



## **Chapter 06**

### Traffic & Transport

## Contents

---

	Page
<b>Contents</b>	<b>1</b>
<b>6 Traffic and Transport</b>	<b>1</b>
6.1 Introduction	1
6.1.1 Aim and Objectives of the Proposed Scheme	2
6.1.2 Iterative Design Process and Mitigation by Design	3
6.2 Guidelines	5
6.3 Methodology	7
6.3.1 Study Area	7
6.3.2 Proposed Scheme Impact Assessment Modelling Tools	8
6.3.3 Appraisal Method for the Assessment of Impacts	9
6.3.4 Data Collection and Collation	14
6.4 Baseline Environment	17
6.4.1 Overview	17
6.4.2 Section 1 – University Road to St Francis Street Junction	24
6.4.3 Section 2 – St. Francis Street to Eglinton Street	27
6.4.4 Section 3 – Eyre Square to Forster Street	30
6.4.5 Section 4 – College Road (Lough Atalia to Fairgreen)	34
6.4.6 Section 5 – College Road (Lough Atalia to Moneenageisha)	36
6.4.7 Section 6 – R338 Dublin Road	37
6.4.8 Section 7 – Fairgreen Road	39
6.4.9 General Traffic	40
6.4.10 Section 8 – Bóthar Uí Eithir and Prospect Hill	41
6.4.11 Section 9 – Bothar na mBan/ St. Brendan’s Avenue / Dyke Road/ Headford Road	43
6.4.13 Section 11 – Forthill Street / Merchants Road / Queen Street	47
6.5 Potential Impacts	49
6.5.1 Characteristics of the Proposed Scheme	49
6.5.2 Do Nothing Scenario	50
6.5.3 Do Minimum Scenario	50
6.5.4 Do Something Scenario	51
6.5.5 Construction Phase	52
6.5.6 Construction Programme	55
6.5.7 Operational Phase	59
6.5.8 Quantitative Analysis	100
6.6 Mitigation and Monitoring Measures	162
6.7 Residual Impacts	162
6.8 References	163

## 6 Traffic and Transport

### 6.1 Introduction

This Chapter of the Environmental Impact Assessment Report (EIAR) has considered the potential traffic & transport impacts associated with the Construction and Operational Phases of the BusConnects Galway: Cross-City Link (University Road to Dublin Road) Scheme (hereafter referred to as the Proposed Scheme).

The chapter describes the traffic and transport impacts in accordance with the requirements of the relevant Environmental Protection Agency's (EPA) guidance on the information to be contained in EIARs (2022).

The Proposed Scheme, as described in detail in Chapter 4 (Proposed Scheme Description), has an overall length of approximately 6.7km, and routes along University Road, St. Vincent's Avenue, St. Francis Street, Eglinton Street, Eyre Square, Forster Street, College Road and Dublin Road and also encompasses numerous roads within the city centre.

The Proposed Scheme includes an upgrade of the existing bus priority alongside changes to pedestrian and cycle facilities. The Proposed Scheme includes a substantial increase in the level of bus priority in Galway, including the provision of additional lengths of bus lane.

Throughout the Proposed Scheme the environment for cycling will be enhanced, primarily through the removal of traffic from the Cross-City Link. Where traffic cannot be reduced or removed, segregated cycle facilities will be provided where feasible. Throughout the Proposed Scheme pedestrian facilities will be upgraded, additional signalised crossings provided, and entry treatment provided across side road junctions.

Table 6.1 summarises the changes which will be made to the existing transport environment along the corridor as a result of the Proposed Scheme.

**Table 6.1: Summary of Proposed Scheme**

<b>Total Length of Proposed Scheme</b>	<b>6.7km</b>	
<b>Bus Priority</b>	<b>Existing (km)</b>	<b>Proposed Scheme (km)</b>
<b>Bus Lanes</b>		
Inbound	0.3	1.6
Outbound	0.3	0.9
<b>Bus Priority through Traffic Management</b>		
Inbound	0	1.5
Outbound	0	2.2
Total Bus Priority (both directions)	0.6	6.2

<b>Total Length of Proposed Scheme</b>	<b>6.7km</b>	
<b>Bus Priority</b>	<b>Existing (km)</b>	<b>Proposed Scheme (km)</b>
Bus Measures		
Proportion of Route with Bus Priority Measures	10%	100%
Cycle Facilities – Segregated		
Inbound	0	0.7
Outbound	0	0.5
Cyclist Facilities – Non-segregated		
Inbound	0	2.3
Outbound	0	2.3
Total Cyclist Facilities (both directions)	0	5.8
Proportion Segregated (including Quiet Street Treatment)	0%	95%
Other Features		
Number of Traffic Signal Controlled Junctions	5	10
Number of Signal Crossings	10	21

The following drawings (listed in Table 6.2) should be read in conjunction with this chapter.

**Table 6.2: Drawing Number and Description**

<b>Drawing Series Number</b>	<b>Description</b>
BCG-GA-00-00-12	General Arrangement
BCG-CS-01-01-06	Typical Cross Sections
BCG-TS-00-00-12	Traffic Signs and Road Markings

Cumulative impacts of Traffic and Transport, along with other topics, can be found in Chapter 20 (Cumulative Impacts & Environmental Interactions) of this EIAR, as well as in Appendix 6.1 (Transport Modelling Report) in Volume 4 of this EIAR.

### 6.1.1 Aim and Objectives of the Proposed Scheme

The aim of the Proposed Scheme is to provide enhanced walking, cycling and bus infrastructure on this key access corridor in Galway City, which will enable and deliver efficient, safe, and integrated sustainable transport movement along the corridor. The objectives of the works, applicable to the Traffic and Transport assessment of the Proposed Scheme, are to:

- Enhance the capacity and potential of the public transport system by improving bus speeds, reliability and punctuality through the provision of bus priority measures and bus lanes to provide priority to bus movement over general traffic movements;
- Enhance the potential for cycling by providing a safe network for cycling;

- Support the delivery of an efficient, low carbon and climate resilient public transport service, which supports the achievement of Ireland's emission reduction targets;
- Enable compact growth, regeneration opportunities and more effective use of land in Galway, for present and future generations, through the provision of safe and efficient sustainable transport networks;
- Improve accessibility to jobs, education and other social and economic opportunities through the provision of improved sustainable; connectivity and integration with other public transport services; and
- Ensure that the public realm is carefully considered in the design; and development of the transport infrastructure and seek to enhance key urban focal points where appropriate and feasible.

The planning and design of the Proposed Scheme has been guided by these aims and objectives, with the need for the Proposed Scheme described in detail in Chapter 4 (Proposed Scheme Description) of this EIAR.

### **People Movement**

The aims and objectives outlined above are underpinned by the central concept and design philosophy of 'People Movement'. People Movement is the concept of the optimisation of roadway space and/or the prioritisation of the movement of people over the movement of vehicles along the route and through the junctions along the Proposed Scheme. The aim being the reduction of journey times for higher person carrying capacity modes (bus, walking and cycling), which in turn provides significant efficiencies and benefits to users of the transport network and the environment.

A typical double-deck bus takes up the same road space as three standard cars but typically carries 50-100 times the number of passengers. On average, a typical double-deck bus carries approximately 60-70 passengers making the bus typically 20 times more efficient in providing people movement capacity within the equivalent spatial area of three cars. These efficiency gains can provide a significant reduction in road network congestion where the equivalent car capacity would require 50 or more vehicles based on average occupancy levels.

Consequently, by prioritising the movement of bus over cars, significantly more people can be transported along the limited road space available. Similarly, cyclists and pedestrians require significantly less roadway space than general traffic users to move safely and efficiently along the route. Making space for improved pedestrian infrastructure can significantly benefit this sustainable mode and encourage greater use of this mode.

With regards to this traffic and transport chapter, People Movement is the key design philosophy and the Proposed Scheme impacts (both Positive and Negative) have been assessed on that basis.

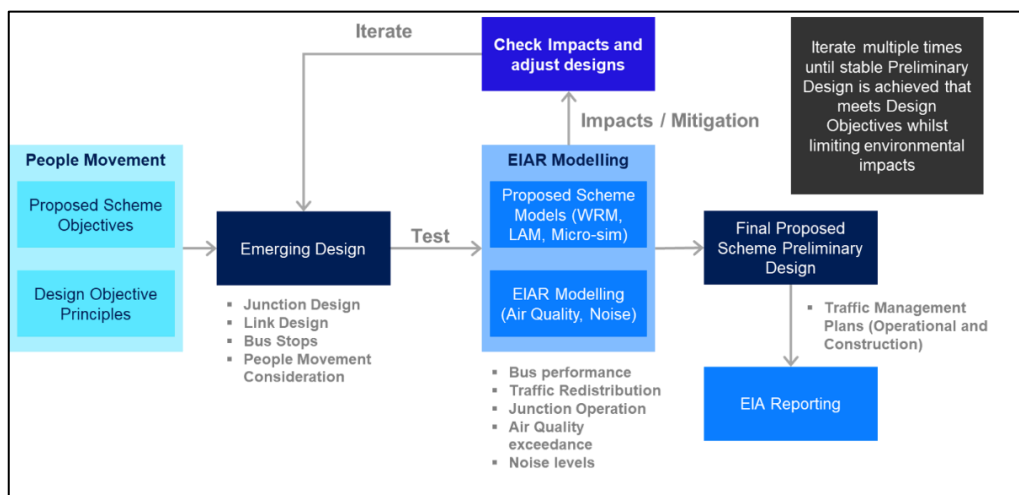
### **6.1.2 Iterative Design Process and Mitigation by Design**

Throughout the development of the Preliminary Design for the Proposed Scheme there have been various design stages undertaken based on a common understanding of the maturity of the design at a given point in time. Part of this

process was to ensure the environmental and transport impacts were mitigated to the greatest extent possible during design development and to enable information on potential impacts to be provided from the various Environmental Impact Assessment (EIA) and Transport Impact Assessment (TIA) disciplines back into the design process for consideration and inclusion in the proposals. This resulted in mitigation being embedded into the design process by the consideration of potential environmental impacts throughout the Preliminary Design development. A multi-tiered modelling framework, as described in Appendix 6.1 (Transport Modelling Report) in Volume 4 of this EIAR, was developed to support this iterative design process,

Diagram 6.1 below illustrates this process whereby the emerging design for the Proposed Scheme has been tested using the transport models as part the iteration. The transport models provided an understanding of the benefits and impacts of the proposals (mode share changes, traffic redistribution, bus performance etc.) with traffic flow information also informing other environmental disciplines (such as Air Quality, Noise and Vibration, Climate etc.) which in turn allowed feedback of potential impacts into the design process to allow for changes and in turn mitigation to be embedded in the designs. The design process included physical changes and adjustments to traffic signals including changes to staging, phasing and green times to limit traffic displacement to the greatest extent possible as well as traffic management arrangements and/or turn bans where appropriate. This ensured that any displaced traffic was kept to a minimum and was maintained on higher capacity roads, whilst continuing to meet scheme objectives along the Proposed Scheme.

The iterative process concluded when the design team were satisfied that the Proposed Scheme met its required objectives (maximising the people movement capacity of the Proposed Scheme) and that the environmental impacts and level of residual impacts were reduced to a minimum.



**Diagram 6.1: Proposed Scheme Impact Assessment and Design Interaction**

The impacts presented in this chapter are based on the final Preliminary Design for the Proposed Scheme which includes the embedded mitigation developed as part of the iterative design process described above.

## 6.2 Guidelines

This chapter outlines the relevant transport guidelines applicable to the Proposed Scheme. Alignment of the Proposed Scheme with current guidance at all levels is an important determining factor in planning decisions. The following sections demonstrate that the Proposed Scheme has this alignment and thus is compliant with transport and planning guidance.

Details of the national, regional and local transport policy application to the Proposed Scheme are outlined in Chapter 2 (Need for the Proposed Scheme).

### 6.2.1.1 Traffic and Transport Assessment Guidelines

To determine the traffic and transport impact that the Proposed Scheme has in terms of an increase in general traffic flows on the direct and indirect study areas, a robust assessment has been undertaken, with reference to Transport Infrastructure Ireland's (TII) most recent Traffic and Transport Assessment Guidelines (TII 2014).

This document is considered best practice guidance for the assessment of transport impacts related to changes in traffic flows due to proposed developments and is an appropriate means of assessing the impact of general traffic trip redistribution on the surrounding road network.

According to Section 1.3 of the Traffic and Transport Assessment Guidelines (TII 2014):

*'a Traffic and Transport Assessment is a comprehensive review of all the potential transport impacts of a proposed development or re-development, with an agreed plan to mitigate any adverse consequences'.*

The guidelines aim to provide a framework to promote an integrated approach to development, ensuring that proposals promote more efficient use of investment in transportation infrastructure which reduces travel demand and promotes road safety and sustainable travel. The document is considered best practice guidance for the assessment of transport impacts related to changes in traffic flows due to proposed developments and is generally an appropriate means of assessing the traffic and transport impact of additional trips on the surrounding road network.

### 6.2.1.2 Design Manual for Urban Roads and Streets

The Design Manual for Urban Roads and Streets (DMURS) (DTTS 2019) promotes an integrated street design approach within urban areas (i.e. cities, towns, and villages) focused on:

- Influence by the type of place in which the street is located; and
- Balancing the needs of all users.

A further aim of this Manual is to put well designed streets at the heart of sustainable communities to promote access by walking, cycling and public transport.

The principles, approaches and standards set out in this Manual apply to the design of all urban roads and streets (with a speed limit of 60 km/h or less), except: (a) Motorways (b) In exceptional circumstances, certain urban roads and streets with the written consent of Sanctioning Authorities.

The Manual is underpinned by a holistic design-led approach, predicated on a collaborative and consultative design process. There is specific recognition of the importance to create secure and connected places that work for all, characterised by creating new and existing streets as attractive places with high priority afforded to pedestrians and cyclists while balancing the need for appropriate vehicular access and movement.

To achieve a more place-based/integrated approach to road and street design, the following four core principles are promoted within the manual:

- **Connected Networks** - To support the creation of integrated street networks which promote higher levels of permeability and legibility for all users, and with emphasis on more sustainable forms of transport;
- **Multi-Functional Streets** - The promotion of multi-functional, place-based streets that balance the needs of all users within a self-regulating environment;
- **Pedestrian Focus** - The quality of the street is measured by the quality of the environment for the user hierarchy pedestrians considered first; and
- **Multi-disciplinary Approach** - Greater communication and co-operation between design professionals through the promotion of a plan-led, multidisciplinary approach to design.

### **6.2.1.3 Traffic Signs Manual (Chapter 8: Temporary Traffic Measures and Signs for Roadworks)**

The Traffic Signs Manual (DTTS, 2019) promotes safety, health and welfare for road workers and users. The manual details the traffic signs which may be used on roads in Ireland, including sign layout, sign symbols, the circumstances in which they are required, and the associated rules for positioning them.

Of direct relevance to the assessment of traffic and transport impacts, Chapter 7 - Road Markings outlines the function of road markings, the legalities of road markings and the application of road markings on roads in Ireland. Chapter 8 - Temporary Traffic Measures and Signs for Roadworks outlines the application of temporary traffic management (TTM) at work sites on public roads; this chapter offers instructions and guidance to road users in relation to the use of TTM and outlines the signs to be used at roadworks.

### **6.2.1.4 Traffic Management Guidelines**

The Traffic Management Guidelines (DOT, 2002) provides guidance on a number of issues including, but not limited to, traffic planning, traffic calming and management, incorporation of speed restraint measures and the provision of suitably designed facilities for public transport users and vulnerable road users.

A core component of the Guidelines is rooted in decision making and balancing priorities, including those that are in conflict with one another. The Guidelines



identifies common objectives to be addressed when managing the transport network:

- Environmental improvement;
- Congestion relief;
- Capacity improvement;
- Safety;
- Accessibility;
- Economic vitality; and
- Politics.

The Proposed Scheme has been designed and assessed with reference to the set of guidance documents listed throughout this section.

## 6.3 Methodology

### 6.3.1 Study Area

The direct and indirect impacts have been considered with reference to the following study area extents (as shown in Diagram 6.2):

- Direct Study Area – The Proposed Scheme (i.e. the transport network within the red line boundary); and
- Indirect Study Area – This is the area of influence the Proposed Scheme has on changing traffic volumes above a defined threshold with reference to TII's Traffic and Transport Assessment Guidelines (May 2014)



**Diagram 6.2: Study Area**

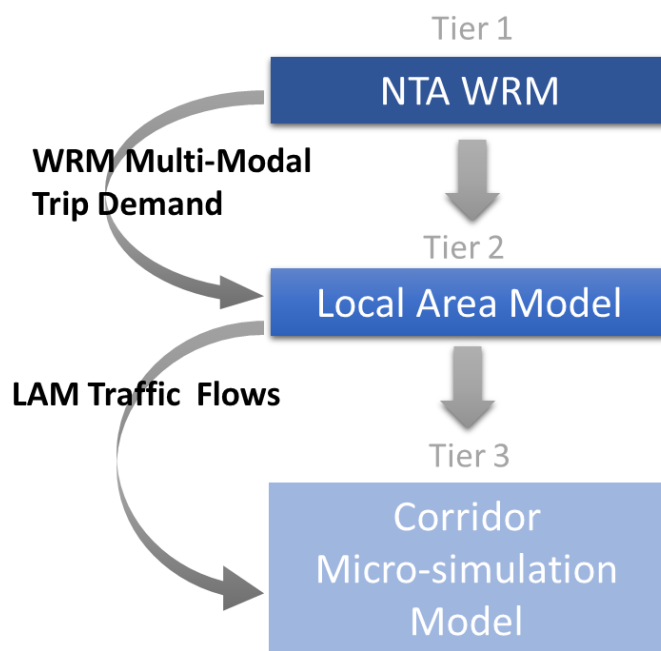
### 6.3.2 Proposed Scheme Impact Assessment Modelling Tools

This section summarises the various transport modelling tools that have been developed and used to inform the preparation of this chapter of the EIAR. The purpose of each tool has been detailed and its use for each element of the Proposed Scheme has been defined.

The modelling tools that have been developed do not work in isolation but instead work as a combined modelling system driven by the NTA's Western Regional Model (WRM) as the primary source for multi-model demand and trip growth. Demand information is then passed to the cordoned Local Area Model (LAM) and a micro-simulation model which have been refined and calibrated to represent local conditions to a greater level of detail than that contained in the WRM.

In summary, there are three tiers of transport modelling which have been used to assess the Proposed Scheme (see Diagram 6.3):

- **Tier 1 (Strategic Level):** The NTA's Western Regional Model (WRM) is the primary tool which has been used to undertake the strategic modelling of the Proposed Scheme and has provided the strategic multi-modal demand outputs for the proposed forecast years;
- **Tier 2 (Local Level):** The LAM has been developed to provide a more detailed understanding of traffic movement at a local level. The LAM is a subset model created from the WRM and is a more refined road network model used to provide consistent road-based outputs to inform this chapter. This includes information such as road network speed data, traffic redistribution impacts the Operational Phase. The LAM also provides traffic flow information for the micro-simulation model; and
- **Tier 3 (Corridor Level):** A micro-simulation model of the full 'end to end' corridor has been developed for the Proposed Scheme. The primary role of the micro-simulation model has been to support the ongoing development of junction designs and traffic signal control strategies and to provide bus journey time information for reporting purposes.



**Diagram 6.3: Proposed Scheme Modelling Hierarchy**

Further detail on the transport model development process, the traffic data inputs used, the calibration, validation and forecast model development for the suite of transport models can be found in Appendix 6.1 (Transport Modelling Report) in Volume 4 of this EIAR.

### 6.3.3 Appraisal Method for the Assessment of Impacts

#### 6.3.3.1 Overview

This section details the methodologies that have been used to assess the potential traffic and transport impacts of the Proposed Scheme during both the Construction and Operational Phases. The assessments have been carried out as follows:

- Outlining the Assessment Topics;
- Determining the Predicted Magnitude of Impacts;
- Defining the Sensitivity of the Environment; and
- Determining the Significance of Effects.

The above approach has been carried out in accordance with procedures described in the Guidelines to be Contained in EIARs (EPA 2022) and methodologies outlined in the 'Traffic and Transport Assessment Guidelines (TII 2014), using a Multi-Modal Level of Service (LoS) approach.

#### 6.3.3.2 Outlining Assessment of Topics

The traffic and transportation impacts have been broken down into the following assessment topics for both the Construction and Operational Phases:

The qualitative assessments:

- Pedestrian Infrastructure: The changes to the quality of the pedestrian infrastructure as a result of the Proposed Scheme;
- Cycling Infrastructure: The changes to the quality of the cycling infrastructure as a result of the Proposed Scheme;
- Bus Infrastructure: The changes to the quality of the bus infrastructure as a result of the Proposed Scheme; and
- Parking / Loading: The changes to the availability of parking and loading as a result of the Proposed Scheme.

The quantitative assessments, which have been undertaken using the Proposed Scheme modelling tools described previously:

- People Movement: An assessment has been carried out to determine the potential impact that the Proposed Scheme will have on the projected volume of people (by mode – Walking, Cycling, Bus and General Traffic) moving along the Proposed Scheme during the Operational Phase only;
- Bus Performance Indicators: The changes to the projected journey times and reliability for buses as a result of the Proposed Scheme; and
- General Traffic: The direct and indirect impacts on general traffic using the Proposed Scheme and surrounding road network.

### 6.3.3.3 Determining the Predicted Magnitude of Impacts

The methodology used for determining the predicted magnitude of impacts has considered the traffic and transport conditions of the environment before and after the Proposed Scheme is in place.

The impact assessments have been carried out using the following scenarios:

- ‘Do Nothing’ – The ‘Do Nothing’ scenario represents the current baseline traffic and transport conditions study area without the Proposed Scheme in place and other GTS projects, outlined in Section 6.2. This scenario forms the reference case by which to compare the Proposed Scheme (‘Do Something’) for the qualitative assessments only.
- ‘Do Minimum’ – The ‘Do Minimum’ scenario (Opening Year 2023, Design Year 2038) represents the likely traffic and transport conditions of the study area, including for any transportation schemes which have taken place, been approved or are planned for implementation as part of the GTS, without the Proposed Scheme in place. This scenario forms the reference case by which to compare the Proposed Scheme (‘Do Something’) for the quantitative assessments.
- ‘Do Something’ – The ‘Do Something’ scenario represents the likely traffic and transport conditions of the study area including for any transportation schemes which have taken place, been approved or are planned for implementation, with the Proposed Scheme in place (i.e. the Do Minimum scenario with the addition of the Proposed Scheme). The Do Something scenario has been broken into two phases:

- Construction Phase (Construction Year 2023) – This phase represents the single worst-case period which will occur during the construction of the Proposed Scheme;
- Operational Phase (Opening Year 2023, Design Year 2038) – This phase represents when the Proposed Scheme is fully operational.
  - Opening Year assessment is based on the same network as the base year plus other committed schemes;
  - Design year assessment is based in the context of the full implementation of the GTS network re-design (including the Galway City Ring Road) in both the Do Minimum and Do Something scenarios, with the Proposed Scheme servicing the new GTS services.

The changes between the Do Minimum and Do Something scenarios have been presented in either a positive, negative or neutral Quality of Impact as a result of the Proposed Scheme, depending on the assessment topic. A high, medium, low or negligible rating has been applied to each impact assessment to determine the Magnitude of Impact.

### **Level of Service Impact Assessment**

To outline the changes in conditions between the Do Minimum and Do Something scenarios a Level of Service (LoS) approach has been developed for the impact assessments, where appropriate. This concept allows a straightforward comparison of two differing scenarios using a series of metrics specifically developed for this purpose.

The concept of LoS was originally developed in the United States' Transportation Research Board's (TRB) Highway Capacity Manual (HCM, 2000). Under this concept, potential values for a performance measure are divided into six ranges, with each range assigned a letter grade ranging from "A" (highest quality) to "F" (lowest quality). LoS concepts are applied universally throughout the world, and have their basis in Highway Capacity Manual and, particularly for bus network assessments, in the Transit Capacity and Quality of Service Manual (TRB 2003).

LoS concepts are not target based or rigid in their application and bespoke versions are developed to suit the particular receiving environment of the scheme under consideration or the particular user problems that the scheme and/or project is seeking to address. A mix of quantitative and qualitative indicators can be used and summarised as a LoS. The process enables integrated planning and decision making across all modes rather than any specific mode which can create a bias in the assessment process (e.g. focusing on Car Volume over Capacity (V/C)). It is intended that the LoS framework for the Proposed Scheme will provide an easily understandable summary of the impact of each assessment topic, where applied.

#### **6.3.3.4 Defining the Sensitivity of the Environment**

The impact assessment sensitivities established for the Traffic and Transport Chapter have been informed using the following data sources:

- OpenStreet / Google Maps – to identify community facilities, and open spaces within 50m of the Proposed Scheme; and

- The LAM (NavStreets) and Google Traffic data – to identify the capability of roads to cater for traffic volumes and existing congested junctions / road links.

The content of Table 6.3 outlines the sets of sensitivity ratings that have been applied to the impact assessments, depending on whether the assessment location is directly within the corridor, or indirectly associated with the corridor.

**Table 6.3: Traffic & Transport Sensitives**

Assessment Area	Sensitivity			
	High	Medium	Low	Negligible
Proposed Scheme Sensitives	Sections of the Proposed Scheme that are in the vicinity of community facilities such as schools or colleges, neighbourhood centres; AND currently experiencing congestion for pedestrians, cyclists, buses or general traffic	Sections of the Proposed Scheme that currently experience congestion for pedestrians, cyclists, buses or general traffic that have not been identified as high sensitivity	Sections of the Proposed Scheme near public open space, nature conservation areas, residential areas that have not been identified as medium or high sensitivity	Areas of low sensitivity to traffic flows i.e. isolated sites or areas with a high standard road network
Indirect Associated Area	Category 5: Low capacity, low operating speeds. Local and minor roads.	Category 4: High capacity, moderate operating speeds. Roads connecting between neighbourhoods.	Category 3 roads: High capacity, high operating speeds (less than Category 2). Roads connecting Category 2 roads.	Category 1: High capacity, high operating speeds. Roads connecting between major cities or urban areas; and

### 6.3.3.5 Determining the Significance of Effects

The Significance of Effects rating has been established using Table 6.4, which was derived from Diagram 3.5 of the EPA Guidelines on EIARs. This enables the sensitivities and magnitudes of impact to determine the significance of a particular effect. For example, a section of a Proposed Scheme with a High sensitivity and a Long-term, Medium, Positive impact would have a potential ‘Positive, Very Significant and Permanent’ effect. A section of a Proposed Scheme with a low sensitivity and a short-term low negative impact would have a potential ‘Negative, Slight and Temporary’ effect.

**Table 6.4: Significance of Effects Matrix for Traffic and Transport Chapter**

Description Impact	Sensitivity of Existing Environment			
	High	Medium	Low	Negligible
<b>High</b>	Profound	Very Significant	Moderate	Slight
<b>Medium</b>	Very Significant	Significant	Moderate	Not Significant
<b>Low</b>	Moderate	Moderate	Slight	Not Significant
<b>Negligible</b>	Not Significant	Not Significant	Not Significant	Imperceptible

The definitions for the Significance of Effects ratings for the Proposed Scheme ranging from Imperceptible to Profound are outlined in Table 6.5.

**Table 6.5: EIAR Impact Significances**

Significance of Effects (EPA)	Typical Criteria Descriptors
Imperceptible	An effect capable of measurement but without significant consequences.
Not significant	An effect which causes noticeable changes in the character of the environment but without significant consequences
Slight	An effect which causes noticeable changes in the character of the environment without affecting its sensitivities.
Moderate	An effect that alters the character of the environment in a manner that is consistent with existing and emerging baseline trends.
Significant	An effect which, by its character, magnitude, duration or intensity alters a sensitive aspect of the environment.
Very Significant	An effect which, by its character, magnitude, duration or intensity significantly alters most of a sensitive aspect of the environment.
Profound	An effect which obliterates sensitive characteristics

Potential mitigation and monitoring measures have been considered for assessments that result in a negative effect and significant or higher (i.e. significant, very significant or profound).

### 6.3.4 Data Collection and Collation

The assessment of the Traffic & Transport impacts of the proposed scheme has two distinct parts namely, qualitative methods which consider the physical



changes to transport networks and quantitative methods which are based upon traffic modelling. The following sections describe the data collection and collation for each method of assessment.

### 6.3.4.1 Qualitative Assessment Data Collection

#### Site Surveys

A walkover of the route of the Proposed Scheme was undertaken and photographs were used to record locations of particular importance. This ensures an up to date record of the existing environment was used to complete the qualitative assessment. The surveys focussed on the following aspects which are relevant to the assessment:

- Provision for the movement of pedestrians, cyclists and vehicles;
- Location of, and facilities at, bus stops; and
- Existing parking and loading facilities.

These surveys were supplemented by specially commissioned aerial orthophotography along the full length of the Proposed Scheme.

#### Mapping Data

Two sources of mapping data have been used to inform the analysis, NavStreets and OpenStreet Map.

NavStreets is a street-level GIS dataset which covers the Republic of Ireland, including the proposed scheme area. Two sets of data from this dataset have been used to inform the EIAR:

- Road Network: Functional Class of each road link in the road network, which is a road type indicator, reflecting traffic speed and volume, as well as the importance and connectivity of the road. The Functional Class information has been used to help inform the metrics for identifying the sensitivities of roads in the indirect study area; and
- Points of Interest: NavStreets contains information on a wide range of “points of Interest”. This has been referred to when identifying sensitive community receptors, such as schools, healthcare facilities, places of worship, retail clusters, etc, when determining how sensitive a particular location is to changes in terms of traffic and transport facilities.

OSM and NavStreets have been supplemented by OpenStreet Map which is an open-source database of geographic data (i.e. Points of Interest, Land Use and Places of Worship). This has been used to further identify community facilities and open spaces in proximity to the Proposed Scheme.

### 6.3.4.2 Quantitative Assessment Data Collection

This section discusses the data collection undertaken to inform the quantitative assessment metrics set out in Section 6.3.4.2. Further detail can be found in Appendix 6.1 (Transport Modelling Report) in Volume 4 of this EIAR.

## **Existing Data Review (Gap Analysis)**

A review of existing traffic survey data available for the area of interest was undertaken from the following sources:

- Galway City Council: A mixture of Automatic Traffic Counts (ATC) and Junction Turning Counts (JTC) from previous studies covering a range of years.

Information on bus passenger volumes was already available and included in the modelling process as part of the WRM base model calibration and validation as well as ticketing data.

## **Junction Turning Counts (JTCs)**

The JTCs are 24-hour counts broken down into 15-minute segments over a full day. All main junctions along the Proposed Scheme have been included and provide information on the volume, and types of vehicles, making turning movements at each location. This data is utilised within the models to ensure that the flow of vehicles through the main junctions on the network is being represented accurately.

## **Automatic Traffic Counts (ATCs)**

The ATC data provides information on:

- The daily and weekly profile of traffic along the Proposed Scheme; and
- Busiest time periods and locations of highest traffic demand on the network.

The ATCs were taken for an entire week. A summary of the collected data can be found in Appendix 6.1 (Transport Modelling Report) in Volume 4 of this EIA.

## **Road and Bus Journey Time Data**

### **Bus Journey Time Data**

Bus Journey time data for the Proposed Scheme was provided by the National Transport Authority (NTA) from the Automatic Vehicle Location (AVL) dataset used to monitor bus performance. The data provides information on bus travel time and dwell times at existing bus stops and has been used to inform the development of the transport models used to assess the impacts of the Proposed Scheme.

### **TomTom Road Journey Time Data**

Road Journey time data for the Proposed Scheme models has been sourced from TomTom, who calculate journey times using vehicle position data from GPS-enabled devices and provide this on a commercial basis to a number of different users. The NTA purchased a license to access the anonymised Custom Area Analysis dataset through the TomTom TrafficStats portal. The NTA has an agreement with TomTom to provide travel time information covering six areas of Ireland and for certain categories of road.

The data is provided in the form of a GIS shapefile and accompanying travel time database file. The shapefile contains topographical details for each road segment, which is linked to the travel time database via a unique link ID. The database file then contains average and median travel time, average and median speed, the standard deviation for speed, the number of observations and percentile speeds ranging from 5 to 95 for each link.

### **TomTom Data Processing**

In order to compare the journey times of specific links and routes between the TomTom data and the road assignment models, the two datasets were linked. After importing both the road assignment model and TomTom networks into the GIS environment, ensuring both datasets are in the same coordinate system, the selected routes were then linked using a spatial join functionality.

Before applying the data to the models, it was checked to ensure that it was fit for purpose. The review included checks of the number of observations that form the TomTom average and median times and checks of travel times against Google Maps travel times.

The TomTom Custom Area Analysis dataset was processed to provide observed journey times against which the strategic and micro-simulation models could be validated along the Proposed Scheme route.

### **TomTom Data Application**

The processed journey time data was used to validate the LAM and the micro-simulation models at an end-to-end travel time level, with intermediate segment travel times used to inform the calibration of both models. Further information about the journey time validation process can be found in Appendix 6.1 (Transport Modelling Report) in Volume 4 of this EIAR.

## **6.4 Baseline Environment**

### **6.4.1 Overview**

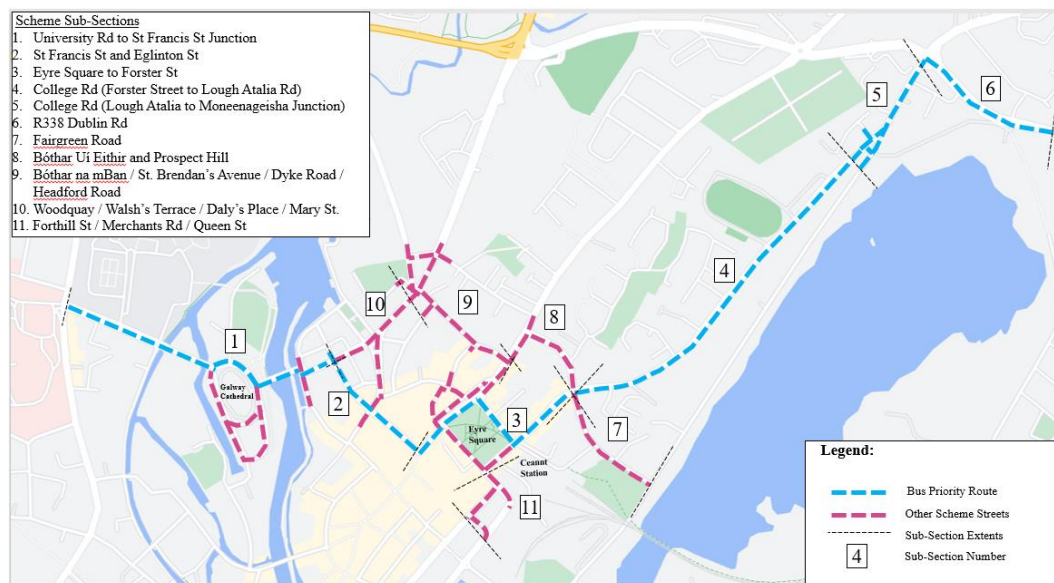
This section provides an overview of the existing traffic and transport conditions in the area surrounding the scheme and is informed by desk-based research. These baseline conditions have been identified so the context of the Proposed Scheme and its potential impacts on the local highway and transport network can be fully understood.

The scheme has been divided into 11 sections, outlined in Diagram 6.4: below. The extent of each section is described below:

- Section 1: University Road to St. Francis Street Junction;
- Section 2: St. Francis Street to Eglinton Street;
- Section 3: Eyre Square to Forster Street;
- Section 4: College Road (Forster Street to Lough Atalia Road);
- Section 5: College Road (Lough Atalia Road to Moneenageisha Junction);
- Section 6: R338 Dublin Road;

- Section 7: Fairgreen Road;
- Section 8: Bóthar Uí Eithir and Prospect Hill;
- Section 9: Bóthar na mBan/ St. Brendan's Avenue / Dyke Road/ Headford Road;
- Section 10: Woodquay / Walsh's Terrace / Daly's Place / Mary Street; and
- Section 11: Forthill Street / Merchants Road / Queen Street.

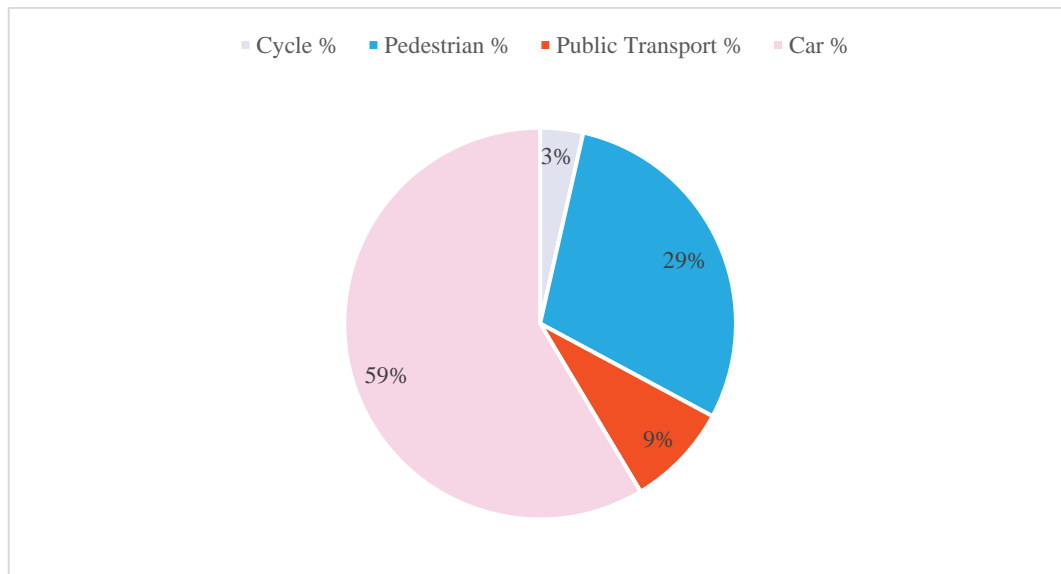
It is of note that the bus frequency data is based on services from the two main operators: City Direct and Bus Eireann. Whilst other operators do service the study area, these services are minor in comparison to the two main operators.



**Diagram 6.4: Sections of Proposed Scheme**

### 6.4.1.1 Mode Share

The existing average mode share across a 24 hour period along the whole corridor is shown in Diagram 6 below. This data has been extracted from the WRM model, for a 2019 base scenario.



**Diagram 6.5: Existing Mode Share**

The diagram demonstrates that car is the most common form of transport at 59% of the mode share. Pedestrian is the second most common form of transport at 29%. Cyclists only make up 3% of the total mode share.

#### 6.4.1.2 Existing Junction Capacity

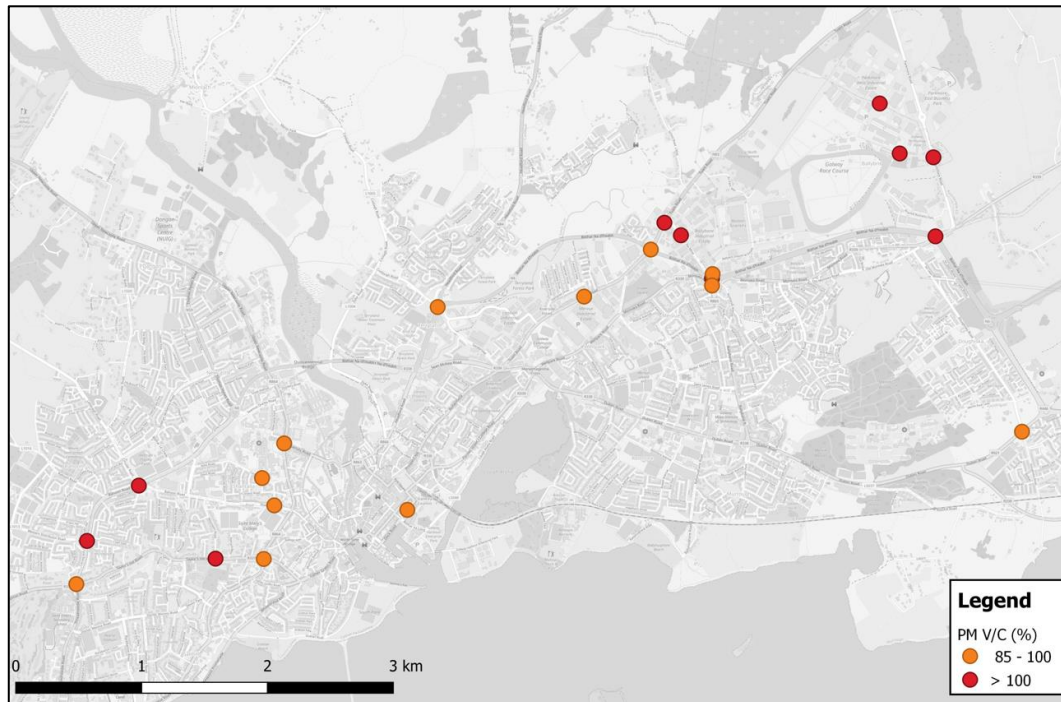
The average capacity at key junctions during the AM peak is shown in Diagram 6.6 below. It is noted that a number of junctions are located outside of the direct study area, however, these junctions may be impacted through the addition of the Proposed Scheme, due to the redistribution of general traffic. The diagrams only show junctions operating with above an 85% volume over capacity (V/C) ratio.



**Diagram 6.6: Junction Capacity AM Peak**

Diagram 6.7 demonstrates that, in total, seven junctions are currently operating over theoretical capacity during the AM Peak Hour ( $>100\%$  V/C ratio). 10 junctions are operating with a V/C ratio of between 85% and 100%.

The average capacity at key junctions during the PM peak is shown in Diagram 6.7: below.



