1M

*Cost estimates from April 2021

The emerging preferred scenario would require the greatest capital investment as it proposes the delivery of all interventions. The delivery of the short term options is proposed to occur over a five year period with interventions being delivered across Westport during that period. Each of the interventions identified in the Emerging Preferred Option would need to complete the phases identified in **Figure 5-1**.

5.4.2 The National Transport Authority Project Approval Guidelines sets out the phased approach to, the development, management and delivery of capital projects. Project phases are monitored at NTA approval points, called Gateways, that occur at key approval milestones throughout the project as set out in **Figure 5-1**.

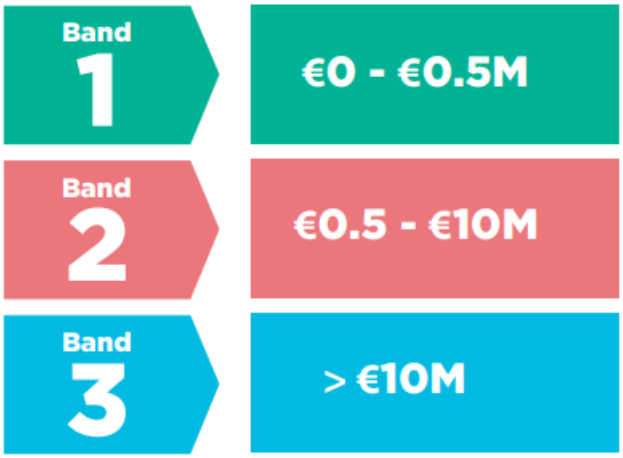
Figure 5-4 - Project Life Cycle - Capital Investment (NTA Project Approval Guidelines 2020)

Figure 5-5 - NTA Project Bands

Furthermore, there are also specific bands for projects based around the value of the project as set out in Figure 5-5 and below:

- Band 1: €0M - €0.5M
- Band 2: €0.5M - €10M
- Band 3: > €10M

Depending on the delivery programme for the Emerging Preferred Scenario, there will likely be a combination of Band 1, 2 and 3 projects as interventions are bundled for delivery.



6 PUBLIC TRANSPORT

6.1 INTRODUCTION

6.1.1 During the stage 2 option development step of the ABTA, twelve potential options (PT-1 to PT-12) were identified that could enhance public transport provision and facilities in Westport, as well as one all-mode option for mobility hubs which would directly impact public transport by improving integration with other modes (AM-2)[1].

6.1.2 In addition, Option F&L-3 proposed the use of passenger train services for the movement of light freight. Whilst not related to moving the public, it does use public transport for part of the journey and as such is included here.

6.2 OPTIONS RETAINED

INTRODUCTION

6.2.1 Of the long list, options PT-1 and PT-3 were included in the Do Minimum investment package detailed in Section 3.3 whilst AM-2 is included in the Do Medium i nvestment package identified in Section 3.4. These Options consist of changes to land and infrastructure already owned and maintained by Mayo County Council and are therefore more likely to be deliverable. Additional details of these options are provided below.

PT-1 BUS STOP PROVISION AND PT-3 BUS STOP ACCESSIBILITY

6.2.2 Option PT-1 would provide the existing bus stops at Castlebar Road and Westport railway station with:

- Bus stop flags/signs to ensure they were easily visible to prospective users and that buses had somewhere formal to stop;
- Stands enabling level access for people with reduced mobility; and
- Timetable information for the services .

6.2.3 Option PT-3 would upgrade or revise the existing stops on Mill Street with facilities to enable level access for wheelchair users and others with reduced mobility.

AM-2 MOBILITY HUBS

6.2.4 Option AM-2 would provide Mobility Hubs at key transport nodes, encouraging interchange between sustainable transport modes such as e-bikes/e-scooters, car share schemes and public transport. Facilities at the hubs could include:

- Facilities for cycle hire and storage, as well as route maps
- Bus and rail timetables
- Walking route maps
- Bathrooms

[1] The wider suite of All Mode Options would also influence public transport; but through indirect means such as reducing town centre traffic and thus improving public transport journey time reliability.

- Waiting areas
- Cafes

6.3 OPTIONS NOT TAKEN FORWARD

INTRODUCTION

6.3.1 Section 6.2 covers the three PT related options which have been retained for inclusion in the package options. The remaining ten PT options were not taken forward at this stage because of they would be difficult to deliver due to them being outside of Mayo County Council's ability to directly influence. These are detailed below.

BUS OPTIONS

6.3.2 The following long-list options proposed alterations to Westport's bus services:

- **PT-4:** Re-route services 440 and 456 to shorten routes and avoid doubling back around the town centre gyratory.
- **PT-5:** Provide contra-flow bus lane on Bridge Street, supported by new stops, which would allow buses to cross town without looping around the gyratory.
- **PT-6:** Provide contra-flow bus lane on Shop Street, supported by new stops, which would allow buses to cross town without looping around the gyratory.
- **PT-7:** Re-route bus No456 via Altamont St, past the railway station. This would increase bus frequency between the station to the town centre and could be synched to integrate with rail arrivals.
- **PT-9:** Trial a shuttle bus between the town centre and the railway station, timed to connect with trains. This could be extended northwest (to reach residential areas) or northeast (to link employment areas).
- **PT-10:** Extend bus service hours and frequency to support the evening economy.
- **PT-11:** Increase bus service frequency to provide a more attractive alternative to the private car
- **PT-12:** Review bus and rail fares to provide a competitive, integrated public transport alternative to the car.

6.3.3 Bus services in Westport are, primarily, controlled by Bus Éireann, Ireland's state-owned bus operator. Mayo County Council can engage with Bus Éireann and discuss the options but can't implement the changes themselves. As such, these options have been discounted from inclusion in the investment scenarios.

RAIL OPTIONS

6.3.4 The following Options proposed alterations to rail services to Westport:

- **PT-8:** Provide the infrastructure to encourage Iarnród Éireann to deliver on their proposed uplift of service frequency and operation hours.
- **PT-12:** Review bus and rail fares to provide a competitive, integrated public transport alternative to the car.
- **F&L-3:** Consider the use of passenger rail services to deliver light cargo into town, as being trialled in the UK.

6.3.5 Rail services are controlled by Iarnród Éireann (IÉ), Ireland's national railway operator and thus can't be directly influenced by Mayo County Council in order to implement these options. As per the bus

services, this does not preclude Mayo County Council from engaging with Iarnród Éireann to discuss desired improvements, particularly as the service enhancements were previously announced as part of Iarnród Éireann Strategy 2027 and could be considered as a committed scheme.

BEHAVIOUR CHANGE MEASURES

6.4 INTRODUCTION

6.4.1 The focus of transport interventions in Ireland has progressively changed in the past few years, moving towards active and sustainable travel modes supported by transport orientated land-use, guided at national level by the National Planning Framework 2040 and more recently by the National Investment Framework for Transport in Ireland (2021), and the Climate Action Plan 2023. Along with providing hard infrastructure to facilitate sustainable travel modes, changes to existing travel behaviours are essential for the full benefits of the new and enhanced infrastructure to be realised. In addition, changes in travel behaviour help support a reduction in private car reliance and help towards national climate action objectives.

6.5 SCHOOLS

6.5.1 Seven schools, 4 primary schools, 2 secondary schools and one further education school, were included as part of the baseline data gathering exercise. The travel surveys indicated travel by car was the main mode of choice, in particular for primary schools, although the surveys also indicated there is opportunity/ demand for greater uptake of active and sustainable travel. Potential behavioural change programmes/ interventions for the schools that could support increased sustainable travel modes and complement new and enhanced infrastructure provision are outlined below.

An Taisce Green-Schools

6.5.2 The An Taisce Green-Schools programme is Ireland's leading environmental management and education programme for schools. The programme has 10 individual themes with the Travel theme (no. 4) relating to transport/ travel. The Travel theme aims to increase the number of students walking, cycling, scooting, using public transport or carpooling to school. The Travel theme is funded by the Department of Transport and supported by the National Transport Authority.

6.5.3 Throughout the country dedicated regional Travel Officers provide support to Green-Schools to consider the existing accessibility of each school (e.g. walkability audits) and support development of each school's Action Plan, setting out Travel Targets and measures to encourage more active and sustainable travel (e.g. Walk on Wednesday). The Green-Schools programme helps to promote climate-friendly travel mode choices from a young age, embedding climate positive travel behaviour for young people. The programme also supports regular physical activity.

Safe Routes to School

6.5.4 The Safe Routes to School (SRTS) programme is an initiative of the Department of Transport (supported by the Department of Education) which was set up in 2020 to provide funding for active travel incentives at schools. The SRTS programme complements the Green-Schools programme and is operated in partnership with the National Transport Authority. The SRTS programme has three aims:

- to provide accelerated delivery of active travel infrastructure on school routes;
- 'front of school' treatments to enhance access to schools; and
- expand provision of bike parking at schools.

6.5.5 To support implementation of the programme a SRTS Design Guide was produced. It provides technical design guidance on creating safer, calmer, more attractive routes to school and front of school environments and includes examples of schemes. Holy Trinity National School, adjacent to Newport Road, was selected as a participating school for round 2.

6.5.6 The preceding paragraphs have outlined potential behavioural change programmes for schools that can support increased active and sustainable travel behaviours around Westport. These programmes complement new and enhanced infrastructure provision to maximise the benefits for students (and residents) of Westport. As set out in Section 5, the Emerging Preferred Option indicates a number of infrastructural enhancements and new infrastructure options to provide improved accessibility for active travel. For example, front of school treatments and routes to schools are included within the Emerging Preferred Scenario.

6.6 MOBILITY MANAGEMENT PLANS

6.6.1 Mobility Management Plans (MMP) or Workplace Travel Plans are an important management tool to help encourage increased active and sustainable travel behaviour. The plans are primarily applied to residential and workplace sites. In addition, MMPs can also be applied to schools (and third-level education institutes) and would be similar to and often aligned with the Green-Schools programme actions.

6.6.2 MMPs seek to establish existing travel behaviours at a site, consider site accessibility, set mode share targets to increase active and sustainable travel share and provide an Action Plan including a number of tailored measures to promote and improve the attractiveness of sustainable travel modes. The National Transport Authority through its Smarter Travel programme provides support to employers and education institutes in developing and implementing voluntary MMPs/ Travel Plans. The National Transport Authority also runs annual behavioural change interventions such as ‘Marachaton’ (Step Challenge) and Cycle Challenges aimed at promoting active travel activities.

6.6.3 As part of a MMP a Transport Coordinator is appointed to oversee the implementation of the Plan as well as monitor its progress and update as necessary over its lifetime. The MMP is considered a live document and enables a continuous promotional initiative which can adapt to evolving travel behaviours over time and tailor its Action Plan accordingly.

6.6.4 MMPs would be a beneficial tool for existing and future employers based in Westport, providing a structured management tool to support increased active and sustainable travel behaviour for staff (and workplace visitors). MMPs can support a range of workplaces, from large scale sites such as AbbVie in Westport to a cluster of smaller businesses on the same campus.

6.7 10-MINUTE TOWNS & 15-MINUTE CITY

6.7.1 10-minute towns (or 15-minute city) as a concept are a recent focus in urban planning which is focusing innovative thinking around designing for or re-imagining an urban core so that all the important services/ residents’ facilities are easily accessible within a 10 or 15 minute radius of home by foot or bicycle. The recently published Climate Action Plan 2023 – Annex of Actions includes an action (no. TR/23/14*(TF) to ensure improved placemaking and accessibility through delivery of the 10-minute town concept throughout Ireland.

6.7.2 The concept while recent, its elements such as improving accessibility, permeability and de-centralised approach are on their own not ‘new’ ideas. Nevertheless, the 10-minute town concept sets

a clear ambition to discourage unsustainable car dependency and encourage active and sustainable travel modes for shorter journeys within Westport. This ideology would help to lower carbon emissions and continue to support active town centres, not dominated by vehicles.

7 MEDIUM TERM OPTIONS

7.1 OPTIONS LIST

7.1.1 As described in section 2.2.3 above, some measures were not considered feasible for delivery in the next 5 years and were not included in the assessment of short term measures. Some were considered deliverable in the medium term (6-10 years) and these are summarised in **Table 7-1** below.

Table 7-1 - Medium Term Options

Ref	Project Summary	Reason for Not Including in Short List
Cyc-5	Increase the cycle network by providing safe cycle routes through off street car parks	A primary cycle network is included in the Do Maximum scenario for the short term measures, which may include routes through car parks where appropriate but there is no separate requirement for providing routes through car parks. The development of a connected cycle network in the medium term may more closely reflect the CycleConnects Plan developed by the NTA including segregated cycle infrastructure on primary routes such as James Street etc.
Park-2	Convert off street ground level car park to multi-story, enabling greater capacity for relieving on-street car parking.	This intervention is Medium Term on the basis that there is a considerable lead time of business case development, scheme design and planning approval prior to rebuilding the car parks; however once agreed construction could potentially take place within a year[2].
PA-1	Consider provision of additional public toilets, including at least one Changing Place toilet (this is a 12m^2 or larger toilet room/space that also has a hoist and an adult sized changing table fitted that provides fully accessible toileting facilities for people who are unable to use a standard toilet).	Delivery of the toilet facility will require a degree of consultation and negotiation to select a suitable location, then implement the facility. This takes it outside of the short-term period of 1-5 years. In addition, public toilets would not normally be funded from transport budgets.
Additional	Old convent grounds	Existing plans to rejuvenate land located on the junction between Mill Road and Altamont Street will take considerable time to be finalised, funded and secure the necessary approvals so are unlikely to be delivered within the next 5 years.

[2] Based upon WSP experience.

8 LONG TERM OPTIONS

8.1 OPTIONS LIST

8.1.1 As described in section 2.2.3 above, some measures were not considered feasible for delivery in the next 5 years and were not included in the assessment of short term measures. Some were considered deliverable in the long term (11+ years) and these are summarised in the **Table 8-1** below.

Table 8-1 - Long Term Options

Ref	Project Summary	Reason for Not Including in Short List
AM-4	Ensure that walking and cycling corridors aren't severed by the N5 Westport to Turlough Road Project and connect with existing facilities and sustainable infrastructure associated with new developments in the area.	This option is categorised as Long Term on the basis that it only becomes relevant as developments are delivered to the north of the new N5 segment, which have a long time frame for completion.
AM-6	Provide an alternative route for through traffic to bypass the town centre	This road scheme is only at outline stage currently. Full scheme development, consultation and construction will take a substantial period of time, over several years even before construction could start.
GT-2	Explore the potential to pedestrianise Bridge Street following a reduction in traffic	This intervention is partly dependent on AM-6 and as such is Long Term. Additionally, Bridge Street is part of the national Trunk Route network at present. This means that MCC can't alter it out without permission from Transport Infrastructure Ireland.
CM-6	Explore price based demand management policies to discourage single occupancy car journeys	This proposal is partially dependent on the delivery of other Short-Medium term options in order to provide viable alternatives to the private car that can enable the desired modal shift. Additionally, this proposal is likely to be controversial and require considerable consultation and public engagement to implement, placing it into the Long Term scope.

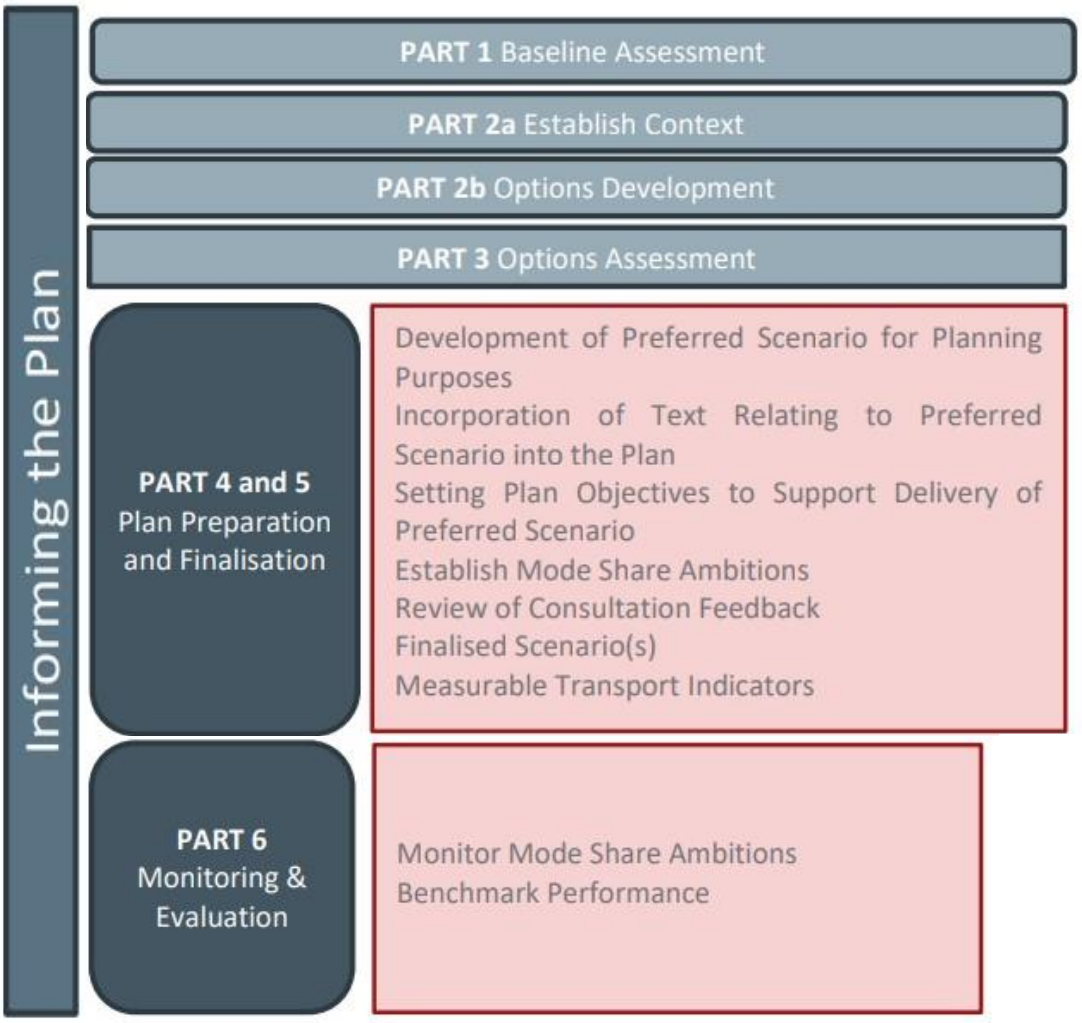
9 NEXT STEPS

9.1 FURTHER STAGES OF THE ABTA PROCESS

9.1.1 This report details the Options Assessment as part of Part 3 of the ABTA process and has identified an emerging preferred scenario.

9.1.2 Subject to approval, Part 4 and 5 Plan Preparation and Finalisation of the ABTA process will commence. This will involve further development of the preferred scenario, incorporating feedback from consultation and producing a final document. Figure 9-1 below illustrates the deliverables required for Part 4 and 5.

Figure 9-1 – Next steps of the ABTA process



APPENDIX A

SCENARIOS

LEGEND:

- Existing Cycle Infrastructure
- Proposed Cycle Infrastructure
- Existing Shared-Use Path
- Proposed Shared-Use Path
- Existing Greenway (Public)
- Proposed Greenway (Public)
- Existing Greenway (Private)
- Proposed Greenway (Private)
- Existing Footway
- Proposed Footway / Upgrade
- Proposed Footbridge
- Proposed Junction Upgrade
- Proposed Signalised Crossing
- Proposed Public Realm
- Existing Car Park
- School
- Existing Bus Stop
- Existing EV Charge Point
- Proposed EV Charge Point
- Proposed Mobility Hub Upgrades
- Proposed Cycle Parking
- Watercourse
- N5 Westport to Turlough Road Project

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MAYO COUNTY COUNCIL
DO MINIMUM SCENARIO
SHEET 1 OF 3

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Mayo County Council

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WESTPORT OPTION DESIGN SOLUTIONS
MAYO COUNTY COUNCIL
DO MEDIUM SCENARIO
SHEET 2 OF 3

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SHEET 3 OF 3

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APPENDIX B

MODEL DEVELOPMENT REPORT

Westport Local Area Model: Model Development Report

For Mayo County Council

TRANSPORT INSIGHTS

Final Report

June 2023

Document Control

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Other Author(s)	Cillian O'Reilly
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2	Final MDR v1.3	COR	20/06/2023
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Distribution

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1	Draft MDR v1.2	SP	16/03/2023
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3			
4			
5			

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1. Introduction

1.1. Background

WSP and Transport Insights have been commissioned by Mayo County Council to produce a Local Transport Plan (LTP) for Westport, following the Area Based Transport Assessment (ABTA) process. The LTP is to inform the preparation of a Local Area Plan for Westport, considering the future integration of land use and transport planning along with supporting sustainable transport outcomes for Westport Town.

As part of the LTP, Transport Insights have developed a local area model of Westport, the subject of this Report. The Westport Local Area Model (WLAM) will help to assess baseline and future traffic conditions on the road network, in addition to testing potential measures/ interventions in the future year scenario. The WLAM provides a highway assignment modelling tool, based on the National Transport Authority's (NTA) Western Regional Model, which forms part of the LTP assessment process.

1.2. ABTA Overview

The ABTA process is split into 6 key parts which guide the preparation of an ABTA. Part 1 Baseline Assessment, Part 2a Establish Context and Part 2b Options Development have been completed. Part 1 involved an extensive data gathering exercise to better understand the baseline transport infrastructure and travel habits in Westport. As part of the baseline data gathering exercise, a large number of surveys (e.g. vehicle, parking, pedestrian etc.) were undertaken across the Westport Town road network, further detail is provided in Section 3 of this Report. Part 2 (a & b) sought to establish context and saw the development of a Long List of options, with the potential to address the identified issues in Part 1 and address the objectives set out in Part 2.

Part 3 of the process seeks to establish an Emerging Preferred Scenario through screening of the Long List of options and a Multi-Criteria Analysis (MCA) of proposed measures. The MCA will evaluate the scenarios on their performance in achieving the objectives identified in Part 2, which are:

1. More effective integration of land use and transport planning to reduce number of car trips.
2. Reduce traffic movements through and within the town to reduce vehicle emissions and create opportunities to enhance placemaking by road space reallocation.
3. Encourage mode shift to active travel and sustainable modes and improve accessibility for all users and all journey types.
4. Accommodate the needs of businesses and local residents by suitable provision and appropriate allocation and management of parking.
5. Enhance road safety with focus on vulnerable users.

6. Deliverability (additional criterion added for Part 3).

The WLAM forms part of the analysis exercise for Part 3, providing a network-level traffic impact focused assessment of potential options in the future year and provides an indication of potential areas of stress on the network. The WLAM aids the evaluation of the scenarios against the LTP objectives, for instance, evaluating the integration of land use and transport planning measures, impacts of reduced (and redistributed) traffic movements through Westport, improved accessibility and accommodation of local businesses and resident travel patterns.

This Report has been prepared for Part 3 and will be included as an appendix to the main Westport LTP Part 3 Summary Report: Options Assessment. The Model Development Report may be further updated (as required) during Parts 4 and 5 of the ABTA process as the LTP is refined and finalised.

1.3. Package of Options (Scenarios)

Following screening of each potential option from the Long List to see whether they addressed one or more of the weaknesses identified in the Strength, Weakness, Opportunity and Threat analysis undertaken within Part 1 of the ABTA process, suitable options (whether individual or combinations) are brought forward to be packaged together and assessed alongside land use scenarios.

Based on high-level deliverability criterion, the options brought forward were categorised in to Do-Minimum, Do-Medium and Do-Maximum packages. A Do-Nothing or baseline package was also created to be used as a qualitative benchmark for the MCA. The Do-Nothing package was set as a future year base scenario within the WLAM, enabling a comparison point between the future year before the packages are implemented. The Westport LTP Part 3 Summary Report: Options Assessment (separate document) provides further detail on the deliverability criterion and development of the three categories. An outline of the various options modelled within the WLAM for the three packages is provided in Section 5 of this Report.

1.4. Purpose and Structure of the Report

The purpose of the report is twofold:

- to explain the stages in the development of the WLAM; and
- to report and discuss the model calibration and validation of the WLAM, thereby demonstrating that the traffic model is a robust tool for supporting ongoing network-level traffic analysis.

The remainder of this report is structured as follows:

- Section 2 – Model description and specification;

- Section 3 – Data collection;
- Section 4 – Model development;
- Section 5 - Future year model development;
- Section 6 – Forecasting results; and
- Section 7 – Conclusion.

