Little Island Transportation Study

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05/03/2019

STRATEGY DESIGN REPORT

Cork County Council
Comhairle Contae Chorcaí

CH2M Barry

SYSTRA

LITTLE ISLAND TRANSPORTATION STUDY

STRATEGY DESIGN REPORT

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1.1 Background & Study Requirements

1.1.1 Cork County Council commissioned SYSTRA and CH2M Barry to develop a transportation strategy for Little Island. The overall aim of the Little Island Transportation Study (LITS) is to:

- identify the existing transportation issues within Little Island;
- explore potential solutions; and
- ensure that there is an integrated and balanced approach to transportation engineering for the future of the Island.

1.1.2 This is required so that Little Island can fulfil its strategic function as an employment location, logistics hub and residential community. Little Island is a significant employment location in Metropolitan Cork, which also encompasses the village of Little Island. It has been extensively developed over the last few decades, particularly in view of its strategic location adjacent to the national road network and central location in Metropolitan Cork. Given the geographical constraints, vehicular access to Little Island is limited to the N25 interchange and slip roads off the Dunkettle Interchange, with most travel to and from the island during peak period by car. The road network within Little Island itself is also restricted. Whilst a frequent rail service provides access to Kent Station and Midleton, the public transport offering on island is very limited. As such, Little Island suffers from severe peak hour traffic congestion.

1.1.3 The LITS determines what transport infrastructure improvements and policy measures are needed to alleviate the severe peak hour traffic congestion on the road network within Little Island. These measures also explore the potential to reduce dependency on single occupier car journeys and look at ways of increasing active travel and public transport use. The study makes recommendations on what interventions are required to improve the environment for general traffic, cyclists, pedestrians and public transport vehicles.

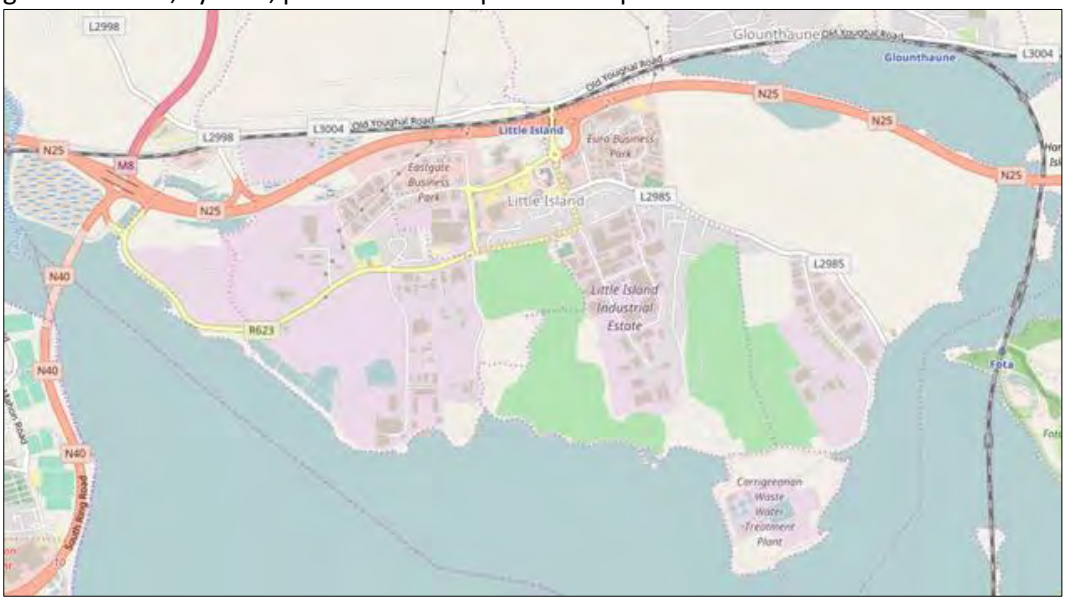


Figure 1.1 Little Island Study Area

1.2 Planning and Policy Guidance

1.2.1 A number of National, Regional and local government policies, plans and guidelines have been reviewed as part of the preparation of the LITS. These relevant plans have been summarised in the *'Little Island Transportation Study - Strategy Development Report',* and include:

National Policy and Strategies

- Towards a National Planning Framework (2015);
- Building on Recovery: Infrastructure and Capital Investment (2016-2021
- National Spatial Strategy (2002-2020);
- Smarter Travel: A Sustainable Transport Future (2009-2020);
- Achieving Effective Workplace Travel Plans Guidance for Local Authorities (2013); and
- Spatial Planning and National Roads: Guidelines for Planning Authorities (Department of Environment, Community and Local Government, 2012)

Regional Plans and Strategies

- Southwest Regional Planning Guidelines (2010-2022).

Local Plans and Strategies

- Cork County Development Plan (2014);
- Cork 2050: Cork's Submission to the National Planning Framework (March 2017);
- Cobh Municipal District Local Area Plan (August 2017);
- Cork Area Strategic Plan (2008 Update);
- Cork Cycle Network Plan (2017); and
- Cork Area Transit Study (2010)

Environment Policy

- Cobh Municipal District Local Area Plan – Volume 2, Environmental Report (August 2017);
- Cork County Development Plan 2014

1.3 Outline of Study Approach

1.3.1 The overall methodology for the LITS is outlined in Figure 1.2, overleaf, and can be broken down into the following key steps:

- **Evaluation of Existing Situation:** SYSTRA and CH2M Barry have carried out a baseline study of Little Island to gain an appreciation of current conditions within the area, including the identification of potential transportation issues. A public consultation event has been held to present the study to the general public and employees/employers, and to invite opinions and concerns regarding the future of Little Island.

- **Visioning, Evaluation Framework & Strategy Development:** The vision for Little Island has been defined based on feedback from the public consultation and a review of national, regional and local policy. Objectives and Key Performance Indicators (KPI's) have been developed to help achieve the defined vision. A package of strategy measures

were developed for testing based on current transportation issues identified within the Little Island local area.

- **Strategy Assessment & Emerging Strategy:** The various strategies have been tested using the National Transport Authority's (NTA) South West Regional Model (SWRM) and a strategic traffic model developed for Little Island. The results of the model runs were analysed using the defined KPI's to identify which package of measures best achieves the study objectives. This preferred package of measures form the finalised transport strategy for Little Island.

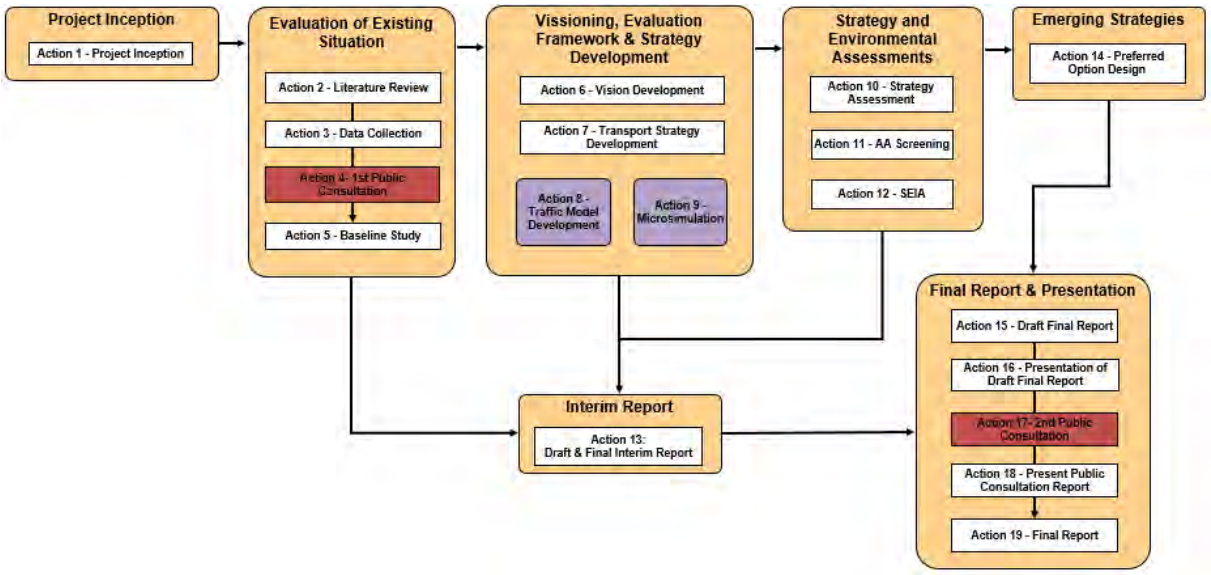


Figure 1.2 LITS Methodology

1.4 Purpose of this Report

1.4.1 This 'Strategy Design Report', takes the emerging preferred strategy developed in the 'Strategy Development Report' and provides additional detail in relation to the design of the proposed infrastructure and policy measures to be implemented in Little Island over a 20 year horizon to enable its sustainable growth as set out in the overriding vision.

1.4.2 The report focuses on the description of the key elements of the transport strategy developed for Little Island. It also provides an overview of the methodology used to derive this strategy along with recommendations for its implementation.

1.4.3 It should be read in conjunction with the *'Little Island Transportation Study - Strategy Development Report'* which provides further details on the following:

- National, regional and local planning and policy documents guiding the development of Little Island;
- current traffic conditions in Little Island including key issues identified during site visits and public consultation;
- the evaluation framework utilised to assess various LITS strategies including the development of a study vision and goals;

- the development of the Little Island Traffic Model (LITM) used to test various transport strategies;
- the assessment of test strategies through the identified evaluation framework; and
- the identification of the emerging preferred LITS Strategy.

1.5 Report Structure

1.5.1 The remainder of this report is structured as follows:

Chapter 2 – Methodology for Undertaking Study

Chapter Two provides an outline of the methodology used, and steps taken, in devising the Little Island Transport Strategy.

Chapter 3 – Recommended Transport Strategy

Chapter Three outlines the recommended strategies developed to support the vision and objectives for Little Island.

Chapter 4- Strategic Environmental Assessment

Chapter four presents the outcome of the Strategic Environmental Assessment (SEA) and Appropriate Assessment (AA) which has been undertaken and integrated into the decision-making processes and development of the Strategy.

Chapter 5 – Implementation Plan

Chapter Five outlines the implementation plan for each proposed measure to ensure the strategy can be fully implemented in the short, medium and long term.

Chapter 6 – Conclusions and Recommendations

Finally, Chapter Six provides a general summary of this report and the key study recommendations.

2. METHODOLOGY FOR UNDERTAKING STUDY

2.1 Introduction

2.1.1 This chapter provides an overview of the methodology used to develop the Little Island Transportation Strategy, including:

- Evaluation of Existing Situation;
- Consultation;
- Model Development;
- Vision, Objectives and Evaluation Framework; and
- Strategy Development and Appraisal.

2.2 Evaluation of Existing Situation

2.2.1 The purpose of this stage of the study was to facilitate an understanding of the existing traffic conditions within the Little Island study area. The below data collection programme was necessary to establish a full understanding of the current situation.

- Traffic Survey Results;
- Travel Survey Results;
- Road Network Description and Issues;
- Junction Evaluation;
- School Transportation;
- Pedestrian Facilities;
- Cyclist Facilities;
- Public Transport Provision and Facilities;
- HGVs and Servicing; and
- Parking Arrangements.

2.2.2 Section 4 of the 'Little Island Transportation Study - Strategy Development Report' provides in-depth detail regarding all of the above, however, the following sections provide a synopsis of each.

Traffic Survey

2.2.3 To gain an in-depth understanding of the existing traffic and transport conditions in Little Island, a substantial programme of traffic data collection was undertaken in May 2017. The data also assisted in calibrating and validating the transport model. In total, five surveys were commissioned and undertaken by Nationwide Data Collection (NDC). These included:

- Automatic Traffic Counts;
- Junction Turning Counts;
- Queue Length Observations;
- Journey Time Surveys; and
- Pedestrian Crossing Counts

2.2.4 The highest levels of traffic in Little Island are experienced at the entrance/exit to the Dunkettle and N25 Interchanges (Gateway Junction). The capacity constraints at these

junctions, combined with high vehicle volumes, creates congestion and delays during both the AM and PM peak hours.

2.2.5 The busiest junction in Little Island is the 'An Crompan' roundabout junction. All traffic entering/exiting Little Island at the N25 Interchange travels via this roundabout. In total, on the day of the survey, during the AM peak period, there were 2,559 vehicle movements and 2,702 in the PM peak.

2.2.6 The N25 slip road accessing the N25 overbridge has the highest vehicle movements of any junction arm with 783 movements in the AM peak.

2.2.7 Pedestrian crossing counts highlighted the junctions between the train station and Eastgate Business/Retail Park as having the greatest number of pedestrian movements. The N25 overbridge experiences the highest pedestrian volumes in the PM peak with 249 pedestrians travelling toward the train station.

Travel Survey Results

2.2.8 A public consultation process was undertaken as part of the study with a public event held in June 2017. Statistical information was gathered from a total of 103 questionnaires completed by members of the public. Whilst the sample rate is not sufficiently high to enable disaggregation of findings, the results do provide a good overview of the perceived quality of transportation in Little Island and the key issues which need to be addressed.

2.2.9 Key statistical findings include:

- 98% of respondents owned or have access to a car;
- 91% of respondents stated that they travel to/from/within Little Island daily;
- 77% rate the general traffic conditions in Little Island as very poor (3% rating them as good)
- 35% rate pedestrian infrastructure in Little Island as very poor (3% rating it as good);
- 67% rate the cycling infrastructure as poor (1% rating it as good);
- 53% rate the public transport provision as very poor (3% rating it as good); and
- 26% rate car parking provision as poor (11% rating it as very good)

Road Network Description and Issues

2.2.10 This section identifies the road network and the related conditions experienced on the roads within and surrounding Little Island. It describes all national, regional and local road classifications, including private commercial roads within the study area.

2.2.11 Little Island is effectively a peninsula settlement with the N25 acting as a boundary to the north; while to the east, west and south is Cork Harbour. Presently, the area is accessed via the Dunkettle Interchange and the N25 /R623 Interchange.

2.2.12 National routes accessible from the Dunkettle Interchange and the N25 Interchange include the M8, N25 and N40 providing access to the wider national road network.

2.2.13 There is one regional route (R623) which acts as the arterial route through Little Island. It links the eastern and western access points on the N25 with all local and private roads accessing residential/commercial/industrial areas.

2.2.14 The R623 is heavily trafficked and due to capacity constraints at the 'gateway' junctions exiting/entering Little Island, congestion and long queuing can occur during peak periods. This can be compounded by traffic congestion on the nearby national routes.

2.2.15 In addition to the 'gateway' junctions, there are currently capacity issues at the junctions exiting the Eastgate Business/Retail Park, Island Cross and the L2985 Ballytrasna junction.

Junction Evaluation

2.2.16 To improve Little Island as a residential area whilst realising its full potential as a commercial/industrial zone, improvements are required to public transport, walking/cycling facilities and road infrastructure. There is further potential for development at Little Island but, the viability of the area relies on good transport links for all modes of transport.

2.2.17 Junction operational issues, coupled with very high numbers of regional and local movements in the Little Island area and in particular the Dunkettle Interchange, creates severance issues which impact the local community and its function as an employment zone. Therefore, it was necessary to investigate the key junctions within Little Island and the impact they have on the local and wider network.

2.2.18 In total, 16 junctions were evaluated identifying the current facilities and key issues at each. There is scope for improvement at all junctions; section 3.7 of this report outlines the proposed redesign of many junctions to increase capacity, cater for public transport and provide improved facilities for pedestrians and cyclists.

School Transportation

2.2.19 There is one primary school in Little Island situation on St. Lappan's Place. Consultation was undertaken with the management of the school to gain an understanding of the travel patterns and any specific transport issues associated with the National School.

2.2.20 Sections 3.4 and 4.6 of the 'Strategy Development Report' provide a description of current school transportation patterns, including details of the consultation held with the principal and members of the teaching staff at the school. The following provides an overview of the key issues and suggested solutions:

- School traffic contributes to congestion on the R623 and St. Lappan's Place during school drop-off/collection;
- School children generally travel to school by car, private bus, walking or cycling;
- School staff travel by car; and
- A private bus operates a school run serving Carrigtwohill, Glounthaune and Little Island.

2.2.21 The key issues for the school and the management team include:

- Staff commuting issues and lack of public bus service;
- Lack of safe pedestrian facilities on the road network; and
- Parents choosing not to enrol children in the school, specifically due to traffic congestion.

2.2.22 Suggested improvements by the school management include:

- Improved turning areas for vehicles;
- Appropriate warning signage approaching the R623/St. Lappan's Place junction;
- Realign and extend the existing car park, including a one-way system; and
- Include and improve pedestrian facilities from the school on route to local amenities such as the Church, Sports Complex and Radisson Hotel.

Pedestrian Facilities

2.2.23 The pedestrian facilities throughout Little Island vary in quality. Issues highlighted during the first public consultation include narrow footpaths, missing footpaths, lack of crossing facilities, poor surface and inadequate lighting.

2.2.24 School children and pedestrians with reduced mobility are among the most vulnerable users and those most affected by the quality of the pedestrian network. The busiest pedestrian route was observed from the train station to the Eastgate Business/Retail Park.

2.2.25 Section 4.7 of the 'Little Island Transportation Study - Strategy Development Report' provides further detail regarding pedestrian facilities and conditions at key areas in Little Island including volume of pedestrians, footpath conditions, crossing facilities and observed issues.

2.2.26 There is large scope for improvements to the pedestrian facilities throughout Little Island. Section 3.7 of this report details the proposed upgrades to the pedestrian infrastructure.

Cyclist Facilities

2.2.27 Cyclist facilities within Little Island are currently non-existent. There are no dedicated cycle lanes on any routes and cyclists have been observed cycling on footways due to the traffic volumes at peak times and vehicle speed in off-peak times.

2.2.28 The current road network represents a poor cycling environment due to:

- The lack of cycle lanes and bike parking facilities within Little Island;
- The N25 is one of the major routes connecting the city and suburban areas to Little Island via the Dunkettle Interchange and the N25 Interchange. This dual carriageway road is not the ideal environment for cycling due to high-speed traffic;
- The presence of large volumes of HGV traffic accessing the industrial/commercial estates within Little Island; and
- The roundabout junctions within Little Island. These can be difficult for cyclists to negotiate safely.

2.2.29 During peak times, traffic congestion can be significant on the roads, creating obstructions for cyclists and forcing them to navigate between/around stationary vehicles. Currently, the above factors represent a major barrier to cycling to/from/within Little Island.

Public Transport Provision and Facilities

2.2.30 Currently, there is no dedicated bus service operating in Little Island, however, an infrequent regional service does pass by Little Island stopping adjacent to the train station.

2.2.31 A frequent train service operates on the Cork-Cobh and Cork-Midleton railway lines. In the AM and PM peak times, services are frequent, running every 15 minutes. Outside peak hours, services are reduced at times to every 45 minutes.

2.2.32 Feedback from the public consultation, highlighted the distance to the train station as a concern, with calls for an improved and more direct route to/from the station. New infrastructure, a bike share scheme and a shuttle bus service were all suggested as potential solutions.

HGV's and Servicing

2.2.33 It was noted through site visits, traffic counts and public consultation that a significant volume of HGV's travel to/from/within Little Island. This is due to the commercial and industrial nature of some areas with Little Island operating as the destination/origin for all HGVs.

2.2.34 HGVs can have a negative impact on walking and cycling and safety concerns were raised through the public consultation, particularly where industrial/commercial areas are located close to residential housing estates.

2.2.35 The turning movements of HGV have defined the layout of several junctions i.e. large turning radii, which negatively impacts the safety of crossing pedestrians.

Parking Arrangements

2.2.36 As a strategic employment zone, the nature of developments in Little Island comprise office blocks, industrial plants, factories/warehouses and retail parks. There is also a number of residential estates on the island. Due to the nature and density of developments, large surface parking has been provided for employees and consumers.

2.2.37 Based on the first public consultation surveys, 80-90% of employees drive a vehicle to work. The large number of available parking spaces caters for the parking demand. This high level of surface parking facilitates travelling by car and does little to encouraging a modal shift to non-car methods of travel.

2.3 Consultation

2.3.1 Key stakeholders and the public were engaged with through a consultation process which was carried out at the beginning of the project to inform people of the study, invite views regarding transportation issues and explore potential solutions.

2.3.2 A comprehensive review of received submissions, including all the statistical information, is provided in the Little Island Transportation Study - First Public Consultation Report.

2.3.3 On the 28th June, a public exhibition was held with over 130 attendees to gather the local knowledge of residents and receive input from employees, businesses and formal stakeholders. The aim was to identify travel patterns, current transportation issues and potential solutions to be explored. A travel survey questionnaire was developed and made available at the public exhibition.

2.3.4 There were five channels available for the public and key stakeholders to provide feedback for the study. These included:

- Attending the public exhibition and completing a questionnaire;
- Sending completed questionnaires by post;
- Sending completed questionnaires by email;
- General email submissions; and
- Submitting a stakeholder letter/email.

2.3.5 In total, 121 responses were received including 86 responses via the ballot box at the public exhibition, 10 completed questionnaires by post, 7 via email, 10 general submissions with comments via email and 8 formal stakeholder submissions.

Table 2.1 Public Consultation Responses

	Completed Questionnaire			General Comments	Stakeholders	Total Response
	Public Exhibition Box	By Post	Via Email	Via Email		
No. of Responses	86	10	7	10	8	121

2.3.6 Formal Stakeholder responses were received from An Garda Síochána, Bus Éireann, Transport Infrastructure Ireland (TII), National Transport Authority, Little Island Business Association, Cork Chamber of Commerce, Cork County Council Sections and the Little Island National School.

Travel Patterns

2.3.7 Of the 103 submissions made using the questionnaire:

- 65 (63%) of respondents live in Little Island;
- 30 (29%) of respondents live outside Little Island; and
- 8 (8%) did not state their place of residence.

2.3.8 Of the 65 Little Island residents who responded, 47 work/study either full time or part time. The remaining 18 are either retired, looking after family/home or unable to work. Of these 18, 15 travel daily within Little Island.

2.3.9 Of the 30 respondents living outside Little Island, 27 travel to work in Little Island daily or 3-4 times/week.

2.3.10 80 respondents work/study full/part-time; of these 65 (81%) travel as a car driver, 3 (4%) took public transport, 4 (5%) cycle or walk and 8 (10%) did not state their travel details. These figures highlight the dependency on the car for journeys to/from/within Little Island.

Current Transportation Issues

2.3.11 By the end of the consultation process, a significant number of submissions had been received from a variety of different stakeholders. A review of the submissions identified key recurring themes as the main areas of concern. These comprised:

- Traffic Congestion/Volume – Negative comments relating to the volume and congestion of traffic entering/exiting Little Island, particularly at peak hours.
- Safety Concerns –Safety concerns for pedestrians, cyclists, children in residential areas, safety for drivers, speeding HGVs and access for emergency vehicles.
- Requests for improvements to infrastructure – Respondents made suggestions regarding upgrades to existing infrastructure including provision for an additional access to Little Island.
- Walking/Cycling – these comments highlighted the lack of pedestrian/cyclist facilities and outlined possible solutions.
- Public Transport – Negative comments relating to the lack of a bus service and requests for improved public transport services.
- Parking – Comments relating to the negative impact of illegal parking. More specifically, HGVs parking illegally and employees parking in residential areas.
- Speeding – negative comments regarding speeding vehicles.
- Condition of existing infrastructure – these were generally negative comments relating to poor road surfaces and pinch points on the road network.
- Other – other comments mostly referred to suggestions to improve transport conditions including lighting, signage and traffic light sequences.

Suggested Solutions

2.3.12 Many respondents suggested solutions which they felt could alleviate the key issues. The suggested solutions fall generally under the following headings.

- Creation of a new/additional entrance to Little Island
- Road Infrastructure improvements
- Improved walking and cycling facilities
- Improved public transport services and associated infrastructure
- Improved safety (e.g. enforcing speed limits and parking regulations)
- Other (e.g. awareness campaigns/improved lighting and signage)

Second Public Consultation

2.3.13 A second public consultation event was held on 18th October 2018 at the Radisson Blu Hotel in Little Island. The purpose of the exhibition was to present the preferred transportation strategy and to invite stakeholders to make submissions and provide feedback on the proposed Design Strategy for Little Island.

2.3.14 The event was hosted by members of the Little Island Transportation Study team from Cork County Council, SYSTRA and J.B. Barry & Partners consultants. Visitors who attended were invited to view a number of presentation boards which outline the draft recommendations of the study.

2.3.15 Visitors were encouraged to talk to members of the project team and discuss any issues or concerns in relation to the draft plan proposals.

2.3.16 Submissions and feedback received during this round of consultation were reviewed and responded to in the 'Little Island Transportation Study Report on 2nd Public Consultation'. A meeting was held with the elected members of the Cobh Municipal District on the 4th February 2019 to present the feedback from the 2nd Public Consultation event and to discuss the recommended measures to be included in the Final Report.

2.4 Model Development

2.4.1 As outlined in the methodology description in Chapter 1 previously, a strategic traffic model has been developed for Little Island to adequately assess the various transport strategies developed as part of the LITS.

2.4.2 The National Transport Authority's (NTA) South West Regional Model (SWRM) covers Cork City, Cork County and neighbouring counties, and was utilised as a base for developing the strategic traffic model for Little Island. The base SWRM was updated with additional network and zonal detail to provide an enhanced representation of the road network, and route choice, in the study area. Figure 2.1 and 2.2, overleaf, provide an illustration of the Little Island Traffic Model (LITM) road network and the detailed zoning system.

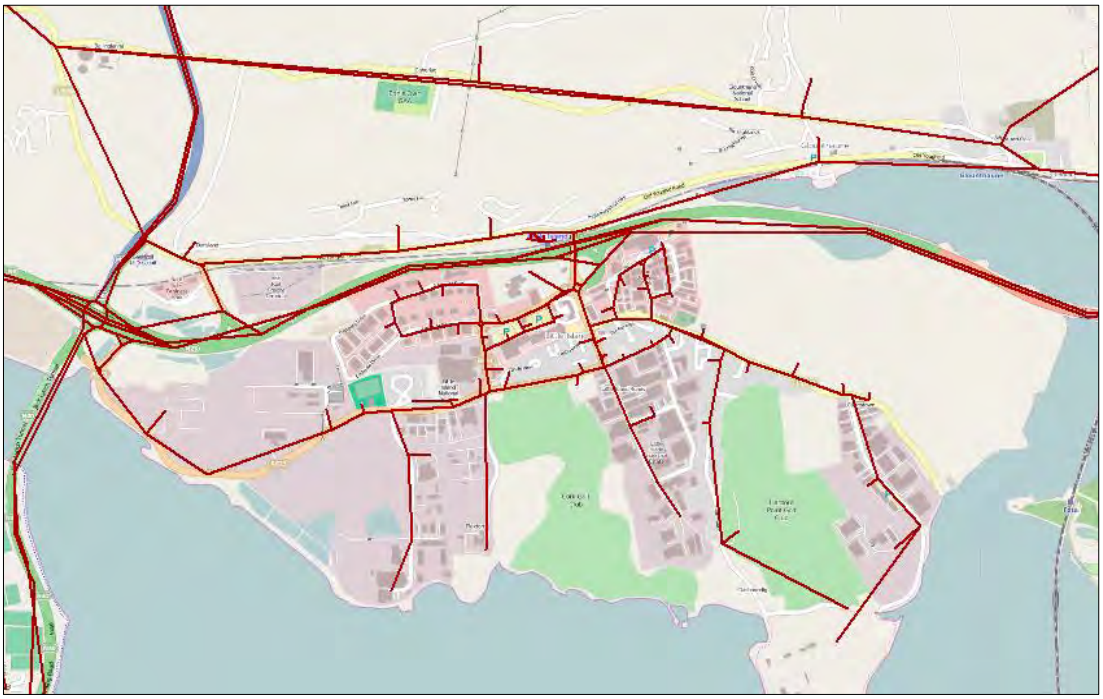


Figure 2.1 Little Island Traffic Model Road Network

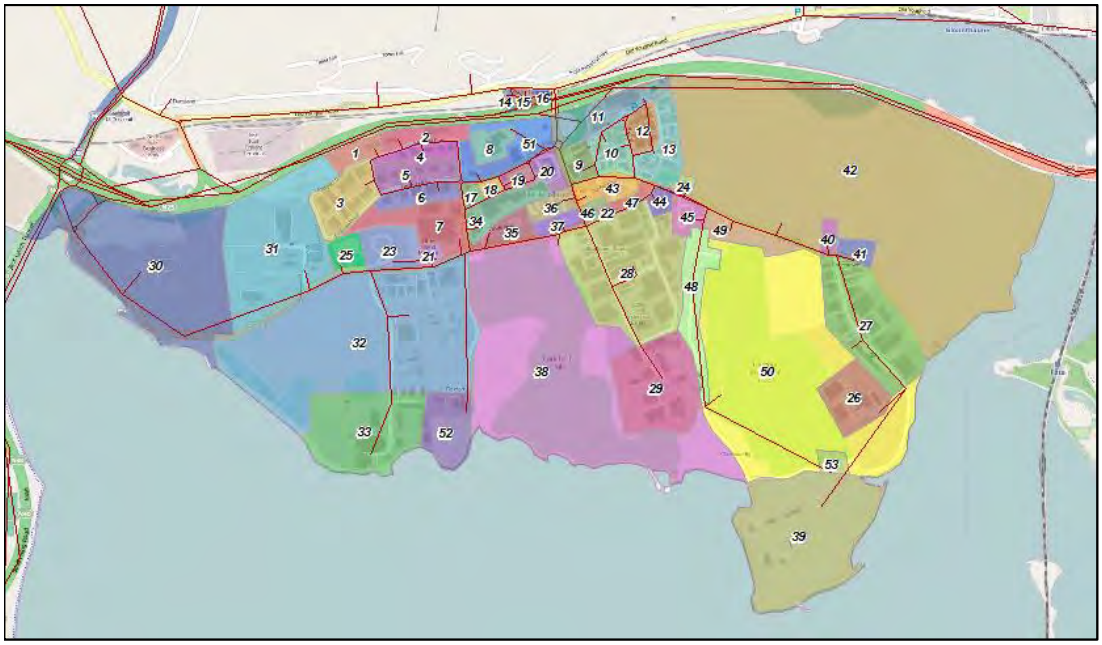


Figure 2.2 Disaggregated Little Island Zone System

2.4.3 Traffic survey data was collected in Little Island in May 2017, and was then used to calibrate and validate the base LITM to ensure that it provides a robust and accurate representation of traffic flow within the study area.