**Diagram 6.7: Junction Capacity PM Peak**

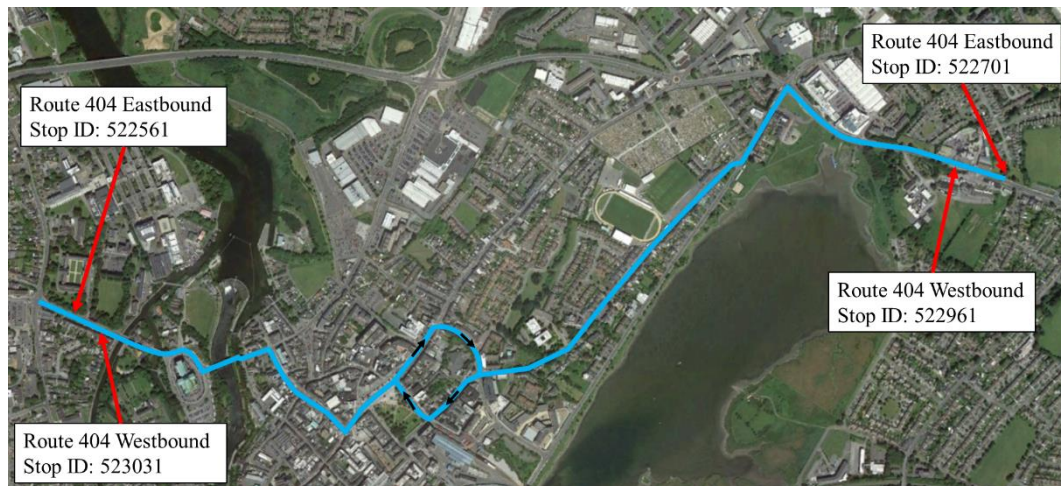
Diagram 6.7: demonstrates that a total nine junctions are currently operating over theoretical capacity during the PM Peak Hour ( $>100\%$  V/C ratio). 12 junctions are operating between 85% and 100% theoretical capacity.

### 6.4.1.3 Automatic Vehicle Location Journey Times

Automatic Vehicle Location (AVL) systems are required for service control of buses, communications with drivers, and the current generation of real-time information for on-street displays, websites, and mobile apps. The information recorded by AVL is also central to the tracking of operational performance by following metrics on routes such as punctuality (journey times) and stops serviced. Therefore, by taking a sample of this AVL dataset, a picture can be formed of the average journey times for various services including their reliability.

A sample was taken for the 404 bus route in the month of November in 2019 between two stops which correspond to the start and end points of the proposed scheme as shown in Diagram 6.8 (to the west on University Road, near the junction with Newcastle Road and to the east on the Dublin Road via the Lakeview School).





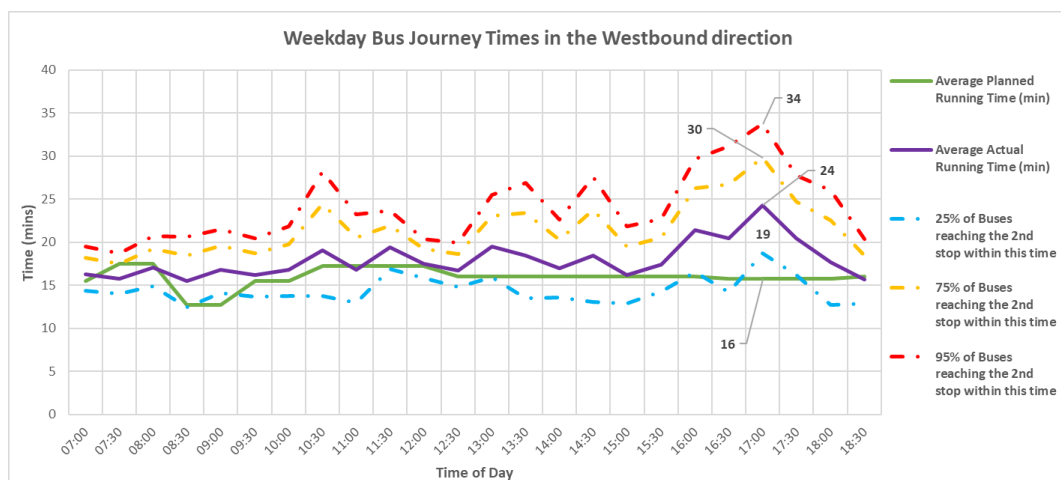
**Diagram 6.8: 404 Bus Route covered by AVL Data**

The data was analysed for the average weekday in November 2019 for both eastbound and westbound services and a profile across the 7:00 – 19:00 period was generated. Table 6.6 and Diagram 6.9 show the journey times in the westbound direction.

**Table 6.6: AVL Journey Time Data – Average Weekday (Westbound Services)**

Time	Average Planned Running Time (min)	Average Actual Running Time (min)	25% of Buses reaching the 2nd stop within this time	75% of Buses reaching the 2nd stop within this time	95% of Buses reaching the 2nd stop within this time
07:00	16	16	14	18	20
07:30	18	16	14	18	19
08:00	18	17	15	19	21
08:30	13	15	12	18	21
09:00	13	17	14	20	22
09:30	16	16	14	19	20
10:00	16	17	14	20	22
10:30	17	19	14	24	28
11:00	17	17	13	21	23
11:30	17	19	17	22	24
12:00	17	18	16	19	20
12:30	16	17	15	19	20
13:00	16	20	16	23	26
13:30	16	18	14	23	27
14:00	16	17	14	20	23
14:30	16	18	13	24	28
15:00	16	16	13	19	22

Time	Average Planned Running Time (min)	Average Actual Running Time (min)	25% of Buses reaching the 2nd stop within this time	75% of Buses reaching the 2nd stop within this time	95% of Buses reaching the 2nd stop within this time
15:30	16	17	14	21	23
16:00	16	21	17	26	30
16:30	16	20	14	27	31
17:00	16	24	19	30	34
17:30	16	20	16	25	28
18:00	16	18	13	23	26
18:30	16	16	13	18	20



**Diagram 6.9: Average Weekday Bus Journey Time Profile (Westbound Services)**

For the westbound services, the AVL data shows a high degree of variability in journey times across the entire day with the worst periods occurring around 10:30 A.M. and from midday onwards with the peak occurring in the evening peak hour around 17:00 P.M. At this time, we see the average running time is expected to be 16 minutes between the two stops (on the Dublin Road and on University Road) but the average is actually 24 minutes (a 54% increase), with 75% of buses reaching the 2<sup>nd</sup> stop within 30 minutes (89% increase) and 95% of buses reaching the 2<sup>nd</sup> stop within 34 minutes (114% increase).

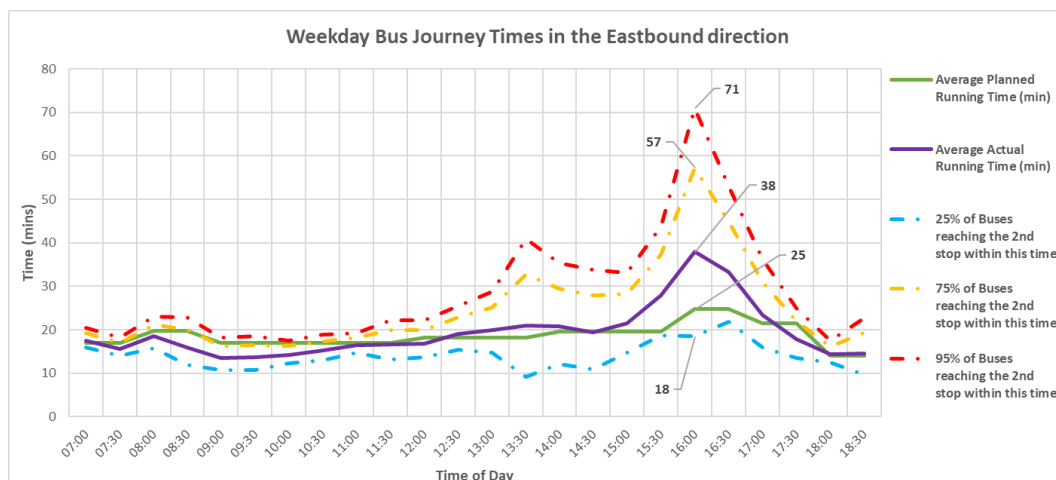
Table 6.7 and Diagram 6.10 show the journey times in the eastbound direction.

**Table 6.7: AVL Journey Time Data – Average Weekday (Eastbound Services)**

Time	Average Planned Running Time (min)	Average Actual Running Time (min)	25% of Buses reaching the 2nd stop within this time	75% of Buses reaching the 2nd stop within this time	95% of Buses reaching the 2nd stop within this time
07:00	17	18	16	19	20
07:30	17	16	14	17	18
08:00	20	18	16	21	23



Time	Average Planned Running Time (min)	Average Actual Running Time (min)	25% of Buses reaching the 2nd stop within this time	75% of Buses reaching the 2nd stop within this time	95% of Buses reaching the 2nd stop within this time
08:30	20	16	12	20	23
09:00	17	14	11	16	18
09:30	17	14	11	16	19
10:00	17	14	12	16	18
10:30	17	15	13	17	19
11:00	17	16	15	18	19
11:30	17	17	13	20	22
12:00	18	17	14	20	22
12:30	18	19	15	23	26
13:00	18	20	15	25	29
13:30	18	21	9	33	41
14:00	20	21	12	29	35
14:30	20	19	11	28	34
15:00	20	22	15	28	33
15:30	20	28	19	37	44
16:00	25	38	18	57	71
16:30	25	33	22	45	53
17:00	22	23	16	31	36
17:30	22	18	14	22	25
18:00	14	14	12	16	17
18:30	14	15	10	19	23



**Diagram 6.10: Average Weekday Bus Journey Time Profile (Eastbound Services)**

For the eastbound services, the AVL data shows a high degree of variability in journey times from midday onwards with the peak occurring in the evening around 16:00 P.M. At this time, we see the average running time is expected to be 25 minutes between the two stops (on University Road and on the Dublin Road) but the average is actually 38 minutes (a 53% increase), with 75% of buses reaching the 2<sup>nd</sup> stop within 57 minutes (131% increase) and 95% of buses reaching the 2<sup>nd</sup> stop within 71 minutes (187% increase).

## **6.4.2 Section 1 – University Road to St Francis Street Junction**

This Section outlines the baseline environment for walking, cycling, bus services, general traffic and parking / loading facilities along Section 1 of the Proposed Scheme, between University Road and the St Francis Street.

Section 1 comprises University Road, Gaol Road, Salmon Weir Bridge, St. Vincent's Avenue, Newtownsmith and Waterside.

### **6.4.2.1 Pedestrian Infrastructure**

There are footpaths and street lighting along both sides of the road throughout Section 1 of the Proposed Scheme. The footpaths are all a minimum of 1.8m wide.

There are several controlled pedestrian crossings along Section 1 which benefit from tactile paving and dropped kerbs. Controlled crossings can be found at the following locations:

- Signalised pedestrian crossings on all four arms of the University Road / Newcastle Road Junction;
- Signalised pedestrian crossing on University Road, approximately 46m west from University Road / Canal Road Upper junction; and
- A signalised pedestrian crossing on the southern arm at the University Road / Gaol Road Junction.

Uncontrolled crossings across priority junctions at side roads benefit from dropped kerbs.

Further details of the baseline pedestrian facilities (i.e. routing, directness, accessibility, crossing and footpath widths) at the junctions along Section 1 of the Proposed Scheme are included in Appendix 6.2 (Impact Assessments) in Volume 4 of this EIAR.

### **6.4.2.2 Cycling Infrastructure**

There is no on or off-road cycle infrastructure along Section 1 of the Proposed Scheme. Cyclists are expected to share the traffic lanes in both directions.

There are stands for TFI cycle hire facility at the following locations:

- 32 stands at University Hospital Galway, immediately to the west of the Newcastle Road / University Road junction;
- 20 stands at (Galway) Cathedral on University Road, 50m to the northwest of the University Road (Salmon Weir Bridge) / Gaol Road junction; and
- 20 stands at Gaol Road, immediately to the east of the Nun's Island / Gaol Road junction.

### 6.4.2.3 Bus Infrastructure

#### Bus Priority Measures

There are no bus lanes along Section 1 of the Proposed Scheme.

#### Bus Stop Facilities

There are currently three bus stops along Section 1 of the Proposed Scheme. The westbound bus stop is as follows:

- Stop 523031 on University Road, at the University Road/NUI Galway junction - flag and pole stop with real time information

The eastbound bus stops are as follows:

- Stop 522561 on University Road, at the University Road/NUI Galway junction - provides a shelter and timetable information
- Stop 523181 on University Road, to the north of Galway Cathedral – flag and pole stop with timetable information

The main bus services which operate along Section 1 are outlined in Table 6.8.

**Table 6.8: Section 1 – Bus Service Frequency**

Service	Route	Typical Service Frequency	
		Weekday	Weekend
402	Shangort Road – Knocknacarra – Taylors Hill Road – University Road – Eyre Square – Dublin Road (G Hotel) – Merlin Park Terminus	30 mins	30 mins – 1 hour
404	Oranmore – Dublin Road – College Road – Eyre Square – University Road – Thomas Hynes Road – Westside Shopping Centre	30 mins	30 mins
405	Gort Na Bro (B&Q) – Seamus Quirke Road – University Road – Eyre Square – Tuam Road – Ballybane Road – Ballybane Industrial Estate	20 mins	20 mins – 30 mins
410	Cappagh Road – Knocknacarra – Upper Salthill Road – University Road – Eyre Square	1 hour	1-2 hrs (no Sunday service)
411	Cappagh Road – Ballymoneen Road – Ragoon Road – University Road – Eyre Square	30 mins	30 mins
412	Cappagh Road – Ballymoneen Road – Seamus Quirke Road – Eyre Square	30 mins	NA

Service	Route	Typical Service Frequency	
		Weekday	Weekend
414	Barna – Cappagh Road – Western Distributor Road – Rahoon Road – Eyre Square	2/3 services daily	NA
424	Costello – Barna – Upper Salthill Road – Galway Bus Station	Only one bus daily for this section of the Proposed Scheme	NA

#### 6.4.2.4 General Traffic

##### University Road (R863)

University Road is a single carriageway with one lane travelling in each direction. It extends to Newcastle Road to the west and St Vincent's Avenue to the east. Salmon Weir Bridge is situated along University Road, it has one traffic lane in each direction and footpaths on both side of the road.

##### Gaol Road

Gaol Road has an orbital layout around Galway Cathedral and the cathedral car park, joining to University Road on either side of the cathedral. There is a one-way system around the car park and on the western side of the cathedral. The road is two-way between the car park and the cathedral and on the eastern side of the cathedral, connecting to University Road at Salmon Weir Bridge.

##### Newtownsmith

Newtownsmith is a narrow carriageway (two-way traffic permitted). It connects to the R863 to the north and the Newtownsmith / Bowling Green / Mary Street junction to the south.

##### St. Vincent's Avenue (R863)

Within Section 1 of the Proposed Scheme, St. Vincent's Road routes between Salmon Weir Bridge and the St Francis Street / Courthouse Square four-arm signalised junction.

St Vincent's Avenue is a single carriageway with one lane travelling in each direction, which widens to two lanes in the eastbound direction approaching the junction with St. Francis Street.

#### 6.4.2.5 Parking & Loading Facilities

The on-street and off-street parking facilities along Section 1 of the Proposed Scheme are outlined below.

On-street pay and display parking is in operation between 08:30 – 18:30 on Monday – Saturday and 13:00 – 18:00 on Sunday at the following locations:

- University Road – Pay and display parking and one loading bay (three spaces) located on sections to the west of Salmon Weir Bridge. 17 parking spaces are present.
- Gaol Road – Two (nine spaces) bus set down areas located on the eastern side of the road. Pay and display parking and loading bay located on the western side of the road, prior to the Gaol Road / Gaol Road junction. Four tour buses only parking spaces located prior to the Gaol Road/ University Road western junction. 10 parking spaces and two accessible spaces are present.
- Newtownsmith – Pay and display parking and one loading bay (three spaces) on one side of the road. Double yellow lines present on the other side of the road. 10 parking spaces are present.
- St Vincent’s Avenue (R863) – no parking spaces present.

Galway Cathedral car park is located within the study area and is accessed from Gaol Road, comprising 152 parking spaces and five accessible spaces. It is a pay-on-foot car park. Charges are operational Monday – Sunday across a 24-hour period.

Parish of Cathedral Car Park is located within the study area and is accessed from Gaol Road comprising 150 parking spaces. It is a pay and display car park. Charges are operational 24hrs on Monday – Saturday and is free on Sundays.

In addition to the above, the following car parks are accessed from the roads within Section 1 of the Proposed Scheme, but are not included within the direct study area:

- Our Lady’s College Galway, accessed from Newtownsmith, comprising 50 spaces one of which is an accessible space. Permit parking only during school hours, pay and display parking outside of school hours from 18:00-21:00 Monday – Friday and 08:00-21:00 Saturday – Sunday (Term time) and 08:00-21:00 Monday- Sunday (outside of term time);
- Newtownsmith Car Park, accessed from the south west of Newtownsmith, comprising 40 spaces one of which is an accessible space. Pay and display car park. Charges are operational between 08:30 – 18:30 on Monday – Saturday and 13:00 – 18:00 on Sunday.

Market Square and Bowling Green, and NUI Galway are also located in the vicinity of the section and provide off-street parking.

## **6.4.3 Section 2 – St. Francis Street to Eglinton Street**

This Section outlines the baseline environment for walking, cycling, bus services, general traffic and parking / loading facilities along Section 2 of the Proposed Scheme, along St. Francis Street, Eglinton Street and Williamsgate Street.

### **6.4.3.1 Pedestrian Infrastructure**

There are footpaths and street lighting along both sides of the road throughout Section 2 of the Proposed Scheme. The footpaths are all a minimum of 1.8m wide.

Controlled pedestrian crossings in Section 2 of the Proposed Scheme that benefit from tactile paving and dropped kerbs are located:

- On all four arms at the St. Vincent's Avenue / St. Francis Street / Courthouse Square junction.

Uncontrolled crossings across priority junctions at side roads benefit from dropped kerbs.

Further details of the baseline pedestrian facilities (i.e. routing, directness, accessibility, crossing and footpath widths) at the junction are included in Appendix 6.2 (Impact Assessments) in Volume 4 of this EIAR.

### 6.4.3.2 Cycle Infrastructure

There is no on or off-road cycle infrastructure (or stands for the cycle hire facility) along Section 2 of the Proposed Scheme. Cyclists are expected to share the traffic lanes in both directions.

### 6.4.3.3 Bus Infrastructure

#### **Bus Priority Measures**

There are no bus lanes along Section 2 of the Proposed Scheme.

#### **Bus Stop Facilities**

There are currently two bus stops along Section 2 of the Proposed Scheme. The westbound bus stops are as follows:

- Stop 523021 on St. Francis Street, to the north of St. Francis Street / Eglinton Street / Dalys Place / Mary Street junction – flag and pole stop, with real time information.

The eastbound bus stops are as follows:

- Stop 522591 on St. Francis Street, to the north of St. Francis Street / Eglinton Street / Dalys Place / Mary Street junction - flag and pole stop with timetable information

The main bus services which operate along Section 2 are outlined in Table 6.9.

**Table 6.9: Section 2 - Bus Service Frequency**

Service	Route	Typical Service Frequency	
		Weekday	Weekend
402	Shangort Road – Knocknacarra – Taylors Hill Road – University Road – Eyre Square – Dublin Road (G Hotel) – Merlin Park Terminus	30 mins	30 mins – 1 hr
404	Oranmore – Dublin Road – College Road – Eyre Square – University Road – Thomas Hynes Road – Westside Shopping Centre	30 mins	30 mins
405	Gort Na Bro (B&Q) – Seamus Quirke Road – University Road – Eyre Square – Tuam Road – Ballybane Road – Ballybane Industrial Estate	20 mins	20 mins – 30 mins
407	Eyre Square – Francis Street - Headford Road – Tirrellan Heights – Bothair an Choiste	20 mins	30 mins – 1hr
410	Cappagh Road – Knocknacarra – Upper Salthill Road – University Road – Eyre Square	1 hr	1-2 hrs (no Sunday service)
411	Cappagh Road – Ballymoneen Road – Rahoon Road – University Road – Eyre Square	30 mins	30 mins
412	Cappagh Road – Ballymoneen Road – Seamus Quirke Road – Eyre Square	30 mins	NA
414	Barna – Cappagh Road – Western Distributor Road – Rahoon Road – Eyre Square	2/3 services daily	NA
424	Costello – Barna – Upper Salthill Road – Galway Bus Station	Only one bus daily for this section of the Proposed Scheme	NA

#### 6.4.3.4 General Traffic

##### St. Francis Street / Eglinton Street / Williamsgate Street (R863)

St. Francis Street, Eglinton Street and Williamsgate Street are single carriageways with one lane travelling in each direction, with loading bays on the eastern side of the road between Dalys Place and William Street. It is noted that William Street, located to the south of Eglinton Street, is pedestrianised.

There are double yellow lines on both sides of Williamsgate Street.

#### 6.4.3.5 Parking & Loading Facilities

The parking and loading facilities along Section 2 of the Proposed Scheme are as follows:

- St Francis Street – Double yellow lines present on both sides of the road. No parking spaces are available.

- Eglinton Street – One loading bay (six spaces) present on the eastern side of the road and double yellow present lines on the western side of the road. Time-plated clearway present which can fit up to nine parking spaces, where activity can occur outside of clearway hours of 11:00-19:30 Monday – Saturday.
- Williamsgate Street – Double yellow lines present on both sides of the road. One loading bay/ clearway (three spaces) present in the vicinity of Logues and the GBC Galway Bakery Company.

#### 6.4.4 Section 3 – Eyre Square to Forster Street

This Section outlines the baseline environment for walking, cycling, bus services, general traffic and parking / loading facilities along Section 3 of the Proposed Scheme, between Eyre Square, Prospect Hill and Forster Street.

Section 3 comprises Eyre Square, Rosemary Avenue, Eyre Street, Prospect Hill up to the Prospect Hill / Bothar Na mBan junction, and Forster Street up to the Bóthar Bhreandain Uí Eithir / Forster Street / Fairgreen Road junction.

##### 6.4.4.1 Pedestrian Infrastructure

There are footpaths and street lighting along both sides of the road throughout Section 3 of the Proposed Scheme. The footpaths are all a minimum of 1.8m wide along the majority of this route, however some pinch points are present along Forster Street, Rosemary Avenue and Eyre Street. In addition, Eyre Square west is fully pedestrianised and Rosemary Avenue has a section which is fully pedestrianised.

There are several controlled pedestrian crossings along Section 3 which benefit from tactile paving and dropped kerbs. Controlled crossings can be found at the following locations,

- A pelican pedestrian crossing on Williamsgate Street at Williamsgate Street / Rosemary Avenue junction;
- On the southern and western arms signalised at the Eyre Square / Prospect Hill junction;
- On the eastern and southern arms signalised at the Victoria Place / Eyre Square junction; and
- On the eastern, southern and northern arms signalised at the Eyre Square / Forster Street / Station Road junction.

Uncontrolled crossings across priority junctions at side roads benefit from dropped kerbs.

Further details of the baseline pedestrian facilities (i.e. routing, directness, accessibility, crossing and footpath widths) at the junctions along Section 3 of the Proposed Scheme are included in Appendix 6.2 (Impact Assessments) in Volume 4 of this EIAR.



### 6.4.4.2 Cycle Infrastructure

There is no on or off-road cycle lane infrastructure along Section 3 of the Proposed Scheme. Cyclists are expected to share the traffic lanes in both directions.

There are stands for TFI cycle hire facility at the following locations:

- 24 stands at Brown Doorway on Eyre Square, 20m to the northeast of the Rosemary Avenue / Eyre Square junction; and
- 10 stands at Eyre Square South, 10m to the northwest of the Eyre Square / Forster Street / Station Road junction.

### 6.4.4.3 Bus Facilities

#### Bus Priority Measures

A bus lane is present on Forster Street in the eastbound direction, operating Monday to Saturday between 16:00 and 19:00. No other bus lanes are present along Section 3 of the Proposed Scheme.

#### Bus Stop Facilities

There are currently 10 bus stops along Section 3 of the Proposed Scheme. The westbound bus stops are as follows:

- Stop 5 on Eyre Square, 35m north from the Eyre Square / St Patricks Avenue junction – provides a shelter, seating and real time information;
- Stop 6 on Eyre Square, 20m north from the Eyre Square / St Patricks Avenue junction - provides a shelter, seating and real time information;
- Stop 7 on Eyre Square, 15m southeast from the Eyre Square / St Patricks Avenue junction – provides a shelter and real time timetable information;
- Stop 8 on Eyre Square, 30m southeast from the Eyre Square / St Patricks Avenue junction – provides a shelter, seating and real time information;
- Stop 9 on the southern corner of Eyre Square – provides a shelter, seating and real time information;
- Stop 524361 on Forster Street, 60 southwest from the Bóthar Bhreandain Uí Eithir / Forster Street / Fairgreen Road junction - flag and pole stop with timetable information.

The eastbound bus stops are as follows:

- Stop 1 on Eyre Square, between Rosemary Avenue and Prospect Hill – provides a shelter, seating and real time information;
- Stop 2 on Eyre Square, between Rosemary Avenue and Prospect Hill – provides a shelter and timetable information;
- Stop 3 on Eyre Square, between Rosemary Avenue and Prospect Hill – provides a shelter, seating and real time information;
- Stop 4 on Eyre Square, between Rosemary Avenue and Prospect Hill – provides a shelter, seating and real time information.

The main bus services which operate along Section 3 are outlined in Table 6.10.

**Table 6.10: Section 3 - Bus Service Frequency**

Service	Route	Typical Service Frequency	
		Weekday	Weekend
401	Parkmore Road – Monivea Road – Forster Street – Eyre Square – Salthill Road Lower	20 mins	20 mins
402	Shangort Road – Knocknacarra – Taylors Hill Road – University Road – Eyre Square – Dublin Road (G Hotel) – Merlin Park Terminus	30 mins	30 mins – 1hour
404	Oranmore – Dublin Road – College Road – Eyre Square – University Road – Thomas Hynes Road – Westside Shopping Centre	30 mins	30 mins
405	Gort Na Bro (B&Q) – Seamus Quirke Road – University Road – Eyre Square – Tuam Road – Ballybane Road – Ballybane Industrial Estate	20 mins	20 mins – 30 mins
407	Eyre Square – Francis St - Headford Road – Tirrellan Heights – Bothair an Choiste	20 mins	30mins – 1hour
409	Eyre Square – Dublin Road – Doughiska Road – Parkmore Road	10 mins	10mins– 20mins
411	Cappagh Road – Ballymoneen Road – Ragoon Road – University Road – Eyre Square	30 mins	30mins
412	Cappagh Road – Ballymoneen Road – Seamus Quirke Road – Eyre Square	30 mins	NA
414	Barna – Cappagh Road – Western Distributor Road – Ragoon Road – Eyre Square	2/3 services daily	NA
424	Costello – Barna – Upper Salthill Road – Galway Bus Station	1 – 2 hours	NA

#### 6.4.4.4 General Traffic

##### Eyre Street

Eyre Street is a single lane, one-way road travelling eastbound between Rosemary Avenue and Eyre Square. It is right turn only from Eyre Street onto Eyre Square.

##### Rosemary Avenue

Rosemary Avenue is a paved single lane road between Eyre Square and Eyre Street. Rosemary Avenue yields to Eyre Street and there is no left turn permitted onto Eyre Street.

##### Eyre Square (R866)

Eyre Square has one lane of traffic travelling in each direction to the north and south of the square. Eyre Square East is one-way with two lanes travelling northbound. Eyre Square to the west of the square is a pedestrian zone from Monday to Sunday between 11:00 and 06:00, i.e. it allows vehicles for loading activities each morning only.

### **Prospect Hill (R336)**

Prospect Hill is a one-way road comprising with two lanes travelling eastbound between Eyre Square East and the Prospect Hill / Bothar Na mBan junction to the west within Section 3 of the Proposed Scheme.

### **Forster Street (R339)**

Forster Street is a one-way road with one traffic lane and a bus lane travelling westbound. The bus lane is operational Monday – Saturday between 16:00 and 19:00. The road extends from the Bóthar Bhreandain Uí Eithir / Forster Road / Fairgreen Road junction to the east and connects Eyre Square to the west.

#### **6.4.4.5 Parking & Loading Facilities**

The parking and loading facilities along Section 3 of the Proposed Scheme is as follows:

- Eyre Street – Double yellow lines present on both sides of the road. No parking spaces are available.
- Rosemary Avenue – Double yellow lines present on both sides of the road. A bus set down area is present in front of the Imperial Hotel.
- Eyre Square East – Provides two taxi ranks (eight spaces) on the eastern of the road, operating Monday to Sunday between 18:30 and 06:00. In addition, two loading bays (six spaces) which also operate as taxi ranks from Monday to Sunday between 06:00 and 11:00 are present. Double yellow lines present on the remainder of the road.
- Eyre Square North – provides a bus set down area (six spaces) on the northern side of the road. There are double yellow lines on the southern side. One loading bay (two spaces), one taxi rank (14 spaces) and two accessible spaces are present.
- Prospect Hill – Provides four accessible parking spaces, a taxi rank (11 spaces) and two loading areas (eight spaces) on the southern side of the road, to the west of the Prospect Hill / Bóthar Na mBan junction. It is noted that informal parking for one vehicle occurs on the clearway, despite the clearway being 24hrs designation.
- Forster Street – Double yellow lines present on the southern side of the road. One loading area / taxi rank (six spaces) is present on the northern side, with operates 08:30-15:30 Monday – Saturday, for a maximum stay of 30mins. Section of bus lane present which operates from 16:00-19:00 Monday – Saturday. Eight parking spaces and two accessible spaces are present.
- Bothar Irwin – Located just outside of the study area, containing three pay and display spaces and one accessible space.

The Galway (Ceannt) Train Station off-street car park is located outside of the direct study area, but accessed from Eyre Square south, comprising 90 parking

spaces. Pay-on-foot<sup>1</sup> car park. Charges are operational Monday – Sunday across a 24hr period.

## **6.4.5 Section 4 – College Road (Lough Atalia to Fairgreen)**

This section outlines the baseline environment for walking, cycling, bus services, general traffic and parking / loading facilities along Section 4 of the Proposed Scheme, along College Road.

Section 4 comprises of College Road between the Bóthar Bhreandain Uí Eithir / Forster Road / Fairgreen Road junction and College Road / Lough Atalia Road junction.

### **6.4.5.1 Pedestrian Infrastructure**

There are footpaths and street lighting along both sides of the road throughout Section 4 of the Proposed Scheme. The footpaths are a minimum of 1.8m wide along the majority of the route, however a pinch point with sub-standard footpath width is present in the vicinity of the Magdalene Convent.

There are no controlled pedestrian crossings along Section 4 of the Proposed Scheme, aside from signalised crossings on each arm of the junction at the start of this section.

There are various uncontrolled crossings across priority junctions at side roads along this section of the Proposed Scheme.

### **6.4.5.2 Cycle Infrastructure**

There is no on or off-road cycle infrastructure along Section 4 of the Proposed Scheme. Cyclists are expected to share the traffic lanes in both directions.

There are stands for TFI cycle hire facility at the following location:

- 18 stands at Galway City Hall, 45m to the west of the junction of Forster Street / College Road / access to Galway City Council.

### **6.4.5.3 Bus Facilities**

#### **Bus Priority Measures**

There are no bus lanes along Section 4 of the Proposed Scheme.

#### **Bus Stop Facilities**

There are currently six bus stops along Section 4 of the Proposed Scheme. The westbound bus stops are as follows:

---

<sup>1</sup> Pay-on-foot is a time-based charging system, whereby payment is made at the end of the parking period, on exit. This is different from pay and display, whereby payment is on time-estimated, at the beginning of the parking period, on arrival.

- Stop 523691 on College Road, at the College Road / Glenmore junction – flag and pole stop with timetable information;
- Stop 523681 on College Road, adjacent to Galway Greyhound Stadium – flag and pole stop with timetable information;
- Stop 523671 on College Road, 55m southwest to College Road / Loyola Park junction – provides a shelter and timetable information.

The eastbound bus stops are as follows:

- Stop 523251 on College Road, at the College Road/ Loyla Park junction - flag and pole stop with timetable information;
- Stop 523231 on College Road, at the College Road / Glenmore junction – flag and pole stop with timetable information;
- Stop 523241 on College Road, adjacent to Greyhound Track carpark – indented flag and pole stop with timetable information.

The main bus services which operate along Section 4 are outlined in Table 6.11.

**Table 6.11: Section 4 - Bus Service Frequency**

Service	Route	Typical Service Frequency	
		Weekday	Weekend
401	Parkmore Road – Monivea Road – Forster Street – Eyre Square – Salthill Road Lower	20 mins	20 mins
404	Oranmore – Dublin Road – College Road – Eyre Square – University Road – Thomas Hynes Road – Westside Shopping Centre	30 mins	30 mins
409	Eyre Square – Dublin Road – Doughiska Road – Parkmore Road	10 mins	10 mins – 20 mins

#### 6.4.5.4 General Traffic

##### Forster Street / College Road (R339)

Forster Street within Section 4 is a single carriageway with one lane travelling in each direction. It extends from the Bóthar Bhreandain Uí Eithir / Forster Road / Fairgreen Road junction to the west and becomes College Road at the access to the Galway City Council building.

College Road is a single carriageway with one lane travelling in each direction and parking bays on either side.

#### 6.4.5.5 Parking & Loading Facilities

The parking facilities along Section 4 of the Proposed Scheme are as follows:

- Forster Street (R339) – Double yellow lines present on both sides of the road.
- College Road (R339) – Sections of pay and display parking present. Double yellow lines present on the rest of the road. 64 parking spaces, three accessible spaces and two loading areas (six spaces) present. On-street pay and display

parking charges are in operation between 08:30 – 18:30 on Monday – Saturday and 13:00 – 18:00 on Sunday.

The Galway Sportsground car park is situated outside of the direct study area and is accessed from College Road. It comprises 100 parking spaces and is a Pay and display car park. Charges are operational between 08:30 – 18:30 on Monday – Saturday and 13:00 – 18:00 on Sunday.

Galway City Council and Connacht Rugby Sports Ground are located in the vicinity of the section and provide off-street parking.

#### **6.4.6 Section 5 – College Road (Lough Atalia to Moneenageisha)**

This Section outlines the baseline environment for walking, cycling, bus services, general traffic and parking / loading facilities along Section 5 of the Proposed Scheme.

Section 5 comprises College Road between the College Road / Loyola Park / Lough Atalia Road junction and the Moneenageisha Road / Dublin Road / Wellpark Road/ College Road junction.

##### **6.4.6.1 Pedestrian Infrastructure**

There are footpaths and street lighting along both sides of the road throughout Section 5 of the Proposed Scheme. The footpaths are all a minimum of 1.8m wide.

Controlled pedestrian crossings along Section 5, which benefits from tactile paving and dropped kerbs, can be found at the following locations:

- On the Lough Atalia Road and College Road (west) arms of the College Road / Loyola Park / Lough Atalia Road four-arm signalised junction.

Further details of the baseline pedestrian facilities (i.e. routing, directness, accessibility, crossing and footpath widths) at the junction are included in Appendix 6.2 (Impact Assessments) in Volume 4 of this EIAR.

Uncontrolled crossings across priority junctions at side roads benefit from dropped kerbs.

##### **6.4.6.2 Cycle Infrastructure**

There is no on or off-road cycle infrastructure along Section 5 of the Proposed Scheme. Cyclists are expected to share the traffic lanes in both directions.

There are stands for TFI cycle hire facility at the following location:

- 40 stands at Lough Atalia, 30m to the south of the College Road / Lough Atalia Road junction.

### 6.4.6.3 Bus Facilities

#### Bus Priority Measures

There are no bus lanes along Section 5 of the Proposed Scheme.

#### Bus Stop Facilities

There are no bus stops along Section 5 of the Proposed Scheme.

The main bus services which route along Section 5 are outlined in Table 6.12.

**Table 6.12: Section 5 - Bus Service Frequency**

Service	Route	Typical Service Frequency	
		Weekday	Weekend
401	Parkmore Road – Monivea Road – Forster Street – Eyre Square – Salthill Road Lower	20 mins	20 mins
404	Oranmore – Dublin Road – College Road – Eyre Square – University Road – Thomas Hynes Road – Westside Shopping Centre	30 mins	30 mins
409	Eyre Square – Dublin Road – Doughiska Road – Parkmore Road	10 mins	10 mins – 20 mins

### 6.4.6.4 General Traffic

#### College Road (R339)

College Road comprises is a single carriageway with two lanes travelling eastbound and one lane travelling westbound.

### 6.4.6.5 Parking & Loading Facilities

College Road Private Parking –Four private parking areas are located off College Road just outside the study area, as below:

- Gleann Noinin – 58 spaces; and
- Circle K – 11 spaces.
- Moneenageisha Court – 24 spaces; and
- Bayview B&B – 12 spaces.

## 6.4.7 Section 6 – R338 Dublin Road

This Section outlines the baseline environment for walking, cycling, bus services, general traffic and parking / loading facilities along Section 6 of the Proposed Scheme, comprising Dublin Road between the Moneenageisha junction and to the entrance to the Brothers of Charity.



### 6.4.7.1 Pedestrian Infrastructure

There are footpaths and street lighting along both sides of the road throughout Section 6 of the Proposed Scheme. The footpaths are all a minimum of 1.8m wide.

Controlled pedestrian crossings along Section 6, which benefit from tactile paving and dropped kerbs, can be found at the following locations:

- On all arms at the College Road / Moneenageisha Road / Wellpark Road / Dublin Road four-arm signalised junction.

Further details of the baseline pedestrian facilities (i.e. routing, directness, accessibility, crossing and footpath widths) at the junction are included in Appendix 6.2 (Impact Assessments) in Volume 4 of this EIAR.

Uncontrolled crossings across priority junctions at side roads benefit from dropped kerbs.

### 6.4.7.2 Cycling Infrastructure

There is no cycle infrastructure westbound along Section 6 of the Proposed Scheme, however, cyclists share the bus lane travelling eastbound.

There are no stands for the TFI cycle hire facility along this section.

### 6.4.7.3 Bus Facilities

#### **Bus Priority Measures**

There is a bus lane present for the eastbound movement on Dublin Road from approximately 80m after the Moneenageisha junction, which operates 24 hours, Monday to Sunday.

#### **Bus Stop Facilities**

There are currently two bus stops along Section 6 of the Proposed Scheme. The westbound bus stops are as follows:

- Stop 522971 on Dublin Road, 60m southeast to the College Road / Moneenageisha Road / Wellpark Road / Dublin Road junction – shelter with timetable information

The eastbound bus stops are as follows:

- Stop 522691 on Dublin Road, 150m southeast to College Road / Moneenageisha Road / Wellpark Road / Dublin Road junction – flag and pole stop with timetable information

The main bus services which operate along Section 6 are outlined in Table 6.13.

**Table 6.13: Section 6 - Bus Service Frequency**

Service	Route	Typical Service Frequency	
		Weekday	Weekend
402	Shangort Road – Knocknacarra – Taylors Hill Road – University Road – Eyre Square – Dublin Road (G Hotel) – Merlin Park Terminus	30 mins	30 mins – 1hr
404	Oranmore – Dublin Road – College Road – Eyre Square – University Road – Thomas Hynes Road – Westside Shopping Centre	30 mins	30 mins
409	Eyre Square – Dublin Road – Doughiska Road – Parkmore Road	10 mins	10 mins – 20 mins

#### 6.4.7.4 General Traffic

##### Dublin Road

Dublin Road within Section 6 comprises a dual carriageway with two lanes travelling in each direction along the majority of the scheme. To the west of the Dublin Road / Sáilín junction, the westbound lane is a single lane, which widens to two lanes from the Sáilín junction. A bus lane is present for eastbound movements only. The road extends from the Moneenageisha Road / Wellpark Road / Dublin Road / College Road junction to the Dublin Road / Brothers of Charity entrance.

#### 6.4.7.5 Parking & Loading Facilities

There are no parking or loading facilities along Section 6 of the Proposed Scheme.

Wellpark Retail Centre and The G Hotel & Spa are located in the vicinity of the section and provide off-street parking.

### 6.4.8 Section 7 – Fairgreen Road

This section outlines the baseline environment for walking, cycling, bus services, general traffic and parking / loading facilities along Section 7 of the Proposed Scheme, along Fairgreen Road between Forster Street and Lough Atalia Road.

#### 6.4.8.1 Pedestrian Infrastructure

There are footpaths and street lighting along both sides of the road throughout Section 7 of the Proposed Scheme. The footpaths are all a minimum of 1.8m wide.

There are no controlled crossings within this section. Uncontrolled crossings across priority junctions at side roads benefit from dropped kerbs.

### 6.4.8.2 Cycle Infrastructure

There is no on or off-road cycle infrastructure along Section 7 of the Proposed Scheme. Cyclists are expected to share the traffic lanes in both directions.

There are stands for TFI cycle hire facility at the following location:

- 17 stands at Fairgreen, 20m to the south-east of the Fairgreen Road / Station Road junction.

### 6.4.8.3 Bus Infrastructure

#### Bus Priority Measures

There are no bus lanes along Section 7 of the Proposed Scheme.

#### Bus Stop Facilities

There is currently one coach stop along Section 7 of the Proposed Scheme. This coach stop is not served by the two main bus operators in Galway (City Direct and Bus Eireann).

City Link and Air Coach operate on Fairgreen Road providing long distance coach services to areas such as Dublin and Cork. Dublin services operate approximately every 2-4 hours on weekdays.

## 6.4.9 General Traffic

### Fairgreen Road

Fairgreen Road is a single carriageway street, generally with one lane travelling in each direction. The southbound carriageway widens into two lanes on approach to the Fairgreen Road / Lough Atalia Road junction. The northbound carriageway widens into two lanes on approach to the Fairgreen Road / Forster Street junction.

### 6.4.9.1 Parking & Loading Facilities

The parking and loading facilities along Section 7 of the Proposed Scheme are as follows:

- Fairgreen Road – 24 hour loading bay (five spaces) and taxi rank (10 spaces) on western side of the road. Double yellow lines present elsewhere. It is noted that informal parking for up to seven vehicles occurs along a section of the footpath between the taxi rank and road.

The following car parks are accessed from the roads within Section 7 of the Proposed Scheme, but are not included within the direct study area:

- The City Park at City Centre at Fairgreen Road is accessed from Fairgreen Road, comprising 410 parking spaces. It is a pay on foot car park with charges operating 24 hours, Monday – Sunday.

- Galway Coach Station is accessed of Fairgreen Road, comprising 168 parking spaces. It is a pay and display car park with charges operating 24 hours, Monday -Sunday.
- The Galmont Hotel & Spa is accessed of Fairgreen Road, comprising 240 spaces. It is a pay and display car park with charges operating 24 hours, Monday – Sunday.

#### **6.4.10 Section 8 – Bóthar Uí Eithir and Prospect Hill**

This Section outlines the baseline environment for walking, cycling, bus services, general traffic and parking / loading facilities along Section 8 of the Proposed Scheme, comprising Prospect Hill between the Bóthar Na mBan and Bóthar Bhreandain Uí Eithir and the full length of Bóthar Uí Eithir.