2. Model Description and Specification

2.1. Introduction

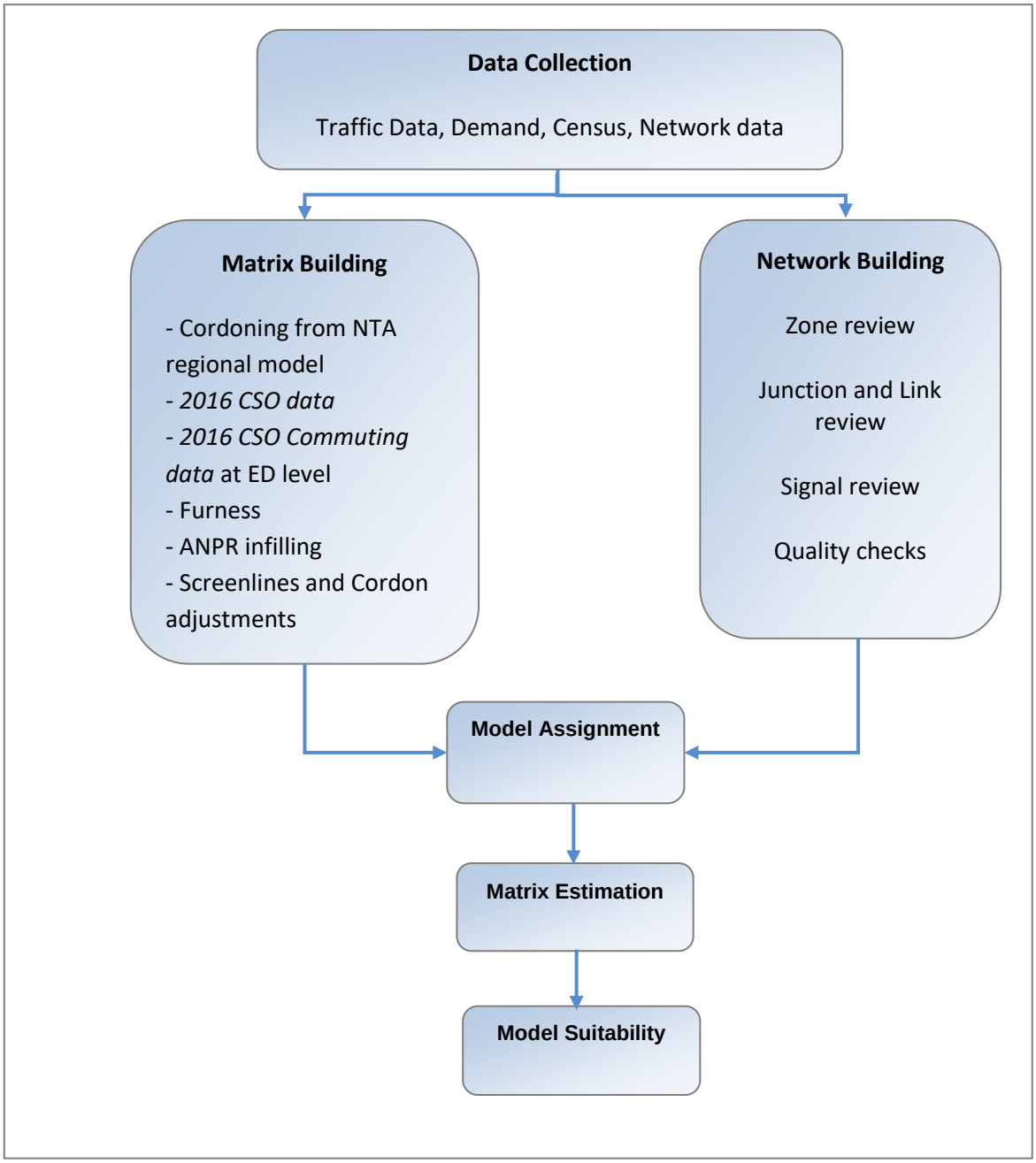
To develop the traffic model in line with the ABTA requirements it was necessary to build a detailed highway assignment model. The model development was supplemented by other related tasks associated with collecting travel data and building sets of trip demand matrices.

The model construction can be divided into four main phases of work, as follows:

- Inception / outline model design;
- Definition of study area:
    - Spatial detail and zoning system;
    - Review of existing / available data sources (ATCs, O-D, planning data etc);
    - Definition of base year, price base, units and time periods; and
    - Specification of model segmentation (trip purposes, vehicle types).
- Traffic data collection and processing:
    - Survey design;
    - Data collection and collation; and
    - Data quality assessment.
- Model Development
    - Network definition;
    - Demand matrix build;
    - Model calibration;
    - Model validation; and
    - Implementation of traffic model.

Therefore, this section provides a summary of the spatial coverage, the model specification, years and time periods modelled. Figure 2.1 (overleaf) gives an overview of the WLAM development process, from data collection to a final calibrated model. During the model development process, the scope of the model and scope of the input data (e.g. surveys) has been discussed and agreed upon with Mayo County Council and the NTA.

Figure 2.1 Model Development Process



2.2. Software Used

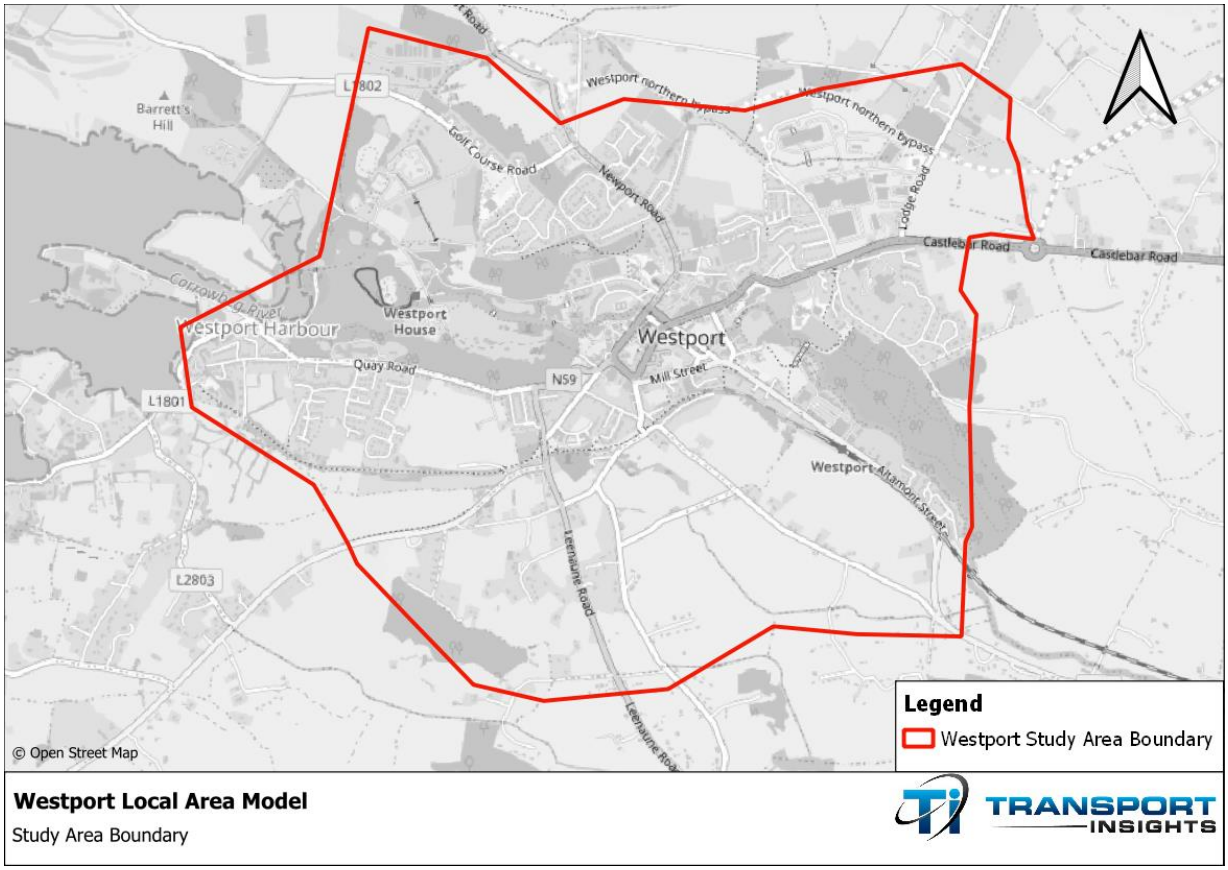
The WLAM has been developed using the traffic modelling SATURN software (Version: 11.5.05H). The use of SATURN as the highway assignment model platform was made because:

- it is the software platform used for the NTA Regional Models; and
- it is considered tried and tested.

2.3. Model Extents

The geographic scope of the model, as shown in Figure 2.2, was defined as part of the scoping process. Discussion with MCC during Part 1 of the ABTA process identified a (wider) Area of Influence and a Main Study Area. The Main Study Area covers the town of Westport and broadly corresponds with a 10-minute crow files cycle catchment. Within this Main Study Area, the model area of the WLAM has been defined and includes the local area of Westport and key road corridors through and leading into the Town. The model area has been designed to take account of the Census spatial boundaries and also allow for re-routeing impacts to be captured while avoiding any excessive model area that would increase the model run times (which may make it harder to achieve acceptable level of convergence and stability).

Figure 2.2 WLAM Study Area Boundary



2.4. Zoning System

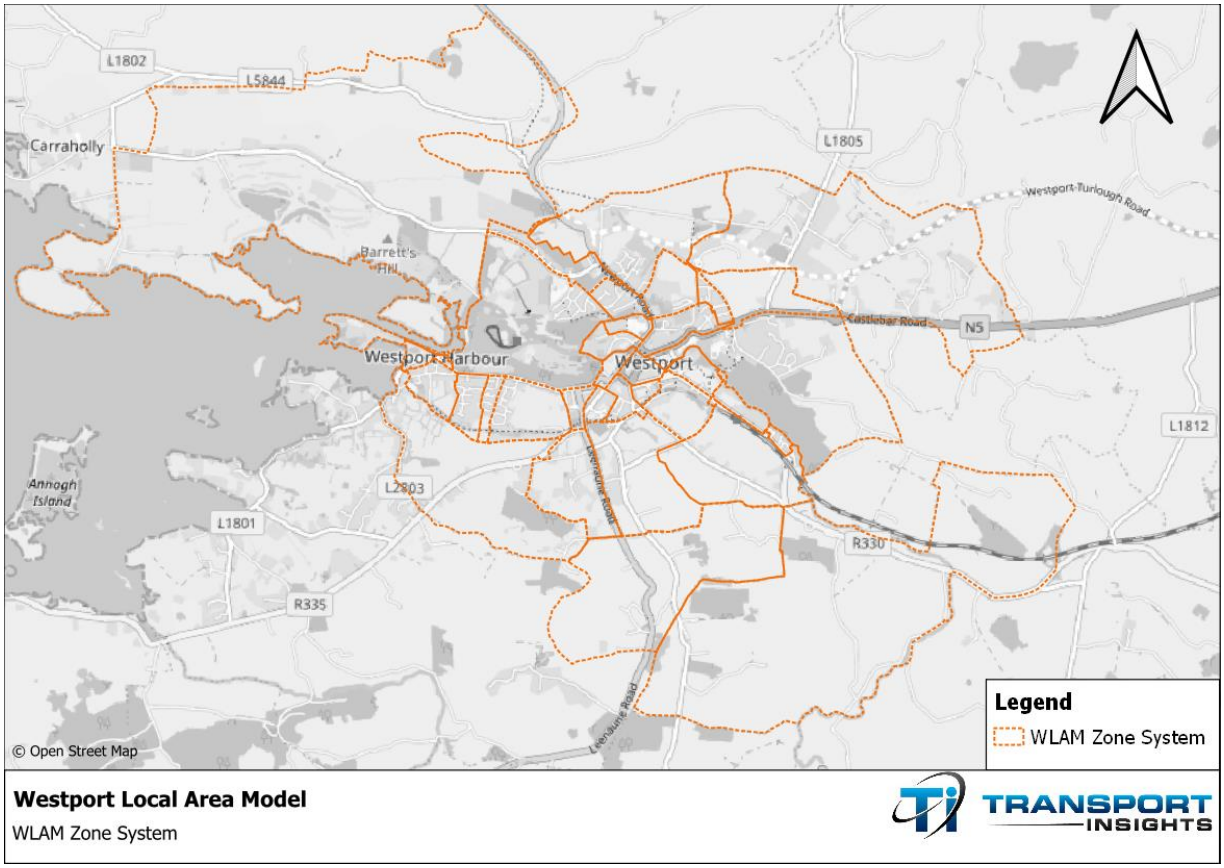
The zone system for the WLAM used the 2016 Census spatial boundaries (Small Areas, Workplace Zones) as a basis. The model zoning system has been created in line with the considerations set out in Section 3.3 of the Transport Infrastructure Ireland PAG Unit 5.1. The general principles for developing the zone plan are, as follows:

- each zone should be as homogenous as possible, i.e. representing similar land-use types;

- zones are consistent with geographical boundaries to be used in obtaining zonal data;
- zones are consistent with natural boundaries such as rivers, railways, motorways or other major roads, which can result in some zones being inconsistent with census boundaries;
- zones have been spatially defined around a convenient and realistic loading point, that is, land-use within a zone has reasonably homogeneous access to the transport networks; and
- the zoning structure has taken account of model size and run times.

At the end of the zoning system development, the 6 NTA Western Regional Model (WRM) zones were disaggregated into 39 WLAM zones, the boundaries of which are shown in the following Figure 2.3.

Figure 2.3 WLAM Zone System



2.5. Centroid Connectors

Trips are loaded onto the network using special links usually referred to as centroid connectors. Each zone can be viewed as having a centre of gravity and the centroid connectors are the means by which the demand from or to zones loads onto or leaves the network. The position of these connectors is often a critical factor in achieving realistic results from the assignment model.

The general principle is that centroid connectors should, wherever possible, represent actual means of access to and egress from the modelled network. They should not cross barriers to vehicular movement.

In addition to this, the number of centroid connectors per zone should be minimised, and ideally each zone should be represented by a single loading point. This rule can be relaxed in the external areas of the network where the zones represent a larger geographical area which may have numerous loading points onto the coded network.

Centroid connectors providing access to zones will be connected to real links and spigot coding where appropriate in the detailed modelling area and to represent real network access in the external area. Centroid connectors will not be coded directly onto junctions. Centroid distances represent crow-fly distances whilst centroid travel times are based on average speeds of 30 kph.

2.6. Assignment Method

The assignment model is Wardrop's Principle of Traffic (or User) Equilibrium. Wardrop's first principle of traffic equilibrium is that all users will seek to minimise their cost of travel between their origin and destination. A number of different routes will normally be used between zone pairs. This results from differences in the actual location of origin and destination within the zone; differences in the relative values of time and distance between users; and changes in route costs as a result of congestion.

The assignment process takes account of the impact of flows on route costs by running a series of iterations. In the first iteration, trips will be assigned to the best route in uncongested conditions. Costs will be recalculated under these flow conditions and the demand assigned again for the next iteration. The iteration process will be complete when all trips are minimising their costs under prevailing traffic conditions. In general, the iterative process used in assignment algorithms will not converge completely. Hence, there will be an error in the assignment resulting from a failure to ensure that all trips minimise their cost of travel.

2.7. Generalised Costs

The traffic assignment procedure builds and loads paths through the network based on a behavioural generalised cost formulation. This is a linear combination of time and distance of the following form:

Cost = (PPM*Time (in minutes)) + (PPK*Distance (in km))

Where:

- PPM = Cents per minute; and
- PPK = Cents per kilometre.

Parameter values PPM and PPK have been derived from the NTA regional model and converted into WLAM user classes using a weighted average for the different Light Vehicles (LVs) and Heavy Vehicles (HVs) purposes based on the relevant local demand avoiding any distortion. Table 2.1 demonstrates the PPM and PPK values of the WLAM for each user class.

Table 2.1 PPM and PPK values

Parameter		User class 1 - LVs	User class 2 - HVs
AM Peak	PPM	27.85	49.00
	PPK	10.11	82.56
PM Peak	PPM	28.11	49.00
	PPK	9.65	74.59

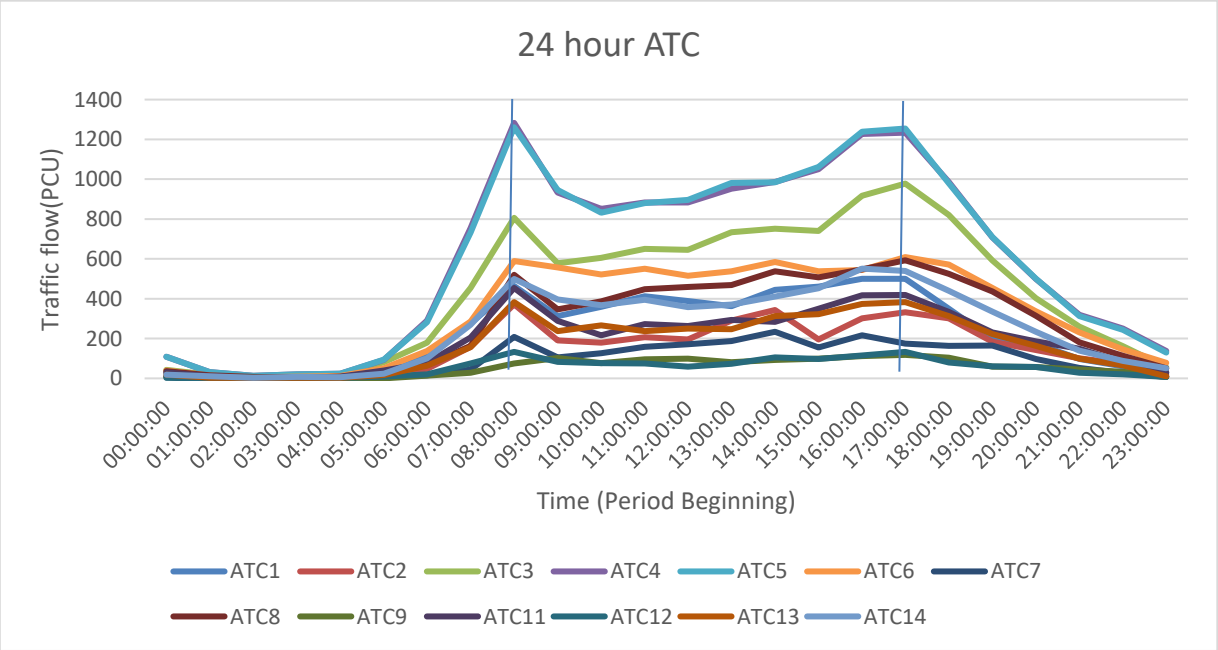
2.8. Base Year and Time Periods

Base year model represents an average weekday in September 2022 for two modelled time periods:

- Morning peak hour (08:00 to 09:00); and
- Evening peak hour (17:00 to 18:00).

Flow profiles were used to establish the peak hour in the AM and PM periods that the model represents. The 2-way Automated Traffic Count (ATC) data across the various sites surveyed are presented in the following Figure 2.4 showing the peak periods.

Figure 2.4 24 Hour Traffic Profile



2.9. Vehicle Types and Journey Purpose

The model has been built to represent two vehicle types:

- Light vehicles (Car, LGV),
- Heavy vehicles (OGV1, OGV2).

2.10. Passenger Car Units

The identified passenger car units (pcu) to convert vehicles to their equivalent units are as follows:

- Car and LGV: 1.0 pcu; and
- HGV: 1.9 pcu.

2.11. Model Standards

The development of the WLAM has been undertaken in accordance with TII PAG Construction of Transport Models and NTA Coding Guide for the road network.

Calibration Criteria and Acceptability Guidelines

The TII PAG Unit 5.1 specifies the acceptable values for modelled and observed traffic flow comparisons and suggests how calibration and validation should relate to the magnitude of the values being compared.

Percentage difference between observed and modelled data sets can prove to be misleading given the relative value of the difference. The standard method used to compare modelled values against observations on a link involved the calculation of GEH[1], which is a form of the Chi-squared statistic, incorporating both relative and absolute errors.

The GEH is a measure of comparability that takes account of, not only the difference between the observed and modelled flows, but also the significance of this difference with respect to the size of the observed flow. For instance, a difference of 50% compared to an observed flow of 10 is far less significant than a difference of 20% compared with an observed flow of 1000. The GEH is calculated as follows:

$$GEH = \sqrt{\frac{(M-O)^2}{0.5(M+O)}}$$

[1] The GEH Statistic is a formula used in traffic forecasting and traffic modelling to compare two sets of traffic volumes. The GEH formula gets its name from Geoffrey E. Havers.

Were:

M is the modelled flow and

O is the observed flow.

A low GEH value indicates a good correlation between the observed and modelled flows. As a rule of thumb in comparing assigned volumes with observed volumes a GEH parameter of 5 or less indicates an acceptable fit whilst a value of greater than 10 requires closer attention. A summary of the criteria is included in Table 2.2.

Table 2.2 Calibration and Validation Criteria

Calibration	Criteria
Individual flows within 100 v/h for flows less than 700 v/h.	More than 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.	
GEH statistic: individual flows – GEH < 5	More than 85% of cases

Although many transport models use the GEH statistic as a key indicator, the threshold criteria for flow differences in Table 2.2 are sometimes more stringent, hence it is possible to have a GEH value less than five but not satisfy the threshold criteria or vice-versa. For example at very low flows, less than 50, a GEH less than 5 is difficult to obtain.

Convergence and Stability standards

A high level of convergence is key to achieving good modelling results. If a high level of convergence is achieved the model will provide stable, consistent, and robust results. The recommended measure of convergence is 'percentage relative GAP'. This measure demonstrates how far the present level of flow is from its equilibrium point. As convergence improves, the difference in trips between successive iterations decreases until the equilibrium point is reached. TII PAG Unit 5.1 states that a GAP around 0.1% is the benchmark.

Stability means that flows and costs are stable between successive iterations and is important for the reporting of flows and delays. This is usually measured by the percentages of links with small flow or cost changes which provide pragmatic views of the stability of the assignment. However, stability can be achieved without the necessity of reaching convergence to the criteria outlined in Table 2.3 (overleaf).

Table 2.3 Convergence and Stability Criteria

Criterion	Value	TII PAG Recommendations
Convergence (STPGAP, also known as delta) Difference between the costs on the chosen routes and those along the minimum cost routes summed across the network as a percentage of the minimum costs	0.05%	Less than 0.1%
Stability of Flows (ISTOP) Percentage of links with a flow change between iterations of less than (PCNEAR) % across consecutive iterations (NISTOP).	98% of links, with less than 1% change across 4 iterations	98% of links, with less than 1% change across 4 iterations

3. Data Collection

3.1. Introduction

It is vital for the construction of any traffic model that an adequate volume of reliable traffic data is collected to compare against modelled flow in the validation and calibration of the model. To save time and resources, the project made use of existing data where possible and new counts were commissioned to fill in the gaps. In order to provide a comprehensive database in support of the development of the WLAM, Transport Insights (with support from WSP) collected and analysed the following data:

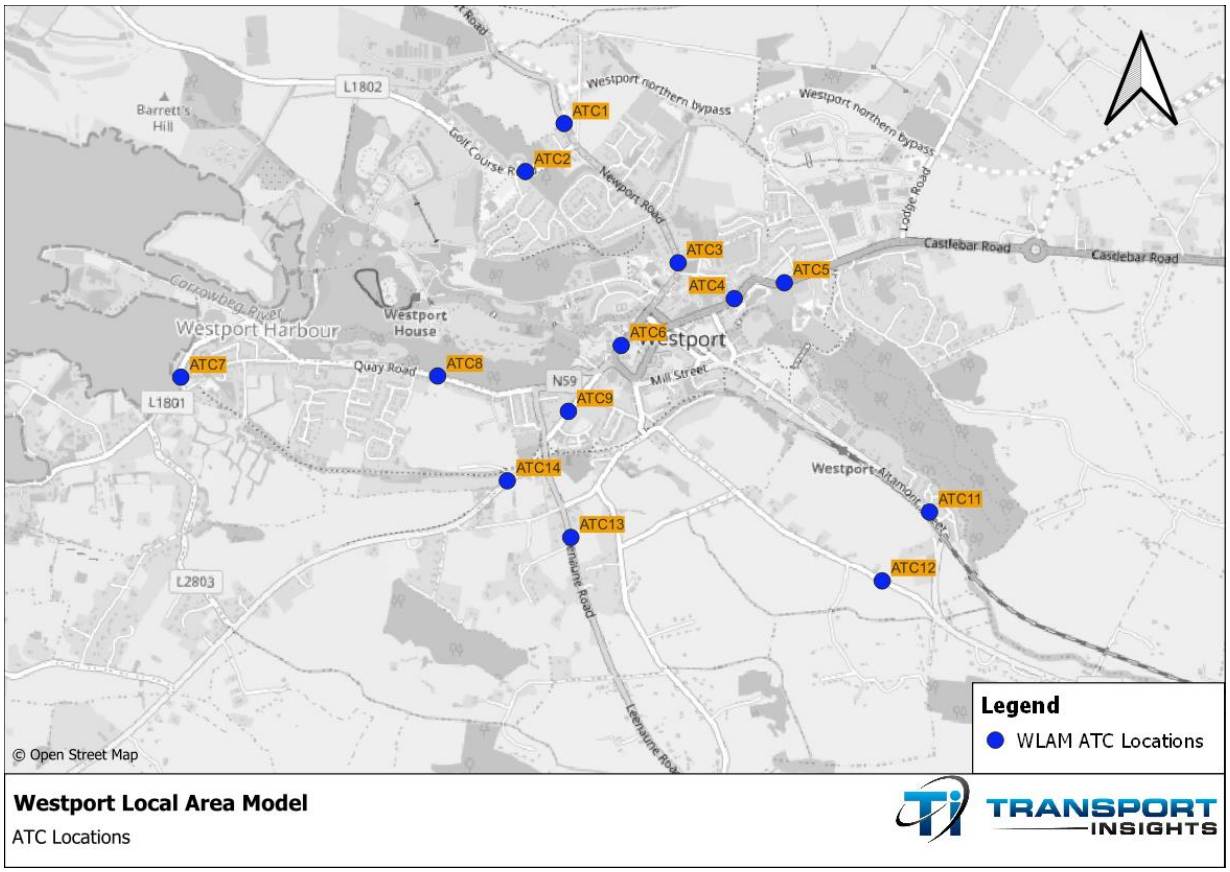
- Traffic counts;
- Junction turning counts;
- Journey time information; and
- Bus route information.