2.4.4 The LITM was calibrated and validated in accordance with Transport Infrastructure Ireland's (TII) *Project Appraisal Guidelines (PAG) for National Roads Unit 5.1 – Construction of Transport Models (October 2016)* and has been shown to meet all specified criteria for both the AM and

PM peaks. This is a widely accepted standard in Ireland that provides robust calibration and validation criteria to which certain types of highway models should adhere.

2.4.5 The LITM is fit for purpose, and represents AM and PM peak period base year traffic conditions well, as demonstrated statistically through calibration and validation. It provides a robust basis for assessing the impacts on the road network of any future infrastructure improvements/developments.

2.4.6 For further information on the development, calibration and validation of the LITM, the reader is referred to the *'Little Island Transportation Study - Strategy Development Report'*.

2.5 Vision, Objectives and Evaluation Framework

2.5.1 An evaluation framework was developed to assess the various LITS test strategies, and comprised of the following key elements:

- **Vision Statement:** Outlines the future aspirations for the area and its citizens and provides an over-arching context for the study;
- **Objectives:** A series of evaluation objectives developed to assist in achieving the defined vision for Little Island;
- **Test Strategies:** A package of strategy measures were developed for testing based on current transportation issues identified in Little Island;
- **Key Performance Indicator (KPI) Evaluation:** Both quantitative and qualitative KPIs have been defined to assess how well the test strategies achieve the specified LITS objectives; and
- **Preferred Strategy:** Based on the results of the KPI analysis, an emerging preferred strategy has been identified.

Vision Statement

2.5.2 The Vision Statement provides the over-arching context for the specific measures within the strategy, providing the all-encompassing blanket to which the evaluation objectives fall under, and ultimately the basic justification for the proposed set of road, public transport, walking and cycling improvements.

2.5.3 The Vision Statement creates a sense of what the LITS will achieve in the medium to long term so that the public can easily identify with its rationale and purpose. It communicates the desire to improve quality of life in Little Island while also supporting its function as strategic employment location. Evaluation objectives may then be set within the broad framework provided by the Vision Statement, such that transport is integrated with the future aspirations for Little Island and its surrounding areas. The Vision Statement, therefore, focuses more on the future transport environment than the current situation.

2.5.4 Information gathered through a review of national and local policy, baseline studies and consultation with the general public was utilised to develop the following Little Island Transportation Study Vision Statement:

Little Island Transportation Study Vision

"To create a safe and efficient transport network supporting ease of movement for all, which allows residents and businesses to work together to improve the quality of life within Little Island, and strengthen its position as a Strategic Employment Centre"

Objectives and KPIs

2.5.5 The Department of Transport, Tourism and Sport's (DTTAS) Guidelines on a Common Appraisal Framework for Transport Projects and Programmes sets out high level objectives which can be applied to the LITS. These can be broadly categorised as follows:

- Economic;
- Safety and Physical Activity;
- Environmental; and
- Integration, Accessibility and Social Inclusion.

2.5.6 The LITS objectives have been developed under these headings to assist in achieving the defined vision for Little Island.

2.5.7 KPI's have been identified and were used to measure the performance of the Little Island strategies under the various defined objectives. These KPI's, therefore, had to be measurable and clearly related to the desired outcome.

2.5.8 This allowed scenarios to be easily comparable and successful scenarios to be identified. Furthermore, the particular attributes which influence a KPI one way or another (for example provision of bus priority, or the location and density of a development) could be fine-tuned to obtain a transport scenario that meets the targets and, therefore, satisfies the LITS evaluation objectives.

2.5.9 The KPI's are both qualitative and quantitative with the Little Island Traffic Model (LITM) being used to calculate the majority of the quantitative KPI's. The qualitative KPI's for each option were given a ranking or score relative to the Do Minimum Scenario.

2.5.10 The various Little Island test strategies were assessed through this objectives and KPI evaluation framework. Table 2.2 overleaf, summarise the key evaluation objectives, associated KPI's and means of measurement that have been used to evaluate each Little Island strategy option.

Table 2.2 Little Island Objectives and KPIs

No.	Key Project Objectives	Key Performance Indicators	Measure By
Economic	Support the existing employment function and planned economic expansion of Little Island through delivering an efficient and reliable transport network	Network wide delay/queueing	% Junctions with V/C > 85%
		Journey times (Car and PT)	% Change in public transport travel costs
			% Change in car journey times
		Cost efficiency of proposals	High level comparison of cost measures
Safety & Physical Activity	Develop a safe and healthier transport network for all transport modes and users	Change in vehicle emissions particularly those that cause higher health risks	% change in vehicular emissions within Little Island
		Sustainable transport mode share	Walking, Cycling and PT Mode Share
Environmental	Deliver a multi-modal transport network which supports sustainable travel and reduces the environmental impact of transportation in Little Island	Minimising impact on environmentally sensitive areas	Rating scale
		Reduce traffic congestion on Little Island	% Change in total queuing
Integration, Accessibility and Social Inclusion	Provide equal opportunity for all through improving accessibility and enhancing the integration of land-use and transport	Compatibility of transport measures with Local, Regional and National policy	Review of policy and rating scale
		Availability for transport interchange	Rating scale

2.6 Strategy Development and Appraisal

Strategy Development

2.6.1 The proposed strategy measures for Little Island have been developed through a review of policy, public consultation responses and taking cognisance of existing plans for the wider Cork Area. The following sections provide a brief overview of the key proposed strategy measures, however, for a more detailed description, the reader is referred to the *'Little Island Transportation Study - Strategy Development Report'*.

Road Based Measures

- **Dunkettle Interchange Upgrade:** TII, in conjunction with Cork County Council and Cork City Council, are currently working to upgrade the existing Dunkettle Interchange which is located immediately to the west of Little Island, where the M8/N8 road from Dublin to Cork intersects with the N25 road from Waterford to Cork. Under the proposed upgrades, the interchange will be re-designed, with the central roundabout and traffic lights removed facilitating free flow of traffic. This will provide significant additional capacity on all approaches reducing congestion and delay. It is anticipated that the Dunkettle Interchange Upgrade will be completed by 2022 and therefore the scheme was included in all future long term assessments.

- **3rd Interchange on the N25:** The proposal for another interchange onto the N25 to the east of Little Island was included in a substantial number of submissions received through the public consultation process. The proposed measure includes for a link road connecting Lower Courtstown to the N25 via currently undeveloped lands with a new interchange facilitating movements to/from the N25.

- **Local Road Capacity Enhancements:** This includes proposals for capacity enhancements at a number of junctions in the vicinity of the current N25/R623 interchange accessing Little Island, including:

  - N25/R623 Interchange;
  - An Crompán Roundabout; and
  - Ballytrasna Park/R623 Junction

Public Transport Based Measures

- **Public Transport Priority:** In order to improve the competitiveness and reliability of journey times, and support travel by public transport, it is proposed that bus lanes are introduced on the N25 eastern and western approach to the R623 interchange and in a clockwise direction on-island. It is proposed that public transport priority is only provided in one direction of travel due to carriageway width constraints on the network. It would not be possible to provide bus lanes in both directions along the R623 without the acquisition of a substantial number of properties and lands.

- **Re-routing of Existing Bus Services:** Currently, a number of Bus Éireann services (including route 40, 240, 241, 260 and 261) operate along the N25 towards Cork City

bypassing Little Island. In order to improve the public transport offering for residents and employees in Little Island, it is proposed that these existing services could be re-routed on-island on completion of the on-island bus priority measures outlined above.

- **Additional Bus Services:** demand analysis was carried out to identify key origins and destinations of travel and potential public transport measures which could support this demand. The results of this analysis highlighted additional bus services that could operate via Little Island to key destinations in the South, North, West and the centre of Cork City. Further information of these routes is provided in Section 3.2 of this report.

- **New Train Station and Park and Ride:** The Cork Area Strategic Plan (CASP update 2008) and the Cork Area Transit System Study (CATS) both identify the development of a new park and ride site near Dunkettle with an associated new train station. The availability of a large Park and Ride site adjacent to Little Island would provide the opportunity for people to park off-island and either walk, cycle, or get a bus to their destination.

  Mobility Hub: A local Park and Ride facility, often knows as a 'Mobility Hub' is proposed at the Little Island train station to encourage sustainable travel on and off Little Island. This will include an extension to the existing well utilised parking area, either through the form of a multi-storey car park or extension to the surface parking. A direct pedestrian / cycle bridge will be provided over the N25 linking the mobility hub and train station to Little Island at the Eastgate Business Park.

- **Shuttle Bus Service:** In order to support sustainable travel, and encourage people to use park and ride or travel via public transport, it is proposed that a shuttle bus service could be established on-island accessing key employment locations. The proposed service would operate in a clockwise direction around the island making use of the public transport priority measures to avail of quick and reliable journey times.

2.6.2 The transport measures outlined above were combined into three road based, and two public transport based, strategies for testing with varying levels of infrastructure and required investment, as follows:

Table 2.3 LITS Strategies for Testing

Strategy Measure	Reference Case	Road Strategy			PT Strategy	
	DM	SC1	SC2	SC3	SC4	SC5
Dunkettle Interchange Upgrade	✓	✓	✓	✓	✓	✓
Left-In/Left-Out 3rd N25 Interchange		✓				
Full Movements N25 Interchange			✓			
Local Road Capacity Enhancements				✓		
PT Priority Improvements					✓	✓
Re-routing Existing Bus Services					✓	✓
Additional Bus Services						✓
New Train Station and Park & Ride						✓
Shuttle Bus Service						✓

Strategy Appraisal

2.6.3 All of the above scenarios were tested through the Evaluation Framework described in Section 2.5. For each of the study objectives, KPIs were identified and used to measure the performance of the various LITS strategies.

Rating	Description
	Major Benefit
	Moderate Benefit
	Minor Benefit
	Neutral
	Minor Disbenefit
	Moderate Disbenefit
	Major Disbenefit

2.6.4 All scenarios have been tested in the forecast year 2040 (in-line with the planning and population forecasts recently published in the Draft National Planning framework Report), and were assessed relative to the 2040 Do Minimum scenario using a rating scale.

2.6.5 The summary appraisal results for each of the proposed strategies are outlined in Table 2.4, overleaf. Further detail on the appraisal process, and results, is provided in the *'Little Island Transportation Study - Strategy Development Report'*.

Table 2.4 Appraisal of Scenarios - Summary

No.	Key Project Objectives	Key Performance Indicators	DM	Sc1	Sc2	Sc3	Sc4	Sc5
Economic	Support the existing employment function and planned economic expansion of Little Island through delivering an efficient and reliable transport network	Network wide delay/queueing						
		% Change in PT Travel Costs						
		% Change in Car Journey Times						
		Cost efficiency of proposals						
Safety & Physical Activity	Develop a safe and healthier transport network for all transport modes and users	Change in vehicle emissions particularly those that cause higher health risks						
		Sustainable transport mode share						
Environmental	Deliver a multi-modal transport network which supports sustainable travel and reduces the environmental impact of transportation in Little Island	Minimising impact on environmentally sensitive areas						
		Reduce traffic congestion on Little Island						
Integration, Accessibility and Social Inclusion	Provide equal opportunity for all through improving accessibility and enhancing the integration of land-use and transport	Compatibility of transport measures with Local, Regional and National policy						
		Availability for transport interchange						

2.6.6 In Summary:

Scenario 1

- provides a substantial reduction in congestion and delay when compared to the Do Minimum scenario;
- queuing remains in the peak periods, particularly in the AM; and
- fails to support sustainable modes, and as such, any development growth will be dependent on the private car.

Scenario 2

- performs the best in terms of providing substantial additional road capacity and reducing congestion and delay on the network;
- the cost of this scenario is substantially higher than all other alternatives;
- the construction of the full movements interchange may not be feasible due to the location of environmentally protected lands; and
- promotes unsustainable growth in Little Island with an increase in car mode share.

Scenario 3

- additional road capacity results in a considerable reduction in queuing and delay in Little Island;
- upgrades could be delivered for a low cost in a relatively short timeframe;
- does not support a mode shift to more sustainable travel; and
- additional road capacity starts becomes utilised in the future year due to growth in Little Island and the reliance on the private car leading to congestion.

Scenario 4

- proposed measures are not significant enough to generate a substantial mode share response; and
- significant levels of congestion remain in the AM and PM peak periods.

Scenario 5

- provides a substantial increase in public transport mode share with an approx. 6% reduction in car demand; and
- considerably reduces the level of congestion on the network, however, queuing still occurs in the peak hours.

Emerging Preferred Strategy

2.6.7 The results of the initial appraisal outlined above were used to identify the emerging preferred strategy for Little Island. Whilst the modelling results indicate that the provision of an additional 3rd N25 interchange at Little Island reduces congestion and delay, it was concluded that the provision of a 3rd interchange at little Island is not a requirement of the transport strategy for the following reasons :

- An alternative, cost effective and less environmentally sensitive, road capacity enhancement solution (Scenario 3) has been developed which could be delivered in a short term horizon.
- The full delivery of the strategy will enable the sustainable growth of Little Island beyond the forecast contained in Cobh Municipal District Local Area Plan, supporting up to 13,000 employees.[1]

2.6.8 Notwithstanding the above, the corridor for the route could be retained by Cork County Council as part of a longer term strategy, however significant challenges remain, including:

- The creation of another interchange on the N25 directly contradicts national policy seeking to safeguard the capacity and safety of the national road network;
- The cost of construction of this scheme is extremely high and is unlikely to be funded by national agencies;
- The construction of the new interchange at its proposed location has the potential to have adverse impacts on the conservation objectives and qualifying interests of the Cork Harbour SAC and SPA; and
- The creation of substantial additional road capacity for trips onto Little Island will induce additional car trips on the transport network, resulting in a greater reliance on private car use.

2.6.9 Based on the overall scenario assessment results, the emerging preferred LITS strategy was considered to be a combination of Scenario 3 and Scenario 5 outlined previously, and includes:

- Short term road capacity enhancements to assist in reducing congestion and delay for traffic entering and exiting Little Island in the AM and PM peak hours;

- A range of public transport improvements to support sustainable travel, including:
  - High frequency bus services operating to Little Island;
  - Re-routing existing bus services on-island;
  - Introduction of public transport priority;
  - Creation of a new Park and Ride site and train station at North Esk;
  - Provision of a Mobility Hub at the Little Island Railway Station;
  - Provision of a direct Commuter Rail service to Mallow; and
  - Introduction of a new shuttle bus service linking employment locations to the train stations and Park and Ride site.

[1] The 2016 CSO National Census indicates 8,283 jobs at Little Island

- A suite of demand management measures (including elements such as parking management, flexi-time working etc.) to support the use of sustainable travel and assist in reducing car demand on the network.

2.6.10 The emerging preferred strategy was then re-tested through the evaluation framework and the results indicate that it performs well in achieving the identified LITS Vision and Objectives. In summary, the proposed measures:

- reduce journey times to/from Little Island, thus supporting its planned economic expansion;
- reduce congestion and queueing leading to a decrease in vehicular emissions and reduce the environmental impact of transportation in Little Island;
- promotes the use of public transport which supports sustainable travel; and
- complies with all National, Regional and Local policies and deliver a multi-modal transport network which facilitates access for all.

2.6.11 The following chapter of this report provides further details on the various elements of the recommended LITS strategy.

3. RECOMMENDED TRANSPORT STRATEGY

3.1 Introduction

3.1.1 The following chapter presents the recommended strategies which have been developed to support the LITS vision by:

- Creating a safe and attractive environment for people to live, work and do business;
- Providing accessibility and ease of movement within Little Island, particularly for vulnerable road users; and
- Supporting the future economic development of Little Island, strengthening its position as a Strategic Employment Centre.

3.1.2 A series of workshops were held, both internally and between the wider project working group, to identify key strategies which could assist in improving transport in Little Island. The strategies were focused on the following key elements:

- Improving **pedestrian and cycle** movement within Little Island;
- Improving **public transport** facilities, services and accessibility;
- Reducing local traffic congestion;
- Developing a strategy for the **management of traffic** in Little Island, with a particular focus on **promoting travel by sustainable modes**; and
- Developing a **schools travel strategy** to increase use of sustainable modes;

3.1.3 The remainder of this chapter outlines the various elements which form the Little Island Transport Strategy and includes the following:

- **Public Transport:** Describing the recommendations for improving Public Transport services, facilities and accessibility in Little Island;
- **Pedestrian & Cyclists:** Outlining the proposed Little Island walking and cycle strategy;
- **Schools:** Describing the specific school travel plan developed to improve safety for children travelling to the National School, and encourage walking and cycling as a prominent mode of transport;
- **Parking:** Presenting the parking strategy developed for Little Island;
- **Network Upgrade Plan:** Presenting key network upgrades and junction improvements which will assist in improving traffic flow within Little Island, and also aid in facilitating pedestrian and cyclist movements;
- **Demand Management Strategy:** Describing the proposed recommendations aimed at reducing demand for travel by private vehicles, particularly during the commuter peaks, and to encourage the use of walking, cycling and public transport.

3.1.4 It should be noted that, while the proposed strategies are presented individually for the purpose of this report, they have been developed in cognisance with each other and form an integrated package of measures which are aimed at delivering the defined LITS vision and objectives.

3.1.5 All of the preferred strategies outlined in the following sections have been tested through the evaluation framework, and the results are presented in detail in the *'Little Island Transportation Study - Strategy Development Report'*.

3.2 Public Transport Strategy

Introduction

3.2.1 At present, Little Island does not have a dedicated bus service, however, it is well served by a relatively frequent train service (approx. every 15 minutes in the AM and PM peaks). Initial public consultation responses raised concerns regarding the distance to the train station and closest bus stops which are both located 'off-island'. This, combined with ample parking provision, and limited destinations accessible by rail, contributes to low levels of public transport use for work and education trips (approx. 3% mode share[2]).

3.2.2 The Public Transport strategy developed for Little Island takes consideration of local, regional and national policy, along with responses received during public consultation. It aims to significantly improve public transport use through:

- Increased walking and cycling accessibility to the existing train station (discussed further in Section 3.4);
- Additional public transport services on-island serving key locations; and
- Demand management measures supporting travel by public transport (discussed further in Section 3.8).

3.2.3 The following sections provide an overview of the key measures proposed as part of the LITS Public Transport Strategy, namely:

- Providing additional Public Transport Priority;
- Re-routing of Existing Bus Services on-island;
- Provision of additional Bus Services;
- New Train Station and Park and Ride;
- Creation of a 'Mobility Hub' at Little Island Train Station; and
- Introduction of a Shuttle Bus Service.

3.2.4 It should be noted that the NTA, in conjunction with Cork County Council and Cork City Council, are currently preparing the draft Cork Metropolitan Area Transport Study (CMATS) which is focusing on interventions to substantially improve sustainable travel in the Cork Metropolitan Area. The LITS Public Transport Strategy was developed taking cognisance of the wider strategic measures proposed as part of the draft CMATS.

Public Transport Priority

3.2.5 Currently, there are no bus services which operate on Little Island. This is predominantly due to the level of congestion on access and egress in the AM and PM peaks which makes it difficult for operators to schedule services and provide reliable journey times.

3.2.6 In their submission to the LITS 1st round public consultant, Bus Éireann stated that the study needs to promote modal shift to public transport, identifying that adequate Bus Lanes / Bus Priority measures need to be provided in Little Island.

[2] Taken from analysis of Census POWSCAR data

3.2.7 Therefore, in order to improve the competitiveness and reliability of journey times, and support travel by public transport, it is proposed that bus lanes are introduced in a clockwise direction on-island, as illustrated in Figure 3.1. The main area of congestion in the peak hours is along the R623 between the An Crompán Roundabout and Island Cross Junction. As such, it is proposed that public transport priority will be provided along this section of road, and on the exit to the new Dunkettle Interchange.

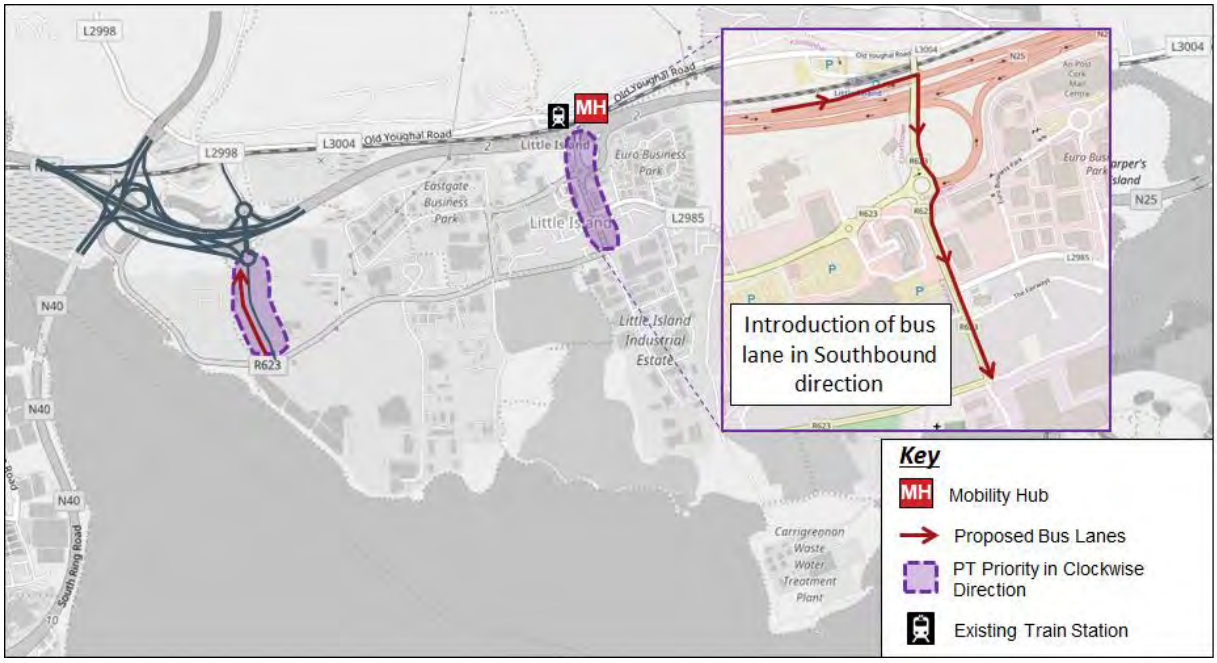


Figure 3.1 Proposed Little Island Public Transport Priority

3.2.8 It is proposed that public transport priority is only provided in one direction of travel due to carriageway width constraints on the network. It would not be possible to provide bus lanes in both directions along the R623 without the acquisition of a substantial number of properties and lands. On the southbound approach to Island Cross Junction, the carriageway narrows significantly, and therefore, to provide bus lanes in even one direction will require land acquisition.

3.2.9 Therefore, due to the fact that priority can only be provided in one direction, it is proposed that bus services operating on Island would travel in a clockwise direction to ensure efficiency and reliability of journey times. As such, eastbound buses would be required to enter Little Island at the existing N25 interchange and travel in a clockwise direction before exiting at the new Dunkettle Interchange continuing to their scheduled destinations. Other bus priority measures such as traffic signal priority, queue jump facilities etc. should also be provided and are discussed further in Section 3.7 of this report.

3.2.10 During the 2nd public consultation, the inclusion of a traffic link from the East Gate Drive to the R623 via lands adjacent to the ESB substation was requested. This was examined in the traffic model as part of the examination of potential measures. It was concluded that the addition of this link would not yield substantial network benefits (e.g. reduction in delays) when the other study measures are implemented. Notwithstanding this, as the demand for a shuttle bus through Eastgate increases, merit may exist to implement this link to serve public transport and pedestrians/cyclists only. It is therefore recommended to retain this corridor free from development to enable the future provision of a sustainable transport link.

Re-routing of Existing Bus Services

3.2.11 Currently, a number of Bus Éireann services (including route 40, 240, 241, 260 and 261) operate along the N25 towards Cork City bypassing Little Island. In order to improve the public transport offering for residents and employees in Little Island, it is proposed that these existing services could be re-routed on-island as illustrated in Figure 3.2 below. Note that this would only be a possibility if some level of public transport priority is provided on Little Island.

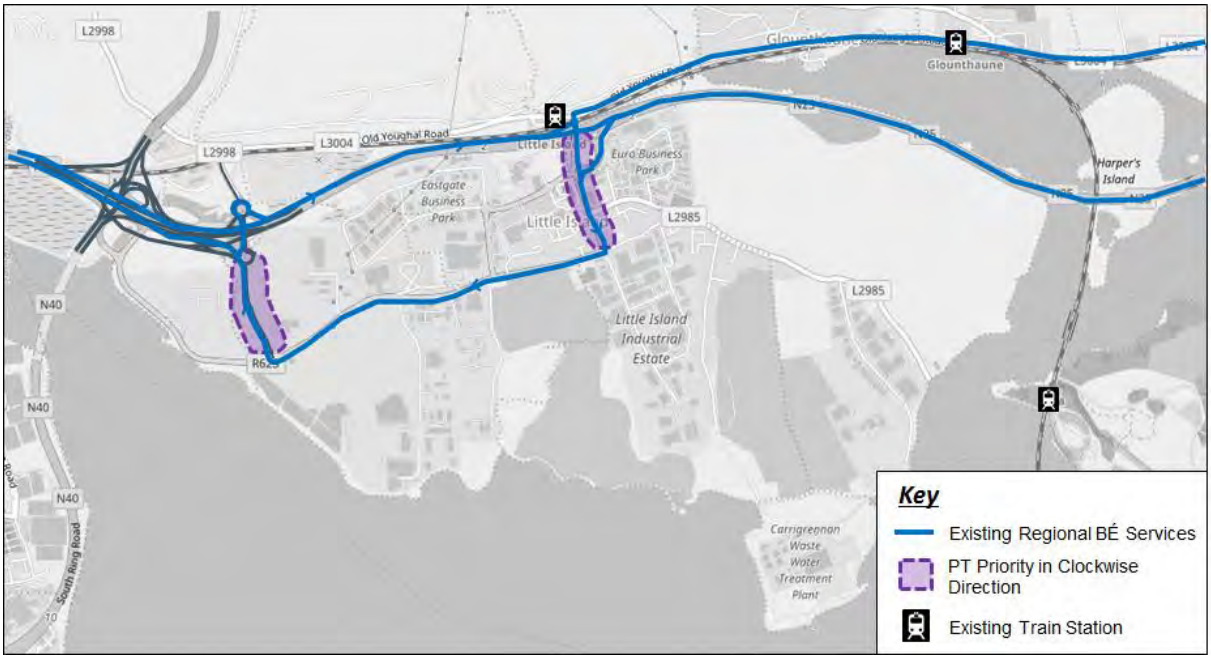


Figure 3.2 Re-routing Existing Services on Little Island

3.2.12 In a westbound direction, services could easily re-route through Little Island along the R623 with a relatively minor increase in overall journey times. In the eastbound direction, it is proposed that services would perform a clockwise loop on-island to avail of the public transport priority, and as such avail of faster and more reliable journey times.

Additional Bus Services

3.2.13 As noted previously, the NTA, in conjunction with Cork County Council and Cork City Council, are currently preparing the draft Cork Metropolitan Area Transport Study (CMATS). As part of this study, demand analysis was carried out to identify key origins and destinations of travel and potential public transport measures which could support this demand. This analysis was adopted and assessed in further detail for Little Island as part of the LITS.

3.2.14 The results of this analysis highlighted some additional bus services that could operate via Little Island to key destinations in the South, North, West and the centre of Cork City. Further information on these routes will be available in the CMATS report when it is released for public consultation, however, the proposed indicative routing through Little Island is outlined in Figure 3.3, overleaf.

3.2.15 The provision of these additional bus services would significantly increase the public transport offering to Little Island providing direct services to key destinations within Cork City at a relatively high frequency.

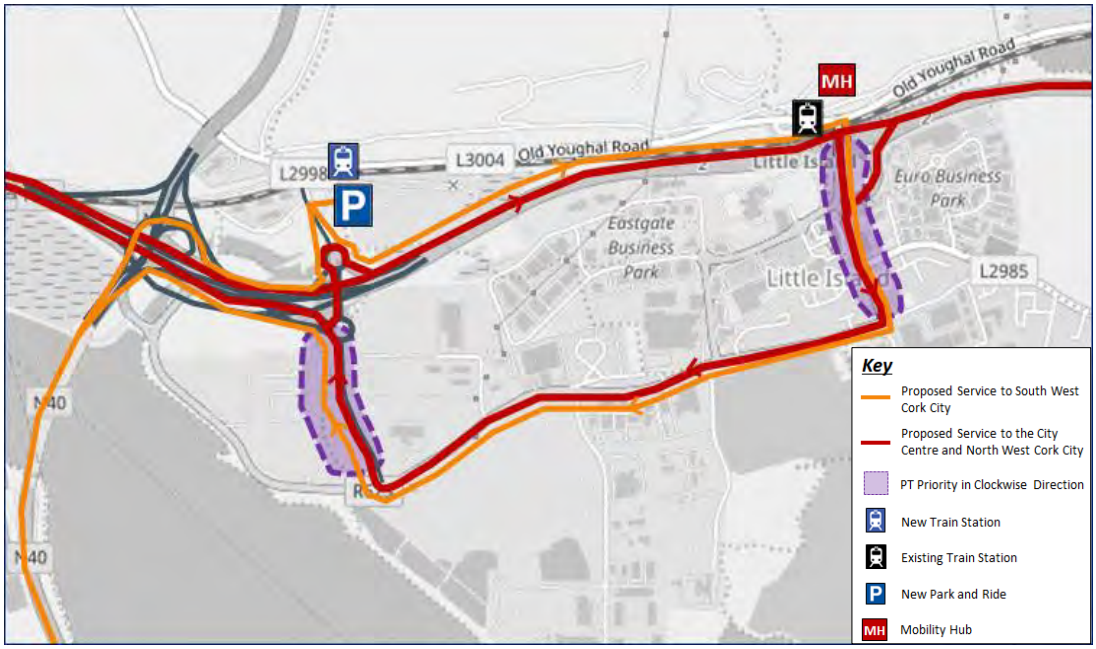


Figure 3.3 Proposed Additional Bus Services

New Train Station and Park and Ride

3.2.16 The Cork Area Strategic Plan (CASP update 2008) and the Cork Area Transit System Study (CATS) both identify the development of a new park and ride site near Dunkettle with an associated new train station.

3.2.17 The availability of a large Park and Ride site adjacent to Little Island would provide the opportunity for people to park off-island and either walk, cycle, or get a bus to their destination. This could reduce the volume of traffic entering the island in the peak hours. However, it is likely that demand management measures would be required (e.g. parking restrictions, parking charges etc.) to encourage people to park off-island.

3.2.18 The additional train station at North Esk (illustrated in Figure 3.3 above) is of limited advantage to current residents and employees in Little Island. However, it could provide benefits if lands to the west of the Island are developed further and strong walk and cycle links are provided to this station.

