

National Transport Authority

BusConnects Cork

Core Bus Corridor 9 - Airport to City Centre Feasibility and Options Assessment Report

Reference: REP/009

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1. Introduction

1.1 Background

BusConnects Cork is the National Transport Authority's plan to improve Bus Services throughout the city and suburbs. It is a programme of nine measures to fundamentally transform Cork's bus system, so that bus commuting will become a viable and attractive choice for employees, students, shoppers and visitors. BusConnects Cork aims to overhaul the current bus system in the Cork region through:

- Redesigning the bus network;
- Building a new network of bus corridors and cycle lanes;
- Implementing a state-of-the-art ticketing system;
- Implementing a cashless payment system;
- A simpler fare structure;
- New bus livery
- New bus stops and shelters, with better signage and information;
- New Park and Ride sites in key locations; and
- Transitioning to a new zero emissions bus fleet.

As part of BusConnects Cork, it is necessary to develop concept engineering solutions for the core bus corridors that will support the efficient running of bus services in the city, and to include for the provision of both bus priority and safe cycle and pedestrian facilities.

Arup has been appointed by the National Transport Authority to undertake a route options assessment for four radial core bus corridor (CBC) approaches to the city (packed together as 'Project B' of the overall city and suburban area). These four corridors are as follows:

- CBC 6 – West of Ballincollig to City Centre via Mardyke;
- CBC 9 – West of Bishopstown to City Centre;
- CBC 8 – Wilton to City Centre; and
- CBC 9 – Cork Airport to City Centre via Turners Cross area.

This report presents the findings of the route options assessment undertaken for CBC 9 of BusConnects Infrastructure Cork (BCIC) (Airport to City Centre) and makes a recommendation on a preferred route. The report also details the emerging preferred route for the bus priority and cycle infrastructure provision along the CBC 9 corridor.

1.2 Report Structure

The report structure is set out as following:

- **Section 2** – The strategic transport policy context which has identified the need for the delivery of bus priority infrastructure on this corridor is discussed in this section;
- **Section 3** – The objectives for the BusConnects Infrastructure Cork scheme are set out in this section;
- **Section 4** – The extent of the BusConnects Infrastructure Cork study area assessed, effectively defining the proposed scheme, is described in this section. Key constraints and opportunities are identified and the integration of the corridor with the wider public transport network, and the compatibility with other road users is presented;

- **Section 5** – The methodology for identifying and assessing the feasibility of the various potential route options available within the study area is discussed in this section including:
 - the selection and determination of initial criteria for screening and assessing technically feasible route options, based on distinct, project-specific objectives;
 - the definition of assessment criteria; and
 - the identification of study area sections where practical route options have been considered, and presentation of an initial network ('spider's web') of options examined.
- **Section 6** - presents the Stage 1 assessment of potential route options within each of the sub-sections of the overall study area;
- **Section 7** - details the route options assessment undertaken for each of the study area sections and a comparison of potential 'end-to-end' route options;
- **Section 8** – In this section, the Emerging Preferred Route identified is described; and
- **Section 9** - makes recommendations regarding how the emerging preferred route should be progressed through the next step (public consultation).

2. Transport Planning and Policy Context

2.1 Project Ireland 2040 National Planning Framework (NPF)

The National Planning Framework (NPF) is a statutory document, published in 2018 which supersedes the National Spatial Strategy (NSS). It sets out the long-term direction for Ireland's physical development, and is established on supporting policies and actions at a sectoral, regional and local level. The NPF outlines the strategic planning and development for the country in the period to 2040.

The NPF outlines some key transport growth enablers relevant to the projected population growth Cork will experience by 2040. Some of the key enablers outlined which are applicable to the development of the BCIC include:

- Intensification of development within inner-city and suburban areas, and utilisation of brownfield lands where possible;
- Large-scale regeneration projects within the Cork City Docklands;
- Development of an enhanced city-wide public transport system to incorporate proposals for an east-west corridor from Mahon, through the City Centre to Ballincollig and a north-south corridor with a link to the Airport; and
- Improved traffic flow around the city, which could include upgrades of the N40, and/or alternatives which may include enhanced public transport.

The NPF also outlines 10 National Strategic Outcomes (NSO's) relevant to transportation and the improvement of the quality of public space. **NSO 4** is the most relevant to BCIC and it identifies the need for high-quality public transport services to promote sustainable mobility. NSO 4 calls for the expansion of public transport alternatives to car transport in order to reduce congestion, the delivery of key bus-based projects in cities and towns and the development of a comprehensive network of safe cycling routes in metropolitan areas.

- **NSO 4:** Sustainable Mobility by continuing to enhance Ireland's public transport and environmental sustainability of our mobility systems.

2.2 National Development Plan (NDP) 2018 – 2027

The National Development Plan (NDP) is a spatial planning guide setting out the investment priorities from the NPF and will drive its implementation over the next ten years. This plan is currently under review and will set the vision for the next decade, beyond 2027.

The NDP will guide national, regional and local planning and investment decisions in Ireland to cater for any future population increase. The current plan recognises that there is a need to address the issues of lengthy commute times and slow progress, acknowledging that a new approach is required.

While the National Strategic Outcomes (NSOs) represent the overarching priorities which the NPF is designed to achieve, the purpose of the NPF is to set out the new configuration for public capital investment to secure realisation of each of the NSOs. This is being achieved by the identification of Strategic Investment Priorities for 2018 to 2027.

In relation to BCIC, the core priority NSO 4: Sustainable Mobility aims to create an environmentally-sustainable public transport system to enable growth and change and to meet the significant increase in travel demand and urban congestion while also contributing to the national policy vision of a low-carbon economy.

NSO 4 also states the NDP will deliver a public transport network that will provide high-quality passenger interchange points, so as to facilitate convenient transfer between efficient and integrated public transport services.

In order to achieve this NSO, an increase in the public capital investment is required which sets out the road for BCIC.

2.3 Climate Action Plan 2021

Published in November 2021, the Climate Action Plan (2021) sets out the pathway to halving Ireland's emissions by 2030 and reaching net zero by 2050. Emissions relating to the transport sector account for approximately 20% of Ireland's greenhouse gas emissions and the transport sector is a particular focus of the Climate Action Plan.

Key Objectives referenced in the plan include:

- An additional 500,000 daily journeys using public transport and active travel modes; and
- Increased numbers of electric vehicles and low emission vehicles.

Key Action Items referenced in the plan include:

- Continue the improvement and expansion of the Active Travel and Greenway Network;
- Construct an additional 1,000km of cycling and walking infrastructure;
- Commence delivery of BusConnects Network redesigns in Cork, Galway, Limerick and Waterford;
- Commence delivery of BusConnects Core Bus Corridor Infrastructure Works;
- Examine the role of demand management measures in Irish cities, including low emission zones and parking pricing policies;
- Balance better movement priorities within urban areas to transition the built environment and public domain from one that is "vehicle centred" to being "people centred";
- Advance demand management measures;
- Increase provision of Park & Ride at transport interchanges;
- Deliver sustainable bus priority measures on the National Road Network; and
- Transition Cork, Galway, Limerick and Waterford metropolitan area Public Service Obligation (PSO) bus services to low/zero emission bus fleet.

2.4 National Sustainable Mobility Policy (2022)

The National Sustainable Mobility Policy, published on April 7th, 2022 sets out a strategic framework to 2030 for active travel (walking and cycling) and public transport journeys to help Ireland meet its climate obligations (achieving a 51% reduction in carbon emissions by the end of the decade). It is accompanied by an action plan to 2025 which contains actions to improve and expand sustainable mobility options across the country by providing safe, green, accessible and efficient alternatives to car journeys. It also includes demand management and behavioural change measures to manage daily travel demand more efficiently and to reduce the journeys taken by private car.

The policy aims to deliver at least 500,000 additional daily active travel and public transport journeys by 2030 and a 10% reduction in the number of kilometres driven by fossil fuelled cars by 2030.

The NSMP builds on and replaces existing active travel and public transport policy set out in 'Smarter Travel: A Sustainable Transport Future' and the National Cycle Policy Framework (both published in 2009).

The Vision of the NSMP is 'To connect people and places with sustainable mobility that is safe, green, accessible and efficient'. The policy is guided by three key principles, underpinned by 10 high-level goals

PRINCIPLES	GOALS
Safe and Green Mobility	<ol style="list-style-type: none"> 1. Improve mobility safety. 2. Decarbonise public transport. 3. Expand availability of sustainable mobility in metropolitan areas. 4. Expand availability of sustainable mobility in regional and rural areas. 5. Encourage people to choose sustainable mobility over the private car.
People Focused Mobility	<ol style="list-style-type: none"> 6. Take a whole of journey approach to mobility, promoting inclusive access for all. 7. Design infrastructure according to Universal Design Principles and the Hierarchy of Road Users model. 8. Promote sustainable mobility through research and citizen engagement.
Better Integrated Mobility	<ol style="list-style-type: none"> 9. Better integrate land use and transport planning at all levels. 10. Promote smart and integrated mobility through innovative technologies and development of appropriate regulation.

Figure 1: Principles and Goals (Source: National Sustainable Mobility Policy 2022)

Goal 3 above (‘Expand availability of sustainable mobility in metropolitan areas’) foresees the implementation of improved walking, cycling, bus and rail infrastructure in the five cities. This is fundamental to achieving the policy target of 500,000 additional daily active travel and public transport journeys by 2030. The expansion of public transport in the five cities will be delivered through the BusConnects programmes.

Goal 5 (‘Encourage people to choose sustainable mobility over the private car’) outlines potential measures to encourage modal shift to sustainable travel options, including reference to measures to improve the attractiveness of these sustainable modes whilst also exploring measures to reduce the attractiveness of private car movements where there are sustainable alternatives – these measures can include demand management. The Five Cities Demand Management Study referenced in this section of the NSMP refers to measures such as reallocation of road space from cars to prioritise walking, cycling and public transport, reducing parking provision and supporting the concept of the 15-minute neighbourhood.

2.5 National Investment Framework for Transport in Ireland (NIFTI)

The National Investment Framework for Transport in Ireland (NIFTI) is the long-term sectoral strategy for investment in land transport and replaces the 2015 Strategic Investment Framework for Land Transport. Its purpose is to establish the high-level direction and parameters for future investment and ensure that investment is consistent with Government policy.

NIFTI is a high-level tool through which project sponsors can align capital transport projects with the NPF. It will guide transport investment to support the delivery of the NPF, enable the Climate Action Plan and promote positive social, environmental and economic outcomes throughout Ireland.

The framework establishes four high-level strategic investment priorities:

- Decarbonisation;
- Protection and Renewal;
- Mobility of People and Goods in Urban Areas; and
- Enhanced Regional and Rural Connectivity.

These priorities are not an either/or scenario. Investment is required in all these areas to support the NPF and Climate Action Plan objectives. The priorities represent the key objectives of transport investment that new projects should align with. NIFTI also establishes a process to help decide the best solution to an identified need or problem through modal and interventional hierarchies.

The framework encourages the use of active travel and public transport ahead of solutions reliant on private transport. To make best use of our existing assets, protecting and renewing the existing land transport network should, where possible, be the first solution considered. This is followed by maximising the value of the network through optimising its use. Infrastructural investment will then be considered after these two categories have been assessed as inappropriate for the identified problem, with upgrades to existing infrastructure to be considered before outright new infrastructure.

2.6 Regional Spatial and Economic Strategy (RSES)

The Regional Spatial and Economic Strategy (RSES) is a link between the NPF, the City and County Development Plans and the Local Economic and Community Plans. The RSES is prepared alongside the NPF through three new Regional Assemblies which will be utilised to inform the NPF and are centrally involved in the formulation of policies geared towards achieving a greater dispersal of economic growth and development throughout their respective regions.

These Regional Assemblies are the Eastern and Midland, Northern and Western, and Southern Regional Assemblies. In turn these Regional Assemblies will be informed by smaller Strategic Planning Areas (SPAs), which envelop key economic catchments, due to the geographical extent of the assemblies. Cork is situated within the South-West SPA of the Southern Regional Assembly.

The Strategy for the Southern Region, as set out in the RSES report is to build a strong, resilient, sustainable region, through 11 individual actions, including the following relevant actions:

- Strengthening and growing our cities and metropolitan areas, harnessing the combined strength of the three regional cities as a counterbalance to the Greater Dublin Area through quality development, regeneration and compact growth, building on the strong network of towns and supporting our villages and rural areas;
- Enhancing regional accessibility through upgraded transport infrastructure and digital connectivity allied to transformed settlement hierarchy; and
- Transforming our transport systems towards well-functioning, sustainable integrated public transport, walking and cycling and electric vehicles.

A Metropolitan Area Strategic Plan (MASP) for Cork is set out within the RSES report, and this MASP places significant emphasis on the implementation of the CMATS recommendations.

Section 2 of the RSES report deals with the Regional Transport Strategy, with transport investment priorities set out, with Sustainable Mobility a key investment priority, including the delivery of BusConnects programmed within the regional cities. Transport priorities for the Cork Metropolitan Area include the following:

- A high-capacity public transport corridor (potentially a Light Rail corridor);
- Infrastructure to serve Cork Docklands and Tivoli;
- Prioritisation of buses over car traffic through delivery of several high-quality bus corridors;
- Targeted improvement of arterial routes within the city and environs to enable the delivery of higher bus service frequencies and improved journey time reliability; and
- The development of a metropolitan area-wide cycle network.

2.7 Cork Metropolitan Area Transport Strategy (CMATS)

2.7.1 Introduction

The NPF 2040 envisages that Cork will become the fastest growing county in Ireland with a projected increase of its population of 105,000 – 125,000 people. within the Cork City and Suburbs area up to 2040. The projected population and associated economic growth will result in a significant increase in the demand for travel, which needs to be managed and planned for carefully to safeguard Cork's attractiveness to live, work, visit and invest in.

The current metropolitan area transport network contains limited capacity to cater for this projected additional growth, with a need to allocate remaining capacity efficiently. The result being that land-use and transport planning will need to be far more closely aligned to reduce the need to travel by car and support the functioning of a sustainable, integrated transport system.

CMATS is a co-ordinated land use and transport strategy for the Cork Metropolitan area which will provide a coherent transport planning policy framework and implementation plan. It is around this plan that other agencies involved in land use planning, environmental protection, and delivery of other infrastructure such as housing and water can align their investment priorities.

2.7.2 Vision and Principles

It is the vision of CMATS to deliver an integrated transport network that addresses the needs of all modes of transport, offering better transport choices, resulting in better overall network performance and providing capacity to meet travel demand and support economic growth.

The vision is based on guiding principles including the following:

- **Principle 1:** To support the future growth of the CMA through the provision of an efficient and safe transport network;
- **Principle 2:** To prioritise sustainable transport and reduce car dependency;
- **Principle 3:** To provide a high level of public transport connectivity;
- **Principle 4:** To identify and protect key strategic routes for the movement of freight and services;
- **Principle 5:** To enhance the public realm through traffic management and transport interventions; and
- **Principle 6:** To increase public transport capacity and frequencies where needed to achieve the strategy outcomes.

It is evident that the majority of these principles are relevant to BCIC and set out the approach for this project.

CMATS also recognises the opportunities afforded to the CMA, arising from high level spatial planning objectives and associated population growth projections outlined in the NPF 2040 and proposed capital investment in the NDP 2018-2027, to consolidate future projected growth in the CMA within established urban centres and along its identified high quality, high-capacity public transport corridors as illustrated in **Figure 2**.

2.7.3 Public Transport

The CMATS Strategy was prepared by firstly developing a high-level public transport network which provides a context for the overarching transport options and proposals. The public transport network is based on the six core principles outlined above. Following the development of the public transport network, the cycling and walking networks were subsequently developed. The public transport network formed the indicative framework before more detailed network development was carried out. This more detailed network included the scale and type of public transport requirement on the strategic corridors, the route alignment, the level of priority required, the frequency of service, as well as the level of coverage provided by the strategy public transport proposals.

Figure 2 shows the indicative public transport network that was developed as part of CMATS. It shows the proposed rapid transit corridor to be the central spine of the public transport network, which is complemented by core bus corridors which emanate radially out of Cork City in all directions.

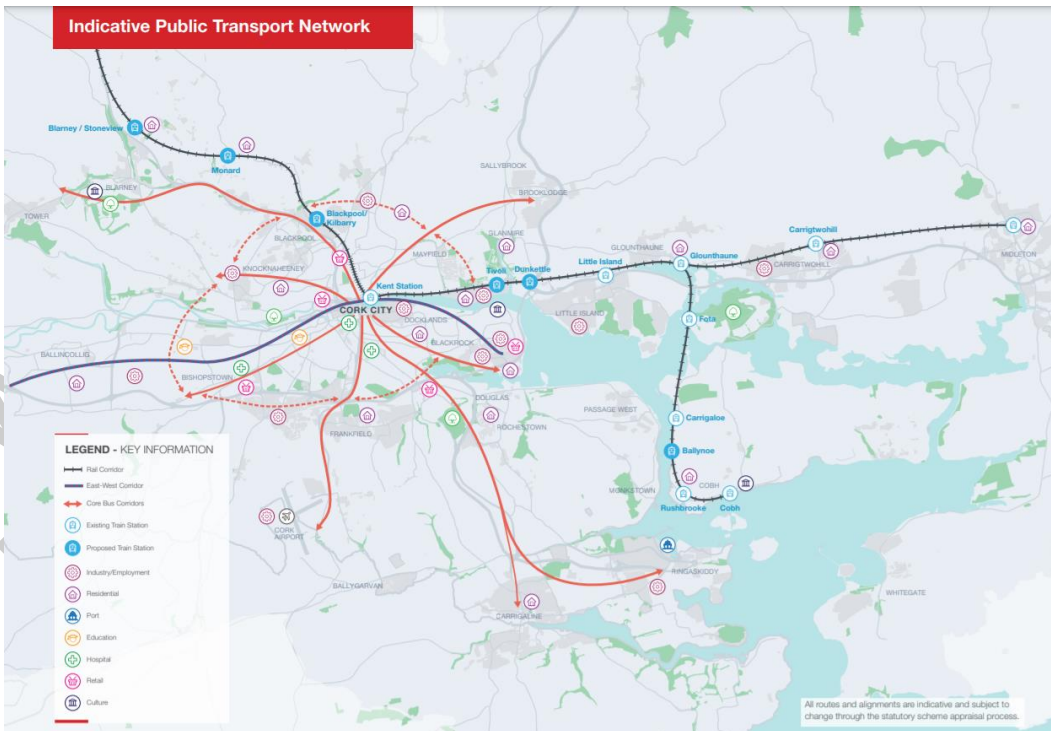


Figure 2: Indicative Public Transport Network [Source: CMATS]

The Strategy recognises and identifies buses as an extremely efficient mode of transport which will serve the majority of the Cork Metropolitan area. It makes reference to a BusConnects network which will comprise a *Core Radial Bus Network*, an *Orbital Bus Network*, a *Cross-City Network* as well as *Supporting Radial Bus Services* to ensure comprehensive network coverage.