The scope of data collection activities and locations was agreed with Mayo County Council and the NTA. The subsequent paragraphs provide an overview of the data collected. Further detail on data collection can be found in the Part 1 & 2 Summary Report (separate document).

3.2. Automatic Traffic Counts

Automatic Traffic Counts (ATCs) were undertaken over a 24-hour period at 13 sites around Westport. The ATCs were collected in 15-minute survey intervals and classified into cars, LGVs, OGV1, OGV2, buses/coaches, motorcycle and pedal cycles. Figure 3.1 (overleaf) illustrates the ATC locations. Note there is no ATC 10 (original ATC location replaced by a junction survey) although the Figure does include an ATC 14.

Figure 3.1 WLAM ATC Locations

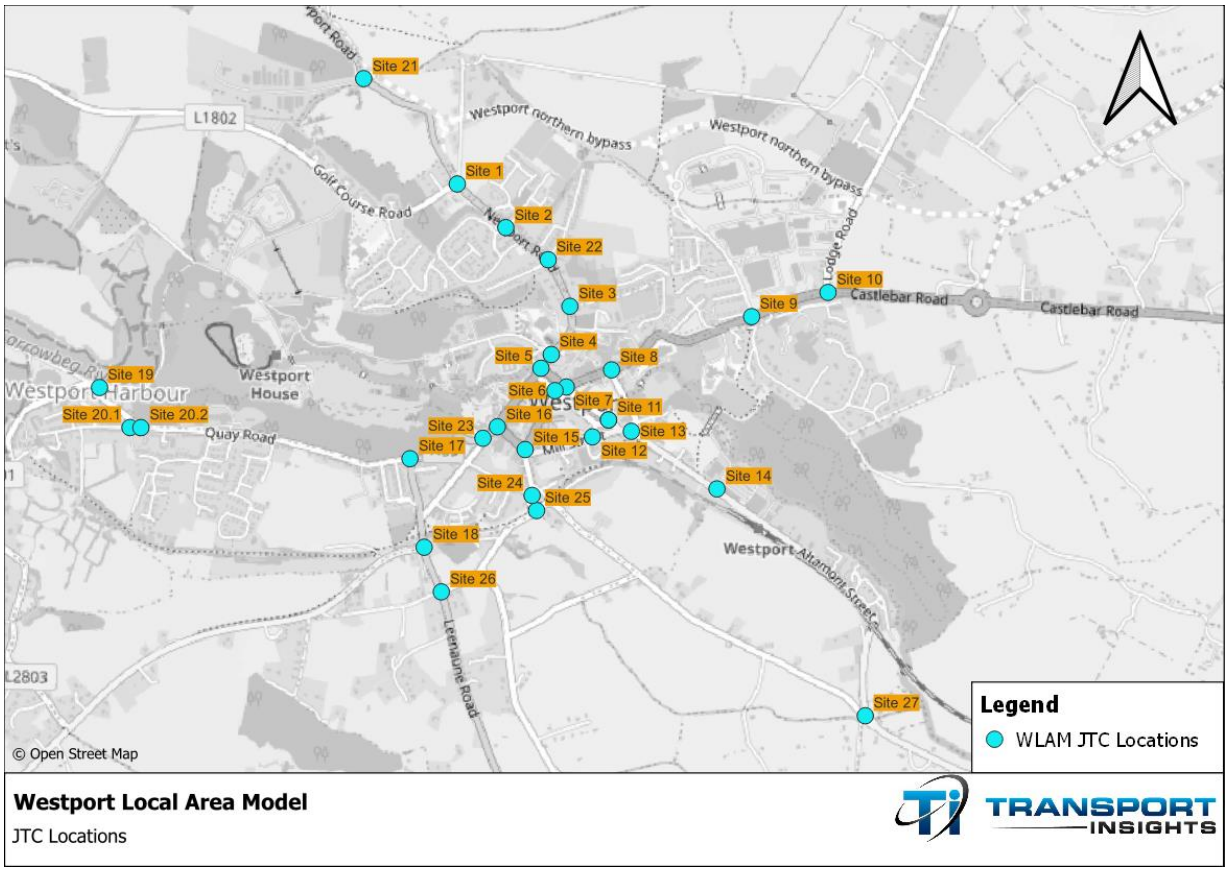


3.3. Junction Turning Counts

Junction Turning Counts (JTCs) were undertaken over a 12-hour period (07:00-19:00hrs) at 27 junction locations around Westport to supplement other data sources such as ATCs as well inform the development of the WLAM.

Data was collected using video-based surveys in 15-minute survey intervals and classified into cars, LGVs, OGV1, OGV2, buses/coaches, motorcycle and pedal cycles. Figure 3.2 (overleaf) illustrates the JTC locations.

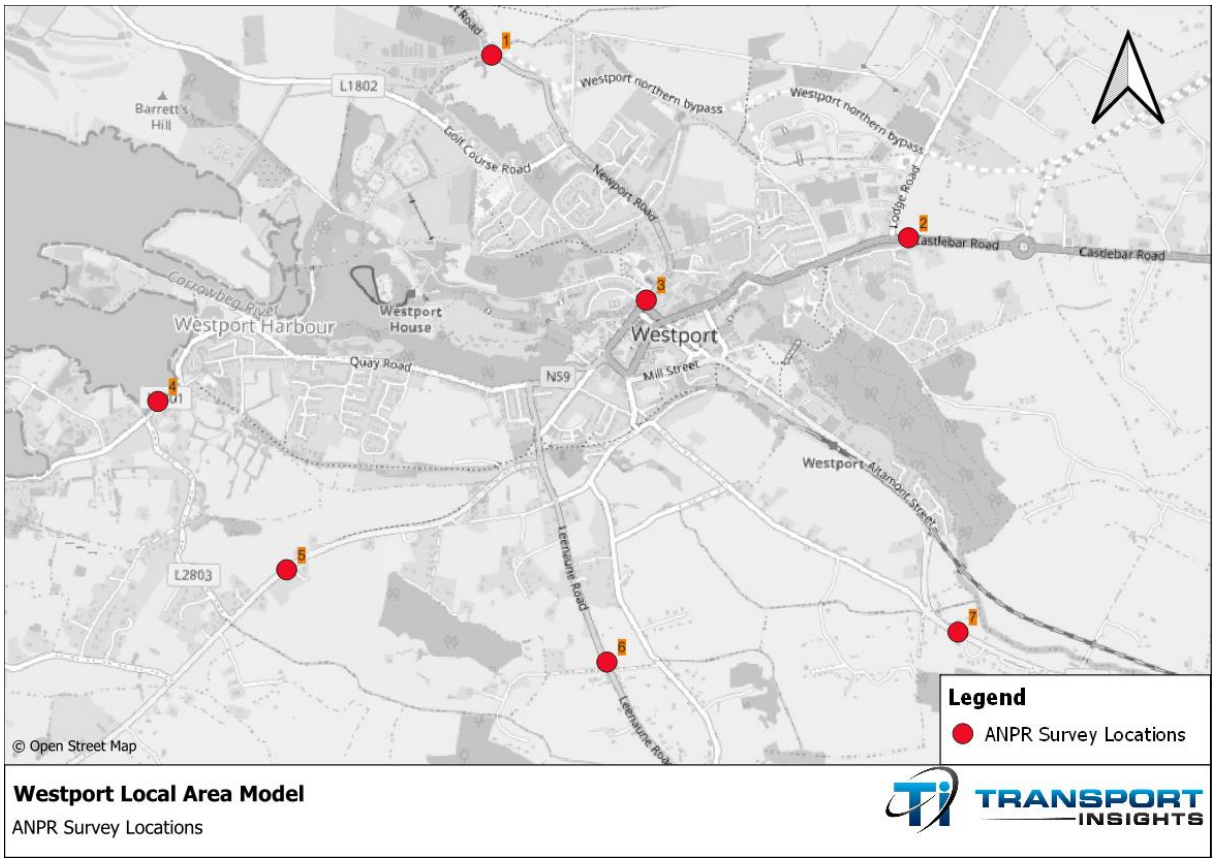
Figure 3.2 WLAM JTC Locations



3.4. Automatic Number Plate Recognition

Automatic Number Plate Recognition (ANPR) surveys were undertaken over two days at a number of locations that formed a cordon around the Westport Town. The data was collected to allow number plate matching to be undertaken, allowing vehicle routing through the wider Westport area to be determined in connection with the development of the WLAM. Figure 3.3 (overleaf) shows the locations of the ANPR surveys.

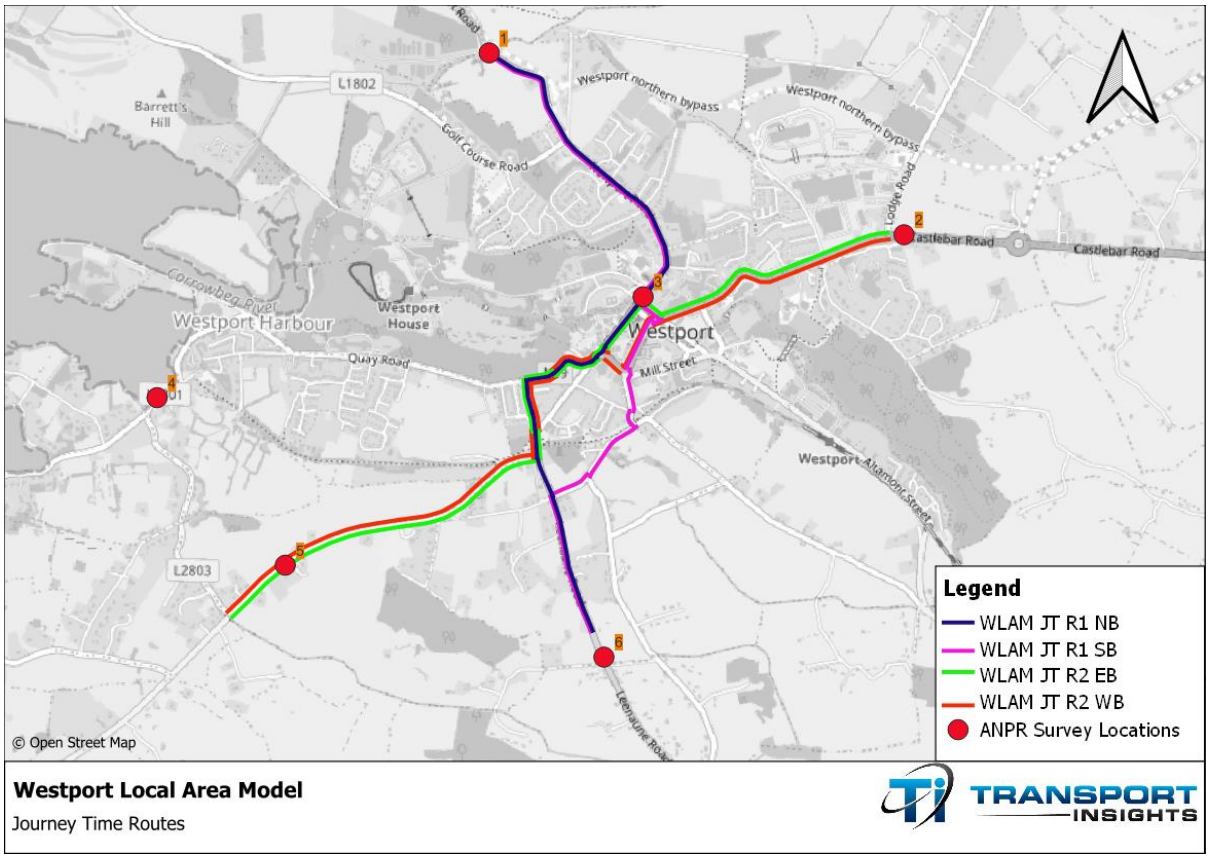
Figure 3.3 ANPR Survey Locations



3.5. ANPR-travel times

The ANPR surveys recorded the travel time of a vehicle crossing two different ANPR locations. The travel time information was then analysed and reviewed with the aim to be used during the model validation process. The ANPR travel times do not provide information on the route choice of the vehicle captured, hence the key routes used in the model validation have been defined by trying to minimise the uncertainty around the route alternatives between the ANPR crossing points. Figure 3.4 (overleaf) presents the journey time routes defined.

Figure 3.4 Journey time routes



As expected, the ANPR travel times are longer than the actual travel times between different ANPR locations. The reason for this is that the ANPR surveys capture trips going through the Town Centre with the possibility of an intermittent stop. Therefore, the fastest observations were used as the basis for further analysis based on the statistical and logical checks. The following Table 3.1 summarises the ANPR travel time of the key routes.

Table 3.1 Journey time data

Journey time routes	AM Peak		PM Peak	
	Number of records used	ANPR travel time (sec)	Number of records used	ANPR travel time (sec)
Route_1_NB	3	367	4	376
Route_1_SB	3	308	2	307
Route_2_WB	11	339	17	389
Route_2_EB	45	472	3	415

3.6. Final Data Sets

The traffic survey results were analysed to determine link and turn flows from ATC and JTC survey counts. The counts used in the calibration are summarised in Table 3.2.

Table 3.2 Calibration Counts

Count	Direction	AM Peak		PM Peak	
		Light Vehicles	Heavy Vehicles	Light Vehicles	Heavy Vehicles
ATC1	NB	183	29	183	33
ATC1	SB	246	30	245	30
ATC2	WB	161	18	165	12
ATC2	EB	187	22	295	19
ATC3	NB	284	29	323	46
ATC3	SB	471	53	592	53
ATC4	NB	663	63	716	56
ATC4	SB	549	53	542	52
ATC5	WB	524	63	542	52
ATC5	EB	665	55	716	56
ATC7	NB	111	8	111	4
ATC7	SB	86	11	86	0
ATC8	WB	211	28	211	18
ATC8	EB	274	27	181	16
ATC11	NB	285	27	276	11
ATC11	SB	142	14	138	21
ATC12	NB	48	12	47	19
ATC12	SB	70	11	70	12
ATC13	NB	218	21	218	21
ATC13	SB	144	11	144	18
ATC14	NB	328	32	337	23

Count	Direction	AM Peak		PM Peak	
		Light Vehicles	Heavy Vehicles	Light Vehicles	Heavy Vehicles
ATC14	SB	143	18	149	17
Site 1	Arm B to Arm C	157	12	153	12
Site 1	Arm B to Arm D	173	33	172	33
Site 1	Arm C to Arm D	11	0	11	0
Site 1	Arm C to Arm B	180	18	284	19
Site 1	Arm D to Arm B	230	21	232	30
Site 1	Arm D to Arm C	13	0	13	0
Site 5	Arm B to Arm C	2	0	0	0
Site 5	Arm B to Arm A	247	29	202	21
Site 5	Arm C to Arm A	258	21	303	30
Site 5	Arm C to Arm B	229	12	152	13
Site 5	Arm A to Arm B	297	25	325	29
Site 5	Arm A to Arm C	223	15	266	27
Site 6	Arm A to Arm B	41	5	40	5
Site 6	Arm A to Arm C	233	15	223	15
Site 6	Arm D to Arm B	93	13	96	12
Site 6	Arm D to Arm C	207	16	222	16

Count	Direction	AM Peak		PM Peak	
		Light Vehicles	Heavy Vehicles	Light Vehicles	Heavy Vehicles
Site 8	Arm A to Arm B	197	15	195	15
Site 8	Arm A to Arm C	362	37	347	37
Site 8	Arm B to Arm C	12	0	0	0
Site 8	Arm B to Arm A	240	14	237	15
Site 8	Arm C to Arm A	504	37	480	42
Site 8	Arm C to Arm B	61	2	0	0
Site 10	Arm A to Arm B	54	8	54	0
Site 10	Arm A to Arm C	145	17	0	0
Site 10	Arm B to Arm C	386	36	386	43
Site 10	Arm B to Arm A	71	17	71	17
Site 10	Arm C to Arm A	130	15	0	0
Site 10	Arm C to Arm B	428	30	442	42
Site 13	Arm A to Arm B	124	11	124	11
Site 13	Arm A to Arm C	158	10	158	5
Site 13	Arm B to Arm C	259	21	260	13
Site 13	Arm B to Arm A	102	7	103	7
Site 13	Arm C to Arm A	162	5	171	7

Count	Direction	AM Peak		PM Peak	
		Light Vehicles	Heavy Vehicles	Light Vehicles	Heavy Vehicles
Site 13	Arm C to Arm B	157	13	154	13
Site 14	Arm A to Arm B	15	0	7	0
Site 14	Arm A to Arm C	58	0	62	1
Site 14	Arm B to Arm C	295	29	309	19
Site 14	Arm B to Arm A	25	0	25	0
Site 14	Arm C to Arm A	75	0	96	2
Site 14	Arm C to Arm B	183	22	183	22
Site 15	Arm A to Arm B	72	3	77	0
Site 15	Arm A to Arm C	66	7	66	7
Site 15	Arm A to Arm D	294	17	0	0
Site 15	Arm B to Arm C	59	4	52	4
Site 15	Arm B to Arm D	184	30	229	8
Site 15	Arm C to Arm D	98	12	92	20
Site 15	Arm C to Arm B	273	8	272	8
Site 17	Arm A to Arm B	86	17	48	0
Site 17	Arm A to Arm C	174	15	149	15
Site 17	Arm B to Arm C	62	5	62	2

Count	Direction	AM Peak		PM Peak	
		Light Vehicles	Heavy Vehicles	Light Vehicles	Heavy Vehicles
Site 17	Arm B to Arm A	227	17	232	18
Site 17	Arm C to Arm A	259	9	140	9
Site 17	Arm C to Arm B	44	7	41	7
Site 18	Arm A to Arm B	84	15	68	11
Site 18	Arm A to Arm C	98	9	149	17
Site 18	Arm B to Arm C	57	6	0	0
Site 18	Arm B to Arm A	108	14	85	2
Site 18	Arm C to Arm A	182	9	173	17
Site 18	Arm C to Arm B	163	5	164	6
Site 19	Arm C to Arm B	153	9	68	9
Site 19	Arm B to Arm C	121	12	131	12
Site 20.2	Arm A to Arm B	165	9	62	9
Site 20.2	Arm B to Arm C	32	0	32	3
Site 20.2	Arm B to Arm A	129	12	129	12
Site 20.2	Arm C to Arm B	29	0	29	1
Site 22	Arm A to Arm B	18	0	18	3
Site 22	Arm A to Arm D	6	0	6	0

Count	Direction	AM Peak		PM Peak	
		Light Vehicles	Heavy Vehicles	Light Vehicles	Heavy Vehicles
Site 22	Arm B to Arm C	2	0	2	0
Site 22	Arm B to Arm D	337	44	329	46
Site 22	Arm B to Arm A	10	0	10	0
Site 22	Arm C to Arm D	1	0	0	0
Site 22	Arm C to Arm B	6	0	6	1
Site 22	Arm D to Arm A	1	0	1	0
Site 22	Arm D to Arm B	449	39	555	49
Site 22	Arm D to Arm C	3	0	0	0
Site 27	Arm A to Arm B	127	9	131	21
Site 27	Arm A to Arm D	7	0	7	0
Site 27	Arm B to Arm D	40	11	40	19
Site 27	Arm B to Arm A	257	7	266	11
Site 27	Arm D to Arm A	10	2	10	0
Site 27	Arm D to Arm B	61	11	60	12

The counts used in the validation are summarised in Table 3.3.

Table 3.3 Validation Counts

Count	Direction	AM Peak		PM Peak	
		Light Vehicles	Heavy Vehicles	Light Vehicles	Heavy Vehicles
Site 3	Arm A to Arm C	467	39	579	53
Site 3	Arm C to Arm A	337	44	323	46
Site 20.1	Arm A to Arm B	6	0	0	0
Site 20.1	Arm A to Arm C	5	0	6	0
Site 20.1	Arm B to Arm C	20	0	32	3
Site 20.1	Arm B to Arm A	11	0	0	0
Site 20.1	Arm C to Arm A	7	0	2	0
Site 20.1	Arm C to Arm B	23	0	29	1
Site 26	Arm A to Arm B	162	12	180	9
Site 26	Arm A to Arm C	83	7	52	8
Site 26	Arm A to Arm D	2	0	0	0
Site 26	Arm B to Arm C	63	2	92	10
Site 26	Arm B to Arm D	12	0	15	11
Site 26	Arm B to Arm A	58	6	11	1
Site 26	Arm C to Arm D	3	0	9	2
Site 26	Arm C to Arm A	108	16	74	2

Count	Direction	AM Peak		PM Peak	
		Light Vehicles	Heavy Vehicles	Light Vehicles	Heavy Vehicles
Site 26	Arm C to Arm B	117	2	135	17
Site 2	Arm B to Arm C	1	0	0	0
Site 2	Arm B to Arm D	339	45	335	46
Site 2	Arm C to Arm D	2	0	2	0
Site 2	Arm C to Arm B	12	0	0	0
Site 2	Arm D to Arm B	441	39	556	49
Site 2	Arm D to Arm C	1	0	1	0

4. Model Development

4.1. Network Development

The WLAM network broadly covers the Town of Westport and key approach roads. The model represents the road network within the area, with coverage including all national, regional and key local roads. The network within the model area has been coded in SATURN in order to enable the interaction of traffic at junctions and the resulting delays and queues to be modelled as accurately as possible. The information required for simulation coding is detailed and includes:

- Node numbers at either end
- Link Length
- Speed Limit
- Speed/flow relationship
- Link Type
- Link capacity
- Provision of bus/ cycle lanes
- Traffic calming and its impact on speed/capacity
- Number of (effective) lanes
- Vehicular restrictions
- One way/ two way operation

The network development approach is summarised as follows:

1. **Definition of model coverage and network detail**

   Development of the network structure
2. **Definition of link types**

   Coding links
3. **Definition of saturation flows, gap values, vehicle restrictions**

   Junction coding

   Turn restriction(s) application

   Vehicle restriction(s) application
4. **Definition of zone system**

   Zone centroid and connectors coding
5. **Quality assurance**

   Node and link attributes

   Network connectivity

   Key routes and junctions review

   Error review

   Network assignment review.

The model network has been coded following guidelines, as set out in the NTA Regional Modelling System Coding Guide, the latest version at the time of network building.

On-site observations, survey video footage, aerial photographs from Google Maps, as well as Google Street View were used to gather information on how junctions operated, alongside checking speed limits along the road network.