Mobility Hub

3.2.19 A local Park and Ride facility, often knows as a 'Mobility Hub' is proposed at the Little Island train station to encourage sustainable travel on and off Little Island. This will include an extension to the existing well utilised parking area, either through the form of a multi-storey car park or extension to the surface parking.

3.2.20 The mobility hub will support the proposed investment in public transport services and walking infrastructure, enabling motorists to park and utilise the frequent shuttle bus for travel on island or park and use the proposed walking / cycling footbridge to access nearby Eastgate Business park.

3.2.21 The mobility hub will also be attractive to motorists wishing to travel into the city via rail or interchange with other proposed bus services. It may include supplementary facilities including public transport stops, high capacity cycle parking, bicycle sharing systems dedicated car club spaces, carpooling spaces, electric charging facilities for cars and taxi drop-off facilities.

3.2.22 It is recommended that a modest size parking area be developed in the short term, with the ability to considerably expand as sustainable transport infrastructure is delivered and demand management measures (such as restricted levels of parking for new developments) are implemented.

3.2.23 The mobility hub at the Little Island Train Station, incorporating the pedestrian/cycle footbridge should be prioritised within the first five years of the strategy. It is recommended that a masterplan for the mobility hub, including the pedestrian/cycle footbridge, is commenced on completion of the Little Island Transportation Study, and that it is delivered prior to the delivery of the N25 Interchange to Ballytrasna Park Junction bus priority scheme.

Shuttle Bus Service

3.2.24 In order to support sustainable travel, and encourage people to use park and ride or travel via public transport, it is proposed that a shuttle bus service should be established on-island accessing key employment locations.

3.2.25 The proposed service, illustrated in Figure 3.4, would operate in a clockwise direction around the island making use of the public transport priority measures to avail of quick and reliable journey times. The bus would operate at a relatively high frequency linking the two train stations adjacent to Little Island (one existing and one proposed at North Esk), and the proposed new park and ride site and Mobility Hub, with key employers on-island. It is hoped that the availability of this service will encourage people to park off-island, or interchange with rail rather than travel via car.

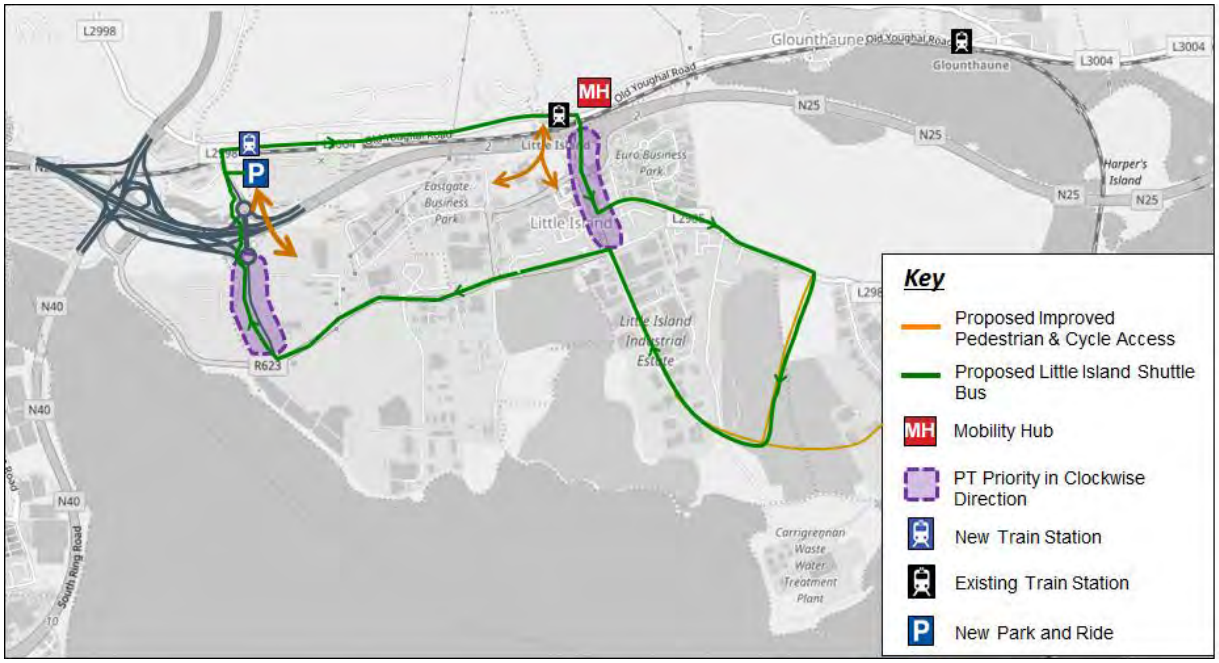


Figure 3.4 Proposed Shuttle Bus Service

3.2.26 As part of the 2nd public consultation event, requests were received for the implementation of the shuttle bus during the Dunkettle upgrade construction works to help alleviate congestion. The shuttle bus would operate from the Little Island train station to employment areas within Little Island. It is recommended that the feasibility of operating the shuttle service during the upgrade of the Dunkettle Interchange be examined.

Summary

3.2.27 Figure 3.5, overleaf, provides a graphical representation of the key measures proposed as part of the Little Island Public Transport Strategy. In summary:

Public Transport Strategy – Key Recommendations:

- Provide priority for Public Transport in a clockwise direction on Little Island to improve journey times and reliability;
- Re-route existing bus services on-island;
- Introduce additional bus services connecting Little Island to key destinations within Cork City at a relatively high frequency;
- Make use of the proposed new train station and Park & Ride site at North Esk, and the Mobility Hub at Little Island train station, to enable motorists to park off-island and access their destination using sustainable modes;
- Introduce a high frequency shuttle bus service linking the two train stations adjacent to Little Island (one existing and one proposed at North Esk), and the proposed new park and ride site and Mobility Hub, with key employers on-island.
- It is recommended to retain the R623/East Gate Drive corridor link free from development to enable the future provision of a public transport link.
- The feasibility of operating a shuttle bus during the upgrade of the Dunkettle Interchange will be examined.

Benefits of the Public Transport Strategy:

- Improved journey times and reliability for public transport services in Little Island;
- Additional bus services provide viable alternatives to the private car, thus supporting sustainable travel;
- Enhanced accessibility to public transport by improving the pedestrian and cycle network, and routing bus services on-island; and
- Promote parking off-island due to the creation of a Mobility Hub and Park and Ride facilities linked to a high frequency shuttle bus service operating to key destinations on Little Island.

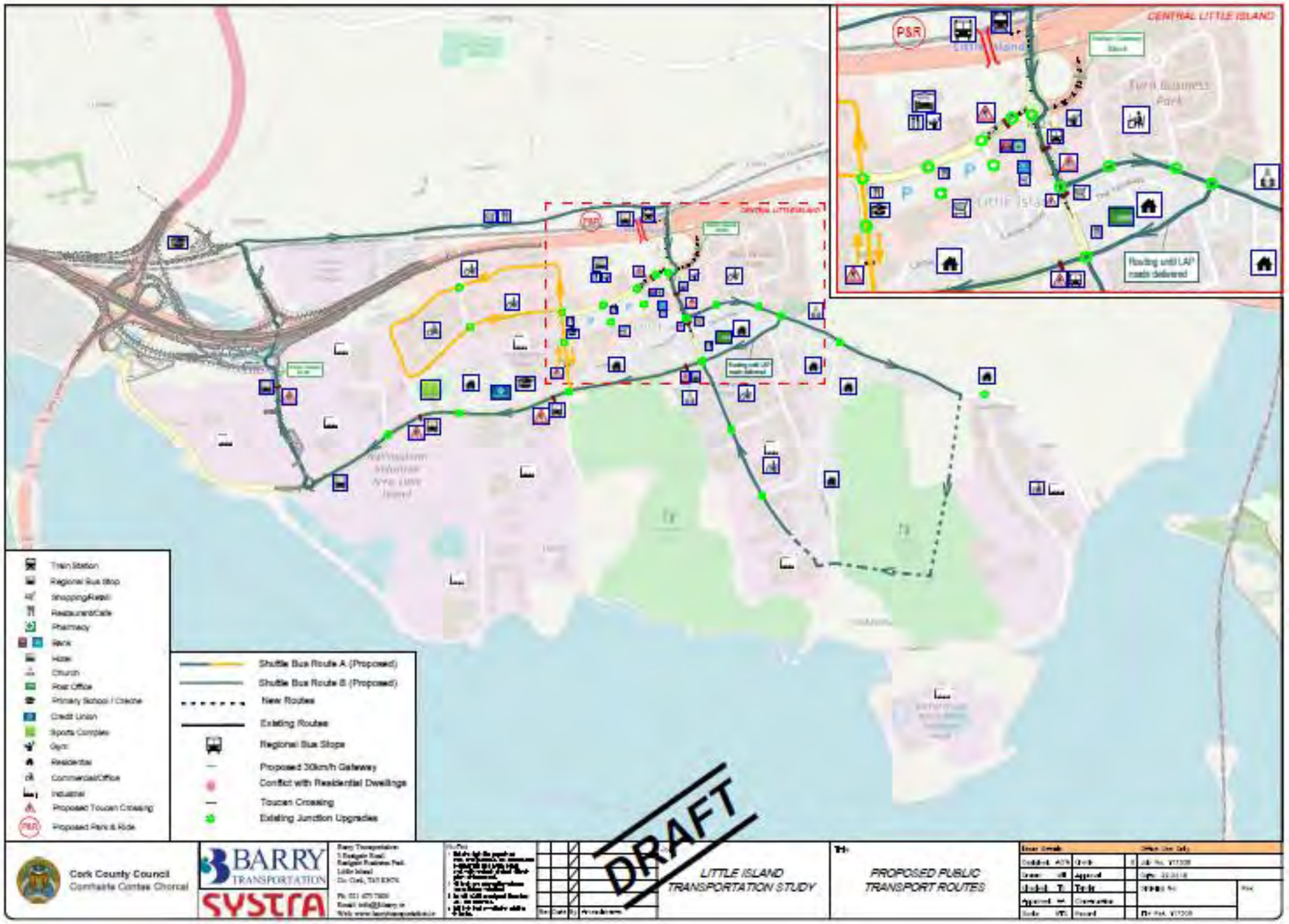


Figure 3.5 Little Island Public Transport Strategy

3.3 Walking and Cycling Strategy

Introduction

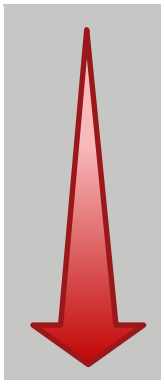
3.3.1 Through public and stakeholder consultation, it was noted that pedestrian and cycling facilities within Little Island are currently poor with particular issues comprising traffic volumes and congestion, difficulty navigating junctions, speeding HGVs, uneven surfacing, lack of appropriate crossings and a disjointed network.

3.3.2 To address these issues, the Little Island walking and cycling strategy has been developed through detailed analysis of local issues and opportunities which were identified in the baseline transport assessment (see section 4 of the *'Little Island Transportation Study – Strategy Development Report'*).

3.3.3 In addition, the walking and cycling strategy takes cognisance of recent local, regional and national policies such as the National Transport Authority's National Cycle Manual, the Cork County Development Plan and the Department of Transports Smarter Travel Policy.

3.3.4 In designing the walking and cycling strategy for Little Island, a hierarchical approach was considered.

Table 3.1 Pedestrian and Cyclist Hierarchy of Provision

Consider First	Pedestrians	Cyclists
	Traffic reduction	Traffic reduction
	Speed Reduction	Speed Reduction
	Reallocation of road space to pedestrians	Junction treatment and traffic management
	Provision of direct at-grade crossings	Redistribution of the carriageway (bus lanes, widened nearside lanes etc.)
	Improved pedestrian routes on existing desire lines	Cycle lanes and cycle tracks
Consider Last	Segregated Walking Infrastructure	Segregated Cycle Infrastructure

Proposed Strategy

3.3.5 The proposed strategy has resulted in the development of an island wide network to facilitate pedestrian and cycle movements throughout Little Island. The finalised route maps identifying the location and type of facilities for pedestrians/cyclists are illustrated in Figures 3.6 and 3.7 overleaf. The following sections of this chapter identify specific examples of measure included in the design as part of the overall route development. This chapter provides an overview of the key aspects of the strategy, whereas, details on specific improvement

measures of each junctions are presented on a corridor-by-corridor basis in Section 3.7 of this report. Behavioural change measures aimed at encouraging residents and employees to cycle on Little Island are detailed in Section 3.8.

Strategic Aims

3.3.6 The overarching **aims** of the Little Island Walking and Cycling Strategy are to:

- Create a culture of walking/cycling where everyone walks/cycles more often as part of their everyday commute/travel and for recreation and well-being
- Generate better quality walking/cycling environments with attractive, well designed and managed built and natural spaces for everyone; and
- Enable easy, convenient and safe independent mobility for everyone.

3.3.7 To achieve the above aims and a multi-modal sustainable transport network for Little Island, the route maps and subsequent design in Section 3.7 needed to address a number of active travel considerations. Footways and cycleways need to:

- Be well planned, physically accessible and sustainable
- Be **green and healthy** by reducing the impacts of transport on the environment and local residents/employees**;** promoting Active Travel with roads/streets appropriately designed for their functions, and with an emphasis on encouraging walking and cycling to reduce vehicle congestion and improve air quality.
- Be **accessible and connected** locally and regionally, enabling easy access for employment, education and all other amenities and services.
- Be **smart and efficient** providing direct, unconvoluted routes
- Be **inclusive and integrated** whereby everyone can get to and around Little Island regardless of income or disability.
- Be, and perceived to be, **safe, secure and comfortable**, so that people feel able to move around by walking and cycling.
- Be **effectively maintained** to enhance and maximise the facilities of Little Island and ensure continued use.

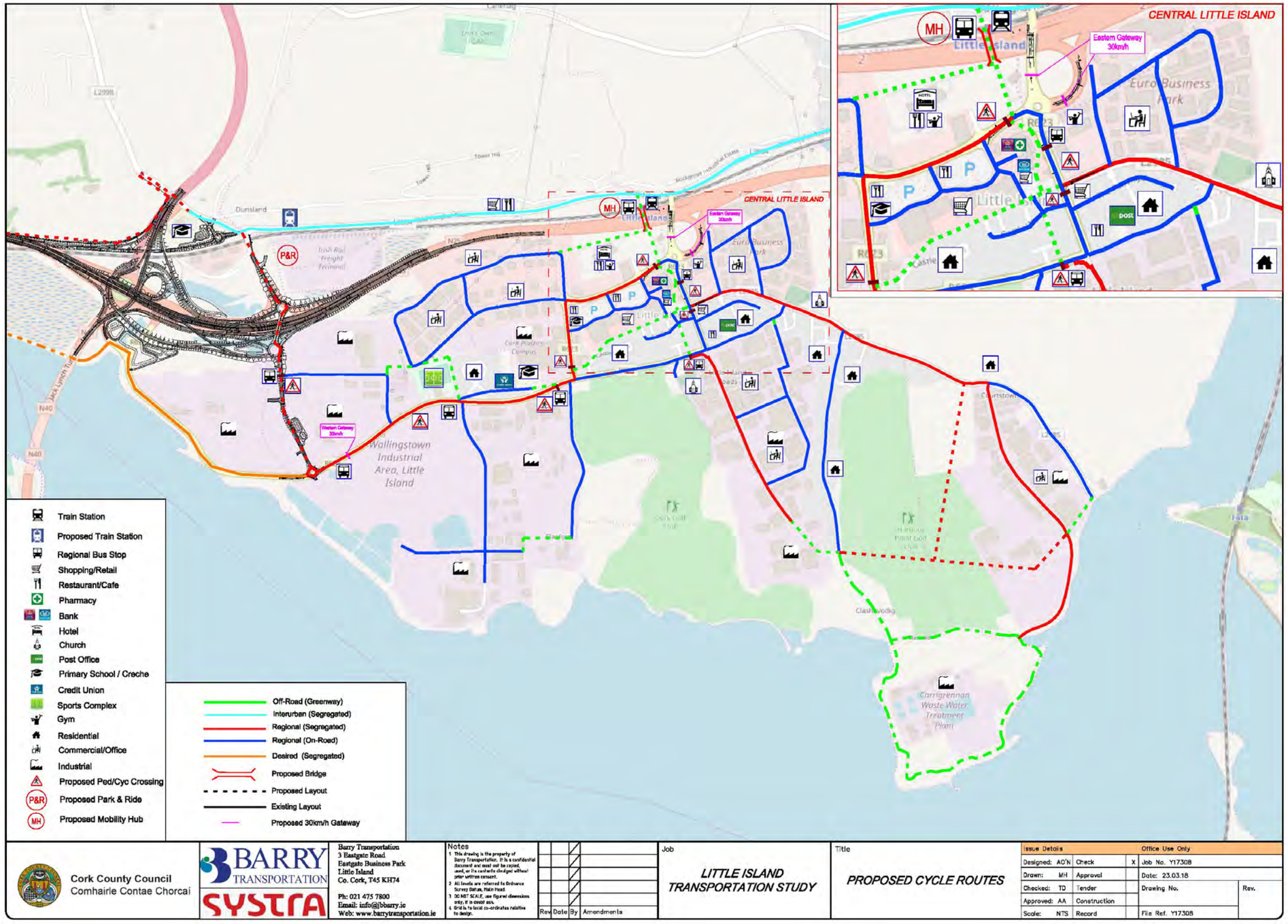


Figure 3.6 Proposed Cycle Routes

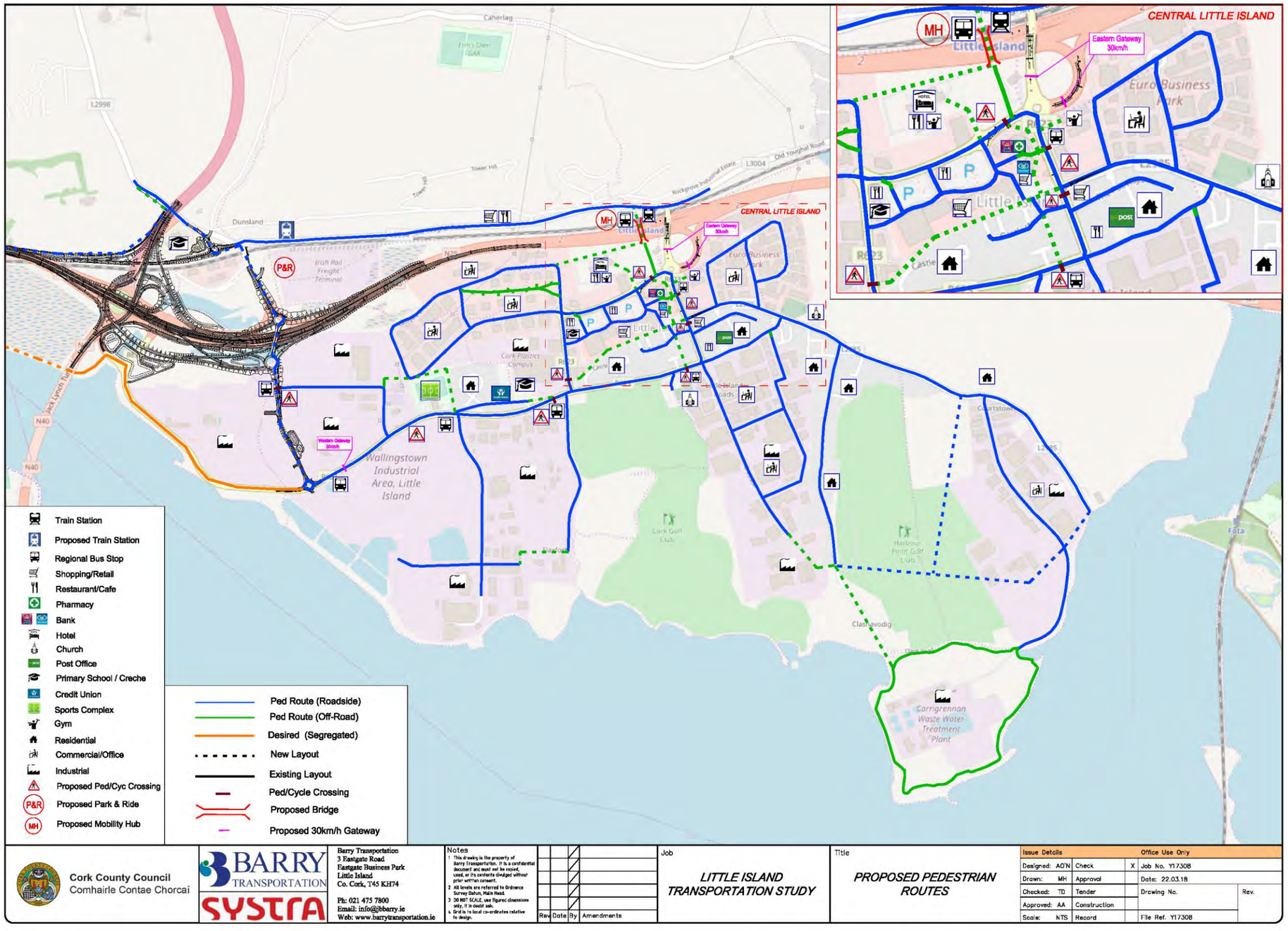


Figure 3.7 Proposed Pedestrian Routes

Objectives and Targets

3.3.8 As outlined in the Cork Cycle Network plan, currently 0.7% of trips to work in Little Island are by bike. As set out in the Cork Cycle Network Plan, the overall mode share target for Little Island (Metropolitan Towns) is 5%. This includes cycling trips to work and to the Primary School:

- Cycling trips to work to increase from 0.7% to 5%; and
- Primary school cycling trips to increase from 0.5% to 2%.

Strategic Actions

3.3.9 In addition to section 3.3 Public Transport Strategy, the following measures aspire to achieving a viable alternative to the private car for travelling to/from/within Little Island. These measures aim to promote walking and cycling and will help realise a modal shift for residents, employers and employees in Little Island.

3.3.10 This strategy aims to transform conditions for walking and cycling enabling more people to regard it as a realistic travel choice. The strategy proposes hard infrastructural measures to increase connectivity, comfort and convenience for cyclist travelling to/within Little Island as well as soft behavioural measures.

Traffic Reduction

3.3.11 As Little Island is the origin/destination for all vehicle trips, it is well known locally that Little Island experiences very heavy traffic congestion during peak hours. The development of the road and street hierarchy along with the traffic modelling, identifies the need to reduce the dependency on single journey car trips and create streets which have a multi-purpose function providing greater emphasis on pedestrians, cyclists and public transport. This is achieved through the upgrading and development of priority bus corridors and the east-west/north-south pedestrian/cycle links through the central part of the island.

3.3.12 Due to the industrial and commercial nature of Little Island as a strategic employment zone, a high percentage of traffic movements in and around the area consists of HGV traffic. One of the aims of the walking and cycling strategy is to reduce the impact of HGV traffic within Little Island to create a safer, more attractive environment for pedestrians and cyclists, while still maintaining an appropriate level of HGV access to the industrial areas. This has been achieved through the creation of a comprehensive cycle network consisting of, where feasible, cycle tracks remote from the road network (for example the central spine from the train station) and on road cycle lanes.

3.3.13 The provision of safe on-road cycle lanes has been achieved through the reallocation of road space, reducing lane widths and minimising corner radii at junctions. The implementation of a 30kph speed limit will be identified with repeater signage and road surface roundels on the main routes used by HGV drivers, namely the R623 and the L2985. This could potentially be supported by Variable Message Signs at the entrance to the Island (with repeaters at sensitive areas e.g. in front of the National School) to alter drivers of their speed and to slow down if necessary. The above combined measures will help reduce HGV speeds to create a safer and more pleasant environment for pedestrians and cyclists.

Speed Reduction

3.3.14 As mentioned previously, and following the hierarchical design approach, there is a proposed 30kph speed restriction on the roads and streets on Little Island. Its proposed to locate the 30kph gateways at both the eastern and western entrances, thereby reducing the speed of all roads in the central and most populated areas of the island.

3.3.15 Figure 3.7 illustrates the locations of both gateways and Figure 3.8 provides a cross-section of the proposed western gateway on the R623.

3.3.16 The limiting of speeds where high levels of interaction between vehicular traffic and vulnerable road users exists, has obvious benefits for the safety of all road users. By reducing speeds, the risk of accident and the severity of those accidents are greatly decreased.

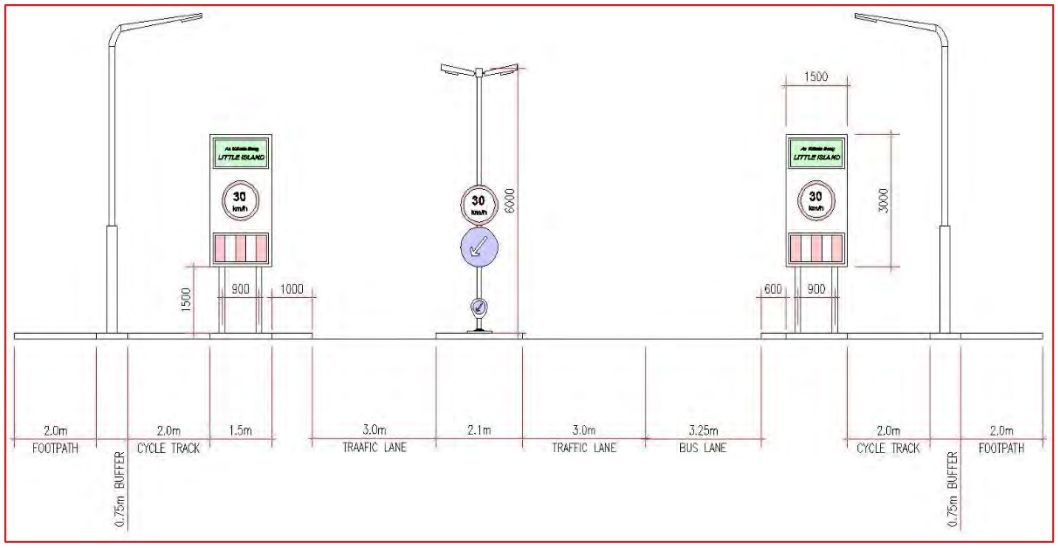


Figure 3.8 Proposed Western Gateway

3.3.17 Lower speeds will also provide environmental benefits by reduced traffic noise which benefits the local environment. The lower speeds also improve the perceived safety of the area which in turn makes it more attractive for walking and cycling.

Reallocation of Road Space

3.3.18 Section 3.7 of this report outlines detailed information on specific pedestrian and cycle infrastructure introduced on a corridor by corridor basis. Figure 3.9 below illustrates an example of road space reallocation to provide pedestrian and cyclist facilities on both sides of the carriageway. The reallocation of road space to include pedestrians and cyclists makes them conspicuous to other road users and acknowledges them as a form of traffic. This creates further awareness of pedestrian and cyclists decreasing the risk of conflicts with vehicles.

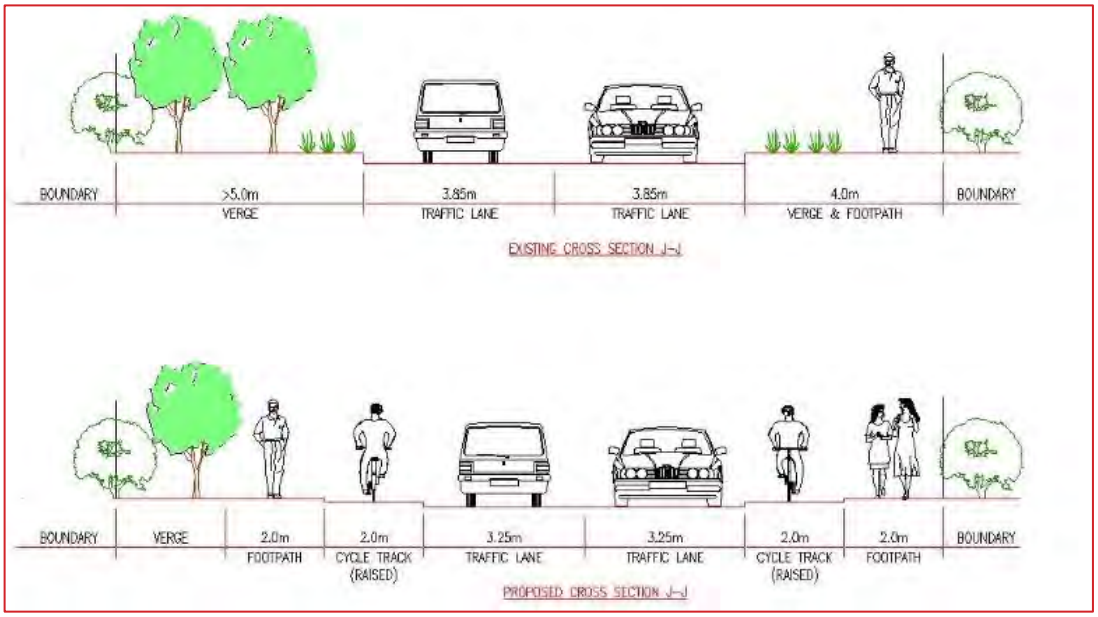


Figure 3.9 Road Space Reallocation

Segregated Facilities

3.3.19 Segregated walking and cycling facilities have been proposed forming a central axis through the central core of Little Island; the North-South and East-West Links. The North-South Link runs from the Mobility Hub in the north of the island to Island Cross while the East-West link provides a safe connection from the residential areas in the east to the school in St. Lappan's Place to the west. Figure 3.10 illustrates the proposed links at a high level.

3.3.20 The narrow streetscape of some roads such as the R623 on approach to and through Island Cross make it difficult to provide dedicated cycle lanes in these areas due to constraints on both road boundaries. As such, a shared use, segregated pedestrian/cycle facility (Greenway) has been developed to follow the main arterial route (R623). The Greenway is intended to provide a safe environment for pedestrians and cyclists completely segregated from traffic through central Little Island.

3.3.21 During the 2nd public consultation, concerns were raised regarding the social and safety aspects of including the Greenway adjacent to the Church Court Residential estate. The concerns raised during the consultation are acknowledged and legitimate and will be

addressed during the route design process in close partnership with the residents of Church Court and Castlewood.

3.3.22 The design will be fully cognisant of anti-social behaviour issues. The use of quality street design, including pavement design, street furniture and planting will be carefully selected to deter potential incidents of anti-social behaviour / loitering. High quality public lighting will be designed to ensure surveillance of any vulnerable areas without causing shadows or glare, which can significantly minimise potential danger spots and reduce the fear of crime. A CCTV monitoring system will be installed to deter access to the rear of properties fronting the proposed Greenway, increase public safety and provide the public with a sense of security. This will provide 24/7 surveillance and monitoring.

3.3.23 As part of any future Part 8 planning application, the Council will work closely with the residents of Castlewood and Church Court to address all safety concerns.