##### **6.4.10.1 Pedestrian Infrastructure**

There are footpaths and street lighting along both sides of the road throughout Section 8 of the Proposed Scheme. The footpaths are all a minimum of 1.8m wide with the exception of a short section of sub-standard footpath width in the vicinity of 38 Prospect Hill and a short section of footpath in the vicinity of St. Patricks Church.

There are two controlled pedestrian crossings along Section 8, which benefit from tactile paving and dropped kerbs, and can be found at the following locations:

- Pelican crossing of Prospect Hill, approximately 20m north of the Prospect Hill / Bóthar Bhreandain Uí Eithir junction.
- On all arms of the Bóthar Bhreandain Uí Eithir / Forster Street / Fairgreen Road four-arm signalised junction.

There is one uncontrolled crossing across a priority junction at a side road for this section of the Proposed Scheme.

Further details of the baseline pedestrian facilities (i.e. routing, directness, accessibility, crossing and footpath widths) at the junction are included in Appendix 6.2 (Impact Assessments) in Volume 4 of this EIAR.

##### **6.4.10.2 Cycle Infrastructure**

There is no on or off-road cycle infrastructure along Section 8 of the Proposed Scheme. Cyclists are expected to share the traffic lanes in both directions.

There are stands for TFI cycle hire facility at the following location:

- 14 stands at County Hall, 20m to the northeast of the Bóthar Na mBan / Prospect Hill junction.

### 6.4.10.3 Bus Infrastructure

#### Bus Priority Measures

There is a bus lane travelling southbound along Bóthar Uí Eithir, operating 24 hours Monday to Sunday.

#### Bus Stop Facilities

There is currently one bus stop along Section 8 of the Proposed Scheme. The bus stop is an eastbound service (Stop 523211) on Bóthar Uí Eithir, 55m east to the Prospect Hill / Bóthar Uí Eithir junction. It is a flag and pole stop with timetable information only.

The main bus services which route along Section 8 are outlined in Table 6.14.

**Table 6.14: Section 8 - Bus Service Frequency**

Service	Route	Typical Service Frequency	
		Weekday	Weekend
401	Parkmore Road – Monivea Road – Forster Street – Eyre Square – Salthill Road Lower	20 mins	20 mins
402	Shangort Road – Knocknacarra – Taylors Hill Road – University Road – Eyre Square – Dublin Road (G Hotel) – Merlin Park Terminus	30 mins	30 mins – 1hour
404	Oranmore – Dublin Road – College Road – Eyre Square – University Road – Thomas Hynes Road – Westside Shopping Centre	30 mins	30 mins
405	Gort Na Bro (B&Q) – Seamus Quirke Road – University Road – Eyre Square – Tuam Road – Ballybane Road – Ballybane Industrial Estate	20 mins	20 mins – 30 mins
409	Eyre Square – Dublin Road – Doughiska Road – Parkmore Road	10 mins	10 mins – 20 mins
412	Cappagh Road – Ballymoneen Road – Seamus Quirke Road – Eyre Square	30 mins	NA
414	Barna – Cappagh Road – Western Distributor Road – Ragoon Road – Eyre Square	2/3 services daily	NA

### 6.4.10.4 General Traffic

#### Prospect Hill (R336)

Prospect Hill within Section 8 of the Proposed Scheme is a one-way road travelling eastbound, comprising two lanes.

#### Bóthar Bhreandain Uí Eithir (R336)

Bóthar Bhreandain Uí Eithir comprises a one-way road travelling southbound, with two general traffic lanes and a bus lane.

#### **6.4.10.5 Parking & Loading Facilities**

There are no parking and loading facilities along Section 8 of the Proposed Scheme.

#### **6.4.11 Section 9 – Bothar na mBan/ St. Brendan's Avenue / Dyke Road/ Headford Road**

This Section outlines the baseline environment for walking, cycling, bus services, general traffic and parking / loading facilities along Section 9 of the Proposed Scheme, along St Brendan's Avenue and Bóthar Na mBan, between Headford Road and Prospect Hill and along Headford Road, Walsh's Terrace, O'Donoghue's Terrace and Dyke Road.

##### **6.4.11.1 Pedestrian Infrastructure**

There are footpaths and street lighting along both sides of the road throughout Section 9 of the Proposed Scheme, with the exception of the eastern side of Dyke Road. These footpaths are all a minimum of 1.8m wide. Along St. Brendan's Avenue, between Bother na mBan and Headford Road there is only a footpath present on the southern side of the road. This footpath is sub-standard with a width of approximately 1.2m.

There is one controlled pedestrian crossing along Section 9 of the Proposed Scheme.

- On all arms at the Headford Road / St Brendan's Avenue / Dyke Road four-arm signalised junction.

There are various uncontrolled crossings across priority junctions at side roads along this section of the Proposed Scheme which benefit from dropped kerbs.

Further details of the baseline pedestrian facilities (i.e. routing, directness, accessibility, crossing and footpath widths) at the junction are included in Appendix 6.2 (Impact Assessments) in Volume 4 of this EIAR.

##### **6.4.11.2 Cycle Infrastructure**

There is no on or off-road cycle infrastructure along Section 9 of the Proposed Scheme. Cyclists are expected to share the traffic lanes in both directions.

There are stands for TFI cycle hire facility at the following location:

- 19 stands at Headford Road, 30m to the north of the Dyke Road / Headford / St Bridget's Place junction.

##### **6.4.11.3 Bus Facilities**

###### **Bus Priority Measures**

There are no bus lanes along Section 9 of the Proposed Scheme.

### Bus Stop Facilities

There are no bus stops along Section 9 of the Proposed Scheme.

The main bus services which route along Section 9 of are outlined in Table 6.15.

**Table 6.15: Section 9 - Bus Service Frequency**

Service	Route	Typical Service Frequency	
		Weekday	Weekend
407	Eyre Square – Francis Street - Headford Road – Tirrellan Heights – Bothair an Choiste	20mins	30mins – 1hour
412	Cappagh Road – Ballymoneen Road – Seamus Quirke Road – Eyre Square	30 mins	N/A

#### 6.4.11.4 General Traffic

##### St Brendan's Avenue

St Brendan's Avenue is a single carriageway with one lane travelling in each direction.

##### Bóthar Na mBan

Bóthar Na mBan is a single carriageway with one lane travelling in each direction. There are two right turn pockets for movements into a private surface car park adjacent to St Brendan's Avenue and the Corrib Centre off-street multi-storey car park.

##### Headford Road

Headford Road within Section 9 generally comprises a single carriageway with one lane for northbound traffic and two lanes for southbound traffic.

##### Dyke Road

Dyke Road is a single carriageway with one lane travelling in each direction. Within the direct study area, it routes north from the Headford Road / Dyke Road / St Brendan's Avenue junction and the east back towards Headford Road, forming a triangular shape.

#### 6.4.11.5 Parking & Loading Facilities

The parking and loading facilities along Section 9 of the Proposed Scheme are as follows:

- St Brendan's Avenue – Double yellow lines present on both sides of the road for the section associated with the scheme. 48 pay and display spaces on the rest of the road.
- Bóthar Na mBan – Bus set down area (two spaces) present on the eastern side of the road. Loading bay (three spaces) present outside of the TK Maxx store.



operating 24 hours Monday to Saturday. Double yellow lines present along the rest of the road.

- Headford Road (R866) – Indented parking bay on the northern wide of Headford Road between St Brendan’s Avenue and St Bridget’s Place, able to accommodate two cars; and Double yellow lines present on the rest of the road.
- Dyke Road – Double yellow lines present on both sides of the road on the major and minor arms. No parking present on this road.

Bothar Na mBan provides access to Corrib Shopping Centre off-street car park, comprising 576 parking spaces. It operates as a pay on foot car park, 24 hours Monday – Saturday.

#### **6.4.12 Section 10 –Woodquay / Walsh’s Terrace / Daly’s Place / Mary Street**

This section outlines the baseline environment for walking, cycling, bus services, general traffic and parking / loading facilities along Section 10 of the Proposed Scheme, between Mary Street and Woodquay, comprising Mary Street, St. Vincent’s Avenue, Daly’s Place, Woodquay and a section of Headford Street until the Headford Street/ Dyke Road / St Brendan’s Avenue junction.

##### **6.4.12.1 Pedestrian Infrastructure**

There are footpaths and street lighting along both sides of the road throughout Section 10 of the Proposed Scheme. Where there are footpaths, they are all a minimum of 1.8m wide. The footpaths are generally minimum of 1.8m wide, however, narrower on both sides of the road to the south of Mary Street.

There is one controlled pedestrian crossing along Section 10, which benefits from tactile paving and dropped kerbs, at the following location:

- A pelican crossing on Headford Road, adjacent to the Headford Road / Riverside junction.

Uncontrolled crossings across priority junctions at side roads benefit from dropped kerbs.

Further details of the baseline pedestrian facilities (i.e. routing, directness, accessibility, crossing and footpath widths) at the junction are included in Appendix 6.2 (Impact Assessments) in Volume 4 of this EIAR.

##### **6.4.12.2 Cycle Infrastructure**

There is no on or off-road cycle infrastructure along Section 10 of the Proposed Scheme. Cyclists are expected to share the traffic lanes in both directions.

There are stands for TFI cycle hire facility at the following location:

- 20 stands at Wood Quay on Corrib Terrace, immediately to the north of the Corrib Terrace / Woodquay Street junction.

### 6.4.12.3 Bus Facilities

#### Bus Priority Measures

There are no bus lanes along Section 10 of the Proposed Scheme.

#### Bus Stop Facilities

There are currently two bus stops along Section 10 of the Proposed Scheme. The westbound bus stop is as follows:

- Stop 525411 on Headford Road, at the Headford Road / Woodquay Street junction – shelter and timetable information

The eastbound bus stop is as follows:

- Stop 523711 on Headford Road, at the Headford Road / Woodquay Street junction – flag and pole stop and timetable information.

The main bus services which operate along Section 10 are outlined in Table 6.16.

**Table 6.16: Section 10 - Bus Service Frequency**

Service	Route	Typical Service Frequency	
		Weekday	Weekend
407	Eyre Square – Francis St - Headford Road – Tirrellan Heights – Bothair an Choiste	20 mins	30 mins – 1hr

### 6.4.12.4 General Traffic

#### St. Vincent's Avenue / Headford Road (R866)

St. Vincent's Avenue and Headford Road within Section 10 generally comprises a single carriageway with one lane travelling in each direction.

#### Woodquay Street

Woodquay Street has a one lane for northbound and southbound movements respectively, which are separated by a car parking area in the middle. It routes between Dalys Place / Eyre Street to the south and Headford Road to the north.

#### Daly's Place

Daly's Place is a one-way street travelling eastbound. It routes between St Francis Street / Mary Street/ Daly's Place/ Eglinton Street junction to the west and merges with Eyre Street to the east.

## Mary Street

Mary Street is a one-way street comprising two lanes, travelling eastbound. It routes between the Mary Street / Bowling Green/ Newtownsmith / Abbeygate Street Upper junction to the west and the St Francis Street / Mary Street / Daly's Place / Eglinton Street junction to the east.

### 6.4.12.5 Parking & Loading Facilities

The parking and loading facilities along Section 10 of the Proposed Scheme are as follows:

- St Vincent's Avenue / Headford Road (R866) – Six Pay and display parking and loading bays located on Headford Road.
- Woodquay – Contains pay and display parking spaces operational from 08:30-18:30 Monday – Saturday and 13:00-18:00 on Sunday. Further parking provided in the middle of the road splitting the lanes into a one-way movement. Approximately 64 parking spaces are present, of which two are accessible spaces. One loading bay (two spaces) and one taxi rank (two spaces) is present.
- Walsh's Terrace – Located off Headford Road, containing five pay and display spaces.
- Dalys Place – Double yellow lines present on both sides of the road. No parking spaces are available.

The Riverside off-street car park is outside of the direct study area but accessed from Headford Road, comprising 20 parking spaces. Pay and display car park. Charges are in operation between 08:30 – 18:30 on Monday – Saturday and 13:00 – 18:00 on Sunday.

### 6.4.13 Section 11 – Forthill Street / Merchants Road / Queen Street

This Section outlines the baseline environment for walking, cycling, bus services, general traffic and parking / loading facilities along Section 11 of the Proposed Scheme, between Victoria Place and Bóthar Na nDuganna, comprising Queen Street, Merchants Road and Forthill Street.

#### 6.4.13.1 Pedestrian Infrastructure

There are footpaths and street lighting along both sides of the road throughout Section 11 of the Proposed Scheme. The footpaths are all a minimum of 1.8m wide for the majority of this section with some sections on the southern side of Merchants Road falling below this over short sections.

There are three controlled pedestrian crossings along Section 11, which benefit from tactile paving and dropped kerbs which can be found at the following location:

- Pelican crossing of Victoria Place where the road meets Eyre Square.

Uncontrolled crossings across priority junctions at side roads benefit from dropped kerbs.

Further details of the baseline pedestrian facilities (i.e. routing, directness, accessibility, crossing and footpath widths) at the junctions along Section 11 of the Proposed Scheme is included in Appendix 6.2 (Impact Assessments) in Volume 4 of this EIAR.

### 6.4.13.2 Cycle Infrastructure

There is no on or off-road cycle infrastructure along Section 11 of the Proposed Scheme. Cyclists are expected to share the traffic lanes in both directions.

### 6.4.13.3 Bus Infrastructure

#### Bus Priority Measures

There are no bus lanes along Section 11 of the Proposed Scheme.

#### Bus Stop Facilities

There is currently one bus stop along Section 11 of the Proposed Scheme. The bus stop is an eastbound service (Stop 524501) on Merchants Road, at the Merchants Road / Victoria Place junction. This stop comprises a flag and pole, with timetable information.

The main bus services which operate along Section 11 are outlined in Table 6.17.

**Table 6.17: Section 11 - Bus Service Frequency**

Service	Route	Typical Service Frequency	
		Weekday	Weekend
401	Parkmore Road – Monivea Road – Forster Street – Eyre Square – Salthill Road Lower	20 mins	20 mins

### 6.4.13.4 General Traffic

#### Victoria Place

Victoria Place is a single carriageway with one lane travelling in each direction. It becomes one way at the Merchant Road junction, comprising two lanes travelling southbound. It routes between Eyre Square and Queen Street.

#### Merchants Road (R336)

Merchants Road within Section 11 is one-way travelling eastbound and comprises one lane between Forthill Street and Victoria Place.

#### Forthill Street

Forthill Street is a one-way road with one lane travelling southbound between Merchants Road and Queen Street.

## Queen Street

Queen Street within Section 11 is a one-way road travelling westbound and comprises one lane between Victoria Place and Bóthar Na nDuganna.

### 6.4.13.5 Parking & Loading Facilities

The parking and loading facilities along Section 11 of the Proposed Scheme are as follows:

- Victoria Place – Double yellow lines present on both sides of the road. Contains a bus set down on the northern side of the road.
- Merchants Road – Pay and display parking and taxi spaces on the southern side of the road and double yellow lines on the northern side. Eight parking spaces were identified, of which two are accessible parking spaces. Tour bus set down area (two spaces) present.
- Forthill Street – Contains a bus set down and pick up area (one space) on the eastern side of the road. Pay and display parking spaces provided on both sides of the road. Approximately 19 parking spaces are provided.
- Queen Street – Contains pay and display parking and a bus set down area on the northern side of the road between Forthill and Bóthar Na nDuganna, comprising approximately 10 parking spaces.
- On-street pay and display parking charges are in operation between 08:30 – 18:30 on Monday – Saturday and 13:00 – 18:00 on Sunday.

The following car parks are accessed from the roads within Section 11 of the Proposed Scheme, but are not included within the direct study area:

- Q car park is accessed from Merchants Road, comprising 444 parking spaces. It is a pay on foot car park with charges operating 24 hours, Monday – Sunday.
- Hynes Yard multi-storey car park is accessed from Dock Road, comprising 480 spaces. It is a pay on foot car park with charges operating 24 hours, Monday – Sunday.

## 6.5 Potential Impacts

This section presents potential impacts that may occur due to the Proposed Scheme, in the absence of mitigation. This informs the need for mitigation or monitoring to be proposed (Section 6.6). Predicted ‘residual’ impacts taking into account any proposed mitigation is presented in Section 6.7.

### 6.5.1 Characteristics of the Proposed Scheme

The characteristics of the Proposed Scheme are described in detail in Chapter 4 (Proposed Scheme Description).

## 6.5.2 Do Nothing Scenario

With regards to this chapter, the ‘Do Nothing’ scenario means there would be no changes to existing transport infrastructure, so infrastructure provision for buses, pedestrians and cyclists would remain the same. The streetscape would continue to be based around the movement and parking requirements of private cars instead of people. High levels of traffic are associated with discouraging pedestrian and cyclist activity and this activity would be further discouraged as traffic congestion remains the same or increases. The baseline situation of congestion and journey time reliability issues for buses would also continue, and potentially be exacerbated over time as traffic congestion increases in line with travel demand growth.

## 6.5.3 Do Minimum Scenario

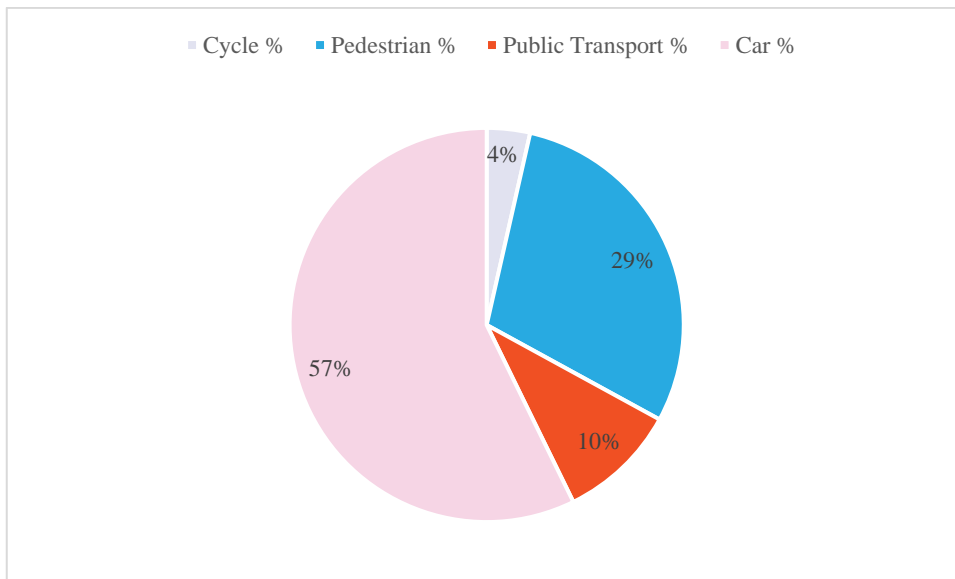
### **Do Minimum Transport Schemes**

The full list of schemes in relation to the Do Minimum scenario can be found in Appendix 6.1 (Transport Modelling Report) in Volume 4 of this EIAR. The Do Minimum network is defined for 2023 and 2038.

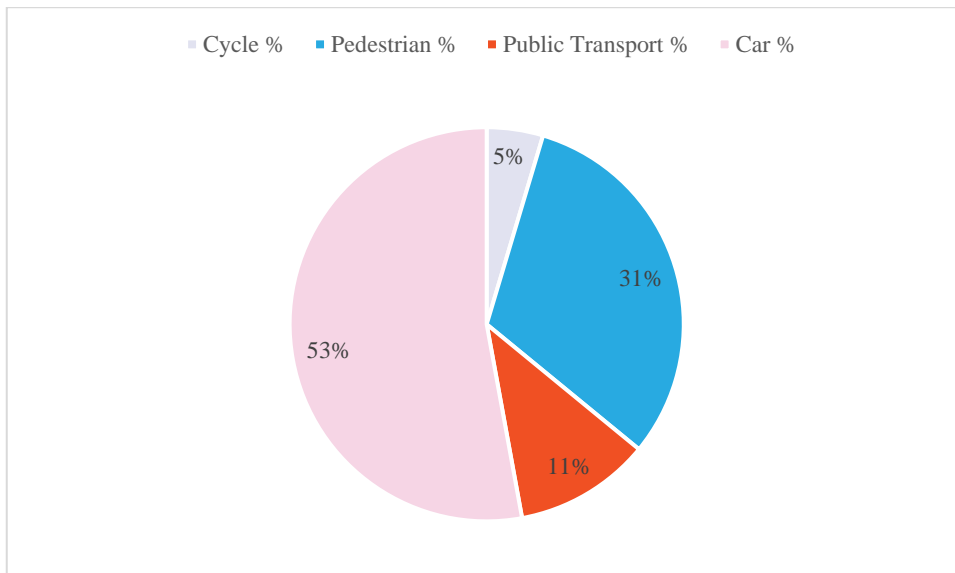
### **Do Minimum Transport Demand**

The transport demand changes for the 2023 and 2038 assessment year have been included within this chapter, using travel demand forecasting from the WRM. This accounts for planned growth contained within the NPF. The NPF recognises that Galway, as one of Ireland’s five biggest cities, will play an important role in driving the economy. The projected population growth within Galway City and its suburbs is expected to grow by 50-60% by 2040, or up to a total of 120,000 individuals.

Based on WRM estimates, the predicted mode share in the Do Minimum 2023 and 2038 scenarios can be seen in Diagram 6.11 and Diagram 6.12 respectively. In general, car use is expected to decrease from 57% to 53% between 2023 and 2038. Pedestrian, cyclist and public transport trips are all expected to increase.



**Diagram 6.11: 2023 Do Minimum Mode Share**



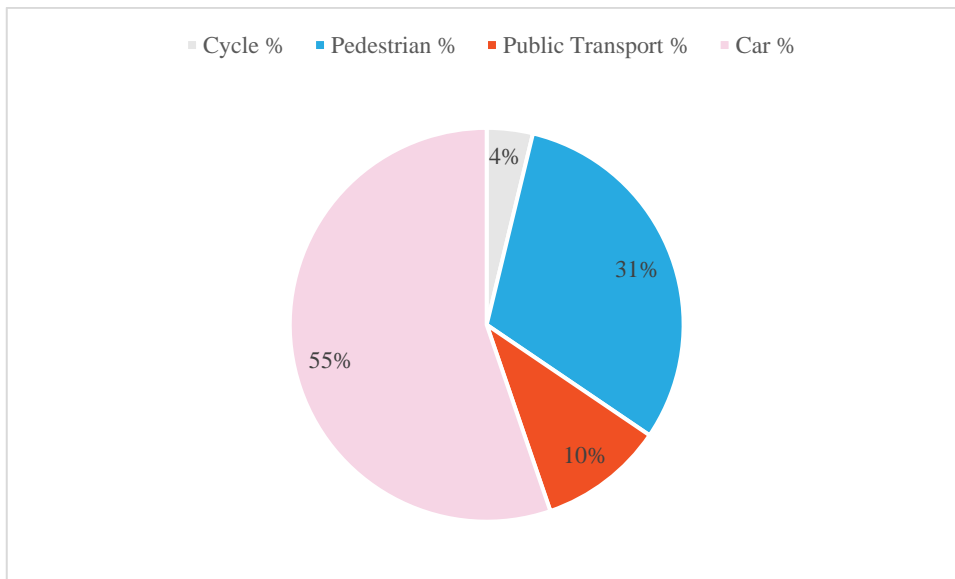
**Diagram 6.12: 2038 Do Minimum Mode Share**

### 6.5.4 Do Something Scenario

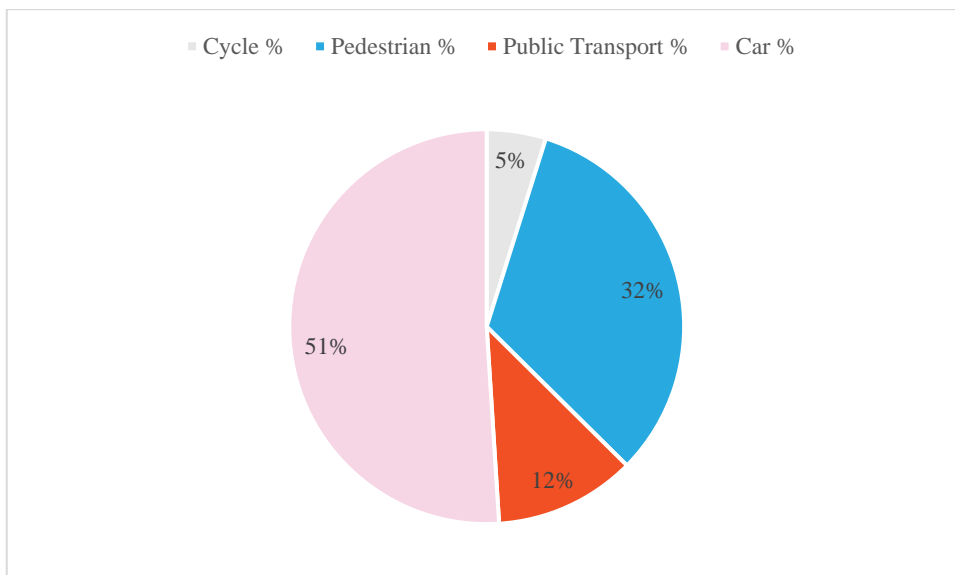
The Do Something scenario represents the likely conditions with the Proposed Scheme in place. The traffic and transport elements of the Proposed Scheme are presented in detail in Chapter 4 (Proposed Scheme Description) of the EIAR.

Based on the WRM, the predicted mode share in the Do Something 2023 and 2038 scenarios can be seen in Diagram 6.13 and Diagram 6.14 respectively. In general, car use is expected to decrease from 55% to 51% between 2023 and 2038 in the Do Something scenario. Pedestrian, cyclist and public transport trips are all expected to increase.





**Diagram 6.13: 2023 Do Something Mode Share**



**Diagram 6.14: 2038 Do Something Mode Share**

### 6.5.5 Construction Phase

This section considers the potential temporary traffic and transport impacts that construction of the Proposed Scheme will have on the direct and indirect study areas during the construction phase.

Chapter 5 (Construction) of the EIAR has been prepared to demonstrate the likely approach that will be taken to construct the Proposed Scheme. A high-level construction strategy has been prepared and should be referred to in this section. This assessment, as outlined herein, provides an overview of the potential traffic and transport impacts of the Construction Phase based on the information in this strategy.

The appointed contractor will be required to prepare and implement a comprehensive Construction Traffic Management Plan (CTMP). In preparing the CTMP for the proposed works, the appointed contractor will be required to give consideration where practicable to facilitate and identify opportunities for the maximum movement of people during the construction period through implementing the following hierarchy of transport mode users:

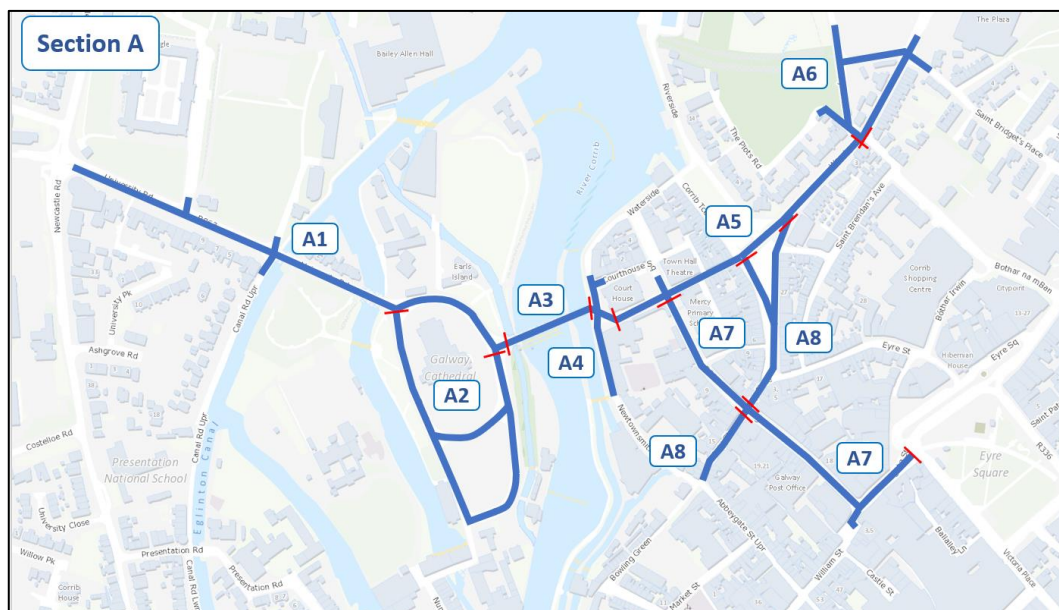
- Pedestrians;
- Cyclists;
- Public Transport; and
- General Traffic.

#### 6.5.5.1 Description of Construction Works

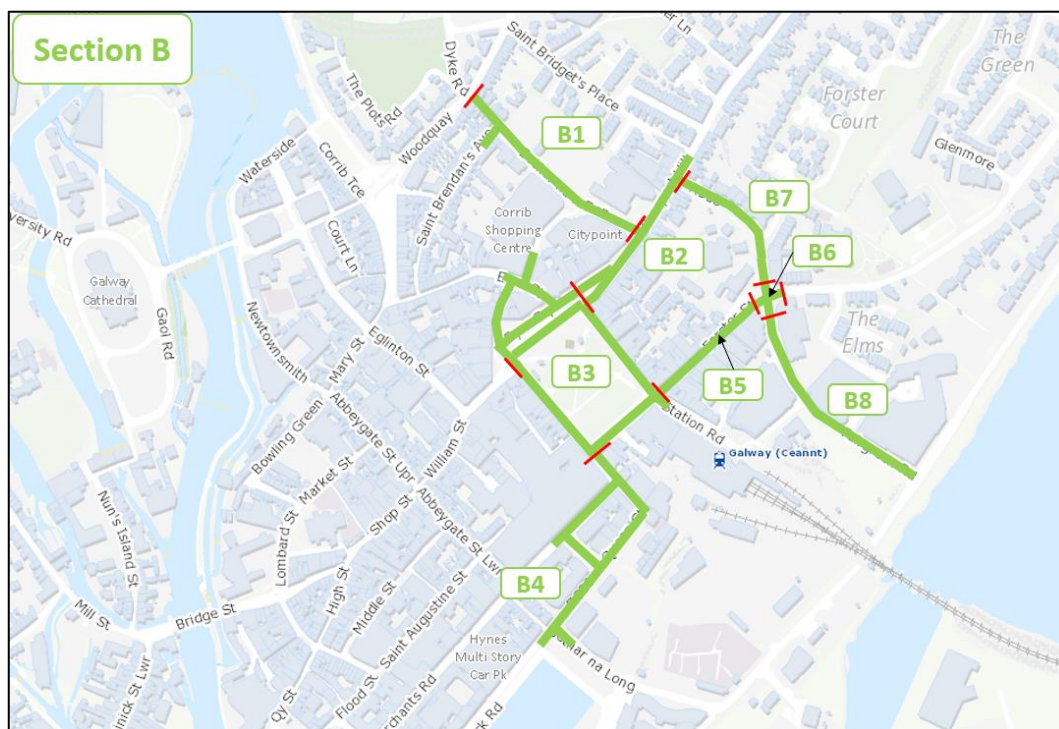
The Proposed Scheme has been divided into the following three principal sections, and multiple sub-sections, in relation to construction:

- Section A - University Road to Eyre Square, Woodquay and Headford Road:
  - Section A1 – University Road
  - Section A2 – Gaol Road & Galway Cathedral
  - Section A3 – Salmon Weir Bridge
  - Section A4 – Newtownsmith / Waterside
  - Section A5 – St Vincent’s Avenue / Walsh’s Terrace
  - Section A6 – Dyke Road / Headford Road
  - Section A7 - St. Francis Street/Eglinton Street/Williamsgate Street
  - Section A8 - Woodquay/Daly’s Place/Mary Street
- Section B - Eyre Square to Dock Road, Bothar na mBan to College Road
  - Section B1 - Bóthar na mBan/St. Brendan’s Avenue
  - Section B2 - Prospect Hill
  - Section B3 - Eyre Square North/Eyre Square East/Eyre Square South
  - Section B4 - Victoria Place/Merchant’s Road/Queen Street
  - Section B5 - Forster Street
  - Section B6 - College Road/Forster Street/Fairgreen Road/Bóthar Uí hÉithir junction
  - Section B7 - Bóthar Uí hÉithir
  - Section B8 - Fairgreen Road
- Section C - College Road to Dublin Road
  - Section C1 - College Road (Forster Street to Lough Atalia Road)
  - Section C2 - College Road/Lough Atalia Road junction
  - Section C3 - College Road (to junction at Moneenageisha)
  - Section C4 - Moneenageisha junction
  - Section C5 - R338 Dublin Road

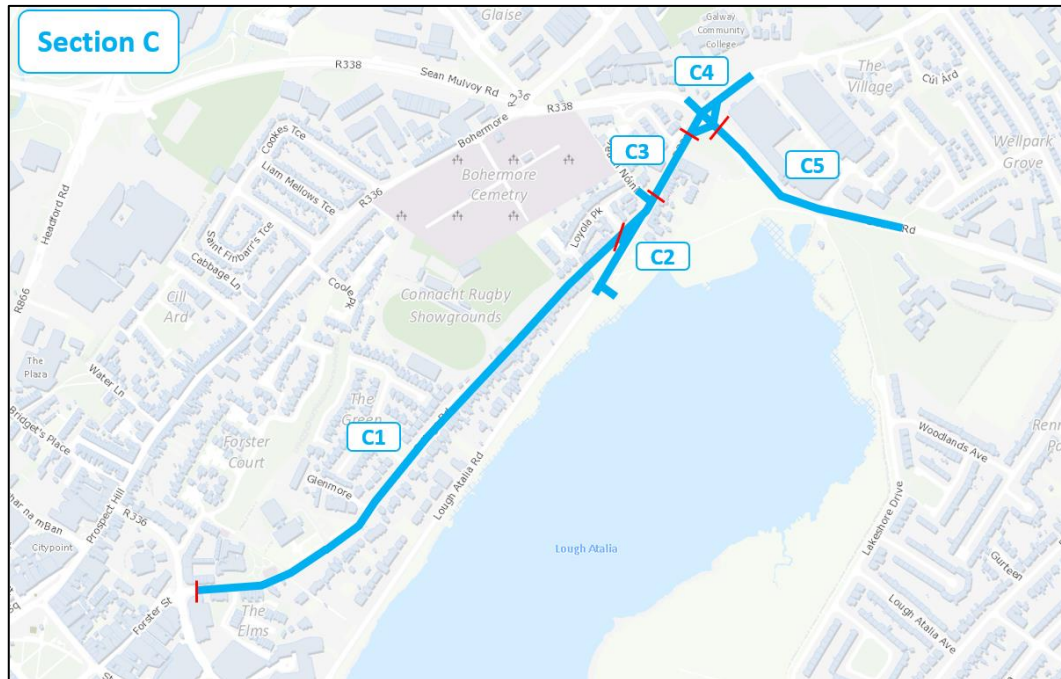
The location of each principal section and the various sub-sections can be seen in Diagram 6.15, Diagram 6.16 and Diagram 6.17.



**Diagram 6.15: Proposed Sub Sections of Construction Phase - Section A**



**Diagram 6.16: Proposed Sub Sections of Construction Phase - Section B**



**Diagram 6.17: Proposed Sub Sections of Construction Phase – Section C**

## 6.5.6 Construction Programme

It is expected that construction will commence in Q4 2023, with construction works anticipated to take approximately 18 – 20 months. Individual activities will have varying durations. A minimum of three work areas are expected to be in construction simultaneously (one from Section A, one from Section B and one from Section C).

### 6.5.6.1 Construction Route

The appointed contractor's CTMP shall include measures for managing traffic in and out of the construction compounds. Construction vehicles will be directed to access work sections via the Proposed Scheme and dedicated routes on the National and Regional Road Network where practicable, to minimise use of the local road network. The following National and Regional roads are envisaged to form dedicated Construction Access Routes for construction vehicles to travel to and from the construction works (as shown in red in Diagram 6.18).





**Diagram 6.18: National Roads Used for Construction**

### 6.5.6.2 Potential Construction Impact

#### Overview

Construction of the Proposed Scheme has the potential to impact people's day-to-day activities along the corridor while the works are underway. Chapter 5 (Construction) of this EIAR identifies impactful activities, considers their effect, and identifies mitigation measures to reduce or remove their impact insofar as practicably possible.

For construction activities on or adjacent to public roads, all works will be undertaken in accordance with DOT's 'Traffic Signs Manual, Chapter 8 Temporary Traffic Measures and Signs for Roadworks' and associated guidance. Chapter 5 (Construction) of the EIAR contains temporary traffic management proposals for the Proposed Scheme. These proposals maintain safe distances between road users and road workers, depending on the type of construction activities taking place and existing site constraints. Temporary diversions, and in some instances temporary road closures, may be required where a safe distance cannot be maintained to undertake works necessary to complete the Proposed Scheme. All road closures and diversions will be determined by Galway City Council. The need for temporary access restrictions will be confirmed with residents and businesses prior to their implementation.

## **Pedestrian Provisions**

As described in Chapter 5 (Construction) of the EIAR, pedestrians may be temporarily impacted by construction activities along the Proposed Scheme corridor. Pedestrian diversions and temporary surface footpaths will be used to facilitate pedestrian movements around work areas. Access to local amenities, such as to bus stops, traffic crossings, private dwellings, and businesses, may be temporarily altered but access will be maintained.

Due consideration will be given to pedestrian provisions in accordance with Section 8.2.8 of the DTTS Chapter 8, Temporary Traffic Measures and Signs for Roadworks of the Traffic Signs Manual (DTTS 2019a) and the DTTS Temporary Traffic Management Design Guidance (DTTS 2019b), to ensure the safety of all road users, in particular pedestrians (including able-bodied pedestrians, wheelchair users, mobility impaired pedestrians, pushchair users etc.). Therefore, where footpaths are affected by construction, a safe route will be provided past the works area, and where practicable, provisions for matching existing facilities for pedestrians. Due consideration will also be given to the need for temporary ramps, and measures for accessible users, where changes in elevation are temporarily introduced to facilitate works and footpath diversions. Entrance points to the construction zone will be controlled as required.

## **Cycling Provisions**

Cyclists may be temporarily impacted by construction activities along the Proposed Scheme corridor. As part of Temporary Traffic Management arrangements, the appointed Contractor will give due consideration to cyclist provision in accordance with Section 8.2.8 of the DTTS Chapter 8, Temporary Traffic Measures and Signs for Roadworks of the Traffic Signs Manual (DTTS 2019a) and the DTTS Temporary Traffic Management Design Guidance (DTTS 2019b), including the use of site-based risk assessments. Therefore, where cycle tracks are affected by construction, a safe route will be provided past the work area, and where practicable, provisions for matching existing facilities for cyclists will be made.

## **Public Transport Provisions**

Existing public transport routes will be maintained throughout the duration of the Construction Phase of the Proposed Scheme (notwithstanding potential for occasional road closures / diversions as described in Chapter 5 (Construction) of the EIAR.

Wherever practicable, bus services will be prioritised over general traffic. However, the temporary closure of sections of existing dedicated bus lanes may be required to facilitate the construction of new bus priority infrastructure that is being developed as part of the Proposed Scheme. It is also likely that some existing bus stop locations may need to be temporarily relocated to accommodate the works. In such cases operational bus stops will be safely accessible to all users.

## **Parking and Loading**

Parking and loading locations may be temporarily impacted by construction activities along the Proposed Scheme corridor. There may be temporary

restrictions to on-street parking and loading facilities. The appointed contractor will discuss temporary traffic management measures with the road authority and directly affected residents/business with the aim of minimising disruption.

### **General Traffic**

The Proposed Scheme will be constructed to ensure the mitigation of disturbance to residents, businesses and existing traffic. Localised temporary lane or road closures may be required for short periods. Details of illustrative temporary traffic management measures to facilitate construction of the Proposed Scheme are included in Chapter 5 (Construction) of the EIAR. Each sub section in relation to the construction strategy outlines phases of traffic management and associated road/ lane closures – see the construction strategy for further details.

### **Construction Traffic Generation**

Site Operatives: It is expected that there will be 70 to 80 staff directly employed across the Proposed Scheme, rising to 100 staff at peak construction.

Typical work hours on site are between 08:00 and 18:00, meaning that staff will typically arrive and depart outside of the AM and PM peak hours.

The appointed contractor will prepare a Construction Stage Mobility Management Plan (CSMMP) which will be developed prior to construction to actively discourage personnel from using private vehicles to travel to site. The CSMMP will promote the use of public transport, cycling and walking by personnel. Private parking at the Construction Compound will be limited. Vehicle-sharing will be encouraged, subject to public health guidelines, where travel by private vehicle is a necessity e.g. for transporting heavy equipment. A combination of CSMMP measures, as well as work shift patterns, means that fewer than 10 trips by private vehicle are envisaged to and from site during peak periods.

Heavy Goods Vehicles (HGVs): Additional construction traffic will be generated during the Construction Phase of the Proposed Scheme, for the purpose of the following:

- Clearance of existing site material and waste;
- Deliveries of construction material; and
- Removal of construction waste material.

Chapter 5 (Construction) of this EIAR provides a breakdown of the expected operation for the construction of the Proposed Scheme during each subsection. It should be noted that the CTMP will control vehicular movement along the construction route, including restrictions on the number of HGVs accessing and egressing the construction works throughout the day to mitigate the impacts to general traffic on the surrounding road network.

Based on construction activities associated with the Proposed Scheme, a maximum of 26 HGV trips are estimated to access / egress the construction works over a 10 hour period. This equates to an average of 2 – 3 HGVs in the AM and PM peak hours.



Given that the above impacts are minimal and comfortably below the thresholds set out in TII's Guidelines for Transport Assessments, it is considered appropriate to define the general potential traffic impacts of the Construction Phase as negligible and having a Not Significant and Temporary effect. Therefore, no further analysis is required for the purpose of this assessment.

It should be noted that further detail on the restrictions to construction vehicle movements during the peak periods of the day will be contained within the appointed contractor's CTMP prior to construction.

### Construction Phase Summary

The contents of Table 6.18 present a summary of the potential impacts of the Proposed Scheme during Construction Phase.

**Table 6.18: Summary of Construction Phase Impacts**

Assessment Topic	Description of Effect	Potential Impact / Significance of Effect
Walking	Restrictions to pedestrians along Proposed Scheme.	Negative, Slight and Temporary
Cycling	Restrictions to cyclists along Proposed Scheme	Negative, Moderate and Temporary
Bus	Restrictions to public transport along Proposed Scheme.	Negative, Slight and Temporary
Parking and Loading	Restrictions to parking / loading along Proposed Scheme.	Negative, Slight and Temporary
General Traffic	Restrictions to general traffic along Proposed Scheme	Negative, Moderate and Temporary
Construction Traffic	Restrictions to construction traffic along Proposed Scheme	Negative, Slight and Temporary

## 6.5.7 Operational Phase

The impact assessment for the Operational Phase has been outlined in terms of a qualitative (walking, cycling, bus infrastructure and parking / loading) and quantitative (bus journey times / reliability, general traffic and people movement) impact analysis, which are outlined in the following sections.