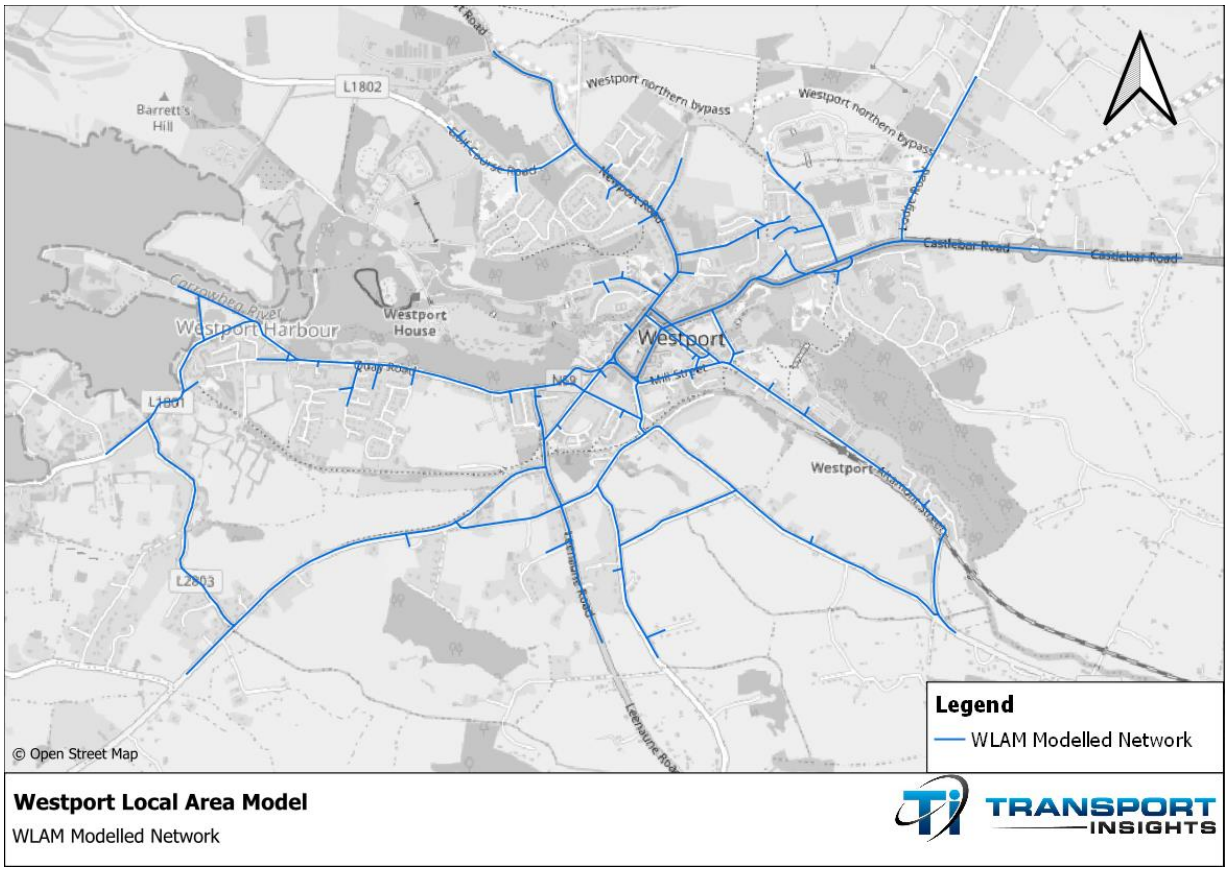
Signal timings for two junctions within Westport Town had been requested; however, they were unavailable by the completion of the base year model. Therefore, signal timings and stages were adopted from similar type signalised junctions within the NTA WRM. The performance of the two signalised junctions were closely monitored during the model calibration and validation.

The bus routes within the area of interest have been taken from the WSP Bus Network review (undertaken during Part 1 of the ABTA process). The bus routes and their frequencies are coded in the model (as fixed flows) to incorporate their impact on the network.

The developed WLAM network includes 89 simulation junctions outlined below and illustrated in Figure 4.1 (overleaf):

- 55 external nodes;
- 86 priority junctions;
- 1 roundabout; and
- 2 traffic signal junctions.

Figure 4.1 WLAM Modelled Network



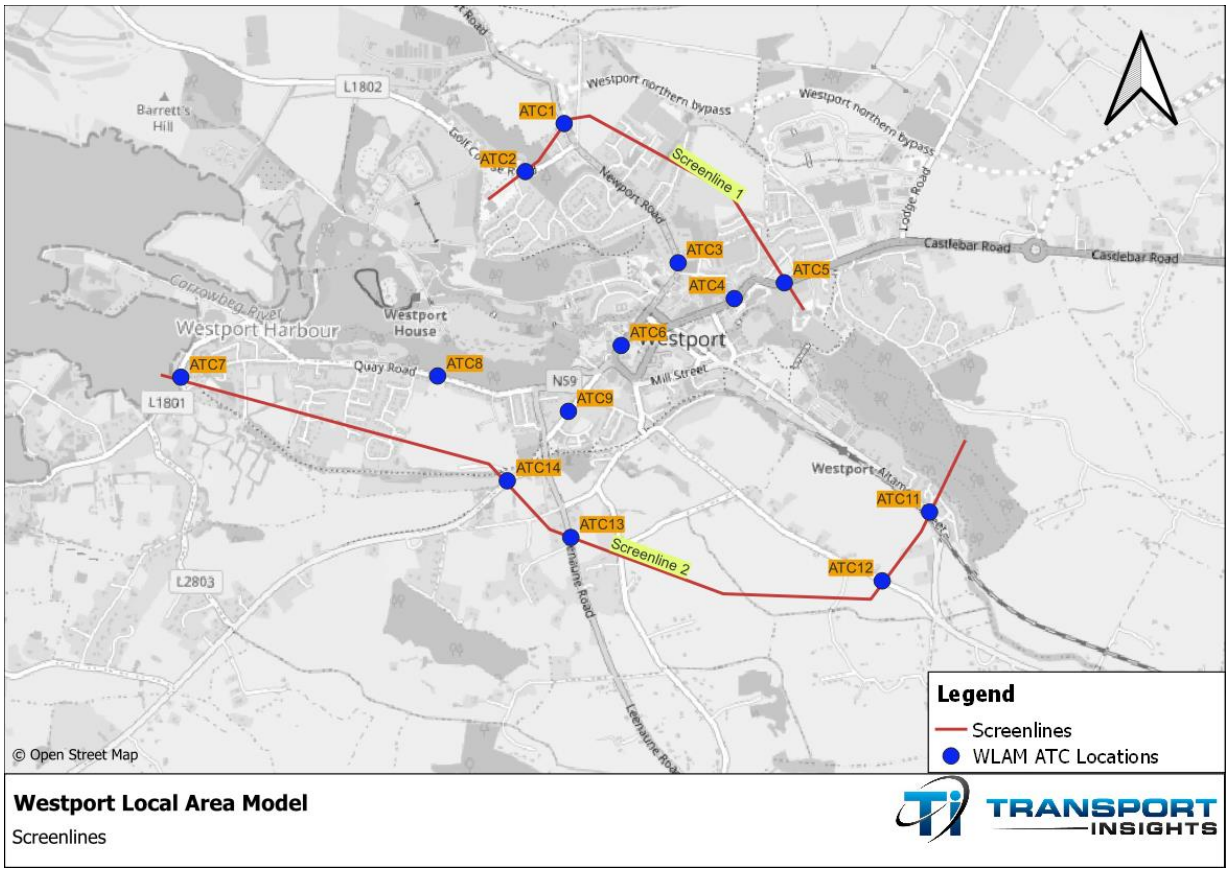
4.2. Demand Matrix Development

The trip demand of WLAM is based on the disaggregation of the NTA WRM highway demand within the area of interest. The trip demand has been distributed to the disaggregated zones using a distributional model built on the Population and Employment census data at zonal level.

The ANPR data was then used for an initial verification and infilling of any unobserved trip movements within the demand matrices. Next, the count data (ATCs, JTCs) around the study area formed 2 screenlines[2] and a cordon, see Figure 4.2 (overleaf). The screenlines and cordon data were then used to produce factors (assigned flows/count data) that bringing the 2016 WRM demand to 2022 count levels (year surveys undertaken).

[2] An imaginary line that intercepts major flows and highlights travel patterns within a study area.

Figure 4.2 Screenlines



The demand matrix development is summarised as follows:

1. **Cordon the relevant demand from the NTA WRM**
2. **Disaggregate the NTA WRM zones into WLAM zoning system**

   Trip distributional based on Population and Employment data

   Verify the total demand against the *2016 CSO Commuting data* at ED level
3. **Trip ends constraints at zonal level**
4. **Matrix infilling**

   Infill unobserved movements using the ANPR data
5. **Adjustments based on assigned flows against count data**
6. **Screenlines and cordon definition**

   The survey locations of the ATCs and JTCs formed 2 screenlines or a cordon around Westport
7. **Adjustments based on assigned flows against count data**

   Factors were calculated and applied using the assigned flows against the screenlines and cordon count data.

Table 4.1 Summary of Demand Development Steps

Step	AM Peak			PM Peak		
	Light Vehicles	Heavy Vehicles	Total	Light Vehicles	Heavy Vehicles	Total
1	3109	8	3117	2973	6	2979
2	3109	8	3117	2973	6	2979
3	3109	8	3117	2973	6	2979
4	3170	31	3201	3062	24	3087
5	3940	227	4167	3607	99	3706
6	3940	227	4167	3607	99	3706
7	3529	279	3807	3592	98	3690

The validation results of the prior trip matrices, presented in the Table 4.1, indicate good assignment performance with many link flows meeting the validation statistics, even before the calibration and validation stage through the implementation of the matrix estimation. It is also observed that the modelled flows across the screenlines show very small differences with the traffic count data.

4.3. Calibration & Validation

Demand Matrix Calibration

Despite the good performance of the prior matrices, validation still falls short of TII PAG acceptability criteria. As a result, matrix estimation has been used to further refine the trip matrices.

Matrix estimation is a matrix calibration process in which the model uses an iterative procedure to find a set of balancing factors for each counted link to improve the fit between modelled and observed flows. This process is carried out only after network checks have taken place and is designed to improve the validation of flows in the area of interest whilst ensuring that the base assumptions on which the matrices have been built are not altered significantly.

The SATURN program ME2 was used to re-estimate the base matrix in order to improve assignment validation. In ME2, the SATPIJA and SATME2 processes are used to estimate the demand matrices. SATPIJA analyses the output .UFS and .UFC files from the assignment to calculate factors which feed into SATME2. SATME2 then tries to improve the fit between observed and modelled flows by factoring individual cells in the prior matrix. Matrix estimation is an iterative process, whereby new SATPIJA factors are calculated during each assignment to feed back into SATME2, with the updated matrix used

in successive iterations. This process of reassignment and adjusting the trip matrix is continued until stable values are found; standard practice is to assume that six loops will be sufficient to allow appropriate adjustment to the matrix but without excessive distortion.

Matrix estimation has been undertaken for Light and Heavy vehicles separately by constraining them to the observed count data.

The count data used in matrix estimation is removed from the "validation deck" so that validation is only carried out against links which have not been directly manipulated by the estimation process.

The changes in the trip matrices due to the matrix estimation process were continually monitored to ensure that the underlying observed trip distribution are not being distorted.

The trip ends analysis of the matrix zones shows that the zonal trip ends haven't been significantly changed through the Matrix Estimation with most of them being very close to the criteria. Summary graphs of the prior and post trip ends for both periods and origins and destinations can be seen in Figure 4.3 and Figure 4.4 (overleaf).

Figure 4.3 AM Trip Ends Prior Vs Post

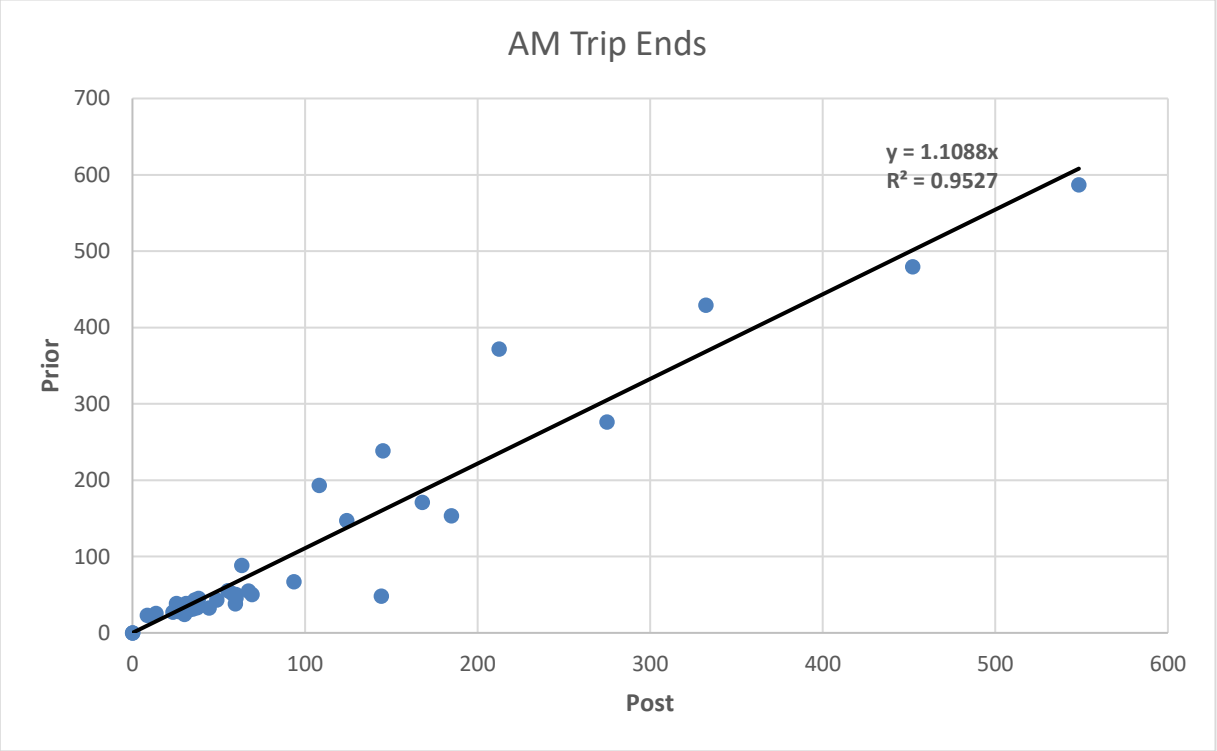
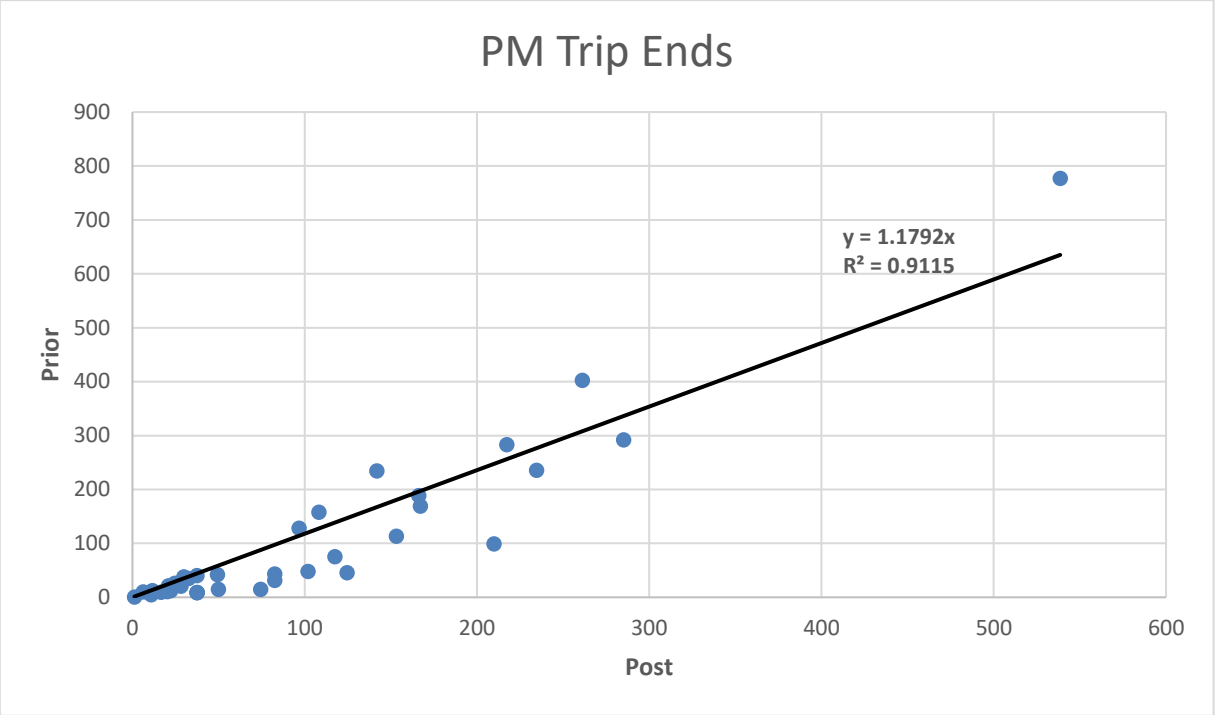


Figure 4.4 PM Trip Ends Prior Vs Post



The trip length distribution between the prior and estimated matrices for the AM and PM peak hours are displayed in Figure 4.5 (overleaf) and Figure 4.6 (overleaf), respectively. Despite the changes between the prior and post matrices, the shape of the trip length distribution has not been affected significantly.

Figure 4.5 Trip Length Distribution AM

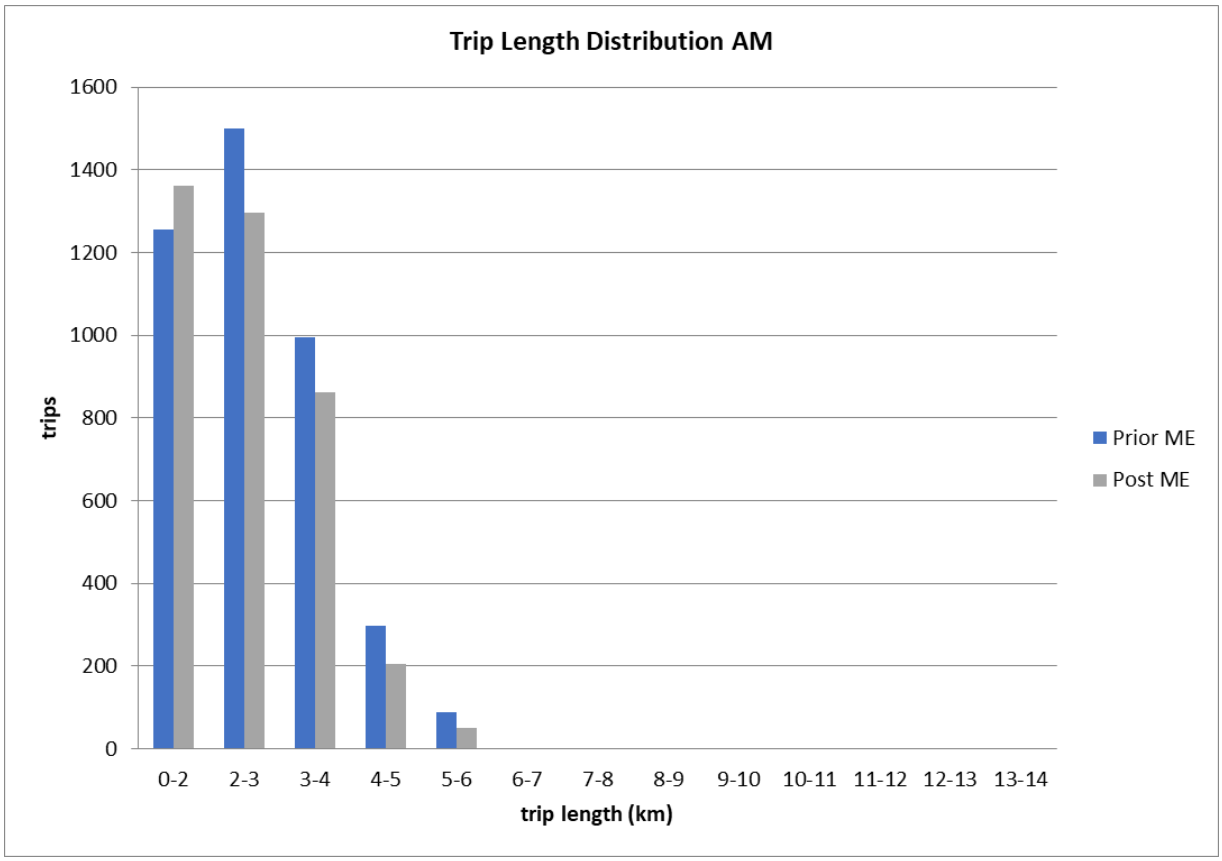


Figure 4.6 Trip Length Distribution PM

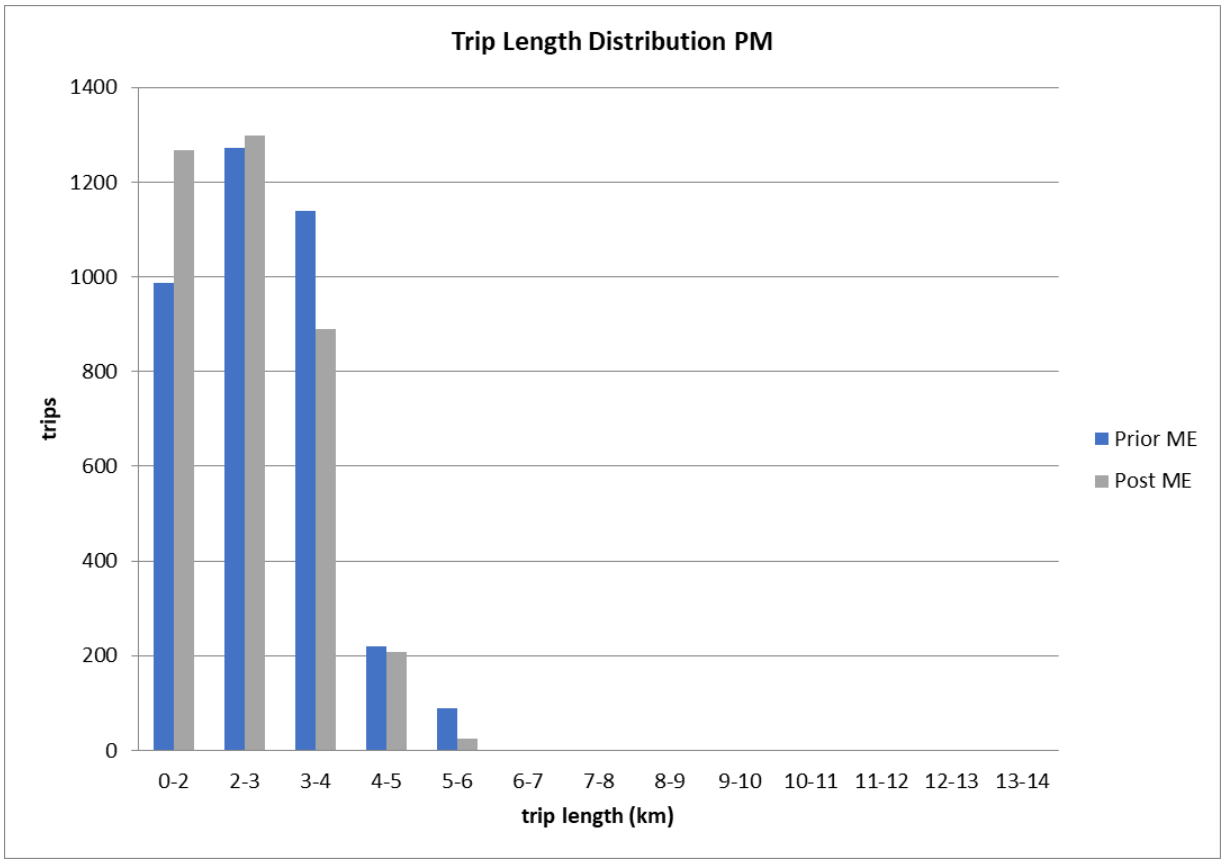


Table 4.2 Matrix Totals by User Class Prior Vs Post

	AM Peak			PM Peak		
	Light Vehicles	Heavy Vehicles	Total	Light Vehicles	Heavy Vehicles	Total
Prior	3940	227	4167	3607	99	3706
Post	3529	279	3807	3592	98	3690
% Diff	-10.4%	22.7%	-8.6%	-0.4%	-0.8%	-0.4%

Model convergence

The convergence criteria have been achieved in all modelled time periods. This is shown in Table 4.3 which provides convergence statistics for the last four iterations of each modelled hour and demonstrates that both AM and PM models are suitably converged against both the %GAP and stability (%Flows) criteria. The %GAP achieved is much tighter than the 0.1% recommended for Base Year modelling.

Table 4.3 Convergence Statistics

Measure/Time Period	AM Peak	PM Peak
Assignment/Simulation Loops	14	9
% GAP <0.1%	0.01%	0.02%
Four consecutive iterations with flow change less than 1%	99.0%	99.2%

Calibration

The calibration process ensures that the model satisfactorily reproduces the traffic conditions observed on street. It is essentially an iterative process consisting of the following steps:

- Carrying out an assignment;
- Comparing modelled flows against observed flows;
- Making adjustments to the network and flows where necessary; and
- Repeating the assignment.

Adjustments to the network are made only when they can be justified in operational terms. These can include changes in link or junction capacities and amending network coding errors not picked up in the network validation phase.

The tables below summarise the model performance against the calibration and validation criteria and acceptability guidelines presented in Table 2.2.

Table 4.4 Calibration summary statistics

	AM Peak	PM Peak
Number of counts	103	103
Individual flows within 100 v/h for flows less than 700 v/h	91	96
Individual flows within 15% for flows between 700 & 2,700 v/h.	2	2
Individual flows within 400 v/h for flows greater than 2,700 v/h.	0	0
GEH statistic: individual flows – GEH < 5	90	92

The general calibration summary statistics outlined in Table 4.4 provide a good indication of the overall model performance. However, it is also important to have confidence that the modelled traffic travelling into and out of Westport closely resembles that observed. To that end, the calibration data has been broken down and analysed in terms of a cordon and screenlines around the town.

Table 4.5 and Table 4.6 (overleaf) summarise the cordon calibration statistics for the key radial routes in the town for the AM and PM periods respectively, and show a good fit on a link by link basis and on a cordon basis.