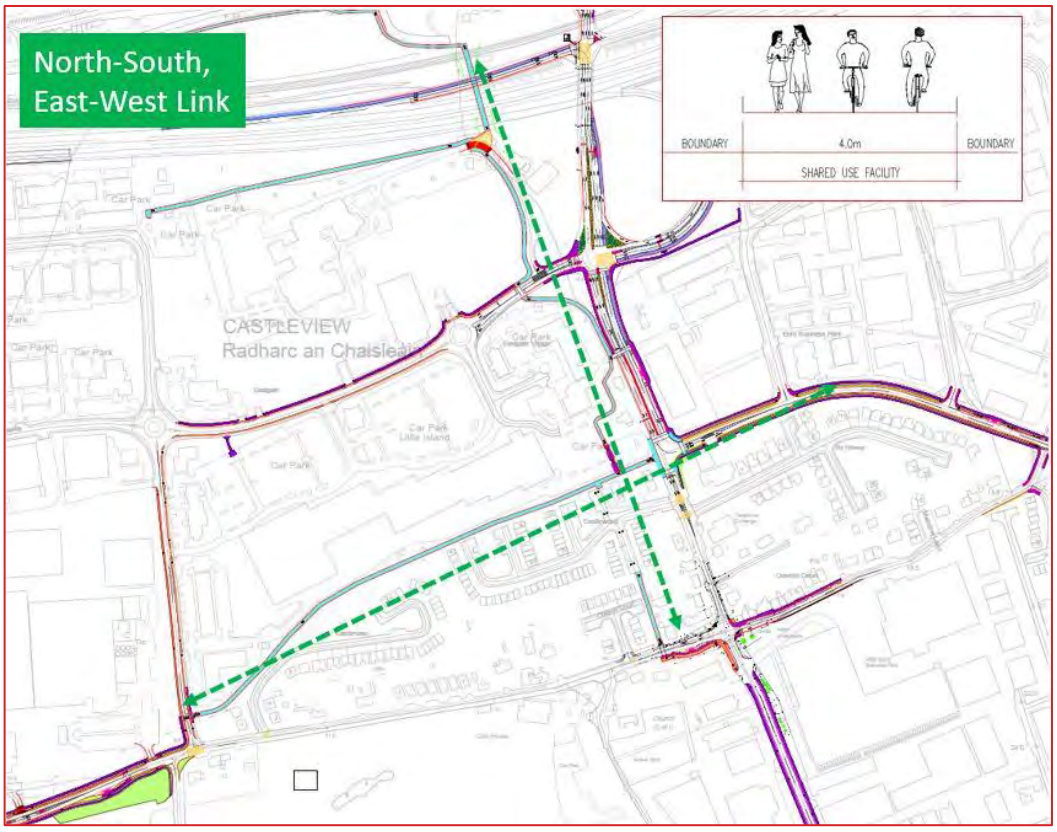


Figure 3.10 Proposed Segregated Facilities

3.3.24 Where the greenway ties in with the roads and other users, appropriate crossing facilities and connections to segregated/on-road cycle facilities have been included in the design enabling easy and comfortable access to employment, education and all other amenities/services in the area. Figure 3.11 illustrates an example of one of the options for a segregated cycle link on the L2985 Ballytrasna Park.

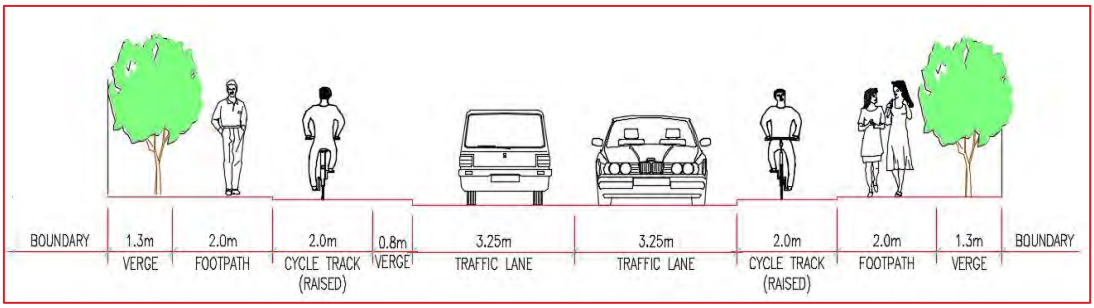


Figure 3.11 Segregated Cycle Link

Pedestrian/Cycle Link Bridge

3.3.25 As part of the proposals, a pedestrian/cycle bridge will be located adjacent to the existing train station. The train station forms part of the 'Mobility Hub' which encompasses the station, vehicle and cycle parking and a shuttle bus stop. The proposed bridge will provide an accessible, safer and direct route for pedestrians and cyclists. It will significantly shorten the journey time between the train station and the Eastgate commercial park making the option of commuting by train more attractive to employees. This introduces a choice for employees enabling them to travel part of their journey by walking or cycling. Figure 3.12 illustrates the location of the proposed Mobility Hub and pedestrian/cycle bridge.

3.3.26 This bridge is an integral part of the north-south link connecting to the east-west link in central Little Island. This will provide a safe and comfortable route enabling local resident to access the train station efficiently.

3.3.27 Cycle parking will be provided at strategic locations throughout Little Island such as the Mobility Hub and retail areas. Individual companies will be encouraged to provide increased cycle parking facilities at the workplace.

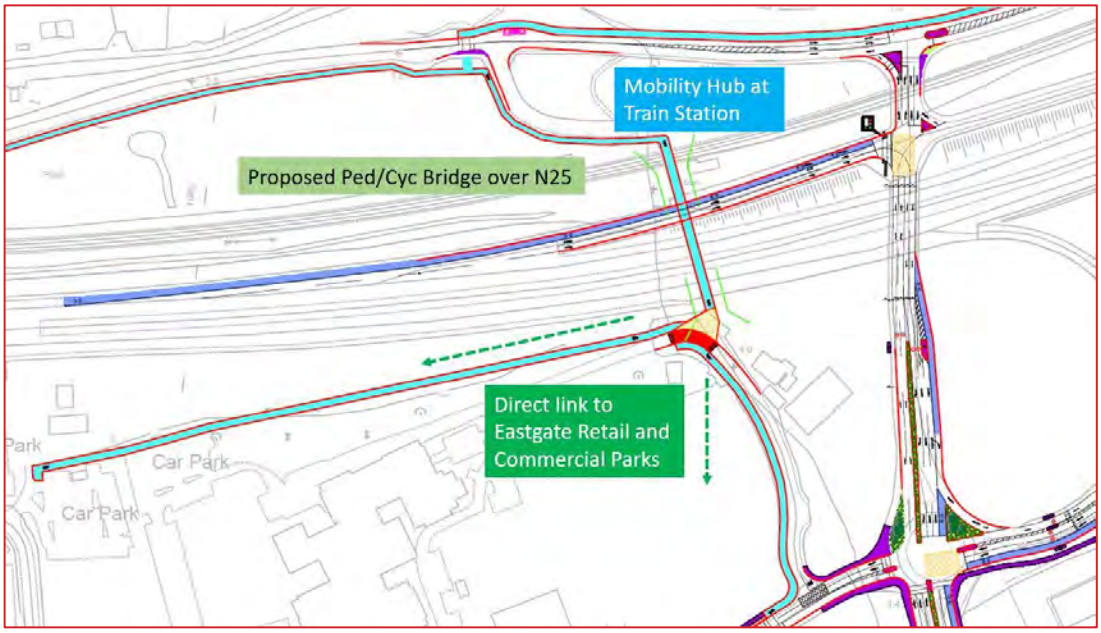


Figure 3.12 Mobility Hub and Ped/Cyc Link

Additional Crossing Points and Improved Connectivity

3.3.28 Local knowledge and observations from site visits identified several routes with high pedestrians and cyclists, irrespective of the presence of footpaths or crossing points. Additional crossing points and footpaths connecting pedestrians/cyclists with their destinations were included at the locations identified. Figure 3.13 indicates an example of a proposed crossing point and footpath where pedestrians have been observed waiting or walking. Toucan crossings have been located where there is expected to be a high level of cycle activity on the network.

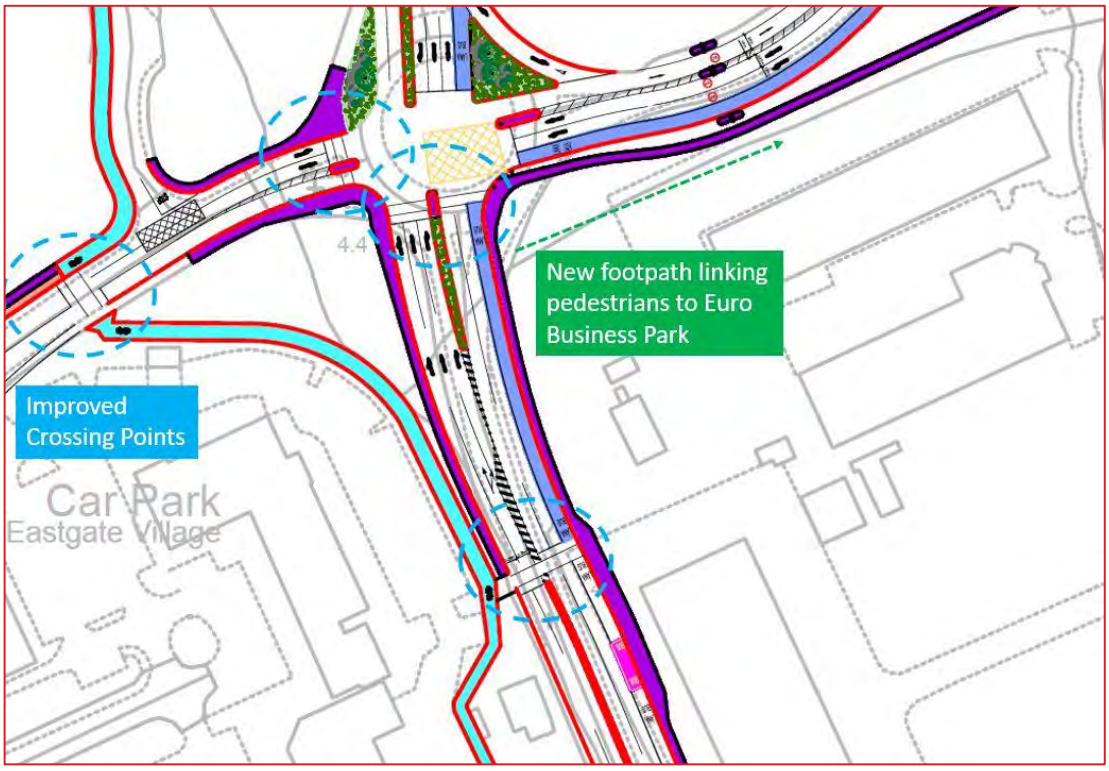


Figure 3.13 Example of Proposed Crossing Points

Junction treatment and provision of at-grade crossings

3.3.29 Many of the junctions throughout Little Island were not designed to prioritise pedestrians and cyclists, resulting in difficult/unsafe road crossings points on several routes. The lack of connectivity reduces the attractiveness of walking, inhibiting residents and employees from choosing this mode of travel. Improved junction treatments, designed following the principles set out in DTTAS's and DECALG's 'Design Manual for Urban Roads and Streets' and the NTA's 'National Cycle Manual' will help provide a safer environment for pedestrians and cyclists.

3.3.30 The junction upgrades have been designed to provide improved safety, accessibility and connectivity for pedestrian and cyclist movements, in particular, for vulnerable users such as school children and the mobility/visually impaired.

3.3.31 An example of these junction upgrades is illustrated in Figure 3.14 below. One example is the Crompan roundabout; it is proposed to signalise the junction incorporating a dedicated pedestrian phase for crossings pedestrians and advanced stopping lines for cyclists. For further information, including design rationale, the reader is referred to Section 3.7 of this report.

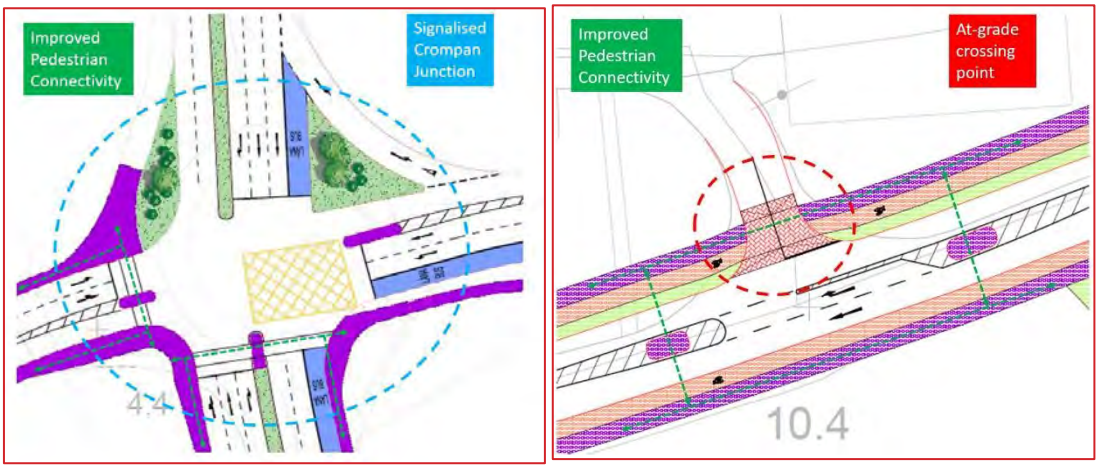


Figure 3.14 Example Junction Upgrade

Improved pedestrian and cycle routes on existing desire lines

3.3.32 From site observations, it is clear there are a number of desire line routes particularly in and around the Eastgate Area. Figure 3.15 illustrates an example of a path worn into the grassed area indicating the desire line pedestrians and cyclists take from the train station through the Crompan roundabout and towards the retail area in Eastgate Village.

Figure 3.15 Improved Desire Lines

3.3.33 As part of the measures, a more direct route is proposed from the train station to the rear of the retail area along the north-south link. This reduces the walking distance between the train station and Eastgate Village with appropriate facilities and safe crossing points on the desired route.

Wider Cycle Network

3.3.34 The Little Island Walking and Cycling Strategy takes cognisance of other proposals for the study area including the development of the surrounding 'Interurban' cycleways as per the 'Cork Cycle Network Plan 2017'.

3.3.35 Tivoli and the Docklands area have the potential for future redevelopment and a desired route linking these areas to Little Island as well as Cork City has been included within the plan. Tie in with the proposed cycle route through the new Dunkettle Interchange and on the Glounthaune Road offer access to the wider regional area. Figure 3.16 illustrates an example of the cycle link tying into the wider network on the Glounthaune Road.

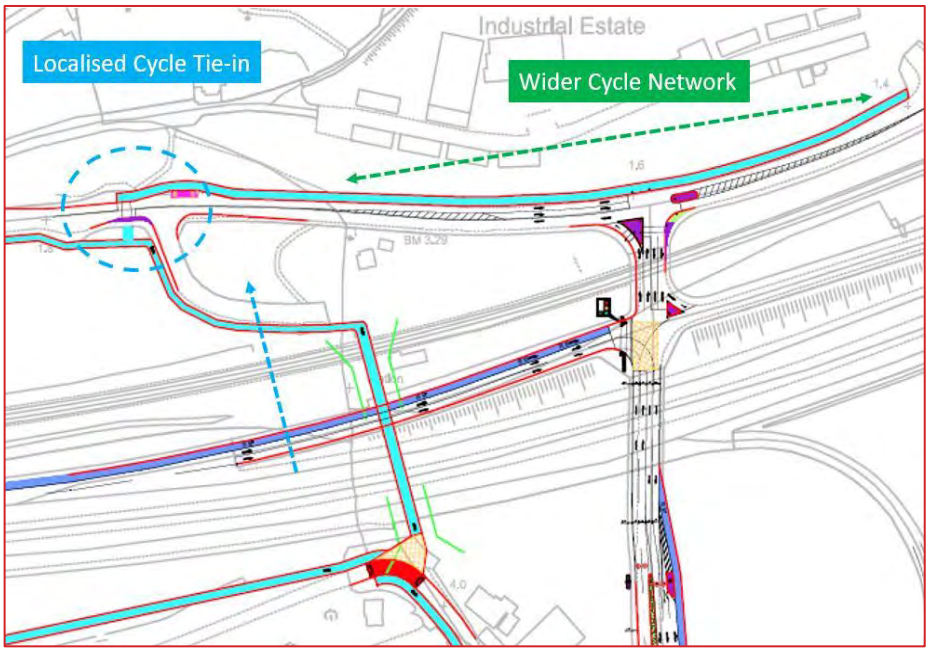


Figure 3.16 Cycle Link Tie-In

Soft Measures

3.3.36 To increase behavioural changes, a number of soft measures are outlined to influence a modal shift towards away from single vehicle trips towards an increase in active travel.

- Promoting and marketing travel by bike;
- Increasing mutual awareness and respect between cyclists, pedestrians and other road users;
- Training primary school children to ride bikes to help mainstream cycling as a form of transport; and

Working with private employers and key stakeholders to provide cycle parking facilities/showering facilities and lockers/changing rooms within individual work places.

Walk and Cycle Strategy – Key Recommendations:

- Reduction of speed limit to 30kph to enhance cycle/pedestrian safety and provide an environment conducive to cycling/walking;
- Provision of an island wide network to facilitate cycle and pedestrian movement by:
  - Reallocating road space to include ped/cycle facilities
  - The creation of a 'greenway' forming a central axis through Little Island
  - Inclusion of the Pedestrian/Cycle bridge linking Eastgate to the Train Station
  - Improved pedestrian/cycle routes on existing desire lines
- Provision of improved cycle and pedestrian crossing facilities at significant junctions by:
  - Inclusion of additional crossing points and improved connectivity; &
  - Junction treatment and provision of at-grade crossings
- Implementing a suite of measures to influence behavioural change.
- As part of the detailed design of the Church Court cycle route, consultation with the residents of Castlewood and Church Court to discuss and mitigate safety concerns will be undertaken.
- As part of the Part 8 design for the individual schemes, the appointed design team will take account of the detailed submissions provided by the Transport & Mobility Forum (TMF) cycling organisations (Cork/Dublin Cycling Campaign; Cycling without Age) and individuals during the 2nd Public Consultation. This will help inform the detailed design further from a user's view point.
- It is recommended, if feasible, provision is made for the inclusion of a walking/cycling route adjacent to the former Mitsui Site along the waterfront .

Benefits of Walking and Cycling Strategy:

- Increased area-wide connectivity with direct, comfortable and attractive cycleways/footways;
- Improved connectivity between schools and residential areas, to assist with promoting sustainable school travel;
- Safer facilities for pedestrian/cyclists with increased priority for both pedestrians and cyclists;
- Improved accessibility to public transport; and
- Improved vibrancy throughout Little Island.

3.4 School Travel Strategy

Introduction

3.4.1 The only school within Little Island is the National School, located on St. Lappan's Place. Other schools in the area, outside Little Island, include Scoil Naisiunta an Chroi Naofa (Glounthaune Primary School), located North East of Little Island outside the village of Glounthaune and Gaelscoil Ui Drisceoil (Primary School), located North West of Little Island adjacent to the M8.

3.4.2 The following sections of this chapter outline initiatives to promote active travel for pupils and reduce dependency on cars for the school-run. Although not directly located in Little Island, Gaelscoil Ui Drisceoil and Scoil Naisiunta an Chroi Naofa could adopt measures to assist pupils walking/cycling to school, reducing dependency on the private vehicle for the school-run.

3.4.3 Consultation with the management of the Little Island National School was held in December 2017 to gain an understanding of the travel patterns and issues associated with the daily school-run. It is evident from discussions that the school pick up/drop off adds to local congestion on the road network, particularly during the AM peak.

Little Island National School

3.4.4 There are currently 200 pupils attending the National School with 15 full-time and 3 part-time staff. The school building is open from 08:00 to 16:00, with classes from 08:30 to 14:30.

3.4.5 The school has implemented an initiative to encourage pupils to walk, cycle or scoot to school under the Green Schools Programme. Cycle parking facilities (15-20 spaces) exist close to the school building, however, the pedestrian/cycle facilities in the vicinity of the school and surrounding network are poor and lack safe and appropriate crossing points in many areas.

3.4.6 A comprehensive review of the consultation and comments received is provided within the *'Little Island Transportation Study – Strategic Development Report'*. The following paragraphs outline the key issue raised regarding active travel and suggestions put forward to encourage more sustainable transport modes among children to improve traffic flow around the school.

3.4.7 One of the main issues highlighted during the consultation was the lack of safe pedestrian facilities on the road network, restricting the number of children who might otherwise walk or cycle to school from local residential areas.

3.4.8 As well as existing issues, proposed solutions were discussed to alleviate current problems.

Suggested Solutions

- Include provision for a roundabout or right turn lane on the R623 to improve access and slow down traffic;
- Improve turning areas on St. Lappan's Place;
- Appropriate warning signage approaching the R623/St. Lappan's Place junction;
- Realign and extend the existing car park for additional parking and set down. Provide direct access (one-way system) to/from the car park;

- Extend the existing footpath from St. Lappan's Place to the Little Island sports complex, including appropriate accessibility features and lighting;
- Include and improve pedestrian facilities on route from the school to the Church, Golf Club, Radisson Hotel and local historical sites;
- Give pedestrians increased priority at the nearby Cork Plastics entrance; and
- Improve general access to Little Island at the eastern gateway.

Little Island Primary School - Travel Strategy

3.4.9 The Little Island School Travel strategy aims to reduce congestion at the school by developing facilities which provide safe and convenient routes for children and parents to cycle/walk to the school. Local infrastructure changes are included at the junctions closest to the school to reduce traffic speeds and provide a safer environment for all users.

3.4.10 Traffic calming measures on existing streets throughout Little Island have been designed to assist in reducing traffic speeds to make cycling and walking for children/parents safer and a realistic option for school journeys.

3.4.11 Proposed priority bus corridors will reduce travel times for public transport and school buses, providing more parents with the option of sending children to school using public or private buses.

3.4.12 Many of the suggestions outlined during the consultation with school management are incorporated into the School Travel Strategy. The following paragraphs outline some of the design measures included to improve connectivity, accessibility and safety for people travelling to the school.

Improved Connectivity

3.4.13 Many of the actions detailed in the Walking and Cycling Strategy compliment the requirements of the School Travel Strategy. One of the issues identified during consultation included the lack of connectivity to amenities and services for the school.

3.4.14 Appropriate controlled crossing facilities and continuous footpaths have been designed to provide a direct route from east to west and north to south. The proposed 'Greenways' and improvements to roadside infrastructure provide a safe and convenient walking/cycling route for school pupils, parents and teachers to other areas of Little Island. (See Figure 3.17) The 'Greenways' provides a clear connection from the residential areas in the east to the school in the west.

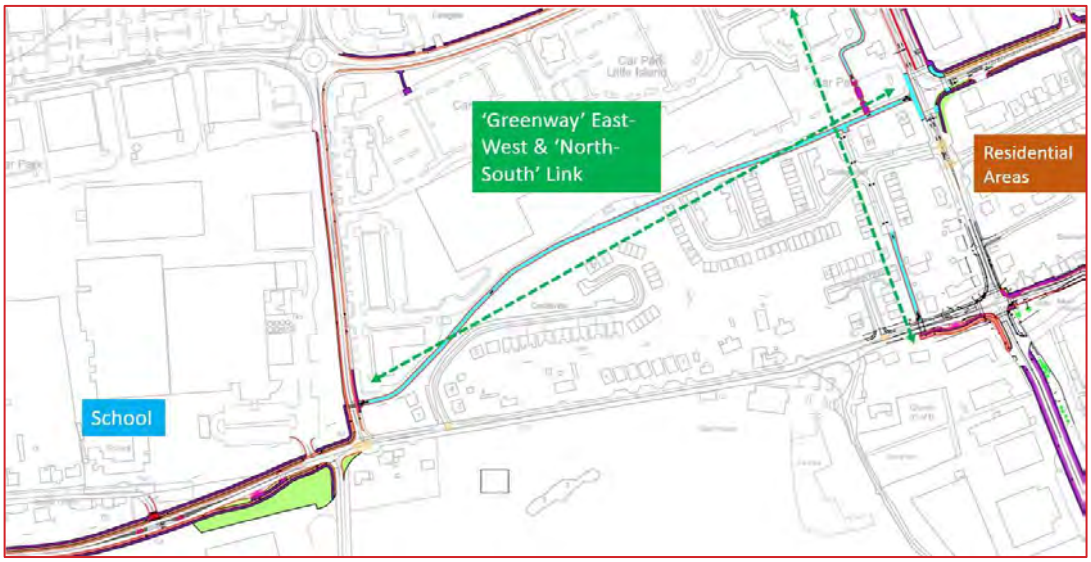


Figure 3.17 High Level View of East-West, North-South Greenways

Speed Reduction Measures

3.4.15 A number of measures have been introduced at the junction of St Lappan's Place to reduce vehicle speeds approaching the school. As discussed with school management, a right turn lane has been introduced which will prevent right turning vehicles blocking through traffic. It also enhances safety for the waiting vehicles. Raised traffic islands have been included to stream traffic flows, reduce speeds and assist pedestrians crossing where appropriate. (See Figure 3.18) Associated public lighting and landscaping will be included in the final detailed design to make the junction more conspicuous to vehicles.

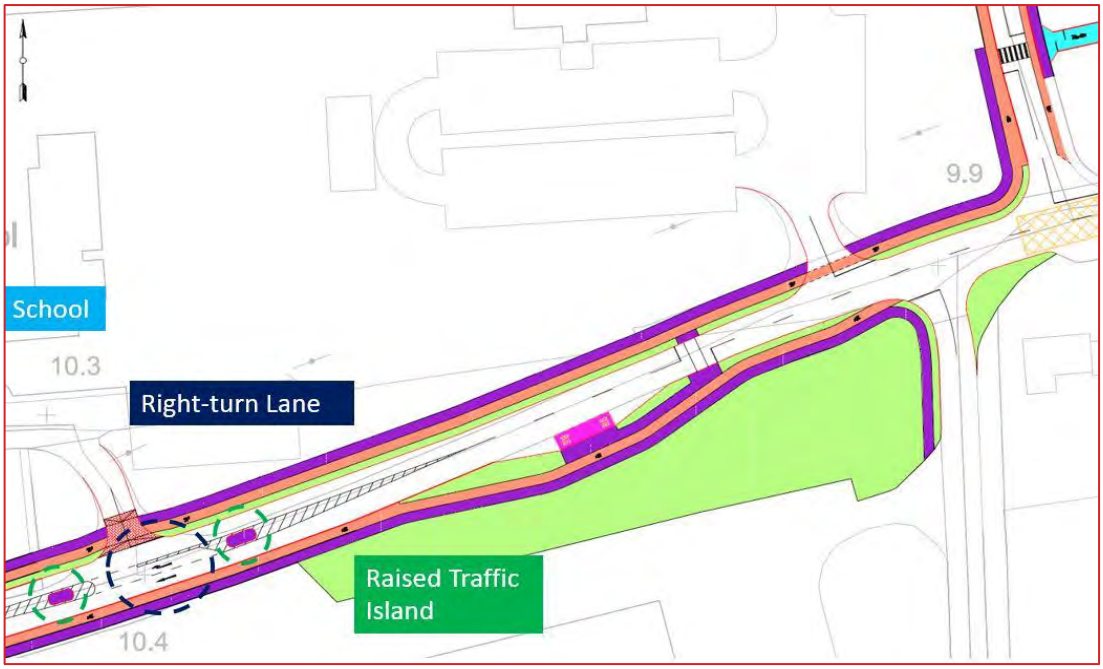


Figure 3.18 Location of Right-Turn Lane and Raised Traffic Islands

Toucan Crossings and Bus Stop

3.4.16 Toucan crossings have been strategically located where there will be a high crossing demand. These include where the 'Greenway' meets the segregated/on-road cycle and walking facilities and behind the proposed bus stop close to the school.

3.4.17 The inclusion of demand led traffic signals for pedestrian/cyclists will have a positive effect of not only improving junction capacity but also curtailing and controlling traffic speeds whilst allowing pedestrians and cyclists a designated time to safely cross the road. Figure 3.19 below illustrates the location of two crossings, one of which is located behind the bus stop across from the school on the R623. This provides a safe and direct access for pupils travelling by public transport.

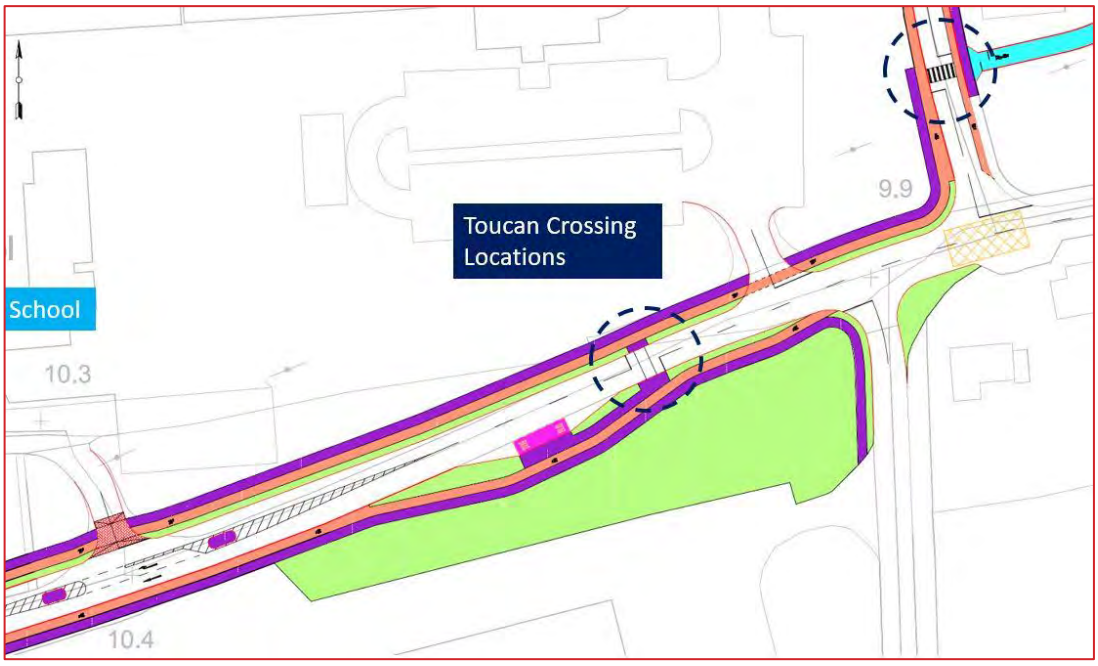


Figure 3.19 Location of Toucan Crossings

Raised Crossings and Tighter Corner Radii

3.4.18 A raised crossing has been included in the design of St. Lappan's Place which will slow vehicles when entering the junction and give pupils and parents informal priority at the junctions. The corner radii of the entrance to Cork Plastics and St. Lappan's Place have both been reduced to shorten the crossing distance for pedestrians at these junctions. Figure 3.20 illustrates the locations of both junctions incorporating reduced corner radii and a raised crossing.