### 6.5.7.1 Qualitative Assessment Methodology

The structure of the qualitative assessment is consistent with the Baseline Environment (Section 6.4) and Chapter 4 (Proposed Scheme Description), whereby the Proposed Scheme has been split into 11 sections.

This has allowed for a more detailed analysis of the quality of the infrastructure proposals per section. The approach for each qualitative assessment is outlined below.

## Pedestrian Infrastructure

The impacts to the quality of the Pedestrian Infrastructure as a result of the Proposed Scheme have been considered with reference to any changes to the existing pedestrian facilities along footpaths and crossing locations. Reference has been made to the overall changes along the full length of the Proposed Scheme and the impact assessment primarily focuses only on the pedestrian facilities at junctions to provide a direct comparison between the Do Minimum and Do Something scenarios.

Where the Proposed Scheme introduces a change to a junction layout, the impact on pedestrians has been assessed using a set of criteria which has been derived from guidance listed in the references section of this report (Section 6.2). The contents of Table 6.19 outline the assessment criteria for each junction.

**Table 6.19: Pedestrian Junction Assessment Criteria**

Aspect	Indicator
Routing	Are pedestrian crossings (signalised or uncontrolled) available on all arms?
Directness	Where crossings are available, do they offer direct movements which do not require diversions or staggered crossings i.e., no or little delay required for pedestrians to cross in one direct movement?
Accessibility	Where crossings exist, are there adequate tactile paving, dropped kerbs and road markings for pedestrians (including able-bodied, wheelchair users, mobility impaired and pushchairs)?
Widths	Are there adequate footpath and crossing widths in accordance with national standards?

The LoS rating demonstrated in Table 6.20 has been applied to each junction for both the Do Minimum and Do Something scenarios based on whether the above indicators have been met.

**Table 6.20: Pedestrian Junction Assessment LoS**

LoS	Indicators Met (of Total of 4)
A	4
B	3
C	2
D	1
E	0

When comparing the Do Minimum and Do Something scenarios for pedestrians, the terms outlined in Table 6.21 have been used to describe the impact, based on the changes in the Qualitative Pedestrian LoS rating.

**Table 6.21: Description of Impact for Pedestrian Qualitative Assessment**

Magnitude of Impact	Change in LoS Rating
High	3 to 4
Medium	2

Low	1
Negligible	0

To establish the Significance of Effect for the impacts of the Pedestrian Infrastructure, as a result of the Proposed Scheme, a sensitivity rating has been applied to each junction in accordance with the methodology set out in Section 6.3.3.

### Cycling Infrastructure

The impacts to the quality of the cycling infrastructure as a result of the Proposed Scheme have been considered with reference to the changes in physical provision for cyclists provided during the Do Minimum and Do Something scenarios. The NTA's National Cycle Manual's Quality of Service (QoS) Evaluation criteria have been adapted for use in assessing the cycling qualitative impact along the Proposed Scheme. The refined cycling facilities criteria are as follows:

- **Segregation:** a measure of the separation between vehicular traffic and cycling facilities;
- **Number of adjacent cyclists / width:** the capacity for cycling two abreast and / or overtaking ('2+1' accommodates two abreast plus one overtaking); and
- **Junction Treatment:** a measure of the treatment of cyclist traffic at existing junctions.

The contents of Table 6.22 outline the assessment criteria with reference to the corresponding LoS ratings.

**Table 6.22: Cycling Assessment Criteria**

LoS	Segregation	No. of adjacent cyclists/width		Junction treatment
A+	High degree of separation. Minimal delay	2+1	2.5m	Cyclists get green signal priority at signalised junctions / has priority across uncontrolled junctions
A	Well separated at mid-link with some conflict at intersections	1+1	2.0m	Toucan crossings at signalised junctions for cyclists along CBC / Protected junctions not already classified as A+ for junction treatment
B	On-road cycle lanes or carriageway designated as 'quiet cycle routes'	1+1	1.75m	Cyclists share green time with general traffic and cycle lanes continue through the junction, for junctions not already classified as A or A+ for junction treatment
C	Bicycle share traffic or bus lanes	1+0	1.25m	Cyclists share green time with general traffic with cycle facilities (advanced stacking locations / cycle lanes) available up to the junction but don't continue through
D	No specific bicycle facilities	1+0	0.75m	No specific bicycle facilities

When comparing the Do Minimum and Do Something scenarios for cyclists, the terms outlined in Table 6.23 have been used to describe the impact, based on the changes in the Qualitative Cycling LoS rating.

**Table 6.23: Description of Impact for Cycling Qualitative Assessment**

Magnitude of Impact	Change in LoS Rating
High	3 to 4
Medium	2
Low	1
Negligible	0

To establish the Significance of Effect for the impacts of the cycling infrastructure, as a result of the Proposed Scheme, a sensitivity rating has been applied to each assessed section in accordance with the methodology set out in Section 6.3.3.

### Bus Infrastructure

The implementation of the Proposed Scheme will result in changes in the quality of bus infrastructure provision along the route, including dedicated bus lanes and bus stop upgrades / relocations. Improvement in bus priority measures will reduce the interaction between buses and general traffic and reduce the likelihood of delays.

The qualitative impact assessment has been undertaken based on the following factors:

- Provision of bus lanes and associated bus priority measures;
- Bus stop provision; and
- Changes to the existing bus stop facilities:
  - Real-time information;
  - Timetable information;
  - Shelters;
  - Seating;
  - Accessible kerbs; and
  - Removal of indented drop off areas, where appropriate.

The magnitude of impact of the Proposed Scheme, applied to the qualitative review of the above factors, is set out in Table 6.24.

**Table 6.24: Magnitude of Impact for Bus Users Qualitative Assessment**

Impact	Description of Impact / Proposed Changes
High positive	Significant benefit for bus users with no disbenefits
Medium positive	Positive impact for bus stop users with benefits outweighing any minor disbenefits.
Low positive	Slight benefit for users with benefits outweighing any disbenefits.
Negligible impact	Marginal impact to user buses where any benefits or disbenefits are offset.

Impact	Description of Impact / Proposed Changes
Low negative	Slight negative impact for users with disbenefits marginally outweighing benefits.
Medium negative	Negative impact for bus users with benefits not outweighing any disbenefits.
High negative	Complete removal of provision.

To establish the Significance of Effect for the impacts of the bus infrastructure, as a result of the Proposed Scheme, a sensitivity rating has been applied to each assessed section in accordance with the methodology set out in Section 6.3.3.

### Parking and Loading

The impacts of the Proposed Scheme on parking and loading provision have been assessed through a comparison of the availability of spaces or lengths of bay in the Do Minimum (baseline environment) and Do Something scenarios. The assessment has taken the parking information and considers the impact of any changes on the general availability of parking and loading in the vicinity of the Proposed Scheme. It classifies parking into the following categories:

- Designated Paid Parking;
- Disabled Permit Parking;
- Designated Loading Bays;
- Designated Taxi Ranks and;
- Informal Parking (i.e. parking alongside the kerb which is unrestricted).

Significance ratings for the impacts of any changes in parking provision have been generated for each specific instance of change and for each section of the Proposed Scheme. The ratings are based upon professional judgement and experience and consider:

- The magnitude of change in parking availability;
- The availability of alternative parking; and
- Nearby land uses, such as businesses.

Note that the parking and loading assessment has been undertaken as a qualitative analysis based on the above criteria and does not generate a resulting LoS rating.

### 6.5.7.2 Section 1 – University Road to St Francis Street Junction

#### Pedestrian Infrastructure Changes

- The key infrastructural changes to the pedestrian link along Section 1 of the Proposed Scheme are the following:
- Raised entry treatment on the northern arm of the uncontrolled junction at University Road / NUIG, with signalised pedestrian crossing on University Road;
- Widened pedestrian footpaths along University Road;
- Raised junction at the University Road / Canal Road Upper uncontrolled junction;

- Existing kerbs to be realigned to provide improved traffic management and pedestrian facilities at University Road/ Gaol Road uncontrolled junction to the northwest of Galway Cathedral;
- Raised table at the University Road / NUIG uncontrolled junction to the north of Galway Cathedral;
- Existing University Road / Gaol Road junction to the east of Galway Cathedral to be transformed into signalised pedestrian crossing, with the southern arm to be pedestrianised;
- Raised table at Gaol Road to the southeast of Galway Cathedral; and
- Splitter island at Gaol Road to the southwest of Galway Cathedral with raised table on the eastern and southern arm.

The assessment of the qualitative impacts on the Pedestrian Infrastructure for Section 1 of the Proposed Scheme are summarised in Table 6.25 along with the accompanying sensitivity for each junction and the resultant significance of effect. A detailed breakdown of the assessment at each junction can be found in Appendix 6.2 (Impact Assessments) in Volume 4 of this EIAR.

**Table 6.25: Section 1 – Significance of Effects for Pedestrian Impact during Operational Phase**

Junctions	Do Minimum LoS	Do Something LoS	Impact	Sensitivity	Significance of Effect
University Road / NUIG (southwest to President's Lawn)	B	A	Low	High	Positive, Moderate and Long-term
University Road / Canal Road Upper	E	A	High	High	Positive, Profound and Long-term
University Road / NUIG (north of Galway Cathedral)	C	B	Low	High	Positive Moderate and Long-Term
University Road / Gaol Road	C	A	Medium	High	Positive, Very Significant and Long-term
Gaol Road (Southeast of Galway Cathedral)	E	B	Medium	Low	Positive, Moderate and Long-term
Gaol Road (Southwest of Galway Cathedral)	E	C	Low	Low	Positive, Slight and Long-term
<b>Section Summary</b>	<b>D</b>	<b>B</b>	<b>Medium</b>	<b>Medium</b>	<b>Positive, Significant and Long-term</b>

The contents of Table 6.25 demonstrate that the Proposed Scheme will have a Positive, Significant and Long-term impact on the quality of the pedestrian infrastructure along the R863 University Road to Saint Francis Street Junction during the Operational Phase.

The LoS during the Do Minimum scenario ranges between E and B, with three of the six impacted junctions along this section given the low E ratings. These ratings have been determined using the previously referenced assessment criteria set out in Table 6.20. The LoS will improve to an A rating at three of the impacted junctions, a B rating at two of the impacted junctions and a C rating at one of the impacted junctions, in the Do Something scenario. This is a result of the proposed improvements to the existing pedestrian facilities in the form of additional crossing locations, increased pedestrian directness, provision of traffic calming measures to reduce vehicle speeds, improved accessibility and increased footpath and crossing widths. All proposed facilities have been designed in accordance with the principles of DMURS and the National Disability Authority (NDA) 'Building for Everyone: A Universal Design Approach' (NDA 2020) with regards to catering for all users, including those with disabilities.

Overall, it is anticipated that there will be Positive, Significant and Long-term effect to the quality of the pedestrian infrastructure along Section 1 of the Proposed Scheme, during the Operational Phase. A detailed breakdown of the assessment at each impacted junction, including a list of the junctions which experience no change, can be found in Appendix 6.2 (Impact Assessments) in Volume 4 of this EIAR.

### Cycling Infrastructure

The following section sets out the qualitative impacts on the cycling receptor for Section 1 of the Proposed Scheme. The results are summarised in Table 6.26, along with the accompanying sensitivity for each section and the resultant significance of impact.

The key cycling improvements along Section 1 of the Proposed Scheme can be summarised as follows:

- Provision of dedicated bus lanes in the eastbound direction from Fisheries Field entrance to Waterside, and in the westbound direction from St Vincent's Avenue crossing to Fisheries Field entrance. This is considered a positive for cyclists, with safer road space available due to less general motorised vehicles.
- Provision of cycling infrastructure providing connectivity between Courthouse Square and the Salmon Weir Bridge in the form of a 3.0m wide two-way cycle track on a paved pedestrian area.

The contents of Table 6.26 outline the cycling qualitative assessment along Section 1 of the Proposed Scheme, which sets out the overall Do Minimum LoS and the Do Something LoS and the description of impact. Please refer to Appendix 6.2 (Impact Assessments) in Volume 4 of this EIAR which outlines in further detail the methodology behind each LoS rating given to the Do Minimum and Do Something scenarios.

**Table 6.26: Section 1 – Cycling Impact during Operational Phase**

Junctions	Do Minimum LoS	Do Something LoS	Impact	Sensitivity	Significance of Effect
-----------	----------------	------------------	--------	-------------	------------------------



Salmon Weir Bridge to Waterside	<b>D</b>	<b>B</b>	Medium	Medium	Positive, Significant and Long-term
Newtownsmith from Corrib Bridge to Waterside	<b>D</b>	<b>B</b>	Medium	Low	Positive, Moderate and Long-term
St Vincent's Ave from Waterside to St Francis St	<b>D</b>	<b>B</b>	Medium	High	Positive, Very Significant and Long-term
<b>Section Summary</b>	<b>D</b>	<b>B</b>	<b>Medium</b>	<b>Medium</b>	<b>Positive, Significant and Long-term</b>

The contents of Table 6.26 demonstrate that the scheme will have a Positive, Significant and Long-term effect on the cycling environment along Section 1 of the Proposed Scheme, including the orbital route around the Galway Cathedral.

The Do Minimum Los has been determined using the previously referenced assessment criteria set out in Table 6.22. The LoS rating of the cycling facilities will improve from D in the Do Minimum to B in the Do Something along the entirety of Section 1 of the Proposed Scheme. This is a result of a reduction in traffic and improved cycling infrastructure as part of the Proposed Scheme.

The findings of the cycling assessment fully align with the objective of the Proposed Scheme, applicable to the Traffic and Transport assessment of the Proposed Scheme, to 'Enhance the potential for cycling by providing a safe network for cycling'.

Section 1.7.3 in the National Cycle Manual states, that in relation to cyclist hierarchy of provision, traffic reduction is a priority, before the provision of segregated cycle lanes to create an attractive environment for cyclists. The Proposed Scheme is designed to reduce traffic significantly and therefore aligns with this hierarchy.

### Bus Infrastructure

The proposed changes to the bus stop infrastructure along Section 1 of the Proposed Scheme are outlined in Table 6.27 below.

**Table 6.27: Section 1 – Changes in Bus Infrastructure**

Inbound/ Outbound	Bus Stop Name/No.	Location	Retained/ Relocated/ Removed/ New	Existing Facilities	Proposed Facilities	Reason for moving / locating stop
----------------------	----------------------	----------	--	------------------------	------------------------	---

Inbound (Eastbound)	University Road (NUIG Main Gate) No.522561	30m North-West of NUI Galway Main Gate	Retained	Bus Shelter No Seating Paper timetable	Bus shelter with seating & facilities to incorporate RTPI	N/A
Inbound (Eastbound)	Galway Cathedral No. 523181	North-East Galway Cathedral, 50m after crossing Salmon Weir Bridge	Relocated	Bus Stop Pole Paper timetable	Bus shelter with seating & facilities to incorporate RTPI	Stop moved closer to pedestrian crossing
Outbound (Westbound)	NUIG Main Gate No. 523031	35m south-east of NUI Galway Main Gate	Retained	RTPI Bus Stop Pole Paper timetable	Bus shelter with seating & facilities to incorporate RTPI	N/A
Outbound (Westbound)	Galway Cathedral No. 522571	North-East Galway Cathedral, 50m after crossing Salmon Weir Bridge	New	Bus Stop Pole Paper timetable	Bus shelter with seating & facilities to incorporate RTPI	New outbound stop to correspond with existing inbound stop

The contents of Table 6.27 indicate that there are considerable improvements to the bus stop facilities along Section 1 of the Proposed Scheme with the provision of shelters, seating, the facilities to incorporate real-time information, and accessible kerbs throughout.

The layout of the relocated and new bus stops is considered to better serve the existing and future catchment and be closer to existing pedestrian crossing facility for improved convenience. This is assessed as providing an overall Positive, Moderate and Long-term effect for bus passengers.

### **Parking & Loading**

The proposals will impact on existing parking and loading along Section 1 of the Proposed Scheme. The contents of Table 6.28 present a summary of the proposed changes along Section 1 of the Proposed Scheme.

**Table 6.28: Section 1 – Overall Changes in Parking / Loading Spaces**

Location	Parking Type	Do Minimum	Do Something	Change
University Road	Pay & Display / Residential	17	13	-4
	Loading Bay	1 bay (3 spaces)	1 bay (3 spaces)	0
Gaol Road	Tour Bus Stop	4	0	-4
	Disabled Bays	2	2	0
	Bus Set Down	2 bays (9 spaces)	4	-5
Newtownsmith	Paid/ Commercial	10	6	-4
	Loading Bay	1 bay (3 spaces)	1 bay (3 spaces)	0
Galway Cathedral*	Bus Parking	0	10	+10
	Disabled Bays/ Commercial	5	5	0
	Paid/ Commercial	158	42	-116
<b>Total</b>		<b>211</b>	<b>88</b>	<b>-123</b>

*\*Note, this is an off-street car park.*

Overall, there are approximately 211 current parking spaces affected along Section 1 of the Proposed Scheme. Under the proposals, 88 parking / loading spaces will be lost, the majority lost from Galway Cathedral car park. It is noted that there are other on-street parking locations and off-street parking locations surrounding the corridor, which provide ample parking opportunities.

There are approximately 39 parking spaces within a 200m distance of University Road, which are located on Ash Grove, University Park, Canal Road Upper. There are approximately 175 parking spaces within a 200m distance of Gaol Road and Galway Cathedral which are unaffected by the Proposed Scheme. There are approximately 40 parking spaces within a 200m distance of Newtownsmith within Newtownsmith Car Park.

The changes are considered to have a Negative, Moderate and Long-term effect overall, due to the number of spaces lost, compared to the spaces available within the local area. This effect is considered acceptable in the context of the aim of the Proposed Scheme, to provide enhanced walking, cycling and bus infrastructure on this key access corridor. In addition to this, reducing parking within the city centre links with national and regional policy requirements to shift away from private car use as a form of traffic demand management, and help meet Ireland's climate action target.

More information in relation to detailed parking proposals can be found in Appendix 6.3 (Preliminary Parking Survey Report) in Volume 4 of this EIAR.

### 6.5.7.3 Section 2 – St. Francis Street and Eglinton Street

#### Pedestrian Infrastructure Changes

The key infrastructural changes to the pedestrian link along Section 2 of the Proposed Scheme are the following:

- Realigned and improved pedestrian facilities at the St. Vincent's Avenue / St. Francis Street / Courthouse Square signalised junction.
- Signalised junction and pedestrian crossings at the St. Francis Street / Dalys Place / Eglinton Street / Mary Street junction
- Signalised pedestrian crossing at St. Francis Street, approximately 15m to the south of the St. Francis Street / St. Anthony's Place junction; and
- Raised table at the Eglinton Street / Williamsgate Street intersection.

The assessment of the qualitative impacts on the pedestrian infrastructure for Section 2 of the Proposed Scheme is summarised in Table 6.29 along with the accompanying sensitivity for each junction and the resultant significance of impact.

**Table 6.29: Section 2 – Significance of Effects for Pedestrian Impact during Operational Phase**

Junctions	Do Minimum LoS	Do Something LoS	Impact	Sensitivity	Significance of Effect
St Vincent's Avenue / St Francis Street / Courthouse Square	B	A	Low	High	Positive, Moderate and Long-term
St Francis Street / Dalys Place / Eglinton Street / Mary Street	B	A	Medium	High	Positive, Very Significant and Long-term
<b>Section Summary</b>	<b>B</b>	<b>A</b>	<b>Low</b>	<b>High</b>	<b>Positive, Moderate and Long-term</b>

The contents of Table 6.29 demonstrate that the Proposed Scheme will have a Positive, Moderate and Long-term impact on the quality of the pedestrian infrastructure at junctions along the R866 Saint Francis Street to Eglinton Street.

The LoS during the Do Minimum scenario is B at both junctions. These ratings have been determined using the previously referenced assessment criteria set out in Table 6.20. The LoS will improve to an A rating at both the impacted junctions in the Do Something scenario. This is a result of the proposed improvements to the existing pedestrian facilities in the form of additional crossing locations, increased pedestrian directness, provision of traffic calming measures to reduce vehicle speeds, improved accessibility and increased footpath and crossing widths. All proposed facilities have been designed in accordance with the principles of

DMURS and Building for Everyone: A Universal Design Approach (NDA 2020) with regards to catering for all users, including those with disabilities.

Overall, it is anticipated that there will be Positive, Moderate and Long-term effect to the quality of the pedestrian infrastructure along Section 2 of the Proposed Scheme, during the Operational Phase, which aligns with the overarching aim to provide enhanced walking infrastructure on the corridor. A detailed breakdown of the assessment at each impacted junction, including a list of the junctions which experience no change, can be found in Appendix 6.2 (Impact Assessments) in Volume 4 of this EIAR.

### Cycling Infrastructure

The key cycling improvements along Section 2 of the Proposed Scheme can be summarised as follows:

- Provision of dedicated bus lane in the southbound direction from Saint Francis Street, via Eglinton Street to Williamsgate Street. This is considered a positive for cyclists, with safer road space available due to less general motorised vehicles.

The contents of Table 6.30 outline the cycling qualitative assessment along Section 2 of the Proposed Scheme, with reference to the accompanying sensitivity for each section and the resultant Significance of Impact.

**Table 6.30: Section 2 – Cycling Impact during Operational Phase**

Junctions	Do Minimum LoS	Do Something LoS	Impact	Sensitivity	Significance of Effect
St Francis St from Courthouse Square to Dalys Place	D	B	Medium	High	Positive, Very Significant and Long-term
Eglinton / Williamsgate St from Mary St to Eyre Square	D	B	Medium	High	Positive, Very Significant and Long-term
<b>Section Summary</b>	<b>D</b>	<b>B</b>	<b>Medium</b>	<b>High</b>	Positive, Very Significant and Long-term

The contents of Table 6.30 demonstrate that the scheme will have a Positive, Very Significant and Long-term effect on the cycling environment along the R866 Saint Francis Street to Williamsgate Street.

The Do Minimum LoS has been determined using the previously referenced assessment criteria set out in Table 6.22. The LoS rating of the cycling facilities will improve from D in the Do Minimum to B in the Do Something along the entirety of Section 2 of the Proposed Scheme. This is a result of a reduction in traffic and therefore improved safety for cyclists associated with the Proposed Scheme.

The findings of the cycling assessment fully align with the objective of the Proposed Scheme, applicable to the Traffic and Transport assessment of the Proposed Scheme, to 'Enhance the potential for cycling by providing a safe network for cycling'. Section 1.7.3 in the National Cycle Manual states, that in relation to cyclist hierarchy of provision, traffic reduction is a priority, before the provision of segregated cycle lanes to create an attractive environment for cyclists. The Proposed Scheme is designed to reduce traffic significantly and therefore aligns with this hierarchy.

### Bus Infrastructure

The proposed changes to the bus stop infrastructure along Section 2 of the Proposed Scheme are outlined in Table 6 below.

**Table 6.31: Section 2 – Changes in Bus Infrastructure**

Inbound/ Outbound	Bus Stop Name/No.	Location	Retained/ Relocated/ Removed/ New	Existing Facilities	Proposed Facilities	Reason for moving / locating stop
Inbound (Eastbound)	Franciscan Friary No. 522591	Osteria Italia Restaurant St. Francis Street	Retained	Bus Stop Pole Paper timetable	Bus shelter with seating & facilities to incorporate RTPI	N/A
Outbound (Westbound)	Francis Street No. 523021	Franciscan Abbey St. Francis Street	Retained	RTPI Bus Stop Pole	Bus shelter with seating & facilities to incorporate RTPI	N/A

The number and location of stops along Section 2 will remain the same, however, there will be improvements to the bus stop facilities with the provision of shelters, seating, the facilities to accommodate real-time information and accessible kerbs throughout. This is assessed as providing an overall Positive, Slight and Long-term effect for bus passengers.

### Parking & Loading

The proposals will impact on existing parking and loading along Section 2 of the Proposed Scheme. The contents of Table 6.32 present a summary of the proposed changes along Section 2 of the Proposed Scheme.

**Table 6.32: Section 2 – Overall Changes in Parking / Loading Spaces**

Location	Parking Type	Do Minimum	Do Something	Change
Eglinton Street	Loading Bay / Commercial	1 bay (6 spaces)	1 bay (4 spaces)	-2
	Informal Parking/	1 bay (9 spaces)	0	-9

Location	Parking Type	Do Minimum	Do Something	Change
	Commercial			
Williamsgate Street	Loading Bay / Commercial	1 bay (3 spaces)	1 bay (3 spaces)	0
<b>Total</b>		<b>18</b>	<b>7</b>	<b>-11</b>

Overall, there are approximately 18 current parking spaces affected along Section 2 of the Proposed Scheme.

Under the proposals, 11 parking spaces will be lost, however this is informal, unmarked parking. It is noted that there are other on-street parking locations and off-street parking locations surrounding the corridor, which provide ample parking opportunities.

There are over 500 parking spaces on local side roads within 200m of this section. Bowling Green Car Park and Market Square Car Park are also situated in proximity to this section.

The changes are considered to have a Not Significant and Long-term effect overall, due to the low number of spaces lost and the informal nature of these spaces. This effect is considered acceptable in the context of the aim of the Proposed Scheme, to provide enhanced walking, cycling and bus infrastructure on this key access corridor.

In addition to this, reducing parking within the city centre links with national and regional policy requirements to shift away from private car use as a form of traffic demand management, and help meet Ireland's climate action target.

#### 6.5.7.4 Section 3 – Eyre Square to Forster Street

##### Pedestrian Infrastructure Changes

The key infrastructure changes to pedestrian links along Section 3 of the Proposed Scheme are summarised as follows:

- Improved pedestrian crossing at the Williamsgate Street / Rosemary Street / Eyre Square intersection;
- Kerb realignment to provide wider footpaths and improved pedestrian facilities at the existing Eyre Square / Prospect Hill signalised junction; eastern arm on Prospect Hill to be disconnected;
- Raised entry treatment at Prospect Hill / Bóthar Na mBan uncontrolled junction;
- Existing partially signalised junction at Eyre Square / Forster Road / Station Road junction to be fully signalised with kerb realignment and improved pedestrian facilities; and
- Footpaths to be widened along Forster Street.

The assessment of the qualitative impacts on the pedestrian infrastructure for Section 3 of the Proposed Scheme is summarised in Table 6.33 along with the



accompanying sensitivity for each junction and the resultant significance of impact.

**Table 6.33: Section 3 – Significance of Effects for Pedestrian Impact during Operational Phase**

Junctions	Do Minimum LoS	Do Something LoS	Impact	Sensitivity	Significance of Effect
Eyre Square / Prospect Hill	B	A	Low	High	Positive, Moderate and Long-term
Eyre Square / Forster Street / Station Road / Frenchville Lane	D	A	High	High	Positive, Profound and Long-term
<b>Section Summary</b>	<b>C</b>	<b>A</b>	<b>Medium</b>	<b>High</b>	<b>Positive, Very Significant and Long-term</b>

The contents of Table 6.33 demonstrate that the Proposed Scheme will have a Positive, Very Significant and Long-term impact on the quality of the pedestrian infrastructure at junctions between Eyre Square and Forster Street.

The LoS during the Do Minimum scenario ranges from B to D, with one of the two impacted junctions along this section given the low D rating. These ratings have been determined using the previously referenced assessment criteria set out in Table 6.20. The LoS will improve to an A rating at both of the impacted junctions, in the Do Something scenario. This is a result of the proposed improvements to the existing pedestrian facilities in the form of additional crossing locations, increased pedestrian directness, provision of traffic calming measures to reduce vehicle speeds, improved accessibility and increased footpath and crossing widths. All proposed facilities have been designed in accordance with the principles of DMURS and Building for Everyone: A Universal Design Approach (NDA 2020) with regards to catering for all users, including those with disabilities.

Overall, it is anticipated that there will be Positive, Very Significant and Long-term effect to the quality of the pedestrian infrastructure along Section 3 of the Proposed Scheme, during the Operational Phase, which aligns with the overarching aim to provide enhanced walking infrastructure on the corridor.

A detailed breakdown of the assessment at each impacted junction, including a list of the junctions which experience no change, can be found in Appendix 6.2 (Impact Assessments) in Volume 4 of this EIAR.

### Cycling Infrastructure

The key cycling improvements along Section 3 of the Proposed Scheme can be summarised as follows:

- Provision of dedicated bus lanes around Eyre Square, from Rosemary Avenue junction, along Eyre Square East to Forster Street and Fairgreen Road junction.

This is considered a positive for cyclists, with safer road space available due to less general motorised vehicles.

The contents of Table 6.34 outline the cycling qualitative assessment along Section 3 of the Proposed Scheme, with reference to the accompanying sensitivity for each section and the resultant Significance of Impact.

**Table 6.34: Section 3 – Cycling Impact during Operational Phase**

Junctions	Do Minimum LoS	Do Something LoS	Impact	Sensitivity	Significance of Effect
An Fhaiche Mhor from Rosemary Ave to Eyre Street	D	B	Medium	High	Positive, Very Significant and Long-term
Eyre Square / Forster St from Victoria Place to Fairgreen Road	D	B	Medium	High	Positive, Very Significant and Long-term
<b>Section Summary</b>	<b>D</b>	<b>B</b>	<b>Medium</b>	<b>High</b>	<b>Positive, Very Significant and Long-term</b>

The contents of Table 6.34 demonstrate that the scheme will have a Positive, Very Significant and Long-term effect on the cycling environment along Section 3 of the Proposed Scheme.

The Do Minimum LoS has been determined using the previously referenced assessment criteria set out in Table 6.22. The LoS rating of the cycling facilities will improve from D in the Do Minimum to B in the Do Something along the entirety of Section 3 of the Proposed Scheme. This is a result of a reduction in traffic and therefore improved safety for cyclists associated with the Proposed Scheme.

The findings of the cycling assessment fully align with the objective of the Proposed Scheme, applicable to the Traffic and Transport assessment of the Proposed Scheme, to 'Enhance the potential for cycling by providing a safe network for cycling'. Section 1.7.3 in the National Cycle Manual states, that in relation to cyclist hierarchy of provision, traffic reduction is a priority, before the provision of segregated cycle lanes to create an attractive environment for cyclists. The Proposed Scheme is designed to reduce traffic significantly and therefore aligns with this hierarchy.

### Bus Infrastructure

The proposed changes to the bus stop infrastructure along Section 3 of the Proposed Scheme are outlined in Table 6.35 below.

**Table 6.35: Section 3 – Changes in Bus Infrastructure**

Inbound/ Outbound	Bus Stop Name/No.	Location	Retained/ Relocated/ Removed/ New	Existing Facilities	Proposed Facilities	Reason for moving / locating stop
Eastbound	Eyre Square Stop 1	North of Eyre Square parallel to the plaza.	Removed	RTPI Bus Shelter with Seating	Bus shelter with seating & facilities to incorporate RTPI	Removed due to amendments to road layout from Eyre Street
Eastbound	Eyre Square Stop 2	North of Eyre Square parallel to the plaza.	Retained	RTPI Bus Shelter with Seating	Bus shelter with seating & facilities to incorporate RTPI	N/A
Eastbound	Eyre Square Stop 3	North of Eyre Square parallel to the plaza.	Retained	RTPI Bus Shelter with Seating	Bus shelter with seating & facilities to incorporate RTPI	N/A
Eastbound	Eyre Square Stop 4	North of Eyre Square parallel to the plaza.	Retained	RTPI Bus Shelter with Seating	Bus shelter with seating & facilities to incorporate RTPI	N/A
N/A (Westbound)	Eyre Square Stop 5	East of Eyre Square Parallel to playground	Retained	RTPI Bus Shelter with Seating	Bus shelter with seating & facilities to incorporate RTPI	N/A
N/A (Westbound)	Eyre Square Stop 6	East of Eyre Square Parallel to playground	Retained	RTPI Bus Shelter with Seating	Bus shelter with seating & facilities to incorporate RTPI	N/A
N/A (Westbound)	Eyre Square Stop 7	East of Eyre Square Parallel to playground	Retained	RTPI Bus Shelter with Seating	Bus shelter with seating & facilities to incorporate RTPI	N/A
N/A (Westbound)	Eyre Square Stop 8	East of Eyre Square Parallel to playground	Retained	RTPI Bus Shelter with Seating	Bus shelter with seating & facilities to incorporate RTPI	N/A
N/A (Westbound)	Eyre Square Stop 9	South of Eyre Square Beside AIB Building	Removed	RTPI Bus Shelter with Seating	N/A	Removed as bus stop is now obsolete

Inbound/ Outbound	Bus Stop Name/No.	Location	Retained/ Relocated/ Removed/ New	Existing Facilities	Proposed Facilities	Reason for moving / locating stop
Inbound (Westbound)	Forster Street No. 524361	Outside Forster Court	Removed	Bus Stop Pole Paper Timetable	Bus shelter with seating & facilities to incorporate RTPI	Removed due to Proximity to Eyre Square

The number of stops along Section 3 will reduce by three stops, which is considered to better serve the existing and future catchment. There will be improvements to the bus stop facilities with the provision of accessible kerbs throughout. This is assessed as providing an overall Positive, Slight and Long-term effect for bus passengers.

### Parking & Loading

The proposals will impact on existing parking and loading along Section 3 of the Proposed Scheme. The contents of Table 6.36 present a summary of the proposed changes along Section 3 of the Proposed Scheme.

**Table 6.36: Section 3 – Overall Changes in Parking / Loading Spaces**

Location	Parking Type	Do Minimum	Do Something	Change
Eyre Square East	Loading Bay/ Taxi Rank / Commercial	2 bays (6 spaces)	2 bays (12 spaces)	+6
	Taxi Rank / Commercial	2 bays (8 spaces)	0	-8
	Bus Set Down	1 bay (5 spaces)	1 bay (5 spaces)	0
Eyre Square North	Bus Set Down	2 bays (6 spaces)	1 bay (4 spaces)	-2
	Loading Bay / Commercial	1 bay (2 spaces)	1 bay (4 spaces)	+2
	Taxi Rank/ Commercial	1 bay (14 spaces)	0	-14
	Designated Disabled Parking	2	0	-2
Prospect Hill	Disabled Bays / Commercial	4	4	0
	Loading Bay / Commercial	2 bays (8 spaces)	2 bays (9 spaces)	+1
	Taxi Rank/ Commercial	2 bays (11 spaces)	2 bays (7 spaces)	-4
Forster Street	Paid Parking/ Commercial	8	0	-8
	Disabled Bays / Commercial	2	0	-2

Location	Parking Type	Do Minimum	Do Something	Change
	Loading Bay/ Commercial	1 bay (6 spaces)	1 bay (6 spaces)	0
Bothar Irwin	Paid Parking / Commercial	3	0	-3
	Disabled Bays / Commercial	1	3	+2
<b>Total</b>		<b>86</b>	<b>54</b>	<b>-32</b>

Overall, there are approximately 86 current parking spaces affected along Section 3 of the Proposed Scheme. Under the proposals, 32 parking spaces will be lost. It is noted that there are other on-street parking locations and off-street parking locations surrounding the corridor, which provide ample parking opportunities.

There are approximately over 1000 parking spaces within a 200m distance of Section 3. In addition, Galway (Ceannt) Train Station is located within a close proximity and contains 90 parking spaces.

The changes are considered to have a Not Significant and Long-term effect overall, due to the low number of spaces lost, compared to spaces available in surrounding areas. This effect is considered acceptable in the context of the aim of the Proposed Scheme, to provide enhanced walking, cycling and bus infrastructure on this key access corridor.

In addition to this, reducing parking within the city centre links with national and regional policy requirements to shift away from private car use as a form of traffic demand management, and help meet Ireland's climate action target.

More information in relation to detailed parking proposals can be found in Appendix 6.3 (Preliminary Parking Survey Report) in Volume 4 of this EIAR.

#### 6.5.7.5 Section 4 – College Road (Forster Street to Lough Atalia)

##### **Pedestrian Infrastructure Changes**

The key infrastructural changes to the pedestrian link along Section 4 of the Proposed Scheme are the following:

- Raised entry treatment on College Road, approximately 50m west to the College Road / The Elms junction;
- Raised entry treatment on The Elms at the College Road / The Elms uncontrolled junction;
- Signalised pedestrian crossing on College Road at approximately 40m to the south of the College Road / Glenmore uncontrolled junction;
- Raised entry treatment on Glenmore at the College Road / Glenmore uncontrolled junction;

- Raised entry treatment on The Green at the College Road / The Green uncontrolled junction;
- Raised entry treatment at the access to Galway Greyhound Stadium on College Road, approximately 160 to the north of the College Road / The Green uncontrolled junction; and
- Signalised pedestrian crossing on College Road at the southeast of Galway Greyhound Stadium.
- There are no existing junctions along Section 4 of the scheme, and therefore there is no significant impact on pedestrian infrastructure.

### Cycling Infrastructure

The key cycling improvements along Section 4 of the Proposed Scheme can be summarised as follows:

- Carriageway designated as ‘quiet cycle route’ by provision of a bus gate on College Road which will reduce vehicle traffic and provides safer cycling facilities.

The contents of Table 6.37 outline the cycling qualitative assessment along Section 4 of the Proposed Scheme, which sets out the overall Do Minimum LoS and the Do Something LoS and the description of impact. Please refer to Appendix 6.2 (Impact Assessments) in Volume 4 of this EIAR which outlines in further detail the methodology behind each LoS rating given to the Do Minimum and Do Something scenarios.

**Table 6.37: Section 4 – Cycling Impact during Operational Phase**

Junctions	Do Minimum LoS	Do Something LoS	Impact	Sensitivity	Significance of Effect
Forster Street/ College Road from Fairgreen Road to / Lough Atalia Road	D	B	Medium	Medium	Positive, Significant and Long-term

The contents of Table 6.37 demonstrate that the scheme will have a Positive Significant and Long-term effect on the cycling environment along the R339 Forster Road / College Road between Fairgreen Road and the Lough Atalia Road junction.

The Do Minimum LoS has been determined using the previously referenced assessment criteria set out in Table 6.22. The LoS rating of the cycling facilities will improve from D in the Do Minimum to B in the Do Something along Section 4 of the Proposed Scheme. This is a result of removing through traffic in this section of the Proposed Scheme, and prioritising cyclist movement.

The findings of the cycling assessment fully align with the objective of the Proposed Scheme, applicable to the Traffic and Transport assessment of the Proposed Scheme, to ‘Enhance the potential for cycling by providing a safe network for cycling’.

Section 1.7.3 in the National Cycle Manual states, that in relation to cyclist hierarchy of provision, traffic reduction is a priority, before the provision of segregated cycle lanes to create an attractive environment for cyclists. The Proposed Scheme is designed to reduce traffic significantly and therefore aligns with this hierarchy.

### Bus Infrastructure

The proposed changes to the bus stop infrastructure along Section 4 of the Proposed Scheme are outlined in Table 6.38 below.

**Table 6.38: Section 4 – Changes in Bus Infrastructure**

Inbound/ Outbound	Bus Stop Name/No.	Location	Retained/ Relocated/ Removed/ New	Existing Facilities	Proposed Facilities	Reason for moving / locating stop
Inbound (Westbound)	College Road Galway (Opposite City Hall) No. 523691	Opposite Galway City Council Entrance	Relocated	Bus Stop Pole Paper Timetable	Bus shelter with seating & facilities to incorporate RTPi	Relocated due to installing of new pedestrian crossing
Outbound (Eastbound)	College Road Stop ID 523231	Yeats College Gate	Retained	Pole Paper Timetable	Bus shelter with seating & facilities to incorporate RTPi	N/A
Inbound (Westbound)	Connacht Rugby No. 523681	Opposite Connacht Rugby Main Entrance	Relocated	Pole Paper Timetable	Bus shelter with seating & facilities to incorporate RTPi	Relocated due to reconfigur ation of loading bay
Outbound (Eastbound)	Connacht Rugby No. 523241	Connacht Rugby 50m North East of Main Entrance	Retained	Pole Paper Timetable	Bus shelter with seating & facilities to incorporate RTPi	N/A
Inbound (Eastbound)	Loyola Park No. 523671	40m South West from Lough Atalia Road Junction	Removed	Bus Shelter Paper Timetable	N/A	Removed due to proximity to Connaught Rugby Stop
Outbound (Eastbound)	Loyola Park No. 523251	60m South West from Lough Atalia Road Junction	Removed	Bus Stop Pole Paper Timetable	N/A	Removed due to proximity to Connaught Rugby Stop



Table 6.38 indicates that there are considerable improvements to the bus stop facilities along Section 4 of the Proposed Scheme with the provision of shelters, seating, the facilities to incorporate real-time information and accessible kerbs throughout.

Two bus stops are being removed, due to the proximity of other bus stops within Section 4. The layout of the relocated and new bus stops is considered to better serve the existing and future catchment and be closer to existing pedestrian crossing facility for improved convenience. This is assessed as providing an overall Positive, Moderate and Long-term effect for bus passengers.

### Parking & Loading

The proposals will impact on existing parking and loading along Section 4 of the Proposed Scheme. The contents of Table 6.49 present a summary of the proposed changes along Section 4 of the Proposed Scheme.

**Table 6.39: Section 4 – Overall Changes in Parking / Loading Spaces**

Location	Parking Type	Do Minimum	Do Something	Change
College Road	Paid / Residential	65	46	-19
	Disabled Bay / Commercial	3	4	+1
	Loading Bay / Commercial	2 bays (4 spaces)	2 bays (4 spaces)	0
<b>Total</b>		<b>72</b>	<b>55</b>	<b>-18</b>

Overall, there are approximately 72 current parking spaces affected along Section 4 of the Proposed Scheme. Under the proposals, 18 parking spaces will be lost, all of which are on-street pay and display spaces. One additional commercial parking space will be added along this section. It is noted that there are other on-street parking locations and off-street parking locations surrounding the corridor, which provide ample parking opportunities.

There are approximately 45 parking spaces on local side roads within a 200m distance of Section 4. There are also a number of off-street parking locations within the vicinity of Section 4 including Galway Sportsground car park, comprising 100 pay and display spaces.

The changes are considered to have a Not Significant and Long-term effect overall, due to the low number of spaces lost, compared to spaces available in surrounding areas. This effect is considered acceptable in the context of the aim of the Proposed Scheme, to provide enhanced walking, cycling and bus infrastructure on this key access corridor.