Table 4.5 Calibration results – Cordon

	Counts	AM Peak %	PM Peak %
GEH AM	16	94%	100%
Flow AM	16	94%	100%

In order to give a further indication of the model performance, a series of screenlines were used to capture the total traffic travelling in and out of the town centre. The screenlines cover the north, east and south of Westport town centre and captured all traffic crossing these lines in each direction.

Table 4.6 Calibration results – Screenlines

Screenline		Counts	AM Peak			PM Peak		
			GEH	Flow Pass/Fail	GEH Pass/Fail	GEH	Flow Pass/Fail	GEH Pass/Fail
Screenline 1	In	3	3.3	Pass	Pass	3.3	Pass	Pass
	Out	3	1.7	Pass	Pass	1.7	Pass	Pass
Screenline 2	In	5	0.7	Pass	Pass	0.7	Pass	Pass
	Out	5	0.2	Pass	Pass	0.2	Pass	Pass

Validation

A set of counts have been withheld from the matrix estimation process and thus provide a form of independent validation. In terms of demonstrating model validation, modelled values have been compared against observations. For the purpose of this study, "goodness of fit" has been assessed on the basis of the difference between modelled and observed flows and the GEH statistic. Table 4.7 below highlights the results for each peak period and shows an excellent fit between modelled and observed values with only the PM Peak GEH statistic falling slightly below target.

Table 4.7 Validation results

	Counts	AM Peak %	PM Peak %
GEH AM	23	87%	83%
Flow AM	23	91%	96%

In addition to the flow validation, two journey time routes have been identified and assessed against observed data collated from the ANPR surveys. Table 4.8 (overleaf) summarises the results of the journey time validation for the AM and PM Peak periods and shows that the modelled journey times accurately reflect those travel times extracted from the ANPR surveys.

Table 4.8 Journey time validation

Journey time route	AM Peak			PM Peak		
	ANPR travel time (sec)	Modelled time (sec)	Diff %	ANPR travel time (sec)	Modelled time (sec)	Diff %
Route_1_NB	367	319	13%	376	320	15%
Route_1_SB	308	272	12%	307	274	11%
Route_2_WB	339	332	2%	389	343	12%
Route_2_EB	472	450	5%	415	379	9%

4.4. Base Year Summary and Conclusions

Summary

The purpose of the SATURN model is to provide high-level quantification of potential traffic impacts of proposed active travel options/ interventions within Westport Main Study area. The model will also be used to provide indicative outputs to other processes such as operational assessment of specific junction or road links within the area of interest. In summary:

The model network and matrices have been constructed using a robust and transparent methodology:

- A data collection exercise has been carried out to ensure the best understanding of current traffic conditions in the study area;
- The model has achieved a high level of convergence suggesting stability and that any flow changes resulting from interventions testing can be attributed to the intervention itself and not model noise;
- Acceptable link flow calibration has been achieved on a cordon around Westport Town Centre and across the network as a whole; and
- Peak hour validation and journey time results on key links across the network suggest that the model provides an accurate representation of observed conditions within the core study area.

Conclusion

Based on these results it can be concluded that the WLAM is a sufficiently robust model that accurately reflects the existing situation in terms of flows and journey times and is suitable for assessing potential network level traffic impacts of proposed LTP packages within the modelled area.

5. Future Year Model Development

5.1. Introduction

Building on the Base Year model detailed previously, road related aspects of the potential option packages were coded into the model and the 2022 Base Year matrices were developed to produce future year demand matrices. This section of the Report outlines the steps taken to develop the future year model and associated demand forecast.

5.2. Demand Forecast

Deliverability Categorisation

As noted in Section 1, the three package options were subject to categorisation in terms of estimated delivery timescale as part of screening for Part 3 of the ABTA process. Three timescales[3] were considered, Short (intended 1-5 year implementation up to 2028), Medium (intended 6- 10 year implementation up to 2034) and Long (intended 11 – 16 years up to 2040). Following initial screening, measures from the Long List which were considered medium/ long term or outside of scope were not taken forward and assessed. The Westport LTP Part 3 Summary Report: Options Assessment provides further detail on the medium and long term options.

Options considered as part of the short timescale, see Table 5.2, were taken forward and developed into three packages, namely, Do Minimum, Do Medium and Do Maximum. The potential network-level traffic impact of these three packages was assessed in the WLAM for the short timescale future year of 2028, i.e. forecast year.

Forecast Year Model Build Process

The 2022 Base Year matrices form the basis from which the forecast year demand has been constructed. As outlined in Section 4.2, the base year matrices were developed from NTA WRM cordon matrices. Accordingly, the 2028 future year WRM matrices were obtained for the same area. These cordon matrices, in addition to supplementary development information (e.g. proposed Local Area Plan zoning), have been used to forecast the future levels of traffic demand within the modelled area. In particular, the growth rates at zonal level have been estimated from the WRM Reference Cases for 2028 and 2043. The WLAM forecast growth rates have then been estimated by interpolating the WRM Base (2016) and 2028 Reference Case.

It should be noted that the heavy vehicles in the WRM are underrepresented, compared to the 2022 observed data, leading to unrealistically high growth in the WLAM projections. For example, a growth

[3] The outlined timescales are indicative only and subject to funding and resource availability.

of a few vehicles between the WRM years could lead to 100-150% growth rate. Therefore, the TII PAG zone-based growth rates have been applied to the heavy vehicles.

The methodology used for building the future year matrices is as follows:

- Extract the NTA WRM demand for 2016 and 2028 (Reference Case);
- Disaggregate the WRM 2028 demand in a manner consistent to the base year;
- Growth factors for Light Vehicles estimated through interpolation, using 2016 and 2028 WRM model years. The formula for interpolation is based on the assumption of geometric growth;
- Zone-based factors estimated for the Heavy Vehicles according to the TII PAG Unit 5.3 (Travel Demand Projections) as WRM growth rate was unrealistically high for some zonal trip ends; and
- Comprise the origin and destination trip end totals for each user class in each time period.

The trip matrix totals for WLAM in traffic growth are shown in Table 5.1

Table 5.1 Trip Matrix Growth and Totals

	AM Peak			PM Peak		
	LVs	HVs	Total	LVs	HVs	Total
Base Year 2022	3529	279	3808	3592	98	3690
Future Year 2028	3858	317	4175	3911	112	4023
Growth 2021-2028	9.3%	13.7%	9.7%	8.9%	13.9%	9.0%

The following figures graphically present the growth rate of the WLAM and confirm its consistency to the NTA WRM growth rate for Light Vehicles in both time periods.

Figure 5.1 WRM and WLAM Trip Demand Growth for Light Vehicles, AM Peak

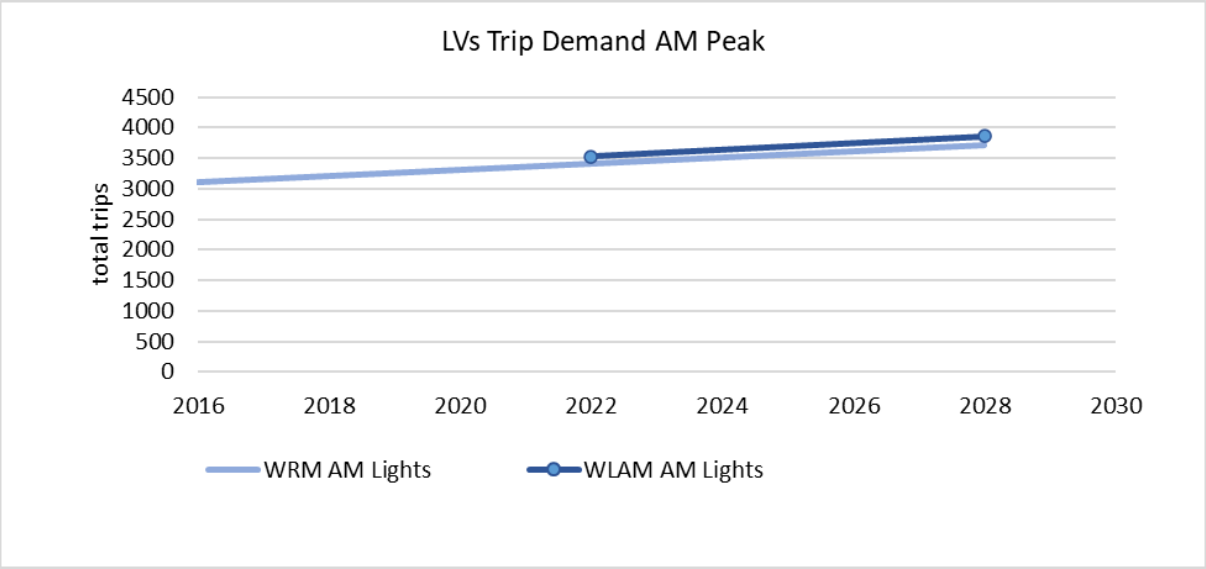
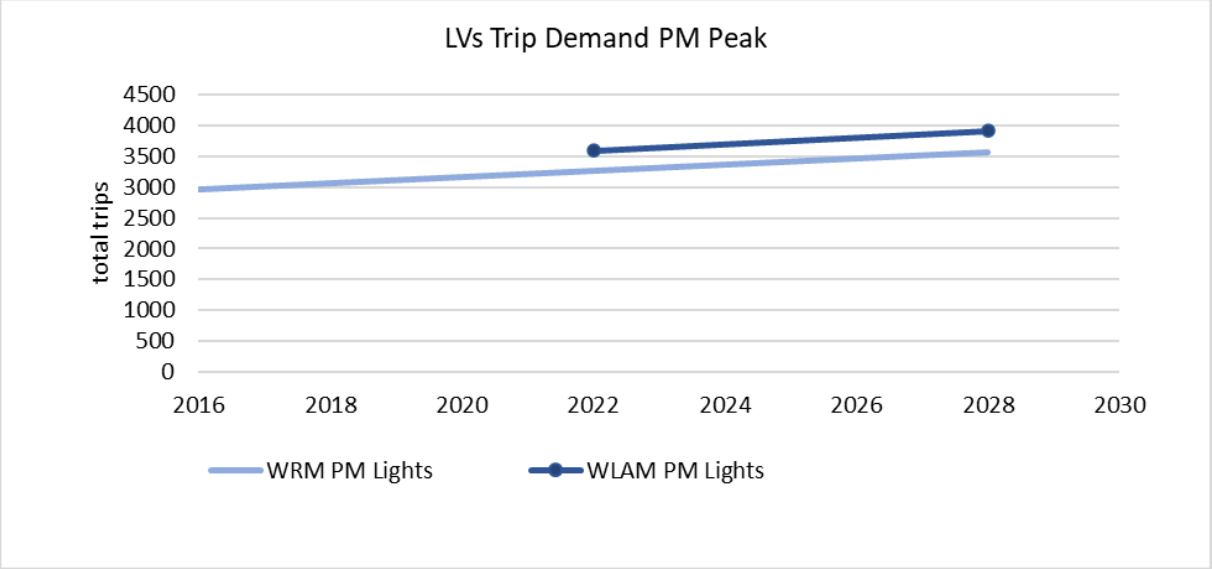


Figure 5.2 WRM and WLAM Trip Demand Growth for Light Vehicles, PM Peak



5.3. Forecast Network Development

As noted, a number of options (screened from the Long List) were brought forward as part of the short timescale assessment under three packages; Do Minimum, Do Medium and Do Maximum packages. The Do Medium and Do Maximum packages include the options of the preceding package(s) as well as some additional options particular to that package. The three packages encompass a range of options including those which have a direct physical impact on the existing road network (e.g. footpath widening, speed limit change, controlled pedestrian crossing points, etc.) and other options which may not have a direct physical impact on the existing road network (e.g. mobility hubs, Mobility Management Plans, parklet design guide, etc.). Given the purpose of the WLAM is to provide an assessment of the potential traffic impacts of options, some of the options in each package were not

modelled within the WLAM as they were deemed out of scope/ not directly impacting traffic movements on the existing road network.

All the future scenarios include the N5 Westport to Turlough Road Project as this is under construction and expected to be delivered before 2028.

Each of the packages was modelled within the WLAM in the future year (2028) to gain a better understanding of the potential network-level impact(s) the proposed options may have on the road network in Westport Town. The WLAM is intended to provide an indication of potential stress point(s) on the road network which may require further localised analysis as part of an individual scheme design. It is also noted, the packages are also assessed against the MCA (which this modelling forms a part of) undertaken and detailed in the Westport LTP Part 3 Summary Report: Options Assessment.

The following Table 5.2 outlines the options from each package which were assessed within the WLAM and also outlines how each option was coded in the model to create the forecast year network. Note a more detailed list of the options is provided in the Westport LTP Part 3 Summary Report: Options Assessment.

Table 5.2 Outline of Options Tested and Modelling Implementation

Package	Options Tested	Modelling Implementation
Do Minimum	30 km/h speed limit (application road dependent)	Speed limit adjusted and Speed Flow Curve (SFC) applied
	Consider converting existing raised pedestrian courtesy crossing to formal zebra crossings, possible locations include Bridge Street, James Street etc.	Indicative controlled crossing points coded into model
	Greenway Improvements, e.g. better connectivity with existing housing estates. Location includes R335 at Sli Na Misean estate	Indicative controlled crossing points coded into model
	Upgrade Existing Footpaths, e.g. provide drop kerbing, tactile paving, junction tightening, localised footpath widening, address pinch points etc. Locations include sections of Tober Hill, Leenane Road,	Adjust capacity of link to reflect usable carriageway width of traffic lanes using relevant SFC.

Package	Options Tested	Modelling Implementation
	Hillside, Altamont Street, Newport Road etc.	
Do Medium	Potential for an enhanced east-west pedestrian connection from High Street car park to Leisure Centre car park	Indicative controlled crossing point coded into model
	New footpath provision, locations include along sections of Leenane Road, High Road, Lodge Road etc.	Adjust capacity of link to reflect usable carriageway width of traffic lanes using relevant SFC.
	Permeability Improvements, locations include Upper Carrowbeg Estate to Greenway, etc.	Adjust capacity of link to reflect usable carriageway width of traffic lanes using relevant SFC.
Do Maximum	Greenway Accessibility enhancements, e.g. accessible connections from Altamont Street	Adjust capacity of link to reflect usable carriageway width of traffic lanes using relevant SFC.
	Increase footpath width on South Mall	Adjust capacity of link to reflect usable carriageway width of traffic lanes using relevant SFC.
	Provide a Primary Cycle Network, e.g. segregated cycle tracks in Westport, such as on North Mall, Altamont Street etc.	Adjust capacity of link to reflect usable carriageway width of traffic lanes using relevant SFC.

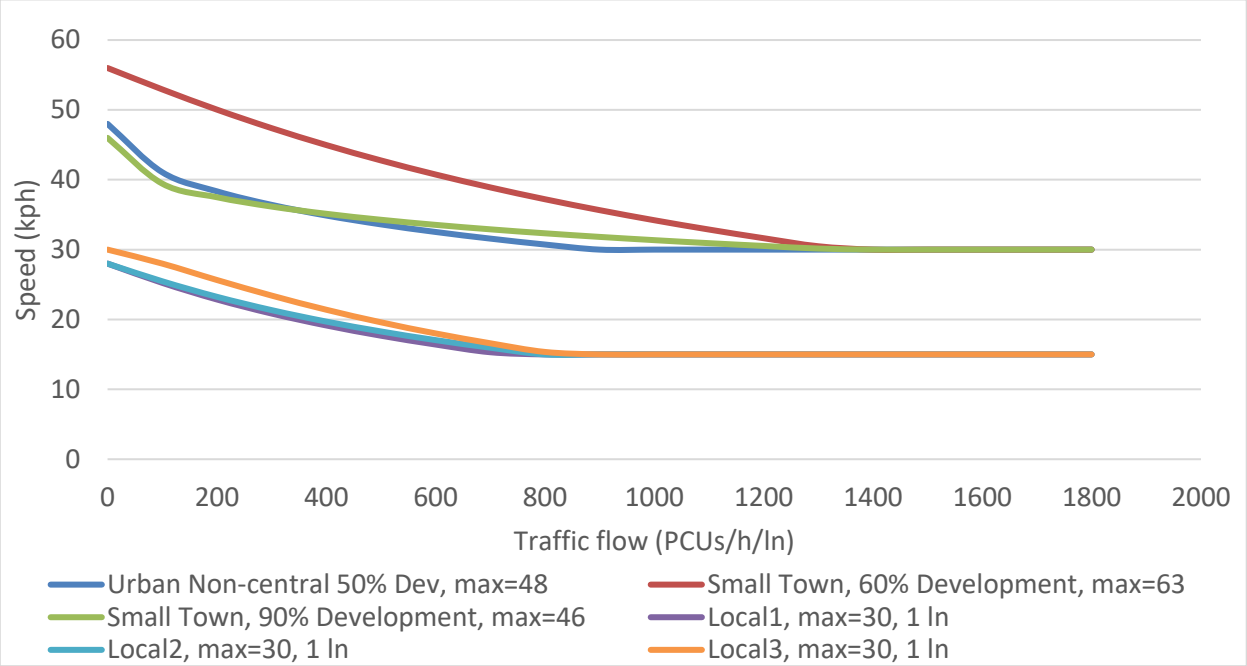
As mentioned in the table, the reduction of the carriageway and speed limit were modelled using a relevant Speed Flow Curve (SFC). Speed Flow Curves (SFC) represent the relationship between the travel speed and the traffic flow on a link. The SFCs can be used as a capacity restraint technique to represent accurately the delay on a network link due to the traffic volume and the link capacity.

The initial review of the SFC used in the NTA WRM model highlighted the need for calculating a new one as the relevant existing SFCs (e.g. Urban Non-central 50% Dev, Small Town 60% Development, Small Town 90% Development) represent a typical 3.65m lane and higher travel speed conditions. Therefore, the capacity, power, and speed at capacity were calculated with reference to the values provided within the NTA WRM, which in turn are based on the COBA software. The resulting SFCs were

then compared in a spreadsheet against those resulting from application of the Akcelik speed flow relationships. Generally, application of the COBA curve parameters provides a more linear relationship than those of the Akcelik curves, which tend to have a much shaper transition from free-flow speeds to capacity speeds. Adjustments were made to the initial COBA parameters such that the WLAM SFC replicates sufficiently the reduced speed and capacity conditions.

Figure 5.3 presents the operation of the existing SFCs tested for suitability and the estimated ones.

Figure 5.3 Speed Flow Curves Assessed



The resulting SFC parameters for a local narrow road of 3m lane width (Local3, max=30, 1 ln) are estimated, as follows:

Local 3, max =30, 1 Lane

- Free flow speed: 30kph
- Min speed: 15kph
- Capacity per lane: 831 PCUs/h/ln
- Power: 1.25

5.4. Assignment

Route choice criteria

The route choice criteria used in the future year models is the same as the route choice parameters used in the base year models. The estimated parameters for 2028 are outlined in Table 5.3 (overleaf).

Table 5.3 PPM and PPK values in 2028

Parameter		User class 1 - LVs	User class 2 - HVs
AM Peak	PPM	27.86	49.00
	PPK	11.23	94.23
PM Peak	PPM	28.12	49.00
	PPK	10.57	81.57

Convergence

The results of the future year model convergence are outlined in Table 5.4.

Table 5.4 Model convergence in 2028

Scenario	Time Period	Assignment/Simulation Loops	% GAP <0.1%	Four consecutive iterations with flow change less than 1%
Do Nothing	AM	14	0.0051	98.4
	PM	25	0.048	100.0
Do Minimum	AM	17	0.0085	99.5
	PM	17	0.023	99.9
Do Medium	AM	17	0.0034	98.5
	PM	19	0.019	100.0
Do Maximum	AM	25	0.036	99.9
	PM	14	0.018	98.9

Assignment model checks

Checks have been undertaken to ensure that the future year models have converged and traffic flows and routings appear reasonable and realistic. Where possible signal times have been altered to minimise delays in all models and scenarios.

6. Forecasting results

6.1. Introduction

This section sets outs the results of the forecast year, presenting network statistics; forecast flows and flow differences; the change in journey times along key routes within the model; and network performance (i.e. Volume/Capacity, junction delay).

6.2. Do Nothing

Network Statistics

The Do Nothing model has first been interrogated in order to determine the level of change between the 2022 Base Year and 2028 Future Year showing the change in traffic conditions without any impacts from the proposed package options.

PCU-kilometres and PCU-hours have been extracted from the assignments in order to present the overall change in performance of the network between the Base and Forecast Year; the growth in total demand is also presented. This provides a general overview of the performance of the network – more detailed analysis for the Study Area is presented in later sections.

A comparison between the 2022 Base Year and 2028 Do Nothing scenario is presented in Table 6.1, which also includes the matrix totals in order to provide a metric for the overall growth between 2022 and 2028.

Table 6.1 Network Summary Statistics: Base Year and Do Nothing

Time Period	Metric	Base Year	Do Nothing	% Difference
AM Peak	Travel Distance (PCU-Km)	9452	11154	18%
	Total travel time (PCU-Hours)	241	320	33%
	Assigned Demand (PCU Totals)	3776	4138	10%
PM Peak	Travel Distance (PCU-Km)	9341	11048	18%
	Total travel time (PCU-Hours)	244	325	33%
	Assigned Demand (PCU Totals)	3690	4020	9%

Table 6.1 shows an increase in demand of 10% and 9% between 2022 and 2028 for the AM Peak and PM Peak respectively which are in line with the demand development. The increase in PCU-kilometres is in excess of the increase in demand for both periods. This reflects changes in the trip distribution and routeing patterns and an increase in the average trip length. The increase in PCU hours compared to PCU kilometres is an indication of increasing congestion between the Base Year and the 2028 Do Nothing scenario. The increase in PCU-hours is greater than the increase in PCU kilometres in both time periods with trips taking more time to travel through the network.

Traffic Flows

Between the Base Year and 2028 Do Nothing, demand is expected to increase between 10% and 9% as noted in Table 6.1. In order to assess the impact on traffic flows in the study area, flow data have been extracted from the model and presented in the figures below.

Figure 6.1 (overleaf) and Figure 6.2 (overleaf) present the difference in traffic flow between the Base Year and Do Nothing scenarios for the AM Peak and PM Peak respectively.

The traffic flow increases (green) tend to be reasonably consistent to the demand growth from the base to the future year while the decreases (blue) are due to the implementation of the N5 Westport to Turlough Road Project and the increased delay of the signalised junction in the Town Centre. In particular, the new N5 takes a significant amount of traffic from the existing N5 which travels across the Town Centre while creating a flow increase along the Carrowbeg Estate Road by the traffic that goes into the Town. There is also a flow increase along the local link south of R330 due to the future traffic growth and the operation of the signalised junction along R330.