The indicative Core Radial Bus Network connects the external corridors to the city centre and has been refined to pair with cross-city travel demand to maximise the utilisation of the bus services on these corridors. Supplementary to this is the proposal to significantly improve frequency of bus services along these radial routes, the majority of which are intended to operate at a frequency of 15 minutes or better.

The indicative Orbital Bus Network comprises four orbital services which are proposed to serve a multitude of key destinations outside of the city centre. The upgraded orbital network will provide additional connectivity, support urban expansion areas and interchange with radial bus services.

The Cross-City Network is a 200km Core Radial Bus network, which has been refined to pair with cross-city travel demand to maximise the utilisation of the core bus services for effective and efficient travel to and through Cork City Centre.

There were a number of guiding principles applied such as alignment with CCMS, the targeting of key interchange locations and the minimisation of divided services on one-way sections or routes. Key interchange locations were chosen due to their ability to accommodate large numbers of public transport services either through bus lanes or full bus priority. These key interchange locations are identified as St. Patrick's Street, MacCurtain Street, Grande Parade/South Mall and the Parnell Place Bus Station.

Supporting Radial Bus Services will also be developed in order to ensure comprehensive network coverage. These supporting services will typically have lower frequencies than the Core Radial Bus Network but will cater for a wider catchment across the Metropolitan area. The radial bus services will provide further opportunities for interchange to future provisions of Suburban Rail, Light Rail and other bus services on the Core Bus Network.

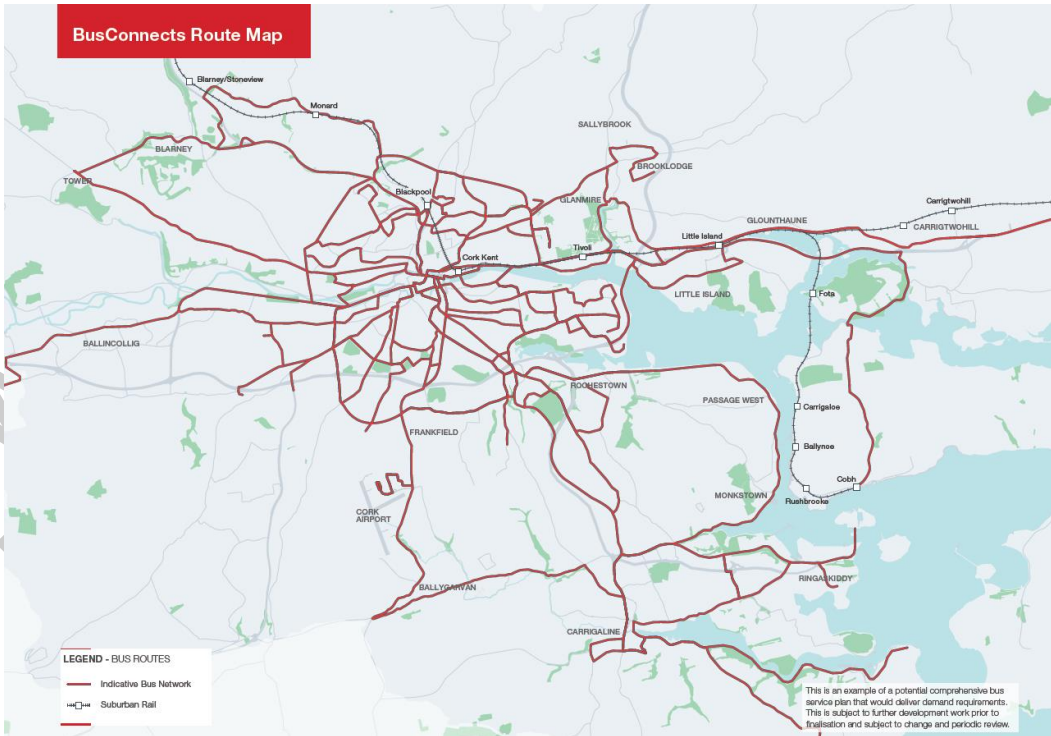


Figure 3: BusConnects Route Map [Source: CMATS]

2.7.4 Cycling

CMATS proposes a vision for the Cork Metropolitan area that has a coherent, safe and attractive cycle network that will support a shift from private car to cycling. High-quality cycle links are proposed to connect with public transport and will be designed to National Cycle Manual standards and, where possible, segregated from other modes of transport.

The key priorities for the development of the Cycle Network Plan include the designation of a coherent network providing access to all major trip generators, prioritising employment areas and third level education and schools. These priorities have been established to support proposed modal shift targets. The network will provide the highest possible level of service on identified high demand corridors, as well as the identification and maximisation of opportunities for high quality greenways and quietways. **Figure 4** shows an extract of the CMATS Cycle Route Network.

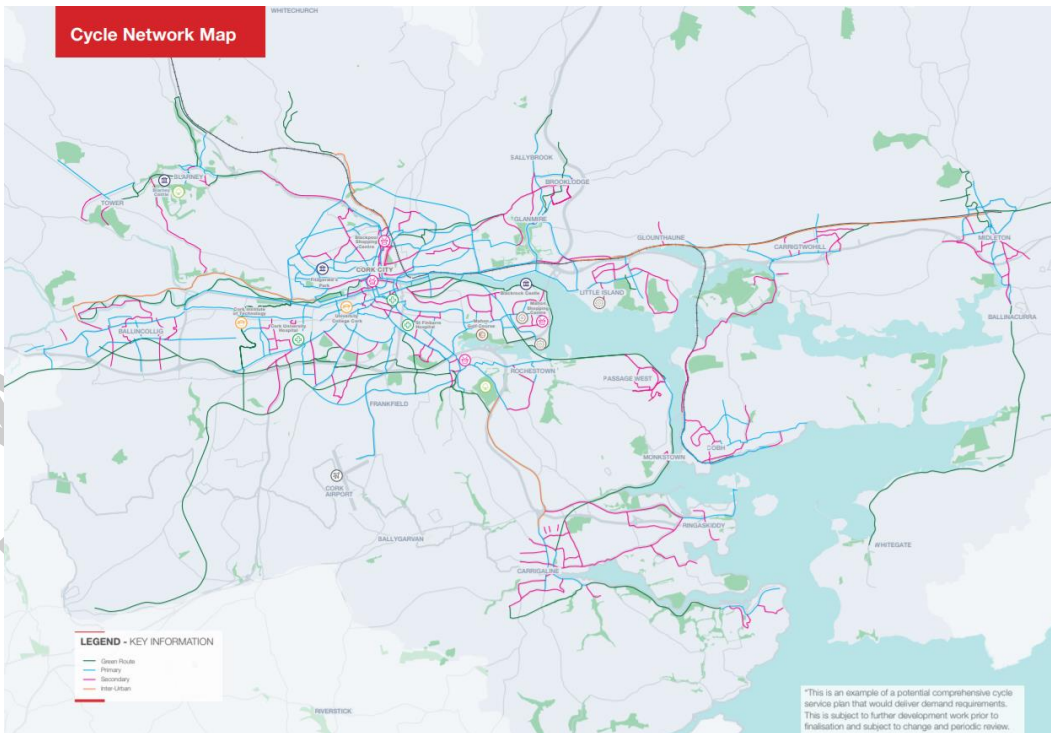


Figure 4: Cycle Network Map [Source: CMATS]

The network comprises a number of different route types: Primary, Secondary, Green Route, Inter-Urban, and Feeder Cycle networks. Each route type is identified and designated based on experienced demand and proximity and connectivity to employment, residential area or educational facilities.

2.8 Cork City Bus Network Review

A review of the existing Cork City bus network has been recently complete. The outcome of this review was the determination of an optimal new city bus network which will support the planned future growth of the city and suburbs.

The work carried out in preparing this new bus network for Cork emphasised that the network review was an opportunity to redesign the Cork network around today's needs rather than continue with the network inherited from the past. The report identifies that the projected growth forecasted for Cork's population and economy will lead to congestion and degradation of the area's attractiveness without new investment in the city's public transport network. The study also identifies that a well-connected public transport network is key to high patronage, with easy and reliable interchange a key factor.

An initial round of public consultation was undertaken in June/July of 2021 for the network review, which focused on a 'Choices Report' outlining initial decisions and key considerations to inform the redesign of the bus network. The general public were invited to comment on this initial consultation, with the input gathered utilised to inform the design of the draft bus network. This draft network was subsequently released to the public in October/November 2021 and was the subject to a further round of consultation. A final revised network has now been completed and is available to view at <https://busconnects.ie/cork>.

2.9 Cork City Development Plan 2015-2021

The Cork City Development Plan is Cork City Council's main strategic planning policy document, which guided the development of the city between 2015 and 2021. The document is set to be superseded in early 2022 with the adoption of the new Cork City Development Plan 2022-2028. A draft of this new City Development Plan is currently being finalised and is due to be adopted in late summer 2022.

The plan provides a vision for the development and improvement of the city and sets out the priorities for investment in infrastructure over the plan period. In addition, the plan is the main reference point in determining planning applications for new developments.

The Plan also emphasises the need for balance and integrated public transport system along with complementary land use policies to drive a broader range of transport options.

The Plan contains a number of transport objectives related to BCIC, as set out in Chapter 5: Transportation, including the following strategic objectives:

- **Objective 5.5 - Strategic Transport Corridors:** Cork City Council prepared studies to determine how to best optimise transport provision along strategic corridors within the city to reduce trip length and increase demand in order to provide more frequent bus services. Upon completion, land use transport plans for each corridor will be prepared.
- **Objective 5.7 Cycling Strategy:** Cork City Council will develop a Cycling Strategy during the lifetime of the Development Plan to address supporting measures required to increase cycling uptake.
- **Objective 5.12 - Support Bus Network Improvement:** Cork City Council and other stakeholder will make sure to facilitate the delivery of a legible and reliable network of bus services.
- **Objective 5.13 - Bus Rapid Transit:** Cork City Council will identify the preferred route for Bus Rapid Transit in conjunction with Cork County Council and the National Transport Authority.

2.10 Cork City Development Plan 2022-2028

The Cork City Development Plan 2022-2028 will supersede the Cork City Development Plan 2015-2021 upon its adoption in early 2022. The Plan is currently in Draft format and is being finalised with adoption expected towards the end of the summer 2022.

The Draft Plan contains some specific commentary in relation to BCIC in Chapter 4: Transport and Mobility under 'Public Transport', in which emphasis is put on the primary objective of CMATS to significantly increase the modal share of public transport from its current level of 9.1% to over 26% by the year 2040. The plan highlights the important role investment in the BusConnects project will take in underpinning this modal share increase, emphasising that the BusConnects programme represents an opportunity to overhaul the public bus service across Cork. The Draft Plan also stresses that the delivery of an efficient and reliable bus system is contingent on prioritising bus services above general traffic.

The Draft Plan contains 9 overarching Strategic Objectives which align with the UN Sustainable Development Goals (UNSDGs) as well as the National Strategic Outcomes of the NPF.

There are a number of transport objectives related to BCIC, as set out under Strategic Objective 3: Transport and Mobility, including the following:

- **Objective 4.1 – CMATS:** Cork City Council will work in cooperation with the NTA, TII and Cork County Council to fully implement the Cork Metropolitan Area Transport Strategy subject to detailed engineering design and environmental considerations, including the projects and programmes in relation to walking, cycling, public transport, BusConnects, suburban rail, light rail, park and rides and roads infrastructure;
- **Objective 4.4 – Active Travel:** To actively promote walking and cycling as efficient, healthy, and environmentally friendly modes of transport by securing the development of a network of direct, comfortable, convenient, and safe cycle routes and footpaths across the city; and
- **Objective 4.6 – Corridor & Route Selection Processes, Policies and Objectives** relating to new roads and other transport infrastructure projects (including greenways, walkways, cycleways and blueways) that are not already provided for by existing plans/programmes or are not already permitted, are subject to the undertaking of feasibility assessment having regard to normal planning considerations and environmental sensitivities as identified in the SEA Environmental Report and the objectives of the Plan relating to sustainable mobility.

2.11 Cork Cycle Network Plan 2017

The Cork Cycle Network Plan was developed to provide a plan for the future cycling network within the Cork Metropolitan Area. The aim of this Plan was to promote cycling as mode of transport for trips to work,

school, recreation and leisure. The Plan suggested a coherent, safe and attractive cycle network that will support a modal shift from the private car to cycling. **Error! Reference source not found.** below illustrates the proposed Cork City network.

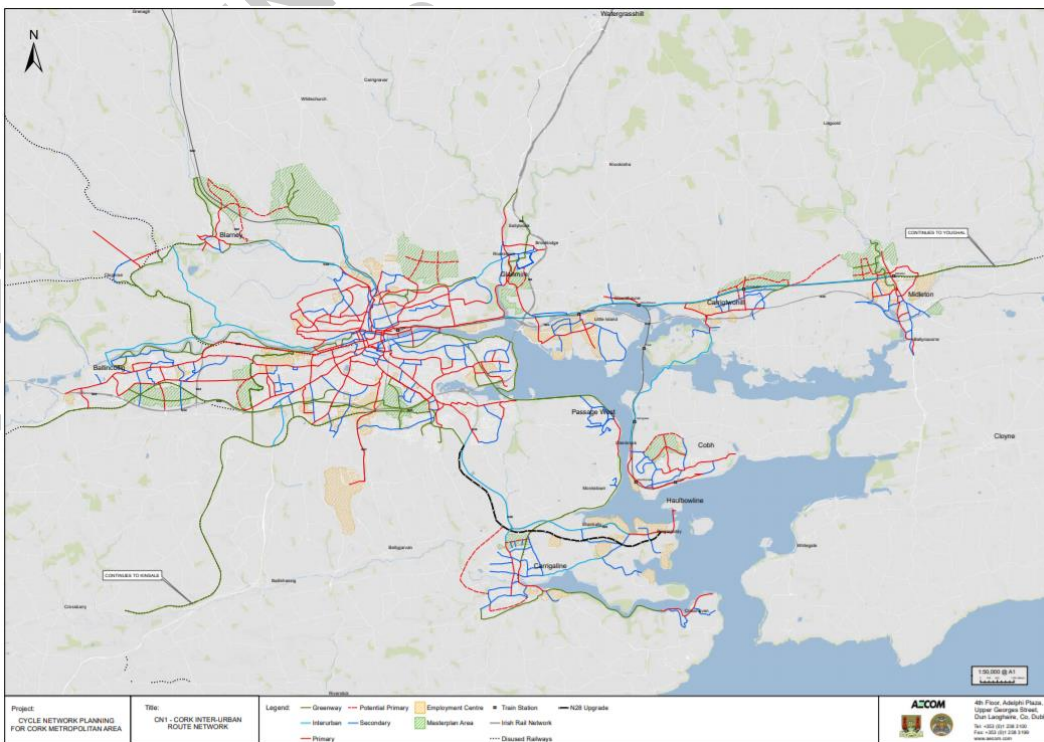


Figure 5: Cycle Network Map [Source: Cork Cycle Network Plan 2017]

The network consists of:

- Primary Cycle Networks designed to cater for high demand on radial routes to key destinations
- Secondary routes provide connection from residential areas and employment to Primary Network
- Interurban routes indicate possible connections from the Metropolitan Towns to Cork City;
- Greenway represent traffic free cycling routes

The Cork Cycle Network Plan proposals have been incorporated into the CMATS cycle network proposals as identified above in Section 2.7. Some amendments were made to the 2017 network in order to ensure consistency with the CMATS overall proposals.

2.12 Cork Walking Strategy (2013-2018)

The Cork Walking Strategy sets out a clear vision for increasing the modal share of walking for commuting within the city suburbs. The strategy proposed the development of walking networks that connect neighbourhoods, origins and destinations, with increased permeability and attractive, safe environments that encourage more people to choose to walk.

A number of key strategic walking routes were identified, including the following:

- Dublin Hill;
- Ballyhooly Road;
- Old Youghal Road and Colmcille Avenue;
- Lower Glanmire Road;
- Blackrock Road;

- Ringmahon Road;
- Skehard Road;
- Douglas Road;
- South Douglas Road
- Pouladuff Road;
- Togher Road;
- Curraheen Road;
- Model Farm Road;
- Carrigrohane Road;
- Western Road;
- Strawberry Hill;
- Blarney Street;
- Pophams Road;
- Harbour View Road/Kilmore Road; and
- Fair Hill.

Footpath widening works on these strategic routes would improve pedestrian connectivity and provide the priority to pedestrians over private car traffic to assist deliver on our modal share targets. Within the city centre, the strategy outlines numerous interventions intended to enhance pedestrian comfort throughout, including raised tables, build-outs, additional crossings, wider footpaths, etc.