In addition to this, reducing parking within the city centre links with national and regional policy requirements to shift away from private car use as a form of traffic demand management, and help meet Ireland's climate action target.

More information in relation to detailed parking proposals can be found in Appendix 6.3 (Preliminary Parking Survey Report) in Volume 4 of this EIAR.

### 6.5.7.6 Section 5 – College Road (Lough Atalia to Moneenageisha)

#### Pedestrian Infrastructure Changes

The key infrastructural changes to the pedestrian link along Section 5 of the Proposed Scheme are the following:

- Reprovision of signalised junction with pedestrian crossing at the College Road / Lough Atalia Road junction, approximately 50m to the south of the existing College Road / Loyola Park / Lough Atalia Road signalised junction;
- Raised entry treatment on Loyola Park at the Loyola Park / College Road uncontrolled junction;
- Raised entry treatment at the Gleann Noinin access on College Road, approximately 70m to the north of the Loyola Park / College Road junction; and
- Raised entry treatment at the Huntsman Inn access on College Road, approximately 60m to the south of the College Road / Moneenageisha Road / Wellpark Road / Dublin Road junction.

The assessment of the qualitative impacts on the Pedestrian Infrastructure for Section 5 of the Proposed Scheme are summarised in Table 6.40 along with the accompanying sensitivity for each junction and the resultant significance of effect. A detailed breakdown of the assessment at each junction can be found in Appendix 6.2 (Impact Assessments) in Volume 4 of this EIAR.

**Table 6.40: Section 5 – Significance of Effects for Pedestrian Impact during Operational Phase**

Junctions	Do Minimum LoS	Do Something LoS	Impact	Sensitivity	Significance of Effect
College Road / Loyola Park / Lough Atalia Road	C	A	Medium	Low	Positive, Moderate and Long-term

The contents of Table 6.40 demonstrate that the Proposed Scheme will have a Positive, Moderate and Long-term impact on the quality of the pedestrian infrastructure along College Road between Lough Atalia and Moneenageisha Road.

The LoS during the Do Minimum scenario is noted as C. This rating has been determined using the previously referenced assessment criteria set out in Table 6.20. The LoS will improve to an A rating at the impacted junction in the Do Something scenario.

This is as a result of the proposed improvements to the existing pedestrian facilities in the form of additional crossing locations, increased pedestrian

directness, provision of traffic calming measures to reduce vehicle speeds, improved accessibility and increased footpath and crossing widths. All proposed facilities have been designed in accordance with the principles of DMURS and the National Disability Authority (NDA) 'Building for Everyone: A Universal Design Approach' (NDA 2020) with regards to catering for all users, including those with disabilities.

Overall, it is anticipated that there will be Positive, Moderate and Long-term effect to the quality of the pedestrian infrastructure along Section 5 of the Proposed Scheme, during the Operational Phase, which aligns with the overarching aim to provide enhanced walking infrastructure on the corridor. A detailed breakdown of the assessment at each impacted junction, including a list of the junctions which experience no change, can be found in Appendix 6.2 (Impact Assessments) in Volume 4 of this EIAR.

### Cycling Infrastructure

The key cycling improvements along Section 5 of the Proposed Scheme can be summarised as follows:

- Provision of continuous cycle infrastructure in westbound direction between Moneenageisha Road and the College Road in the form of a 2.0m wide cycle tracks in one direction and a dedicated bus lane in the eastbound direction;
- Upgrade of the existing signalised crossing on L5048 Lough Atalia Road, at the College Road junction, from a pelican crossing to a toucan crossing, allowing cyclist priority.

Along Section 5, the Proposed Scheme will provide a 60mm set down kerb segregation between the footpath and the cycle track.

The kerbs separating the cycle tracks will be raised 120mm from the carriageway to provide segregation from vehicles.

The contents of Table 6.52 outline the cycling qualitative assessment along Section 5 of the Proposed Scheme, which sets out the overall Do Minimum LoS and the Do Something LoS and the description of impact. Please refer to Appendix 6.2 (Impact Assessments) in Volume 4 of this EIAR which outlines in further detail the methodology behind each LoS rating given to the Do Minimum and Do Something scenarios.

**Table 6.41: Section 5 – Cycling Impact during Operational Phase**

Junctions	Do Minimum LoS	Do Something LoS	Impact	Sensitivity	Significance of Effect
College Road from Lough Atalia Road to Dublin Road	D	B	Medium	Low	Positive, Moderate and Long-term

The contents of Table 6.41 demonstrate that the scheme will have a Positive, Moderate and Long-term effect on the cycling environment along the R339 College Road between Lough Atalia Road and the R338 Moneenageisha Road.

The Do Minimum Los has been determined using the previously referenced assessment criteria set out in Table 6.22. The LoS rating of the cycling facilities will improve from D in the Do Minimum to B in the Do Something along Section 5 of the Proposed Scheme. This is a result of improved segregation for cyclists in the westbound direction and provision of dedicated bus lanes in the eastbound direction creating a more attractive cyclist environment. A dedicated toucan crossing is also proposed, contributing to the improvement in LoS.

The findings of the cycling assessment fully align with the objective of the Proposed Scheme, applicable to the Traffic and Transport assessment of the Proposed Scheme, to 'Enhance the potential for cycling by providing a safe network for cycling'. Section 1.7.3 in the National Cycle Manual states, that in relation to cyclist hierarchy of provision, traffic reduction is a priority, before the provision of segregated cycle lanes to create an attractive environment for cyclists.

This section of the Proposed Scheme is designed to reduce traffic significantly and provides segregated cycling infrastructure, and therefore aligns with this hierarchy.

### Bus Infrastructure

There is no bus infrastructure along Section 5 of the Proposed Scheme, therefore, the proposals will have no impact.

### Parking & Loading

The proposals will impact on existing parking and loading along Section 5 of the Proposed Scheme. The contents of Table 6.42 present a summary of the proposed changes along Section 5 of the Proposed Scheme.

**Table 6.42: Section 5 – Overall Changes in Parking / Loading Spaces**

Location	Parking Type	Do Minimum	Do Something	Change
Gleann Noinin	Private / Residential	58	52	-6
Circle K	Private/ Commercial	11	7	-4
Moneenageisha Court	Private / Residential	24	24	0
Bayview B&B	Private / Commercial	12	7	-5
<b>Total</b>		<b>105</b>	<b>90</b>	<b>-15</b>

Overall, there are approximately 105 current parking spaces affected along Section 5 of the Proposed Scheme.

Under the proposals, 15 parking spaces will be lost. It is noted that there are other on-street parking locations and off-street parking locations surrounding the corridor, which provide ample parking opportunities.

There are approximately 45 parking spaces on local side roads, within a 200m distance of Section 5.

The changes are considered to have a Not Significant and Long-term effect overall, due to the low number of spaces lost. This effect is considered acceptable in the context of the aim of the Proposed Scheme, to provide enhanced walking, cycling and bus infrastructure on this key access corridor.

In addition to this, reducing parking within the city centre links with national and regional policy requirements to shift away from private car use as a form of traffic demand management, and help meet Ireland's climate action target.

More information in relation to detailed parking proposals can be found in Appendix 6.3 (Preliminary Parking Survey Report) in Volume 4 of this EIAR.

### 6.5.7.7 Section 6 – Dublin Road

#### Pedestrian Infrastructure

The key infrastructural changes to the pedestrian link along Section 6 of the Proposed Scheme are the following:

- Junction upgrade at the existing College Road / Moneenageisha Road / Wellpark Road / Dublin Road signalised junction;
- Raised entry treatment at the Huntsman Inn access on Dublin Road, approximately 100m to the east of the College Road / Moneenageisha Road / Wellpark Road / Dublin Road junction; and
- Toucan crossing on Dublin Road and raised entry treatment on Wellpark Retail Park entrance at the Dublin Road / Sáilín uncontrolled junction.

The assessment of the qualitative impacts on the Pedestrian Infrastructure for Section 6 of the Proposed Scheme are summarised in Table 6.43 along with the accompanying sensitivity for each junction and the resultant significance of effect. A detailed breakdown of the assessment at each junction can be found in Appendix 6.2 (Impact Assessments) in Volume 4 of this EIAR.

**Table 6.43: Section 6 – Significance of Effects for Pedestrian Impact during Operational Phase**

Junctions	Do Minimum LoS	Do Something LoS	Impact	Sensitivity	Significance of Effect
Dublin Road / Sáilín	D	A	High	High	Positive, Profound and Long-term

The contents of Table 6.43 demonstrate that the Proposed Scheme will have a Positive, Profound and Long-term impact on the quality of the pedestrian infrastructure along Dublin Road.

The LoS during the Do Minimum scenario is noted as D. This rating has been determined using the previously referenced assessment criteria set out in Table 6.20. The LoS will improve to an A rating at the impacted junction in the Do Something scenario. This is as a result of the proposed improvements to the existing pedestrian facilities in the form of additional crossing locations, increased pedestrian directness, provision of traffic calming measures to reduce vehicle speeds, improved accessibility and increased footpath and crossing widths. All proposed facilities have been designed in accordance with the principles of DMURS and the National Disability Authority (NDA) 'Building for Everyone: A Universal Design Approach' (NDA 2020) with regards to catering for all users, including those with disabilities.

Overall, it is anticipated that there will be Positive, Profound and Long-term effect to the quality of the pedestrian infrastructure along Section 5 of the Proposed Scheme, during the Operational Phase, which aligns with the overarching aim to provide enhanced walking infrastructure on the corridor.

A detailed breakdown of the assessment at each impacted junction, including a list of the junctions which experience no change, can be found in Appendix 6.2 (Impact Assessments) in Volume 4 of this EIAR.

### **Cycling Infrastructure**

The key cycling improvements along Section 6 of the Proposed Scheme can be summarised as follows:

- Provision of continuous cycle infrastructure in both directions between Moneenageisha Road and the Brothers of Charity access road in the form of a 2.0m wide cycle tracks in both directions which bypass bus stop islands;
- Upgrade of the existing signalised crossings on R339 College Road / Wellpark Road/R338 Moneenageisha Road / Dublin Road, from pelican to Toucan crossings allowing cyclist priority.

Along Section 6, the Proposed Scheme will provide a 60mm set down kerb segregation between the footpath and the cycle track. The kerbs separating the cycle tracks from the adjoining lane will be raised 120mm from the carriageway to provide segregation from vehicles.

The contents of Table 6.44 outline the cycling qualitative assessment along Section 6 of the Proposed Scheme, which sets out the overall Do Minimum LoS and the Do Something LoS and the description of impact.

Please refer to Appendix 6.2 (Impact Assessments) in Volume 4 of this EIAR which outlines in further detail the methodology behind each LoS rating given to the Do Minimum and Do Something scenarios.

**Table 6.44: Section 6 – Cycling Impact during Operational Phase**

Junctions	Do Minimum LoS	Do Something LoS	Impact	Sensitivity	Significance of Effect
Dublin Road from College Road to Sáilín	D	A+	High	Medium	Positive Very Significant

Table 6.44 demonstrates that the scheme will have a Positive, Very Significant and Long-term effect on the cycling environment along the R338 Dublin Road between R339 Wellpark Road and the Sáilín.

The Do Minimum LoS has been determined using the previously referenced assessment criteria set out in Table 6.22. The LoS rating of the cycling facilities will improve from D in the Do Minimum to A+ in the Do Something along Section 6 of the Proposed Scheme. This is a result of improved segregation for cyclists and toucan junction treatment as part of the Proposed Scheme.

The findings of the cycling assessment fully align with the objective of the Proposed Scheme, applicable to the Traffic and Transport assessment of the Proposed Scheme, to ‘Enhance the potential for cycling by providing a safe network for cycling’.

### Bus Infrastructure

The proposed changes to the bus stop infrastructure along Section 6 of the Proposed Scheme are outlined in Table 6.45 .

**Table 6.45 : Section 6 – Changes in Bus Infrastructure**

Inbound/ Outbound	Bus Stop Name/No.	Location	Retained/ Relocated/ Removed/ New	Existing Facilities	Proposed Facilities	Reason for moving / locating stop
Inbound (Westbound)	Dublin Road (Opp G Hotel) No. 522971	30m North West of Huntsman Inn Entrance	Retained	Bus Shelter Paper Timetable	Bus shelter with seating & facilities to incorporate RTPI	N/A
Outbound (Eastbound)	Dublin Road (G Hotel) No. 522691	60m North West of G Hotel Entrance	Relocated	Pole Paper Timetable	Bus shelter with seating & facilities to incorporate RTPI	Relocated to improve interchange opportunity
Outbound (Eastbound)	Dublin Road (Eye	80m West of Wellpark Shopping Centre Entrance on	New	N/A	Bus shelter with seating & facilities to incorporate	N/A



Inbound/ Outbound	Bus Stop Name/No.	Location	Retained/ Relocated/ Removed/ New	Existing Facilities	Proposed Facilities	Reason for moving / locating stop
	Cinema)	Dublin Road			RTPI	

Table 6.45 indicates that there are improvements to the existing bus stop facilities along Section 6 of the Proposed Scheme with the provision of shelters, seating, the facilities to incorporate real-time information and accessible kerbs throughout.

Overall, there will be one additional bus stop along this section. The layout of the relocated and new bus stops is considered to better serve the existing and future catchment and be closer to the bus interchange opportunity for improved convenience. This is assessed as providing an overall Positive, Moderate and Long-term effect for bus passengers.

### Parking & Loading

There are no existing parking and loading facilities within Section 6 of the Proposed Scheme. Therefore, no significance of effect can be determined.

## 6.5.7.8 Section 7 – Fairgreen Road

### Pedestrian Infrastructure

The key infrastructural changes to the pedestrian link along Section 7 of the Proposed Scheme are the following:

- Raised entry treatment on Station Road at the Fairgreen Road / Station Road uncontrolled junction;
- Signalised pedestrian crossing on Fairgreen Road approximately 10m to the north of the Fairgreen Road / Station Road uncontrolled junction;
- Raised entry treatment at the entrance / exit of the City Centre Carpark on Fairgreen Road, approximately 50m south to the Bóthar Bhreandain Uí Eithir / Forster Street / Fairgreen Road junction;
- Raised entry treatment at the entrance / exit to the Galmont Hotel access road junction.

There are no key junctions along Section 7 of the scheme, and therefore there is no significant impact on pedestrian infrastructure.

### Cycling Infrastructure

There are no cycling improvements planned along Section 7 of the Proposed Scheme and therefore there is no significant impact on cycling infrastructure

## Bus Infrastructure

There is no bus infrastructure along Section 7 of the Proposed Scheme, therefore, the proposals will have no impact.

## Parking & Loading

The proposals will impact on existing parking and loading along Section 7 of the Proposed Scheme. The contents of Table 6.46 present a summary of the proposed changes along Section 7 of the Proposed Scheme.

**Table 6.46: Section 7 – Overall Changes in Parking / Loading Spaces**

Location	Parking Type	Do Minimum	Do Something	Change
Fairgreen Road	Set Down Area	2 bays (6 spaces)	2 bays (6 spaces)	0
	Taxi Rank	1 bay (10 spaces)	1 bay (10 spaces)	0
	Loading Bay/ Commercial	1 bay (5 spaces)	1 bay (5 spaces)	0
	Informal Parking	7	0	-7
<b>Total</b>		<b>28</b>	<b>21</b>	<b>-7</b>

Overall, there are approximately 28 current parking spaces affected along Section 7 of the Proposed Scheme. Under the proposals, seven informal, unmarked parking spaces will be lost. It is noted that there are other on-street parking locations and off-street parking locations surrounding the corridor, which provide ample parking opportunities.

There are approximately over 25 parking spaces on local side roads within a 200m distance of Section 7. In addition, Galway Coach Station and the City Car Park provide over 500 paid for parking spaces.

The changes are considered to have a Not Significant and Long-term effect overall, due to the low number of spaces lost and the informal nature of the parking spaces. This effect is considered acceptable in the context of the aim of the Proposed Scheme, to provide enhanced walking, cycling and bus infrastructure on this section.

In addition to this, reducing parking within the city centre links with national and regional policy requirements to shift away from private car use as a form of traffic demand management, and help meet Ireland's climate action target.

More information in relation to detailed parking proposals can be found in Appendix 6.3 (Preliminary Parking Survey Report) in Volume 4 of this EIAR.

### 6.5.7.9 Section 8 – Bóthar Uí Eithir and Prospect Hill

## Pedestrian Infrastructure

The key infrastructural changes to the pedestrian link along Section 10 of the Proposed Scheme are the following:

- Existing Prospect Hill / Bóthar Bhreandain Uí Eithir uncontrolled junction to be converted into signal control with pedestrian crossings.
- Kerb realignment to provide wider footpaths and improved pedestrian facilities at the Bóthar Bhreandain Uí Eithir / Forster Street / Fairgreen Road junction.
- The assessment of the qualitative impacts on the Pedestrian Infrastructure for Section 8 of the Proposed Scheme are summarised in Table 6.47 along with the accompanying sensitivity for each junction and the resultant significance of effect. A detailed breakdown of the assessment at each junction can be found in Appendix 6.2 (Impact Assessments) in Volume 4 of this EIAR.

**Table 6.47: Section 8 – Significance of Effects for Pedestrian Impact during Operational Phase**

Junctions	Do Minimum LoS	Do Something LoS	Impact	Sensitivity	Significance of Effect
Prospect Hill / Bóthar Bhreandain Uí Eithir	B	A	Low	Medium	Positive, Moderate and Long-term
Bóthar Bhreandain Uí Eithir / Forster Street / Fairgreen Road	B	A	Low	Medium	Positive Moderate and Long-term
<b>Section Summary</b>	<b>B</b>	<b>A</b>	Low	Medium	Positive Moderate and Long-term

The contents of Table 6.47 demonstrate that the Proposed Scheme will have a Positive, Moderate and Long-term impact on the quality of the pedestrian infrastructure along the Prospect Hill and Bóthar Uí Eithir.

The LoS during the Do Minimum scenario is B at both junctions. This rating has been determined using the previously referenced assessment criteria set out in Table 6.20. The LoS will improve to an A rating at both of the impacted junctions, in the Do Something scenario.

This is as a result of the proposed improvements to the existing pedestrian facilities in the form of additional crossing locations, increased pedestrian directness, provision of traffic calming measures to reduce vehicle speeds, improved accessibility and increased footpath and crossing widths. All proposed facilities have been designed in accordance with the principles of DMURS and the National Disability Authority (NDA) 'Building for Everyone: A Universal Design Approach' (NDA 2020) with regards to catering for all users, including those with disabilities.

Overall, it is anticipated that there will be Positive, Moderate and Long-term effect to the quality of the pedestrian infrastructure along Section 8 of the Proposed Scheme, during the Operational Phase, which aligns with the overarching aim to provide enhanced walking infrastructure on the corridor. A

detailed breakdown of the assessment at each impacted junction, including a list of the junctions which experience no change, can be found in Appendix 6.2 (Impact Assessments) in Volume 4 of this EIAR.

### Cycling Infrastructure

There are no cycling improvements planned along Section 8 of the Proposed Scheme and therefore there is no significant impact on cycling infrastructure

### Bus Infrastructure

The proposed changes to the bus stop infrastructure along Section 8 of the Proposed Scheme are outlined in Table 6.48.

**Table 6.48: Section 8 – Changes in Bus Infrastructure**

Inbound/ Outbound	Bus Stop Name/No.	Location	Retained/ Relocated/ Removed/ New	Existing Facilities	Proposed Facilities	Reason for moving / locating stop
Inbound Eastbound	Bóthar Uí Eithir	Outside Salon de Beauté	Removed	Bus Stop Pole Paper Timetable	n/a	Removed as bus stop is now obsolete

Table 6.48 indicates that the bus stop along Section 8 will be removed as part of the proposals. Section 8 is in proximity to Eyre Square, which has a number of bus stops serving a range of routes. Therefore, the removal of this bus stop is assessed as providing an overall Not Significant and Long-term effect for bus passengers.

### Parking & Loading

There are no existing parking and loading facilities within Section 8 of the Proposed Scheme. Therefore, no significance of effect can be determined.

## 6.5.7.10 Section 9 – Bothar na mBan / St. Brendan's Avenue / Dyke Road/ Headford Road

### Pedestrian Infrastructure

The key infrastructural changes to the pedestrian link along Section 9 of the Proposed Scheme are the following:

- Raised entry treatment at the Bóthar Na mBan / St Brendan's Avenue uncontrolled junction;
- Raised entry treatment at the Bóthar Na mBan / Bóthar Irwin uncontrolled junction; and
- Provision of new footpath on St. Brendan's Avenue and widened footpath on opposite side of the road.

- Realigned and improved pedestrian facilities at the Headford Road / St Brendan's Avenue / Dyke Road signalised junction;
- Existing uncontrolled junction on Dyke Road to be converted into signal control with pedestrian crossings; and
- Existing Dyke Road / Headford Road / St Bridget's Place uncontrolled junction to be converted into signal control with pedestrian crossings.

The assessment of the qualitative impacts on the Pedestrian Infrastructure for Section 9 of the Proposed Scheme are summarised in Table 6.49 along with the accompanying sensitivity for each junction and the resultant significance of effect. A detailed breakdown of the assessment at each junction can be found in Appendix 6.2 (Impact Assessments) in Volume 4 of this EIAR.

**Table 6.49: Section 9 – Significance of Effects for Pedestrian Impact during Operational Phase**

Junctions	Do Minimum LoS	Do Something LoS	Impact	Sensitivity	Significance of Effect
Bóthar Na mBan / Prospect Hill / Bohemore Road	C	A	Medium	Medium	Positive, Significant and Long-term
Headford Road / Street Brendan's Avenue / Dyke Road	B	A	Low	High	Positive Moderate and Long-term
Dyke Road	E	A	High	Low	Positive Moderate and Long-term
<b>Section Summary</b>	<b>D</b>	<b>A</b>	<b>High</b>	<b>Medium</b>	Positive, Very Significant and Long-term

Positive, Very Significant and Long-term impact on the quality of the pedestrian infrastructure along Bothar Na mBan, St Brendan's Avenue, Dyke Road and Headford Road.

The LoS during the Do Minimum scenario ranges from B to E. This rating has been determined using the previously referenced assessment criteria set out in Table 6.20. The LoS will improve to an A rating at all junctions in this section, in the Do Something scenario. This is as a result of the proposed improvements to the existing pedestrian facilities in the form of additional crossing locations, increased pedestrian directness, provision of traffic calming measures to reduce vehicle speeds, improved accessibility and increased footpath and crossing widths. All proposed facilities have been designed in accordance with the principles of DMURS and the National Disability Authority (NDA) 'Building for Everyone: A Universal Design Approach' (NDA 2020) with regards to catering for all users, including those with disabilities.

Overall, it is anticipated that there will be Positive, Very Significant and Long-term effect to the quality of the pedestrian infrastructure along Section 9 of the

Proposed Scheme, during the Operational Phase, which aligns with the overarching aim to provide enhanced walking infrastructure on the corridor. A detailed breakdown of the assessment at each impacted junction, including a list of the junctions which experience no change, can be found in Appendix 6.2 (Impact Assessments) in Volume 4 of this EIAR.

### Cycling Infrastructure

The key cycling improvements along Section 9 of the Proposed Scheme can be summarised as follows:

- Provision of cycle infrastructure between The Plots Road and the Dyke Road Car Park in the form of a 3.0m wide two-way cycle track, with two protected right-turn movements on the Dyke Road Car Park crossing.

The contents of Table 6.50 outline the cycling qualitative assessment along Section 7 of the Proposed Scheme, which sets out the overall Do Minimum LoS and the Do Something LoS and the description of impact. Please refer to Appendix 6.2 (Impact Assessments) in Volume 4 of this EIAR which outlines in further detail the methodology behind each LoS rating given to the Do Minimum and Do Something scenarios.

**Table 6.50: Section 9 – Cycling Impact during Operational Phase**

Junctions	Do Minimum LoS	Do Something LoS	Impact	Sensitivity	Significance of Effect
Headford Road from St Brendan's Ave to St Bridget's Place	D	B	Medium	High	Positive Very Significant and Long - Term
Dyke Road from St Brendan's Avenue to Dyke Road	D	B	Medium	Medium	Positive Significant Long - Term
<b>Section Summary</b>	<b>D</b>	<b>B</b>	<b>Medium</b>	<b>Medium</b>	<b>Positive Significant and Long - Term</b>

The contents of Table 6.50 demonstrate that the scheme will have a Positive, Significant and Long-term effect on the cycling environment along Section 9 of the Proposed Scheme.

The Do Minimum Los has been determined using the previously referenced assessment criteria set out in Table 6.22. The LoS rating of the cycling facilities will improve from D in the Do Minimum to B in the Do Something along the entirety of Section 9 of the Proposed Scheme. This is as a result of improved segregation for cyclists in the form of cycling infrastructure on Dyke Road.

The findings of the cycling assessment fully align with the objective of the Proposed Scheme, applicable to the Traffic and Transport assessment of the Proposed Scheme, to 'Enhance the potential for cycling by providing a safe network for cycling'. Section 1.7.3 in the National Cycle Manual states, that in relation to cyclist hierarchy of provision, traffic reduction is a priority, before the provision of segregated cycle lanes to create an attractive environment for

cyclists. This section of the Proposed Scheme is designed to reduce traffic significantly and provides segregated cycling infrastructure, and therefore aligns with this hierarchy.

### Bus Infrastructure

There are no bus facilities along Section 9 of the Proposed Scheme to assess and therefore there is no significant impact on bus infrastructure.

### Parking & Loading

The proposals will impact on existing parking and loading along Section 8 of the Proposed Scheme. The contents of Table 6.51 present a summary of the proposed changes along Section 9 of the Proposed Scheme.

**Table 6.51: Section 9–Overall Changes in Parking / Loading Spaces**

Location	Parking Type	Do Minimum	Do Something	Change
St Brendan's Avenue	Paid/ Residential	48	46	-2
Bóthar Na mBan	Bus Set Down/ Commercial	1 bay (2 spaces)	1 bay (2 spaces)	0
	Loading Bay	1 bay (3 spaces)	1 bay (3 spaces)	0
Headford Road	Informal Parking	2	0	-2
Dyke Road Car Park*	Paid/ Commercial	510	500	-10
<b>Total</b>		<b>565</b>	<b>551</b>	<b>-14</b>

Overall, there are approximately 565 current parking spaces affected along Section 9 of the Proposed Scheme. Under the proposals, two designated paid residential parking spaces, two informal parking spaces will be lost and 10 car parking spaces will be lost. It is noted that there is still significant capacity within the Dyke Road Car Park and there are other on-street parking locations and off-street parking locations surrounding the corridor, which provide ample parking opportunities.

There are approximately over 75 parking spaces on local side roads within a 200m distance of Section 9. In addition, the Corrib Shopping Centre is located off Bóthar Na mBan and provides 576 pay by foot spaces.

The changes are considered to have a Not Significant and Long-term effect overall, due to the low number of spaces lost. This effect is considered acceptable in the context of the aim of the Proposed Scheme, to provide enhanced walking, cycling and bus infrastructure on this key access corridor.

In addition to this, reducing parking within the city centre links with national and regional policy requirements to shift away from private car use as a form of traffic demand management, and help meet Ireland's climate action target.



More information in relation to detailed parking proposals can be found in Appendix 6.3 (Preliminary Parking Survey Report) in Volume 4 of this EIAR.

### 6.5.7.11 Section 10 – Woodquay / Walsh’s Terrace / Daly’s Place / Mary Street

#### Pedestrian Infrastructure

The key infrastructural changes to the pedestrian link along Section 10 of the Proposed Scheme are the following:

- Raised entry treatment at the Headford Road / Riverside / Woodquay junction, existing signalised pedestrian crossing on Headford Road to be retained;
- Raised entry treatment at the Woodquay / St Anthony’s Place junction; and
- Raised entry treatment at the Woodquay / Daly’s Place junction.

The assessment of the qualitative impacts on the Pedestrian Infrastructure for Section 10 of the Proposed Scheme are summarised in Table 6.52 along with the accompanying sensitivity for each junction and the resultant significance of effect. A detailed breakdown of the assessment at each junction can be found in Appendix 6.2 (Impact Assessments) in Volume 4 of this EIAR.

**Table 6.52: Section 10 – Significance of Effects for Pedestrian Impact during Operational Phase**

Junctions	Do Minimum LoS	Do Something LoS	Impact	Sensitivity	Significance of Effect
Headford Road at Headford Road / Riverside	C	A	Medium	High	Positive Very Significant and Long-Term

The contents of Table 6.52 demonstrate that the Proposed Scheme will have a Positive, Very Significant and Long-Term impact on the quality of the pedestrian infrastructure along Woodquay, Mary Street and Daly’s Place

The LoS during the Do Minimum scenario is noted as C. This rating has been determined using the previously referenced assessment criteria set out in Table 6.20. The LoS will improve to an A rating in the Do Something scenario. This is a result of the proposed improvements to the existing pedestrian facilities in the form of additional crossing locations, increased pedestrian directness, provision of traffic calming measures to reduce vehicle speeds, improved accessibility and increased footpath and crossing widths. All proposed facilities have been designed in accordance with the principles of DMURS and the National Disability Authority (NDA) ‘Building for Everyone: A Universal Design Approach’ (NDA 2020) with regards to catering for all users, including those with disabilities.

Overall, it is anticipated that there will be Positive, Very Significant and Long-term effect to the quality of the pedestrian infrastructure along Section 10 of the Proposed Scheme, during the Operational Phase, which aligns with the overarching aim to provide enhanced walking infrastructure on the corridor. A

detailed breakdown of the assessment at each impacted junction, including a list of the junctions which experience no change, can be found in Appendix 6.2 (Impact Assessments) in Volume 4 of this EIAR.

### Cycling Infrastructure

The key cycling improvements along Section 10 of the Proposed Scheme can be summarised as follows:

- Provision of dedicated bus lane in a westbound direction on R866 Corrib Terrace to R866 St. Francis Street. This is considered a positive for cyclists, with safer road space available due to less general motorised vehicles.
- Provision of cycle infrastructure on Woodquay between Daly's Place and Riverside in the form of a 2.0m wide counterflow cycle track, for the northbound direction.
- Provision of dedicated bus lane in an eastbound direction on R866 O'Donoghue's Terrace. This is considered a positive for cyclists, with safer road space available due to less general motorised vehicles.

Along Section 10, the Proposed Scheme will provide a 60mm set down kerb segregation between the footpath and the cycle track. The kerb separating the cycle tracks will be raised 120mm from the adjacent carriageway to provide segregation from vehicles.

The contents of Table 6.53 outline the cycling qualitative assessment along Section 10 of the Proposed Scheme, which sets out the overall Do Minimum LoS and the Do Something LoS and the description of impact. Please refer to Appendix 6.2 (Impact Assessments) in Volume 4 of this EIAR which outlines in further detail the methodology behind each LoS rating given to the Do Minimum and Do Something scenarios.

**Table 6.53: Section 10 – Cycling Impact during Operational Phase**

Junctions	Do Minimum LoS	Do Something LoS	Impact	Sensitivity	Significance of Effect
St Vincent's Avenue / Headford Road from St Francis Street to Dyke Road	D	B	Medium	High	Positive Very Significant and Long-Term
Mary Street / Woodquay Street from Newtownsmith to Headford Road	D	B	Medium	Low	Positive Moderate Long-Term
<b>Section Summary</b>	<b>D</b>	<b>B</b>	<b>Medium</b>	<b>Medium</b>	<b>Positive Significant and Long - Term</b>

The contents of Table 6.53 demonstrate that the scheme will have a Positive, Significant and Long-term effect on the cycling environment along Section 10 of the Proposed Scheme.

The Do Minimum LoS has been determined using the previously referenced assessment criteria set out in Table 6.22. The LoS rating of the cycling facilities

will improve from D in the Do Minimum to B in the Do Something along the entirety of Section 10 of the Proposed Scheme. This is as a result of improved segregation for cyclists in the form of cycle lane traversing Woodquay Street and a reduction in vehicular traffic creating a safer space for cyclists.

The findings of the cycling assessment fully align with the objective of the Proposed Scheme, applicable to the Traffic and Transport assessment of the Proposed Scheme, to 'Enhance the potential for cycling by providing a safe network for cycling'. Section 1.7.3 in the National Cycle Manual states, that in relation to cyclist hierarchy of provision, traffic reduction is a priority, before the provision of segregated cycle lanes to create an attractive environment for cyclists. This section of the Proposed Scheme is designed to reduce traffic significantly and provides segregated cycling infrastructure, and therefore aligns with this hierarchy.

### Bus Infrastructure

The proposed changes to the bus stop infrastructure along Section 10 of the Proposed Scheme are outlined in Table 6.54 below.

**Table 6.54: Section 10 – Changes in Bus Infrastructure**

Inbound/ Outbound	Bus Stop Name/No.	Location	Retained/ Relocated/ Removed/ New	Existing Facilities	Proposed Facilities	Reason for moving / locating stop
Inbound (Eastbound)	Headford Road No. 523711	AXA Insurance Building parallel to Walsh's Terrace	Relocated	Bus Stop Pole Paper timetable	Bus shelter with seating & facilities to incorporate RTPI	Relocated due to amendments to on street parking
Outbound (Westbound)	Woodquay Court No. 525411	Opposite AXA Insurance parallel to Walsh's Terrace	Retained	Bus Shelter Paper timetable	Bus shelter with seating & facilities to incorporate RTPI	N/A

Table 6.54 indicates that there are improvements to the bus stop facilities along Section 10 of the Proposed Scheme with the provision shelters, seating, the facilities to incorporate real-time information and accessible kerbs throughout. The number of bus stops along this section will remain unchanged.

This is assessed as providing an overall Positive, Slight and Long-term effect for bus passengers.

### Parking & Loading

The proposals will impact on existing parking and loading along Section 10 of the Proposed Scheme. The contents of Table 6.55 present a summary of the proposed changes along Section 10 of the Proposed Scheme.

**Table 6.55: Section 10 – Overall Changes in Parking / Loading Spaces**

Location	Parking Type	Do Minimum	Do Something	Change
Woodquay Street	Paid / Commercial	64	22	-42
	Disabled Bay	2	0	-2
	Loading Bay / Taxi Rank	1 bay (2 spaces)	1 bay (5 spaces)	+3
	Taxi Rank / Paid / Commercial	1 bay (2 spaces)	0	-2
Walsh's Terrace	Paid / Commercial	5	10	+5
<b>Total</b>		<b>75</b>	<b>37</b>	<b>38</b>

Overall, there are approximately 75 current parking spaces affected along Section 10 of the Proposed Scheme. Under the proposals, 38 parking spaces will be lost, the majority being designated paid parking on Woodquay. It is noted that there are other on-street parking locations and off-street parking locations surrounding the corridor, which provide ample parking opportunities.

There are approximately over 60 parking spaces on local side roads within a 200m distance of Section 10.

The changes are considered to have a Negative, Slight and Long-term effect overall, due to the low number of spaces lost, compared to the number of spaces available in the surrounding area. This effect is considered acceptable in the context of the aim of the Proposed Scheme, to provide enhanced walking, cycling and bus infrastructure on this key access corridor.

In addition to this, reducing parking within the city centre links with national and regional policy requirements to shift away from private car use as a form of traffic demand management, and help meet Ireland's climate action target.

More information in relation to detailed parking proposals can be found in Appendix 6.3 (Preliminary Parking Survey Report) in Volume 4 of this EIAR.

### **6.5.7.12 Section 11 – Forthill / Merchants Road / Queen Street**

#### **Pedestrian Infrastructure**

The key infrastructural changes to the pedestrian link along Section 11 of the Proposed Scheme are the following:

- Raised uncontrolled crossing on Merchants Road at the Merchants Road / Victoria Place uncontrolled junction;
- Raised uncontrolled crossing on Merchants Road and signalised crossing on Forthill Street at the Merchants Road / Forthill Street uncontrolled junction;
- Raised entry treatment on Queen Street and signalised crossing on Forthill Street at the Forthill Street / Queen Street uncontrolled junction; and

The assessment of the qualitative impacts on the Pedestrian Infrastructure for Section 11 of the Proposed Scheme are summarised in Table 6.56 along with the accompanying sensitivity for each junction and the resultant significance of effect. A detailed breakdown of the assessment at each junction can be found in Appendix 6.2 (Impact Assessments) in Volume 4 of this EIAR.

**Table 6.56: Section 11 – Significance of Effects for Pedestrian Impact during Operational Phase**

Junctions	Do Minimum LoS	Do Something LoS	Impact	Sensitivity	Significance of Effect
Merchants Road / Forthill Street	C	A	Medium	Medium	Positive Significant and Long-term
Forthill Street / Queen Street	E	A	High	Low	Positive, Moderate and Long-term
<b>Section Summary</b>	<b>D</b>	<b>A</b>	<b>High</b>	<b>Medium</b>	<b>Positive, Very Significant and Long-term</b>

The contents of Table 6.56 demonstrate that the Proposed Scheme will have a Positive, Very Significant and Long-term impact on the quality of the pedestrian infrastructure along Forthill Street, Merchants Road Queen Street.

The LoS during the Do Minimum scenario is C and E at each impacted junction respectively. These ratings have been determined using the previously referenced assessment criteria set out in Table 6.20. The LoS will improve to an A rating for both junctions, in the Do Something scenario. This is as a result of the proposed improvements to the existing pedestrian facilities in the form of additional crossing locations, increased pedestrian directness, provision of traffic calming measures to reduce vehicle speeds, improved accessibility and increased footpath and crossing widths. All proposed facilities have been designed in accordance with the principles of DMURS and the National Disability Authority (NDA) ‘Building for Everyone: A Universal Design Approach’ (NDA 2020) with regards to catering for all users, including those with disabilities.

Overall, it is anticipated that there will be Positive, Very Significant and Long-term effect to the quality of the pedestrian infrastructure along Section 11 of the Proposed Scheme, during the Operational Phase, which aligns with the overarching aim to provide enhanced walking infrastructure on the corridor. A detailed breakdown of the assessment at each impacted junction, including a list of the junctions which experience no change, can be found in Appendix 6.2 (Impact Assessments) in Volume 4 of this EIAR.

### **Cycling Infrastructure**

There are no cycling improvements planned along Section 11 of the Proposed Scheme and therefore there is no significant impact on cycling infrastructure

### **Bus Infrastructure**

The proposed changes to the bus stop infrastructure along Section 11 of the Proposed Scheme are outlined in Table 6.57 below.

**Table 6.57: Section 11 – Changes in Bus Infrastructure**

Inbound/ Outbound	Bus Stop Name/No.	Location	Retained/ Relocated/ Removed/ New	Existing Facilities	Proposed Facilities	Reason for moving / locating stop
Inbound (Eastbound)	Merchants Road No. 524501	Opposite Ross House	Retained	Bus Stop Pole Paper Timetable	Bus shelter with seating & facilities to incorporate RTPI	N/A

The location of the stop along Section 11 will remain unchanged, however, there will be improvements to the bus stop facilities with the provision of shelters, seating, the facilities to incorporate real-time information and accessible kerbs throughout. This is assessed as providing an overall Positive, Slight and Long-term effect for bus passengers.

### Parking & Loading

The proposals will impact on existing parking and loading along Section 11 of the Proposed Scheme. The contents of Table 6.58 present a summary of the proposed changes along Section 11 of the Proposed Scheme.

**Table 6.58: Section 11 – Overall Changes in Parking / Loading Spaces**

Location	Parking Type	Do Minimum	Do Something	Change
Merchants Road	Disabled Bay	2	2	0
	Bus Set Down	1 bay (2 spaces)	2 bays (3 spaces)	+1
	Paid / Taxi Rank	2 bays (6 spaces)	2 bays (5 spaces)	-1
Forthill Street	Paid/ Commercial	19	6	-13
	Bus Set Down	1 bay (1 space)	1 bay (1 space)	0
<b>Total</b>		<b>30</b>	<b>17</b>	<b>-13</b>

Overall, there are approximately 30 current parking spaces affected along Section 11 of the Proposed Scheme. Under the proposals, 13 designated paid parking spaces will be lost. It is noted that there are other on-street parking locations and off-street parking locations surrounding the corridor, which provide ample parking opportunities.

There are approximately over 900 parking spaces on local side roads within a 200m distance of Section 11. In addition, there are two off-street car parks within the vicinity of this section offering charged parking.

The changes are considered to have a Not Significant and Long-term effect overall, due to the low number of spaces lost. This effect is considered acceptable in the context of the aim of the Proposed Scheme, to provide enhanced walking, cycling and bus infrastructure on this key access corridor.

In addition to this, reducing parking within the city centre links with national and regional policy requirements to shift away from private car use as a form of traffic demand management, and help meet Ireland's climate action target.

More information in relation to detailed parking proposals can be found in Appendix 6.3 (Preliminary Parking Survey Report) in Volume 4 of this EIAR.

### 6.5.8 Quantitative Analysis

This quantitative assessment has been prepared with reference to the modelling outputs obtained from the three-tiered modelling approach outlined in Section 6.3.2. The following assessment topics have been considered:

- People Movement:
- Peak Hour People Movement along the Proposed Scheme;
- People Movement by Bus; and
- Bus Boarding.
- Bus Network Performance Indicators:
- Bus Journey Times; and
- Bus Journey Time Reliability.
- General Traffic Network Performance Indicators:
- Junction Capacity Outputs on the Direct Study Area; and
- Redistributed flows and Junction Capacity Outputs on the Indirect Study Area.

#### 6.5.8.1 People Movement Assessment

##### Overview

In order to understand the benefit of the Proposed Scheme with regards to the Movement of People following the implementation of the proposed infrastructure measures, a quantitative People Movement assessment has been undertaken using outputs from the NTA ERM and LAM and comparing the Do Minimum and Do Something peak hour scenarios for each forecast year (2023, 2038).

The assessment of People Movement includes the following metrics:

- The average number of people moved by each transport mode (i.e., Car, Bus, Walking and Cycling) along the corridor in the eastbound and westbound direction. This metric is compared for the Do Minimum and Do Something scenarios in the AM and PM peak hours for each forecast year (2023, 2038). This metric provides an estimate of the modal share changes along the route as a result of the Proposed Scheme measures; and
- People Movement by Bus:
- AM and PM peak hour Bus Passenger Loadings along the Proposed Scheme for each forecast year (2023, 2038); and
- Total Passengers Boarding Buses on bus routes that use any part of the Proposed Scheme for each forecast year (2023, 2038).