Figure 6.1 Traffic flow difference (Do Nothing- Base Year), AM Peak

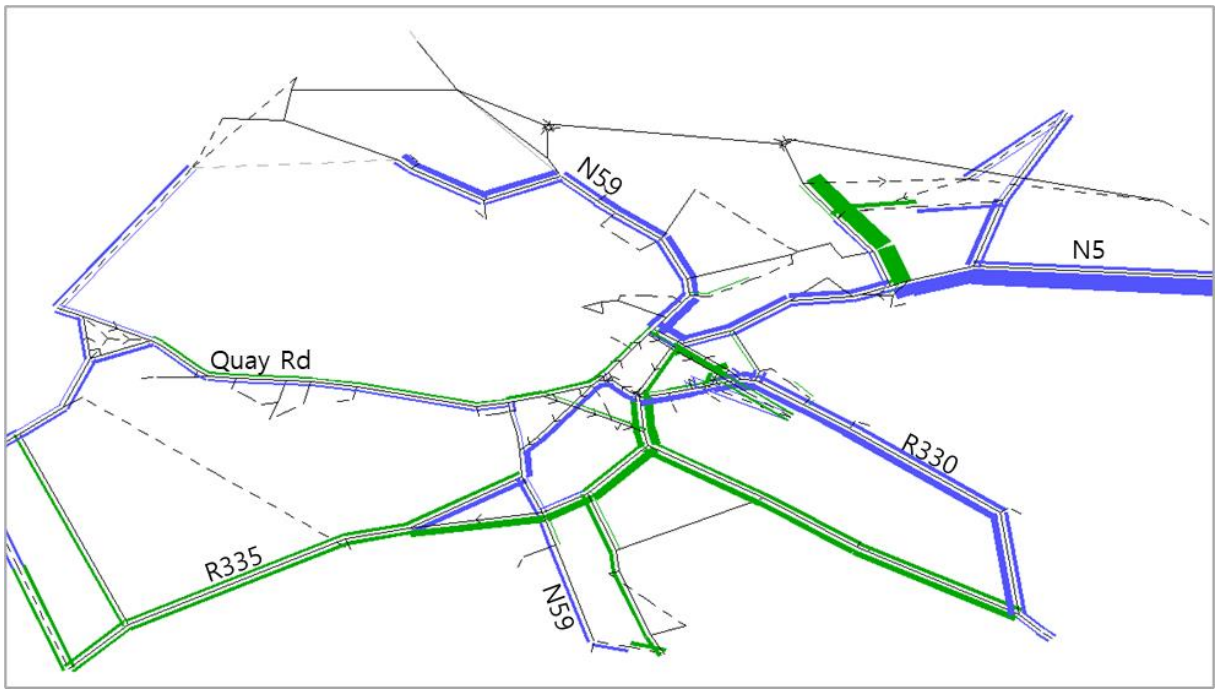
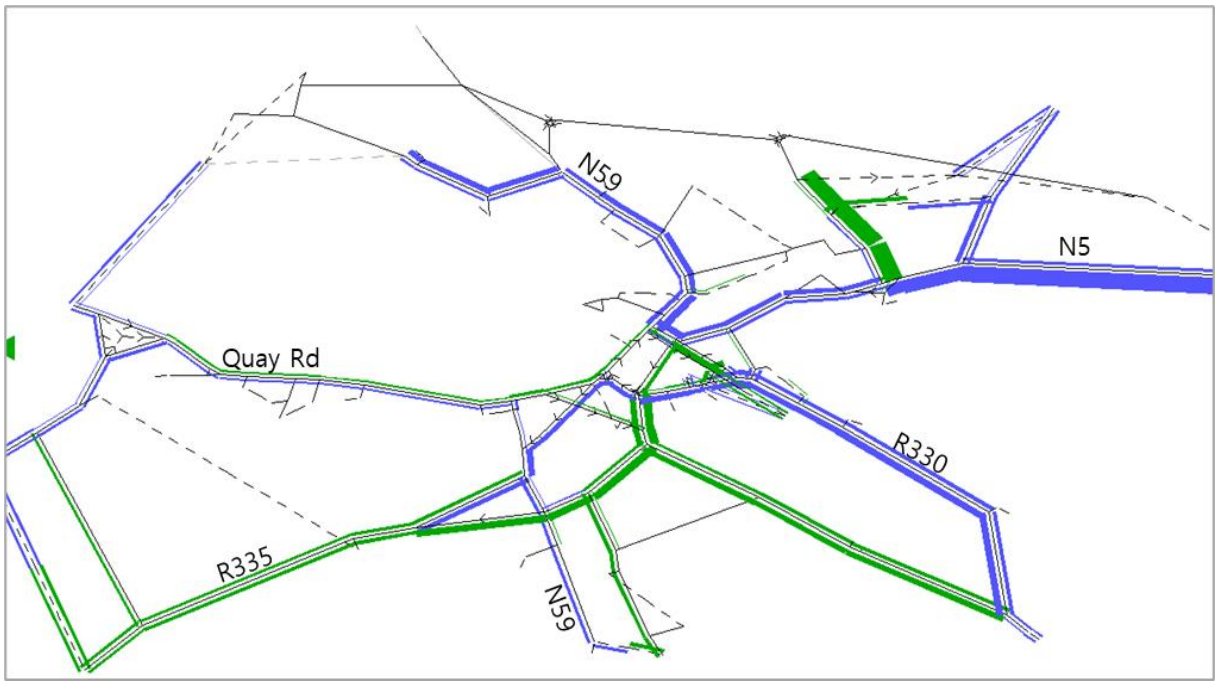


Figure 6.2 Traffic flow difference (Do Nothing- Base Year), PM Peak



Network Performance

The delays in the model are presented in the following sections in terms of link stress (volume over capacity – V/C) and junction (node) delay in minutes. The commentary given in the following sections is not intended as a comprehensive statement of network functionality, rather, points out where the main areas of congestion and delay are expected to occur given the assumptions inherent in these tests.

Link Stress

Figure 6.3 and Figure 6.4 show the 2028 Do Nothing modelled link stress in terms of V/C for the two modelled time periods. In general, the network links operate under capacity. However, there are a few cases of links with V/C above 70% such as the High Street and Distillery Road.

Figure 6.3 2028 Do Nothing link V/C, AM Peak

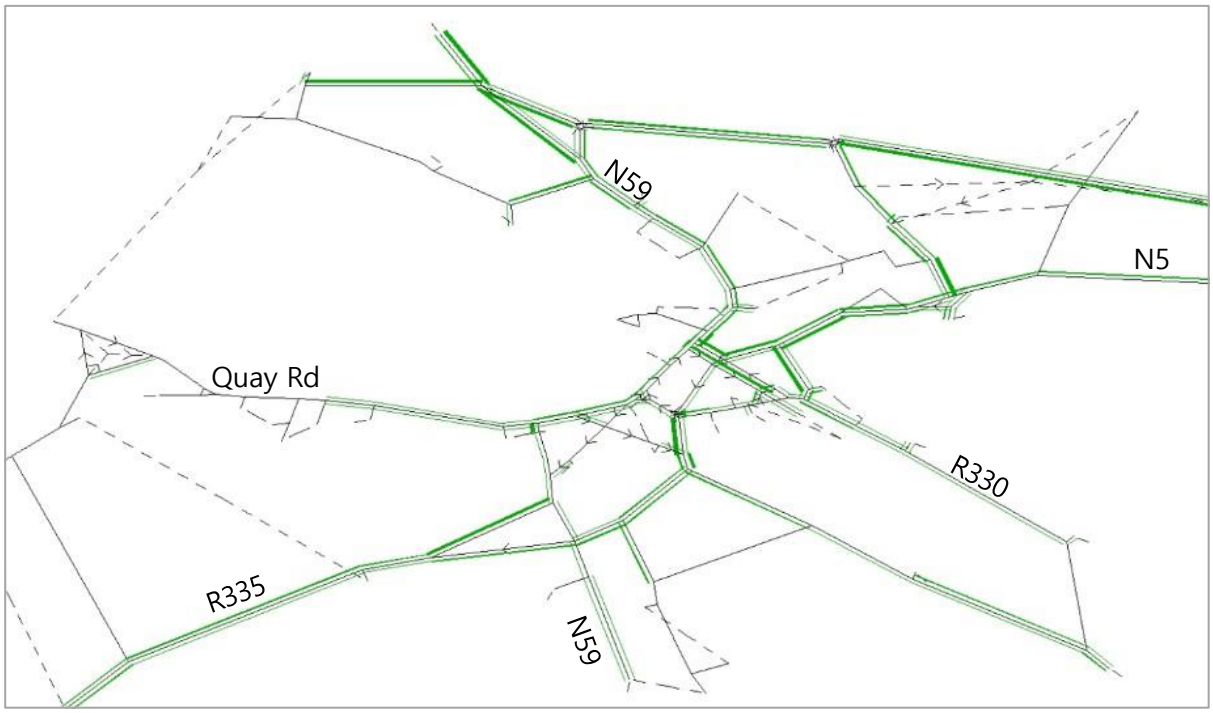
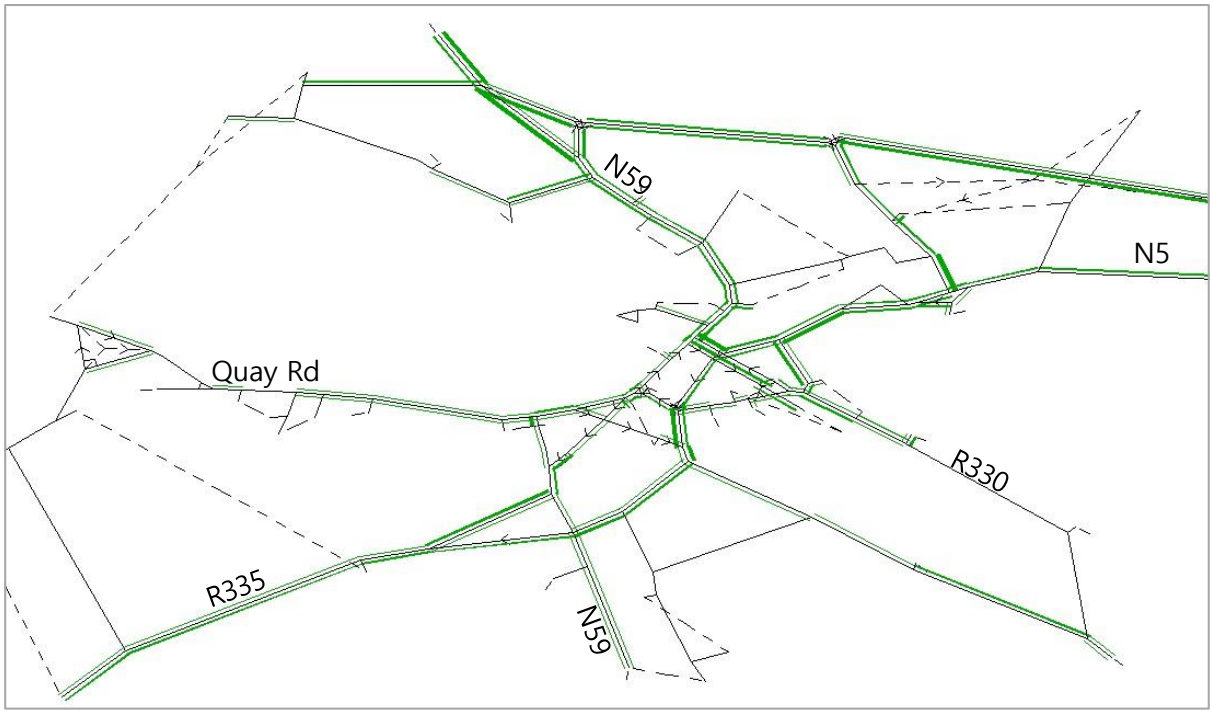


Figure 6.4 2028 Do Nothing link V/C, PM Peak



Junction Delay

Junction delays in the Do Nothing have also been assessed in order to determine those locations that are likely to come under pressure in future years. It should be noted that SATURN is a strategic highway assignment program and whilst it has been used in the assessment of which junctions may be experiencing capacity problems the results should be taken as being indicative.

Figure 6.5 and Figure 6.6 (overleaf) show the average junction delays per PCU in the 2028 Do Nothing for the two time periods. Delays are shown as variable circular bandwidths whereby the centre of the circle is located on the node or junction in question and the relative size of the radius indicates the level of average delay per vehicle at the junction experienced by each PCU (with larger circles indicating larger average delays).

In 2028 Do Nothing there is some additional delay at the N59/Westport Industrial Park junction, N59/N5 and Castlebar/Distillery Road junction in both time periods.

Figure 6.5 Do Nothing Junction Delay, AM Peak

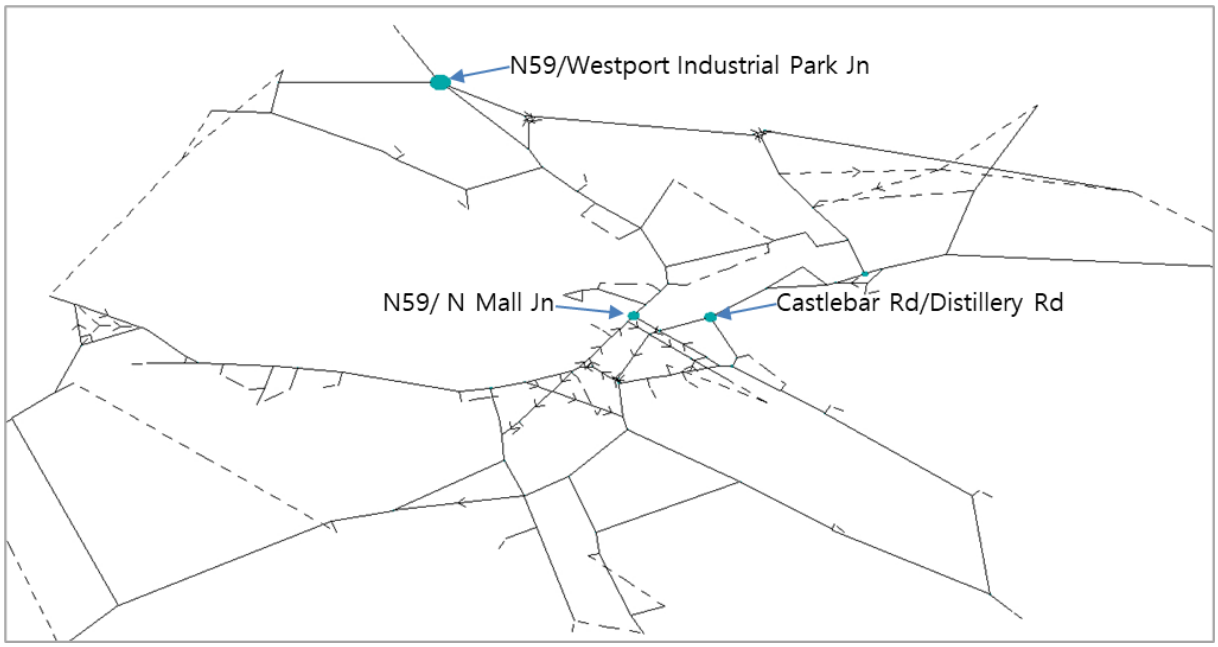
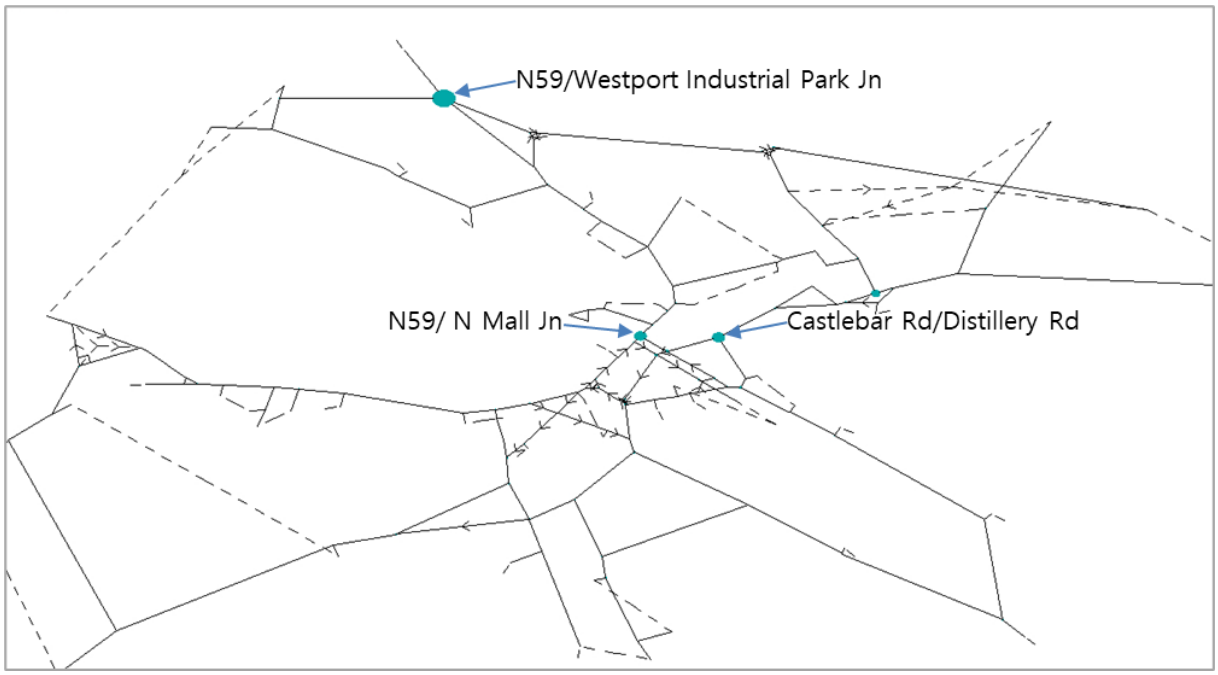


Figure 6.6 Do Nothing Junction Delay, PM Peak



Journey Times

Journey Times for the Base Year and Do-Nothing scenario are presented in Table 6.2. These are the same routes used in the base year.

Table 6.2 Journey Times: Base Year and 'Do Nothing' (minutes)

		Base Year (BY)		Do Nothing (DN)		DN – BY	
Route	Direction	AM	PM	AM	PM	AM	PM
Route 1 (North/ South via N59)	NB	5.32	5.33	7.38	7.74	2.06	2.41
	SB	4.60	4.60	5.43	5.58	0.84	0.98
Route 2 (East/West via N5 & R335)	WB	5.58	6.22	6.86	6.94	1.28	0.72
	EB	6.87	6.30	7.12	7.08	0.25	0.78

Journey times are expected to increase across the routes and time periods in 2028, particularly Route 1 Northbound (N59) which increases by up to 44% in the PM Peak. This is due to increased traffic volumes causing congestion and increasing delay times at pinch points within the network.

6.3. Do Minimum

Network Statistics

Global statistics have been extracted from the Do Minimum models as per the previous analysis of the Do Nothing. These are presented in Table 6.3 (overleaf).

Table 6.3 Network Summary Statistics: Do Nothing and Do Minimum

Time Period	Metric	Do Nothing	Do Minimum	% Difference
AM Peak	Travel Distance (PCU-Km)	11154	11216	1%
	Total travel time (PCU-Hours)	320	366	14%
	Assigned Demand (PCU Totals)	4138	4138	0%
PM Peak	Travel Distance (PCU-Km)	11048	11129	1%
	Total travel time (PCU-Hours)	325	364	12%
	Assigned Demand (PCU Totals)	4020	4020	0%

There are no changes in the number of trips in the forecast scenarios as they are all for 2028. There is an increase in travel time due to the implementation of the proposed measures in both time periods while the travel distance stays at the same level. This is an indication that the increase in travel time is coming from additional delay and not rerouting.

Traffic Flows

The differences of traffic flow for the modelled network are shown in the following plots for both time periods. There is some rerouting due to the implementation of the measures that causes minor changes in traffic flows (<50 PCUs/h).

Figure 6.7 Traffic flow difference (Do Minimum – Do Nothing), AM Peak

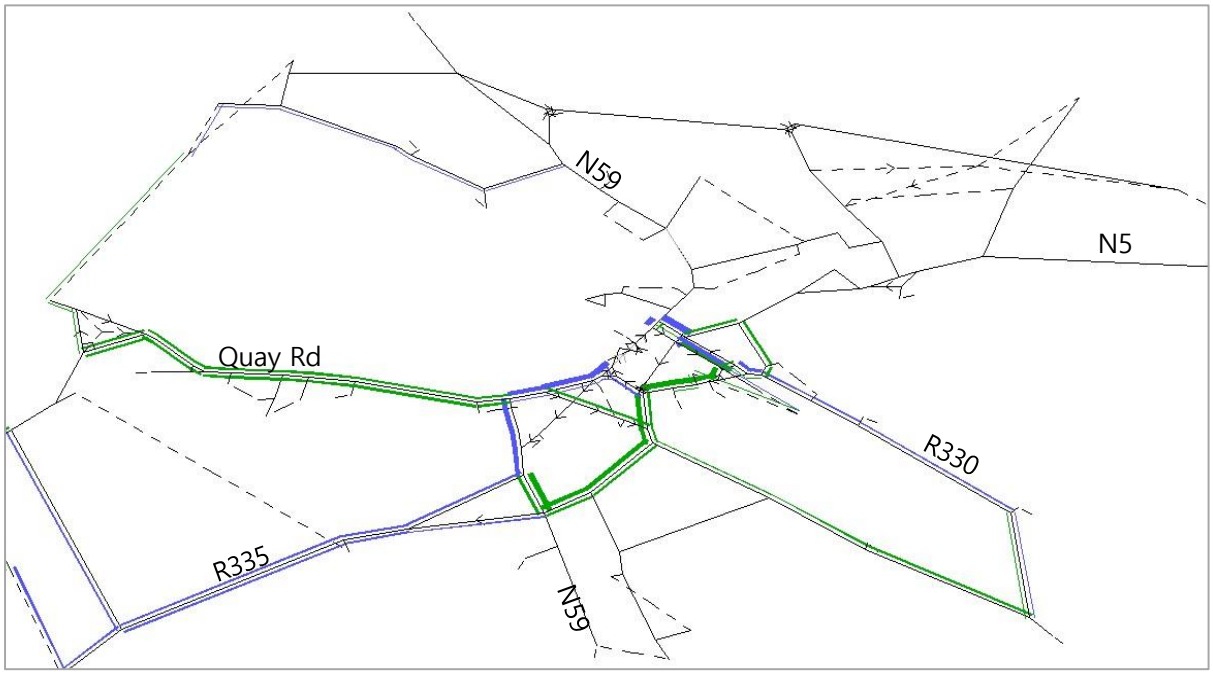
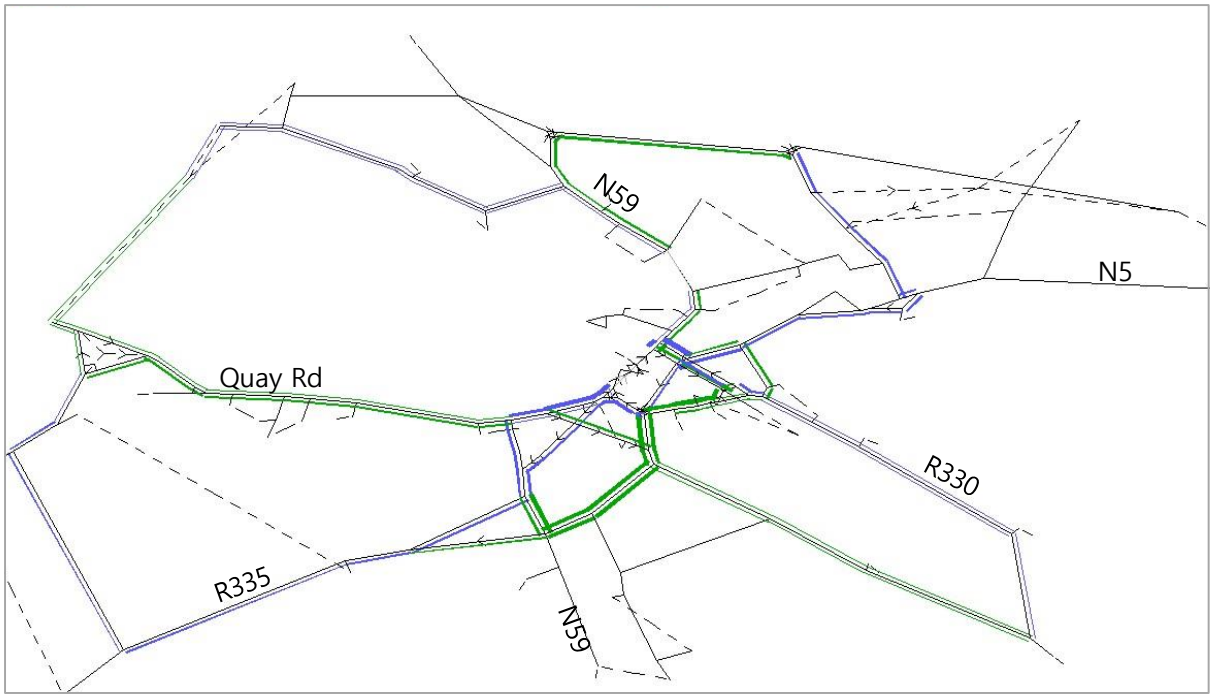


Figure 6.8 Traffic flow difference (Do Minimum – Do Nothing), PM Peak



Network Performance

Link Stress

In general, the link stress test shows that the network in Do Minimum operates under capacity without significant change from the Do Nothing as the same few links are around 70%. Therefore, the proposed Do Minimum measures do not have a significant impact on the network operation.