3. Project Objectives

Having regard to the findings of the transport context, the following key objective and sub-objectives have been established for BCIC:

Objective:

To provide enhanced walking, cycling and bus infrastructure on key access corridors in the Cork Metropolitan Area, which will enable and deliver efficient, safe and integrated sustainable transport movement along these corridors.

Sub-Objectives:

- Enhance the capacity and potential of the public transport system by improving bus speeds, reliability and punctuality through the provision of bus lanes and other measures to provide priority to bus movement over general traffic movements;
- Enhance the potential for cycling by providing safe infrastructure for cycling, segregated from general traffic wherever practicable;
- Support the delivery of an efficient, low carbon and climate resilient public transport service, which supports the achievement of Ireland's emission reduction targets;
- Enable compact growth, regeneration opportunities and more effective use of land in the Cork Metropolitan Area, for present and future generations, through the provision of safe and efficient sustainable transport networks;
- Improve accessibility to jobs, education and other social and economic opportunities through the provision of improved sustainable connectivity and integration with other public transport services; and
- Ensure that the public realm is carefully considered in the design and development of the transport infrastructure and seek to enhance key urban focal points where appropriate and feasible.

4. Core Bus Corridor 9 Study Area

The extent of the Core Bus Corridor 9 study area as set out in the project brief is presented in Figure 6.

Initially, the adjacent roads and streets along the corridor route were identified and included within the study area, and a further ‘buffer’ was applied to this initial area to allow for areas outside of the primary road and street network to be included as potentially feasible route options.

A notional starting point was identified as the Airport Road Roundabout, which serves as the access point to Cork Airport. Potential route options were developed from this notional starting point. The notional end point of the CBC 9 corridor was identified as the junction of Parnell Palace/Anderson’s Quay.

The study area was also divided into a number of discrete sub-sections to allow for local optioneering and assessment between route options on a section-by-section basis. The individual sections were determined based on locations along the transport network where a logical transition between sections and route choices would occur.

At the southern end of CBC 9, the study area was developed to include parallel roads either side of the N27 Airport Road. At the Kinsale Road Roundabout all streets and roads approaching the city centre, including the South City Link Road, Kinsale Road, Curragh Road, Tory Top Road, Connolly Road, Evergreen Road, Summerhill South, Langford Row, Infirmary Road, Anglesea Street, Eglinton Street, Parnell Place and Clontarf Street were included.

The study area also considers the proximity and potential overlap of other existing or proposed corridors as identified in the Cork Metropolitan Area Transport Strategy and the BusConnects Infrastructure Project, including CBC 8 (Wilton to City) and CBC 10 (Douglas to City Centre) and the proposed orbital CBC.

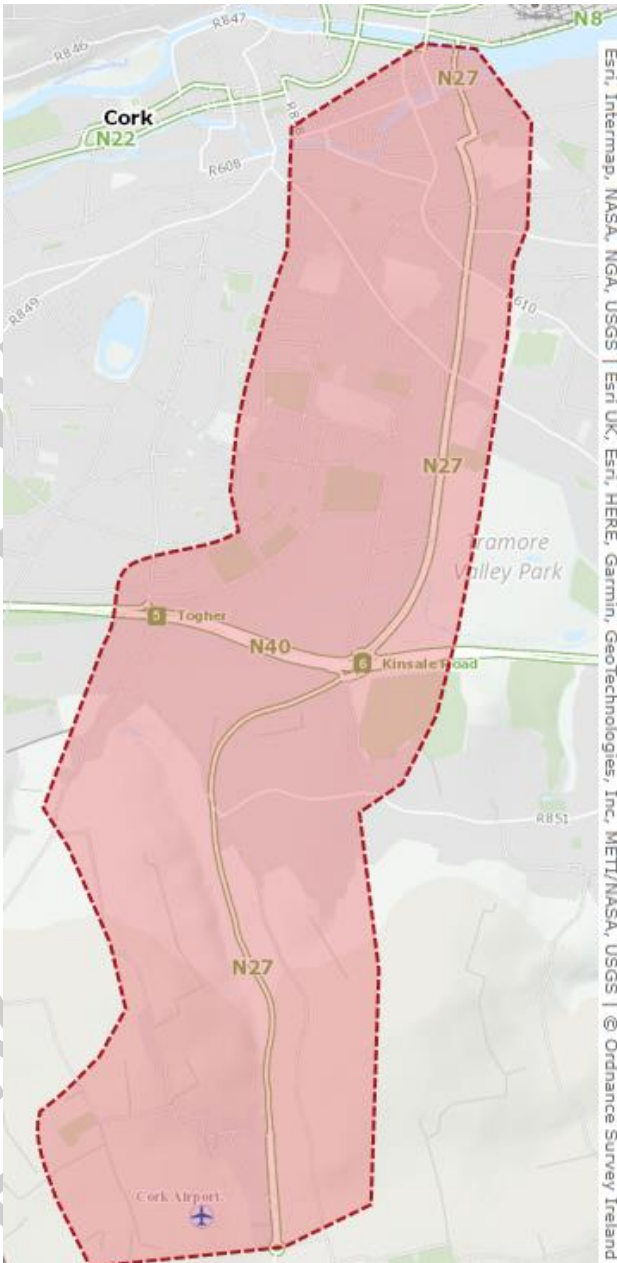


Figure 6: CBC 9 Study Area

4.1 Study Area Sub-Sections

As outlined above, the study area for CBC 9 was subsequently divided up into numerous smaller sub-sections, to allow for localised optioneering to be undertaken within individual sections of the overall route, as shown in Figure 7. These sections are:

- Section 1 – Airport to Airport Road Roundabout; and
- Section 2 – Airport Road Roundabout to City Centre;



Figure 7: Individual Study Area Sections

4.2 Physical Constraints and Opportunities

There are a number of constraints and opportunities, both natural (i.e., the existing natural environment) and physical (the built environment), which constrain route options for the proposed scheme within the defined study area. These include, *inter alia*:

- The National Road network, including the N40 South Ring Road and the N27 Airport Road/South Link Road and the various structures and junctions present along these routes;
- The R851 South Douglas Road/Evergreen Street and the R610 Infirmary Road/ Anglesea Street;
- Tramore Valley Park;

- Cork Airport and its associated infrastructure
- Musgrave Park and Turners Cross Stadium;
- NIAH-designated and protected structures/monuments along the route;
- The existing urban and suburban roads and street networks;
- Numerous river crossings and their designations (protected structures, etc.);
- Existing and committed future developments along the route;
- Limited availability of land within urban and suburban areas, and the proximity of the built environment to the existing road and street network; and
- Street trees and other natural features along the potential route options within the study area.

4.3 Integration with existing and proposed public transport network

A key requirement of the proposed scheme will be to enhance interchange between the various modes of public transport operating in the city and wider metropolitan area, both now and in the future.

Route options within the study area have therefore been developed with this in mind and, in so far as possible, seek to provide for improved existing or new interchange opportunities with other transport services, including:

- The BusConnects Cork City Network Route Map, outlined in the Cork Metropolitan Area Transport Strategy (CMATS);
- Future plans for a revised Cork City Bus Network (currently in development);
- Other proposed BusConnects Cork routes, including both radial corridor routes to/from the city and the planned Orbital route;
- Existing Cork City bus services at numerous locations along the route; and
- Where feasible, interchange opportunities with regional bus and coach services and rail services at Parnell Place Bus Station, Kent Rail Station and Cork Airport.

4.4 Compatibility with other users

A key objective of the proposed scheme is to improve pedestrian and cyclist facilities along the route. In general, segregated facilities (i.e., off-road) should be proposed for these modes. Where it is considered impractical to construct pedestrian or cycle facilities along a particular section of the route, such facilities will need to be provided along a suitable alternative route.

There may be locations where segregated cycle facilities cannot be provided along the route and there is no suitable routing alternative. In such instances, it may be possible for cyclists to share the bus or general traffic lane with other vehicles. However, such proposals need careful consideration and design to ensure the safety of cyclists, with additional mitigation measures, such as speed restrictions for vehicles in bus lanes being applied.

General traffic flow and local access will typically be maintained along the corridor although it is inevitable that there will be impacts on traffic capacity along the route associated with the reallocation of road space to bus priority and cycle facilities and the introduction of turning movement restrictions or through-traffic restrictions. However, reductions in the traffic carrying capacity of the road network need to be considered in the context of the overall planned significant increase in quality and level of public transport service (including increased capacity provision) on the bus route once implemented.

5. Assessment Methodology

5.1 Assessment Process

This section of the report presents the methodology used for the assessment of potentially viable route options identified within the study area. A two-stage assessment process was adopted as follows:

- An initial Stage 1 high-level route options assessment or ‘sifting’ process, which appraised potentially viable route options in terms of ability to achieve scheme objectives and whether they could be practically delivered, and
- Routes which passed this initial stage were taken forward to a more detailed Stage 2 assessment.

5.2 Stage 1: Route Options Assessment – Sifting Stage

An initial ‘spider’s web’ of potential route options that could accommodate a CBC was identified for each study area section. This ‘spider’s web’ of route options was developed with reference to the CBC characteristics and specifically the potential to meet the scheme objectives as set out in Section 3 of this report.

Initial route options identified also took cognisance of the physical constraints and opportunities present (Section 4.2), and the ability to integrate with other public transport modes and routes (Section 4.3). Of particular relevance in developing the ‘spider’s web’ was the potential for the road or route sections to facilitate fast and reliable journey times, and thereby have the potential to practically accommodate bus lane priority.

A typical ‘spider’s web’ of route options for a corridor section is presented in Figure 8.

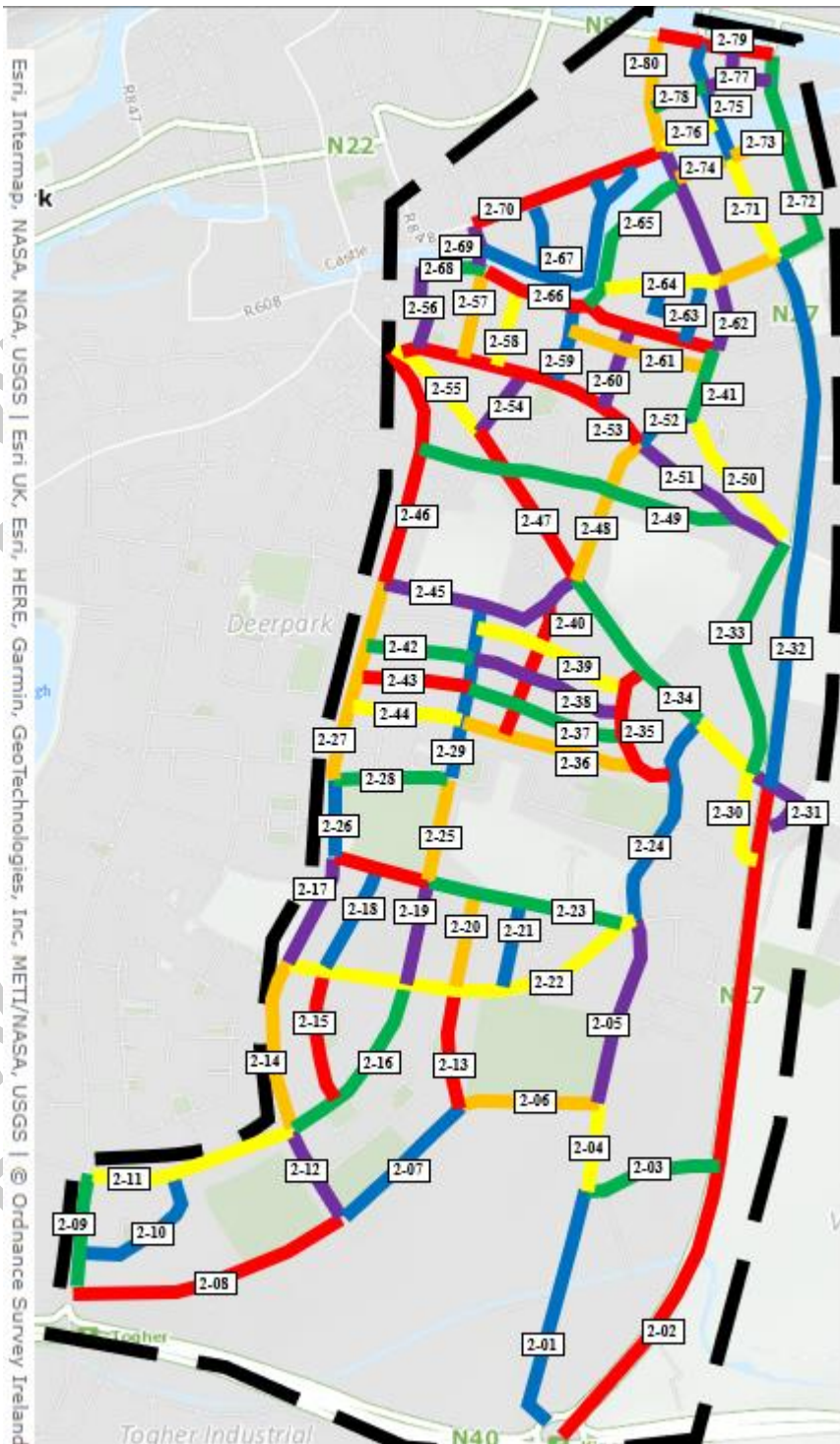


Figure 8: Sample Spiders Web of Route Options

As part of the Stage 1 ‘sifting’, the initial ‘spider’s web’ of route options (sample of which is presented in Figure 8) was narrowed down using a high-level qualitative method based on professional judgement and a general appreciation for existing physical conditions/constraints within the study area from available survey information and site visits.

This exercise screened and assessed technically feasible route options, based on distinct, project-specific objectives. In addition to being assessed on their individual merits, routes were also screened relative to each other allowing some routes to be ruled out if more suitable alternatives existed.

This assessment stage focused on engineering constraints together with a desktop study, identifying high level environmental constraints and population catchment analysis.

5.3

5.3 Stage 2: Multi Criteria Analysis

All route options that progressed to this stage were compared against one another using a detailed multi-criteria analysis (MCA) approach in accordance with the Department of Transport Document “Common Appraisal Framework for Transport Projects and Programmes”.

Each scheme was comparatively assessed against the study objectives using the method of measurements identified below. The scheme options were then ranked accordingly in order to identify the Emerging Preferred Route Option.

In accordance with the Department of Transport “Guidelines on a Common Appraisal Framework for Transport Projects”, the multi-criteria analysis considered Economy; Integration; Accessibility and Social Inclusion; Safety and Environment. The ‘Physical Activity’ criterion has not been assessed as a standalone criterion as the impacts on Physical Activity have been captured under the Pedestrian and Cyclist Integration criteria.

The assessment criteria are detailed in Table 1 below:

Table 1: Assessment Criteria

Assessment Criteria		Sub-Criteria
1	Economy	1.a. Capital Cost
		1.b. Average Journey-time
		1.c. Journey-time Reliability and Consistency
2	Integration	2.a. Land Use Integration
		2.b. Residential Population and Employment Catchments
		2.c. Transport Network Integration
		2.d. Cyclists Integration
		2.e. Pedestrian Integration
3	Accessibility and Social Inclusion	3.a. Key Trip Attractors
		3.b. Deprived Geographic Areas
4	Safety	4. Road Safety
5	Environment	5.a. Archaeological, Architectural and Cultural Heritage
		5.b. Biodiversity
		5.c. Soils and Geology
		5.d. Water Resources
		5.e. Landscape and visual
		5.f. Noise, Vibration and Air
		5.g. Land Use and the Built Environment

These criteria are presented in greater detail in the following sections.

Economy

1.a. Capital Cost

The capital cost of a scheme includes both the estimated infrastructure costs and the required land acquisition costs. These costs are normalised to per-kilometre rates for the purpose of comparison of one scheme with another.

Construction cost estimates for corridor sections (between junctions) have been categorised as minor, moderate or major. Minor works have been assumed where significant road widening is not anticipated, for example along sections of a route where bus and cycle infrastructure is already provided, or along sections where significant widening is geometrically constrained. Moderate works have been assumed where the existing road corridor will be reconfigured to provide the bus priority measures and some minor road widening. Major works have been assumed where significant road widening, and land take is required.

For each route option, the length of the route requiring either the minor, moderate or major works category has been calculated and multiplied by the relevant cost rate to derive the cost estimate for the route.

Additional costs will be added to the project for significant items relevant to each scheme i.e., significant structures.