## **Peak Hour People Movement along the Proposed Scheme**

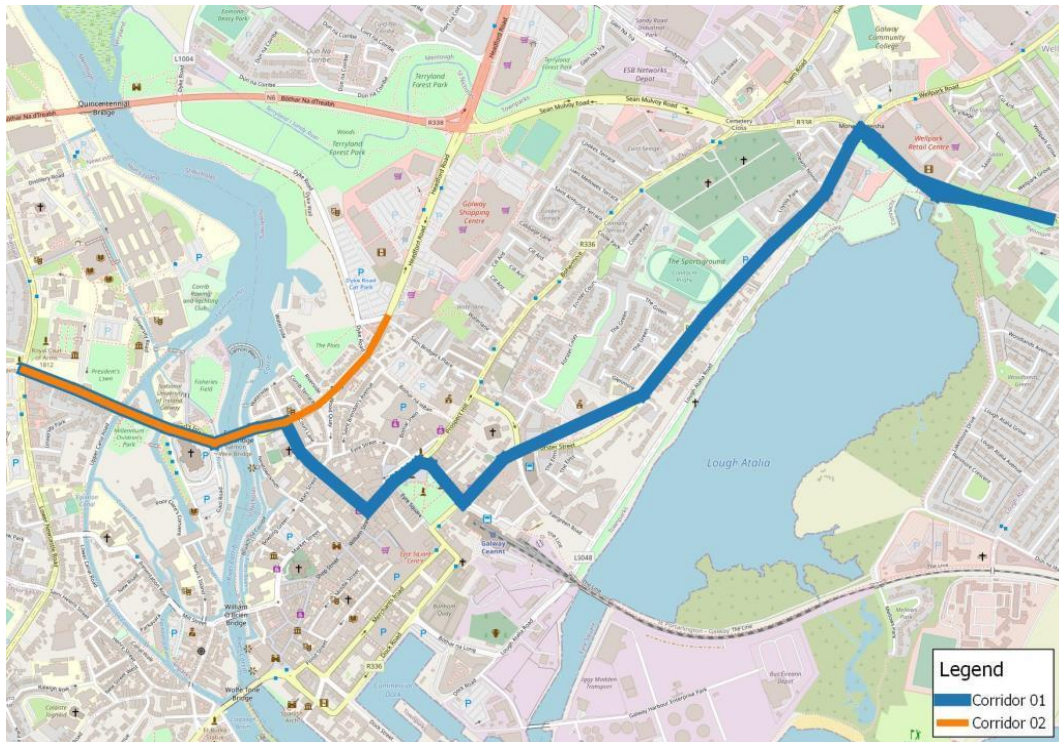
To determine the impact that the Proposed Scheme has on modal share in the study area as a result of its implementation, the weighted average number of people moved by each mode (Car, Bus, Active Modes) has been extracted from the WRM / LAM. The analysis compares the Do Minimum and Do Something scenarios both in the eastbound and westbound direction in the AM and PM peak hours (8-9am, 5-6pm) for each forecast year (2023, 2038).

As outlined previously, the same demographic assumptions (population, employment levels) are included in both the Do Minimum and Do Something scenarios. The bus network and frequency assumptions are also the same in both scenarios and are in line with the network proposals. It is acknowledged, therefore, that the assessment is conservative in terms of the relative increase in the level of people movement that is predicted in the Do Something scenario. The Do Something scenario will facilitate opportunities to increase bus network capacity operating along the corridor due to the extensive priority provided.

In addition to this, the significant segregation and safety improvements to walking and cycling infrastructure that is a key feature of the Proposed Scheme will further maximise the movement of people travelling sustainably along the corridor and will therefore cater for higher levels of future population and employment growth. In the absence of the delivery of the Proposed Scheme, growth along this key corridor would continue to contribute to increased congestion and operational issues on the road network. The Proposed scheme delivers a reliable alternative to car-based travel that can support future sustainable growth and provide a positive contribution towards reducing carbon emissions.

For the purposes of this assessment, the Proposed Scheme has been split into two sub-corridors, as highlighted in Diagram 6.19.





**Diagram 6.19: Sub Corridors – People Movement Assessment**

*2023 AM Peak Hour People Movement Westbound*

The contents of Table 6.59 and Table 6.60 outline the difference in modal split between the Do Minimum and Do Something scenarios for each mode of transport in a westbound direction during the AM Peak Hour. The results indicate a 12% and 13% increase in people moved by sustainable modes (Public Transport, Walk, Cycle).

**Table 6.59: Mode Shift of 2023 AM Peak Hour: Corridor 1 Westbound**

Direction	Time Period	Mode of Transport	Do Minimum		Do Something		Difference	
			Hourly Trips	Modal Split (%)	Hourly Trips	Modal Split (%)	Hourly Trips	Difference (%)
Westbound Corridor 1	AM Peak Period	General Traffic	550	34%	350	22%	-200	-36%
		Public Transport	810	50%	910	58%	100	12%
		Walking	220	13%	250	16%	30	14%
		Cycling	50	3%	50	3%	0	0%
		<b>Sustainable Modes Total</b>	<b>1,080</b>	<b>66%</b>	<b>1,210</b>	<b>78%</b>	<b>130</b>	<b>12%</b>

**Table 6.60: Mode Shift of 2023 AM Peak Hour: Corridor 2 Westbound**

Direction	Time Period	Mode of Transport	Do Minimum		Do Something		Difference	
			Hourly Trips	Modal Split (%)	Hourly Trips	Modal Split (%)	Hourly Trips	Difference (%)
Westbound Corridor 2	AM Peak Period	General Traffic	590	38%	80	7%	-510	-86%
		Public Transport	460	29%	510	43%	50	11%
		Walking	460	29%	530	45%	70	15%
		Cycling	60	4%	70	6%	10	17%
		<b>Sustainable Modes Total</b>	<b>980</b>	<b>62%</b>	<b>1,110</b>	<b>93%</b>	<b>130</b>	<b>13%</b>

*2023 AM Peak Hour People Movement Eastbound*

The contents of Table 6.61 and Table 6.62 outline the difference in modal split between the Do Minimum and Do Something scenarios for each mode of transport in an eastbound direction during the AM Peak Hour. The results indicate a 10% and 8% increase in people moved by sustainable modes (Public Transport, Walk, Cycle).

**Table 6.61: Mode Shift of 2023 AM Peak Hour: Corridor 1 Eastbound**

Direction	Time Period	Mode of Transport	Do Minimum		Do Something		Difference	
			Hourly Trips	Modal Split (%)	Hourly Trips	Modal Split (%)	Hourly Trips	Difference (%)
Eastbound Corridor 1	AM Peak Period	General Traffic	410	34%	240	22%	-170	-41%
		Public Transport	650	54%	710	64%	60	9%
		Walking	120	10%	130	12%	10	8%
		Cycling	20	2%	30	3%	10	50%
		<b>Sustainable Modes Total</b>	<b>790</b>	<b>66%</b>	<b>870</b>	<b>78%</b>	<b>80</b>	<b>10%</b>

**Table 6.62: Mode Shift of 2023 AM Peak Hour: Corridor 2 Eastbound**

Direction	Time Period	Mode of Transport	Do Minimum		Do Something		Difference	
			Hourly Trips	Modal Split (%)	Hourly Trips	Modal Split (%)	Hourly Trips	Difference (%)
Eastbound Corridor 2	AM Peak Period	General Traffic	400	38%	180	20%	-220	-55%
		Public Transport	440	42%	470	53%	30	7%

Direction	Time Period	Mode of Transport	Do Minimum		Do Something		Difference	
			Hourly Trips	Modal Split (%)	Hourly Trips	Modal Split (%)	Hourly Trips	Difference (%)
		Walking	180	17%	200	22%	20	11%
		Cycling	40	4%	40	4%	0	0%
		<b>Sustainable Modes Total</b>	<b>660</b>	<b>62%</b>	<b>710</b>	<b>80%</b>	<b>50</b>	<b>8%</b>

### 2023 PM Peak Hour People Movement Westbound

The contents of Table 6.63 and Table 6.64 outline the difference in modal split between the Do Minimum and Do Something scenarios for each mode of transport in a westbound direction during the PM Peak Hour. The results indicate a 15% and 17% increase in people moved by sustainable modes (Public Transport, Walk, Cycle).

**Table 6.63: Mode Shift of 2023 PM Peak Hour: Corridor 1 Westbound**

Direction	Time Period	Mode of Transport	Do Minimum		Do Something		Difference	
			Hourly Trips	Modal Split (%)	Hourly Trips	Modal Split (%)	Hourly Trips	Difference (%)
Westbound Corridor 1	PM Peak Period	General Traffic	490	45%	330	32%	-160	-33%
		Public Transport	460	42%	530	51%	70	15%
		Walking	120	11%	140	14%	20	17%
		Cycling	30	3%	30	3%	0	0%
		<b>Sustainable Modes Total</b>	<b>610</b>	<b>55%</b>	<b>700</b>	<b>68%</b>	<b>90</b>	<b>15%</b>

**Table 6.64: Mode Shift of 2023 PM Peak Hour: Corridor 2 Westbound**

Direction	Time Period	Mode of Transport	Do Minimum		Do Something		Difference	
			Hourly Trips	Modal Split (%)	Hourly Trips	Modal Split (%)	Hourly Trips	Difference (%)
Westbound Corridor 2	PM Peak Period	General Traffic	530	50%	70	10%	-460	-87%
		Public Transport	300	28%	350	51%	50	17%
		Walking	190	18%	230	33%	40	21%
		Cycling	40	4%	40	6%	0	0%
		<b>Sustainable Modes Total</b>	<b>530</b>	<b>50%</b>	<b>620</b>	<b>90%</b>	<b>90</b>	<b>17%</b>

*2023 PM Peak Hour People Movement Eastbound*

The contents of Table 6.65 and Table 6.66 outline the difference in modal split between the Do Minimum and Do Something scenarios for each mode of transport in an eastbound direction during the PM Peak Hour. The results indicate a 15% and 8% increase in people moved by sustainable modes (Public Transport, Walk, Cycle).

**Table 6.65: Mode Shift of 2023 PM Peak Hour: Corridor 1 Eastbound**

Direction	Time Period	Mode of Transport	Do Minimum		Do Something		Difference	
			Hourly Trips	Modal Split (%)	Hourly Trips	Modal Split (%)	Hourly Trips	Difference (%)
Eastbound Corridor 1	PM Peak Period	General Traffic	460	35%	230	19%	-230	-50%
		Public Transport	640	48%	750	61%	110	17%
		Walking	190	14%	200	16%	10	5%
		Cycling	30	2%	40	3%	10	33%
		<b>Sustainable Modes Total</b>	<b>860</b>	<b>65%</b>	<b>990</b>	<b>81%</b>	<b>130</b>	<b>15%</b>

**Table 6.66: Mode Shift of 2023 PM Peak Hour: Corridor 2 Eastbound**

Direction	Time Period	Mode of Transport	Do Minimum		Do Something		Difference	
			Hourly Trips	Modal Split (%)	Hourly Trips	Modal Split (%)	Hourly Trips	Difference (%)
Eastbound Corridor 2	PM Peak Period	General Traffic	630	43%	230	20%	-400	-63%
		Public Transport	380	26%	430	37%	50	13%
		Walking	410	28%	430	37%	20	5%
		Cycling	60	4%	60	5%	0	0%
		<b>Sustainable Modes Total</b>	<b>850</b>	<b>57%</b>	<b>920</b>	<b>80%</b>	<b>70</b>	<b>8%</b>

*2038 AM Peak Hour People Movement Westbound*

The contents of Table 6.67 and Table 6.68 outline the difference in modal split between the Do Minimum and Do Something scenarios for each mode of transport in a westbound direction during the AM Peak Hour. The results indicate a 18% and 12% increase in people moved by sustainable modes (Public Transport, Walk, Cycle).

**Table 6.67: Mode Shift of 2038 AM Peak Hour: Corridor 1 Westbound**

Direction	Time Period	Mode of Transport	Do Minimum		Do Something		Difference	
			Hourly Trips	Modal Split (%)	Hourly Trips	Modal Split (%)	Hourly Trips	Difference (%)
Westbound Corridor 1	AM Peak Period	General Traffic	530	24%	360	15%	-170	-32%
		Public Transport	1,240	56%	1,520	65%	280	23%
		Walking	290	13%	320	14%	30	10%
		Cycling	150	7%	140	6%	-10	-7%
		<b>Sustainable Modes Total</b>	<b>1,680</b>	<b>76%</b>	<b>1,980</b>	<b>85%</b>	<b>300</b>	<b>18%</b>

**Table 6.68: Mode Shift of 2038 AM Peak Hour: Corridor 2 Westbound**

Direction	Time Period	Mode of Transport	Do Minimum		Do Something		Difference	
			Hourly Trips	Modal Split (%)	Hourly Trips	Modal Split (%)	Hourly Trips	Difference (%)
Westbound Corridor 2	AM Peak Period	General Traffic	560	30%	90	6%	-470	-84%
		Public Transport	600	32%	650	42%	50	8%
		Walking	570	31%	660	43%	90	16%
		Cycling	130	7%	150	10%	20	15%
		<b>Sustainable Modes Total</b>	<b>1,300</b>	<b>70%</b>	<b>1,460</b>	<b>94%</b>	<b>160</b>	<b>12%</b>

*2038 AM Peak Hour People Movement Eastbound*

The contents of Table 6.69 and Table 6.70 outline the difference in modal split between the Do Minimum and Do Something scenarios for each mode of transport in an eastbound direction during the AM Peak Hour. The results indicate an 8% and 7% increase in people moved by sustainable modes (Public Transport, Walk, Cycle).

**Table 6.69: Mode Shift of 2038 AM Peak Hour: Corridor 1 Eastbound**

Direction	Time Period	Mode of Transport	Do Minimum		Do Something		Difference	
			Hourly Trips	Modal Split (%)	Hourly Trips	Modal Split (%)	Hourly Trips	Difference (%)
Eastbound Corridor 1	AM Peak Period	General Traffic	390	28%	250	19%	-140	-36%
		Public Transport	790	56%	860	64%	70	9%

Direction	Time Period	Mode of Transport	Do Minimum		Do Something		Difference	
			Hourly Trips	Modal Split (%)	Hourly Trips	Modal Split (%)	Hourly Trips	Difference (%)
		Walking	150	11%	150	11%	0	0%
		Cycling	80	6%	90	7%	10	13%
		<b>Sustainable Modes Total</b>	<b>1,020</b>	<b>72%</b>	<b>1,100</b>	<b>81%</b>	<b>80</b>	<b>8%</b>

**Table 6.70: Mode Shift of 20 AM Peak Hour: Corridor 2 Eastbound**

Direction	Time Period	Mode of Transport	Do Minimum		Do Something		Difference	
			Hourly Trips	Modal Split (%)	Hourly Trips	Modal Split (%)	Hourly Trips	Difference (%)
Eastbound Corridor 2	AM Peak Period	General Traffic	430	31%	210	17%	-220	-51%
		Public Transport	630	46%	670	54%	40	6%
		Walking	220	16%	240	20%	20	9%
		Cycling	100	7%	110	9%	10	10%
		<b>Sustainable Modes Total</b>	<b>950</b>	<b>69%</b>	<b>1,020</b>	<b>83%</b>	<b>70</b>	<b>7%</b>

*2038 PM Peak Hour People Movement Westbound*

The contents of Table 6.71 and Table 6.72 outline the difference in modal split between the Do Minimum and Do Something scenarios for each mode of transport in a westbound direction during the PM Peak Hour. The results indicate a 14% and 10% increase in people moved by sustainable modes (Public Transport, Walk, Cycle).

**Table 6.71: Mode Shift of 2038 PM Peak Hour: Corridor 1 Westbound**

Direction	Time Period	Mode of Transport	Do Minimum		Do Something		Difference	
			Hourly Trips	Modal Split (%)	Hourly Trips	Modal Split (%)	Hourly Trips	Difference (%)
Westbound Corridor 1	PM Peak Period	General Traffic	420	33%	310	24%	-110	-26%
		Public Transport	600	47%	710	55%	110	18%
		Walking	160	13%	180	14%	20	13%
		Cycling	90	7%	80	6%	-10	-11%
		<b>Sustainable Modes Total</b>	<b>850</b>	<b>67%</b>	<b>970</b>	<b>76%</b>	<b>120</b>	<b>14%</b>

**Table 6.72: Mode Shift of 2038 PM Peak Hour: Corridor 2 Westbound**

Direction	Time Period	Mode of Transport	Do Minimum		Do Something		Difference	
			Hourly Trips	Modal Split (%)	Hourly Trips	Modal Split (%)	Hourly Trips	Difference (%)
Westbound Corridor 2	PM Peak Period	General Traffic	350	31%	90	9%	-260	-74%
		Public Transport	450	40%	500	53%	50	11%
		Walking	260	23%	290	31%	30	12%
		Cycling	70	6%	70	7%	0	0%
		<b>Sustainable Modes Total</b>	<b>780</b>	<b>69%</b>	<b>860</b>	<b>91%</b>	<b>80</b>	<b>10%</b>

*2038 PM Peak Hour People Movement Eastbound*

The contents of Table 6.73 and Table 6.74 outline the difference in modal split between the Do Minimum and Do Something scenarios for each mode of transport in an eastbound direction during the PM Peak Hour. The results indicate a 12% and 7% increase in people moved by sustainable modes (Public Transport, Walk, Cycle).

**Table 6.73: Mode Shift of 2038 PM Peak Hour: Corridor 1 Eastbound**

Direction	Time Period	Mode of Transport	Do Minimum		Do Something		Difference	
			Hourly Trips	Modal Split (%)	Hourly Trips	Modal Split (%)	Hourly Trips	Difference (%)
Eastbound Corridor 1	PM Peak Period	General Traffic	440	26%	240	14%	-200	-45%
		Public Transport	910	53%	1,050	63%	140	15%
		Walking	260	15%	260	16%	0	0%
		Cycling	110	6%	120	7%	10	9%
		<b>Sustainable Modes Total</b>	<b>1,280</b>	<b>74%</b>	<b>1,430</b>	<b>86%</b>	<b>150</b>	<b>12%</b>

**Table 6.74: Mode Shift of 2038 PM Peak Hour: Corridor 2 Eastbound**

Direction	Time Period	Mode of Transport	Do Minimum		Do Something		Difference	
			Hourly Trips	Modal Split (%)	Hourly Trips	Modal Split (%)	Hourly Trips	Difference (%)
Eastbound Corridor 2	PM Peak Period	General Traffic	540	33%	230	16%	-310	-57%
		Public Transport	470	29%	510	36%	40	9%

Direction	Time Period	Mode of Transport	Do Minimum		Do Something		Difference	
			Hourly Trips	Modal Split (%)	Hourly Trips	Modal Split (%)	Hourly Trips	Difference (%)
		Walking	520	32%	540	38%	20	4%
		Cycling	110	7%	130	9%	20	18%
		<b>Sustainable Modes Total</b>	<b>1,100</b>	<b>67%</b>	<b>1,180</b>	<b>84%</b>	<b>80</b>	<b>7%</b>

## People Movement – Conclusions

In summary, the People Movement Assessment above has shown increases in sustainable modes in both 2023 and 2038 as a result of the Proposed Scheme. Despite the general growth in traffic levels between 2023 and 2038, general traffic along the corridor is either reducing or increasing at marginal levels. Sustainable modes on the other hand see a significant increase between 2023 and 2038. This shows that car trips – unlike public transport, walking and cycling - do not grow in line with population. Therefore, the Proposed Scheme is providing a substantial opportunity for growth of sustainable modes whilst it discourages car usage along the corridor.

## People Movement – Significance of Impact

The significance of impact for the movement of People Movement by sustainable modes with the Proposed Scheme in place has been appraised qualitatively, taking into account the changes in mode share, demand changes by mode along the Proposed Scheme as well as bus usage presented above.

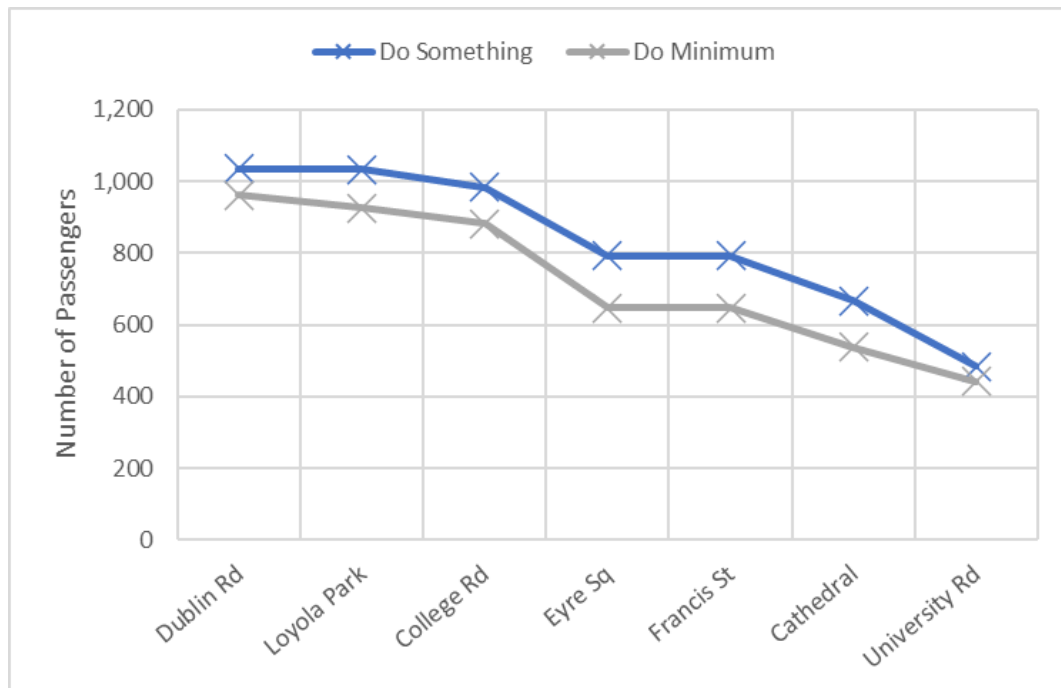
The Proposed Scheme has been adjudged to deliver a Positive, Very Significant and Long-term impact in terms of People Movement by sustainable modes. The Proposed Scheme can be shown to deliver significant improvements in people movement by sustainable modes along the Proposed Scheme corridor, particularly by bus, with reductions in car mode share due to the enhanced sustainable mode provision.

## People Movement by Bus

The following section presents the WRM demand outputs for People Movement by Bus in terms of passenger loadings along the corridor. The results indicate that the improvements in bus priority infrastructure with the Proposed Scheme in place show a substantial increase in Bus patronage during the peak hours.

Diagram 6.20 presents the passenger loading profile comparing the Do Minimum and Do Something scenarios in the AM Peak Hour in the westbound direction in 2023.



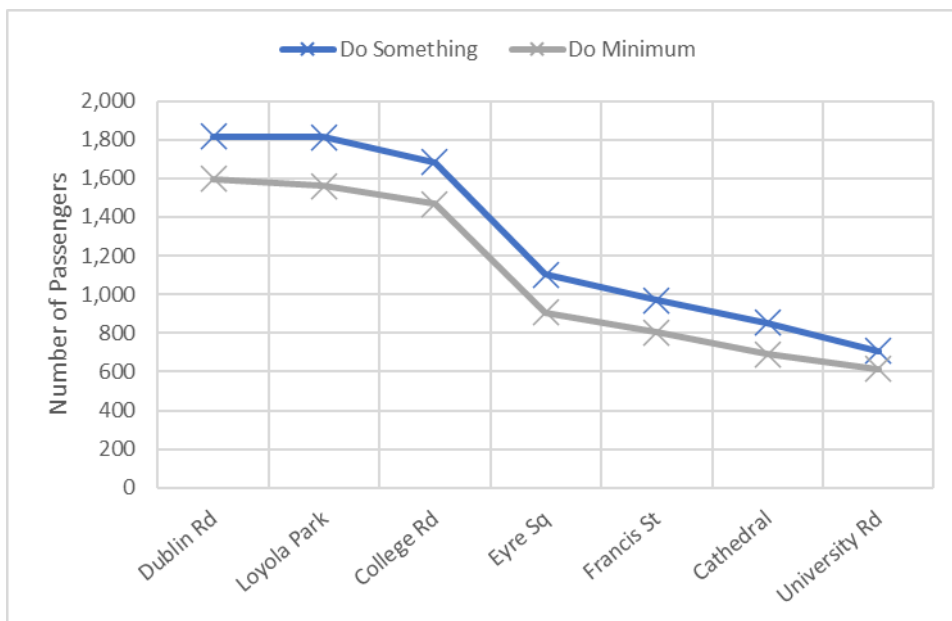


**Diagram 6.20: 2023 AM Peak Hour Passenger Volume along Proposed Scheme (westbound direction)**

Diagram 6.20 shows higher levels of bus passenger loadings along the Proposed Scheme. The volume of passengers reaches its peak at Loyola Park and Dublin Road with a volume of 1,035 passengers in the AM Peak hour, compared to approximately 925 in the Do Minimum scenario.

The increase in bus passengers remains at a high level along the Proposed Scheme with approximately 145 additional users at Eyre Square, compared to the Do Minimum scenario.

Diagram 6.21 presents the passenger loading profile comparing the Do Minimum and Do Something scenarios in the AM Peak Hour in the westbound direction in 2038.

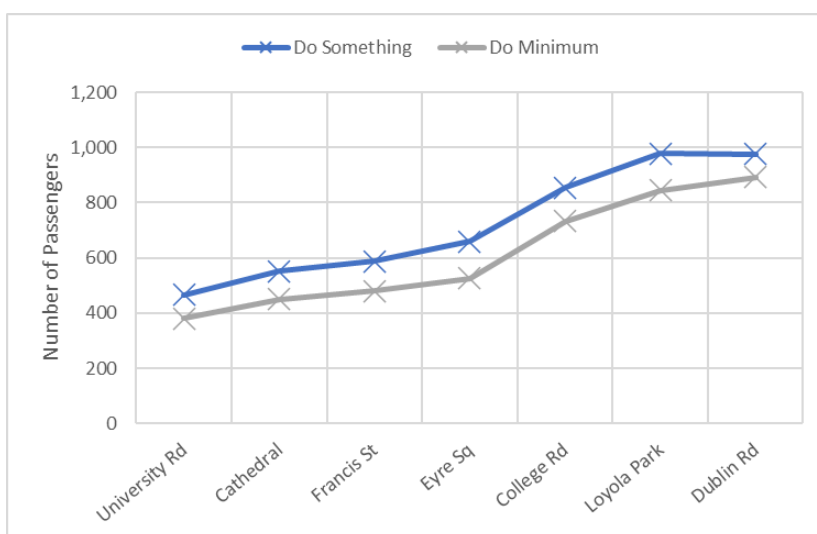


**Diagram 6.21: 2038 AM Peak Hour Passenger Volume along Proposed Scheme (westbound direction)**

Diagram 6.21 shows higher levels of bus passenger loadings along the Proposed Scheme. The volume of passengers reaches its peak at Loyola Park and Dublin Road with a volume of 1,815 passengers in the AM Peak hour, compared to approximately 1,560 in the Do Minimum scenario.

The increase in bus passengers remains at a high level along the Proposed Scheme, at Loyola Park and Dublin Road with approximately 250 additional users on most of the corridor, compared to the Do Minimum scenario.

Diagram 6.22 presents the passenger loading profile comparing the Do Minimum and Do Something scenarios in the PM Peak Hour in the eastbound direction in 2023.

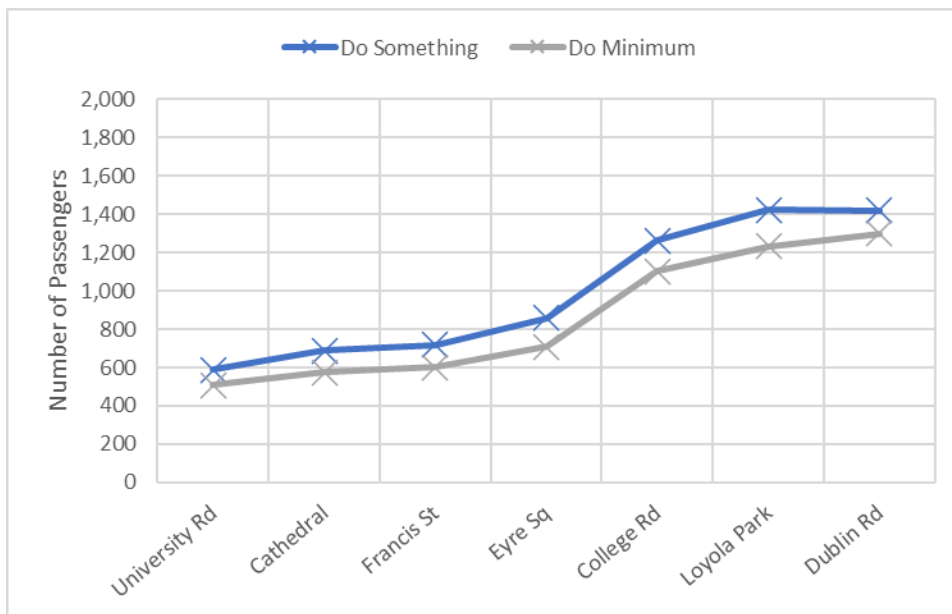


**Diagram 6.22: 2023 PM Peak Hour Passenger Volume along Proposed Scheme (eastbound direction)**

Diagram 6.22 shows a higher level of bus passenger along the Proposed Scheme. Loadings reach a peak at Loyola Park and Dublin Road at approximately 975 passengers in the Do Something scenario, compared to 845 passengers in the Do Minimum.

The increase in bus patronage is high all along the Proposed Scheme, specifically at Eyre Square where the additional passengers loading is approximately 135, compared to the Do Minimum scenario.

Diagram 6.23 presents the passenger loading profile comparing the Do Minimum and Do Something scenarios in the PM Peak Hour in the eastbound direction in 2038.



**Diagram 6.23: 2038 PM Peak Hour Passenger Volume along Proposed Scheme (eastbound direction)**

Diagram 6.23 shows a higher level of bus passenger along the scheme. Loadings reach a peak at Loyola Park at approximately 1,425 passengers in the Do Something scenario, compared to 1,230 passengers in the Do Minimum.

The increase in bus patronage is high all along the Proposed Scheme, specifically at Loyola Park where the additional passenger load is approximately 190, compared to the Do Minimum scenario.

### Bus Boardings

An additional assessment has been undertaken to compare the Do Minimum and Do Something total passengers boarding on bus routes that use any part of the Proposed Scheme in both 2023 and 2038 forecast years. The results for the 2023 Opening Year scenario are indicated in Table 6.75.

**Table 6.75: 2023 Peak Hour Bus Boardings on Routes using the Proposed Scheme**

Time Period	Do Minimum (no. of boardings)	Do Something (no. of boardings)	Difference in No. of Boardings	Difference (%)
AM Peak Hour	4,277	4,516	239	5.6%
PM Peak Hour	2,937	3,264	327	11.1%

The contents of Table 6.75 show that there will be a 5.6% increase in people boarding bus routes which use the Proposed Scheme during the AM Peak Hour. This represents an addition of 239 passengers in the AM Peak hour.

In the PM Peak hour, there will be a 11.1% increase in people boarding bus routes which use the Proposed Scheme, representing an additional 327 passengers.

The comparison results for the 2038 Design Year scenario are indicated in Table 6.76.

**Table 6.76: 2038 Peak Hour Bus Boardings on Routes using the Proposed Scheme**

Time Period	Do Minimum (no. of boardings)	Do Something (no. of boardings)	Difference in No. of Boardings	Difference (%)
AM Peak Hour	6,355	6,862	507	8.0%
PM Peak Hour	4,265	4,797	531	12.5%

The contents of Table 6.76 show that there will be an 8% increase in people boarding bus routes which use the Proposed Scheme during the AM Peak Hour. This represents an addition of 507 passengers in the AM Peak hour.

In the PM Peak hour, there will be a 12.5% increase in people boarding bus routes which use the Proposed Scheme, representing an additional 531 passengers.

### 6.5.8.2 Operational Impacts for Bus Users

#### Overview

The impacts of the Proposed Scheme for Bus Users have been assessed based on journey times and reliability metrics extracted from the micro-simulation model of the Proposed Scheme corridor.

Due to the stochastic nature of the micro-simulation software, model outputs based on the average of 5 simulation seed runs (minimum of 5 recommended as per Transport for London (2010) Traffic Modelling Guidelines) have been calculated between the point of Proposed Scheme entry and exit and compared against the corresponding Do Minimum scenarios.

## Bus Journey Time and Reliability changes as a result of the Proposed Scheme

To give an overview of how the Proposed Scheme will impact on bus journey times along the Scheme, outputs for all services combined, for the entire length of the Proposed Scheme only, have been extracted from the model. As outlined in Section 6.3.3.3, the Opening Year assessment is based on the same network as the base year plus other committed schemes while the Design Year assessment is based in the context of the full implementation of the GTS network re-design (including the Galway City Ring Road) in both the Do Minimum and Do Something scenarios, with the Proposed Scheme servicing the new GTS services.

### *Eastbound Direction*

Average journey times for all eastbound services in the 2023 Opening Year can be seen in Table 6.77.

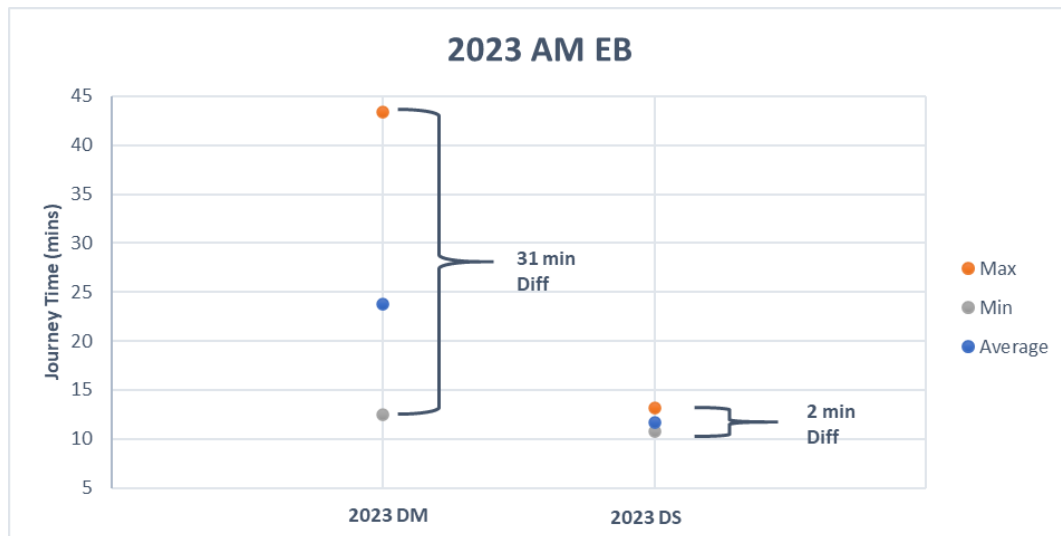
**Table 6.77: Bus Average Journey Times (All Eastbound Services)**

Peak Hour	Do Minimum (minutes)	Do Something (minutes)	Difference (minutes)	% Difference
2023 AM	23.8	11.6	-12.1	-51%
2023 PM	24.3	13.1	-11.2	-46%

Additional information regarding the range of journey times (minimum, maximum, average and standard deviation) for all eastbound services combined in the Do Minimum and Do Something can be seen in Table 6.78, Diagram 6.24 and Diagram 6.25 below. The minimum, maximum, average and standard deviation journey times are represented as a dot in the graphs for buses in each scenario. A larger range of journey times are an indication of lower levels of reliability in a given scenario.

**Table 6.78: Range of Journey Times (Eastbound Services)**

Peak Hour	Do Minimum				Do Something			
	MIN	MAX	AVG	STDEV	MIN	MAX	AVG	STDEV
2023 AM	12.5	43.4	23.8	9.2	10.8	13.1	11.6	0.6
2023 PM	13.5	40.1	24.3	7.9	11.6	14.9	13.1	0.9



**Diagram 6.24: AM Bus Journey Times (Eastbound Services)**



**Diagram 6.25: PM Bus Journey Times (Eastbound Services)**

Based on the results presented above, the Proposed Scheme will deliver average journey time savings for eastbound bus passengers of up to 12.1 minutes (51%) in 2023 during the AM peak hour and 11.2 minutes (46%) in the PM peak hour. Furthermore, results presented in Diagram 6.2426 and Diagram 6.2527 suggest an improvement in bus journey time reliability across both morning and evening peak hour scenarios as indicated by the reduced ranges of journey times achieved with the max and min journey times focused much closer to the average journey times in the Do Something scenario with the Proposed Scheme in place compared to the more dispersed range in the Do Minimum scenario.

Note that the variation in journey times shown above are based on one set of predicted flows for the Do Minimum and Do Something scenario. Traffic flows fluctuate daily which would mean that the variation in journey times would be much greater in the Do Minimum with any increases in traffic flows compared to the protection of journey time reliability provided by the bus priority measures that comprise the Proposed Scheme.

*Westbound Direction*

Average journey times for all westbound services in the 2023 Opening Year can be seen in Table 6.79.

**Table 6.79: Bus Average Journey Times (All Westbound Services)**

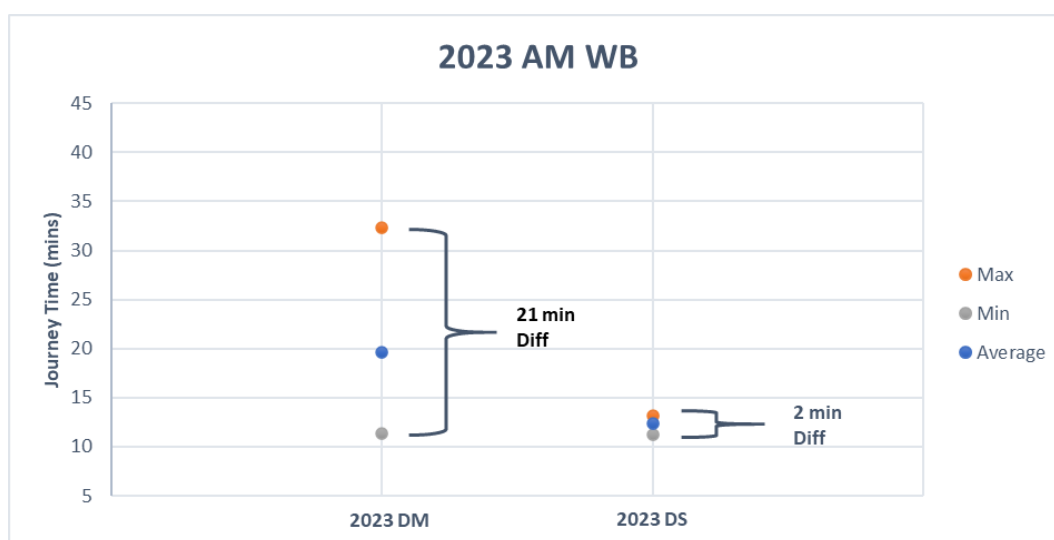
Peak Hour	Do Minimum (minutes)	Do Something (minutes)	Difference (minutes)	% Difference
2023 AM	19.6	12.3	-7.3	-37%
2023 PM	19.4	11.3	-8.1	-42%

Additional information regarding the range of journey times (minimum, maximum, average and standard deviation) for all westbound services combined in the Do Minimum and Do Something can be seen in Table 6.80, Diagram 6.26 and Diagram 6.27.

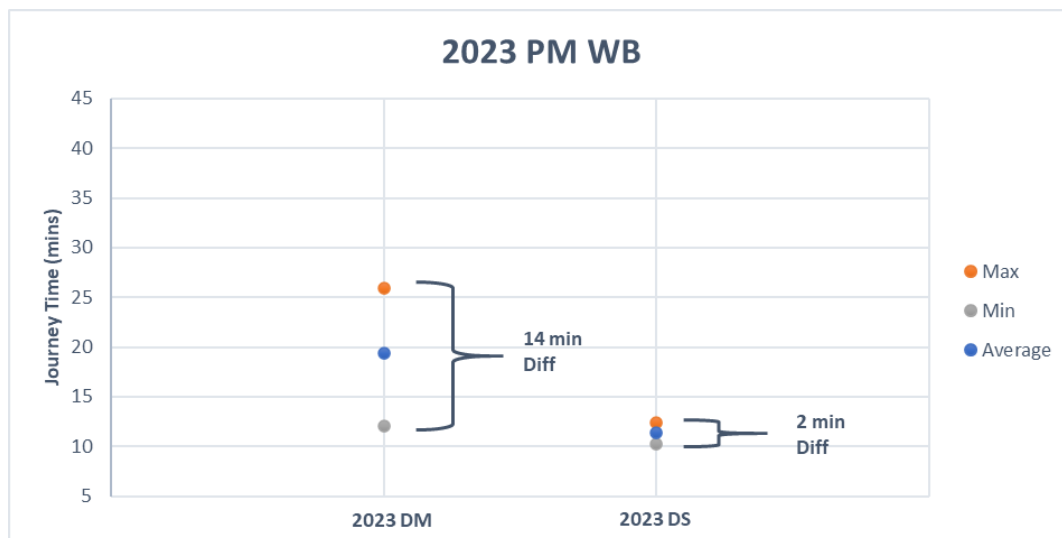
The minimum, maximum, average and standard deviation journey times are represented as a dot in the graphs for buses in each scenario. A larger range of journey times are an indication of lower levels of reliability.

**Table 6.80: Range of Journey Times (Westbound Services)**

Peak Hour	Do Minimum				Do Something			
	MIN	MAX	AVG	STDEV	MIN	MAX	AVG	STDEV
2023 AM	11.3	32.3	19.7	6.8	11.3	13.1	12.3	0.4
2023 PM	12.1	26.0	19.4	4.5	10.2	12.4	11.3	0.9



**Diagram 6.26: AM Bus Journey Times (Westbound Services)**



**Diagram 6.27: PM Bus Journey Times (Westbound Services)**

Based on the results presented in above, the Proposed Scheme will deliver average journey time savings for westbound bus passengers of 7.3 minutes (37%) in 2023 during the AM peak hour and 8.1 minutes (42%) in the PM peak hour. Furthermore, results presented in Diagram 6.2628 and Diagram 6.2729 suggest an improvement in bus journey time reliability across both morning and evening peak hour scenarios as indicated by the reduced ranges of variability of journey times achieved. The maximum and minimum journey times are closer to the average journey times in the Do Something scenario with the Proposed Scheme in place compared to the more variable (hence unreliable) journey times in Do Minimum scenario.

Note that the variation in journey times shown above are based on one set of predicted flows for the Do Minimum and Do Something scenario. Traffic flows fluctuate daily which would mean that the variation in journey times would be much greater in the Do Minimum with any increases in traffic flows compared to the protection of journey time reliability provided by the bus priority measures that comprise the Proposed Scheme.