Figure 6.9 2028 Do Minimum link V/C, AM Peak

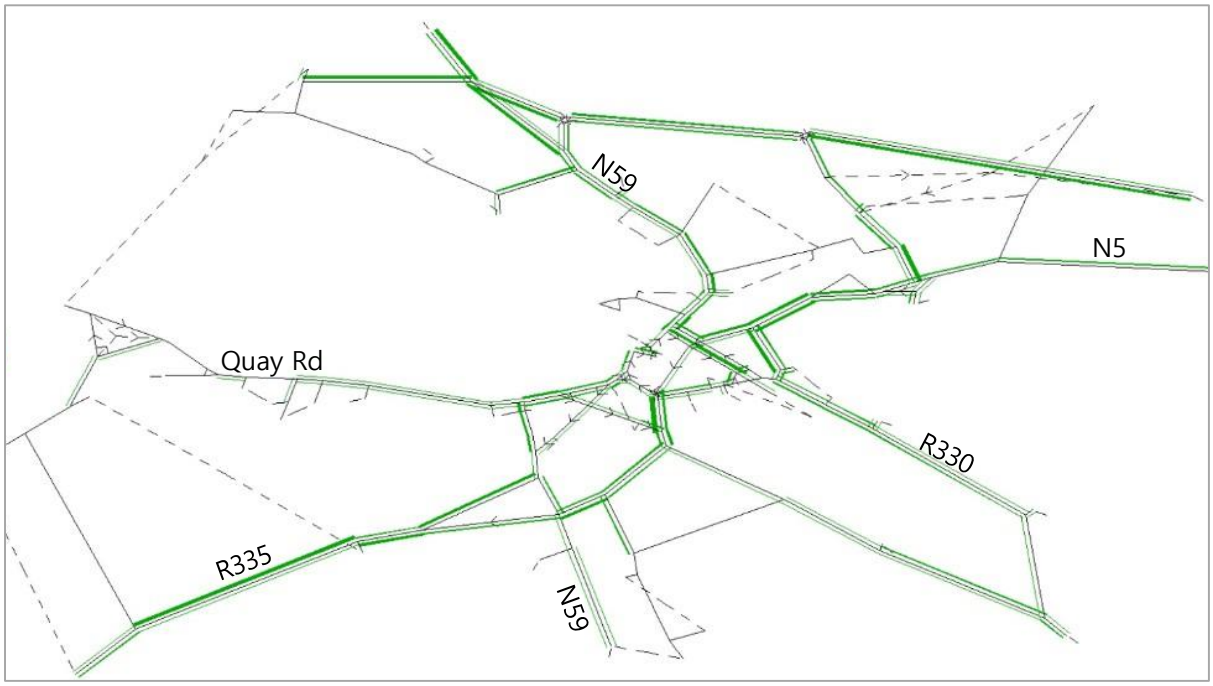
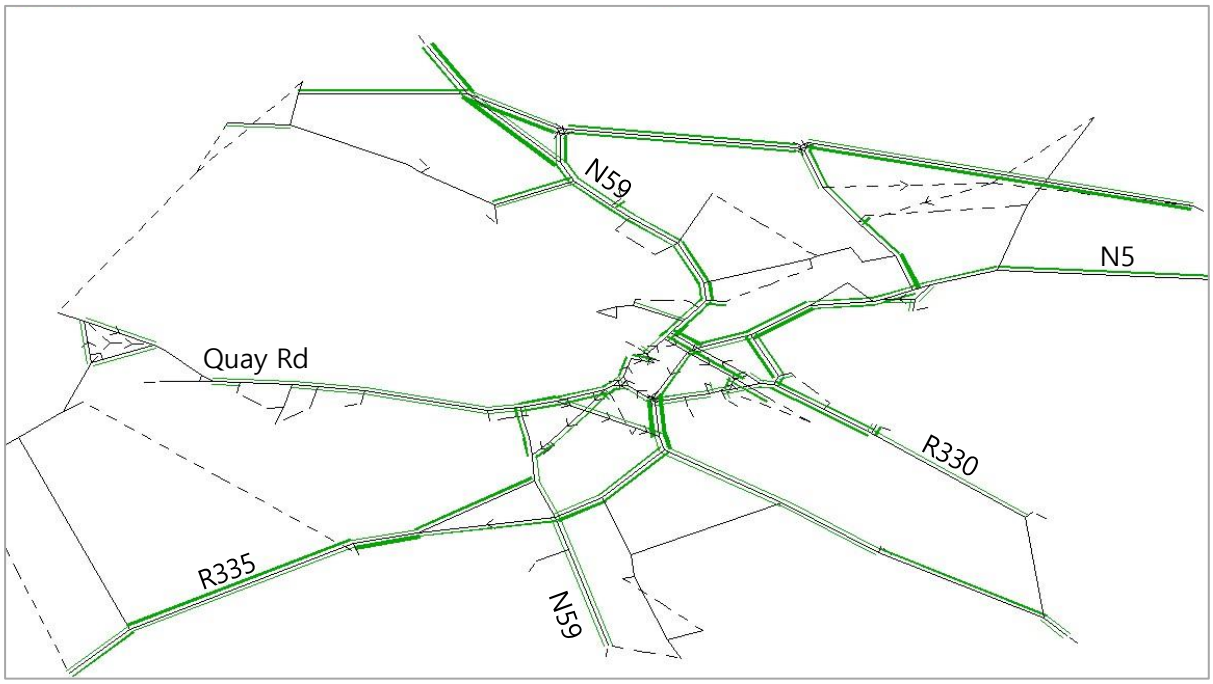


Figure 6.10 2028 Do Minimum link V/C, PM Peak



Junction Delay

Figure 6.11 (overleaf) and Figure 6.12 (overleaf) show the average junction delays per PCU in the 2028 Do Minimum for the two time periods. Delays are shown as variable circular bandwidths whereby the centre of the circle is located on the node or junction in question and the relative size of the radius indicates the level of average delay per vehicle at the junction experienced by each PCU (with larger circles indicating larger average delays).

In 2028 Do Minimum there is some additional delay at the N59/Westport Industrial Park junction, N59/N5 and the Castlebar/Distillery Road junction in both time periods. Some delay is also indicated at the R335/Sli Na Misean junction following implementation of a proposed controlled crossing point link to the greenway, although it is noted that further optimisation of said crossing point operation (e.g. sensor activation) would likely reduce any significant potential delay at the junction.

Figure 6.11 Do Minimum Junction Delay, AM Peak

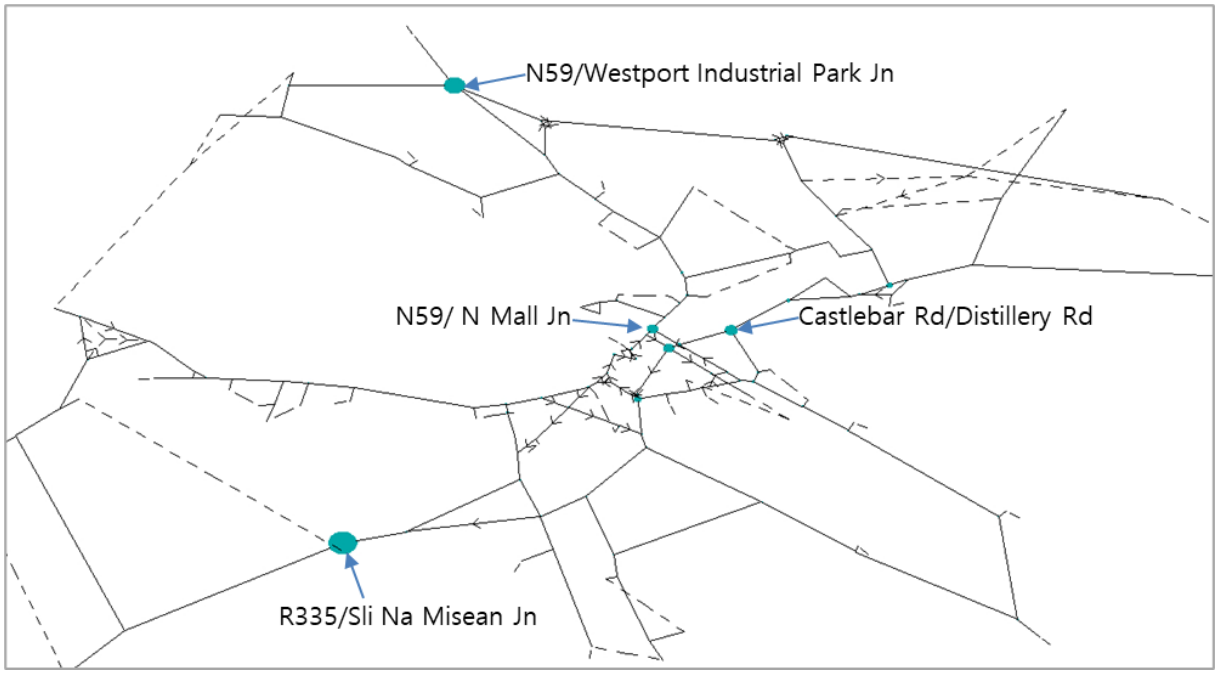
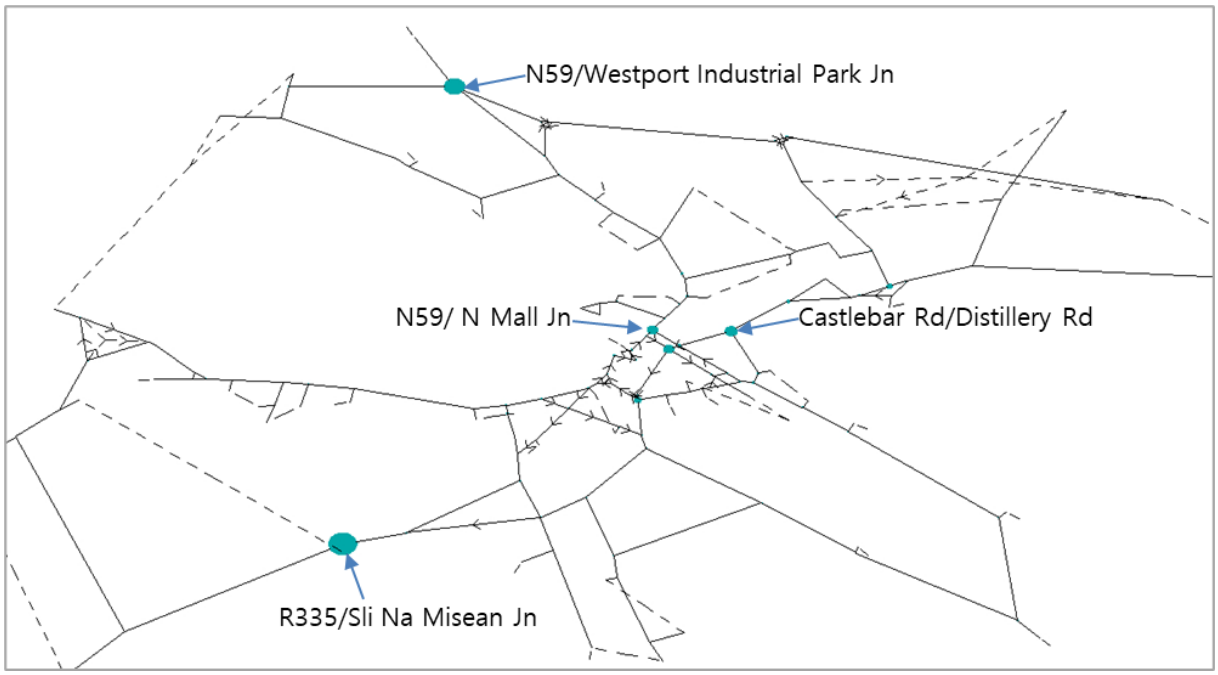


Figure 6.12 Do Minimum Junction Delay, PM Peak



Journey Times

Journey Times for the Do Nothing and Do Minimum scenarios are presented in Table 6.4.

Table 6.4 Journey Times: Do Nothing and Do Minimum

Route	Direction	Do Nothing (DN)		Do Minimum (DM)		DM – DN	
		AM	PM	AM	PM	AM	PM
Route 1	NB	7.38	7.74	7.92	8.23	0.54	0.49
Route 1	SB	5.43	5.58	6.19	6.50	0.75	0.92
Route 2	WB	6.86	6.94	8.38	9.14	1.52	2.20
Route 2	EB	7.12	7.08	9.74	8.69	2.62	1.61

Journey times are expected to increase across the routes and time periods in 2028, particularly Route 2 (East/West via N5 & R335) which increases by up to 32% in the AM Peak. This is due to increased traffic volumes causing congestion and increasing delay times at pinch points within the network.

6.4. Do Medium

Network Statistics

Global statistics have been extracted from the Do Medium models as per the previous analysis of the Do Nothing. These are presented in Table 6.5.

Table 6.5 Network Summary Statistics: Do Nothing and Do Medium

Time Period	Metric	Do Nothing	Do Medium	% Difference
AM Peak	Travel Distance (PCU-Km)	11154	11198	0%
	Total travel time (PCU-Hours)	320	369	15%
	Assigned Demand (PCU Totals)	4138	4138	0%
PM Peak	Travel Distance (PCU-Km)	11048	11112	1%
	Total travel time (PCU-Hours)	325	370	14%
	Assigned Demand (PCU Totals)	4020	4020	0%

The increase of total travel time is slightly larger in Do Medium compared to Do Minimum due to the implementation of the proposed measures in both time periods while the travel distance stays at the same level.

Traffic Flows

The differences in traffic flow between Do Nothing and Do Medium for the modelled network are shown in the following plots for both time periods. There is some rerouting due to the implementation of the measures that causes in the majority of the cases minor changes in traffic flows (<50 PCUs/h).

Figure 6.13 Traffic flow difference (Do Medium - Do Nothing), AM Peak

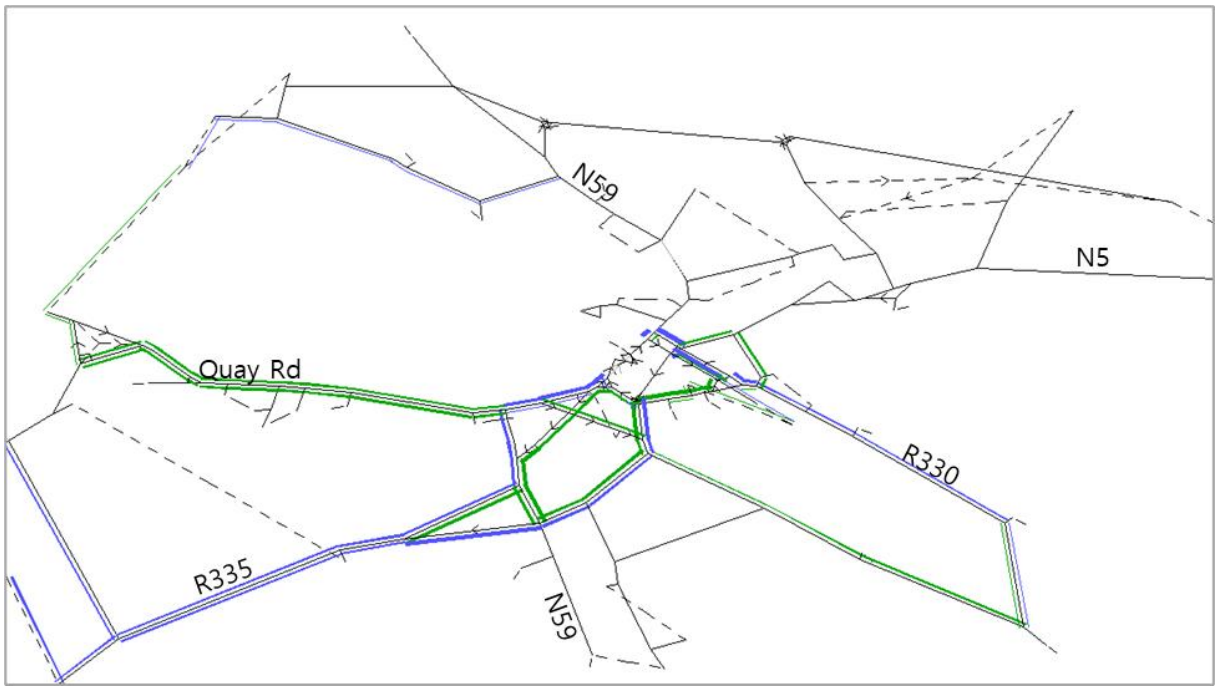
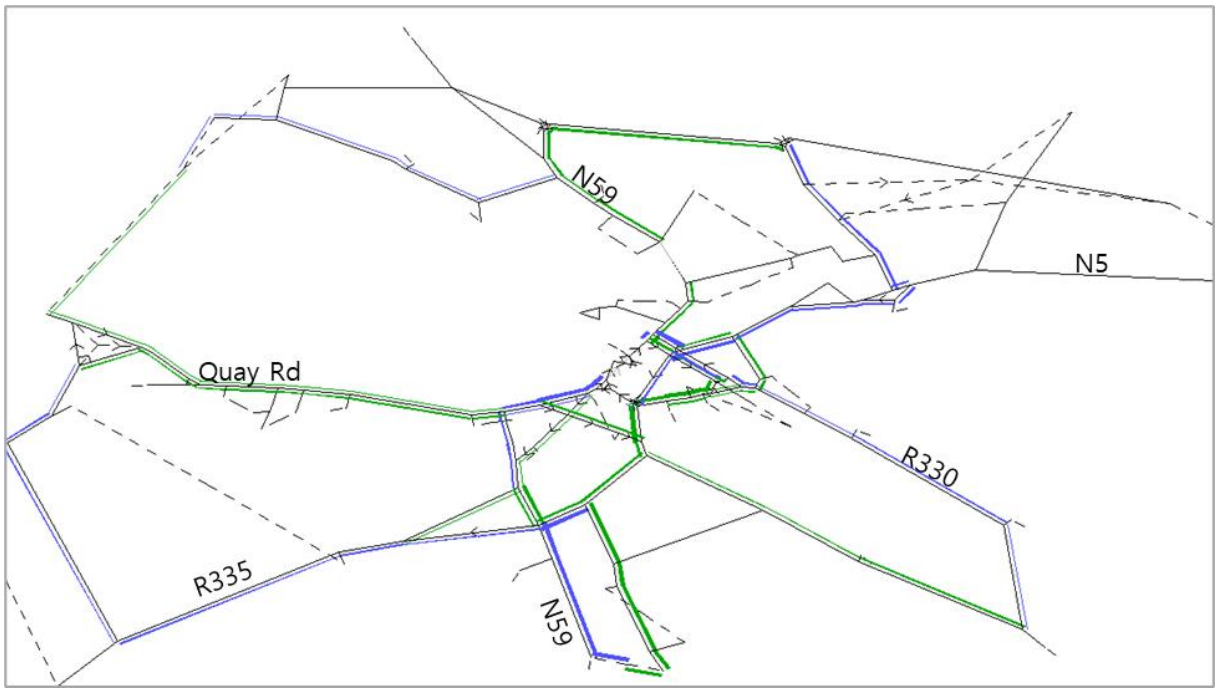


Figure 6.14 Traffic flow difference (Do Medium - Do Nothing), AM Peak



Network Performance

Link Stress

In general, the link stress test shows that the network in Do Medium operates under capacity in both time periods without significant change from the Do Nothing as the same few links are around 70%.

Figure 6.15 2028 Do Medium link V/C, AM Peak

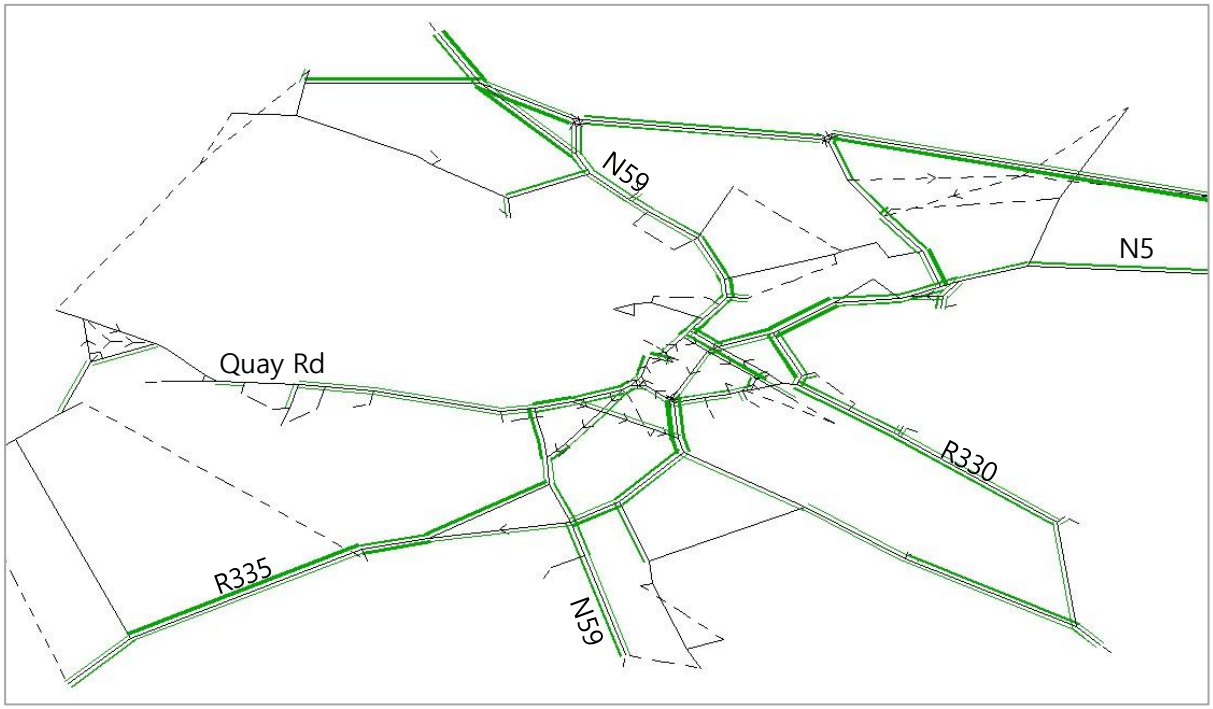
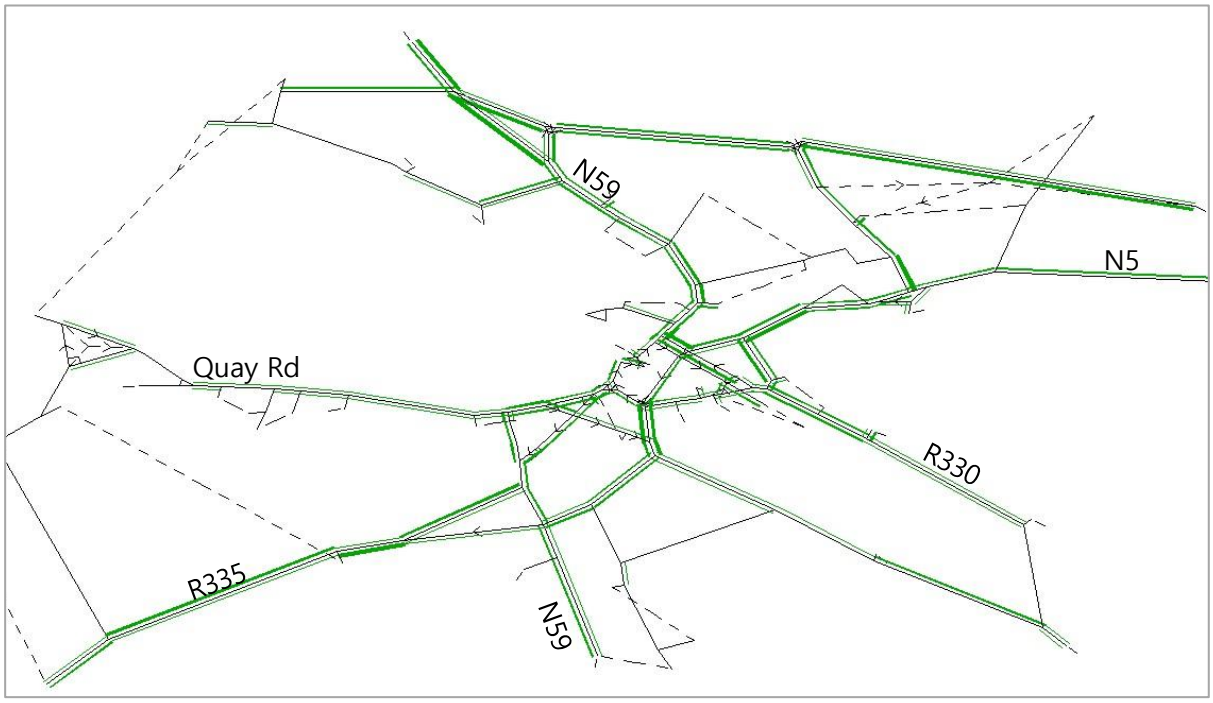


Figure 6.16 2028 Do Medium link V/C, PM Peak



Junction Delay

Similar to the Do Minimum there is some additional delay at the N59/Westport Industrial Park junction, N59/N5, Castlebar/Distillery Road junction, and at R335/Sli Na Misean junction in both time periods.