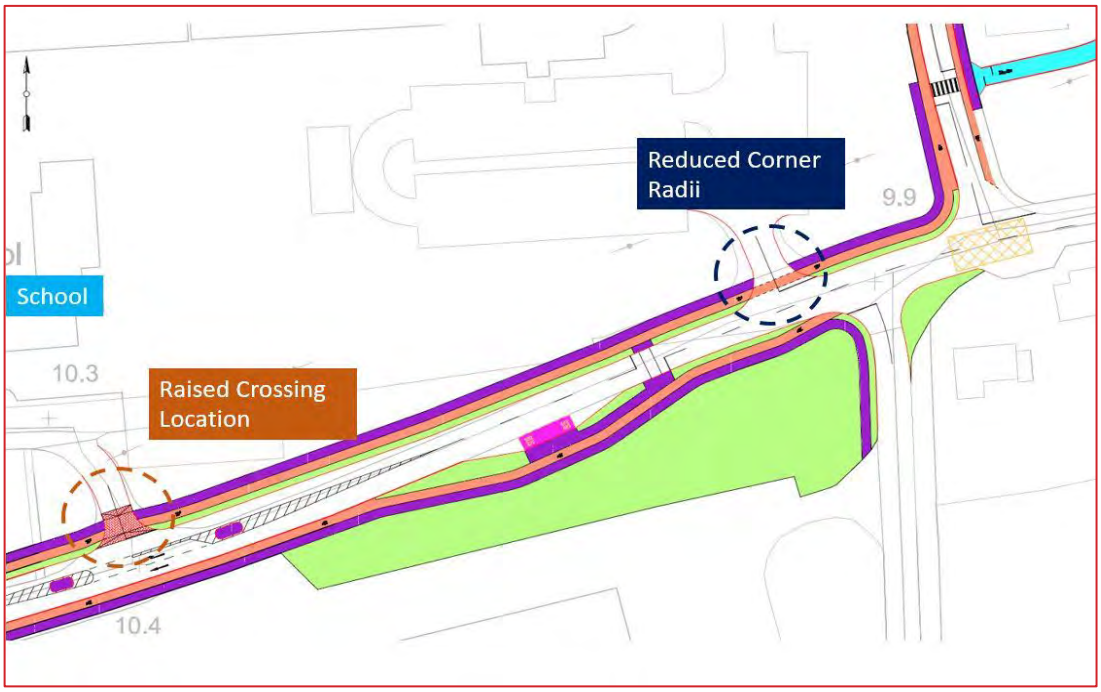


Figure 3.20 Raised Crossing and Reduced Corner Radii

3.4.19 Further to the 'hard' infrastructure measures, there are numerous 'soft' measures that could be employed to further promote active travel amongst school pupils. At present, the school management undertake many 'Green-Schools Travel Initiatives'. The following sections detail further 'soft' measures which can be adopted by schools to help promote active travel.

3.4.20 The 'Green-Schools Travel Initiative' encourages pupils and parents to walk, cycle, Park n Stride, use public transport or car pool instead of using the private car on the school-run. It provides a 'Toolkit for School Travel' which promotes the four key sustainable modes of transport:

- Walking;
- Cycling;
- Public transport; and
- Car-pooling.

Walking

3.4.21 Walking is a great way for pupils to travel to school and get around the locality. It instils active travel from an early age and incorporates exercise easily into their daily routine. As well as the health benefits to children, it also helps reduce noise and air pollution. Further actions which the school could use to promote walking include:

- Raising awareness of walking – introduce poster competitions, promote local walking trails and the health benefits of walking;
- Creating an incentive – create prizes for the top walker, healthy breakfast morning for all those who choose walking, etc;

- Developing an initiative – pick a day that people are invited to walk to school and then promote it, e.g. Walk on Wednesday (WOW). This could be linked with raising awareness and creating an incentive;
- Walking Bus – A walking bus is run by a group of adult volunteers who walk a route to/from school, stopping off at certain points to collect and drop children off;
- Fancy Dress/Themed Walks – organise fancy dress walks to school or go for a nature walk, for example at Halloween, around certain times of year;
- International Walking Events – promote Green-Schools National Walk to School Week which takes place in May and international Walk to School month which occurs in October;
- Networking – Speak to the Local Authority and Community Gardai about managing parking and traffic outside the school or to improve pedestrian infrastructure in your area;
- Carrying out a Walkability Audit – involves students and teachers walking around their school or local area with clipboards, paper and a camera to 'log' areas for improvement.

Cycling

3.4.22 Cycling has many benefits which are not just limited to health, happiness and the local environment. Cycling emits less pollution than other modes of transport. The National Transport Authorities School Travel Kit sets out many best practice measures and actions which can help schools promote cycling:

- Cycle training – teach students to become experienced and confident cyclists by undertaking cycle training courses during or after school time;
- Raise awareness – introduce poster competitions promoting local cycling routes and cycle parking locations;
- Create an incentive – pick a day to invite people to cycle and then promote it, e.g. Cycle on Wednesday (COW). This could be linked to raising awareness and creating an incentive;
- Cycle parking – each school will need somewhere safe and secure to leave bicycles. The bicycle parking will need to be suitable, so bicycles can be locked by their frames (not the wheels), near entrances, covered and well-lit with people passing by;
- Bike doctor – Bike maintenance classes are a good way to encourage children to use their bikes on the journey to school; and
- Bike Week – National Bike Week takes place every June.

Public Transport

3.4.23 Public transport can cater for longer distance trips that may not be possible on foot or bike; however, walking and cycling can be used alongside public transport. As more public transport services come online, the school could:

- Raise awareness – introduce poster competitions to encourage people to use public transport, highlight the benefits and display public transport timetables;
- Create an incentive – create prizes for the people to use public transport;
- Talks on public transport – invite a local representative from a bus or rail company to talk about public transport (for example, how to read timetables, how to board, how to flag buses, fare structures and how to pay) and responsible behaviour when using such transport.

Car Pooling

3.4.24 If walking, cycling and public transport are not suitable options, then organising a car pool or car share scheme may be a viable and sustainable alternative. The 'School Travel Toolkit' sets out many best practice measures and actions which can help schools promote car sharing:

- Information day - have an information day at a school. This could be incorporated into a sustainable travel open evening where people can be invited to pin their details and location on a map allowing for connections to be made between potential car poolers;
- Coffee mornings - 'No pressure' meetings or coffee mornings give people a chance to get together, find out what's involved and see if it's for them.
- Raise awareness – information days to get people thinking about car shares and perhaps getting them interested;
- Create an incentive – Reward schemes for parents who car-share, such as allowing them to access parking easier than those who don't car share.

Scheme Promotion

3.4.25 The Green Schools Programme suggests that in order to promote sustainable travel to a school, it's necessary to have a dedicated 'champion' who can give their time on a regular basis. The 'champion' can be a teacher or parent or both. The role of the 'champion', or committee, is to promote walking, cycling, public transport and car sharing to the school through initiatives and actions, as well as to garner support from the wider community.

Summary and Conclusion

3.4.26 There is not a high concentration of schools in the Little Island area, however, school traffic contributes to congestion on the road network surrounding the school, particularly in the drop-off and collection periods.

3.4.27 The Little Island Primary School Travel Strategy includes a significant number of infrastructural improvements to provide safer, more direct and continuous routes to school for pupils, parents and staff. Appropriate walking/cycling routes are established through the designs from the school to local amenities throughout Little Island. Additionally, bus priority lanes are designed to provide provision for a regional bus service to operate in Little Island.

3.4.28 All schools in and around Little Island can adopt and implement the 'Green Schools Travel Initiatives' outlined above to further support sustainable travel. A mix of the "hard" and "soft" measures will provide increased opportunity for sustainable school travel

School Travel Strategy – Key Recommendations:

- Improved connectivity for pupils, parents and teachers through the proposed East-West, North-South 'Greenways' and junction improvements;
- Speed reduction measures at the School Junction to increase safety, including:
  - A right-turn lane for vehicles at St. Lappin's Place junction;
  - Raised traffic islands; and
  - Improved public lighting
- Improved pedestrian and cyclist facilities at junctions approaching the school including:
  - Toucan crossings;
  - Raised pedestrian crossings; and
  - Tighter corner radii
- Implementing further behavioural change initiatives to encourage the use of public transport, walking and cycling amongst pupils, teachers and parents;
- Inclusion of a public bus stop near the school.

Benefits of School Travel Plans/Initiatives:

- Improved health and fitness among pupils, parents and staff;
- Improved concentration levels among pupils who walk and cycle;
- Safer access and journeys to school for all with appropriate infrastructure;
- Increased road safety awareness;
- Reduced traffic congestion and pollution in the vicinity of the school;
- Improved community awareness among pupils, parents and staff; and
- Increased parent-child interaction among parents and children who cycle/walk to school.

3.5 Parking Strategy

Proposed Strategy Aim

3.5.1 The challenge of improving access to Little Island without increasing congestion highlights the need to encourage a change in travel behaviour away from the car where possible and to promote more sustainable modes of transport including cycling, walking and public transport. Parking management is an effective tool which can assist in this aim.

3.5.2 The parking strategy for Little Island works in conjunction with, and supports, the other recommended transport actions that form the integrated transport strategy for Little Island with the central aim to reduce single occupancy car journeys.

3.5.3 The following section outlines the proposed actions which have been developed to meet the aim of the parking strategy.

Parking Strategy Actions

3.5.4 The main element of the proposed parking strategy is the provision of a mobility hub at the existing train station and a longer term park and ride facility at the proposed North Esk train station. The mobility hub at the train station will include an extension to the existing well utilised parking area, either through the form of a multi-storey car park or extension to the surface parking. The mobility hub will support the proposed investment in public transport services and walking infrastructure, enabling motorists to park and utilise the frequent shuttle bus for travel on island or park and use the proposed walking / cycling footbridge to access nearby Eastgate Business park. This will capture a proportion of motorists entering Little Island, thereby helping to ease traffic volumes and congestion on the internal road network. Figure 3.21 illustrates the location of both proposed facilities.

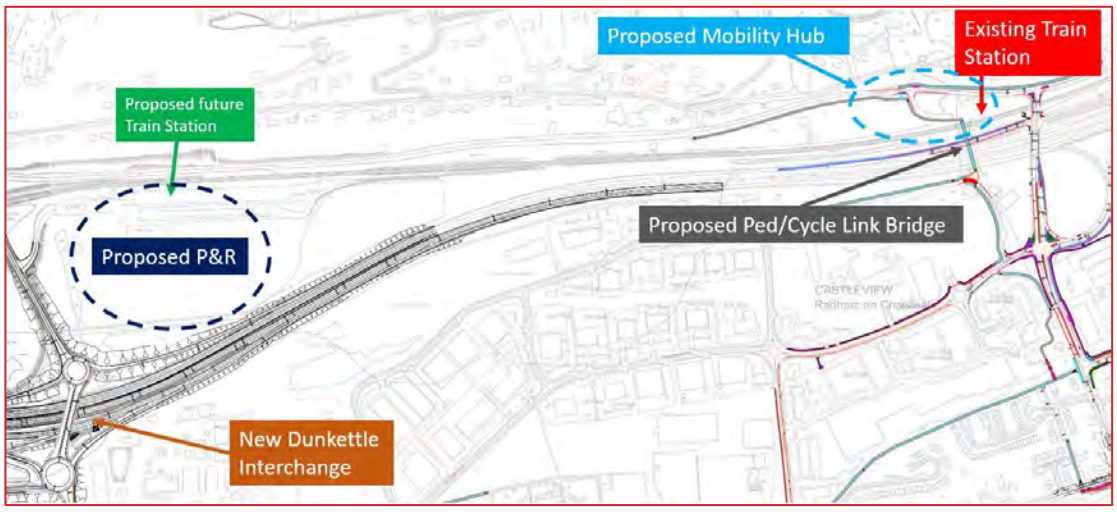


Figure 3.21 Location of Park & Ride and Mobility Hub

Localised Island Cross Parking

3.5.5 To improve the existing parking conditions for motorists using the local amenities at Island Cross, a number of measures have been included in the design to widen the existing carriageway and provide an improved public realm, wider footpaths and dedicated parking facilities to enable easier access to the existing shops and services. Figure 3.22 illustrates the measured included in the designs at Island Cross.

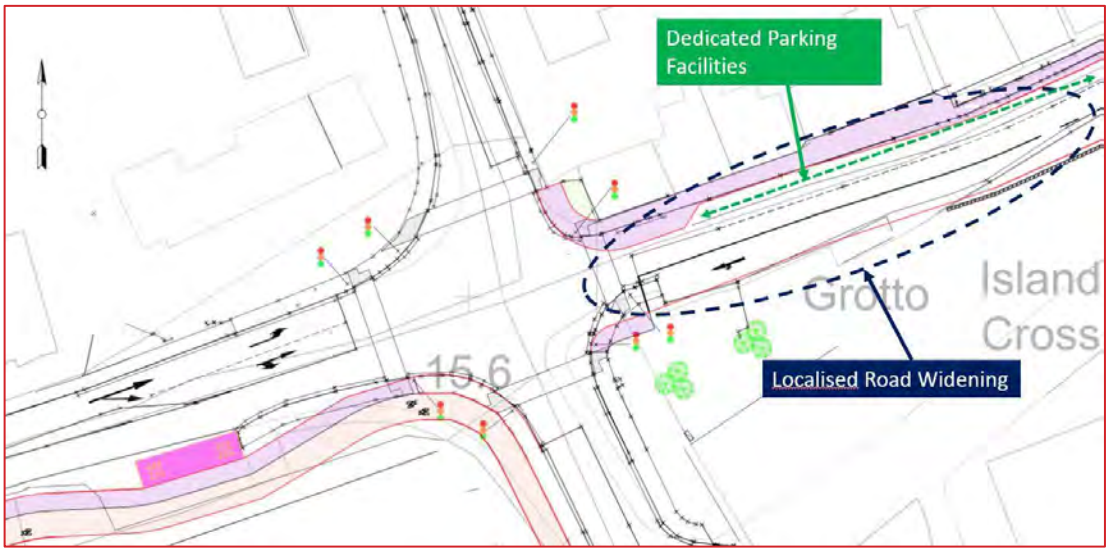


Figure 3.22 Dedicated Island Cross Parking

3.5.6 During the 2nd public consultation, a request was made to increase and formalise parking at Carrigrennan playground. As part of the delivery of the recommended waterfront amenity walk, it is recommended that the suitability of the parking facilities at the Carrigrennan playground be examined..

Parking/Planning Standards

3.5.7 In tandem with the investment in sustainable transport infrastructure, it is an objective of the parking strategy to reduce the quantum of workplace parking spaces permitted (compared to CCC Development Plan Standards) for future developments.

3.5.8 The reduction in permissible parking spaces as part of the planning process will help promote alternative travel options and the use of remote parking as detailed above.

3.5.9 In support of the reduced parking provision, it would be a requirement of the development company to produce and submit a detailed travel plan as part of a planning application. The reduction of parking for future developments will be mitigated through the increased investment in public transport. Further information on travel planning is contained in section 3.8 of this report.

Cycle Parking

3.5.10 As previously mentioned in the Walking and Cycling Strategy, cycle parking will be provided at strategic locations throughout Little Island such as the Mobility Hub and retail areas.

Provision will be made for secured, covered, long-term bike parking at the Mobility Hub for those who want to park and bike, without having to take their bike on the train/car/bus. Individual companies will be encouraged to provide increased cycle parking facilities at the workplace.

Parking Strategy – Key Recommendations:

- Intercepting traffic through the introduction of Park & Ride Facilities and a Mobility Hub;
- Introduction of a frequent shuttle bus with dedicated bus priority measures servicing the Park and Ride and the Mobility Hub. The service will travel throughout Little Island;
- Development of the Pedestrian/Cycle Link bridge to facilitate park and bike/walk from the Mobility Hub:
- Local road widening and dedicated parking facilities at Island Cross;
- Enforcing restrictions on illegally parked HGV's and vehicles in residential areas;
- Providing strategically located cycle parking facilities throughout Little Island.
- Provision of secured, covered, long-term bike parking is provided for those who want to park and bike or train and bike, without having to take their bike on the train/car/bus.
- A review of the suitability of the parking facilities at the Carrigrennan playground should be undertaken.

Benefits of Parking Strategy:

- Balanced approach encouraging a move away from car travel wherever possible and promoting more sustainable modes of transport including cycling, walking and public transport;
- The parking strategy aims to intercept traffic prior to the eastern and western gateways, reducing traffic volume entering Little Island;
- Both park and ride, and park and bike/walk, remote parking facilities aim to reduce congestion in central Little Island;
- Promotes more sustainable transport options as part of employee's daily commute; and
- Provides regional road network benefits, whereby wider commuters (i.e. travelling to the city from East/North) can park and ride (train) to reduce traffic pressure and make the city centre environment less car dominated.

3.6 Network Upgrade Plan

Introduction

3.6.1 The review of baseline conditions in the *Little Island Strategy Development Report* identified a number of locations within the network that require attention in order to enhance the overall network performance. A number of infrastructural measures are proposed which aim to bring significant improvement to the operation of these junctions in terms of movement and safety for all road users.

3.6.2 In total 9 junctions and sections of road were identified for improvement as part of the Little Island Transport Study (refer to Figure 3.7.1). The following section outlines the network upgrades proposed including an overview of current issues and design rationale. Also noted, are the various modes which are positively impacted by the proposed junction upgrade designs represented by the following symbols:

Enhancements to cycle facilities to provide for the safe movement of cyclists

Enhancements to Public Transport to improve pedestrian access

Enhancements to pedestrian facilities to provide for the safe movement of pedestrians

Enhancements to improve efficiency of traffic movement

3.6.3 A number of the proposed improvements are relatively minor in nature, i.e. raised road level, build out of footpaths, provision of pedestrian crossings etc., and as such, detailed modelling assessments were not carried out at these locations.

3.6.4 At junctions where larger infrastructure changes were proposed, or where a number of potential options were available, a more detailed analysis was undertaken using microsimulation and individual junction capacity models, using 2040 forecast year traffic flows extracted from the Little Island Local Area Model. Where appropriate, the results of these modelling analysis are summarised in the junction tables.

3.6.5 It should be noted that while the following section provides illustrations of proposed junction designs, more detailed drawings are provided at a larger size in Appendix A of this report.

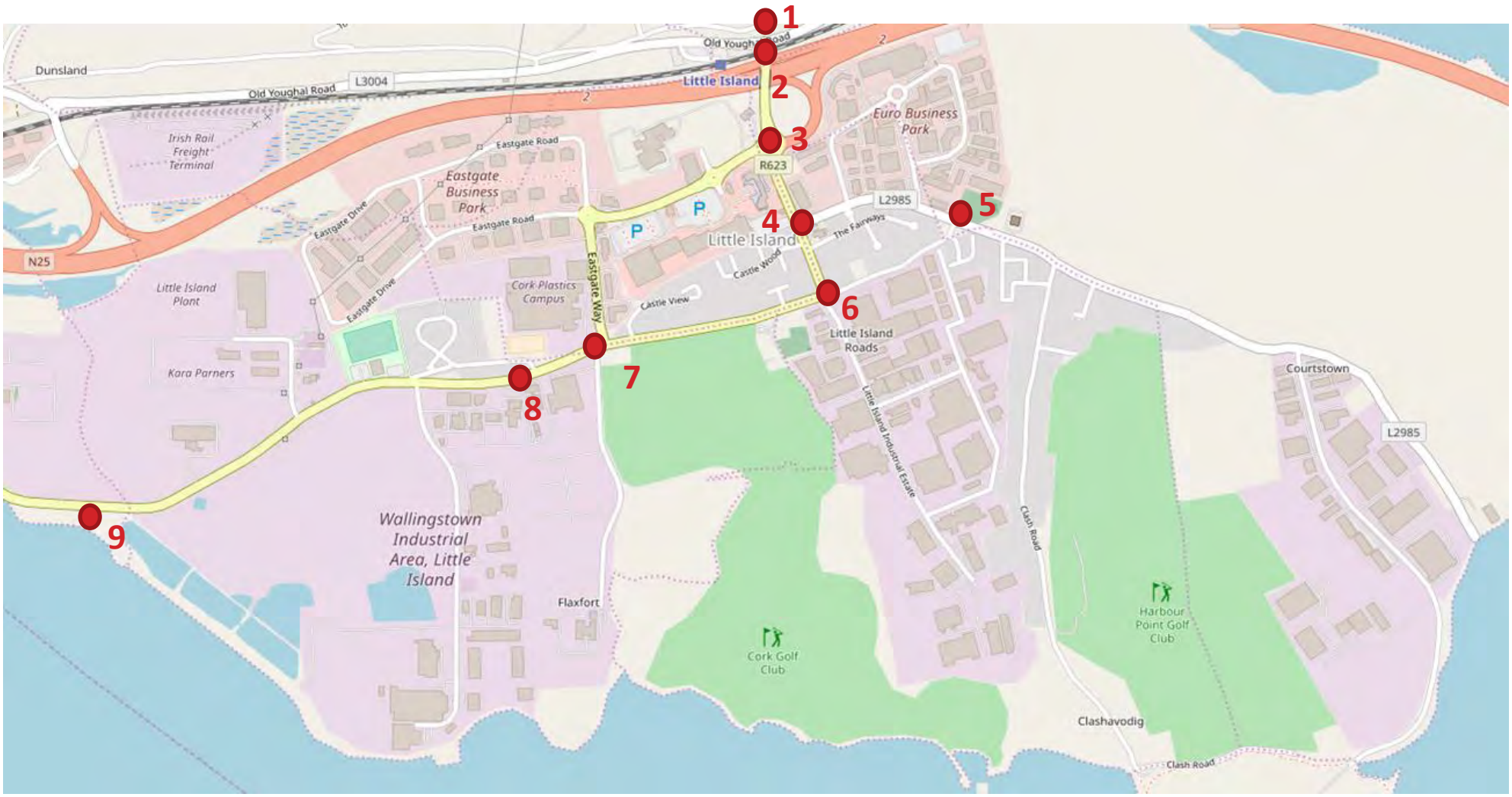


Figure 3.23: Road Network Improvement Location Map

N25 Bridge to Glounthaune Road Junctions (Jnts 1 and 2)

Current Issues

- Peak hour traffic congestion.
- No bus service provision.
- Poor cycle and pedestrian connectively with the Glounthaune Road.

Design Rationale

- Slip road widened to provide for a dedicated bus lane with bus priority at the signals.
- Additional right turn lane on the eastbound slip road with additional receiving lane on the N25 bridge to accommodate high volume of right turning traffic from N25 onto the Island.
- Road widening and lane re-allocation on the railway bridge to reduce traffic congestion
- Possibility to signalise the Glounthaune Road junction in the future and link to the N25 traffic signals to improve capacity and improve pedestrian safety through implementation of controlled crossing facilities.
- Improved pedestrian facilities by way of providing 4.0m wide cycle track on the northern side of the Glounthaune Rd in line with the Cork Cycle Network Strategy providing safe and direct access to a proposed greenway bridge across the N25 at the train station.

Junction Performance

- Modelling analysis carried out using the Micro-simulation software (VISSIM) indicates that the junctions will operate satisfactorily during the AM and PM peak hours without any significant delays. Whilst queuing will extend back on the Glounthaune Road, as currently exists, it will not impact on the operation of downstream junctions. The implementation of linked signal timings and the potential use of MOVA[3] or SCOOT signal infrastructure will improve the operation of this junction and reduce estimated mean max queue lengths[4].

Arm (N25 Slip Road Junction)	Average Queue	Max Queue	Average Queue	Max Queue
N25 Off Slip	30m	135m	70m	156m
N25 Bridge	15m	72m	156m	230m
Rail Bridge	14m	62m	7m	51m

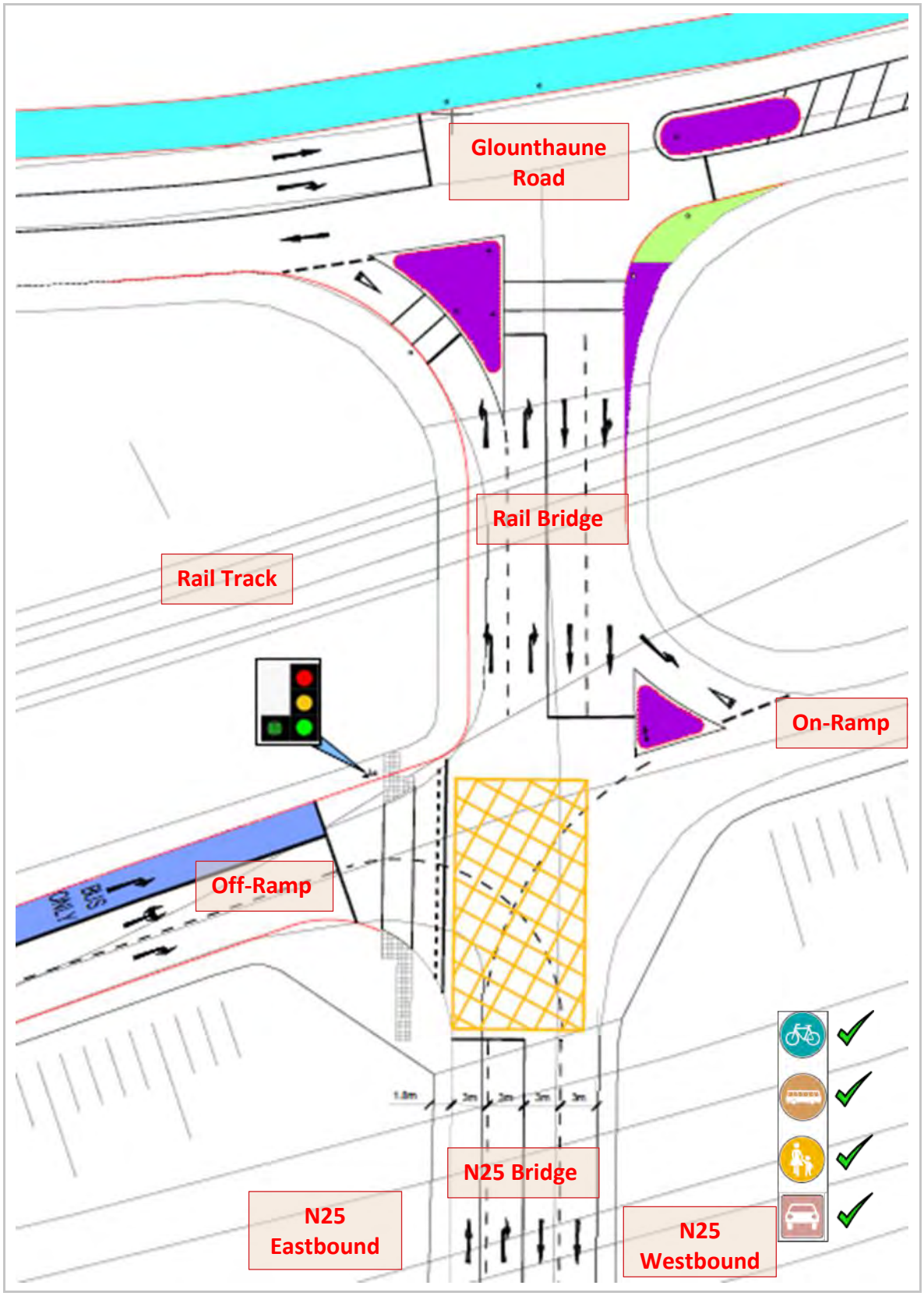
[3] Microprocessor Optimised Vehicle Actuation (MOVA) and Split Cycle Offset Optimisation Technique (SCOOT) are types of real time adaptive traffic control system for the coordination and control of traffic signals across an urban road network. These systems automatically adjust traffic signal timings to adapt to traffic conditions and maximise the throughput of the junction, thus reducing congestion and delay.

[4] The Mean Maximum Queue is the sum of the Maximum Back of Uniform Queue and the Random & Oversaturation Queue. It represents the maximum queue within a typical cycle averaged over all the cycles within the modelled time period.

N25 Bridge to Glounthaune Road Junctions (Jnts 1 and 2)

Arm (Glounthaune Rd Junction)	Average Queue	Max Queue	Average Queue	Max Queue
L3004 East	7m	85m	209m	400m
L3004 West	2m	31m	85m	218m
Rail Bridge	4m	67m	25m	68m

N25 Bridge to Glounthaune Road Junctions (Jnts 1 and 2)



The Crompán Junction (Jnt 3)

Current Issues

- Peak hour traffic congestion.
- No bus service and no bus priority.
- Poor pedestrian facilities.