### 6.5.8.3 General Traffic Assessment

#### Overview

The Proposed Scheme aims to provide an attractive alternative to the private car and promote a modal shift to public transport, walking and cycling. It is, however, recognised that there will be an overall reduction in operational capacity for general traffic along the direct study area given the proposed changes to the road layout and the rebalancing of priority to walking, cycling and bus. This reduction in operational capacity for general traffic along the Proposed Scheme will likely create some level of trip redistribution onto the surrounding road network.

It should be noted that the Do Minimum and Do Something scenarios are based on the assumption that travel behaviour will remain broadly consistent over time and that car demand, used for this assessment, represents a reasonable worst-case



scenario. It is possible that societal trends in the medium to long term may reduce car demand further due to the ongoing changes to travel behaviours and further shifts towards sustainable travel, flexibility in working arrangements brought on following COVID-19, and delayed car ownership trends that are emerging.

The assessment also assumes that goods vehicles (HGVs and LGVs) continue to grow in line with forecasted population growth and economic activity with patterns of travel remaining the same. For example, the assessment assumes a 45% and 77% increase in goods traffic versus the base year in 2023 and 2038 respectively. This is considered a very conservative or worst-case assumption, i.e., it will result in higher levels of associated impact estimates in the modelling. It should be noted that the 2021 Climate Action Plan (CAP) (DCCAE 2021) includes reference to a freight strategy for the region which will seek to further integrate smart technologies in logistics management and may include the regulation of delivery times as far as practicable to off-peak periods to limit traffic congestion in urban areas.

CAP outlines plans to manage the increase in delivery and servicing requirements as the population grows, which may include the development of consolidation centres to limit the number of ‘last-mile’ trips made by larger goods vehicles with plans for higher use of smaller electric vans or cargo bikes for ‘last-mile’ deliveries in urban areas. As proposals for the above are at a pre-planning stage, it was not possible to account for them in the assessments and a worst-case assessment has been undertaken based on continued growth in goods traffic.

The purpose of this section is to assess the overall impact that any redistributed general traffic will have on both the direct and indirect study areas. It should be noted that the impacts presented in this chapter are based on the final Preliminary Design for the Proposed Scheme which includes embedded mitigation to limit environmental and traffic and transport impacts to a minimal level as part of the iterative design development work described previously above.

### **Significance of the General Traffic Impact**

To determine the impact that the Proposed Scheme has in terms of general traffic redistribution on the direct and indirect study areas, the LAM Opening Year 2023 model results have been used to identify the difference in general traffic flows between the Do Minimum and Do Something scenarios and the associated level of traffic flow difference as a result of the Proposed Scheme. The assessment has been considered with reference to both the reductions and increases in general traffic flows along road links.

### **Significance of a Reduction in General Traffic**

For this assessment, the reductions in general traffic flows have been described as a positive impact to the environment. The significance of this positive impact is outlined by the contents of Table 6.81.

**Table 6.81: Significance of the Reduction in General Traffic Flows**

Significance of Positive Impact	Description of Impact / Proposed Changes in Two-way Hourly Traffic Flows
Profound	< -1,000
Very Significant	-1,000 to -800
Significant	-800 to -400
Moderate	-400 to -300
Slight	-300 to -100
Not Significant	> -100

The majority of instances where a reduction in general traffic flow occurs are located along or adjacent to the Proposed Scheme (i.e. the direct study area), where there are proposed measures to improve priority for bus, cycle and walking facilities.

### Significance of an Increase in General Traffic

To determine the impact that the Proposed Scheme has in terms of an increase in general traffic flows on the direct and indirect study areas, a robust assessment has been undertaken, with reference to TII's Traffic and Transport Assessment Guidelines (May 2014).

This document is considered best practice guidance for the assessment of transport impacts related to changes in traffic flows due to proposed developments and is an appropriate means of assessing the impact of general traffic trip redistribution on the surrounding road network.

Diagram 6.28 is a snapshot from the guidance which outlines "Advisory Thresholds for Traffic and Transport Assessment Where National Roads are Affected".

<i>Where applications affect national roads a Transport Assessment should be requested if the thresholds in Table 2.2, below, are exceeded.</i>	
<i>Table 2.2 Advisory Thresholds for Traffic and Transport Assessment Where National Roads are Affected</i>	
<i>Vehicle Movements</i>	<i>100 trips in / out combined in the peak hours for the proposed development</i>
	<i>Development traffic exceeds 10% of turning movements at junctions with and on National Roads.</i>
	<i>Development traffic exceeds 5% of turning movements at junctions with National Roads if location has potential to become congested or sensitive.</i>
Traffic and Transport Assessment Guidelines PE-PDV-02045 May 2014, TII Publications	

### Diagram 6.28: Extract from the Traffic and Transport Assessment Guidelines (PE-PDV-02045, May 2014)

The basis of the guidance is to assess the impacts of additional trips that have been generated as part of a new development (for example, a new housing estate etc.). Noting that the guidance relates to National Roads only, for the purpose of this assessment, the principles of the guidance have been adapted for the

assessment of the Proposed Scheme. This has been achieved by extending the threshold to cover all road types in the vicinity of the Proposed Scheme, not only National Roads. This ensures a robust and rigorous assessment is undertaken and that potential impacts on more localised or residential streets have been captured as part of the assessment.

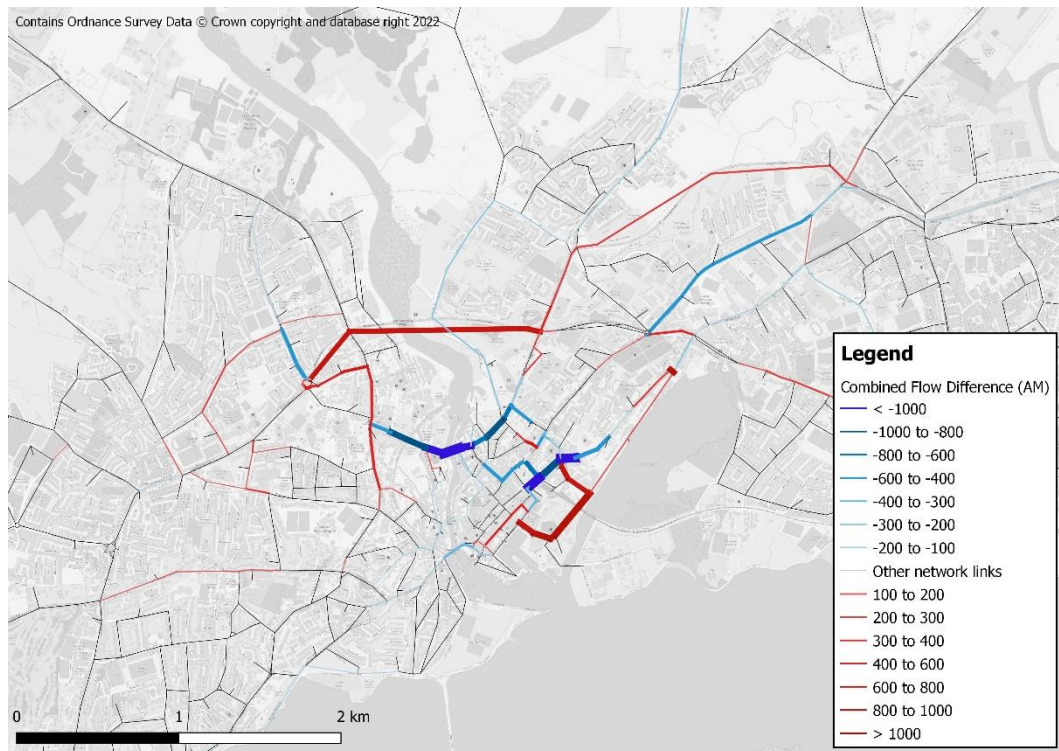
The impact assessment of increases to the general traffic flows has used the following thresholds based on the above guidelines:

- Local / Regional Roads: Traffic redistribution results in an increase above 100 combined flows (i.e. in a two-way direction) along residential, local and regional roads in the vicinity of the Proposed Scheme in the AM and PM peak hours;
  - The threshold aligns with an approximate 1 vehicle per minute increase per direction on any given road. This is a very low level of traffic increase on any road type and ensures that a robust assessment of the impacts of redistributed traffic has been undertaken.
- National Roads: Traffic exceeds 5% of the combined turning flows at major junctions with/ on/or with national roads in the AM and PM peak hours as a result of traffic redistribution comparing the Do Minimum to the Do Something scenario with the Proposed Scheme in place;
  - The guidelines indicate that a 10% threshold may be used, however, to ensure a rigorous assessment in this instance the lower 5% threshold for turning movements has been utilised.

Where road links have been identified as experiencing additional general traffic flow increases which exceed the above thresholds, a further assessment has been undertaken by way of a traffic capacity analysis on the associated junctions along the affected links.

### **General Traffic Flow Difference - AM Peak Hour**

Diagram 6.29 illustrates the difference in traffic flows on the road links in the AM Peak Hour for the 2023 Opening Year. Please see Appendix 6.2 (Impact Assessments) in Volume 4 of this EIAR for the full LAM outputs.



**Diagram 6.29: Flow Difference on Road Links (Do Minimum vs. Do Something), AM Peak Hour, 2023 Opening Year**

### Reductions in General Traffic

The LAM indicates that, during the 2023 Opening Year scenario, there are reductions in general traffic noted along the Proposed Scheme during the AM Peak Hour, as illustrated by the blue lines in 31, which indicates where a reduction of at least -100 combined traffic flows occurs.

The key reductions in traffic flows during the AM Peak Hour are outlined in Table 6.82.

**Table 6.82: Road Links that Experience a Reduction of  $\geq 100$  Combined Flows (AM Peak Hour, 2023)**

Road Name	Do Minimum Flows (PCU)	Do Something Flows (PCU)	Flow Difference (PCU)
Bishop O'Donnell Road	850	743	-107
Thomas Hynes Road	664	563	-101
Coolough Road	487	381	-106
R339 Monivea Road	1,581	1,432	-149
Tuam Road	1,736	1,476	-260
Wellpark Road	1,253	1,133	-120
Connolly Avenue	440	249	-191
Michael Collins Road	340	236	-105
O'Donoghue's Terrace	999	367	-631
St Bridgets Place	587	132	-455
College Road (North of Foster St)	643	530	-113
Forster Street	739	173	-566

Road Name	Do Minimum Flows (PCU)	Do Something Flows (PCU)	Flow Difference (PCU)
College Road (Lough Atalia Road - Dublin Road)	2,085	1,866	-219
Bothar Bhreandan Ui Eithir	1,223	1,029	-194
Queen Street (Forthill St - Victoria Pl)	521	205	-317
Victoria Place	521	205	-317
Eyre Square	272	139	-134
Eyre Square East	272	139	-134
Williamsgate Street	630	139	-492
Eglinton Street	630	144	-486
Daly's Place	147	0	-147
Walsh's Terrace	1,056	222	-833
St Vincent's Avenue	926	293	-633
Newtownsmith	191	0	-191
Waterside	191	0	-191
Mary Street	428	266	-162
Upper Abbeygate Street	498	333	-165
Market Street	498	333	-165
Lombard Street	542	385	-157
O'Brien's Bridge	630	525	-106
Salmon Weir Bridge	1,525	175	-1,350
Spanish Parade	1,115	912	-203
Salthill Promenade	1,006	874	-133
Upper Salthill Road	349	199	-149
Seapoint Promenade	651	507	-143
Grattan Road	335	231	-104
University Road	1,363	844	-519
Earl's Island	1,190	169	-1,021
Nun's Island	263	96	-167
Gaol Road (South of Cathedral Parking)	263	145	-118
Sea Road	341	220	-121
William Street West	336	209	-127
Dominick Street Upper	731	539	-192
Dominick Street Lower	544	374	-169

The contents of Table 6.82 demonstrate that there is a reduction of between -107 and -1,350 general traffic flows along the direct study area during the AM Peak Hour, which is attributed to the Proposed Scheme and the associated modal shift as a result of its implementation. This reduction in general traffic flow averages at -283 across all road links, which is determined as an overall Positive, Slight and Long-term effect on the direct study area, in accordance with Table 6.814. The most significant effect occurs on Salmon-Weir-Bridge and Earl's Island, which is the main corridor of the Proposed Scheme.

## Increases in General Traffic

The road links which experience additional traffic volumes of over 100 combined flows are illustrated by the orange / red lines in 31. These road links have been identified as experiencing traffic volumes above the additional traffic threshold and therefore require further analysis. The road links and associated flow difference between the Do Minimum and Do Something scenarios during the AM Peak Hour are outlined in Table 6.83.

**Table 6.83: Road Links where the 100 Flow Additional Threshold is Exceeded (2023, AM Peak Hour)**

Road Name	Do Minimum Flows (PCU)	Do Something Flows (PCU)	Flow Difference (PCU)
Headford Road	2,452	2,759	306
Quincentenary Bridge	3,656	4,385	729
Quincentenary Bridge Approach Road	3,656	4,385	729
Circular Road	468	613	145
Bushypark	539	649	110
Western Distributor Road	296	398	102
Bothar Le Cheile	429	605	175
Siobhan McKenna Road	748	976	228
Moyola Park	203	312	109
N83 Tuam Road	1,595	1,759	164
Wellpark	365	487	123
Ballybane Road	926	1,153	228
Dublin Road	1,656	1,892	235
Sean Mulvoy Road	1,439	1,616	176
Moneenageisha Road	1,403	1,704	301
Headford Road (South of Sean Mulvoy Road)	1,119	1,324	206
Bohermore	1,334	1,470	136
College Road (South of Lough Atalia Road)	606	843	237
Lough Atalia Road	1,384	2,328	944
Bothar Na Long	1,174	2,043	869
Fairgreen Road	292	1,011	719
Bothar Na Mban	320	754	434
Forthill Street	534	847	313
Merchants Road (Saint Nicholas Street - Forthill Street)	845	1,150	305
New Dock Street	0	175	175
Flood Street	1,113	1,332	219
Taylor's Hill Road	1,041	1,187	146
Rahoon Road	751	873	122
Old Seamus Quirke Road	554	803	249
Ashe Road	86	205	120
Shantalla Road	1,174	1,423	250
Seamus Quirke Road (Lower	447	858	411

Road Name	Do Minimum Flows (PCU)	Do Something Flows (PCU)	Flow Difference (PCU)
Newcastle Road - Browne Roundabout)			
Lower Newcastle Road (University Road - Seamus Quirke Road)	1,270	1,643	373
Newcastle Road	998	1,371	372
St Mary's Road	737	841	104
Gaol Road (South of University Road)	15	187	172
Presentation Road	106	254	148
Bothar na dTreabh (N83-N84)	1,838	2,111	273

Table 6.83 outline that the additional traffic on the key road links varies between 102 and 944 combined flows during the AM Peak Hour. Further junction capacity assessment has been undertaken along these road links to determine whether the above road links have the capacity to cater for the additional traffic volumes as a result of the Proposed Scheme.

Operational capacity outputs have been extracted from the LAM at the associated junctions along the subject road links to determine whether there is reserve capacity to facilitate the uplift in traffic. The results are presented in terms of the significance of the impact to the V / C ratio for each junction based on its sensitivity and magnitude of impact.

It should be noted that the worst performing arm of the junction has been used for the purpose of the assessment to ensure a conservative impact assessment is undertaken.

#### **National Roads – 5% Threshold Impact Assessment (AM Peak Hour)**

On the basis of the assessment methodology specifically for national roads, whereby traffic exceeding 5% of the combined turning flows at junctions on or with national roads as a result of traffic redistribution associated with the Proposed Scheme, the junctions and associated flow difference between the Do Minimum and Do Something scenarios during the AM Peak Hour are outlined in Table 6.84 .

**Table 6.84: National Road Links where the 5% Additional Traffic Threshold is Exceeded (AM Peak Hour)**

Junction	Total Do Minimum Turning Flows (PCU)	Total Do Something Turning Flows (PCU)	Turning Flow Difference (PCU)	Percentage Difference
N6 Quincentenary Bridge/ Upper Newcastle / Lower Newcastle	4,279	4,858	579	13.5%
N6 Quincentenary Bridge/ Headford Road/ Sean Mulvoy Road	4,330	4,869	539	12.4%
Browne Roundabout	3,577	3,740	163	4.6%
Headford Road / Bothar na dTreabh (Kirwan	3,233	3,481	248	7.7%

Junction	Total Do Minimum Turning Flows (PCU)	Total Do Something Turning Flows (PCU)	Turning Flow Difference (PCU)	Percentage Difference
Junction)				
Bothar na dTreabh / Tuam Road	3,915	3,996	81	2.1%
Bothar na dTreabh/ Ballybana Road	4,216	4,119	-97	-2.3%
Bothar na dTreabh/ Monivea Road	4,481	4,286	-195	-4.4%
Coolagh Roundabout	3,299	3,176	-123	-3.7%
Martin Jct	2,088	2,091	3	0.1%

The contents of Table 6.86 demonstrate that redistributed traffic from the Proposed Scheme will have a less than 5% impact on turning flows at Browne Roundabout and Bothar na dTreabh/Tuam Road Junction. Turning flows see a decrease at three national road junctions (Bothar na dTreabh / Ballybana Road and Bothar na dTreabh / Monivea Road Junctions as well as Coolagh Roundabout.

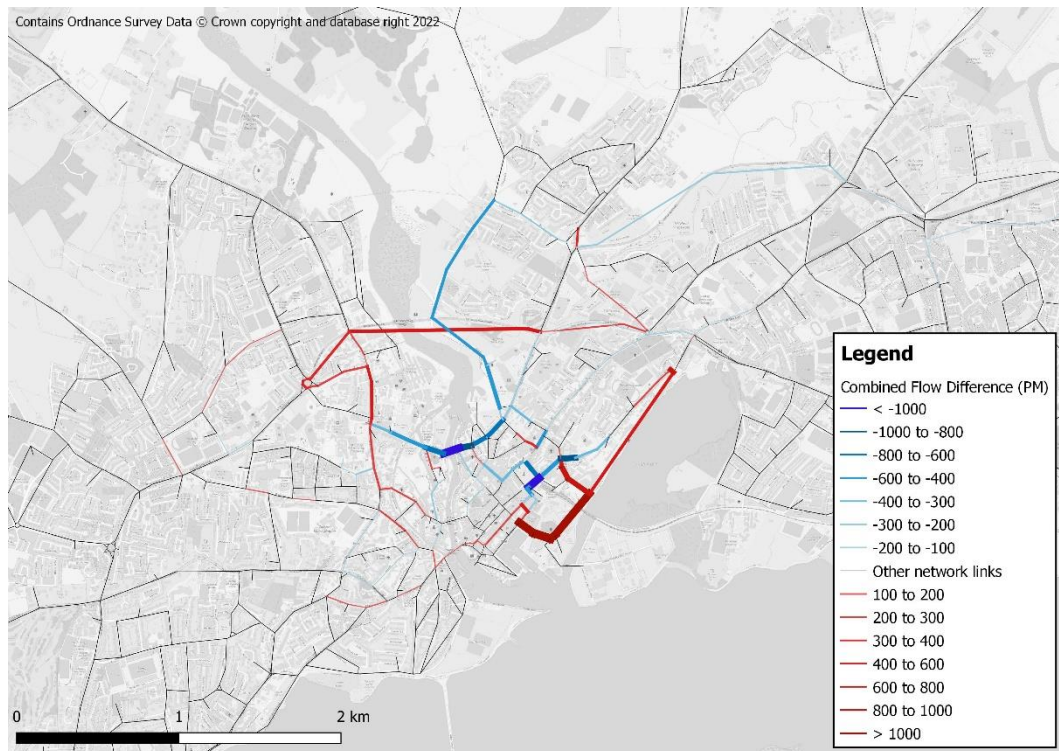
Turning flows at Headford Road / Bothar na dTreabh (Kirwan Junction) will increase by 7.7%. However, this junction has been addressed as part of the General Traffic Impact Assessment shown in Table 6.90 and operates above 100% during both the Do Minimum and Do Something scenarios. Therefore, the impact is considered to be negligible.

Traffic flows at the signalised junction at either end of Quincentenary Bridge (N6 Quincentenary Bridge / Upper Newcastle / Lower Newcastle and N6 Quincentenary Bridge/Headford Road / Sean Mulvoy Road) will increase by 13.5% and 12.4% respectively. Similar to Kirwan Junction, both junctions have been analysed as part of the General Traffic Impact Assessment as shown in Table 6.90 which confirms that both junctions operate above 100% during both the Do Minimum and Do Something scenarios. Therefore, the impact is considered to be negligible.

### **General Traffic Flow Difference - PM Peak Hour**

Diagram 6.30 illustrates the difference in traffic flows on the road links in the PM Peak Hour for the 2023 Opening Year. Please see Appendix 6.2 (Impact Assessments) in Volume 4 of this EIAR for the full LAM outputs.





**Diagram 6.30: Flow Difference on Road Links (Do Minimum vs. Do Something), PM Peak Hour, 2023 Opening Year**

### Reductions in General Traffic

The LAM indicates that, during the 2023 Opening Year scenario, there are reductions in general traffic noted along the Proposed Scheme during the PM Peak Hour, as illustrated by the blue lines in 32, which indicates where a reduction of at least -100 combined traffic flows occurs. The key reductions in traffic flows during the PM Peak Hour are outlined in Table 6.85.

**Table 6.85: Road Links that Experience a Reduction of  $\geq 100$  Combined Flows (PM Peak Hour, 2023)**

Road Name	Do Minimum Flows (PCU)	Do Something Flows (PCU)	Flow Difference (PCU)
Seamus Quirke Road (Bothar Le Cheile - Old Seamus Quirke Road)	1,475	1,333	-143
Dyke Road	406	248	-159
N67/M6 Roundabout	786	685	-101
Monivea Road	458	352	-106
Moneenageisha Road	1,397	1,205	-191
Headford Road (South of Sean Mulvoy Road)	1,071	917	-154
Headford Road (North of Dyke Road)	559	357	-202
O'Donoghue's Terrace	541	256	-285
St Bridgets Place	353	39	-314
Bohermore	1,207	1,085	-122
Prospect Hill	1,105	979	-126
Forster Street	522	175	-347

Road Name	Do Minimum Flows (PCU)	Do Something Flows (PCU)	Flow Difference (PCU)
Queen Street (Forthill Street - Victoria Place)	543	287	-256
Victoria Place	543	287	-256
Merchants Road (Forthill Street - Victoria Place)	393	107	-285
Williamsgate Street	512	139	-374
Eglinton Street	512	145	-368
Daly's Place	184	0	-184
Walsh's Terrace	944	323	-622
St Vincent's Avenue	934	294	-641
Mary Street	387	276	-111
Upper Abbeygate Street	377	222	-155
Market Street	377	222	-155
Lombard Street	392	249	-143
Salmon Weir Bridge	1,274	173	-1,101
Costello Road	731	626	-105
St Enda's Road	657	556	-101
St Mary's Road	690	571	-119
University Road	1,002	639	-363
Earl's Island	900	168	-732
Nun's Island	384	151	-233
Gaol Road (South of Cathedral Parking)	384	216	-168
The Crescent	361	238	-123
Sea Road	265	150	-116
William Street West	290	174	-116
Dominick Street Lower	586	451	-135

The contents of Table 6.85 demonstrate that there is a reduction of between -101 and -1,101 general traffic flows along the direct study area during the PM Peak Hour, which is attributed to the Proposed Scheme and the associated modal shift as a result of its implementation. This reduction in general traffic flow averages at -256 across all road links, which is determined as an overall Positive, Slight and Long-term effect on the direct study area, in accordance with Table 6.814. The most significant effect occurs on Salmon-Weir-Bridge and Earl's Island, which is the main corridor of the Proposed Scheme.

### Increases in General Traffic

The road links which experience additional traffic volumes of over 100 combined flows are illustrated by the orange / red lines in 32.

These road links have been identified as experiencing traffic volumes above the additional traffic threshold and therefore require further analysis.

The road links and associated flow difference between the Do Minimum and Do Something scenarios during the PM Peak Hour are outlined in Table 6.86.

**Table 6.86: Road Links where the 100 Flow Additional Threshold is Exceed (2023, PM Peak Hour)**

Road Name	Do Minimum Flows (PCU)	Do Something Flows (PCU)	Flow Difference (PCU)
Quincentenary Bridge	3,000	3,486	486
Quincentenary Bridge Approach Road	3,000	3,486	486
Circular Road	486	619	132
Siobhan Mckenna Road	699	819	119
N84 Headford Road	1,442	1,749	307
Doughiska Road	427	540	113
Sandy Road	472	654	182
Sean Mulvoy Road	1,393	1,513	120
College Road (South of Lough Atalia Road)	549	764	215
Lough Atalia Road	922	2,034	1,111
College Road (Lough Atalia Road - Dublin Road)	1,487	1,587	100
Bothar Na Long	763	1,942	1,179
Fairgreen Road	184	944	760
Bothar Bhreandan Ui Eithir	796	954	158
Bothar Na Mban	270	605	335
Queen Street (Bothar Na Long - Forthill St)	806	1,052	246
Forthill Street	260	762	502
Merchants Road (Saint Nicholas St - Forthill St)	461	692	230
St Francis Street	286	405	119
New Dock Street	461	634	173
Wolfe Tone Bridge	527	698	171
Flood Street	809	1,034	225
Shantalla Road	778	944	165
Seamus Quirke Road (Lower Newcastle Road - Browne Roundabout)	233	528	295
Upper Newcastle Road	896	1,099	203
Lower Newcastle Road (Seamus Quirke Road - Snipe Av)	896	1,099	203
Lower Newcastle Road (University Road - Seamus Quirke Road)	1,121	1,527	406
Newcastle Road	953	1,241	287
Gaol Road (South of University Road)	42	262	220
Father Griffin Road	264	427	163
Presentation Road	117	348	232
Mill Street	261	415	153
St Helen's Street	436	653	217
Henry Street	322	579	257
Lower Road Fairhill	666	847	181

The contents of Table 6.86 outline that the additional traffic on the key road links varies between 100 and 1,111 combined flows during the PM Peak Hour. As described earlier, these road links have been identified as experiencing additional traffic volumes over the threshold for further assessment.

### **National Roads – 5% Threshold Impact Assessment (PM Peak Hour)**

On the basis of the assessment methodology specifically for national roads, whereby traffic exceeding 5% of the combined turning flows at junctions on or with national roads as a result of traffic redistribution associated with the Proposed Scheme, the junctions and associated flow difference between the Do Minimum and Do Something scenarios during the PM Peak Hour are outlined in Table 6.87.

**Table 6.87: National Road Links where the 5% Additional Traffic Threshold is Exceeded (PM Peak Hour)**

<b>Junction</b>	<b>Total Do Minimum Turning Flows (PCU)</b>	<b>Total Do Something Turning Flows (PCU)</b>	<b>Turning Flow Difference (PCU)</b>	<b>Percentage Difference</b>
N6 Quincentenary Bridge/ Upper Newcastle/ Lower Newcastle	3,665	4,177	511	13.9%
N6 Quincentenary Bridge/ Headford Road/ Sean Mulvoy Road	3,632	3,706	74	2.0%
Browne Roundabout	3,055	3,361	306	10.0%
Headford Road / Bothar na dTreabh (Kirwan Junction)	2,509	2,598	89	3.5%
Bothar na dTreabh/ Tuam Road	3,424	3,281	-143	-4.2%
Bothar na dTreabh/ Ballybana Road	4,196	4,073	-123	-2.9%
Bothar na dTreabh/ Monivea Road	4,301	4,250	-51	-1.2%
Coolagh Roundabout	3,399	3,359	-40	-1.2%
Martin Junction	2,244	2,247	3	0.1%

The contents of Table 6.87 demonstrate that redistributed traffic from the Proposed Scheme will have a less than 5% impact on turning flows at junctions with national roads at N6 Quincentenary Bridge/Headford Road/ Sean Mulvoy Road, Headford Road / Bothar na dTreabh (Kirwan Junction) and Martin Junction. Bothar na dTreabh / Tuam Road, Bothar na dTreabh / Ballybana Road and Bothar na dTreabh / Monivea Road Junctions see a decrease in turning flows.

Traffic flows at N6 Quincentenary Bridge / Upper Newcastle / Lower Newcastle will increase by 13.9%.

This junction has been analysed as part of the General Traffic Impact Assessment as shown in Table 6.87 which confirms that this junction operates between 85% and 100% during the Do Minimum and above 100% during the Do Something scenario. Therefore, the impact is considered to be negligible.

Traffic flows at Browne Roundabout will increase by 10%. As shown in Table 6.91 as part of the General Traffic Impact Assessment, this junction operates below 85% during the Do Minimum and between 85% and 100% in the Do Something scenario. Therefore, the impact is considered to have a Negative, Slight and Long-term effect.

Traffic flows at N6 Quincentenary Bridge / Headford Road / Sean Mulvoy Road Junction will increase by 15%. However, this junction has been analysed as part of the General Traffic Impact Assessment as shown in Table 6.91 which confirms that this junction operates above 100% during both the Do Minimum and Do Something scenarios. Therefore, the impact is considered to have a Negative, Slight and Long-term effect.

### **General Traffic Impact Assessment Methodology**

Following the above threshold assessment, the following three-step approach has been undertaken to determine the impact and Significance of Effect as a result of the redistributed general traffic associated with the Proposed Scheme:

**Step 1 - Determination of Junction Sensitivity:** Where road links experience additional traffic volumes of above the proposed thresholds, a review has been undertaken of its associated junctions using the following categories:

- **High Sensitivity (Category 5)** – Roads that cater for a lower volume of traffic than Category 4 with a lower speed limit (30km/h);
- **Medium Sensitivity (Category 4)** – Roads that can cater for a high volume of traffic with a moderate speed limit (30km/h – 50km/h), connecting neighbourhoods;
- **Low Sensitivity (Category 3)** – Roads that interconnect Category 2 type roads with a lower level of mobility than national roads; and
- **Negligible Sensitivity (Category 1 and Category 2)** – Roads that can cater for a high volume of traffic with a high speed limit (100km/h - 120km/h), between major metropolitan cities, i.e. national primary and secondary roads.

The above sensitivities / categories establish the characteristics of the surrounding road network impacted by the Proposed Scheme. The road link characteristics of the major arm of a junction has been used to determine the junction sensitivity. This has allowed for the identification of where more sensitive locations, in particular Category 5 roads / junctions, are impacted.

### **Step 2 – Determination of the Magnitude of Impact using Junction Analysis:**

To understand the magnitude impact of the redistributed traffic, operational capacities have been extracted from the LAM.

The capacity of junctions within the LAM are expressed in terms of Volume to Capacity ratios ( $V / C$  ratios). The  $V / C$  ratios represent the operational efficiency for each arm of a junction. For the purpose of this EIAR, operational capacity outputs of a junction have been identified with reference to the busiest arm which experiences the maximum  $V/C$  ratio.

A  $V / C$  ratio of below 85% indicates that a junction is operating well, with spare capacity, with traffic not experiencing queuing or delays throughout the hour. A

value of 85% to 100% indicates that the junction is approaching its theoretical capacity with traffic possibly experiencing occasional queues and delays within the hour. A value of over 100% indicates that a junction is operating above its theoretical capacity and traffic experiences queues and delays regularly within the hour. The junctions have been described in the ranges outlined in Table 6.88.

**Table 6.88: Junction Volume / Capacity Ranges**

V / C Ratio	Traffic Condition
≤85%	A junction is operating well within theoretical capacity.
85% - 100%	A junction is approaching theoretical capacity and may experience occasional queues and delays within the hour.
≥100%	A junction is operating above its theoretical capacity and experiences queues and delays quite regularly within the hour.

When comparing the V / C ratios during the Do Minimum and Do Something scenarios for the key junctions, the terms outlined in Table 6.89 have been used to describe the impact.

**Table 6.89: Magnitude of Impact for Redistributed Traffic**

		Do Something		
		≤85%	85% - 100%	>100%
Do Minimum	≤85%	Negligible	Low Negative	High Negative
	85% - 100%	Low Positive	Negligible	Medium Negative
	>100%	Medium Positive	Low Positive	Negligible

As indicated in Table 6.89, the changes in V / C ratios between the Do Minimum and Do Something scenarios result in either a positive, negative, or neutral magnitude of impact.

**Step 3 – Determination of Significance of Effects:** The magnitude of impact has been combined with the sensitivity of the road link to determine the Significance of Effect using the matrix shown in Table 6.4 which is based upon the EPA Guidelines on EIAR. The significance of effect has been assigned as positive or negative in instances where the effect is Slight or higher.

Potential mitigation measures have been considered at junctions where the Significance of Effect is predicted to be Significant or higher. At junctions where a moderate effect or lower is predicted, further consideration has not been undertaken as moderate effects represent that which effects the ‘character of the environment in a manner that is consistent with existing and emerging baseline trends’ (as per Table 6.5).

The above analysis was carried out on the following scenarios:

- 2023 Opening Year – Do Minimum vs Do Something – AM Peak Hour;
- 2038 Design Year (Opening Year + 15 Years) – Do Minimum vs Do Something – AM Peak Hour;
- 2023 Opening Year – Do Minimum vs Do Something – PM Peak Hour; and
- 2038 Design Year (Opening Year + 15 Years) – Do Minimum vs Do Something – PM Peak Hour.

The AM and PM Peak Hour flows are modelled as occurring between 08:00 to 09:00 and 17:00 to 18:00 respectively. The interpeak periods have not been analysed for this impact assessment as the AM and PM Peak Hour flows present an overall worst-case scenario. The full analysis tables for each scenario, demonstrating the Do Minimum and Do Something Peak Hour traffic flows and maximum V / C ratio for each junction assessed is detailed in Table 6.3.1 to Table 6.3.4 of Appendix 6.2 (Impact Assessments) in Volume 4 of this EIAR.

#### **General Traffic Impact Assessment (2023, AM Peak Period)**

The contents of Table 6.90 outline the V / C ratios at the key local / regional road junctions in the AM Peak Hour for the 2023 Opening Year and the resultant magnitude of impact and significance of effect at each junction.

**Table 6.90: Volume over Capacity at Key Junctions (Do Minimum vs Do Something), AM Peak, 2023**

Road Name	Junction Name	Junction Sensitivity	DM Max V/C Ratio			DS Max V/C Ratio			Magnitude of Impact	Significance of Effects
			<85%	85% - 100%	>100%	<85%	85% - 100%	>100%		
Headford Road	Headford Road / Bothar na dTreabh	Negligible			✓			✓	Negligible	Imperceptible
Headford Road	Headford Road / Dun Na Coiribe	Low	✓			✓			Negligible	Not Significant
Quincentenary Bridge	Quincentenary Bridge Approach Road / Headford Road	Low			✓			✓	Negligible	Not Significant
Quincentenary Bridge	Quincentenary Bridge Approach Road / Upper Newcastle Road	Low			✓			✓	Negligible	Not Significant
Quincentenary Bridge	Thomas Hynes Road / Seamus Quirke Road	Low		✓				✓	Medium	Negative Moderate
Circular Road	Circular Road / Siabhan Mckenna Road	Medium	✓			✓			Negligible	Not Significant
Circular Road	Rahoon Road / Circular Road	Low			✓			✓	Negligible	Not Significant
Bushypark	Bushypark / Corcullen Road	High	✓			✓			Negligible	Not Significant
Bushypark	Upper Clybaun Road / Corcullen Road	High	✓				✓		Low	Negative Moderate
Western Distributor Road	Rahoon Road / Unnamed	Medium	✓			✓			Negligible	Not Significant
Western Distributor Road	Unnamed / Galway West Business Park	High	✓			✓			Negligible	Not Significant



Road Name	Junction Name	Junction Sensitivity	DM Max V/C Ratio			DS Max V/C Ratio			Magnitude of Impact	Significance of Effects
Bothar Le Cheile	Bothar Le Cheile / Seamus Quirke Road	Low			✓			✓	Negligible	Not Significant
Siobhan Mckenna Road	Bothar Le Cheile / Siabhan Mckenna Road	High	✓			✓			Negligible	Not Significant
Siobhan Mckenna Road	Siobhan Mckenna Road / Thomas Hynes Road	Low		✓		✓			Low Positive	Positive Slight
Moyola Park	Moyola Park / Upper Newcastle Road	Low	✓					✓	High	Negative Moderate
Moyola Park	Thomas Hynes Road / Moyola Park	Low	✓			✓			Negligible	Not Significant
N83 Tuam Road	N83 Tuam Road / Bothar Na Mine	Negligible	✓			✓			Negligible	Imperceptible
N83 Tuam Road	N83 Tuam Road / Parkmore Road	Negligible		✓			✓		Negligible	Imperceptible
Wellpark	Tuam Road / Wellpark	Low			✓			✓	Negligible	Not Significant
Wellpark	Wellpark Road / Connolly Avenue	Medium		✓		✓			Low Positive	Positive Moderate
Ballybane Road	Ballybane Road / Beechwood Park	Low	✓			✓			Negligible	Not Significant
Ballybane Road	Ballybane Road / Castlepark Road	Low	✓			✓			Negligible	Not Significant
Ballybane Road	Ballybane Road / Glasan	Low	✓			✓			Negligible	Not Significant
Ballybane Road	Ballybane Road / Monivea Road	Low	✓			✓			Negligible	Not Significant
Ballybane Road	Ballybane Road / Rahylin Glebe	Low	✓			✓			Negligible	Not Significant
Dublin Road	Dublin Road / Ballybane Road	Low	✓			✓			Negligible	Not Significant
Dublin Road	Dublin Road / Ballyloughane Road	Low	✓			✓			Negligible	Not Significant

Road Name	Junction Name	Junction Sensitivity	DM Max V/C Ratio			DS Max V/C Ratio			Magnitude of Impact	Significance of Effects
Dublin Road	Dublin Road / Michael Collins Road	Low		✓		✓			Low Positive	Positive Slight
Dublin Road	Dublin Road / Renmore Park	Low	✓				✓		Low	Negative Slight
Dublin Road	Dublin Road / Renmore Road	Low		✓			✓		Negligible	Not Significant
Moneenageisha Road	Moneenageisha Road / Wellpark Road	Low			✓		✓		Low Positive	Positive Slight
Bohermore	Bohermore / Cookes Terrace	Low	✓			✓			Negligible	Not Significant
Bohermore	Bohermore / Saint Anthony's Terrace	High	✓			✓			Negligible	Not Significant
Lough Atalia Road	Fairgreen Road / Lough Atalia Road	Low	✓					✓	High	Negative Moderate
Lough Atalia Road	Lough Atalia Road / Bothar Na Long	Low	✓					✓	High	Negative Moderate
Lough Atalia Road	Lough Atalia Road / College Road	Low	✓					✓	High	Negative Moderate
Bothar Na Long	Bothar Na Long / Dock Road	Low	✓					✓	High	Negative Moderate
Bothar Na Long	Bothar Na Long / Queen Street	Low	✓					✓	High	Negative Moderate
Fairgreen Road	Fairgreen Road / Station Road	High	✓			✓			Negligible	Not Significant
Fairgreen Road	Forster Street / Bothar Bhreandan Ui Eithir	Low	✓				✓		Low	Negative Slight
Bothar Na Mban	Bothar Na Mban / Bothar Irwin	High	✓			✓			Negligible	Not Significant
Forthill Street	Forthill Street / Queen Street	Low			✓	✓			Medium Positive	Positive Moderate
Forthill Street	Merchants Road /	Low	✓			✓			Negligible	Not Significant

Road Name	Junction Name	Junction Sensitivity	DM Max V/C Ratio			DS Max V/C Ratio			Magnitude of Impact	Significance of Effects
	Forthill Street									
Merchants Road (Saint Nicholas St - Forthill St)	Merchants Road / Lower Abbeygate Street	Low	✓			✓			Negligible	Not Significant
Merchants Road (Saint Nicholas St - Forthill St)	New Dock Street / Merchants Road	Low	✓				✓		Low	Negative Slight
New Dock Street	New Dock Street / Dock Road	Low	✓			✓			Negligible	Not Significant
Flood Street	Flood Street / New Dock Street	Low	✓			✓			Negligible	Not Significant
Flood Street	Wolfe Tone Bridge / Spanish Parade	Low		✓			✓		Negligible	Not Significant
Taylor's Hill Road	Taylor's Hill Road / Ardmore	Low	✓			✓			Negligible	Not Significant
Taylor's Hill Road	Taylor's Hill Road / Bishop O'Donnell Road	Low			✓			✓	Negligible	Not Significant
Taylor's Hill Road	Taylor's Hill Road / Maunsell's Road	Low	✓			✓			Negligible	Not Significant
Taylor's Hill Road	Taylor's Hill Road / Rosary Lane	Low		✓			✓		Negligible	Not Significant
Rahoon Road	Rahoon Road / Highfield Park	Medium	✓			✓			Negligible	Not Significant
Rahoon Road	Rahoon Road / Seamus Quirke Road	Low	✓			✓			Negligible	Not Significant
Old Seamus Quirke Road	Old Seamus Quirke Road / Ashe Road	High	✓			✓			Negligible	Not Significant
Old Seamus Quirke Road	Old Seamus Quirke Road / Weatherly Lodge	High	✓			✓			Negligible	Not Significant
Old Seamus Quirke Road	Seamus Quirke Road / Old Seamus Quirke	Low		✓			✓		Negligible	Not Significant

Road Name	Junction Name	Junction Sensitivit	DM Max V/C Ratio			DS Max V/C Ratio			Magnitude of Impact	Significance of Effects
	Road									
Ashe Road	Ashe Road / Costello Road	High	✓			✓			Negligible	Not Significant
Shantalla Road	Rahoon Road / Old Seamus Quirke Road	Medium	✓			✓			Negligible	Not Significant
Shantalla Road	Shantalla Road / Colmcille Road	Medium	✓			✓			Negligible	Not Significant
Shantalla Road	Shantalla Road / Mc Dara Road	Medium	✓			✓			Negligible	Not Significant
Shantalla Road	Shantalla Road / Rahoon Road	Medium		✓			✓		Negligible	Not Significant
Seamus Quirke Road (Lower Newcastle Road - Browne Roundabout)	Seamus Quirke Road / Lower Newcastle Road	Medium	✓			✓			Negligible	Not Significant
Seamus Quirke Road (Lower Newcastle Road - Browne Roundabout)	Seamus Quirke Road / Snipe Lawn	High	✓			✓			Negligible	Not Significant
Lower Newcastle Road (University Road - Seamus Quirke Road)	Lower Newcastle Road / Newcastle Avenue	Medium	✓			✓			Negligible	Not Significant
Lower Newcastle Road (University Road - Seamus Quirke Road)	Newcastle Road / University Road	Medium		✓			✓		Negligible	Not Significant
Newcastle Road	Costello Road / Newcastle Road	Medium	✓			✓			Negligible	Not Significant

Road Name	Junction Name	Junction Sensitivity	DM Max V/C Ratio			DS Max V/C Ratio			Magnitude of Impact	Significance of Effects
Newcastle Road	Newcastle Road / Presentation Road	Medium	✓			✓			Negligible	Not Significant
Newcastle Road	St Mary's Road / Shantalla Road	Medium	✓			✓			Negligible	Not Significant
St Mary's Road	St Mary's Road / Palmyra Avenue	Medium	✓			✓			Negligible	Not Significant
St Mary's Road	The Crescent / Lower Salthill Road	Low		✓			✓		Negligible	Not Significant
Gaol Road (South of University Road)	Gaol Road / Gaol Road	High	✓			✓			Negligible	Not Significant
Gaol Road (South of University Road)	University Road / Gaol Road	Medium	✓			✓			Negligible	Not Significant
Presentation Road	Presentation Road / New Road	High	✓			✓			Negligible	Not Significant
Presentation Road	Presentation Road / Parkavara	High	✓			✓			Negligible	Not Significant
Bothar na dTreabh (N83-N84)	Bothar na dTreabh / Glenburren Park	Negligible			✓			✓	Negligible	Imperceptible
Bothar na dTreabh (N83-N84)	Bothar na dTreabh / Tuam Road	Negligible			✓			✓	Negligible	Imperceptible

The results of the junction analysis illustrated in Table 6.90 demonstrate that the majority of junctions are operating with a maximum V / C ratio of below 85% during the AM Peak Hour in the 2023 Opening Year, and that the Proposed Scheme will have a negligible impact on the majority of assessed local / regional road links within the indirect study area.