Table 2: Cost Rates per km

Category	Construction Works	Cost Rate per km
Minor	<ul style="list-style-type: none"> Local improvements to bus lanes. New sections of paths where necessary. New sections of cycle paths where necessary. New or upgraded bus stops where necessary, including provision of Real Time Passenger Information (RTPI) and bus shelters. Kerb improvement locally (removal and replacement). Footpath improvement locally (breaking out/additional concrete) including tactile paving and dished kerbs. Road resurfacing locally (milling/reinstatement or overlay). Road markings (removal of existing road markings). Signage (removal/relocation/replacement of existing and/or installation of new). 	€800,000
Moderate (Widening excluding boundary walls)	<ul style="list-style-type: none"> General site clearance (street furniture removal/relocation, etc). Services protect in place predominately. Drainage works (removal of and installation of new drainage systems). New or upgraded bus stops where necessary, including provision of Real Time Passenger Information (RTPI) and bus shelters. Earthworks (embankment treatments, retaining walls, slopes regrading, etc). Pavement (milling/reinstatement or overlay). Kerbs footways and paved areas (removal and new). Road markings (non-destructive removal of existing road markings, new road markings). Signage (removal /relocation /replacement of existing and/or installation of new). Road lighting (replacement, cabling, ducting). Landscaping works (top soiling, fence, trees relocation, hedges, road margins re-grading etc). 	€1,500,000

Category	Construction Works	Cost Rate per km
	Minor property boundary reinstatement works (walls, gates, landscaping etc).	
Major (Widening including boundary walls)	General site clearance Services relocation/ diversion. Drainage works (installation of new drainage systems). New bus stops where necessary, including provision of Real Time Passenger Information (RTPI) and bus shelters. Earthworks (embankment treatments, retaining walls, slopes regrading, etc). Significant pavement full depth construction. Kerbs footways and paved areas. Road markings. Signage. Road lighting. Accommodation Works, bespoke design solution for each driveway to accommodate new levels. Landscaping works (top soiling, fence, trees relocation, hedges, road margins re-grading etc). Property boundary reinstatement works (walls, gates, driveways landscaping etc).	€3,000,000

The length of the route requiring either the minor, moderate or major works category is calculated and multiplied by the relevant cost rate to derive the cost estimate for the route. In addition, the construction costs associated with the junctions along the route have been included for based on the rates presented in **Error! Reference source not found..**

Table 3: Junction Cost Rates

Category	Construction Works	Cost
Minor	Road markings. Road resurfacing locally (milling/reinstatement or overlay). Additional signal heads, poles and loops. Dished kerbs and tactile paving. New signal controllers and associated traffic signal works.	€300,000
Moderate Works (Upgrade existing junctions to signal control junctions, without significant alteration to their existing geometry and layout. Excludes significant accommodation works)	Works outlined above in minor works – road marking, traffic signals, kerbs and tactile paving). Services protection predominately. Limited earthworks. Localised pavement reconstruction. Localised public lighting improvements (relocation, cabling, and ducting). Localised kerb and footpath improvement.	€800,000
Major Works (to existing signal-controlled junctions including upgrading of roundabouts to signal controlled junctions. Includes accommodation works)	Works outlined above in moderates works. Services relocation/diversion (power supply, communications cables, water, gas). Drainage works (removal of and installation of new drainage systems).	€1,400,000

Category	Construction Works	Cost
	Earthworks (embankment treatments retaining walls, slopes re-grading, etc). Pavement full depth reconstruction. Property boundary reinstatement works (walls, gates, driveways landscaping etc).	

Land Acquisition Costs

The land acquisition costs concern the cost of acquiring lands necessary for the scheme and the costs of boundary / accommodation work associated with each scheme. It considers the likely number of properties required (commercial, public, residential, and industrial) and the extent of land required.

In this assessment, land is defined as either public or private. Public land is the space between road boundaries and any also any public open space. For this analysis, it is assumed that there is no cost associated with the acquisition of public land. The identification of land acquisition is based on available Ordnance Survey mapping only and as such is approximate.

For the purposes of this high-level cost assessment, private land is assumed to have a standardised cost of €1,500 per square metre, which is applied to each option.

1.b. Average Bus Journey Time

Typically, shorter bus journey times supports higher patronage as people can get to their destination quicker. Bus journey times for each route option have been compared by calculating the estimated journey time between common start and end points. Bus journey times have been calculated based on the following assumptions:

- Buses travel at the posted speed limit unless they are delayed.
- Dwell time of 10-60 sec per stop depending on usage.
- Delay of 15 – 120 secs per junction depending on level of priority achievable.
- Delays where no bus priority is provided. Buses are delayed when they are required to share congested lanes with general traffic. The length of delays is based on distance where there is no priority and the level of congestion expected.

1.c. Bus Journey Time Reliability

Reliable bus journey times provides certainty around departure and arrival time for passengers. The level of bus priority proposed in each route option determines the reliability of journey time for this criterion. Dedicated bus lane provision provides the best conditions, followed by traffic management measures, with no bus priority measures providing the least favourable conditions for reliability.

Integration

2.a. Land Use Integration

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

2.b. Residential Population and Employment Catchments

The current residential and employment population within a particular walking route distance of each of the CBC stops is calculated in order to determine the number of potential users for each scheme option. To assess the potential population and employment catchments the walking distance from bus stop locations along each route was analysed using the network analyst module of ArcGIS to create walk time isochrones from each stop. The distances to the stops correlate to walk times of five, ten and 15min intervals and were estimated based on an average walking speed of 5kph. The population and employment within the

isochrones was then calculated based on planning data received from the NTA at CSO small area and work zone level. Where just a portion of a small area fell within the walking catchments the portion of the population/employment within walking distance was estimated proportionally based on area. See sample catchment map below.

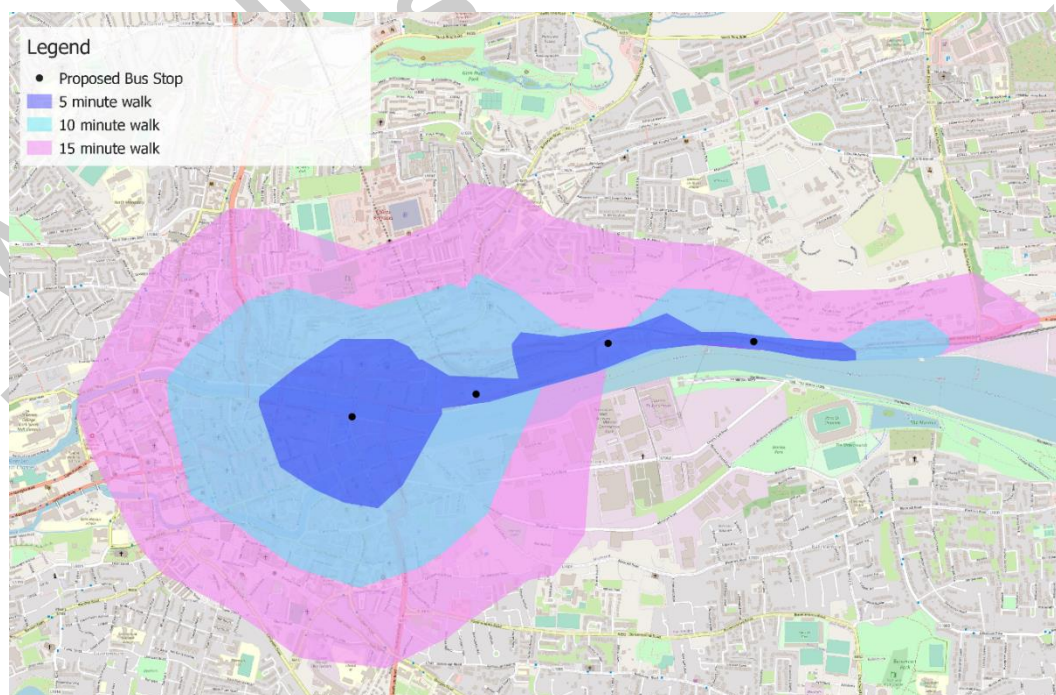


Figure 9: Sample bus stop catchment map with walking isochrones shown at 5/10/15 minute intervals

2.c. Transport Network Integration

Under this criterion, integration with the wider transport network is assessed and compared for each scheme. This includes transport modes such as railway, coaches, public bike schemes, and public and private bus operators. The potential for interchange facilities such as safe walking areas, cycle parking areas, etc. are also assessed under this criterion. Where a potential CBC route duplicates a route with another public transport route over a significant distance this was seen as a negative under this criterion.

The anticipated traffic impact expected to be incurred by motorists using private vehicles as a result of the different route options will also be factored in. The disadvantages experienced by motorists in respect of reduced junction capacity and restricted movements will be considered, with particular emphasis placed on TEN-T routes.

2.d. Cyclist Integration

The compatibility of a scheme with the Cork City Cycle Network Plan is examined and the level of service of deliverable cycle facilities is assessed. In some cases, it is necessary to provide an alternative cycle route on different streets to the CBC and these alternative routes are considered under this criterion.

2.e. Pedestrian Integration

The compatibility of a scheme with the objectives of the Walking Strategy in CMATS is examined and the level of service of deliverable pedestrian facilities is assessed under this criterion.

Accessibility and Social Inclusion

3.a. Key Trip Attractors

This assessment criterion identifies key trip attractors located within appropriate walking catchments which would generate significant demand for bus services, but would not otherwise be picked up by either the employment or residential catchment analysis. For the purposes of this assessment, the following land-uses have been considered as key trip attractors:

- Education (secondary schools and universities);
- Commercial centres (shopping centres, town centres etc.);
- Healthcare (hospitals);
- Leisure (sport stadiums, theatres, cinemas etc.); and
- Employment (business parks, large office developments etc.).

3.b. Deprived Geographic Areas (3.b.)

The possible impact of the route options on deprived geographic areas including RAPID (Revitalising Areas by Planning, Investment and Development) areas and the HP Deprivation Index are investigated.

RAPID is a focused Government initiative to target the most disadvantaged urban areas and provincial towns in the country and sought to improve the lives of the residents of its communities through among other things, improving the delivery of public services through integration and coordination. There are four defined RAPID areas in Cork.

The Pobal HP Deprivation Index is a method of measuring the relative affluence or disadvantage of a particular geographical area using various datasets from the 2016 census. For the purpose of this assessment, the HP Deprivation Index was examined by small area to determine which routes better served deprived areas.

Safety

Under this criterion, the number of junctions along each scheme, as an approximate measure for the potential for collisions, are compared. In addition, the number of turning movements are compared, as these can also potentially lead to lower safety conditions along the scheme. Differentials in traffic speeds along a route are also assessed under this criterion as a high relative speed difference between transport modes may result in an increased road safety risk.

Environment

5.a. Archaeological, Architectural and Cultural Heritage

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

Potential impacts of each scheme on Recorded Monuments and Protected Structures (RMPs) along each route are assessed and compared. Potential impacts on Sites of Archaeological or Cultural Heritage, Architectural Conservation Areas and on buildings listed on the National Inventory of Architectural Heritage are also assessed and compared under this criterion.

The impacts on all of the above are comparatively assessed for each route option under this criterion.

5.b. Biodiversity

The provision of the CBC may have negative impacts on biodiversity, for example, through construction of new infrastructure through green field sites or removal of trees/hedges. These impacts are compared for each scheme under this criterion. The potential for planting replacement trees along each route option is also assessed under this criterion.

5.c. Soils and Geology

Construction of infrastructure necessary for the provision of the CBC has the potential to negatively impact on soils and geology. For example, through land acquisition and ground excavation. There is also the

potential to encounter ground contamination from historical industries. These considerations are compared for each scheme under this criterion.

5.d. Water Resources

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

5.e. Landscape and Visual

Provision of CBC infrastructure has the potential to negatively impact on the landscape and visual aspects of the area, for example, by the removal of front gardens or green spaces or the altering of streetscapes, character and features. Different schemes are compared, and any negative effects considered under this criterion.

The landscape (and visual) assessment of the route corridor options has had regard to:

- Land Use Zonings (amenity, open space, recreation, sport)
- Landscape & Visual Objectives within Cork City Development Plan
- Landscape Preservation Zones
- Areas of High Landscape Value
- Recreation Access Routes / Designated Walkways
- Tree Preservation/Protection Objectives

5.f. Noise, Vibration and Air

Provision of CBC infrastructure has the potential to negatively impact on noise, vibration and air quality along a scheme. These effects are compared for each scheme option under this criterion. The impact is quantified on whether the source of noise, vibration or air pollution (road) is moving closer to sensitive receptors, for example through road widening or a new road alignment.

5.g. Land Use and the Built Environment

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

5.4 Scheme Options Summary Table

Scheme options were assessed for each assessment criterion and compared relative to each other on a five-point scale, from having significant advantages, some advantages, some disadvantages to significant disadvantages over other route options. Schemes could also be considered neutral when no apparent advantages or disadvantages were identified across all scheme options.

Each route is given a comparative score (advantage/disadvantage) on a 5-point scale for each of the criteria listed in Table 4 below.

Table 4: Multi Criteria Assessment comparative advantage/disadvantage colour ranking table

Colour	Description
Green	Significant advantages over the other options
Light Green	Some advantages over the other options
Yellow	Neutral compared to other options

Colour	Description
	Some disadvantages compared to the other options
	Significant disadvantages compared to the other options

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

In applying the assessment criteria to the route selection process, it is recognised that for different sections of the study area corridor, greater emphasis may need to be applied to some criterion over others in terms of their significance and influence on the route selection process. In drawing a conclusion as to which route represents the best option considering all of the criteria put together, judgement was applied to arrive at the preferred option.

5.5 Conclusion

The outcome and the findings of the multi-criteria assessment are then finally considered in a holistic manner to derive a preferred end-to-end route for the proposed CBC scheme.

6. Stage 1 Assessment

As outlined earlier in this report, an initial ‘spider’s web’ of potential route options that could accommodate a CBC was identified for each study area section. This ‘spider’s web’ of route options was chosen with reference to the CBC characteristics and specifically the potential to meet the scheme objectives as set out in Section 4 of this report.

Initial route options identified also took cognisance of the physical constraints and opportunities present (Section 4.2), and the ability to integrate with other public transport modes and routes (Section 4.3). Of particular relevance in developing the ‘spider’s web’ was the potential for the road or route sections to facilitate fast and reliable journey times, and thereby have the potential to practically accommodate bus lane priority.

The Stage 1 assessment therefore includes for the sifting of all possible through links within the study area and these are presented in the following sections (based on the individual sub-sections identified in Section 4.1).

6.1 Study Area Section 1 – Airport to Kinsale Road Roundabout

This section of the CBC examines potential route options between the Airport and the Kinsale Road Roundabout on the N40 National Road. For Section 1, the notional start point of the section is the Airport Roundabout on the N27 National Road at the entrance to the Airport. The end point for Section 1 is the Kinsale Road Roundabout at the intersection the N27 South City Link Road and the N40 South Ring Road.

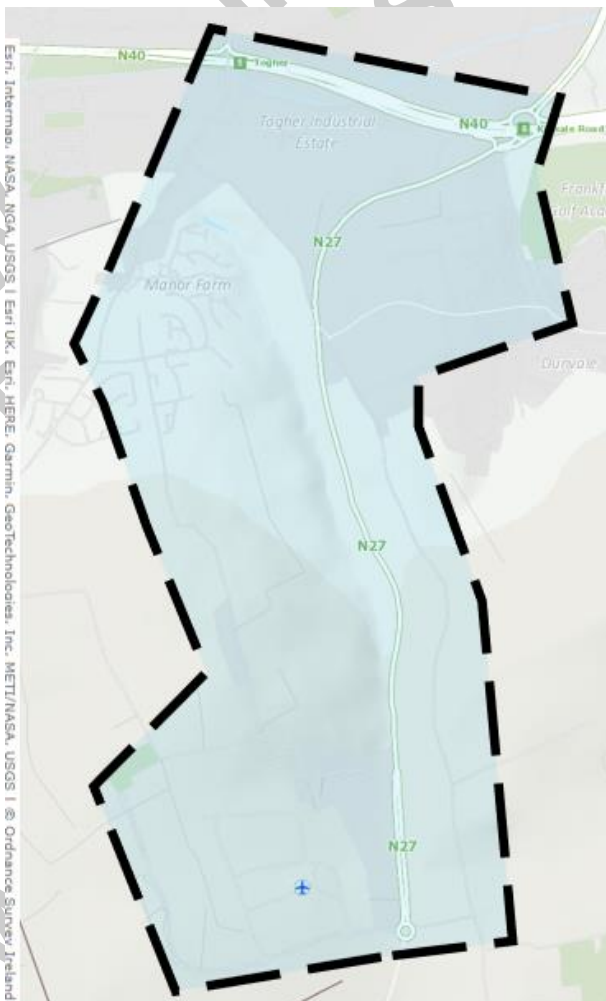


Figure 10: Section 1 start and end locations and overall study area

Figure 11 presents the links within the study area that have been initially identified.

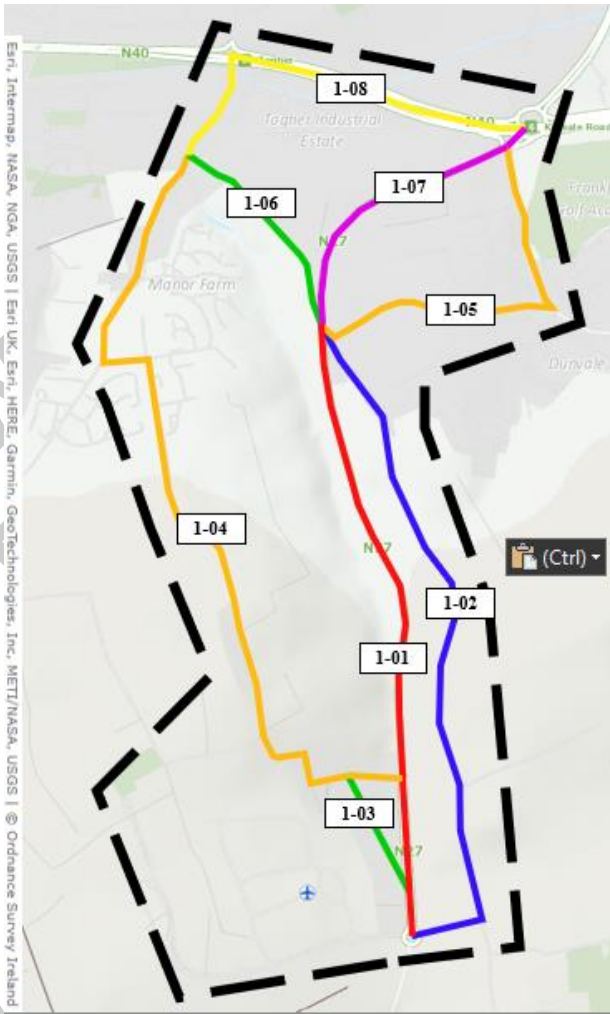


Figure 11: Section 1 – Stage 1 Assessment Links

A summary of the Stage 1 route options sifting process is presented in Table 5.