Design Rationale

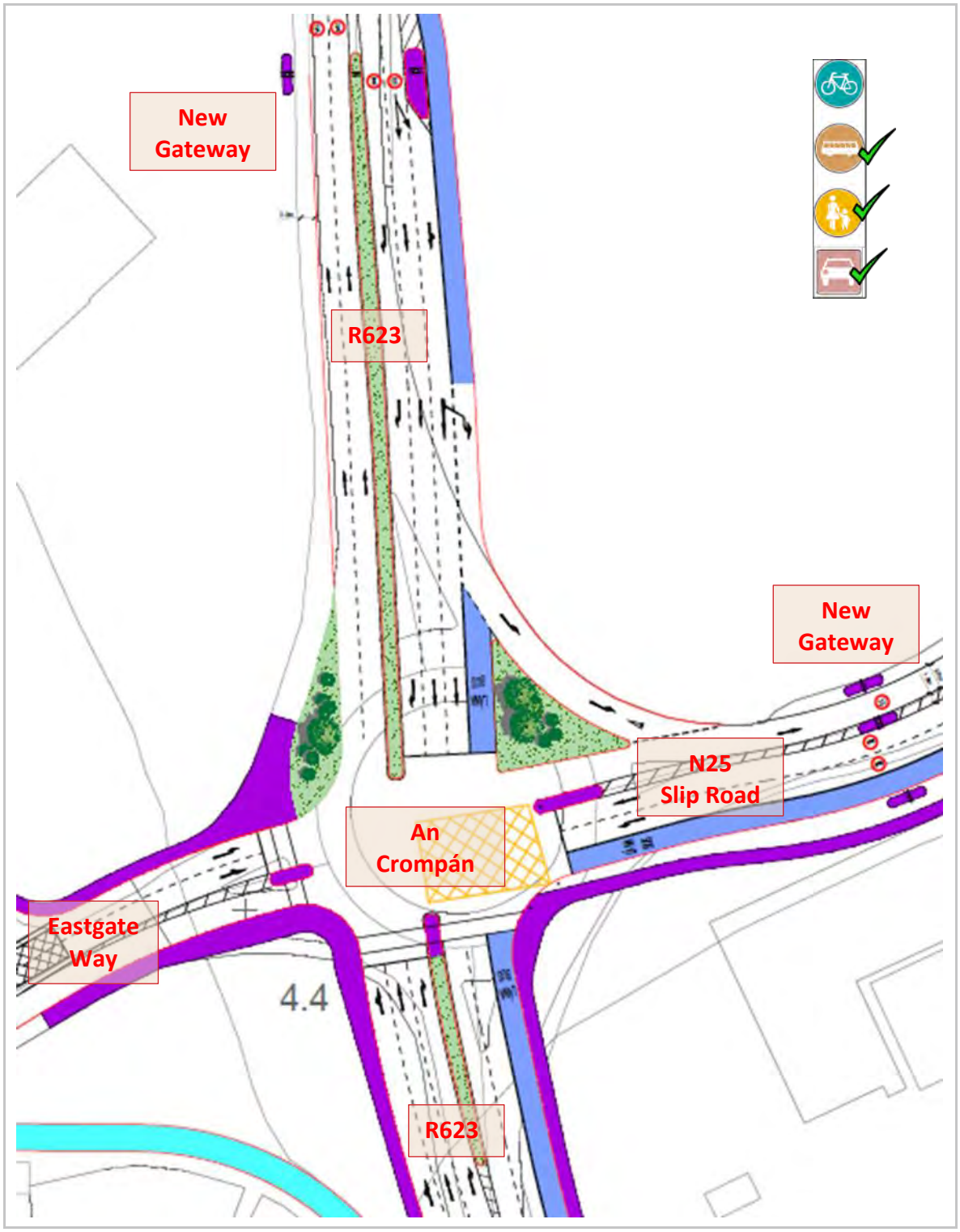
- Additional lanes added to maximise capacity.
- Traffic signal staging tailored for alternative peak hour flow periods and to allow for bus priority.
- Traffic signals linked to neighbouring signalised junctions to ensure continuity of traffic flow and avoid traffic queues blocking upstream junctions.
- Priority bus lane included.
- Pedestrian crossings added.
- Road median included to improve road safety.
- Additional landscaping prescribed to visually soften the enlarged junction.

Junction Performance

- Modelling analysis carried out using the Micro-simulation software (VISSIM) indicates that the junctions will operate satisfactorily during the AM and PM peak hours. Whilst queuing will extend towards the upstream junctions on the R623 during the peak traffic periods, queues will dissipate during each cycle.
- The implementation of linked signal timings and the potential use of MOVA or SCOOT signal infrastructure will improve the operation of this junction and reduce estimated mean max queue lengths.

ARM	Average Queue	Max Queue	Average Queue	Max Queue
R623 (North)	41m	200m	23m	82m
N25 Slip Road	36m	136m	4m	37m
R623 (South)	20m	66m	57m	189m
Eastgate Way	5m	44m	91m	174m

The Crompán Junction (Jnt 3)



Ballytrasna Park Junction (Jnt 4)

Current Issues

- Peak hour traffic congestion.
- No provision for bus services.
- Poor cycle and pedestrian facilities.

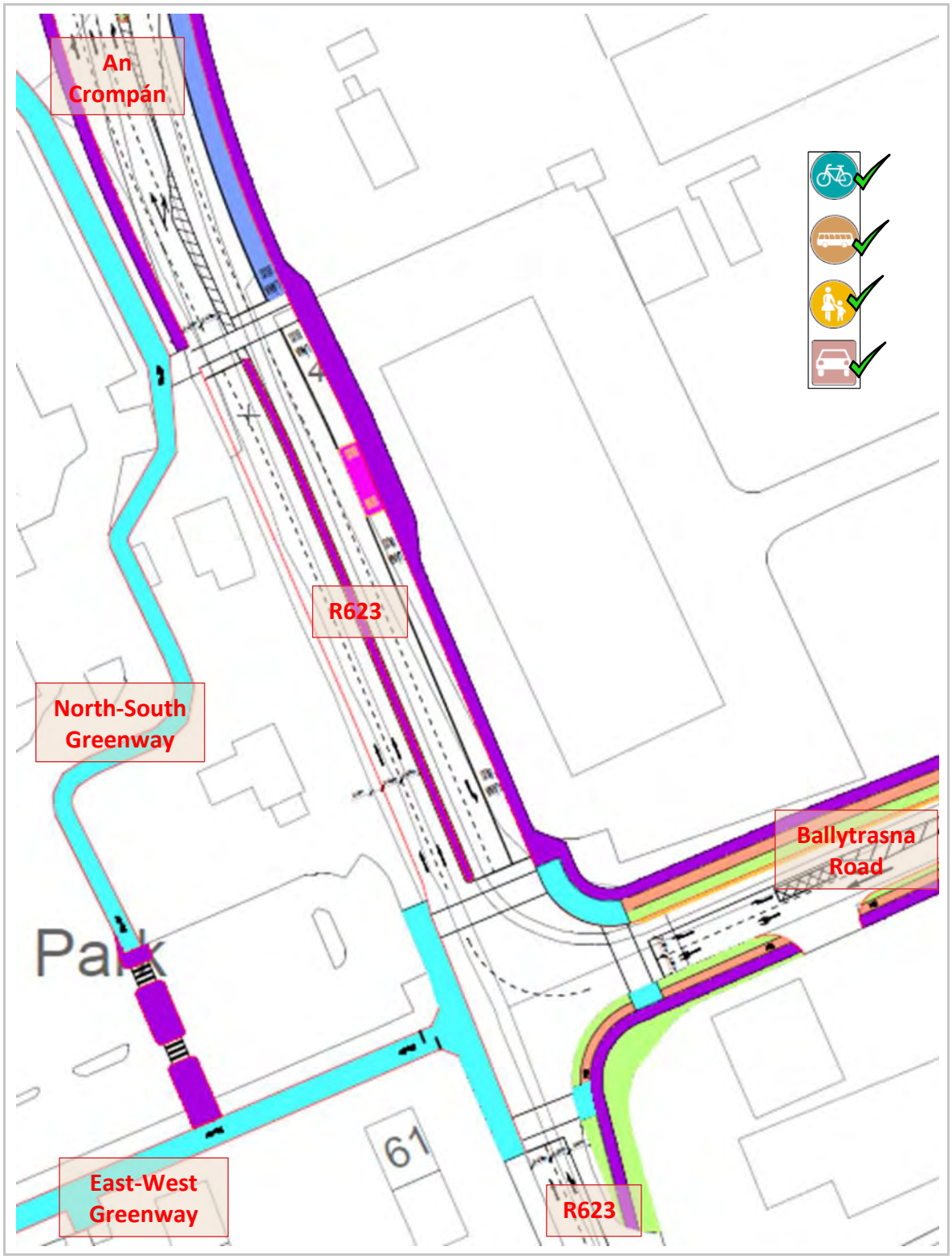
Design Rationale

- Additional lanes added to maximise capacity.
- Left turn green filter added to allow left turn traffic from Crompán to exit at the same time as the primary green stage for Ballytrasna Road.
- Traffic signals linked to neighbouring signalised junction to ensure continuity of traffic flow and avoid traffic queues blocking upstream junctions.
- Priority bus lane included.
- Bus stop strategically placed to access Eastgate and Euro Business Park.
- Pedestrian and Toucan (which includes for cyclists) crossings added.
- New road side cycle track integrated with greenway.

- Modelling analysis carried out using the Micro-simulation software (VISSIM) indicates that the junctions will operate satisfactorily during the AM and PM peak hours. Whilst queuing will extend towards the upstream junctions on the R623 during the peak traffic periods, queues will dissipate during each cycle.
- The implementation of linked signal timings and the potential use of MOVA or SCOOT signal infrastructure will improve the operation of this junction and reduce estimated mean max queue lengths.

ARM	Average Queue	Max Queue	Average Queue	Max Queue
R623 (North)	28m	166m	11m	95m
Ballytrasna Road	10m	77m	28m	130m
R623 (South)	3m	48m	19m	94m

Ballytrasna Park Junction (Jnt 4)



Island Cross Junction (Jnt 6)

Current Issues

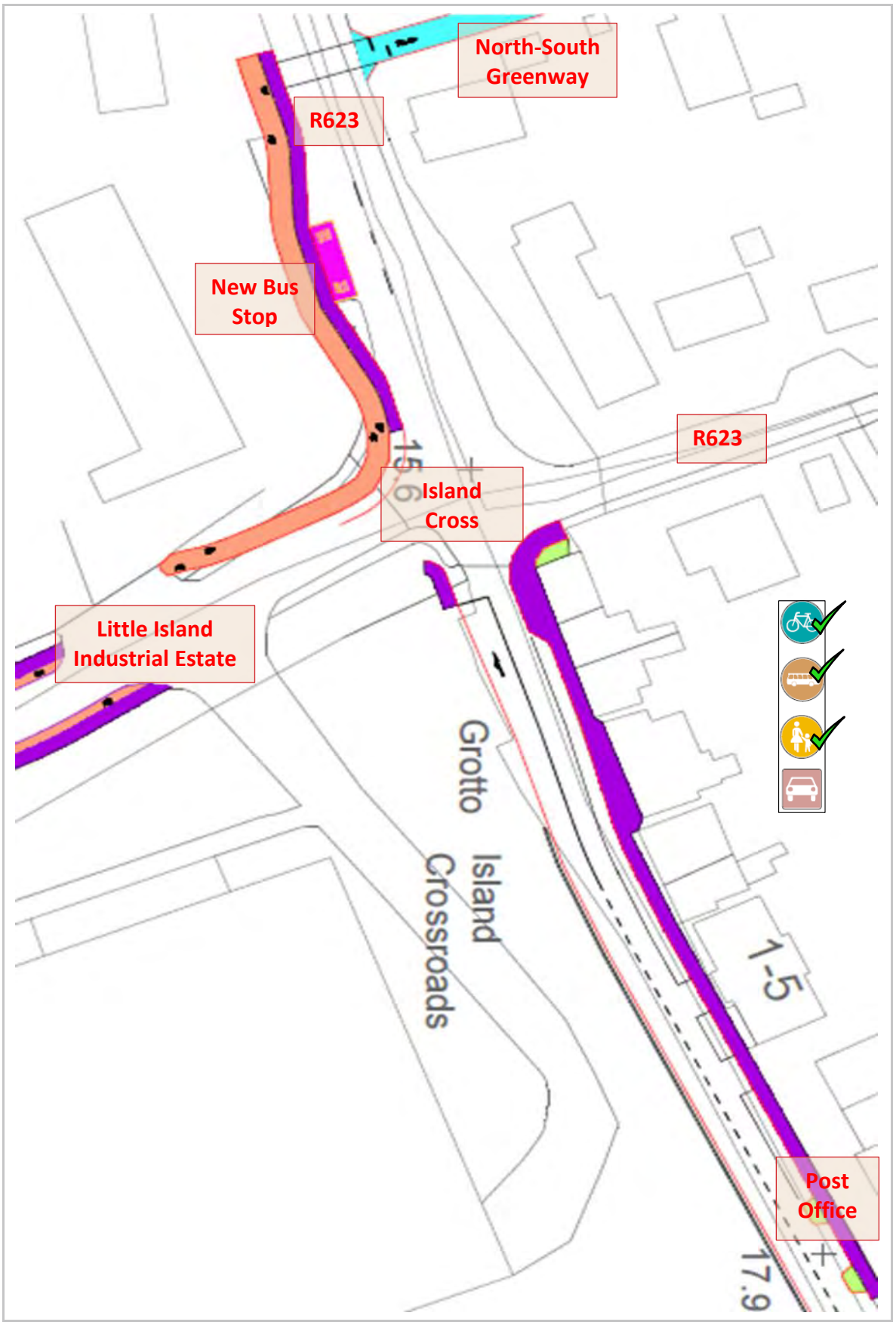
- Peak hour traffic congestion.
- No bus service and no bus priority.
- No cycle facilities.
- Poor pedestrian provision towards village centre (post office)

Design Rationale

- Bus priority provided by way of traffic signal call up and re-staging.
- Bus stop strategically placed to access business centres.
- Footpath widened, buildouts included, and roadside parking regulated.
- New amenity loop linked with bus stop and north-south greenway by way of new Toucan Crossing (used by pedestrians and cyclists) located immediately west of new bus stop (not shown on drawing inset) providing continuity for pedestrians and cyclists

- Modelling analysis carried out using the Micro-simulation software (VISSIM) indicates that the junctions will operate satisfactorily during the AM and PM peak hours. Whilst queuing will extend towards the upstream junctions on the R623 during the peak traffic periods, queues will dissipate during each cycle.
- The implementation of linked signal timings and the potential use of MOVA or SCOOT signal infrastructure will improve the operation of this junction and reduce estimated mean max queue lengths.

Arm	Average Queue	Max Queue	Average Queue	Max Queue
R623 (North)	32m	166m	7m	63m
R623 (West)	24m	99m	8m	54m
Little Island Industrial Estate	59m	136m	21m	99m
Post Office Road	19m	84m	6m	42m


North-South Greenway
R623
New Bus Stop
R623
Island Cross
Little Island Industrial Estate
Grotto Island Crossroads
Post Office

St Lappan's Place Junction and Eastgate Way Junctions (Jnts 7 and 8)

Current Issues

- Unsafe junction due to lack of right turn provision.
- No public bus service.
- Poor cycle and pedestrian facilities especially for pupils wishing to access the national school.

Design Rationale

- Right turn lane provided with traffic island for additional traffic calming.
- Raised pedestrian crossing located adjacent to St Lappan's Place access road to facilitate safe access to the school.
- Corner radii at all junction reduced to aid pedestrians crossing, reduce turning speeds whilst still catering for HGVs.
- New bus stop with controlled pedestrian crossing to link school and employments centre with public transport.
- Carriageway width reduced to 6.5m wide to promote lower traffic speed.
- Improved pedestrian facilities by way of providing 2.0m wide footpath on both sides of road with designated crossing points located on desire lines.

Junction Performance

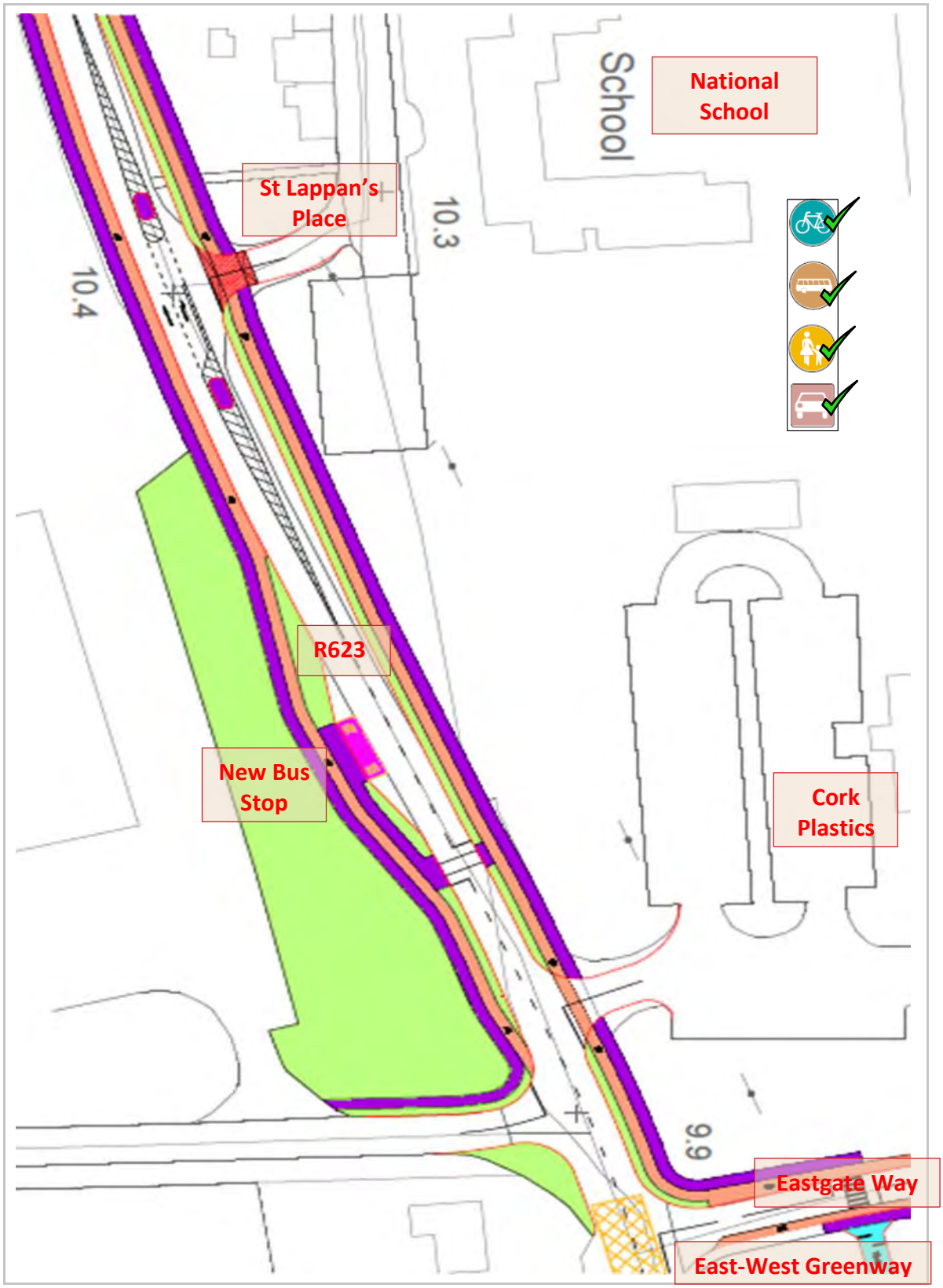
- Modelling analysis carried out using the Micro-simulation software (VISSIM) indicates that the junctions will operate satisfactorily during the AM and PM peak hours.

Arm (Cork Plastics)	Average Queue	Max Queue	Average Queue	Max Queue
R623 (West)	0m	26m	0m	0m
R623 (East)	2m	63m	3m	75m
Eastgate Way	5m	48m	9m	64m
Cork Plastics	0m	8m	0m	5m

St Lappan's Place Junction and Eastgate Way Junctions (Jnts 7 and 8)

Arm (St Lappan's Pl)	Average Queue	Max Queue	Average Queue	Max Queue
R623 (West)	0m	0m	0m	0m
R623 (East)	1m	39m	0m	0m
St Lappan's Place	1m	24m	0m	10m

St Lappan's Place Junction and Eastgate Way Junctions (Jnts 7 and 8)



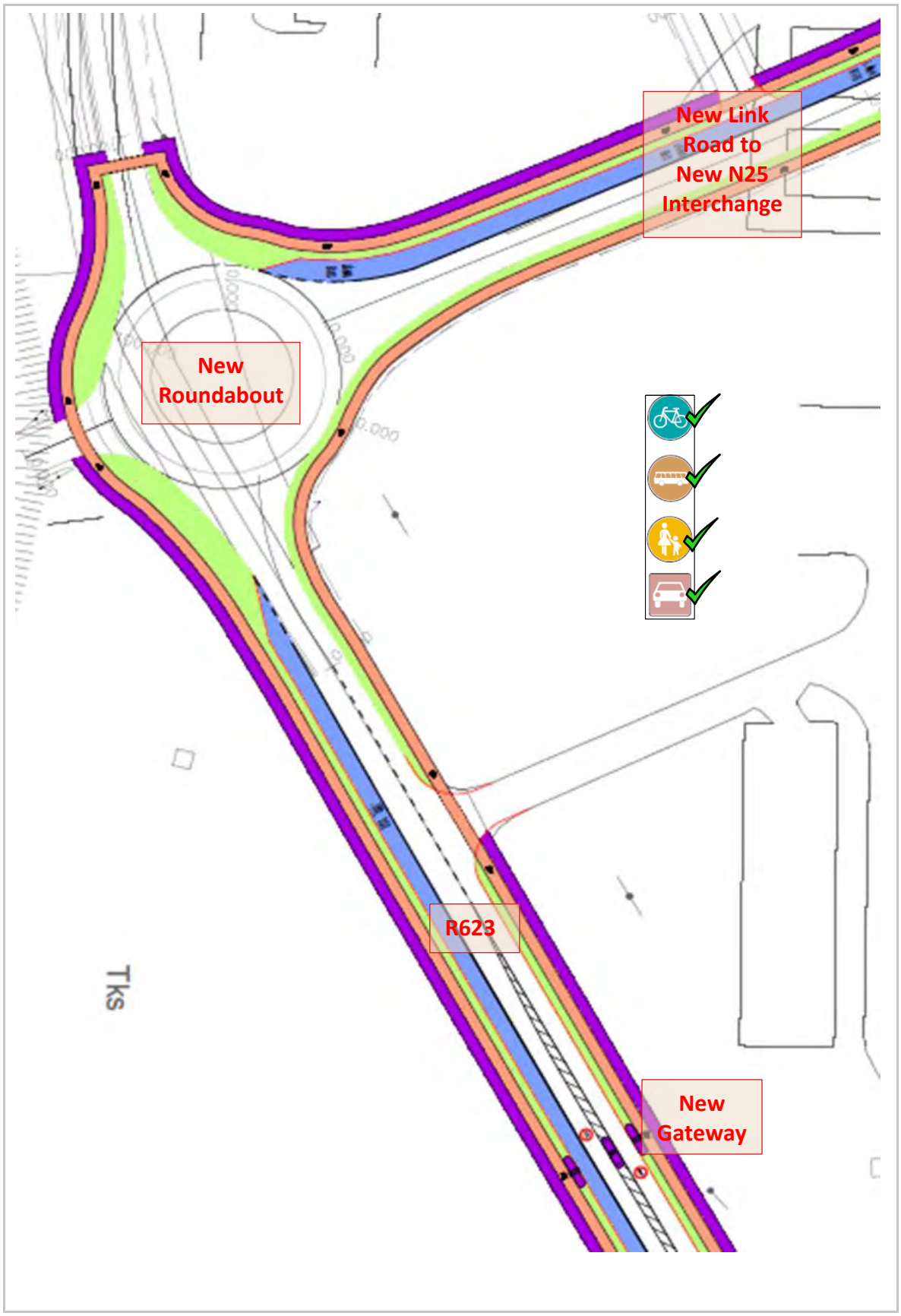
New Dunkettle Link Road Junction (Jnt 9)

Current Issues (at the current tunnel maintenance roundabout)

- Peak hour traffic congestion.
- No bus service and no bus priority.
- No cycle connectivity to greater Cork Cycle Network.

Design Rationale (at new Dunkettle Link Road)

- The proposed TII Roundabout was modified to include bus priority by way of introducing bus lane up the roundabout yield line.
- Footpath and cycle tracks with appropriate crossing facilities included and linked to the new Dunkettle Interchange.
- A 30kph speed zone introduced by way of a gateway incorporating an uncontrolled pedestrian crossing.


New Link Road to New N25 Interchange
New Roundabout
R623
New Gateway
Tks

Junction Improvements – Key Recommendations:

- Junction improvements are proposed at 9 locations throughout Little Island;
- Sections of main approach routes are upgraded to reduce traffic speed, improve general road safety for all road users and provide better links to public transport;
- Upgrades are focused on improving safety and accessibility for pedestrian/cyclists, improving efficiency of traffic movements and provide bus priority at key locations within the Island.

Benefits of the Junction Upgrades:

- Enhanced pedestrian and cycle facilities;
- Enhanced safety for pedestrian movements, in particular for vulnerable road users such as school children and the mobility impaired;
- Enhanced priority for public transport;
- Enhanced links to public transport;
- Reduced traffic speeds;
- Enhanced efficiency of traffic movement; and
- Reduced levels of congestion.

3.7 Demand Management Strategy

Introduction – what is Transport Demand Management?

3.7.1 Transport Demand Management (TDM) is the implementation of programmes of measures which seek to change travel demand patterns by:

- **Trip reduction** – to reduce the need to travel and thereby reduce overall travel demand e.g. through online grocery shopping and home working
- **Trip retiming** – to encourage travel at less congested times e.g. through flexible working, or staggered school hours
- **Vehicle use reduction** – in particular, to reduce the amount of car travel
- **Trip length reduction** – by planning for the provision of employment, retail and other services closer to where people live
- **Increase in vehicle occupancy** – to reduce the amount of single occupancy car trips and increase car occupancy e.g. through car-sharing and car-pooling
- **Increase in travel by alternative modes** – this includes measures to encourage public transport use, walking and cycling in preference to car use
- **Offering alternative destinations** – to encourage travel to destinations that are closer and accessible by sustainable modes, leading to less overall congestion e.g. visiting local retailers rather than out-of-town shopping centres

3.7.2 Transport Demand Management programmes attempt to manage people's travel behaviour rather than seeking to provide more physical capacity for travel.

3.7.3 Transport Demand Management measures include a combination of 'hard' (infrastructure measures including allocation of road space and changes in pricing) and 'soft' (also known as 'Smarter Choices' measures, including promotion of new infrastructure and incentives to trial it). For example, a Transport Demand Management initiative can complement infrastructure schemes, particularly those aimed at reducing the capacity for private vehicles or providing priority for public transport services or active travel.

3.7.4 An example would be where on-street parking availability is reduced as a demand management measure and the space is reallocated to provide for cycle facilities, an improved pedestrian environment or public transport priority. Promotion of these new sustainable travel facilities to target groups, and support for them to use it (e.g. bus taster tickets, led cycle ride along a new route), will lock in the benefits of the infrastructure investment and support return on investment by maximising use of the new asset.

3.7.5 **'Smarter Choices'** (also known as Mobility Management) is a key aspect of Transport Demand Management. It is defined as techniques for influencing people's travel behaviour towards more sustainable options, such as walking, cycling, travelling by public transport and car sharing, while managing the demand for car use. They typically include:

- Giving people better information about their existing travel options
- Marketing sustainable travel options more effectively, so they are better used
- Making improvements to the way services are organised, so they better meet the needs of a particular group of people – for example, retiming a bus service to align with a factory shift

- Providing new transport services, closely focussed on a particular target market such as a workplace or a residential area
- Providing new options that reduce the need to travel at all.

3.7.6 Examples of Smarter Choices initiatives include: workplace travel plans; school travel plans; personalised travel planning; public transport information and marketing; travel awareness campaigns; car clubs; car sharing schemes; teleworking; teleconferencing; and home shopping.

The benefits of Demand Management

3.7.7 Travel Plans (often referred to as Mobility Management Plans) encourage the users of a site (e.g. employees; teachers and students; local residents, customers) to take steps to reduce dependency on the car and to take alternative transport options. Mobility Management is about improving a site's access, by enabling and promoting sustainable travel options (e.g. car sharing, walking, cycling and public transport) to staff, students, visitors and customers.

3.7.8 The impact of an integrated package of Demand Management Measures can support a reduction in Single Occupancy Vehicle (SOV) trips. For example, research suggests that the effective implementation of Workplace Travel Plans can reduce car use by between 10% and 24%.

3.7.9 The National Transport Authority (NTA) Smarter Travel Workplace (STW) Partners achieve an average of 18% reduction in Single Occupancy Vehicles and noting significant increases in cycling (over 150% increase)[5] – which correlates to the Mosser & Bamburg 2008 research which indicated an average of an 18% reduction in car trips achieved through the effective implementation of Workplace Travel Plans[6].

3.7.10 Other benefits from implementing Demand Management measures include: improved health and well-being (and productivity for employees) through the benefits of active travel and flexible working policies; widened access to the labour market for an employer; and widened access to a retailer's customer base. Demand management can also save organisations money through effective car park management and reducing business travel costs.

3.7.11 The use of Mobility Management is well established in Ireland in workplaces, education sites and other large trip generators, primarily through the Development Control process, the NTA's Smarter Travel Workplaces and Campus Programme and An Taisce's Green School programme.

3.7.12 There is a national mode share target to reduce work-related commuting by car from 65% to 45% by 2020. Government guidance is that organisations with over 100 staff should develop and implement a workplace travel plan.

[5] https://www.engineersireland.ie/EngineersIreland/media/SiteMedia/groups/societies/roads-tranport/NTA-Presentation-to-EI-150513.pdf?ext=.pd

[6] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/427135/webtag-tag-unit-m5-2-modelling-smarter-choices.pd

Demand Management – Objectives and Targets

3.7.13 One of the primary aims of LITS is to reduce demand for travel by private vehicles particularly during the commuter peaks and to encourage use of walking, cycling and public transport. The public transport measures proposed by the strategy will provide the capacity to cater for the future growth in travel demand up to the year 2040 and beyond – with investment in active travel providing alternative transport choices for shorter trips and integrated public transport and walking/cycling trips. However, without complementary transport demand management measures, the full benefits of the Strategy will not be achieved or 'locked in'.

3.7.14 To ensure the full benefits of the proposed measures contained in the LITS are realised, the objectives of the Transport Demand Management measures are to:

- Create a culture for Little Island residents and commuters where sustainable travel options become the default mobility choice
- Protect investment in the local and strategic road network
- Support the efficient and effective use of the public transport system
- Maximise the benefits of the proposed investment in public transport and active travel
- Support active and healthy lifestyles while safeguarding vulnerable road users
- Manage congestion in order to facilitate economic growth.

It is estimated that the application of the Demand Management Strategy can enhance the sustainable travel mode share (AM peak) by 10% - from the 19% mode share outlined in Scenario 6 to 29% by 2040.

Overarching Demand Management Approach

3.7.15 The Demand Management Strategy will encourage Little Island residents and commuters to access jobs, leisure, shopping and education opportunities using sustainable travel modes, achieving economic growth in a low carbon way.

3.7.16 This will be achieved by an overarching approach that fully integrates behavioural change techniques and mobility management with the implementation of the infrastructure strategies outlined below:

- Public Transport Strategy
- Walking and Cycling Strategy
- School Travel Strategy
- Parking Strategy
- Local Network Upgrade Plan.

3.7.17 An Area Mobility Management approach is proposed for Little Island that seeks to create a modal shift away from the car over the project period through a combination of:

- Behavioural Change Communication's Campaign
- Personalised Travel Planning
- Residential Travel Plans
- Station Travel Plans for the existing rail station and proposed new station
- Workplace Travel Plans.

3.7.18 To ensure a coherent and consistent approach, it is recommended that a Mobility Manager is deployed to project manage the delivery of the Demand Management Strategy measures outlined below and ensure integration with the infrastructure workstreams. It is envisaged that the Mobility Manager would be employed by the proposed Smarter Travel Forum (led by local businesses and community groups), with accountability and reporting to the Implementation and Monitoring Group. Please see Section 5.3 for more details on proposed governance arrangements for implementation.