At four junctions assessed a Positive, Slight to Moderate and Long-term effect is predicted as a result of the Proposed Scheme due to the redistribution of general traffic.

Capacity issues are noted at the following junctions:

- **Headford Road / Bothar na dTreabh** – operates above 100% during both the Do Minimum and Do Something scenarios;
- **Quincentenary Bridge Approach Road / Headford Road** – operates above 100% during both the Do Minimum and Do Something scenarios;
- **Quincentenary Bridge Approach Road / Upper Newcastle Road** – operates above 100% during both the Do Minimum and Do Something scenarios;
- **Rahoon Road / Circular Road** – operates above 100% during both the Do Minimum and Do Something scenarios;
- **Bothar Le Cheile / Seamus Quirke Road** – operates above 100% during both the Do Minimum and Do Something scenarios;
- **Tuam Road / Wellpark** – operates above 100% during both the Do Minimum and Do Something scenarios;
- **Taylor's Hill Road / Bishop O'Donnell Road** – operates above 100% during both the Do Minimum and Do Something scenarios;
- **Bothar na dTreabh / Glenburren Park** – operates above 100% during both the Do Minimum and Do Something scenarios; and
- **Bothar na dTreabh / Tuam Road** – operates above 100% during both the Do Minimum and Do Something scenarios.

The junctions listed above operate with a maximum V / C ratio of above 100% in both the Do Minimum and Do Something scenarios, therefore, the impact is considered to be negligible with a Not Significant and Long-term effect.

Capacity issues are also noted at the following junctions:

- **Thomas Hynes Road / Seamus Quirke Road** – operates between 85% and 100% in the Do Minimum and above 100% during the Do Something scenario;
- **Moyola Park / Upper Newcastle Road** – operates below 85% in the Do Minimum and above 100% during the Do Something scenario;
- **Fairgreen Road / Lough Atalia Road** – operates below 85% in the Do Minimum and above 100% during the Do Something scenario;
- **Lough Atalia Road / Bothar Na Long** – operates below 85% in the Do Minimum and above 100% during the Do Something scenario;
- **Lough Atalia Road / College Road** – operates below 85% in the Do Minimum and above 100% during the Do Something scenario;
- **Bothar Na Long / Dock Road** – operates below 85% in the Do Minimum and above 100% during the Do Something scenario;

- **Bothar Na Long / Queen Street** – operates below 85% in the Do Minimum and above 100% during the Do Something scenario.

Combining the road sensitivity with the magnitude of impact determines that the significance of effects of the redistributed traffic as a result of the Proposed Scheme at the remaining junctions results in a Not Significant and Long-term effect at 61 junctions and Negative, Imperceptible and Long-term at five junctions. At three junctions, a Negative, Slight and Long-term effect is predicted. At eight junction a Negative, Moderate and Long-term effect is predicted. Further assessment into mitigation measures is therefore not considered necessary for any junctions in the AM Peak Hour of the 2023 Opening Year.

### **General Traffic Impact Assessment (2023, PM Peak Period)**

The contents of Table 6.91 outline the V / C ratios at the key local / regional road junctions in the PM Peak Hour for the 2023 Opening Year and the resultant magnitude of impact and significance of effect at each junction.

**Table 6.91: Volume over Capacity at Key Junctions (Do Minimum vs Do Something), PM Peak, 2023**

Road Name	Junction Name	Junction Sensitivity	DM Max V/C Ratio			DS Max V/C Ratio			Magnitude of Impact	Significance of Effects
			<85%	85% - 100%	>100%	<85%	85% - 100%	>100%		
Quincentenary Bridge	Quincentenary Bridge Approach Road / Headford Road	Low			✓			✓	Negligible	Not Significant
Quincentenary Bridge	Quincentenary Bridge Approach Road / Upper Newcastle Road	Low		✓			✓		Negligible	Not Significant
Quincentenary Bridge	Thomas Hynes Road / Seamus Quirke Road	Low	✓				✓		Low	Negative Slight
Circular Road	Circular Road / Siabhan Mckenna Road	Medium		✓			✓		Negligible	Not Significant
Circular Road	Rahoon Road / Circular Road	Low			✓		✓		Low Positive	Positive Slight
Siobhan Mckenna Road	Bothar Le Cheile / Siabhan Mckenna Road	High	✓			✓			Negligible	Not Significant
Siobhan Mckenna Road	Siobhan Mckenna Road / Thomas Hynes Road	Low	✓			✓			Negligible	Not Significant
N84 Headford Road	Headford Road / Bothar na dTreabh	Negligible			✓			✓	Negligible	Imperceptible
N84 Headford Road	N84 Headford Road / Ballinfoile Park	Negligible	✓			✓			Negligible	Imperceptible
N84 Headford Road	N84 Headford Road / Bothar An Choiste	Negligible	✓			✓			Negligible	Imperceptible
N84 Headford Road	N84 Headford Road / Brookdale	Negligible	✓			✓			Negligible	Imperceptible



Road Name	Junction Name	Junction Sensitivity	DM Max V/C Ratio			DS Max V/C Ratio			Magnitude of Impact	Significance of Effects
N84 Headford Road	N84 Headford Road / Monument Road	Negligible	✓			✓			Negligible	Imperceptible
N84 Headford Road	N84 Headford Road / Tirellan Heights	Negligible	✓			✓			Negligible	Imperceptible
Doughiska Road	Doughiska Road / An Fiodan	High	✓			✓			Negligible	Not Significant
Doughiska Road	Doughiska Road / Dublin Road	Low			✓			✓	Negligible	Not Significant
Doughiska Road	Doughiska Road / Fearann Ri	High	✓			✓			Negligible	Not Significant
Doughiska Road	Doughiska Road / Merlin Park Lane	High	✓			✓			Negligible	Not Significant
Sandy Road	Sandy Road / Glen Na Tra	High	✓			✓			Negligible	Not Significant
Sandy Road	Sandy Road / Gort Na Glaise	High	✓			✓			Negligible	Not Significant
Sandy Road	Sandy Road / Maldron Hotel	High	✓			✓			Negligible	Not Significant
Lough Atalia Road	Fairgreen Road / Lough Atalia Road	Low	✓				✓		Low	Negative Slight
Lough Atalia Road	Lough Atalia Road / College Road	Low	✓				✓		Low	Negative Slight
College Road (Lough Atalia Road - Dublin Road)	Moneenageisha Road / Wellpark Road	Low		✓				✓	Medium	Negative Moderate
Bothar Na Long	Bothar Na Long / Dock Road	Low	✓					✓	High	Negative Moderate
Bothar Na Long	Bothar Na Long / Queen Street	Low	✓					✓	High	Negative Moderate
Bothar Na Long	Lough Atalia Road /	Low	✓					✓	High	Negative Moderate

Road Name	Junction Name	Junction Sensitivity	DM Max V/C Ratio			DS Max V/C Ratio			Magnitude of Impact	Significance of Effects
	Bothar Na Long									
Fairgreen Road	Fairgreen Road / Station Road	High	✓			✓			Negligible	Not Significant
Fairgreen Road	Forster Street / Bothar Bhreandan Ui Eithir	Low	✓			✓			Negligible	Not Significant
Bothar Bhreandan Ui Eithir	Bothar Bhreandan Ui Eithir / Foster Court	Low	✓			✓			Negligible	Not Significant
Bothar Bhreandan Ui Eithir	Prospect Hill / Bothar Bhreandan Ui Eithir	Low	✓				✓		Low	Negative Slight
Bothar Na Mban	Bothar Na Mban / Bothar Irwin	High	✓			✓			Negligible	Not Significant
Forthill Street	Forthill Street / Queen Street	Low		✓		✓			Low Positive	Positive Slight
Forthill Street	Merchants Road / Forthill Street	Low	✓			✓			Negligible	Not Significant
Merchants Road (St Nicholas Street - Forthill Street)	Merchants Road / Lower Abbeygate Street	Low	✓			✓			Negligible	Not Significant
Merchants Road (St Nicholas Street - Forthill Street)	New Dock Street / Merchants Road	Low	✓			✓			Negligible	Not Significant
St Francis Street	St Francis Street / Mary Street	Medium	✓			✓			Negligible	Not Significant
St Francis Street	St Vincents Avenue / Saint Francis Street	Medium	✓			✓			Negligible	Not Significant
New Dock Street	New Dock Street / Dock Road	Low	✓			✓			Negligible	Not Significant

Road Name	Junction Name	Junction Sensitivity	DM Max V/C Ratio			DS Max V/C Ratio			Magnitude of Impact	Significance of Effects
Wolfe Tone Bridge	Father Griffin Road / Claddagh Quay	Low	✓			✓			Negligible	Not Significant
Flood Street	Flood Street / New Dock Street	Low	✓			✓			Negligible	Not Significant
Flood Street	Wolfe Tone Bridge / Spanish Parade	Low		✓			✓		Negligible	Not Significant
Shantalla Road	Rahoon Road / Old Seamus Quirke Road	Medium	✓			✓			Negligible	Not Significant
Shantalla Road	Shantalla Road / Colmcille Road	Medium	✓			✓			Negligible	Not Significant
Shantalla Road	Shantalla Road / Mc Dara Road	Medium	✓			✓			Negligible	Not Significant
Shantalla Road	Shantalla Road / Rahoon Road	Medium	✓			✓			Negligible	Not Significant
Seamus Quirke Road (Lower Newcastle Road - Browne Roundabout)	Seamus Quirke Road / Snipe Lawn	High	✓			✓			Negligible	Not Significant
Lower Newcastle Road (Seamus Quirke Road - Snipe Av)	Lower Newcastle Road / Distillery Road	Medium		✓			✓		Negligible	Not Significant
Lower Newcastle Road (University Road - Seamus Quirke Road)	Lower Newcastle Road / Newcastle Avenue	Medium	✓			✓			Negligible	Not Significant
Lower Newcastle Road	Newcastle Road / University Road	Medium		✓			✓		Negligible	Not Significant

Road Name	Junction Name	Junction Sensitivity	DM Max V/C Ratio			DS Max V/C Ratio			Magnitude of Impact	Significance of Effects
(University Road - Seamus Quirke Road)										
Lower Newcastle Road (University Road - Seamus Quirke Road)	Seamus Quirke Road / Lower Newcastle Road	Medium	✓			✓			Negligible	Not Significant
Newcastle Road	Costello Road / Newcastle Road	Medium	✓			✓			Negligible	Not Significant
Newcastle Road	Newcastle Road / Presentation Road	Medium	✓			✓			Negligible	Not Significant
Newcastle Road	St Mary's Road / Shantalla Road	Medium	✓			✓			Negligible	Not Significant
Gaol Road (South of University Road)	Gaol Road / Gaol Road	High	✓			✓			Negligible	Not Significant
Gaol Road (South of University Road)	University Road / Gaol Road	Medium	✓			✓			Negligible	Not Significant
Father Griffin Road	Father Griffin Road / Father Burke Road	Low	✓			✓			Negligible	Not Significant
Father Griffin Road	Father Griffin Road / Father Griffin Avenue	Low	✓			✓			Negligible	Not Significant
Father Griffin Road	Father Griffin Road / Grattan Court	High	✓			✓			Negligible	Not Significant
Father Griffin Road	Father Griffin Road / Lower Salthill Road	Medium	✓			✓			Negligible	Not Significant
Father Griffin	Father Griffin Road /	Low	✓			✓			Negligible	Not Significant

Road Name	Junction Name	Junction Sensitivity	DM Max V/C Ratio			DS Max V/C Ratio			Magnitude of Impact	Significance of Effects
Road	Munster Avenue									
Father Griffin Road	Father Griffin Road / Whitestrand Road	Medium	✓			✓			Negligible	Not Significant
Presentation Road	Presentation Road / New Road	High	✓			✓			Negligible	Not Significant
Presentation Road	Presentation Road / Parkavara	High	✓			✓			Negligible	Not Significant
Mill Street	Mill Street / Presentation Road	High	✓			✓			Negligible	Not Significant
Henry Street	Henry Street / William Street West	Medium	✓			✓			Negligible	Not Significant
Henry Street	St Helen's Street / New Road	Medium	✓			✓			Negligible	Not Significant
Lower Road Fairhill	Dominick Street Upper / Lower Fairhill Road	Medium	✓			✓			Negligible	Not Significant
Lower Road Fairhill	Father Griffin Road / Lower Fairhill Road	Low		✓		✓			Negligible	Not Significant

The results of the junction analysis illustrated in Table 6.91 demonstrate that the majority of junctions are operating with a maximum V / C ratio of below 85% during the PM Peak Hour in the 2023 Opening Year and that the Proposed Scheme will have a negligible impact on the majority of assessed local / regional road links within the indirect study area.

A Positive, Slight and Long-term effect is predicted at two junctions as a result of redistribution of general traffic associated with the Proposed Scheme.

Capacity issues are noted at the following junctions:

- **Quincentenary Bridge Approach Road / Headford Road** – operates above 100% during both the Do Minimum and Do Something scenarios;
- **Headford Road / Bothar na dTreabh** – operates above 100% during both the Do Minimum and Do Something scenarios;
- **Doughiska Road / Dublin Road** – operates above 100% during both the Do Minimum and Do Something scenarios;
- **Moneenageisha Road / Wellpark Road** – operates between 85% and 100% in the Do Minimum and above 100% during the Do Something scenario;
- **Bothar Na Long / Dock Road** – operates below 85% in the Do Minimum and above 100% during the Do Something scenario;
- **Bothar Na Long / Queen Street** – operates below 85% in the Do Minimum and above 100% during the Do Something scenario; and
- **Lough Atalia Road / Bothar Na Long** – operates below 85% in the Do Minimum and above 100% during the Do Something scenario.

At three of the junctions above, performance is similar with or without the Proposed Scheme in place, therefore, the impact is considered to be negligible and when combining with the sensitivity of the road link, the significance of effect is Not Significant and Long-term at both Quincentenary Bridge Approach Road / Headford Road and Doughiska Road / Dublin Road junctions and Imperceptible and Long-term at Headford Road / Bothar na dTreabh junction.

At the remaining junctions, the effect of redistributed traffic associated with the Proposed Scheme is deemed Not Significant and Long-term at 54 of the 68 junctions assessed. Six junctions are predicted to experience Imperceptible and Long-term effects, four junctions are predicted to experience Negative, Moderate and Long-terms effects and four junctions Negative, Slight and Long-term. Further assessment into mitigation measures is therefore not necessary for any junctions in the PM Peak Hour of the 2023 Opening Year.

### **General Traffic Impact Assessment (2038, AM Peak Period)**

The contents of Table 6.92 outline the V / C ratios at the key local / regional road junctions in the AM Peak Hour for the 2038 Design Year and the resultant magnitude of impact and significance of effect at each junction.

**Table 6.92: Volume over Capacity at Key Junctions (Do Minimum vs Do Something), AM Peak, 2038**

Road Name	Junction Name	Junction Sensitivity	DM Max V/C Ratio			DS Max V/C Ratio			Magnitude of Impact	Significance of Effects
			<85%	85% - 100%	>100%	<85%	85% - 100%	>100%		
Headford Road	Headford Road / Bothar na dTreabh	Negligible			✓			✓	Negligible	Imperceptible
Headford Road	Headford Road / Dun Na Coiribe	Low	✓			✓			Negligible	Not Significant
Quincentenary Bridge	Quincentenary Bridge Approach Road / Headford Road	Low		✓				✓	Medium	Negative Moderate
Quincentenary Bridge	Quincentenary Bridge Approach Road / Upper Newcastle Road	Low			✓			✓	Negligible	Not Significant
Quincentenary Bridge	Thomas Hynes Road / Seamus Quirke Road	Low			✓			✓	Negligible	Not Significant
Circular Road	Circular Road / Siabhan Mckenna Road	Medium	✓			✓			Negligible	Not Significant
Circular Road	Rahoon Road / Circular Road	Low			✓			✓	Negligible	Not Significant
Bushypark	Bushypark / Corcullen Road	High	✓			✓			Negligible	Not Significant
Bushypark	Upper Clybaun Road / Corcullen Road	High	✓			✓			Negligible	Not Significant
Western Distributor Road	Rahoon Road / Unnamed	Medium	✓			✓			Negligible	Not Significant
Western Distributor Road	Unnamed / Galway West Business Park	High	✓			✓			Negligible	Not Significant

Road Name	Junction Name	Junction Sensitivity	DM Max V/C Ratio			DS Max V/C Ratio			Magnitude of Impact	Significance of Effects
Bothar Le Cheile	Bothar Le Cheile / Seamus Quirke Road	Low	✓				✓		Low	Negative Slight
Siobhan Mckenna Road	Bothar Le Cheile / Siabhan Mckenna Road	High	✓			✓			Negligible	Not Significant
Siobhan Mckenna Road	Siobhan Mckenna Road / Thomas Hynes Road	Low			✓			✓	Negligible	Not Significant
Moyola Park	Moyola Park / Upper Newcastle Road	Low	✓			✓			Negligible	Not Significant
Moyola Park	Thomas Hynes Road / Moyola Park	Low	✓			✓			Negligible	Not Significant
N83 Tuam Road	N83 Tuam Road / Bothar Na Mine	Negligible	✓			✓			Negligible	Imperceptible
N83 Tuam Road	N83 Tuam Road / Parkmore Road	Negligible		✓		✓			Low Positive	Not Significant
Wellpark	Tuam Road / Wellpark	Low	✓			✓			Negligible	Not Significant
Wellpark	Wellpark Road / Connolly Avenue	Medium	✓			✓			Negligible	Not Significant
Ballybane Road	Ballybane Road / Beechwood Park	Low	✓			✓			Negligible	Not Significant
Ballybane Road	Ballybane Road / Castlepark Road	Low	✓			✓			Negligible	Not Significant
Ballybane Road	Ballybane Road / Glasan	Low	✓			✓			Negligible	Not Significant
Ballybane Road	Ballybane Road / Monivea Road	Low	✓			✓			Negligible	Not Significant
Ballybane Road	Ballybane Road / Rahylin Glebe	Low	✓			✓			Negligible	Not Significant
Dublin Road	Dublin Road / Ballybane Road	Low	✓				✓		Low	Negative Slight
Dublin Road	Dublin Road / Ballyloughane Road	Low	✓			✓			Negligible	Not Significant



Road Name	Junction Name	Junction Sensitivity	DM Max V/C Ratio			DS Max V/C Ratio			Magnitude of Impact	Significance of Effects
Dublin Road	Dublin Road / Michael Collins Road	Low		✓			✓		Negligible	Not Significant
Dublin Road	Dublin Road / Renmore Park	Low		✓			✓		Negligible	Not Significant
Dublin Road	Dublin Road / Renmore Road	Low		✓			✓		Negligible	Not Significant
Moneenageisha Road	Moneenageisha Road / Wellpark Road	Low		✓				✓	Medium	Negative Moderate
Bohermore	Bohermore / Cookes Terrace	Low	✓			✓			Negligible	Not Significant
Bohermore	Bohermore / Saint Anthonys Terrace	High	✓			✓			Negligible	Not Significant
Lough Atalia Road	Fairgreen Road / Lough Atalia Road	Low	✓					✓	High	Negative Moderate
Lough Atalia Road	Lough Atalia Road / Bothar Na Long	Low	✓					✓	High	Negative Moderate
Lough Atalia Road	Lough Atalia Road / College Road	Low	✓					✓	High	Negative Moderate
Bothar Na Long	Bothar Na Long / Dock Road	Low	✓					✓	High	Negative Moderate
Bothar Na Long	Bothar Na Long / Queen Street	Low	✓					✓	High	Negative Moderate
Fairgreen Road	Fairgreen Road / Station Road	High	✓			✓			Negligible	Not Significant
Fairgreen Road	Forster Street / Bothar Bhreandan Ui Eithir	Low	✓					✓	High	Negative Moderate
Bothar Na Mban	Bothar Na Mban / Bothar Irwin	High	✓			✓			Negligible	Not Significant
Forthill Street	Forthill Street / Queen Street	Low			✓		✓		Low Positive	Positive Slight
Forthill Street	Merchants Road / Forthill	Low	✓			✓			Negligible	Not Significant

Road Name	Junction Name	Junction Sensitivity	DM Max V/C Ratio			DS Max V/C Ratio			Magnitude of Impact	Significance of Effects
	Street									
Merchants Road (St Nicholas Street - Forthill Street)	Merchants Road / Lower Abbeygate Street	Low	✓			✓			Negligible	Not Significant
Merchants Road (St Nicholas Street - Forthill Street)	New Dock Street / Merchants Road	Low	✓				✓		Low	Negative Slight
New Dock Street	New Dock Street / Dock Road	Low	✓			✓			Negligible	Not Significant
Flood Street	Flood Street / New Dock Street	Low	✓			✓			Negligible	Not Significant
Flood Street	Wolfe Tone Bridge / Spanish Parade	Low	✓				✓		Low	Negative Slight
Taylor's Hill Road	Taylor's Hill Road / Ardmore	Low	✓			✓			Negligible	Not Significant
Taylor's Hill Road	Taylor's Hill Road / Bishop O'Donnell Road	Low			✓			✓	Negligible	Not Significant
Taylor's Hill Road	Taylor's Hill Road / Maunsell's Road	Low	✓			✓			Negligible	Not Significant
Taylor's Hill Road	Taylor's Hill Road / Rosary Lane	Low		✓			✓		Negligible	Not Significant
Rahoon Road	Rahoon Road / Highfield Park	Medium	✓			✓			Negligible	Not Significant
Rahoon Road	Rahoon Road / Seamus Quirke Road	Low		✓			✓		Negligible	Not Significant
Old Seamus Quirke Road	Old Seamus Quirke Road / Ashe Road	High	✓			✓			Negligible	Not Significant
Old Seamus Quirke Road	Old Seamus Quirke Road / Weatherly Lodge	High	✓			✓			Negligible	Not Significant
Old Seamus Quirke Road	Seamus Quirke Road / Old Seamus Quirke Road	Low		✓			✓		Negligible	Not Significant

Road Name	Junction Name	Junction Sensitivity	DM Max V/C Ratio			DS Max V/C Ratio			Magnitude of Impact	Significance of Effects
Ashe Road	Ashe Road / Costello Road	High	✓			✓			Negligible	Not Significant
Shantalla Road	Rahoon Road / Old Seamus Quirke Road	Medium	✓			✓			Negligible	Not Significant
Shantalla Road	Shantalla Road / Colmcille Road	Medium	✓			✓			Negligible	Not Significant
Shantalla Road	Shantalla Road / Mc Dara Road	Medium	✓			✓			Negligible	Not Significant
Shantalla Road	Shantalla Road / Rahoon Road	Medium		✓			✓		Negligible	Not Significant
Seamus Quirke Road (Lower Newcastle Road - Browne Roundabout)	Seamus Quirke Road / Lower Newcastle Road	Medium	✓				✓		Low	Negative Moderate
Seamus Quirke Road (Lower Newcastle Road - Browne Roundabout)	Seamus Quirke Road / Snipe Lawn	High	✓			✓			Negligible	Not Significant
Lower Newcastle Road (University Road - Seamus Quirke Road)	Lower Newcastle Road / Newcastle Avenue	Medium			✓			✓	Negligible	Not Significant
Lower Newcastle Road (University Road - Seamus Quirke Road)	Newcastle Road / University Road	Medium			✓		✓		Low Positive	Positive Moderate
Newcastle Road	Costello Road / Newcastle Road	Medium		✓			✓		Negligible	Not Significant
Newcastle Road	Newcastle Road / Presentation Road	Medium	✓			✓			Negligible	Not Significant
Newcastle Road	St Mary's Road / Shantalla Road	Medium		✓			✓		Negligible	Not Significant
St Mary's Road	St Mary's Road / Palmyra Avenue	Medium	✓			✓			Negligible	Not Significant
St Mary's Road	The Crescent / Lower	Low		✓			✓		Negligible	Not Significant

Road Name	Junction Name	Junction Sensitivity	DM Max V/C Ratio			DS Max V/C Ratio			Magnitude of Impact	Significance of Effects
	Salthill Road									
Gaol Road (South of University Road)	Gaol Road / Gaol Road	High	✓			✓			Negligible	Not Significant
Gaol Road (South of University Road)	University Road / Gaol Road	Medium	✓			✓			Negligible	Not Significant
Presentation Road	Presentation Road / New Road	High	✓			✓			Negligible	Not Significant
Presentation Road	Presentation Road / Parkavara	High	✓			✓			Negligible	Not Significant
Bothar na dTreabh (N83-N84)	Bothar na dTreabh / Glenburren Park	Negligible	✓			✓			Negligible	Imperceptible
Bothar na dTreabh (N83-N84)	Bothar na dTreabh / Tuam Road	Negligible			✓			✓	Negligible	Imperceptible

The results of the junction analysis illustrated in Table 6.92 demonstrate that the majority of junctions continue to operate with a maximum V / C ratio of below 85% during the AM Peak Hour in the 2038 Design Year.

Positive, Slight to Moderate and Long-term effects are predicted at two junctions as a result of redistribution of general traffic associated with the Proposed Scheme.

Capacity issues arise at the following junctions during the AM Peak Hour:

- Headford Road / Bothar na dTreabh;
- Quincentenary Bridge Approach Road / Upper Newcastle Road;
- Thomas Hynes Road / Seamus Quirke Road;
- Ragoon Road / Circular Road;
- Siobhan McKenna Road / Thomas Hynes Road;
- Taylors Hill Road / Bishop O'Donnell Road;
- Lower Newcastle Road / Newcastle Avenue; and
- Bothar na dTreabh / Tuam Road.

As each of the junctions above operate with a maximum V / C ratio of above 100% in both the Do Minimum and Do Something, the impact is considered to be negligible with a Not Significant and Long-term effect.

Capacity issues are also noted at the following junctions:

- **Quincentenary Bridge Approach Road / Headford Road** – operates between 85% and 100% during the Do Minimum and above 100% during the Do Something scenario;
- **Moneenageisha Road / Wellpark Road** – operates between 85% and 100% during the Do Minimum and above 100% during the Do Something scenario;
- **Fairgreen Road / Lough Atalia Road** – operates below 85% during the Do Minimum and above 100% during the Do Something scenario;
- **Lough Atalia Road / Bothar Na Long** – operates below 85% during the Do Minimum and above 100% during the Do Something scenario;
- **Lough Atalia Road / College Road** – operates below 85% during the Do Minimum and above 100% during the Do Something scenario;
- **Bothar Na Long / Dock Road** – operates below 85% during the Do Minimum and above 100% during the Do Something scenario;
- **Bothar Na Long / Queen Street** – operates below 85% during the Do Minimum and above 100% during the Do Something scenario; and
- **Forster Street / Bothar Bhreandan Ui Eithir** – operates below 85% during the Do Minimum and above 100% during the Do Something scenario.

Overall, redistributed traffic associated with the Proposed Scheme in is expected to result in a negligible impact at 59 out of 77 junctions assessed and the effect is deemed Not Significant and Long-term. Five junctions are predicted to experience Imperceptible and Long-term effects. A Negative, Slight and Long-term effect is predicted at four junctions, A Negative, Moderate and Long-term effect at nine junctions. Further assessment into mitigation measures is therefore not necessary for any junctions in the AM Peak Hour of the 2038 Design Year.

### **General Traffic Impact Assessment (2038, PM Peak Period)**

The contents of Table 6.93 outline the V / C ratios at the key local / regional road junctions in the PM Peak Hour for the 2038 Design Year and the resultant magnitude of impact and significance of effect at each junction.

**Table 6.93: Volume over Capacity at Key Junctions (Do Minimum vs Do Something), PM Peak, 2038**

Road Name	Junction Name	Junction Sensitivity	DM Max V/C Ratio			DS Max V/C Ratio			Magnitude of Impact	Significance of Effects
			<85%	85% - 100%	>100%	<85%	85% - 100%	>100%		
Quincentenary Bridge	Quincentenary Bridge Approach Road / Headford Road	Low			✓			✓	Negligible	Not Significant
Quincentenary Bridge	Quincentenary Bridge Approach Road / Upper Newcastle Road	Low		✓				✓	Medium	Negative Moderate
Quincentenary Bridge	Thomas Hynes Road / Seamus Quirke Road	Low	✓					✓	High	Negative Moderate
Circular Road	Circular Road / Siabhan Mckenna Road	Medium			✓			✓	Negligible	Not Significant
Circular Road	Rahoon Road / Circular Road	Low			✓			✓	Negligible	Not Significant
Siobhan Mckenna Road	Bothar Le Cheile / Siabhan Mckenna Road	High	✓			✓			Negligible	Not Significant
Siobhan Mckenna Road	Siobhan Mckenna Road / Thomas Hynes Road	Low	✓			✓			Negligible	Not Significant
N84 Headford Road	Headford Road / Bothar na dTreabh	Negligible		✓				✓	Medium	Not Significant
N84 Headford Road	N84 Headford Road / Ballinfoile Park	Negligible			✓			✓	Negligible	Imperceptible
N84 Headford Road	N84 Headford Road / Bothar An Choiste	Negligible	✓				✓		Low	Not Significant
N84 Headford Road	N84 Headford Road / Brookdale	Negligible	✓				✓		Low	Not Significant

Road Name	Junction Name	Junction Sensitivity	DM Max V/C Ratio			DS Max V/C Ratio			Magnitude of Impact	Significance of Effects
N84 Headford Road	N84 Headford Road / Monument Road	Negligible		✓			✓		Negligible	Imperceptible
N84 Headford Road	N84 Headford Road / Tirellan Heights	Negligible	✓			✓			Negligible	Imperceptible
Doughiska Road	Doughiska Road / An Fiodan	High	✓			✓			Negligible	Not Significant
Doughiska Road	Doughiska Road / Dublin Road	Low			✓			✓	Negligible	Not Significant
Doughiska Road	Doughiska Road / Fearann Ri	High	✓			✓			Negligible	Not Significant
Doughiska Road	Doughiska Road / Merlin Park Lane	High	✓			✓			Negligible	Not Significant
Sandy Road	Sandy Road / Glen Na Tra	High	✓			✓			Negligible	Not Significant
Sandy Road	Sandy Road / Gort Na Glaise	High	✓			✓			Negligible	Not Significant
Sandy Road	Sandy Road / Maldron Hotel	High	✓			✓			Negligible	Not Significant
Lough Atalia Road	Fairgreen Road / Lough Atalia Road	Low	✓					✓	High	Negative Moderate
Lough Atalia Road	Lough Atalia Road / College Road	Low	✓					✓	High	Negative Moderate
College Road (Lough Atalia Road - Dublin Road)	Moneenageisha Road / Wellpark Road	Low			✓		✓		Low Positive	Positive Slight
Bothar Na Long	Bothar Na Long / Dock Road	Low	✓					✓	High	Negative Moderate
Bothar Na Long	Bothar Na Long / Queen Street	Low	✓				✓		Low	Negative Slight
Bothar Na Long	Lough Atalia Road / Bothar Na Long	Low	✓					✓	High	Negative Moderate



Road Name	Junction Name	Junction Sensitivity	DM Max V/C Ratio			DS Max V/C Ratio			Magnitude of Impact	Significance of Effects
Fairgreen Road	Fairgreen Road / Station Road	High	✓			✓			Negligible	Not Significant
Fairgreen Road	Forster Street / Bothar Bhreandan Ui Eithir	Low	✓				✓		Low	Negative Slight
Bothar Bhreandan Ui Eithir	Bothar Bhreandan Ui Eithir / Foster Court	Low	✓			✓			Negligible	Not Significant
Bothar Bhreandan Ui Eithir	Prospect Hill / Bothar Bhreandan Ui Eithir	Low	✓				✓		Low	Negative Slight
Bothar Na Mban	Bothar Na Mban / Bothar Irwin	High	✓			✓			Negligible	Not Significant
Forthill Street	Forthill Street / Queen Street	Low	✓			✓			Negligible	Not Significant
Forthill Street	Merchants Road / Forthill Street	Low	✓			✓			Negligible	Not Significant
Merchants Road (St Nicholas Street - Forthill Street)	Merchants Road / Lower Abbeygate Street	Low	✓			✓			Negligible	Not Significant
Merchants Road (St Nicholas Street - Forthill Street)	New Dock Street / Merchants Road	Low	✓			✓			Negligible	Not Significant
St Francis Street	St Francis Street / Mary Street	Medium		✓		✓			Low Positive	Positive Moderate
St Francis Street	St Vincents Avenue / Saint Francis Street	Medium	✓			✓			Negligible	Not Significant
New Dock Street	New Dock Street / Dock Road	Low	✓			✓			Negligible	Not Significant
Wolfe Tone Bridge	Father Griffin Road / Claddagh Quay	Low	✓			✓			Negligible	Not Significant
Flood Street	Flood Street / New Dock Street	Low	✓			✓			Negligible	Not Significant

Road Name	Junction Name	Junction Sensitivity	DM Max V/C Ratio			DS Max V/C Ratio			Magnitude of Impact	Significance of Effects
Flood Street	Wolfe Tone Bridge / Spanish Parade	Low		✓			✓		Negligible	Not Significant
Shantalla Road	Rahoon Road / Old Seamus Quirke Road	Medium	✓			✓			Negligible	Not Significant
Shantalla Road	Shantalla Road / Colmcille Road	Medium	✓			✓			Negligible	Not Significant
Shantalla Road	Shantalla Road / Mc Dara Road	Medium	✓			✓			Negligible	Not Significant
Shantalla Road	Shantalla Road / Rahoon Road	Medium	✓			✓			Negligible	Not Significant
Seamus Quirke Road (Lower Newcastle Road - Browne Roundabout)	Seamus Quirke Road / Snipe Lawn	High	✓			✓			Negligible	Not Significant
Lower Newcastle Road (Seamus Quirke Road - Snipe Av)	Lower Newcastle Road / Distillery Road	Medium			✓			✓	Negligible	Not Significant
Lower Newcastle Road (University Road - Seamus Quirke Road)	Lower Newcastle Road / Newcastle Avenue	Medium	✓			✓			Negligible	Not Significant
Lower Newcastle Road (University Road - Seamus Quirke Road)	Newcastle Road / University Road	Medium		✓			✓		Negligible	Not Significant
Lower Newcastle Road (University Road - Seamus Quirke Road)	Seamus Quirke Road / Lower Newcastle Road	Medium	✓			✓			Negligible	Not Significant
Newcastle Road	Costello Road / Newcastle Road	Medium	✓			✓			Negligible	Not Significant
Newcastle Road	Newcastle Road / Presentation Road	Medium	✓			✓			Negligible	Not Significant
Newcastle Road	St Mary's Road / Shantalla Road	Medium	✓			✓			Negligible	Not Significant

Road Name	Junction Name	Junction Sensitivity	DM Max V/C Ratio			DS Max V/C Ratio			Magnitude of Impact	Significance of Effects
Gaol Road (South of University Road)	Gaol Road / Gaol Road	High	✓			✓			Negligible	Not Significant
Gaol Road (South of University Road)	University Road / Gaol Road	Medium	✓			✓			Negligible	Not Significant
Father Griffin Road	Father Griffin Road / Father Burke Road	Low	✓			✓			Negligible	Not Significant
Father Griffin Road	Father Griffin Road / Father Griffin Avenue	Low	✓			✓			Negligible	Not Significant
Father Griffin Road	Father Griffin Road / Grattan Court	High	✓			✓			Negligible	Not Significant
Father Griffin Road	Father Griffin Road / Lower Salthill Road	Medium	✓			✓			Negligible	Not Significant
Father Griffin Road	Father Griffin Road / Munster Avenue	Low	✓			✓			Negligible	Not Significant
Father Griffin Road	Father Griffin Road / Whitestrand Road	Medium	✓			✓			Negligible	Not Significant
Presentation Road	Presentation Road / New Road	High	✓			✓			Negligible	Not Significant
Presentation Road	Presentation Road / Parkavara	High	✓			✓			Negligible	Not Significant
Mill Street	Mill Street / Presentation Road	High	✓			✓			Negligible	Not Significant
Henry Street	Henry Street / William Street West	Medium	✓			✓			Negligible	Not Significant
Henry Street	St Helen's Street / New Road	Medium	✓			✓			Negligible	Not Significant
Lower Road Fairhill	Dominick Street Upper / Lower Fairhill Road	Medium	✓			✓			Negligible	Not Significant
Lower Road Fairhill	Father Griffin Road / Lower Fairhill Road	Low	✓				✓		Low	Negative Slight

The results of the junction analysis illustrated in Table 6.93 demonstrate that the majority of junctions continue to operate with a maximum V / C ratio of below 85% during the PM Peak Hour in the 2038 Design Year and the Proposed Scheme.

Positive, Slight to Moderate and Long-term effects are predicted at two junctions as a result of redistribution of general traffic associated with the Proposed Scheme.

It is noted that capacity issues arise at the following six junctions:

- Quincentenary Bridge Approach Road / Headford Road;
- Circular Road / Siabhan Mckenna Road;
- Ragoon Road / Circular Road;
- N84 Headford Road / Ballinfoile Park;
- Doughiska Road / Dublin Road; and
- Lower Newcastle Road / Distillery Road.

As each of the junctions above operate with a maximum V / C ratio of above 100% in both the Do Minimum and Do Something, the impact is considered to be negligible with a Not Significant and Long-term effect.

Capacity issues are also noted at the following junctions:

- Quincentenary Bridge Approach Road / Upper Newcastle Road – operates between 85% and 100% during the Do Minimum and above 100% in the Do Something scenario;
- Thomas Hynes Road / Seamus Quirke Road – operates below 85% and 100% during the Do Minimum and above 100% in the Do Something scenario;
- Headford Road / Bothar na dTreabh – operates between 85% and 100% during the Do Minimum and above 100% in the Do Something scenario;
- Fairgreen Road / Lough Atalia Road – operates below 85% and 100% during the Do Minimum and above 100% in the Do Something scenario;
- Lough Atalia Road / College Road – operates below 85% and 100% during the Do Minimum and above 100% in the Do Something scenario;
- Bothar Na Long / Dock Road – operates below 85% and 100% during the Do Minimum and above 100% in the Do Something scenario; and
- Lough Atalia Road / Bothar Na Long – operates below 85% and 100% during the Do Minimum and above 100% in the Do Something scenario.

Overall, redistributed traffic associated with the Proposed Scheme in is expected to result in a negligible impact at 55 out of 68 junctions assessed and the effect is deemed Not Significant and Long-term. Three junctions are predicted to experience Imperceptible and Long-term effects. A Negative, Moderate and Long-term effect is predicted at six junctions.

A Negative, Slight and Long-term effect is predicted at four junctions. Further assessment into mitigation measures is therefore not necessary for any junctions in the PM Peak Hour of the 2038 Design Year.

## 6.6 Mitigation and Monitoring Measures

### Construction Phase

A Construction Environmental Management Plan (CEMP) has been prepared and is appended to Chapter 5 (Construction) of this report, which outlines a number of mitigation measures to minimise the impacts of the Construction Phase of the Proposed Scheme for walking, cycling, bus, parking and general traffic.

A detailed Construction Traffic Management Plan has been prepared and will subsequently be updated by the appointed contractor prior to construction, including Temporary Traffic Management arrangements prepared in accordance with Department of Transport's 'Traffic Signs Manual, Chapter 8 Temporary Traffic Measures and Signs for Roadworks'. The plan will be agreed with GCC and will include measures to minimise the impacts associated with the Construction Phase upon the peak periods of the day.

No further mitigation measures are therefore required to be considered as part of the Proposed Scheme.

### Operational Phase

Given that the Proposed Scheme results in a positive impact for walking, cycling, bus and people movements, mitigation and monitoring measures have not been considered for these assessments.

The design development for general traffic and parking / loading, including the measures incorporated into the Proposed Scheme to minimise negative impacts, have been outlined in Chapter 4 (Proposed Scheme Description) of this EIA. Therefore, no Negative, Significant and Temporary or Long-term effects are predicted as a result of the Proposed Scheme.

As such, no mitigation measures are required to be considered as part of the Proposed Scheme.

## 6.7 Residual Impacts

Residual impacts associated with the assessment topics remain the same as that outlined in Section 6.5 (Potential Impacts whilst meeting the scheme objectives set out in Chapter 1 (Introduction)).

## 6.8 References

DoT (2002). Traffic Management Guidelines

DoT (2019). Traffic Signs Manual

DTTS (2019). Temporary Traffic Management Design Guidance

DTTS (2019). Design Manual for Urban Roads and Streets

DTTS (2019). Traffic Signs Manual – Chapter 8, Temporary Traffic Measures and Signs for Roadworks

EPA (2022). Guidelines on the Information to be Contained in Environmental Impact Assessment Reports. Draft. August 2017

NAVTEQ (2011). The NavStreets Reference Manual

NTA (2011). National Cycle Manual

NTA (2013). Greater Dublin Area Cycle Network Plan

NTA (2016). Transport Strategy for the Greater Dublin Area (2016 – 2035)

TRB (2000) Highway Capacity Manual

TRB (2013) Transit Capacity and Quality of Service Manual

Transport for London (2010) Traffic Modelling Guidelines

TII (2014) Traffic and Transport Assessment Guidelines