Table 5: Section 11 – Route Option Sifting (Stage 1) Summary

Route Option Number	Description	Part of CMATS Cycle Network	Comments	Pass/Fail
1-01	N27 Kinsale Road, Airport Roundabout to Junction with Forge Hill.	Primary	N27 Kinsale Road, Airport Roundabout to Junction with Forge Hill is a two-way road with two lanes in the southbound direction, and one lane in the northbound direction. There are cycle lanes on both sides of the road, but no footpaths. The boundary-to-boundary width is 17m, so no localised road widening would be required for a 16m width, but some land acquisition would be required for a width of 20m. This is a major arterial route and is therefore considered feasible and is carried forward to the Stage 2 assessment.	Pass
1-02	Belvedere, Airport Roundabout to Junction with Forge Hill/ Airport Road	No	Belvedere, Airport Roundabout to Junction with Forge Hill/ Airport Road is a two way single carriageway, with no footpaths. It is mostly bounded by hedgerows and residential land. It runs parallel to the N27, connecting to it at the northern and southern ends. The road width is 4.5m and widening to 16m would require significant land take from fields or residential units. This is	Fail

Route Option Number	Description	Part of CMATS Cycle Network	Comments	Pass/Fail
			considered an indirect route which is therefore not considered feasible and is not carried forward to the Stage 2 assessment.	
1-03	Lenagh More (south), from junction with N27 Kinsale Road to Junction with Lenagh More (North)	No	Lenagh More (south), from junction with N27 Kinsale Road to Junction with Lenagh More (North) is a two-way single carriageway, with no footpaths. It is mostly bounded by hedgerows and residential properties. The typical boundary to boundary width is 8m and widening to 16m would require significant land take from residential gardens. This route is therefore not considered feasible and is not carried forward to the Stage 2 assessment.	Fail
1-04	Lenagh More (North) and Pouladuff Road from junction with Lenagh More (South) to junction with Forge Hill	No	Lenagh More (North) and Pouladuff Road from junction with Lenagh More (South) to junction with Forge Hill is a two-way single carriageway, with no footpaths. It is mostly bounded a number of residential properties fronting onto the route as well as residential estates and industrial estates with direct access to the route. The route is otherwise characterised by dense vegetation and trees. The typical boundary to boundary width is 8m. Widening of the route to 16m would involve land acquisition (walls, gardens & driveways), whereas widening to 20m would involve more significant land and property acquisition. This route is therefore not considered feasible and is not carried forward to the Stage 2 assessment.	Fail
1-05	Ballycureen Road and Frankfield Road, from junction N27 Kinsale Road to Roundabout at N40 Junction 6	Primary (Partial)	Ballycureen Road and Frankfield Road, from junction N27 Kinsale Road to Roundabout at N40 Junction 6 is a two-way single carriageway road with intermittent footpaths. On the western end, it is bounded by commercial units, and grass verges, in the central section it is bounded by residential gardens and buildings, and on the eastern/northern section it is bounded by hedgerows and more commercial units. The total carriageway is generally 12m, and localised widening to 16m is possible along much of the road, but in some areas would require land acquisition, with widening to 20m potentially require building demolition at the narrowest point. This route is considered feasible and is carried forward to the Stage 2 assessment.	Pass
1-06	Forge Hill, from junction with N27 Kinsale Road to junction with Pouladuff Road	No	Forge Hill, from junction with N27 Kinsale Road to junction with Pouladuff Road is a two-way single carriageway road with intermittent footpaths. It links the N27 and the Pouladuff Road and is generally bounded by commercial properties on both sides, The carriageway width is generally 12m, and so	Fail

Route Option Number	Description	Part of CMATS Cycle Network	Comments	Pass/Fail
			localised widening of the route to 16m would be possible with a moderate degree of intervention and minor land acquisition, whereas widening to 20m would require more significant land acquisition. This route is therefore not considered feasible, and is not carried forward to the Stage 2 assessment.	
1-07	N27 Kinsale Road, Junction with Forge Hill to Roundabout at N40 Junction 6	Primary	N27 Kinsale Road, Junction with Forge Hill to Roundabout at N40 Junction 6 is a two way road with two lanes in the southbound direction, and one lane in the northbound direction. It has cycle lanes on both sides of the road, but no footpaths. The boundary to boundary width is 17m, so no localised road widening would be required for a 16m width, but some land acquisition would be required for a width of 20m. This is a major arterial route and is therefore considered feasible and is carried forward to the Stage 2 assessment.	Pass
1-08	Pouladuff Road and N40, from junction with Forge Hill to Roundabout at N40 Junction 6	Secondary (Partial & Green Route (Partial))	Pouladuff Road and N40, from junction with Forge Hill to Roundabout at N40 Junction 6 is a two lane carriageway route throughout with footpaths on one or both sides of the route. There are little to no properties along the route with direct access. There is a roundabout along the route with links to the N40 and to Sitecast Industrial Estate. The route transverses the N40 at a bridge width of 11-12m. Widening of the route would be possible but would experience a pinch point at the N40 bridge. This route is not considered feasible and does not have a connecting link from the south that has passed the Stage 1 assessment and is therefore not carried forward to the Stage 2 assessment.	Fail

Following the Stage 1 sifting exercise, 3 of the 8 route options assessed passed the initial sifting stage and were progressed to the next assessment stage. The remaining route options are presented in Figure 12.

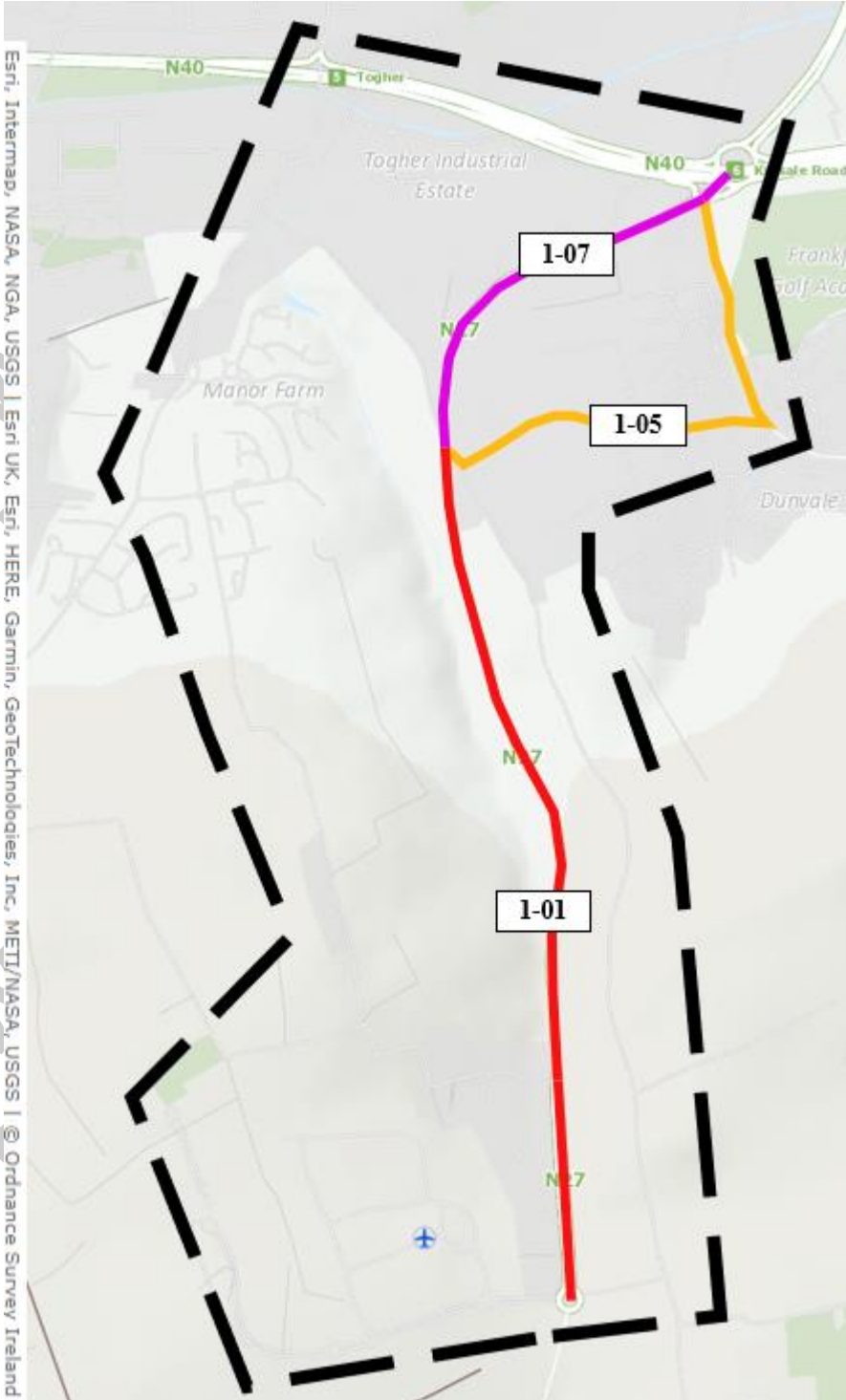


Figure 12: Section 1 – Route Options remaining after Stage 1 Sift

6.2 Study Area Section 2 – Kinsale Road Roundabout to City Centre

For potential route options in Section 2 of Route 9 (between the Kinsale Road Roundabout and the city centre), the notional start point of the Kinsale Road Roundabout was used along with an end point at the junction of Anderson’s Quay/Parnell Place.

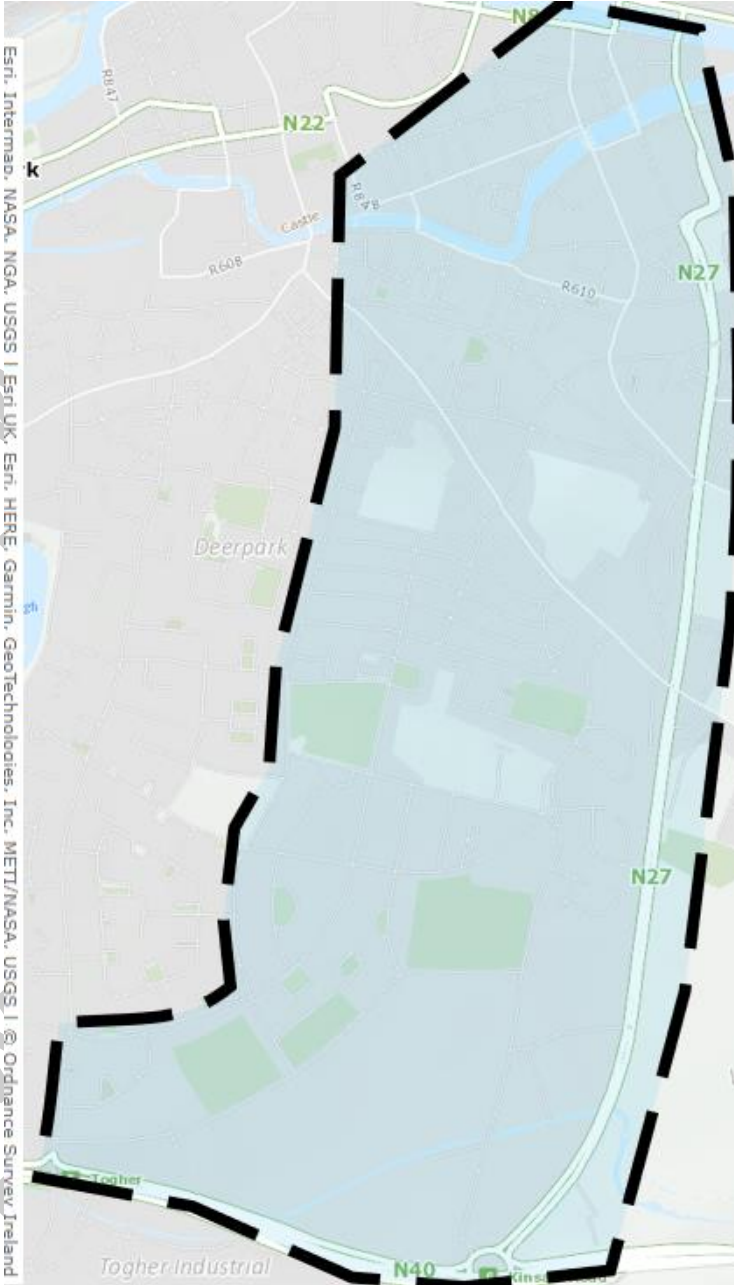


Figure 13: Section 2 start and end locations and overall study area

Figure 14 presents the links within the study area that have been initially identified.

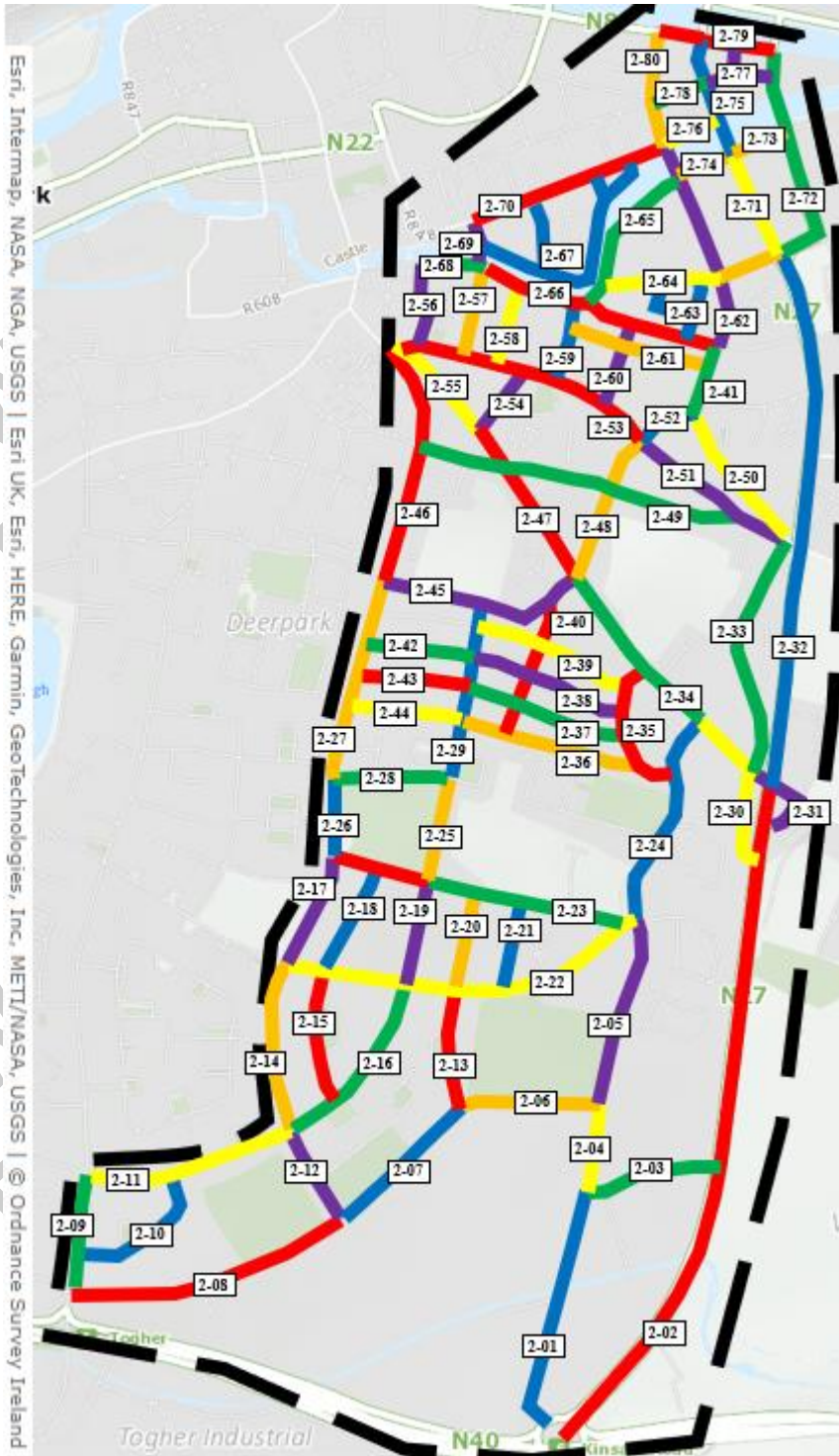


Figure 14: Section 2 – Stage 1 Assessment Links

A summary of the Stage 1 route options sifting process is presented in Table 5.