Behavioural Change Communication's Campaign

3.7.19 A key proposal for the Demand Management Strategy is the development and implementation of an overarching Behavioural Change Communication's Campaign that promotes the new improvements in sustainable travel infrastructure and supports potential users to trial walking, cycling, public transport, park-and-ride and car-sharing.

3.7.20 This would ensure an integrated approach between the proposed infrastructure improvements and targeted promotion of these improvements to different market segments living and working within Little Island to maximise usage. The Behavioural Change Campaign would be developed and implemented by the Mobility Manager and the Little Island Smarter Travel Forum, in close liaison with the Chamber of Commerce, and the Local Authority Communications and Infrastructure Delivery teams.

3.7.21 A Little Island sustainable travel brand could be developed to tie in all related marketing and communications activities, ensure consistency in promotional messages and raise awareness and incentivise sustainable travel choices in Little Island. In partnership with local transport operators, this would include the delivery of an integrated communications campaign (e.g. roadside information, online, social media, radio, residential mailshots, focused employer engagement) to Little Island residents and commuters. Please see below for examples of sustainable travel campaign collateral used elsewhere (Dundee and Letterkenny respectively).

Figure 3.23. Example Branding and Event Posters

3.7.22 As well as marketing new transport infrastructure improvements, the Behavioural Change Campaign can be utilised to:

- **Enhance Transport Resilience** – the Campaign could be used to distribute information and support commuters impacted by the Dunkettle Interchange construction improvements, building resilience into the transport network during the disruption period. The Campaign can help to raise awareness of the disruption (and the benefits it will ultimately bring for them); to encourage people to plan their journeys in advance; to support people to consider alternatives (e.g. car-sharing; home-working); and to reward them when they do so. By supporting new travel habits and new ways of working, successful Resilience programmes can also embed a legacy of new travel behaviour beyond the construction period – for example, nearly half of the businesses that operated flexible working during the London Olympics said that they will continue such practices beyond the Games.

- **Encourage Considerate Driving and Parking** – the Campaign could also be utilised to support promotion of considerate driving and parking within Little Island, integrated with the roll out of the proposed 30kph speed limits. Road safety messages could be developed in conjunction with the Little Island National School and the Little Island Community Centre to reinforce the need to protect vulnerable user groups and enhance community engagement and buy-in to the need for considerate driving and parking. Techniques such as the use of the innovative Kid's Court (featuring school children in Birmingham asking tough questions to drivers who've broken the speed limit - https://www.youtube.com/watch?time_continue=5&v=dh43M8UQrNc) could be utilised, along with Vulnerable Road User cycle training for HGV drivers employed by Little Island businesses.

3.7.23 The proposed **Mobility Hub** at the new rail station could be utilised as a focal point for this Behavioural Change campaign, providing a physical presence and a primary contact for sustainable travel information, advice and support for Little Island residents, visitors and commuters – with a Little Island travel website developed to provide online sustainable travel information, promote new infrastructure investments and facilitate car-share matching.

3.7.24 The Behavioural Change Campaign could also be used to facilitate and promote the installation of Bus and Train Real Time Information (RTI) display screens at key locations in Little Island, including on-street and within workplaces.

3.7.25 The Campaign could also be used to develop and test innovative approaches to sustainable travel, such as the development of a Little Island Journey Planning App utilising *Mobility as a Service* (MaaS) approaches and the focused promotion and take up of electric vehicles by residents and commuters.

Personalised Travel Planning

3.7.26 Personalised Travel Planning (PTP) is an established approach that enables people to think about the way they currently travel and provides them with the information, advice and motivation to walk, cycle, use public transport and car-share more often.

3.7.27 Research has shown that many journeys (particularly shorter ones) could be made on foot, by bike or by bus. People often use their cars out of habit and when new sustainable travel infrastructure and services are introduced, PTP can be effectively utilised to encourage and support individuals to break their 'car habit' for some of their regular journeys[7].

3.7.28 Personalised Travel Planning is about breaking down the subjective barriers to using sustainable travel and providing attractive and reliable information on the alternatives. It utilises face-to-face engagement and can be delivered in a variety of settings within Little Island including:

- Residential areas
- Workplaces
- Schools
- Community centres / public events
- Transport hubs.

Residential Travel Plans

3.7.29 A Residential Travel Plan (RTP) is a package of measures designed to reduce car use originating from new housing by supporting alternative forms of transport and reducing the need to travel in the first place. RTPs can improve the health and wellbeing of residents through the benefits of active travel and specifically focus on journeys made from a single origin (home) to multiple destinations.

3.7.30 They are an important tool to help deliver accessible, sustainable communities and offer clear benefits to all the parties involved – public, private and the community. They involve meeting the access needs of residents in a new way and require partnerships between developers, local authorities, local communities and new residents – ensuring sustainable integration between transport and land use.

3.7.31 A typical feature of a successful Residential Travel Plan is the use of a **'Welcome Travel Pack'**. This can be provided to all new residents with the intention that each resident is made fully aware of the travel choices available to them. This will also give the best possible opportunity to the new residents to consider more sustainable modes of travel at a key moment of life change (i.e. moving to a new house) – where new travel habits are more easily encouraged. The Welcome pack can include a variety of sustainable transport information and incentives about the development itself and Little Island. It can also include mode specific measures such as:

- Information on the health benefits of walking and cycling.
- Information on services and amenities provided within Little Island, particularly those within walking and cycling distance.
- Maps showing the pedestrian and cycle routes in proximity to the site, including cycle parking locations on route and in Little Island village centre.
- Information about local public transport services and tickets, including a plan showing the location of bus stops, bus services and the train station(s).

[7] SYSTRA's i-Travel York - monitoring over the three years showed that 25% of survey respondents were walking more often, 24% cycling more often and 22% using their car less as a result of participation in the programme. An evaluation of the transport and health impacts of the programme showed a cost: benefit ratio of 5.26:1. https://www.systra.co.uk/index.php/projects/transport-consultancy-experience/sustainable-travel-2/176-i-travel-york

- Incentives to trial sustainable travel, such as bus 'taster tickets' and voucher discounts for local bike shops.
- Advice on ways to reduce the need to travel and details of any local Car Clubs and available local cycle hire schemes.
- Details of the benefits of car sharing, such as reduced congestion, better air quality, reduction in traffic noise and cost savings to the individuals taking part.
- Provide information on the financial and environmental costs associated with driving and support regarding tips for green driving techniques.

3.7.32 The development and delivery of Residential Travel Plans as part of the planning process for new housing developments on Little Island can contribute to encouraging sustainable travel habits for people moving to the area from the outset.

Station Travel Plans

3.7.33 A Station Travel Plan (STP) is a strategy for managing the travel options of customers going to and from a rail station, with the aim of reducing their environmental impact. To lessen local road congestion and free up surface car parking requirements, it encourages people to walk, cycle, car share and use public transport to access the station. Typically, a Station Travel Plan will include:

- Personalised travel planning
- Public transport, cycling and walking information and marketing
- Promotion and provision of car clubs and car-sharing
- Provision of 'last kilometre' facilities to enable people to sustainably and seamlessly access the station to and from nearby trip generators – including secure station cycle parking, end-to-end cycle hire facilities, improved cycle and pedestrian routes including lighting, crossings, wayfinding and maintenance and shuttle bus services (as proposed in the Public Transport strategy).

3.7.34 The initial public consultation identified that access to the Little Island rail station on foot or by bike is a barrier preventing many employees who currently drive to work from travelling to Little Island by rail. Given the large proportion of employers located within a reasonable walking or cycling distance of the Little Island rail station, ensuring seamless and safe access by foot or by bike for that last element of someone's commute is a key element of the proposed Little Island Station Travel Plan approach.

3.7.35 The Figure below illustrates the walking distances from the rail station to key employment sites on Little Island. A distance of 1km can generally be walked in approximately 10 to 15 minutes (and 1.5 km within 15 to 20 minutes) which are reasonable timeframes as part of someone overall's commute – particularly if it is marketed as a way to build regular physical activity into a person's daily routine.

Figure 3.24 Walking distances from Little Island rail station

3.7.36 A distance of 2km would take approximately 25 minutes to walk, so employees working at sites in Little Island within that distance from the rail station may respond better to initiatives to enable them to travel by bike, or shuttle bus, from the rail station. A bike journey would take approximately 5 to 10 minutes depending on the speed of the cyclist. For car drivers to consider switching to rail/cycle commuting, secure cycle parking at both the rail station and at workplaces, access to cycle hire and safe direct cycle routes will be key to achieve modal shift.

3.7.37 A Station Travel Plan can bring together all the stakeholders with an interest in rail stations (the rail industry, the local authority, passenger groups, local employers, bus and taxi operators, cyclists and others) to develop and agree common objectives and a coordinated approach to delivery.

3.7.38 In line with the Public Transport, Cycling & Walking and Parking strategies outlined above, it is recommended that a Station Travel Plan management approach is utilised for both the existing rail station and proposed new rail station at Little Island. This will ensure that there is a cohesive and focused approach to ensuring high quality routes and seamless access by sustainable modes to the main employment and residential areas and the public transport interchanges.

Workplace Travel Plans

3.7.39 Given the strategic employment function of Little Island, the development and implementation of Workplace Travel Plans will form a critical element of the Demand

Management Strategy. Continued marketing and promotion of the benefits of Workplace Travel Plans should be pursued to encourage voluntary take up of Workplace Travel Plans by Little Island employers.

3.7.40 The National Transport Authority's Smarter Travel Workplaces programme supports large employers to promote travel choices among their staff. Free expert advice and support for workplaces can be given to encourage employees to move to smarter ways of traveling; whether on foot, by bike, public transport, or through car sharing.

Little Island Smarter Travel Workplaces Forum

3.7.41 It is recommended that a Little Island Smarter Travel Workplaces Forum is developed in partnership with the National Transport Authority, Cork County Council and business intermediaries including Cork Chamber of Commerce. This can enable the development of shared goals and objectives, with appropriate governance modes providing structured frameworks for collective actions and monitoring.

3.7.42 This strategic approach to Workplace Travel Plans has the benefit of economies of scale in co-ordinating initiatives such as car sharing and behavioural change campaigns (e.g. inter-company Pedometer Challenges).

3.7.43 An area-wide approach is also particularly helpful in locations where there are smaller individual workplaces (e.g. SMEs) who cannot access the typical benefits of travel initiatives offered by larger employers. SMEs can lack critical numbers to successfully implement some sustainable transport measures, and equally they may not understand the impact that their site can have on reducing pressure on the network. For example, as part of the West Midlands *Smart Network, Smarter Choices* programme, a number of industrial estates and business parks were identified where critical mass was needed for measures such as car sharing or bespoke shuttle bus services. This innovative approach to engaging with SMEs could be transferred to Little Island.

3.7.44 Given the varying nature of employers based at Little Island, it is recommended that the following three-tiered engagement approach is undertaken to facilitate the take up and delivery of Travel Plans by employers based at the Little Island Industrial Estates and Business Parks – along with the promotion of sustainable commuting habits to employees.

- **A. Area Travel Plans**
  Area Travel Plans can be developed by sites actively managed by an agent such as an Asset Management Company or a Property Management Company on behalf of the landowner – for example at the Eastgate Business Park. The agent would act as a Travel Plan Coordinator (TPC) and through their existing lines of communication with occupants, they could therefore administer baseline Staff Travel Plan surveys, develop and implement the site Travel Plan and promote the Behavioural Change Campaign messages and collateral to employers on site.

- **B. Anchor Site Travel Plans**
  Anchor Site Travel Plans are developed for sites where no management company or letting agent exists but a large occupier can be identified. This approach involves working closely with a single site initially to help them realise the benefits of a Travel Plan and then asking them to act as an 'Anchor Site' and/or a leader to other sites on the Business Park / Industrial Estate. As an anchor site, the business would be able to hold events for other organisations on the Business Park / Industrial Estate and help share best practice with other occupiers to develop their own Travel Plans in the future by.

- **C. Employee Engagement**
  At sites where the landowner or agent are not identified or interested in participating and where there were no suitable Anchor Sites, but there is good potential for sustainable travel at the site, direct employee promotions can be used. This approach would form part of the overall Behaviour Change Campaign measures and involves contacting individual occupiers with marketing and promotions such as invitations to attend Mobility Hub car-share matching events, cycle training and public transport discounts. This approach does not entail a travel plan and is therefore appropriate for Little Island sites with a high number of small employers.

Little Island Workplace Travel Plan Toolkit

3.7.45 There are a range of potential Travel Plan measures that an employer could implement as part of their Workplace Travel Plan. The following section outlines suggestions for measures

that can be incorporated at an Area wide or individual Workplace Travel Plan level by Little Island employers.

Walking

3.7.46 The following measures could be implemented to promote walking to staff:

- Participation in a workplace "Pedometer Challenge" as part of Walk to Work Week
- Organise events such as lunchtime walks
- Display walking maps in communal staff areas
- Highlight the cost savings and health benefits of choosing to walk
- Highlight the walking distance and walking times to local bus stops and the existing and proposed rail station.
- Promote the health and well-being benefits of walking to staff
- Promote Park & Stride options to encourage staff to utilise the proposed new Park & Ride
- Promote new walking routes to staff as they are implemented.

Cycling

3.7.47 To increase the levels of cycling, the following measures could be implemented:

- Provide and publicise safe and secure on-site cycle parking
- Provide and publicise staff showers and changing facilities
- Display Cycling Maps in communal staff areas
- Promote the national cycle journey planner app
- Work with local cycle shops to negotiate discounts for staff purchasing cycling equipment and provide Dr Bike cycle maintenance checks
- Provide subsidised or free adult cycle training as part of an Employee Benefits package
- Encourage a Bike Buddies scheme, whereby more experienced cyclists accompany less confident cyclists on their commute until cycle confidence is improved
- Provide a bike maintenance kit (e.g. puncture repair kit, bike pump) for use by staff
- Provide free bike security marking kits and advice on reducing bike theft
- Establish a staff Bicycle User Group
- Host a Bike Week event (www.bikeweek.ie) for staff, inviting local bike suppliers for staff to try bikes before buying and run bike maintenance / Dr Bike sessions
- Highlight the cost savings and health benefits of choosing to cycle
- Promote of the health and well-being benefits of cycling to staff
- Provide and promote the Cycle to Work Scheme, which is a tax incentive scheme which aims to encourage employees to cycle to and from work. The employee is not liable for tax, PRSI or the Universal Social Charge on their repayments.
- Promotion of the proposed Little Island Bike Hire scheme if it is implemented
- Promote the proposed new cycle routes proposed as they are implemented.

Public transport

3.7.48 To increase the levels of public transport use, the following measures could be implemented:

- Provide timetables and maps of local bus routes and nearest bus stops (including walk times) in communal areas

- Promote the National Public Transport Journey Planner (www.journeyplanner.transportforireland.ie) for travel by bus and rail
- Promote the availability of Real Time Information, which provides live information on bus departure times for main bus routes
- Consider purchasing a small number of public transport tickets to offer to staff as a trial for business use and/or commuting purposes
- Provide and promote Tax Saver tickets to employees. Employees can purchase seasonal public transport tickets from their gross salary, providing savings of either 31% or 51% depending on the level of Tax and PRSI that would otherwise be charged.
- Promote walking options and route improvements to and from the existing rail station and the proposed new rail station (including a Walking Buddies matching scheme)

Car sharing

3.7.49 To help increase the levels of car sharing by Little Island commuters and embed it as a viable travel, the following measures could be implemented:

- Promote the National Car-Sharing website (www.carsharing.ie) in communal areas -and the Little Island car-sharing scheme if one is implemented
- Organise a staff car sharing event/coffee morning, staff can mark their eircodes on a large print out map using stickers to find potential car share partners
- Provide a guaranteed lift home in case of emergencies
- Promote the cost savings and health benefits of car sharing and make car sharing cost calculators available to staff
- As part of car park management plans, add dedicated car share parking bays in attractive locations close to employer entrances.

Working practices and business travel

3.7.50 To help to reduce the need to travel and to reduce pressure during the congested AM and PM peak hours, Little Island employers could facilitate the use of HR policies such as Flexible Working, Compressed Hours, Remote Working and Home Working.

3.7.51 To reduce the impact of business travel on the local transport network, employers can also provide teleconferencing facilities and the promotion of sustainable travel modes for business purposes where feasible. This could include providing pool cars and pool bikes for business travel journeys.

Marketing and promotion

3.7.52 Proactive promotion and internal employee marketing of sustainable travel choices is needed for a Travel Plan to be effective. Measures will involve raising awareness of the different travel mode options available to staff as well as the benefits of active and sustainable travel. Potential marketing activity as part of Little Island Workplace Travel Plans can include:

- Producing and printing travel options leaflets
- Maximising communication through existing communication channels (e.g. social media, site noticeboards etc.)
- Organising events and activities to coincide with Bike Week, European Mobility Week and any other national/local sustainable travel or community events

- Displaying regular updates on the Travel Plan progress in communal staff areas
- Focusing marketing initiatives where there is a willingness to change and promote positive messages i.e. getting fit and active, reducing congestion, saving money etc.
- Promoting sustainable travel options in the recruitment and interview information to prospective employees.
- Providing new members of staff with a Travel Welcome Pack. The pack should detail all transport options to the site and include information on any offers or incentives (such as the Cycle to Work scheme) as part of their induction process

Senior Management Commitment

3.7.53 The successful implementation of a Workplace Travel Plan requires support and commitment from Senior Management by the Employer. A sustained approach to implementation, along with regular annual reviews of progress against staff travel habits and Travel Plan deliverables is key. Successful Workplace Travel Plans often feature a 'Champion' from Senior Management who leads by example – encouraging employees by their own commuting actions to try out sustainable travel for themselves.

3.7.54 Senior Management commitment will be demonstrated by the allocation of appropriate resources and staff time to implement the Travel Plan – including a named Travel Plan Co-ordinator. This does not need to be a full-time position, but is often best suited to someone with an interest in sustainable travel and with experience in areas such as Facilities Management, Environmental Management, HR and / or Marketing.

Benefits of Demand Management Initiatives:

- Creates a culture for Little Island residents and commuters where sustainable travel options become the default mobility choice;
- Protects investment in the local and strategic road network;
- Supports the efficient and effective use of the public transport system;
- Maximises the benefits of the proposed investment in public transport and active travel;
- Supports active and healthy lifestyles while safeguarding vulnerable road users; and
- Manages congestion in order to facilitate economic growth.

4. STRATEGIC ENVIRONMENTAL ASSESSMENT

4.1 Introduction

4.1.1 As detailed in Chapter 1, of this design report, a Strategic Environmental Assessment (SEA) and Appropriate Assessment (AA) has been undertaken and integrated into the decision-making processes and development of the Strategy.

4.1.2 This section outlines the process for the SEA and AA undertaken for the LITS and presents the main findings of the assessment.

4.1.3 Details regarding the SEA itself is detailed in the Draft Environmental Report (ER) and the Draft Natura Impact Assessment Report (NIAR) which are included in the documentation made available for public consultation and feedback prior to the finalisation and adoption of the strategy.

4.2 Regulatory Framework for Environmental Protection and Management

4.2.1 SEA in the European Union originates from the EU Directive 2001/42/EC (Assessment of the Effects of Certain Plans and Programmes on the Environment), which is commonly referred to as the 'SEA Directive'. The main objective of the SEA Directive is to "*provide for a high level of protection for the environment and to contribute to the integration of environmental considerations into the preparation and adoption of plans and programmes with a view to promoting sustainable development.*"

4.2.2 The SEA Directive was transposed into Irish Law through the following Regulations:

- European Communities (Environmental Assessment of Certain Plans and Programmes) Regulations 2004 (Statutory Instrument Number (SI No. 435 of 2004); and
- the Planning and Development (SEA) Regulations 2004 (SI No. 436 of 2004).

4.2.3 S.I. No. 435 of 2004 relates to sectors including transportation plans and was subsequently amended by the European Communities (Environmental Assessment of Certain Plans and Programmes) (Amendment) Regulations 2011 (SI No. 200 of 2011). Both the 2004 and 2011 regulations are applicable to the development of this Transport Strategy and are referred to throughout this section as 'The SEA Regulations'.

4.2.4 The Directive and the transposing Regulations requires that an environmental assessment shall be carried out for plans and programmes that are subject to preparation and/or adoption by an Authority at national, regional or local level.

4.3 Development of the SEA

4.3.1 The SEA process for the LITS has been undertaken in five main stages that run parallel to the development of the overall Strategy. These are:

- **Stage 1 – Screening:** Determining whether the LITS requires a SEA;
- **Stage 2 – Scoping:** Determining the scope of assessment and the level of detail;

- **Stage 3 – Assessment:** Assessment of all considered and preferred options brought forward under the LITS;
- **Stage 4 – Consultation:** Public and Statutory Consultation on the draft Strategy Report and associated Environmental Reports; and
- **Stage 5 – Adoption:** Publication of the LITS with an associated SEA Adoption Statement

4.3.2 These stages are outlined in more detail below.

4.4 SEA Screening

4.4.1 The proposed Little Island Transport Strategy is not subject to mandatory SEA, so therefore was screened according to the relevant criteria set out in Schedule 1 of SI 435 of 2004 as amended.

4.4.2 The conclusion of the assessment was that the LITS should be subject to a full SEA as it was envisaged that the implementation of the Little Island Transportation Strategy will involve works that are proximal to or adjacent to Natura 2000 sites. Consequently, there is a likelihood that the Strategy, if undertaken without due consideration, could result in significant environmental effects to those sites.

4.5 SEA Scoping

4.5.1 The Scoping process determines a range of environmental issues and assessment methodology that should be conducted for a particular project or plan, together with the level of detail to which they should be addressed.

4.5.2 As part of this process, the SEA Regulations require consultation with the following statutory consultees:

- The Environmental Protection Agency;
- The Minister for the Environment, Community and Local Government (now the Minister for Housing, Planning, Community and Local Government); and
- Minister for Agriculture, Food and the Marine, and the Minister for Communications Energy and Natural Resources (now the Minister for Communications, Climate Action and Environment), where it appears to the competent authority that the plan or programme, or modification of the plan or programme, might have significant effects on fisheries or the marine environment

4.5.3 Scoping notices were issued to the above authorities along with the Draft SEA Scoping Report (BTL, 2018) in March 2018, requesting for submissions or observations in relating to the scope and level of detail of the information to be included in the environmental report. A total of two submissions were received.

- A submission from the Environmental Protection Agency received on the 26th March 2018 that provided information/suggestions for the SEA and Environmental Report.
- A submission from the from the Department of Agriculture, Food and the Marine indicating they had no further comment or submissions to make.

4.6 SEA – Assessment of Alternatives

4.6.1 The SEA Environmental Report included an assessment of the five scenarios identified and brought forward for assessment within the Strategy Development Report, as well as an assessment of the sixth 'preferred' scenario as detailed in the draft Strategy Report.

4.6.2 The 'do-minimum' scenario, together with the five scenarios brought forward for consideration, are described in further detail in Section 2.6 previously. Each of the scenarios were assessed in accordance with the SEA regulations under the following headings:

- Biodiversity (flora & fauna);
- Population;
- Human Health;
- Soil
- Water;
- Air;
- Climatic Factors;
- Material Assets;
- Cultural Heritage (including architectural and archaeological heritage),
- Landscape; and
- The inter-relationships between the above.

Table 4.1 SEA of the five Identified Scenarios

ENVIRONMENTAL HEADING	SUMMARY
Biodiversity	Scenarios 1 and 2 require development of a 3rd interchange to the east of Little Island within the Great Island Channel SAC Cork Harbour SPA – both designated conservation areas under the Habitats Directive. As such, they are likely to result in significant effects to their conservation objectives and qualifying species. Scenario 5 has the potential to result in minor impacts on the proposed National Heritage Areas and salt marshes to the west and south of the Island.
Population and Human Health	The do-minimum scenario presented the least favourable option, with Scenario 5 through the provision of public transport of identified as the most preferential option.
Soils	If left unmitigated, scenarios 1, 2 and 5 require development of new transport infrastructure, and as such, have the potential to negatively impact upon the hydrological and ecological function of the soil resources through construction activities. Scenario 5, in offering potential to re-development of brownfield sites to the north of the site could be a considered a positive effect though potentially contaminated lands may be a constraint.

ENVIRONMENTAL HEADING	SUMMARY
Water	If left unmitigated, construction activities associated with Scenarios 1, 2, 3 and 5 have the potential for both negative direct and indirect effects on designated, protected and undesignated water resources in the area. Similarly, Scenarios 1, 2, 3 and 5 have the potential to present an increased flood risk to the area – either by siting of transport infrastructure in identified flood risk areas, or through creating increased flood risk due to surface water run-off.
Air & Climatic Factors	Scenario 5 offers the most benefit with relation to improvements in vehicle emissions that negatively contribute to air quality and Climate factors.
Material Assets	Scenario 5 has been identified as providing additional capacity to enable the economic grown of Little Island and result in an increase in sustainable travel.
Cultural Heritage	Scenarios 1 and 2 (provision of road and interchange on the N25) have the potential for moderate adverse effects if impacting on known or unknown archaeological resources. It is not envisaged that any of the presented LITS Scenarios will negatively impact on any buildings as listed within the Record of Protected Structures, or areas of Architectural Heritage
Landscape	Scenarios 1 and 2 require development of a 3rd interchange to the east of Little Island and have the potential to negatively impact on the Landscape Character, Scenic Routes and designated scenic routes located to the north of the Island.
Inter-relationships	Potentially significant inter-relationships exist between Soils, Water, and Biodiversity arise in construction activities.

4.6.3 An appraisal of Scenarios was undertaken, of which the environmental assessment was one of the topics taken into consideration. The resulting outcome was the identification of the preferred option, which comprised a combination of Scenario 3 and Scenario 5 – See Section 8 of the *'Little Island Transportation Study - Strategy Development Report'* for further detail.

4.7 SEA – Assessment of Preferred Option

4.7.1 The preferred option, as presented in this Strategy Report has been subject to SEA and AA. This draft Environmental Report that accompanies this report presents the likely significant effects on the environment. It also details the process through which mitigation measures to address the significant adverse effects have been considered and recommended.

Table 4.2 SEA of Preferred Option

ENVIRONMENTAL HEADING	SUMMARY
Biodiversity	The preferred option has the potential to result in minor impacts on the proposed National Heritage Areas and salt marshes to the west and south of the Island, particularly through surface water run-off. The development of cycle / walking routes to the south have the potential to cause disturbance to birds that utilise conservation areas to the south.
Population and Human Health	No potentially adverse significant effects have been identified.
Soils	The preferred option offers potential to re-development of identified brownfield sites to the north of the site could be a considered a positive effect, subject to mitigation measures if contaminated land is present.
Water	The preferred option has the potential to result in direct and indirect effects on designated, protected and undesignated water resources in the area. Mitigation measures are recommended for projects developed under the strategy to prevent environmental pollution.
Air & Climatic Factors	No potentially adverse significant effects have been identified.
Material Assets	No potentially adverse significant effects have been identified.
Cultural Heritage	No potentially adverse significant effects have been identified.

4.8 Mitigation Measures

4.8.1 Potentially significant impacts identified in the assessment have been reviewed to determine whether sufficient appropriate policies and objectives / mitigation measures exist within the various plans plan to offset potential adverse effects.

4.8.2 The mitigation measures that are relevant include mitigation measures that may be specific to the plan itself and the protective policies and objectives as set out in development Plans and policies relevant to the Little Island Area, including the following:

- The Draft Natura Impact Assessment Report for the LITS.
- Cork County Development Plan
- Cobh Local Area Plan

4.8.3 The environmental Protection measures set out in other development plans and policies relevant to the Little Island area and LITS have been reviewed. The LITS has been deemed to be compliant with those plans and policies.

4.8.4 The mitigation measures set out in the LITS will ensure that the result significant adverse and objectives as set out in the following:

4.9 SEA Monitoring

4.9.1 Article 10 of the SEA Directive requires the Plan to put in monitoring proposals to monitor the significant environmental effects of the implementation of plans and programmes in order to identify at an early stage unforeseen adverse effects and to be able to undertake appropriate remedial action where necessary.

4.9.2 The Environmental Report puts forward proposals for monitoring, which will be finalised when the plan is being adopted. The monitoring measures, as set out in the Environmental Report are focused on likely significant effects identified during the environmental assessment.

4.10 Appropriate Assessment

4.10.1 In accordance with Article 6(3) of the Habitats Directive 92/43/EEC, Appropriate Assessment (AA) screening of the Transportation Strategy has been undertaken in conjunction with the Strategic Environmental Assessment.

4.10.2 The Habitats Directive places legal obligations on member states to ensure the protection, conservation and management of the habitats and species of conservation interest in all European Sites. The Habitats Directive has been transposed into Irish law by the Planning and Development Act 2000 (as amended) and the European Communities (Birds and Natural Habitats) Regulations 2011 (as amended).

4.10.3 Article 6 of the Directive obliges member states to undertake an 'appropriate assessment' (AA) for any plan or project which may have a likely significant effect on any European Site. The outcome of an AA process fundamentally affects the decisions that may lawfully be made by competent national authorities in relation to the approval of plans or projects. In accordance with this requirement.

4.10.4 Following an examination, analysis and evaluation of the relevant information including, in particular, the nature of the proposed LITS and the relationship between the proposed LITS and Great Island Channel SAC and Cork Harbour SPA, and applying the precautionary principle. The assessment concluded that there will be no adverse impact on the integrity of either Great Island Channel SAC or Cork Harbour SPA, or indeed any other European sites which are beyond the zone of influence of the LITS.

4.10.5 In the case of Great Island Channel SAC, potentially significant risks to the European sites (in the absence of mitigation) arise from surface water discharge during construction and operation, habitat loss or degradation, and the spread of invasive species. However, with the full implementation of the mitigation measures outlined in this NIS these impacts will be addressed. Consequently, there will be no risk of significant effects on Qualifying Interest habitats, nor the attainment of specific conservation objectives, either alone or in-combination with other plans or projects, for Great Island Channel SAC. As a result, the Great Island Channel SAC will not be adversely affected.

4.10.6 In the case of Cork Harbour SPA, potentially significant risks to the European sites (in the absence of mitigation) arise from surface water discharge during construction and operation, habitat loss or degradation, and disturbance/displacement of birds during construction and operation within the SPA and its supporting ex-situ sites. However, with the full implementation of the mitigation measures outlined in this NIS these impacts will be addressed. Consequently, there will be no risk of significant effects on Qualifying Interest species, nor the attainment of specific conservation objectives, either alone or in-combination with other plans or projects, for Cork Harbour SPA. As a result, the constitutive characteristics of Cork Harbour SPA will not be adversely affected.