Figure 6.17 Do Medium Junction Delay, AM Peak

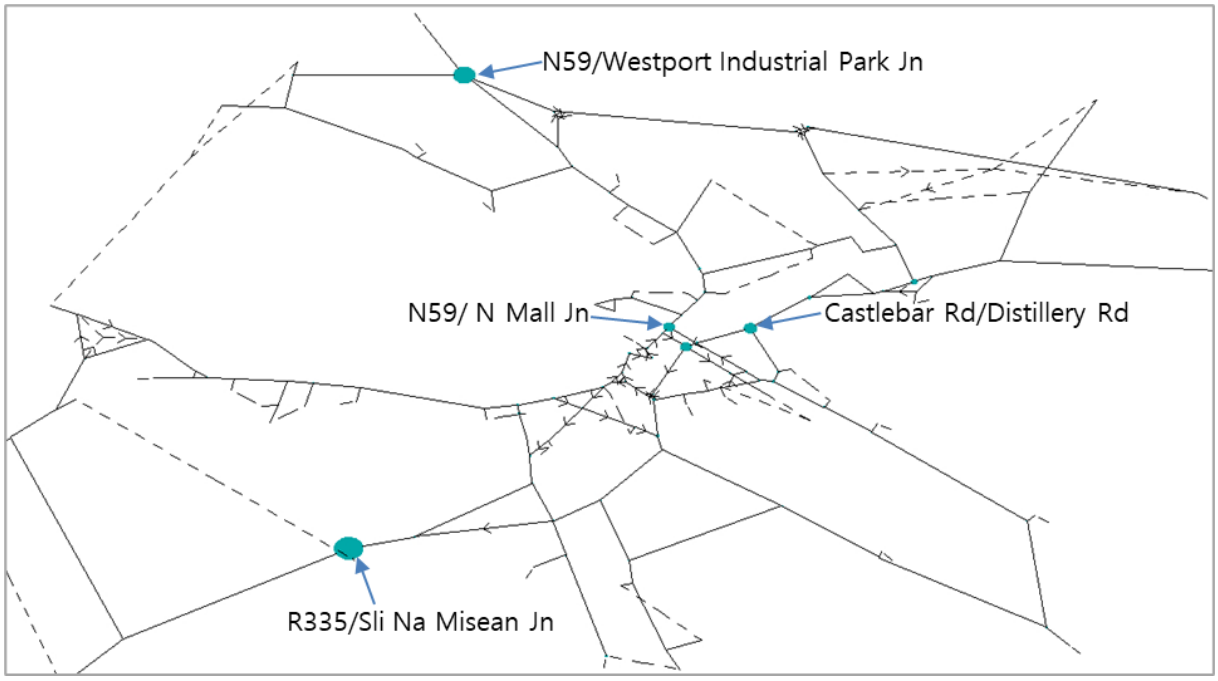
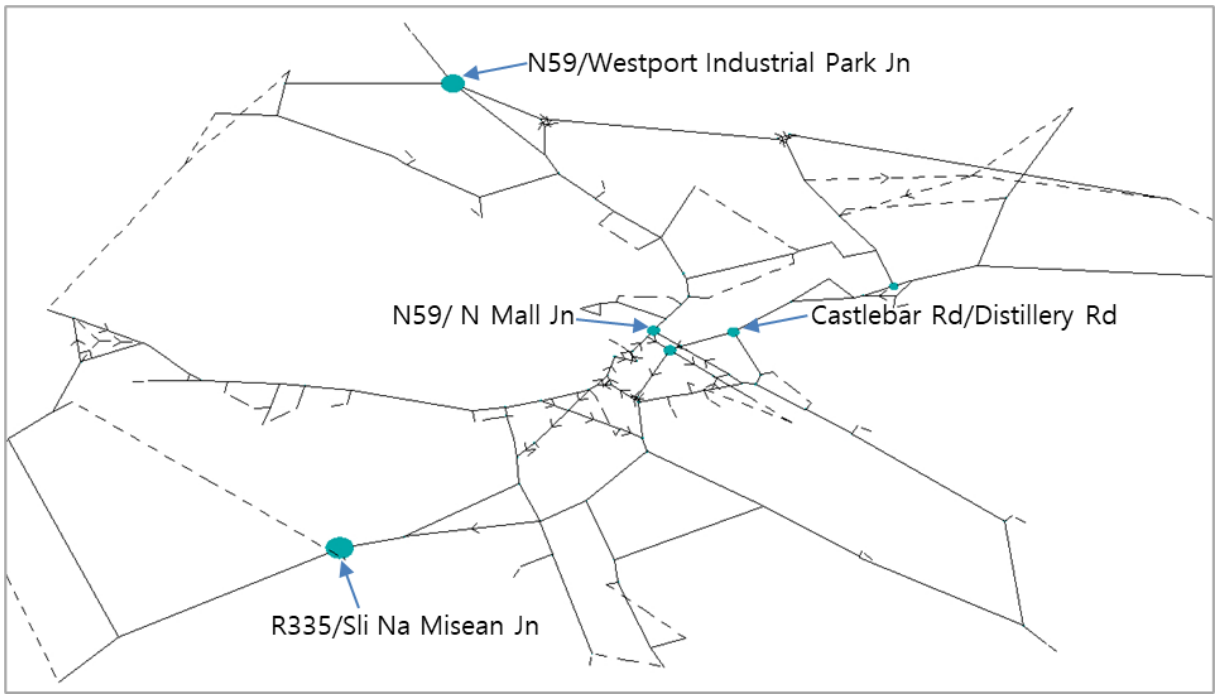


Figure 6.18 Do Medium Junction Delay, PM Peak



Journey Times

Journey times are expected to increase across the routes and time periods in the Do Medium, particularly Route 2 Westbound (via N5 & R335) which increases by up to 2.67 in the AM Peak.

Table 6.6 Journey Times: Do Nothing and Do Medium

		Do Nothing (DN)		Do Medium (DM)		DM – DN	
Route	Direction	AM	PM	AM	PM	AM	PM
Route 1	NB	7.38	7.74	8.27	8.53	0.89	0.79
Route 1	SB	5.43	5.58	7.18	7.45	1.74	1.87
Route 2	WB	6.86	6.94	8.48	9.23	1.62	2.29
Route 2	EB	7.12	7.08	9.79	8.74	2.67	1.66

6.5. Do Maximum

Network Statistics

Global statistics have been extracted from the Do Maximum models as per the previous analysis of the Do Nothing. These are presented in Table 6.7 (overleaf).

Table 6.7 Network Summary Statistics: Do Nothing and Do Maximum

Time Period	Metric	Do Nothing	Do Maximum	% Difference
AM Peak	Travel Distance (PCU-Km)	11154	11960	7%
	Total travel time (PCU-Hours)	320	449	40%
	Assigned Demand (PCU Totals)	4138	4138	0%
PM Peak	Travel Distance (PCU-Km)	11048	11750	6%
	Total travel time (PCU-Hours)	325	441	36%
	Assigned Demand (PCU Totals)	4020	4020	0%

Table 6.7 shows a significant increase in PCU-hours (36-40%) in excess of the increase in PCU-kilometres for both periods indicating the increasing congestion and the trip length between the Do Nothing and the Do Maximum scenario. It is noted that indicative junction signal timings coded within the WLAM would be expected to be further optimised at detailed design stage of each proposed scheme which should help to reduce overall travel time across the network.

Traffic Flows

The differences in traffic flow between Do Nothing and Do Maximum for the modelled network are shown in the following plots for both time periods. There is significant rerouting from the existing N5 to the new N5 due to the Do Maximum measures on Castlebar Road.

Figure 6.19 Traffic flow difference (Do Maximum – Do Nothing), AM Peak

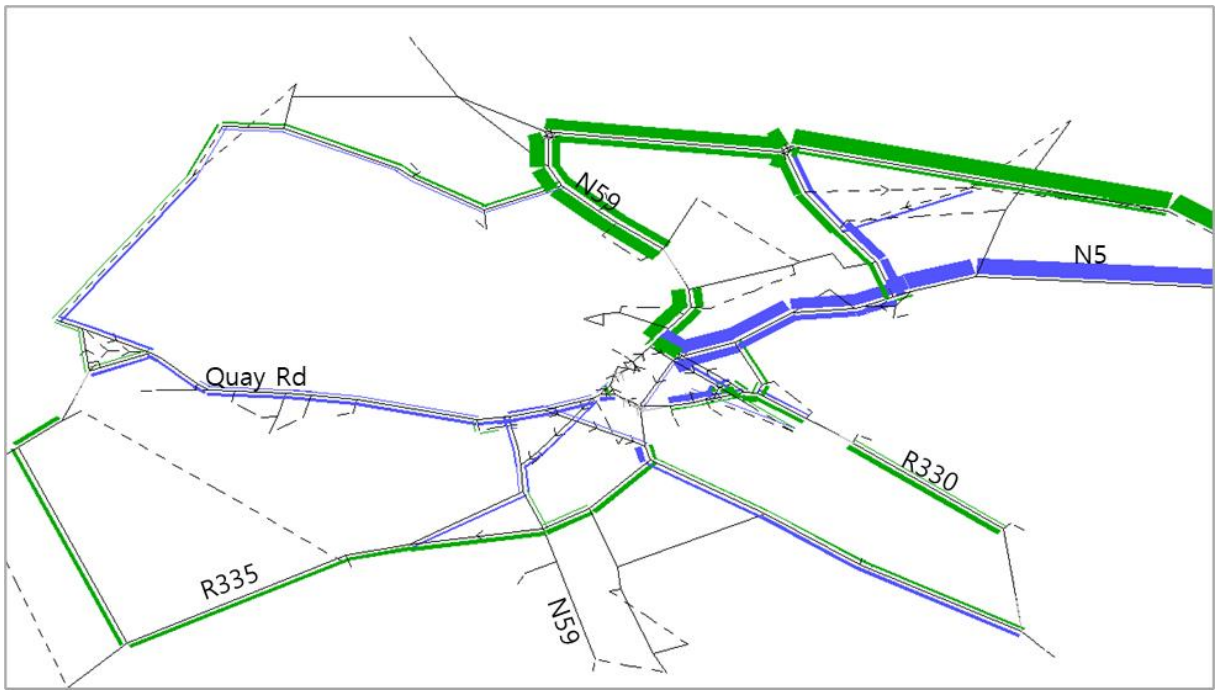
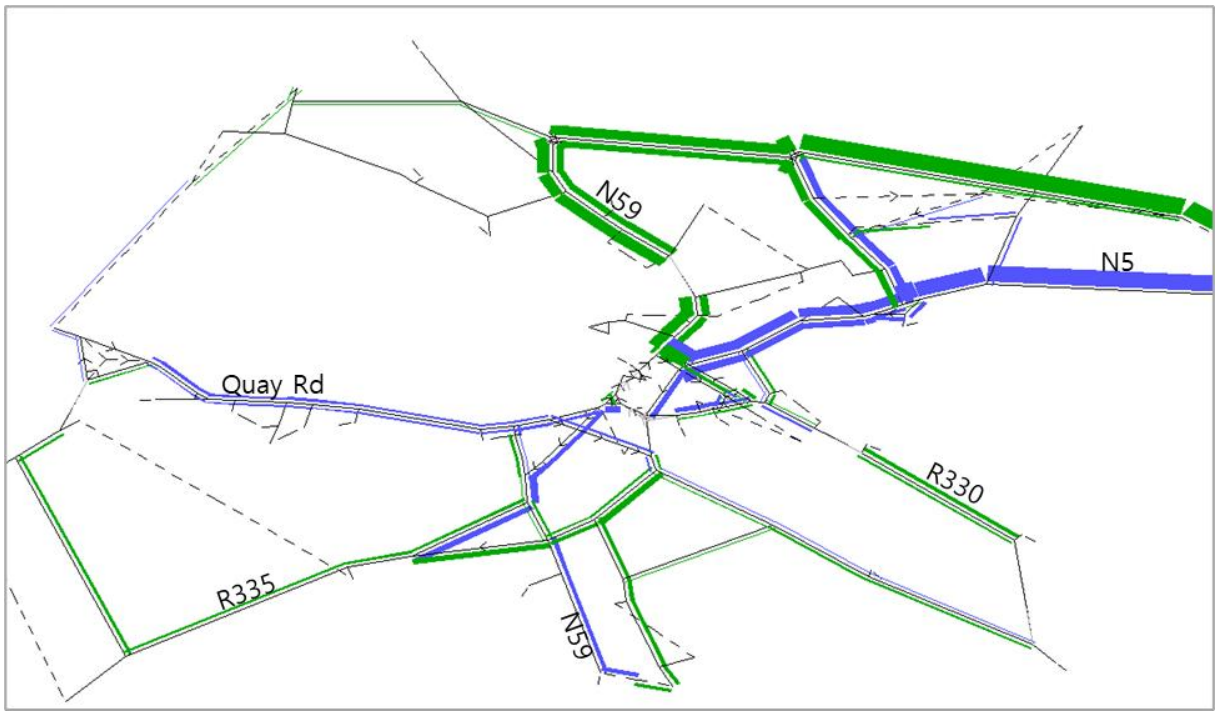


Figure 6.20 Traffic flow difference (Do Maximum – Do Nothing), PM Peak



Network Performance

Link Stress

Figure 6.21 (overleaf) and Figure 6.22 (overleaf) presents the V/C performance of the modelled links. Most of the links operate below their capacity with only a few exceptions above 80% such as High Street and Distillery Road.

Figure 6.21 2028 Do Maximum link V/C, AM Peak

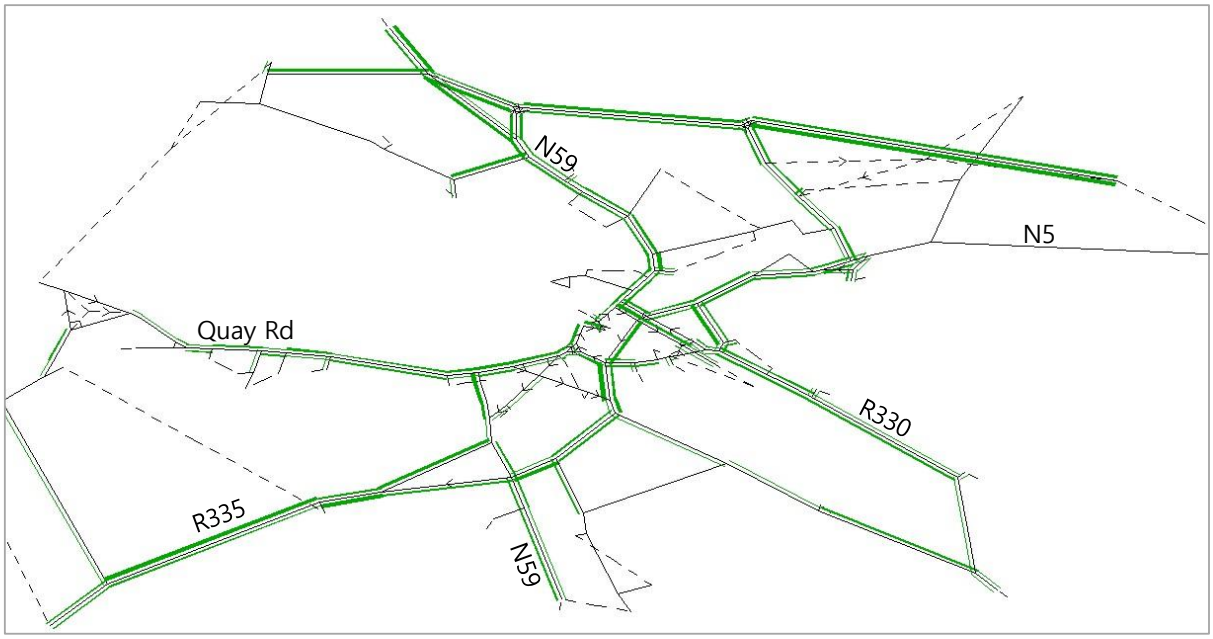


Figure 6.22 2028 Do Maximum link V/C, PM Peak

Junction Delay

The Do Maximum measures cause additional delays in more locations compared to the Do Nothing. The most significant delays are at the N59/Westport Industrial Park junction, N59/N5, Castlebar/Distillery Road junction, and at R335/Sli Na Misean junction in both time periods. As mentioned previously, the WLAM gives a network level indication of delay however optimisation of the signal staging at the various junctions would be expected to reduce junction delays.

Figure 6.23 Do Maximum Junction Delay, AM Peak

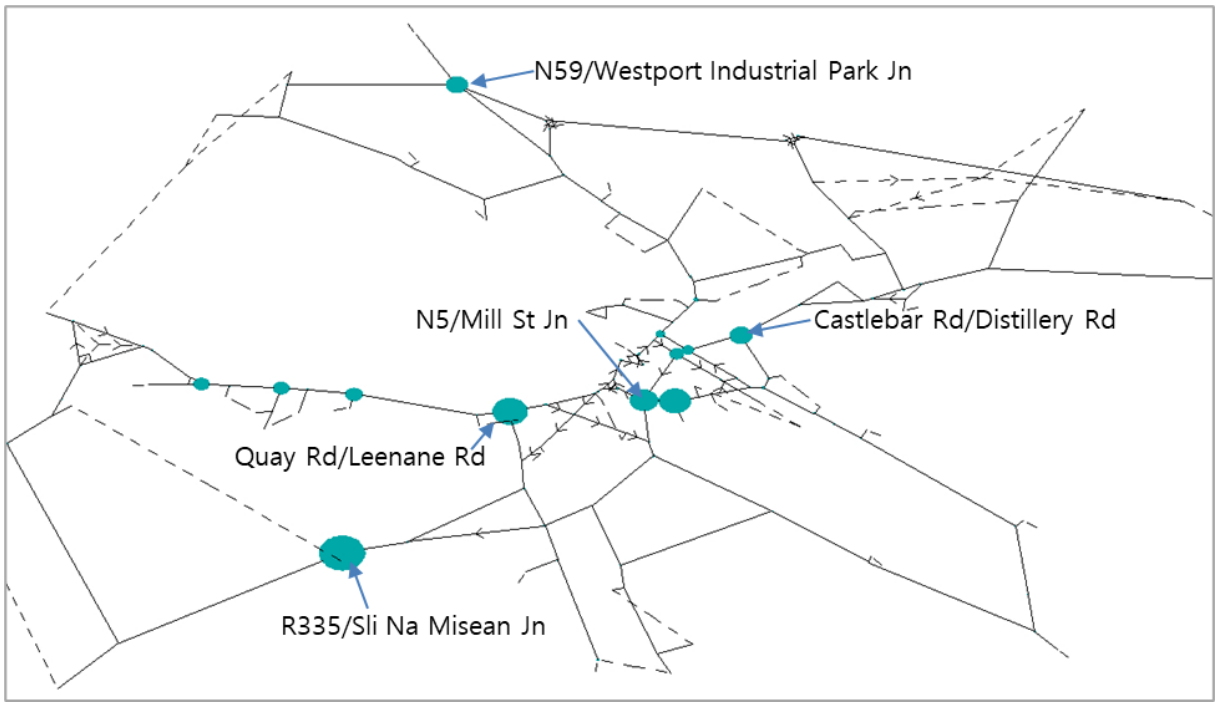
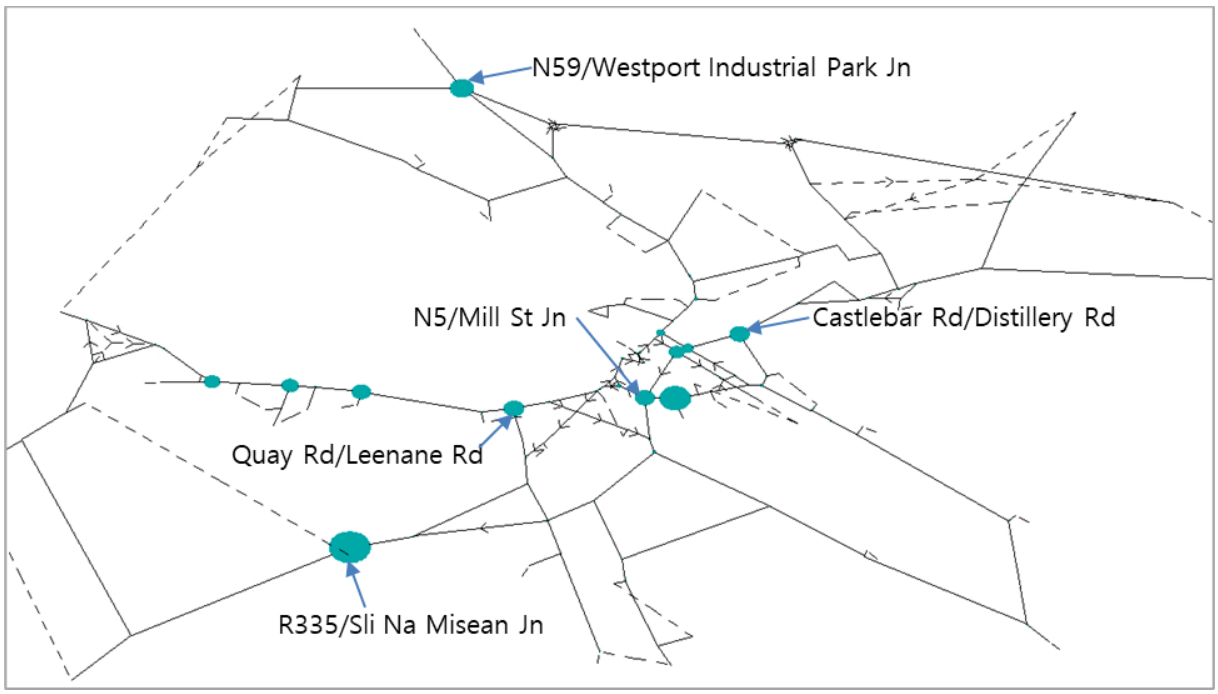


Figure 6.24 Do Maximum Junction Delay, PM Peak



Journey Times

Journey times are expected to increase across the routes and time periods in the Do Maximum (compared to the Do Nothing), particularly Route 2 which increases by up to 6.13 in the AM Peak.

Table 6.8 Journey Times: Do Nothing and Do Maximum

		Do Nothing (DN)		Do Maximum (DS)		DS – DN	
Route	Direction	AM	PM	AM	PM	AM	PM
Route 1	NB	7.38	7.74	10.32	9.34	2.95	1.60
Route 1	SB	5.43	5.58	8.24	8.75	2.81	3.17
Route 2	WB	6.86	6.94	10.18	11.81	3.32	4.87
Route 2	EB	7.12	7.08	13.25	10.13	6.13	3.05

7. Summary

Forecast WLAM models for 2028 have been produced covering four 'core' forecast scenarios: Do Nothing, Do Minimum, Do Medium, Do Maximum. These scenarios have taken into account the background growth estimated by the NTA regional model and TII growth projections as well as proposed Local Area Plan zoning and the new N5 to the north of the Town.

7.1. Scenarios Tested

The 2028 Do Nothing scenario has been compared against the Base Year in order to demonstrate the change (ca. 9-10% increase) in likely forecast traffic flows in the future year. The rest of the future models (Do Minimum, Do Medium, Do Maximum) have been compared against the Do Nothing model to assess the impacts of the proposed packages.

The assessment of the three Do Something scenarios (i.e. package options) was undertaken using network statistics, flow differences, journey time changes along key routes within the model, and network performance indicators (i.e. Volume/Capacity, junction delay).

Table 7.1 summarises the percentage difference of the network indicators between the Do Something and Do Nothing scenarios. The Do Minimum and Do Medium proposed packages indicate similar levels of increase in the travel time and distance in the road network compared to the Do Nothing scenario.

The increase in total travel time is in excess of the increase in total travel distance in both time periods. That is an indication of increasing congestion between the Do Nothing and the Do Something scenarios as trips are taking more time to travel through the network.

Table 7.1 Network Summary Statistics: Percentage Difference of the Scenarios

Time Period	Metric	% Do Minimum-Do Nothing	% Do Medium-Do Nothing	% Do Maximum-Do Nothing
AM Peak	Travel Distance (PCU-Km)	1%	0%	7%
	Total travel time (PCU-Hrs)	14%	15%	40%
PM Peak	Travel Distance (PCU-Km)	1%	1%	6%
	Total travel time (PCU-Hrs)	12%	14%	36%

Traffic volume increases tend to be reasonably consistent to the demand growth from the base to the future year while rerouting occurs due to the implementation of the new N5 and the location of the proposed interventions.

In general, the network links operate under capacity. However, there are a few cases of links with V/C above 70% such as High Street and Distillery Road. The WLAM also indicates junction delay in a few

locations could occur in the Do Something compared to the Do Nothing. The most notable delays are at the N59/Westport Industrial Park junction, N59/N5, Castlebar/Distillery Road junction, and at R335/Sli Na Misean junction in both time periods.

It should be noted that the operational assessment for junction experiencing capacity issues should be taken as being indicative since SATURN is a strategic tool. Optimisation of junction operation (e.g. signal staging, sensor activation) would be expected to minimise potential junction delay.

Journey times are expected to increase across the routes and time periods in all 2028 scenarios. In particular, the journey times of two routes, the same routes as used previously in the Base Year validation, have been calculated using link time and turning delay.

Table 2.1.2 summarises the increase in travel time for the two key routes. The most notable increases occur in the Do Maximum scenario for Route 2 in which a potential journey time increase could range from ca. 50 – 85%.

Table 7.2 Journey times: Percentage Difference of the scenarios

Route	Direction	% Do Minimum-Do Nothing		% Do Medium-Do Nothing		% Do Maximum-Do Nothing	
		AM	PM	AM	PM	AM	PM
Route 1 (via N59)	NB	7%	6%	12%	10%	40%	21%
	SB	14%	17%	32%	34%	52%	57%
Route 2 (via N5 & R335)	WB	22%	32%	24%	33%	48%	70%
	EB	37%	23%	38%	23%	86%	43%

While the WLAM indicates a potential increase in journey time on the two assessed Route options, it is noted that the WLAM is a strategic model and localised optimisation of junction operation would be expected to minimise junction delay and by extension wider network delay. Furthermore, the proposed LTP schemes would provide improved active and sustainable travel infrastructure in Westport Town which would be expected to encourage modal shift away from car travel, helping to reduce the overall number of vehicle trips on the network and in turn minimising potential overall network delay.

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