Table 6: Section 2 – Route Option Sifting (Stage 1) Summary

Route Option Number	Description	Part of CMATS Cycle Network	Comments	Pass/Fail
2-01	Old Kinsale Road, from Kinsale Road Roundabout to Mick Barry Road	Primary Network	The Kinsale Road, from the N40 Kinsale Road Roundabout to the junction with Mick Barry Road is a two-way single carriageway road with a footpath and two-way cycle track on the western side of the road. The road is bounded by car parks which serve commercial units. The typical boundary to boundary width is approximately 12m. Localised widening of the route to 16m	Pass

Route Option Number	Description	Part of CMATS Cycle Network	Comments	Pass/Fail
			would be possible with a moderate degree of intervention and minor land acquisition, whereas widening to 20m would require more significant land acquisition. This is a connecting route and is considered feasible and is therefore carried forward to the Stage 2 assessment.	
2-02	N27 South City Link Road, from Kinsale Road Roundabout to South Douglas Road interchange ramps	No	This road is a national primary dual carriageway route, which varies in cross-section width, with two northbound and two southbound traffic lanes and a central median, widening to three/four southbound lanes and two/three northbound traffic lanes. The signalised access junction to Mick Barry Road and Tramore Valley Park is also located along the route. There are wide verges either side, but no footpaths or cycle lanes present. The boundary to boundary width varies from 28-34m typically, so no localised road widening would be required for either a 16m or 20m width. This link is therefore deemed feasible and is carried forward to the Stage 2 assessment.	Pass
2-03	Mick Barry Road, from Kinsale Road to N27 South City Link Road	No	Mick Barry Road is a two-way road with two lanes in the eastbound direction, and one lane in the westbound direction. There are no footpaths or cycle paths on either side. On the southern side, the site is bounded by the Black Ash Park & Ride, and to the north is bounded by unused green space. The typical boundary to boundary is 9m wide, and so localised widening of the route to 16m would be possible with a moderate degree of intervention and minor land acquisition, whereas widening to 20m would require more significant land acquisition. This link is therefore deemed feasible and is carried forward to the Stage 2 assessment.	Pass
2-04	Kinsale Road, from Mick Barry Road to Tramore Road	Primary	This road is a two-way single carriageway road with a footpath on both sides of the road and a two-way cycle track on one side and a hatched central median. The road widens locally at the northern and southern ends to facilitate turning lanes. The road is bounded by a brownfield site to the west and by a greenfield site and a surface level car park which serve commercial units in Turner's Cross Retail Park. The typical boundary to boundary is generally 16-21m wide. Localised widening of the route to 16m would be possible with a moderate degree of intervention and minor land acquisition, whereas widening to 20m would require more significant land acquisition. This link is therefore deemed feasible and is carried forward to the Stage 2 assessment.	Pass
2-05	Kinsale Road, from Tramore Road to Pearse Road/Curragh Road junction	Primary	The Kinsale Road, from Tramore Road to Pearse Road/Curragh Road is predominantly a two-way single carriageway road with footpaths on both sides and a northbound, on-road cycle lane on the western side of the road. The road is bounded by commercial units and residential properties and some locations with on-street parking. The typical boundary to boundary width is generally 14-16m wide. Localised widening of the route to 16m would be possible with a moderate degree of intervention and minor land acquisition, whereas widening to 20m would require more significant land acquisition. This link is therefore deemed feasible and is carried forward to the Stage 2 assessment.	Pass
2-06	Tramore Road, from Kinsale Road to Kent Road	No	Tramore Road, from Kinsale Road to Kent Road is a two-lane carriageway route with a footpath on the northern side of the route and a section of on-road westbound cycle lane on the southern aspect of the route. The route is characterised by boundary walls and fences throughout with Irish Independent Park (Musgrave Park) to the north of the route and Musgrave Distribution centre to the south of the route, with a notable level difference from the carriageway on this side of the route. Typical width is approximately 10-12m.	Fail

Route Option Number	Description	Part of CMATS Cycle Network	Comments	Pass/Fail
			<p>Widening of the route to 16m or 20m would involve extensive acquisition (walls, fences & potentially internal surface parking in the adjacent sites).</p> <p>This route is also considered a deviation from the direct route to and from the city, and it is therefore considered not feasible and is not carried forward to the Stage 2 assessment.</p>	
2-07	Tramore Road, from Kent Road to Lower Friar's Walk	No	<p>Tramore Road, from Kent Road to Lower Friar's Walk is a two-lane carriageway route throughout with a footpath on the north-western side of the route and a cycle lane on the south-eastern side of the route. There are a limited number of residential and commercial properties along the route with direct access. The route is characterised by boundary fences on both sides for the most part with Ballyphehane GAA to the north of the route and the South Ring West Business Park to the south of the route. Typical width is approximately 15-16m. Widening of the route to 16m would involve limited land acquisition (fences, green areas, walls, gardens & driveways), whereas widening to 20m would involve more significant land and property acquisition.</p> <p>This would be considered a feasible route; however, it connects to other links that have not passed and also represents a deviation from a more direct route to the city centre, and as such it is therefore considered not feasible and is not carried forward to the Stage 2 assessment.</p>	Fail
2-08	Tramore Road, from Lower Friar's Walk to Pouladuff Road	No	<p>Tramore Road, from Lower Friar's Walk to Pouladuff Road is a two-lane carriageway route throughout with a footpath on the northern side of the route, and a cycle lane on southern side. There are sections where on-street parking is present on the link also. There are a small number of properties to the north of the route with direct access to the route and industrial warehouse and business uses to the south. CSN College and sports pitches are to the north of the route. Typical width varies from 14-16m.</p> <p>Widening of the route to 16m would involve limited land acquisition (walls, gardens, driveways & fences) whereas widening to 20m would involve more extensive land acquisition.</p> <p>This would be considered a feasible route; however, it connects to other links that have not passed and also represents a deviation from a more direct route to the city centre, and as such it is therefore considered not feasible and is not carried forward to the Stage 2 assessment.</p>	Fail
2-09	Lower Pouladuff Road, from Tramore Road to Connolly Road	Secondary	<p>This link is a two-lane carriageway route throughout with a footpaths on both sides of the route and an on road cycle lane on part of the western side.</p> <p>The route is characterised by residential properties on the eastern side with direct access and commercial properties, some greenfield lands and the UCC Pouladuff Park and Ride site to the west.</p> <p>Typical width along this section of the route is 12m. Localised widening of the route to 16m would require land acquisition (walls & gardens), whereas widening to 20m would require more significant land acquisition.</p> <p>This is therefore considered not feasible and is not carried forward to the Stage 2 assessment.</p>	Fail
2-10	Connolly Park, from Lower Pouladuff Road to Connolly Road	No	<p>Connolly Park, from Lower Pouladuff Road to Connolly Road is a two-lane carriageway with footpaths on both sides and on-street parking scattered throughout. There are a number of residential properties along the route with direct access onto the route. Typical width along this section of the route is 9.5-10.5m. Localised widening of the route to the north to 16m is achievable but would require land acquisition (walls & gardens), whereas widening to 20m would require more significant land acquisition.</p>	Fail

Route Option Number	Description	Part of CMATS Cycle Network	Comments	Pass/Fail
			This is an indirect route through a predominantly residential area and is considered not feasible and is not carried forward to the Stage 2 assessment.	
2-11	Connolly Road, from Pouladuff Road to Friar's Walk	Secondary	<p>Connolly Road, from Pouladuff Road to Friar's Walk is a two-lane carriageway route throughout with on-street parking on one or both sides, grass verges, trees and footpaths on both sides of the route. The route is characterised by residential properties on both sides of the route throughout with direct access to the route, as well as Morning Star NS to the south of the route. Localised widening of the route to 16m would require a moderate degree of intervention and acquisition, whereas widening to 20m would require more significant land acquisition (walls, gardens & driveways).</p> <p>Widening of the route to 16m would involve minor acquisition (walls, driveways & gardens) whereas widening to 20m would involve significant land and property acquisition.</p> <p>This would be considered a feasible route; however, it connects to other links that have not passed and also represents a deviation from a more direct route to the city centre, and as such it is therefore considered not feasible and is not carried forward to the Stage 2 assessment.</p>	Fail
2-12	Lower Friar's Walk, from Connolly Road to Tramore Road	No	<p>Lower Friar's Walk, from Connolly Road to Tramore Road is a two-way single carriageway road with footpaths on both sides. Informal parking is present on both sides of the road, and the road is lined by houses and their front gardens. The typical boundary to boundary width is 13m and the building-to-building pinch point width is 22m, so local widening to 16m or 20m would require land acquisition of front gardens.</p> <p>This is therefore considered not feasible and is not carried forward to the Stage 2 assessment.</p>	Fail
2-13	Kent Road, from Tramore Road to Pearse Road	No	<p>Kent Road, from Tramore Road to Pearse Road is a residential estate road, with two-lane carriageway throughout, footpaths on both sides and residential properties on both sides of the route. There is on street parking throughout, on both sides. Widening of the route to 16m or 20m would involve extensive land acquisition (walls, gardens & driveways) and potential property acquisition.</p> <p>This is therefore considered not feasible and is not carried forward to the Stage 2 assessment.</p>	Fail
2-14	Lower Friar's Walk, from Connolly Road to Pearse Road	No	<p>Lower Friar's Walk, from Connolly Road to Pearse Road is a two-way single carriageway road with footpaths on both sides. Informal parking is allowed on both sides of the road, and the road is lined by houses and their front gardens. The typical boundary to boundary width is 13m and the building-to-building pinch point width is 22m, so local widening to 16m or 20m would require land acquisition of front gardens.</p> <p>This is a deviation from the direct route to the city centre and connects to other links that have not passed the Stage 1 assessment; therefore, this link is considered not feasible and is not carried forward to the Stage 2 assessment.</p>	Fail
2-15	Clarke's Road, from Connolly Road to Pearse Road	No	<p>Clarke's Road, from Connolly Road to Pearse Road is a residential estate road, with two-lane carriageway throughout, footpaths on one or both sides and residential properties on both sides of the route, with a section of green area to the east of the route. There is on street parking throughout, on one or both sides. Widening of the route to 16m or 20m would involve extensive land acquisition (walls, gardens, driveways & green area).</p> <p>This is an indirect route through a residential estate and is not considered feasible and is therefore not carried forward to the Stage 2 assessment.</p>	Fail

Route Option Number	Description	Part of CMATS Cycle Network	Comments	Pass/Fail
2-16	Connolly Road, from Lower Friar's Walk to Pearse Road	Secondary	<p>Connolly Road, from Lower Friar's Walk to Pearse Road is a two-lane carriageway route throughout with footpaths on both sides of the route. There is on street parking throughout on one or both sides of the route. Residential properties on both sides of the route for the most part with a section of green area present to the south of the route. There are a small number of trees along the route. Widening of the route to 16m would involve a moderate degree of land acquisition (walls, gardens, driveways & green area), whereas widening to 20m would involve more significant land and potential property acquisition.</p> <p>This would be considered a feasible route; however, it connects to other links that have not passed and also represents a deviation from a more direct route to the city centre, and as such it is therefore considered not feasible and is not carried forward to the Stage 2 assessment.</p>	Fail
2-17	Lower Friar's Walk, from Pearse Road to Tory Top Road	No	<p>Lower Friar's Walk, from Pearse Road to Tory Top Road is a two-way single carriageway road with footpaths on both sides. Informal parking is allowed on both sides of the road, and the road is lined by houses and their front gardens, with the Church of the Assumption and Nano Nagle Theatre also on the western side of the route.</p> <p>The typical boundary to boundary width is 13-15m, so local widening to 16m or 20m would require land acquisition of front gardens.</p> <p>This would be considered a feasible route; however, it connects to other links that have not passed and also represents a deviation from a more direct route to the city centre, and as such it is therefore considered not feasible and is not carried forward to the Stage 2 assessment.</p>	Fail
2-18	Clarke's Road, from Pearse Road to Tory Top Road	No	<p>Clarke's Road, from Pearse Road to Tory Top Road is a residential road, with two-lane carriageway throughout, footpaths and residential properties on both sides of the route. There is on street parking on both sides of the route, albeit on footpaths. Widening of the route to 16m or 20m would involve extensive land and property acquisition. This is an indirect route through a residential estate and is not considered feasible and is therefore not carried forward to the Stage 2 assessment.</p>	Fail
2-19	Connolly Road, from Pearse Road to Tory Top Road	No	<p>Connolly Road, from Pearse Road to Tory Top Road is a two-lane carriageway route with trees and large footpaths on both sides of the route throughout. There is on street parking throughout, on both sides, albeit on the footpaths in places. The route is characterised by residential properties on both sides of the route with direct access to the route. Widening of the route to 16m would be possible with a moderate degree of intervention whereas widening to 20m would involve some moderate land acquisition (walls, gardens & driveways).</p> <p>This would be considered a feasible route; however, it connects to other links that have not passed and also represents a deviation from a more direct route to the city centre, and as such it is therefore considered not feasible and is not carried forward to the Stage 2 assessment.</p>	Fail
2-20	Kent Road, from Pearse Road to Tory Top Road	No	<p>Kent Road, from Pearse Road to Tory Top Road is a residential road, with two-lane carriageway throughout, footpaths and residential properties on both sides of the route. There is on street parking on both sides of the route, on footpaths. Widening of the route to 16m or 20m would involve land acquisition (walls, gardens & driveways). This is an indirect route through a residential estate and is not considered feasible and is therefore not carried forward to the Stage 2 assessment.</p>	Fail

Route Option Number	Description	Part of CMATS Cycle Network	Comments	Pass/Fail
2-21	Botanic Road, from Pearse Road to Tory Top Road	No	Botanic Road, from Pearse Road to Tory Top Road is a residential road, with two-lane carriageway throughout, footpaths and residential properties on both sides of the route. There is on street parking on both sides of the route. Widening of the route to 16m or 20m would involve land acquisition (walls, fences, gardens & driveways). This is an indirect route through a residential estate and is not considered feasible and is therefore not carried forward to the Stage 2 assessment.	Fail
2-22	Pearse Road, from Lower Friar' s Walk to Tory Top Road/Curragh Road	Primary	<p>Pearse Road, from Lower Friar' s Walk to Tory Top Road/Curragh Road is a two-lane carriageway throughout with grass verges/parking areas adjacent to footpaths on both sides of the route. The route is characterised by mostly residential properties throughout with direct access, and Musgrave Park and some industrial units (the derelict Vita Cortex site) to the south. Approaching Curragh Road, the route is again mostly residential in nature, with the carriageway widening to three lanes at the junction with Curragh Road, and some retail units on the eastern side. A short section of on-road northbound cycle lane commences just before the junction with Curragh Road.</p> <p>Typical width along the route is 16-18m. Widening to 20m would involve land acquisition, primarily comprising acquisition of gardens.</p> <p>This would be considered a feasible route; however, it connects to other links that have not passed and also represents a deviation from a more direct route to the city centre via Curragh Road, and as such it is therefore considered not feasible and is not carried forward to the Stage 2 assessment.</p>	Fail
2-23	Tory Top Road, from Pearse Road/Curragh Road to Connolly Road	No	<p>Tory Top Road, from Pearse Road/Curragh Road to Connolly Road is a two lane carriageway route with footpaths on both sides of the route throughout, grass verges and trees on one side. There is on street parking throughout, on both sides. The route is characterised by residential properties on the southern side of the route with direct access to the route and St. Josephs Cemetery, Hyde Park Apartments and an Aldi to the north aspect of the route.</p> <p>Typical width is 15-18m. Widening of the route to 16m would involve minor land acquisition (walls, fences, gardens & driveways) whereas widening to 20m would involve more extensive land acquisition.</p> <p>This would be considered a feasible route; however, it connects to other links that have not passed and also represents a deviation from a more direct route to the city centre via Curragh Road, and as such it is therefore considered not feasible and is not carried forward to the Stage 2 assessment.</p>	Fail
2-24	Curragh Road, from Pearse Road to Evergreen Road	Primary	<p>Curragh Road, from Pearse Road to Evergreen Road is a two-lane carriageway route with footpaths on both sides of the route throughout. There are sections of on street parking, typically on one side of the route, and an on-road northbound cycle lane to the entrance to Turner' s Cross. The route is characterised by residential properties on both sides of the route, as well as Turners Cross Football Grounds and the Corner Flag Bar which front onto the western side route to the west of the route.</p> <p>The route widens locally at the northern and southern extents to facilitate turning lanes. Typical width is 12-14m, with some localised sections where there is additional width – from 17m - 19m.</p> <p>Localised widening of the route to 16m or 20m would involve extensive land and potentially property acquisition. However this is a connecting route and is therefore considered feasible and is carried forward to the Stage 2 assessment.</p>	Pass

Route Option Number	Description	Part of CMATS Cycle Network	Comments	Pass/Fail
2-25	Connolly Road, from Tory Top Road to Lower Friar' s Walk	No	<p>Connolly Road, from Tory Top Road to Lower Friar' s Walk is a two-lane carriageway route with footpaths on both sides of the route throughout. There is on street parking throughout, on one side. The route is characterised by residential properties to the east of the route, the Ballyphehane Community Centre and Tory Top Park to the west of the route. Localised widening of the route to 16m or 20m would involve land acquisition (walls, fences, gardens & driveways).</p> <p>This would be considered a feasible route; however, it connects to other links that have not passed and also represents a deviation from a more direct route to the city centre and as such it is therefore considered not feasible and is not carried forward to the Stage 2 assessment.</p>	Fail
2-26	Lower Friar' s Walk, from Tory Top Road to Reendowney Place	No	<p>Lower Friar' s Walk, from Tory Top Road to Reendowney Place is a two-way single carriageway road with footpaths on both sides. Informal parking is allowed on both sides of the road, and the road is lined by houses and their front gardens. The typical boundary to boundary width is 13m and the building-to-building pinch point width is 22m, so local widening to 16m or 20m would require land acquisition of front gardens.</p> <p>This is not considered feasible and is therefore not carried forward to the Stage 2 assessment.</p>	Fail
2-27	Friar' s Walk, from Reendowney Place to St. Patrick' s Road	No	<p>Lower Friar' s Walk, from Reendowney Place to St. Patrick' s Road is a two way single carriageway road with footpaths on both sides. There is intermittent parking along both sides. The road is bounded by houses with front gardens. The typical boundary to boundary width is 9m in places, widening to 12m before narrowing again significantly to approximately 7m building to building width towards the northern end, with two-way traffic flow not possible due to on-street parking.</p> <p>Widening of the road to 16m or 20m would require very significant land and property acquisition.</p> <p>This is not considered feasible and is therefore not carried forward to the Stage 2 assessment.</p>	Fail
2-28	Lower Friar' s Walk, from Reendowney Place to Connolly Road	No	<p>Lower Friar' s Walk, from Reendowney Place to Connolly Road is a laneway link with no footpaths present either side, and on-street parking on one side.</p> <p>The route is bounded by rear garden walls to the north and Tory Top Park boundary walls to the south.</p> <p>The typical boundary to boundary width is 6-7m. Widening to 16m or 20m would require significant land acquisition, likely from the southern side of the road (in Tory Top Park).</p> <p>This is not considered feasible and is therefore not carried forward to the Stage 2 assessment.</p>	Fail
2-29	Connolly Road/Mount Pleasant Road, from Lower Friar' s Walk to St. Patrick' s Road	No	<p>Connolly Road, from Lower Friars Walk to St. Patricks Road is a two-lane carriageway route with footpaths on both sides of the route throughout. There is on street parking throughout, on both sides. The route is characterised by residential properties on one or both sides of the route throughout, and a section of green area on the east of the route. The typical boundary to boundary width is 13-14m.</p> <p>Mount Pleasant Road is a two-lane single carriageway road with footpaths on both sides. Parking is permitted along the northern side. The road is lined by houses with front or side gardens. The typical boundary to boundary width is 9m.</p>	Fail