4.10.7 There is no potential for any significant in-combination effects to arise, from the proposed LITS either alone or in combination with other plans or projects.

4.10.8 Notwithstanding the assessment and the information contained within the Natura Impact Assessment Report, the individual elements progressed as part of this strategy will require screening for Appropriate Assessment, and if necessary Appropriate Assessment, in accordance with the requirements of the Planning Acts and the European Communities (Birds and Natural Habitats) Regulations S.I. No 477 of 2011 as applicable.

5. IMPLEMENTATION PLAN

5.1 Introduction

5.1.1 This chapter makes recommendations on the delivery of the Little Island Strategy in terms of the key aspects of strategy management that contribute to successful programme delivery and the timeline for implementation of the specific recommendations presented earlier in this report.

5.1.2 Also presented are recommendations regarding the mechanism to manage the delivery of the LITS implementation.

5.2 Delivery Timeline

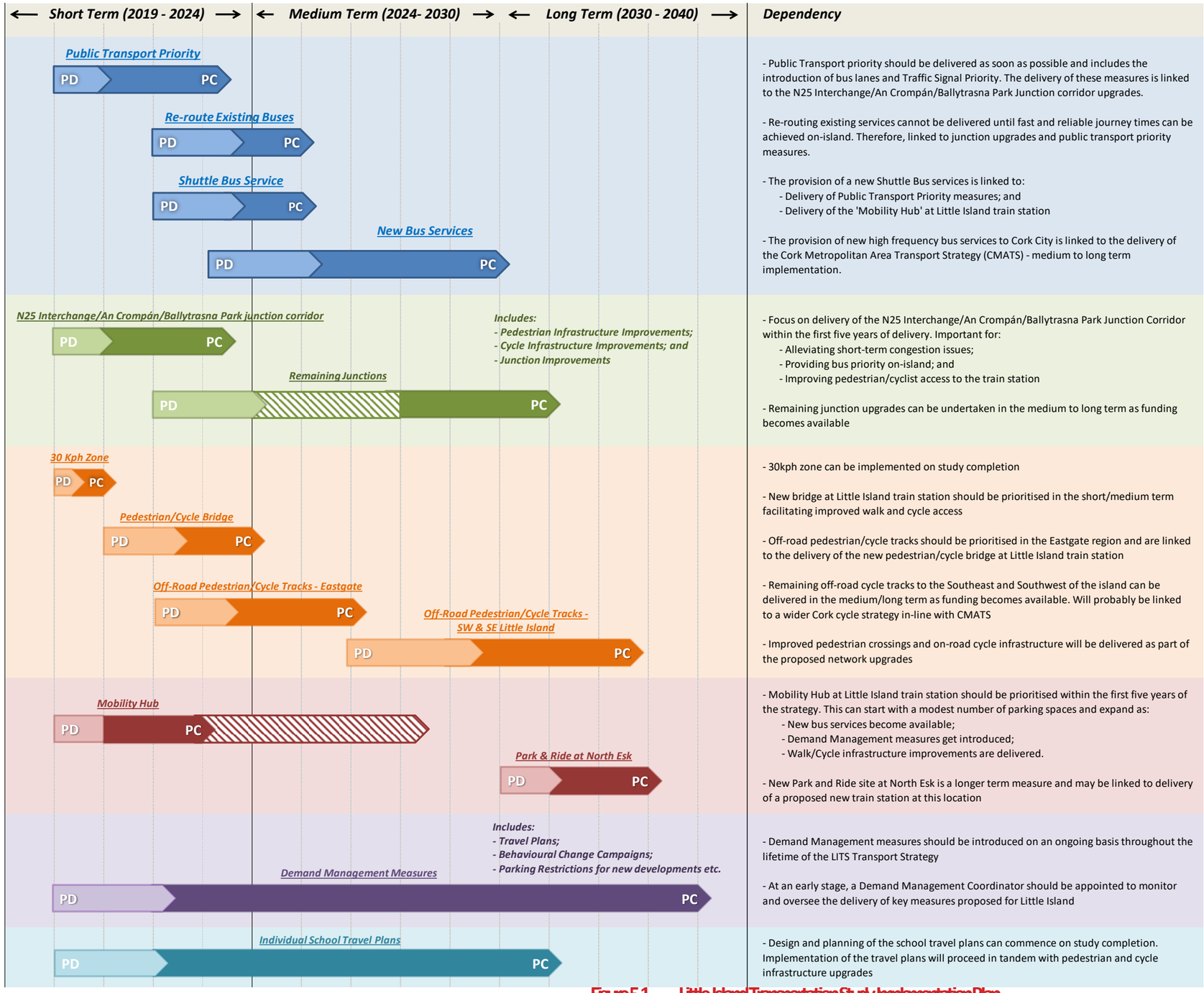
5.2.1 Figure 5.1, overleaf, shows the timeline for the implementation of the LITS measures. This timeline is indicative only, mainly serving the purpose of identifying interdependencies among key measures. Certain proposals included in the strategy may only be implemented following the completion of others.

5.2.2 The implementation of measures is broken into three delivery streams, namely:

- Short Term (2018 - 2023) Strategy Measures;
- Medium Term (2023 - 2030) Strategy Measures; and
- Long Term (2030 - 2040) Strategy Measures.

5.2.3 A phasing strategy has been developed for each of the key recommendations outlined in Chapter 3 of this report. It is recommended that the transport strategy proposals aimed at increasing the mode share for sustainable modes are front loaded in the implementation plan (e.g. Mobility Hub, Schools Plan and improvements for walking, cycling and public transport).

5.2.4 The implementation strategy for each element of the Little Island Transport Strategy have been broken down into 'Planning and Design' (PD) and 'Procurement and Construction' (PC) stages with timelines estimated for each.



Key:

- Indicating will expand as required through lifespan of the study
- Period to allow for obtaining funding and other survey/planning requirements
- PD = Planning & Design
  - Feasibility; and
  - Planning & preliminary design (Part 8)
- PC = Procurement & Construction
  - Detailed Design;
  - Tender;
  - Contract; and
  - Handover

Figure 5.1 Little Island Transportation Study Implementation Plan

Short Term (2019 – 2023) Strategy Measures

5.2.5 As previously noted, construction is planned to commence on the Dunkettle Interchange in 2019 and is scheduled for delivery by 2022. The existing signalised roundabout at the interchange of the N8/N40/N25 will be replaced with a free flowing interchange permitting access into the western end of Little Island from the east and west. This will substantially improve the capacity for vehicular movements onto the island.

5.2.6 In the short term (2020) it is also proposed that additional capacity be added to the main central spine N25/R623 interchange, by using both lanes on the N25 west approach for right turning vehicles and adding an additional lane on the N25 bridge. Widening of the northbound, eastbound and southbound approaches to the An Crompán Roundabout to two lanes is also approached. Construction work for this measure is due to start in February 2019.

5.2.7 The combination of both of the above measures on the N25 will provide significant additional capacity for motorist entering and exiting little island in the relative short term.

5.2.8 During this initial five year period it is also recommended that planning and construction get underway as a priority for the delivery of the on-island public transport priority measures including bus lanes and traffic signal enhancements. It is critical that this is done as soon as feasible in the programme as the successful re-routing of existing bus services and provision of new bus services on island is reliant upon gaining fast and reliable journey times on island for public transport.

5.2.9 In terms of active mode improvements, it is recommended that the 30kph zone be implemented as soon as feasible as it is requires relatively little investment in infrastructure and can have considerable safety benefits.

5.2.10 The mobility hub at the Little Island Train Station, incorporating the pedestrian/cycle footbridge should be prioritised within the first five years of the strategy. It is recommended that a masterplan for the mobility hub, including the pedestrian/cycle footbridge, is commenced on completion of the Little Island Transportation Study, and that it is delivered prior to the delivery of the N25 Interchange to Ballytrasna Park Junction bus priority scheme.

5.2.11 The planning and delivery of cycle infrastructure should also commence in this period, focussing on delivering the central spine and access to the school.

5.2.12 The Smarter Travel Forum should be formed on completion of the study to start overseeing the implementation of the mobility plans. Demand Management measures will be implement throughout the lifetime of the LITS plan.

Medium Term (2023 – 2030) Strategy Measures

5.2.13 Whilst planning for many of the measures will commence during the short term period, their physical implementation may not take place until the medium term period.

5.2.14 As previously noted, the completion of the bus priority measures on island will create the necessary environment for running on island bus services. It is anticipated that the rerouting of existing services, the shuttle bus and implementation of new services will take place early in the 'Medium' period, or sooner depending on available funding. The provision of these services will provide the necessary catalyst for the further expansion of the mobility hub and

will support the widespread delivery of workplace travel plans offering a range of travel choices for employees and residents. The delivery of enhanced public transport access will also enable Cork County Council to implement considerably more progressive parking standards for new developments.

5.2.15 It is also anticipated that the remaining junction improvements and cycle lanes/ tracks will be largely completed during this period.

Long Term (2030 – 2040) Strategy Measures

5.2.16 It is estimated that the majority of measures will have been delivered by 2030, however the train station at North Esk and associated Park and Ride facilities are currently viewed as a longer term measure. These could be fast tracked depending on regional demand and available funding.

5.3 Implementation and Monitoring Strategy

5.3.1 The Little Island Transport Strategy is a 20 year programme of multi-disciplinary actions covering sustainable land use planning, urban design and transportation. In order to appropriately manage this programme, it is necessary to introduce an Implementation and Monitoring Group (IMG) that will co-ordinate both the programme of works and monitor its progress in relation to its overall vision. Figure 5.2 below describes the proposed mechanism for delivering the strategy in terms of implementation and monitoring.

Structure of Implementation and Monitoring Group (IMG)

5.3.2 The Implementation and Monitoring Group (IMG) will be set up within Cork County Council, reporting directly to the Assistant County Manager (ACM) and comprising the following persons:

- Director of Service (Chair of the Group and Champion of the Project);
- Area Engineer;
- Development Management Planner;
- Planning Policy Unit;
- Architects Department; and
- Transport Engineer

Function of IMG

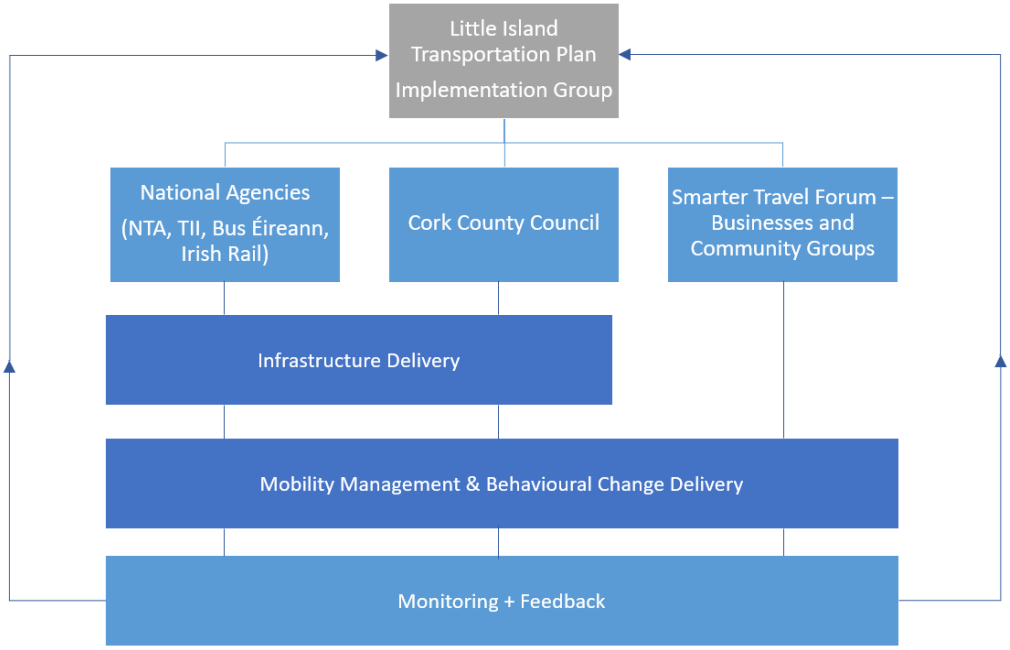


Figure 5.3 – Function of IMG

5.3.3 The first function of the IMG will be to prepare an Inception Report of work to be carried out. In principle, the following functions will need to be included in the Inception Report:

- Development of a LITS Programme Manual – providing detail as to the programme management governance including clear deliverables, scope and timeline for each workstream; change control approvals process; risk management; delegation and approvals levels; and reporting procedures.
- Preparation of the Amendment to the LITS.
- Statutory Planning Processes (Part 8)
- Implementation of Sustainable Schools Travel Plan
- Establishment of the Little Island Smarter Travel Forum, including funding mechanisms for the appointment of a Mobility Manager

5.3.4 The IMG will meet quarterly and will inform the Little Island Area Committee and the Key Stakeholders regularly. Once the Little Island Smarter Travel Forum is established, it will provide progress reports (via the Mobility Manager) regarding implementation of the Demand Management measures outlined in Section 3.8.

5.3.5 The second function of the IMG will be to identify indicators for monitoring the progress of the project. These indicators can be divided into:

- Land use planning (land availability, retail vacancy, employment surveys, planning applications)
- Urban design indicators (public realm improvements and new buildings)
- Transport indicators (to include pedestrian counts at key locations to monitor footfall, transfer to other sustainable modes, improvements to public transport journey times, queuing and car journey times on the road network, increases in walking and cycling

network, number of junction improvements, road safety KSIs, number of Travel Plans implemented and modal shift within workplaces and schools; and outcomes of individual Behavioural Change campaigns).
In this regard, it is recommended that permanent traffic counters be placed on the two N25 access point on Little Island to monitor movements on and off island on a daily basis and over an extended period of time. This will assist in determining the growth in movements on Little Island and will help support the case for the need for further transport interventions.

- Environmental indicators (habitats, water quality, population and human health, air quality, cultural heritage, landscape and material assets).

5.3.6 Key stakeholders will include representatives from the National Transport Authority (NTA), Transport infrastructure Ireland (TII) (formally the National Roads Authority) and Cork Chamber of Commerce.

Outputs of IMG

5.3.7 The output of the IMG will be to report progress made on each workstream within the Implementation Programme on a quarterly basis to the Area Committee and key stakeholders. This Quarterly Report will include: actual delivery against planned delivery in that Quarter, including programme slippage against time and budget; identified risk and issues and agreed mitigation actions; and change management approvals against scope.

5.3.8 An Annual Outcomes Report will also be produced by the IMG, providing outcome reporting on the monitoring indicators outlined above. This will be distributed to the Area Committee and key stakeholders, with key results used as part of the overall Behavioural Change Campaign messaging to ensure continued momentum for mode shift among Little Island residents and commuters.

6. SUMMARY AND RECOMMENDATIONS

6.1 Overview

6.1.1 Cork County Council have commissioned SYSTRA and CH2M Barry to develop a transportation strategy for Little Island. The overall aim of the Little Island Transportation Study (LITS) is to:

- identify the existing transportation issues within Little Island;
- explore potential solutions; and
- ensure that there is an integrated and balanced approach to transportation engineering for the future of the Island.

6.1.2 This is required so that Little Island can fulfil its strategic function as an employment location, logistics hub and residential community.

6.1.3 The '*Little Island Transportation Study - Strategy Development Report*' was completed in February 2018. This report included detail on:

- National, regional and local planning and policy documents guiding the development of Little Island;
- current traffic conditions in Little Island including key issues identified during site visits and public consultation;
- the evaluation framework utilised to assess various LITS strategies including the development of a study vision and goals;
- the development of the Little Island Traffic Model (LITM) used to test various transport strategies; and
- the assessment of test strategies through the identified evaluation framework; and
- the identification of the emerging preferred LITS Strategy.

6.1.4 This *'Strategy Design Report*', takes the emerging preferred strategy developed in the '*Strategy Development Report'* and provides additional detail in relation to the design of the proposed infrastructure and policy measures to be implemented in Little Island over a 20 year horizon to enable its sustainable growth as set out in the overriding vision. As such it is advised that the reports are reviewed together.

6.2 Summary of Recommendations

Vision

6.2.1 The Vision Statement provides the over-arching context for the specific measures within the LITS. Information gathered through a review of national and local policy, baseline studies and consultation with the general public was utilised to develop the following LITS Vision Statement:

"To create a safe and efficient transport network supporting ease of movement for all, which allows residents and businesses to work together to improve the quality of life within Little Island, and strengthen its position as a Strategic Employment Centre"

6.2.2 Based on the identified vision for Little Island, a set of specific objectives and KPI's were developed. These represent the foundation for an evaluation framework which was utilised to measure the performance of various transport strategies identified for Little Island.

6.2.3 The following is a summary of the measures developed for Little Island which are aligned to the study vision.

Public Transport

6.2.4 The public transport strategy developed for Little Island takes consideration of local, regional and national policy, along with responses received during public consultation. It aims to significantly improve public transport use through:

- Increased walking and cycling accessibility to the existing train station;
- Additional public transport services on-island serving key locations; and
- Demand management measures supporting travel by public transport.

6.2.5 Key recommendations of the public transport strategy include:

- Providing priority for Public Transport in a clockwise direction on Little Island to improve journey times and reliability;
- Re-routing existing bus services on-island;
- Introducing additional bus services connecting Little Island to key destinations within Cork City at a relatively high frequency;
- Making use of the proposed new train station and Park & Ride site at North Esk, and the Mobility Hub at Little Island train station, to enable motorists to park off-island and access their destination using sustainable modes; and
- Introducing a high frequency shuttle bus service linking the two train stations adjacent to Little Island (one existing and one proposed at North Esk), and the proposed new park and ride site and Mobility Hub, with key employers on-island.
- Retaining the R623/East Gate Drive corridor link free from development to enable the future provision of a public transport link.

- Examining the feasibility of operating a shuttle bus during the upgrade of the Dunkettle Interchange and the possibility of advertising and advocating the use of Carrigtwohill train station as a park and ride.

6.2.6 Benefits of the public transport strategy include:

- Improved journey times and reliability for public transport services in Little Island;
- Additional bus services provide viable alternatives to the private car, thus supporting sustainable travel;
- Enhanced accessibility to public transport by improving the pedestrian and cycle network, and routing bus services on-island; and
- Promotion of parking off-island due to the creation of a Mobility Hub and Park and Ride facilities linked to a high frequency shuttle bus service operating to key destinations on Little Island.

Walking and Cycling

6.2.7 A comprehensive network of pedestrian and cycle routes have been developed for Little Island, in addition to further supporting infrastructure and behavioural change initiatives, to facilitate safe and efficient access to key destinations, both on and off island.

6.2.8 Key recommendations of the walking and cycling strategy include:

- Reduction of speed limit to 30kph to enhance cycle/pedestrian safety and provide an environment conducive to cycling/walking;
- Provision of an island wide network to facilitate cycle and pedestrian movement by:
  - Reallocating road space to include ped/cycle facilities;
  - The creation of a 'greenway' forming a central axis through Little Island;
  - Inclusion of the Pedestrian/Cycle bridge linking Eastgate to the Train Station;
  - Improved pedestrian/cycle routes on existing desire lines;
- Provision of improved cycle and pedestrian crossing facilities at significant junctions by:
  - Inclusion of additional crossing points and improved connectivity; and
  - Junction treatment and provision of at-grade crossings
- Implementing a suite of measures to influence behavioural change.
- Ensuring consultation with the residents of Castlewood and Church Court to discuss and mitigate safety concerns will be undertaken to be undertaken as part of the detailed design of the Church Court cycle route.
- Ensuring the appointed design team will take account of the detailed submissions provided by the Transport & Mobility Forum (TMF) cycling organisations (Cork/Dublin Cycling Campaign; Cycling without Age) and individuals during the 2nd Public Consultation to help inform the detailed design further from a user's view point.
- Examining the feasibility of making provision for the inclusion of a walking/cycling route adjacent to the former Mitsui Site along the waterfront .

6.2.9 Benefits of walking and cycling strategy include:

- Increased area-wide connectivity with direct, comfortable and attractive cycleways/footways;
- Improved connectivity between schools and residential areas, to assist with promoting sustainable school travel;
- Safer facilities for pedestrian/cyclists with increased priority for both pedestrians and cyclists;
- Improved accessibility to public transport; and
- Improved vibrancy throughout Little Island.

School Travel

6.2.10 A series of infrastructure proposal and behavioural change initiatives have been developed for the Little Island National School to promote active travel for pupils and reduce dependency on cars for the school-run.

6.2.9 Key recommendations of the school travel strategy include:

- Improved connectivity for pupils, parents and teachers through the proposed East-West, North-South 'Greenways' and junction improvements;
- Speed reduction measures at the School Junction to increase safety, including:
  - A right-turn lane for vehicles at St. Lappan's Place junction;
  - Raised traffic islands; and
  - Improved public lighting
- Improved pedestrian and cyclist facilities at junctions approaching the school including:
  - Toucan crossings;
  - Raised pedestrian crossings; and
  - Tighter corner radii
- Implementing further behavioural change initiatives to encourage the use of public transport, walking and cycling amongst pupils, teachers and parents;
- Inclusion of a public bus stop near the school.
- Inclusion of Variable Message Signs to alter drivers of their speed and to slow down if necessary.

6.2.11 Benefits of the school travel plans/initiatives include:

- Improved health and fitness among pupils, parents and staff;
- Improved concentration levels among pupils who walk and cycle;
- Safer access and journeys to school for all with appropriate infrastructure;
- Increased road safety awareness;
- Reduced traffic congestion and pollution in the vicinity of the school;
- Improved community awareness among pupils, parents and staff; and
- Increased parent-child interaction among parents and children who cycle/walk to school.

Parking

6.2.12 The parking strategy for Little Island works in conjunction with, and supports, the other recommended transport actions that form the strategy with the central aim of encouraging the use of sustainable forms of transport whilst facilitating efficient access for all.

6.2.13 The key components of the parking strategy include:

- Intercepting traffic through the introduction of Park & Ride Facilities and a Mobility Hub;
- Introduction of a frequent shuttle bus with dedicated bus priority measures servicing the Park and Ride and the Mobility Hub. The service will travel throughout Little Island;
- Development of the Ped/Cycle Link bridge to facilitate park and bike/walk from the Mobility Hub and provision of secured, covered, long-term bike parking;
- Enforcing restrictions on illegally parked HGV's and vehicles in residential areas; and
- Providing strategically located cycle parking facilities throughout Little Island.
- Making provision for secured, covered, long-term bike parking is provided for those who want to park and bike or train and bike, without having to take their bike on the train/car/bus.
- Reviewing the suitability of the parking facilities at the Carrigrennan playground.

6.2.14 Benefits of the parking strategy include:

- Balanced approach encouraging a move away from car travel wherever possible;
- Intercepting traffic prior to the eastern and western gateways, thereby reducing traffic volumes entering Little Island; and
- Promoting more sustainable transport options as part of employee's daily commute.

Network Enhancements

6.2.15 The construction of the Dunkettle Interchange as a free-flowing junction permitting access into the western end of Little Island from the east and west, will substantially improve the capacity for vehicular movements onto the island.

6.2.16 In the short term, it is also proposed that additional capacity be added to the main central spine of the N25/R623 interchange and widening take place on all approaches to the An Crompán Roundabout.

6.2.17 The combination the above measures on the N25 will provide significant additional capacity for motorist entering and exiting little island in the relative short term.

6.2.18 In the medium term horizon, further upgrades are proposed from the N25/R623 interchange to the Ballytrasna junction to significantly enhance the capacity of this central spine for both public transport and vehicular traffic. The implementation of these measures, in tandem with behavioural change initiatives, will increase capacity for movements on-island, enabling the sustainable growth of Little Island supporting up to 13,000 employees.

6.2.19 The proposed 3rd Interchange onto N25 is not identified as a requirement during the lifetime of the study. The corridor for the route could be retained as part of a longer-term strategy, however, the following significant challenges remain:

- It contradicts National Policy;
- The cost of construction will be extremely high;
- Potential adverse environmental impacts; and
- Will induce car demand resulting in greater reliance on the private

6.2.20 In addition to the above on-island capacity enhancements, a number of internal network enhancements have been developed to improve capacity for vehicular traffic, provide public transport priority and enhance the safety and comfort of pedestrian and cyclists.

Transport Demand Management

6.2.21 Transport Demand Management programmes seek to encourage sustainable travel through a series of techniques aimed at influencing people's travel. Transport Demand Management initiative often complement infrastructure schemes, particularly those aimed at reducing the capacity for private vehicles or providing priority for public transport services or active travel.

6.2.22 As a compact strategic employment centre, Little Island is ideally positioned to benefit from a comprehensive Transport Demand Management programme linked to the planned investment in sustainable infrastructure.

6.2.23 Key elements of the proposed Transport Demand Management programme include:

- Behavioural Change Communication's Campaign
- Personalised Travel Planning
- Residential Travel Plans
- Station Travel Plans for the existing rail station and proposed new station
- Workplace Travel Plans.

6.2.24 The Benefits of the proposed demand management initiatives in Little Island include:

- Creation of a culture for Little Island residents and commuters where sustainable travel options become the default mobility choice;
- Protecting investment in the local and strategic road network;
- Supporting the efficient and effective use of the public transport system;
- Maximising the benefits of the proposed investment in public transport and active travel;
- Supporting active and healthy lifestyles while safeguarding vulnerable road users; and
- Managing congestion in order to facilitate economic growth.

Implementation

6.2.25 An indicative timeline for delivery of the Little Island Transportation Plan has been developed identifying interdependencies among key measures. The implementation of measures is broken into three delivery streams, namely:

- Short Term (2018 - 2023) Strategy Measures;
- Medium Term (2023 - 2030) Strategy Measures; and

- Long Term (2030 - 2040) Strategy Measures.

6.2.26 In order to appropriately manage this programme, it is necessary to introduce an Implementation and Monitoring Group (IMG) that will co-ordinate both the programme of works and monitor its progress in relation to its overall vision.

6.2.27 The plan sets out the recommended structure and function of the an Implementation and Monitoring Group, identifying the expected roles of public bodies and other key stakeholders.

6.3 Conclusion

6.3.1 The growth of Little Island as an employment centre in recent years has led to a substantial increase in car traffic on the island, resulting in significant queuing and delays in the peak commuter periods.

6.3.2 The upgrade of the Dunkettle junction to a free flow interchange will improve capacity for movements to Little Island, however there is an identified need to safeguard the investment in national roads infrastructure and improve access onto island for all transport modes to support the continued sustainable development of the island.

6.3.3 Aligned with the policies set out in the Cobh Municipal District Local Area Plan, the Little Island Transportation Study seeks to reaffirm Little Island's function as a strategic centre of general business development while protecting the amenity enjoyed by existing residential communities.

6.3.4 A comprehensive transport plan has been prepared that identifies the future transport needs of Little Island at a strategic and local level for all modes. The plan provides guidance on the prioritisation of measures which will encourage sustainable travel, while protecting the efficiency of the existing and future network.

6.3.5 Short and medium-term network enhancements have been developed which will improve the capacity for movements on and off island for both public transport and vehicular traffic. The implementation of these measures, in tandem with behavioural change initiatives, will increase capacity for movements on-island in the peak commuter periods, enabling the sustainable growth of Little Island up to 13,000 employees.

6.3.6 The internal network of roads, which are currently dominated by vehicular traffic, will be upgraded to facilitate safe access for pedestrian and cyclists. Augmented by a series of off-road cycle routes, this will enable residents and employees to travel to places of work, education and recreation via a network of safe and easily navigable cycle/pedestrian routes.

6.3.7 The significant investment in infrastructure will be supported by a complementary demand management programme, which delivered in tandem, will help unlock the full benefits of the transport strategy.

6.3.8 In summary, the future development of Little Island, in the manner foreseen, will comprise a prime example of integrated transport and land-use planning, fulfilling its role as a strategic employment centre and supporting a vibrant local community.

In the UK and Ireland, SYSTRA provides Transport Planning consultancy and Rail and Urban Transport engineering services. We work with our clients to think through complex issues concerning the location and movement of people, goods and services – as well as helping them maximise the potential of their own businesses. We have been providing Transport Consultancy services in the UK and Ireland for over 40 years and have an excellent reputation for the provision of high quality, robust and independent advice to our clients. SYSTRA Ltd is a UK and Ireland registered subsidiary of SYSTRA Group.

For more information visit www.systra.co.uk

SYSTRA Ltd Offices

Birmingham
Second Floor, 37a Waterloo Street
Birmingham B2 5TJ United Kingdom
T: +44 (0)121 233 7680

Dublin
2nd Floor, Riverview House,
21-23 City Quay, Dublin 2, Ireland
T: +353 1 9053961

Edinburgh
Prospect House, 5 Thistle Street, Edinburgh EH2 1DF
United Kingdom
T: +44 (0)131 220 6966

Glasgow
Seventh Floor, 78 St Vincent Street
Glasgow G2 5UB United Kingdom
T: +44 (0)141 225 4400

London
Seventh Floor, 15 Old Bailey
London EC4M 7EF United Kingdom
T: +44 (0)20 7529 6500

Manchester
25th Floor, City Tower, Piccadilly Plaza
Manchester M1 4BT United Kingdom
T: +44 (0)161 236 0282

Newcastle
PO Box 438, Newcastle upon Tyne, NE3 9BT
United Kingdom
T: +44 (0)191 2136157

Woking
Dukes Court, Duke Street
Woking, Surrey GU21 5BH United Kingdom
T: +44 (0)1483 728051

Selected SYSTRA Group Offices

Abu Dhabi
AS Business Centre, First Floor, Suites 201-213,
Al Ain Road, Umm al Nar, P.O. Box 129865,
Abu Dhabi, UAE
T: +971 2 558 3809

Hong Kong
14th Floor West, Warwick House, TaiKoo Place,
979 King's Road, Island East, Hong Kong, China
T: +852 2529 7037

Lille
86 Boulevard Carnot, 59000 Lille, France
T: +33 (0)3 74 07 00

Lyon
11, rue de la République, 69001 Lyon, France
T: +33 (0)4 72 10 29 29

Marseille
76, rue de la République, 13002 Marseille, France
T: +33 (0)4 91 37 35 15

Mumbai
Antriksh, Unit no. 301, 3rd Floor, CTS Nos.
773, 773/1 to 7, Makwana Road, Marol, Andheri East,
Mumbai 400069, India
T: +91 22 2647 3134

New Delhi
5th Floor Guru Angad Bhawan, 71 Nehru Place,
New Delhi 110019, India
T: +91 11 2641 3310

Paris
72 rue Henry Farman, 75015 Paris, France
T: +33 (0)1 53 17 36 00

Wroclaw
ul. Świętego Antoniego 2/4 Brama B
50-073 Wroclaw, Poland
T: +48 71 73 36 470

SYSTRA