Route Option Number	Description	Part of CMATS Cycle Network	Comments	Pass/Fail
			<p>Localised widening of the route to 16m or 20m would involve land and potential property acquisition (walls, gardens, driveways & green area).</p> <p>This is not considered feasible and is therefore not carried forward to the Stage 2 assessment.</p>	
2-30	South Douglas Interchange Off/On-Ramp (northbound side) and South Douglas Road to Evergreen Road	No	<p>The South Douglas Interchange Off/On-Ramp (northbound) consists of the on and off ramp between the N27 South City Link Road northbound carriageway and the R815 South Douglas road. The ramp is a two-way single carriageway road which splits to on and off sections at the junction with the N27.</p> <p>This South Douglas Road to the junction with Evergreen Road/Curragh Road is a two-way single carriageway with footpaths on both sides. There are a number of properties along the route with direct access onto the route. Typical width along this section of the route is 8m, with a building-to-building pinch point width of 14m. Localised widening of the route to 16m would require land acquisition and demolition of buildings.</p> <p>Although widening of the link would require land acquisition, and widening of the South Douglas Road would potentially require land and property acquisition, as they are connecting routes they are considered feasible and therefore they are carried forward to the Stage 2 assessment.</p>	Pass
2-31	South Douglas Interchange Off/On-Ramp (southbound side)	No	<p>The South Douglas Interchange Off/On-Ramp (southbound) consists of the on and off ramp between the N27 South City Link Road southbound carriageway and the R815 South Douglas road. The ramp is a two-way single carriageway road which splits to on and off sections at the junction with the N27.</p> <p>Although widening of the link would require land acquisition, as it is a connecting route it is considered feasible and therefore it is carried forward to the Stage 2 assessment.</p>	Pass
2-32	N27 South City Link Road, between South Douglas Road interchange and Old Station Road/Eglinton Street junction	No	<p>N27 South City Link Road, between South Douglas Road interchange and Old Station Road/Eglinton Street junction is a two way dual carriageway national primary road with two lanes in each direction, a central median and no footpaths. North of Old Blackrock Road overbridge, the road widens to provide three lanes in each direction. The boundary-to-boundary width is typically approximately 25m, however under the various overbridge structures the width is constrained, typically to 15-17m, therefore widening to 16 or 20m would in locations require land acquisition or potential property acquisition and amendments to the structures in place along the route.</p> <p>The route is however considered feasible and is carried forward to the Stage 2 assessment.</p>	Pass
2-33	Capwell Road, from Curragh Road to Southern Road	No	<p>Capwell Road, from Curragh Road to Southern Road is a two-way single carriageway with footpaths on both sides. There are a number of residential properties along the route with direct access onto the route. Typical boundary to boundary width along this section of the route is 9m, with a building-to-building pinch point width of 12m. Localised widening of the route to 16m would require land acquisition and demolition of buildings.</p> <p>This route is therefore considered not feasible and is not carried forward to the Stage 2 assessment.</p>	Fail
2-34	Evergreen Road, from Curragh Road to Summerhill South	Primary	<p>Evergreen Road, from Curragh Road to Summerhill South is a two-way single carriageway with footpaths on both sides along with parking on both sides. There are a number of residential properties along the route with direct access onto the route, some of these properties are at a higher level from the adjacent carriageway and are accessed via steps leading to an elevated footpath on the south-western side of the road. The Church of</p>	Pass

Route Option Number	Description	Part of CMATS Cycle Network	Comments	Pass/Fail
			<p>Christ the King and Bunscoil Chríost Rí are located on the north-eastern side of the route also.</p> <p>Typical width along this section of the route is 13-15m, with a building-to-building pinch point width of 17m.</p> <p>Localised widening of the route to 16m would require land acquisition of front gardens; further widening to 20m would require demolition of buildings.</p> <p>The route is however considered feasible and is carried forward to the Stage 2 assessment.</p>	Pass
2-35	O' Connell Avenue/Friars Road, from Evergreen Road to Curragh Road	No	<p>O' Connell Avenue/Friars Road, from Evergreen Road to Curragh Road is a two-way single carriageway road with footpaths on both sides. On-street parking is permitted along the eastern side. The road is lined by houses with front gardens. The typical boundary to boundary width is 9m, and the building-to-building width is 20m, with a pinch point on Friar' s Walk between buildings of approximately 8m. Widening to 16m would require significant land acquisition from front gardens, while widening to 20m would require very significant land and potential property acquisition (buildings).</p> <p>This route is therefore considered not feasible and is not carried forward to the Stage 2 assessment.</p>	Fail
2-36	Derrynane Road, from Connolly Road to O' Connell Avenue	No	<p>Derrynane Road, from Connolly Road to O' Connell Avenue is a two-way single carriageway road with footpaths on both sides. Parking is permitted along the northern side. The road is lined by houses with front gardens. The typical boundary to boundary width is 8m, and the building-to-building width is 19m. Widening to 16m would require land acquisition from front gardens/driveways, while widening to 20m would require demolition of buildings.</p> <p>This route is therefore considered not feasible and is not carried forward to the Stage 2 assessment.</p>	Fail
2-37	Doyle Road, from Connolly Road to O' Connell Avenue	No	<p>Doyle Road, from Connolly Road to O' Connell Avenue is a two-way single carriageway road with footpaths on both sides. Parking is permitted along the southern side. The road is lined by houses with front gardens. The typical boundary to boundary width is 8m, and the building-to-building width is 18-19m. Widening to 16m would require land acquisition from front gardens/driveways, while widening to 20m would require demolition of buildings.</p> <p>This route is therefore considered not feasible and is not carried forward to the Stage 2 assessment.</p>	Fail
2-38	Father Matthew Road, from Connolly Road to O' Connell Avenue	No	<p>Father Matthew Road, from Connolly Road to O' Connell Avenue is a two-way single carriageway road with footpaths on both sides. Parking is permitted along the northern side. The road is lined by houses with front gardens. The typical boundary to boundary width is 7-8m, and the typical building to building width is 19-20m. Widening to 16m would require land acquisition from front gardens/driveways, while widening to 20m would require demolition of buildings.</p> <p>This route is therefore considered not feasible and is not carried forward to the Stage 2 assessment.</p>	Fail
2-39	Friar' s Road, from Connolly Road to O' Connell Avenue	No	<p>Friar' s Road, from Connolly Road to O' Connell Avenue is a two-way single carriageway road with footpaths on both sides. Parking is permitted along the northern side. The road is lined by houses with front gardens. The typical boundary to boundary width is 8-9m, and the building-to-building width is 19-20m. Widening to 16m would require land acquisition from front gardens/driveways, while widening to 20m would require demolition of buildings.</p> <p>This route is therefore considered not feasible and is not carried forward to the Stage 2 assessment.</p>	Fail

Route Option Number	Description	Part of CMATS Cycle Network	Comments	Pass/Fail
2-40	Congress Road, from St. Patrick's Road to Derrynane Road	No	Congress Road, from St. Patrick's Road to Derrynane Road is a two-way single carriageway road with footpaths on both sides. Parking is permitted along the western side. The road is lined by houses with front gardens. The typical boundary to boundary width is 9m, and the building-to-building width is 19-21m. Widening to 16m or 20m would require land acquisition from front gardens. This route is therefore considered not feasible and is not carried forward to the Stage 2 assessment.	Fail
2-41	Infirmiry Road, from Langford Row to Anglesea Street	Primary	Infirmiry Road, from Langford Row to Anglesea Street is a two-way road with two lanes in the southbound direction, and one lane in the northbound direction. It has footpaths and mandatory cycle lanes on both sides. Perpendicular parking and a bus stop are provided on the western side of the road. The typical boundary to boundary width is 24 metres. This route is therefore considered feasible and is carried forward to the Stage 2 assessment	Pass
2-42	Mount Pleasant Avenue, from Mount Pleasant Road to Friar's Walk	No	Mount Pleasant Avenue, from Mount Pleasant Road to Friar's Walk is a two-way single carriageway road with footpaths on both sides. Parking is permitted along the northern side. The road is lined by houses with front gardens. The typical boundary to boundary width is 8m, and the building-to-building width is 19m. Widening to 16m would require land acquisition from front gardens/driveways, while widening to 20m would require demolition of buildings. This route is therefore considered not feasible and is not carried forward to the Stage 2 assessment.	Fail
2-43	Doyle Road, from Mount Pleasant Road to Friar's Walk	No	Doyle Road, from Mount Pleasant Road to Friar's Walk is a two-way single carriageway road with footpaths on both sides. Parking is permitted along the northern side. The road is lined by houses with front gardens. The typical boundary to boundary width is 8m, and the building-to-building width is 19m. Widening to 16m would require land acquisition from front gardens/driveways, while widening to 20m would require demolition of buildings. This route is therefore considered not feasible and is not carried forward to the Stage 2 assessment.	Fail
2-44	Derrynane Road, from Mount Pleasant Road to Friar's Walk	No	Derrynane Road, from Mount Pleasant Road to Friar's Walk is a two-way single carriageway road with footpaths on both sides. Parking is permitted along the northern side. The road is lined by houses with front gardens. The typical boundary to boundary width is 8m, and the building-to-building width is 19m. Widening to 16m would require land acquisition from front gardens/driveways, while widening to 20m would require demolition of buildings. This route is therefore considered not feasible and is not carried forward to the Stage 2 assessment.	Fail
2-45	Saint Patrick's Road, from Friar's Walk to Evergreen Road	Primary	Saint Patrick's Road, from Friar's Walk to Evergreen Road is a two-way single carriageway road with footpaths on both sides. Parking is permitted along the southern side. The road is lined by houses with front gardens along with Colocoláiste field to the north. The typical boundary to boundary width is 10-12m, and the building-to-building width is approximately 22m. A pinch point is present at the junction with Evergreen Road, where building-to-building width is approximately 7m. Widening to 16m would require land acquisition from front gardens or driveways and widening to 20m would require much more significant land acquisition. This route is therefore considered not feasible and is not carried forward to the Stage 2 assessment.	Fail

Route Option Number	Description	Part of CMATS Cycle Network	Comments	Pass/Fail
2-46	Friar's Walk/Friar Street, from St. Patrick's Road to Abbey Street/ Evergreen Street	No	<p>Friar's Walk/Friar Street, from St. Patrick's Road to Abbey Street/ Evergreen Street is a two-lane carriageway with footpaths on both sides and parking on the eastern side towards the south, and on both sides further north on Friar Street.</p> <p>There are primarily residential properties along the route, the majority of which are directly fronting onto the street with no driveways or gardens.</p> <p>Friar's Walk is very heavily constrained by building-to-building width (approximately 8-9m, but as low as 7m in places) and on-street parking, with two-way traffic flow not possible in certain locations (which operate on a give-way basis).</p> <p>Further north on Friar Street the route is slightly wider, with boundary-to-building widths of approximately 12m and on-street parking on both sides of the road</p> <p>Widening of the route to 16m would require significant property acquisition and demolition along the route.</p> <p>This route is therefore considered not feasible and is not carried forward to the Stage 2 assessment.</p>	Fail
2-47	Evergreen Road/ Evergreen Street, from Summerhill South to Nicholas Street	Secondary	<p>Evergreen Road/ Evergreen Street, from Summerhill South to Nicholas Street is a one-way single carriageway with footpaths on both sides along with parking on the western side only. The route is characterised by residential properties directly opening on to the street on the western side, and on a portion of the eastern side along with the boundary wall of Nano Nagle Place.</p> <p>Typical building to building width is approximately 7-8m.</p> <p>Widening of the route to 16m or 20m would require very significant property acquisition.</p> <p>This route is therefore considered not feasible and is not carried forward to the Stage 2 assessment.</p>	Fail
2-48	Summerhill South, from Evergreen Road to Langford Row	Primary	<p>Summerhill South, from Evergreen Road to Langford Row is a two-way single carriageway with footpaths on both sides, with an on-road, bollard protected cycle lane in the northbound direction along part of the road. There are a significant number of residential properties along the route with direct access onto the route, all of which are NIAH-designated or are listed as protected structures. The Capwell Bus Depot is also located on the eastern side. The typical boundary to boundary width along this section of the route is 14m, with a building-to-building typical width of 21-23m. Towards Langford Row, the road widens to facilitate additional lanes for turning, with a typical width of approximately 18m.</p> <p>Localised widening of the route to 16m would require land acquisition of front gardens; further widening to 20m would more significant land acquisition and potential building demolition.</p> <p>This route is however considered feasible as a connecting route and is carried forward to the Stage 2 assessment.</p>	Pass
2-49	Tower Street/ Quaker Road/ Windmill Road, from Friar's Walk to High Street	Secondary	<p>Tower Street is a narrow one-way eastbound single carriageway road with narrow footpaths on both sides and on-street parking on the southern side. Residential properties open directly on to the street. Parking is permitted along the southern side. The road is bounded by small houses which front directly onto the footpaths. The building to building width is 5-6m.</p> <p>Quaker Road is a narrow two-way single carriageway with footpaths on both sides and parking along the northern side. There are a number of residential properties along the route whose front doors open directly onto the street. The typical boundary to boundary width along this section of the route is 6m.</p> <p>Windmill Road is a one-way eastbound single carriageway with footpaths on both sides and parking along the southern side.</p> <p>Again, there are a number of residential properties along the route</p>	Fail

Route Option Number	Description	Part of CMATS Cycle Network	Comments	Pass/Fail
			<p>whose front doors open directly onto the street. The typical boundary to boundary width along this section of the route is 6m.. Localised widening of the route to 16m would require demolition of buildings.</p> <p>These are therefore considered not feasible and are not carried forward to the Stage 2 assessment.</p>	
2-50	Southern Road, from Capwell Road to Langford Row	Primary	<p>Southern Road, from Capwell Road to Langford Row is a two-way single carriageway with footpaths on both sides and an on-road, bollard-protected cycle lane in the southbound direction for most of its length. There are a number of residential properties along the route with direct access onto the route but which are grade separated and accessed via external steps, for most of its length, the road is bounded on the southern side by a large retaining stone wall at the rear of properties along High Road, which are at a higher elevation than Southern Road.</p> <p>Towards the northern end the properties on both sides of the route are at grade, and there are two traffic lanes and on-road cycle lanes on both sides of the road.</p> <p>The typical boundary to boundary width along this section of the route is 12m, increasing to approximately 18-20m to building edges. Localised widening of the route to 16m would require very significant land acquisition and extensive enabling works to address the level differentials between property floor levels and the adjacent carriageway.</p> <p>As Southern Road is also not connected to other routes that have passed, it is therefore considered not feasible and is not carried forward to the Stage 2 assessment.</p>	Fail
2-51	High Street, from Capwell Road to Summerhill South	No	<p>High Street, from Capwell Road to Summerhill South is a two-way single carriageway with footpaths on both sides and parking on the northern side initially, and on both sides thereafter. There are a number of residential properties along the route whose front doors open directly onto the footpath. The typical building-to-building width along this section of the route is 9-10m, with a pinch point width of 9m.</p> <p>This route is therefore considered not feasible and is not carried forward to the Stage 2 assessment.</p>	Fail
2-52	Langford Row, from Summerhill South to Infirmaroy Road	Primary	<p>Langford Row, from Summerhill South to Infirmaroy Road is a two-way single carriageway with footpaths on both sides. A mandatory cycle lane is provided in the northbound direction, and a mandatory cycle lane and bus lane is provided in the southbound direction. A right turning lane is provided at both junctions at either end of the link, and a left turning slip lane is provided at the northern junction. There are a number of properties along the route with direct access onto the route. The typical boundary to boundary width along this section of the route is 18m, with a building to building pinch point width of 16m. This route is a connecting link and is therefore considered feasible and is carried forward to the Stage 2 assessment.</p>	Pass
2-53	Douglas Street/Abbey Street, from Langford Row to Evergreen Street	Secondary	<p>Douglas Street, from Langford Row to the junction with Dunbar Street is a two-way single carriageway route, with on-street parking predominantly on the southern side. The route typically has narrow footpaths on both sides and residential properties fronting directly on to the street. Along the route the presence of on-street parking means that two-way traffic flow operates on a give-way basis in specific areas.</p> <p>West of Dunbar Street, Douglas Street and Abbey Street are one-way eastbound, with a limited amount of on-street parking on the southern side of the route.</p> <p>The typical boundary to boundary width along this section of the route is 9m, with a building-to-building pinch point width of 9m.</p>	Fail

Route Option Number	Description	Part of CMATS Cycle Network	Comments	Pass/Fail
			Localised widening of the route to 16m would require demolition of buildings. This route is therefore considered not feasible and is not carried forward to the Stage 2 assessment.	
2-54	Nicholas Street, from Evergreen Street to Douglas Street	No	Nicholas Street, from Evergreen Street to Douglas Street is an extremely narrow road, which is one-way southbound. It has a footpath on the eastern side but none on the western side. Both sides are lined by houses whose doors open directly onto the street/footpath. The building-to-building width is 4m. This route is therefore considered not feasible and is not carried forward to the Stage 2 assessment.	Fail
2-55	Evergreen Street, from Nicholas Street to Friar Street	No	Evergreen Street, from Nicholas Street to Friar Street is a one-way single carriageway with footpaths on both sides along with parking on the southern side. There are a number of properties along the route whose front doors open directly onto the footpath. Most of the road is bounded to the north by Nano Nagle Place. Typical width along this section of the route is 10m, with a building-to-building pinch point width of 17m. Localised widening of the route to 16m would require land acquisition of front gardens, further widening to 20m would require demolition of buildings. This route is therefore considered not feasible and is not carried forward to the Stage 2 assessment.	Fail
2-56	Travers Street/Meade Street, from Abbey Street to Sullivan's Quay	No	Travers Street, from Abbey Street to Cove Street is a two-way single carriageway with footpaths on both sides. The street is lined by residential properties which front directly onto the footpaths. The typical boundary to boundary width along this section of the route is 7m, with a building-to-building pinch point width of 7m. Meade Street is a two-way road with footpaths on both sides and parallel parking on the eastern side. The road is bounded by commercial properties. The building to building width is 9m. These routes are therefore considered not feasible and are not carried forward to the Stage 2 assessment.	Fail
2-57	Mary Street, from Douglas Street to George's Quay	No	Mary Street, from Douglas Street to George's Quay is a one-way cul-de-sac route with footpaths on both sides and parking on the western side of the road. There are a number of residential properties along the route whose front doors open directly onto the footpath. The typical boundary to boundary width along this section of the route is 9m. This route is therefore considered not feasible and is not carried forward to the Stage 2 assessment.	Fail
2-58	Dunbar Street, from Douglas Street to George's Quay	No	Dunbar Street, from Douglas Street to George's Quay is a one-way single carriageway with footpaths on both sides and parking on the western side of the road for a portion of the street. There are a number of residential properties along the route whose front doors open directly onto the footpath. The typical boundary to boundary width along this section of the route is 9m. This route is therefore considered not feasible and is not carried forward to the Stage 2 assessment.	Fail
2-59	White Street, from Douglas Street to George's Quay	No	White Street, from Douglas Street to George's Quay is a two-way single carriageway with footpaths on both sides and scattered informal parking on both sides. The street is lined by commercial properties which front directly onto the footpaths. The typical boundary to boundary width along this section of the route is 10m. This route is therefore considered not feasible and is not carried forward to the Stage 2 assessment.	Fail
2-60	Rutland Street, from Douglas	No	Rutland Street, from Douglas Street to South Terrace is a two-way single carriageway with footpaths on both sides. The street is lined by commercial properties which front directly onto the footpaths.	Fail

Route Option Number	Description	Part of CMATS Cycle Network	Comments	Pass/Fail
	Street to South Terrace		The typical boundary to boundary width along this section of the route is 7m. This route is therefore considered not feasible and is not carried forward to the Stage 2 assessment.	
2-61	Sawmill Street, from Infirmiry Road to White Street	No	Sawmill Street, from Infirmiry Road to White Street is a two-way single carriageway with a footpath on the southern side only. The street is lined by commercial properties some of which front directly onto the footpaths. The southern side is mostly bounded by a car parking area, and the entrance to St Johns General College. The typical boundary to boundary width along this section of the route is 7.5m. This route is therefore considered not feasible and is not carried forward to the Stage 2 assessment.	Fail
2-62	Anglesea Street, from Infirmiry Road to Parnell Bridge	Primary	Anglesea Street, from Infirmiry Road to Parnell Bridge is a one-way southbound road with two traffic lanes, a southbound bus lane and on-street loading on the western side. There are also footpaths on both sides of the route and a two-way, off-road cycle lane on the western side throughout the length of the street. Continuing south, the bus lane terminates and the route is three lanes wide at the junction with Old Station Road, before reducing to two southbound lanes with on-street parking on one side, before widening again to three southbound lanes, with parking on both sides approaching the junction with South Terrace. The route is directly accessed by Cork City Hall, Cork District Courthouse, Cork City Fire Station, Anglesea Street Garda Station and numerous residential and commercial properties Parnell Bridge has two northbound traffic lanes, a central median, a southbound traffic lane and a two-way cycle facility on the western side, and footpaths on both sides of the route. The typical boundary to boundary width is 22-24m so no widening would be required. This link is therefore considered feasible and is carried forward to the Stage 2 assessment.	Pass
2-63	Cotters Street/Stable Lane, from South Terrace to Copley Street	No	Cotters Street, from South Terrace to Copley Street is a two-way single carriageway with a footpath on both sides. The road has the character of a laneway, with some side or back entrances to commercial properties adjoining. The typical boundary to boundary width along this section of the route is 8m. Stable Lane adjoins Cotters Street and also links to Copley Street, and is a narrow two-way laneway with no footpaths and some informal parking. The laneway is bounded by commercial properties. The building-to-building width is 6m. These links are therefore considered not feasible and are not carried forward to the Stage 2 assessment.	Fail
2-64	Copley Street/Anglesea Place, from Anglesea Street to Union Quay	Secondary	Copley Street is a two-way single carriageway road, which widens at its western end to provide right running lanes within the median. There is a footpath on both sides and parallel parking on the northern side and perpendicular parking on the southern side. The road is bounded by commercial properties with a multi-storey car park on the northern side. The typical boundary to boundary width is 22m so no widening would be needed. Although this would be considered a feasible route, it represents an indirect route and a deviation from a more direct route via Anglesea Street, and it would route buses back via Union Quay to Anglesea Street, and as such it is therefore considered not feasible and is not carried forward to the Stage 2 assessment.	Fail
2-65	Union Quay, from Copley	Secondary	Union Quay, from Copley Street to Anglesea Street is a two-way road with two general traffic lanes. There is a footpath and parallel parking on both sides of the road. The road is bounded by the	Fail

Route Option Number	Description	Part of CMATS Cycle Network	Comments	Pass/Fail
	Street to Anglesea Street		<p>River Lee to the north, and commercial/residential buildings to the south, which front directly onto the footpath. The boundary-to-boundary width is 18m.</p> <p>Although this would be considered a feasible route, it represents an indirect route and a deviation from a more direct route via Anglesea Street, and as such it is therefore considered not feasible and is not carried forward to the Stage 2 assessment.</p>	
2-66	South Terrace/ George' s Quay, from Anglesea Street to Parliament Bridge	Primary	<p>South Terrace is a one-way westbound road with two vehicular lanes and one bus lane. There are footpaths with incorporated trees on both sides. The road is bounded by buildings on both sides which directly front onto the footpaths, with steps to the Georgian buildings on the northern side. The typical boundary to boundary width is 17m.</p> <p>Continuing through towards the junction with Union Quay, the bus lane terminates and on-street parking and a westbound, on road cycle lane are present along two general traffic lanes.</p> <p>This continues through to George' s Quay, where there are two westbound traffic lanes and a westbound bus lane and some limited on-street parking on the southern side. George' s Quay has footpaths on both sides and is bounded by the River Lee to the North and commercial buildings to the south.</p> <p>The typical boundary to boundary width is 15m.</p> <p>Routing buses via South Terrace or George' s Quay would require buses to re-route via Union Quay to rejoin Anglesea Street, or to use Parliament Bridge and South Mall to get to Parnell Place. These are considered indirect routes for buses, which deviate from more direct routing via Anglesea Street. Therefore, these links are not considered feasible and are not carried forward to the Stage 2 assessment.</p>	Fail
2-67	Father Matthew Quay/ Morrison' s Quay	Primary /Secondary	<p>Father Matthew Quay from Parliament Bridge to South Mall is a two-way traffic route between Parliament Bridge and Father Matthew Street, and one-way eastbound/northbound between Father Matthew Street, on to Morrison' s Quay and to Fitton Street, reverting to two-way between Fitton Street and South Mall.</p> <p>The route is bounded to the south by the River Lee, and has perpendicular parking along the quay side edge, a carriageway and a footpath on the building side of the route. Numerous commercial properties, the Holy Trinity Church and the College of Commerce front on to the street.</p> <p>The street is also proposed to be upgraded as part of the Cork City Council Morrison' s Island public realm improvement scheme, which will reduce carriageway widths, reduce parking and provide enhanced footpaths throughout.</p> <p>This route is therefore not considered feasible and is not carried forward to the Stage 2 assessment.</p>	Fail
2-68	Sullivan' s Quay, from Meade Street to Parliament Bridge	Primary	<p>Sullivan' s Quay, from Meade Street to Parliament Bridge is a one-way westbound single-lane road with footpaths on both sides, and a cycle lane on the southern side in the westbound direction with car parking along the northern side. The road is bounded to the north by the River Lee, and to the south by commercial properties (currently a construction site) which front directly onto the footpath. The typical boundary to boundary width along this section of the route is 14m.</p> <p>This is an indirect route and connects to other links which have not passed and as such is therefore not considered feasible and is not carried forward to the Stage 2 assessment.</p>	Fail
2-69	Parliament Bridge and	Primary	<p>Parliament Bridge and Parliament Street are one-way northbound roadways with two general traffic lanes. The road has footpaths on both sides and is bounded by commercial buildings which front</p>	Fail

Route Option Number	Description	Part of CMATS Cycle Network	Comments	Pass/Fail
	Parliament Street		<p>directly onto the footpath on Parliament Street. The building-to-building width is 12m.</p> <p>This is an indirect route and connects to other links which have not passed and as such is therefore not considered feasible and is not carried forward to the Stage 2 assessment.</p>	
2-70	South Mall, from Parliament Street to Parnell Place	Primary	<p>South Mall, from Parliament Street to Parnell Place is a one-way eastbound road with two lanes. There are footpaths on both sides, along with parallel parking/loading areas on both sides and a number of bus stops on the northern side. A two-way segregated cycle lane is also present on the southern side of the street. There are also a number of existing bus stops along the northern side. The building-to-building width is typically 25-27m.</p> <p>Although this would be considered a feasible route, it represents an indirect route and would require buses to divert from the corridor via South Terrace or Copley Street and use George's Quay and Parliament Bridge, which represents a significant deviation from the more direct route via Anglesea Street, and as such it is therefore considered not feasible and is not carried forward to the Stage 2 assessment.</p>	Fail
2-71	Eglinton Street, from Old Station Road to Albert Quay	No	<p>Eglinton Street, from Old Station Road to Albert Quay is a one-way northbound road with three general traffic lanes. There are footpaths on both sides and two loading bays on the eastern side. The road is lined by commercial properties and Cork City Hall along with the Cork City Hall multi-storey car park on the western side. The building-to-building width is typically 22m so no widening would be required.</p> <p>This is therefore considered feasible and is carried forward to the Stage 2 assessment.</p>	Pass
2-72	N27 Albert Street/Custom House Street, from Old Station Road to Anderson's Quay	Partial Feeder	<p>The N27 Albert Street, from Old Station Road to the junction with Albert Quay is a national primary dual carriageway route, with two lanes routing east and north, and two lanes routing south and west, widening to three lanes. A central median is in place for most of the route along with footpaths on both sides. The road is bounded by commercial properties on both sides. The typical boundary to boundary width is 24-26m.</p> <p>North of Albert Quay, the N27 (Custom House Street) crosses over Eamon DeValera Bridge, with two general traffic lanes in each direction and footpaths either side, continuing through to Anderson's Quay. North of the bridge, the road is bounded by commercial properties on both sides, and the Port of Cork buildings to the eastern side. The typical boundary to boundary width is 24-26m.</p> <p>This is therefore considered feasible and is carried forward to the Stage 2 assessment.</p>	Pass
2-73	Albert Quay (east)	Secondary	<p>Albert Quay (east) is a one-way eastbound road with two vehicular lanes and segregated cycle facilities on both sides of the road. There is a footpath on both sides. The road is bounded by the River Lee wharf to the north, and commercial buildings to the south. The typical boundary to boundary width is approximately 18m.</p> <p>This is therefore considered feasible and is carried forward to the Stage 2 assessment.</p>	Pass
2-74	Terrence MacSweeney Quay		<p>Terrence MacSweeney Quay is a one way westbound road with two general traffic lanes and a bus lane. There are footpaths on both sides and a segregated, on-road cycle lane on the northern side. The road is bounded by the River Lee to the north, and Cork City Hall to the south. The boundary-to-boundary width is approximately 19m.</p> <p>This is therefore considered feasible and is carried forward to the Stage 2 assessment.</p>	Pass

Route Option Number	Description	Part of CMATS Cycle Network	Comments	Pass/Fail
2-75	Clontarf Street/Clontarf Bridge	Secondary	<p>Clontarf Bridge is a three-lane, one-way southbound route with three general traffic lanes. There are footpaths either side. Typical width is approximately 14-15m.</p> <p>Clontarf Street, heading south from Anderson's Quay is a one-way southbound traffic route, with two general traffic lanes, an on-road southbound cycle lane and a short section of northbound contra-flow bus lane. South of Oliver Plunkett Street Lower, the route has three southbound general traffic lanes and a southbound on-road cycle to the junction with Lapp's Quay, at which point the cycle lane terminates.</p> <p>The route is bounded by commercial properties, the Clayton Hotel and Parnell Place Bus Station.</p> <p>Typical width varies from 17-18m.</p> <p>This is therefore considered feasible and is carried forward to the Stage 2 assessment.</p>	Pass
2-76	Lapp's Quay	Primary	<p>Lapp's Quay is a connecting roadway from Parnell Place to Clontarf Street. At the western end it is two-way and at the eastern end it is one-way eastbound. The route is bounded to the north by commercial properties, and to the south by the River Lee. There is a TFI bike share station and perpendicular parking along the route and a footpath on the northern side.</p> <p>Typical width is approximately 13-14m.</p> <p>This route is not considered feasible and is not carried forward to the Stage 2 assessment.</p>	Fail
2-77	Oliver Plunkett Street Lower (east)/ Anderson's Street	No	<p>Between Clontarf Street and Custom House Street Oliver Plunkett Street Lower is a one-way eastbound to the junction with Anderson's Street, and two-way thereafter to Custom House Street, with on-street parking on the southern side. Footpaths are present on both sides of the route.</p> <p>The route is bounded by commercial properties along the majority of its length. Typical width varies from 10-12m.</p> <p>Anderson's Street is a short section of connecting road between Oliver Plunkett Street Lower and Anderson's Quay. It is a two-way route with on-street parking possible on the western side and footpaths. It is bounded by commercial buildings on both sides. Typical width is approximately 7-8m</p> <p>These routes are not considered feasible and are not carried forward to the Stage 2 assessment.</p>	Fail
2-78	Oliver Plunkett Street Lower (west)		<p>Oliver Plunkett Street Lower is a two-way route between Clontarf Street and Parnell Place, with an eastbound general traffic lane and a westbound bus lane and footpaths on both sides.</p> <p>Typical width varies from 11-12m.</p> <p>This route is not considered feasible and is not carried forward to the Stage 2 assessment.</p>	Fail
2-79	Anderson's Quay/ Merchant's, from Custom House Street to Parnell Place	Partial Primary	<p>Anderson's Quay, from Custom House Street to Parnell Place is the N8 national primary road. East of Brian Boru Bridge it is a one-way eastbound route, with two general traffic lanes, which widen to three lanes at the eastern extent.</p> <p>West of Brian Boru Bridge, Merchant's Quay is a three-lane road, with two westbound lanes and one eastbound lane. There is a raised adjacent eastbound cycle lane on the northern side and a section of westbound bus lane in front of the Parnell Place Bus Station forecourt.</p> <p>Both streets are bounded to the north by the River Lee and to the south by commercial properties.</p> <p>Typical width varies from 12-13m to 19-20m.</p>	Pass

Route Option Number	Description	Part of CMATS Cycle Network	Comments	Pass/Fail
			This is therefore considered feasible and is carried forward to the Stage 2 assessment.	
2-80	Parnell Place, from South Mall to Merchant's Quay	Primary	<p>Parnell Place, from South Mall to Merchant's Quay is a one-way northbound route, with three general traffic lanes and a short section of northbound bus lane, on-street parallel parking on both sides, a two-way segregated cycle facility on the western side and footpaths of varying widths.</p> <p>The route is fronted by numerous commercial properties and provides access to Parnell Place Bus Station and Merchant's Quay Car Park.</p> <p>Typical width varies from 25-30m.</p> <p>This is therefore considered feasible and is carried forward to the Stage 2 assessment.</p>	Pass

Following the Stage 1 sifting exercise, 21 of the 80 route options assessed passed the initial sifting stage and were progressed to the next assessment stage. These route options are presented in Figure 12.



Figure 15: Section 2 – Route Options remaining after Stage 1 Sift

Following a further review, in the city centre, towards the northern end of Section 2, Albert Street (link 2-72) was removed from the options development process, as more direct and suitable routes are available connecting the N27 to Anderson’s Quay. As a consequence, Albert Quay East (2-73), Anderson’s Quay (2-79) and Terence MacSweeney Quay (2-74) are therefore also not required as alternative connecting routes and have been removed from the route options development stage.



Figure 16: Section 2 – Route Options remaining after additional review

7. Stage 2 Assessment

The following section presents the development of the options covering each of the sub sections reflecting on the links which passed through the Stage 1 Sifting Assessment. This section presents each of the options developed for the individual sections, along with the sectional multi-criteria assessments.

7.1 Study Area Section 1 – Airport to Kinsale Road Roundabout

For potential route options at the southern extent of CBC 9 a number of potential localised route options are available between the Airport entrance roundabout junction and the Kinsale Road Roundabout. These options are assessed as part of Section 1 of CBC 9.

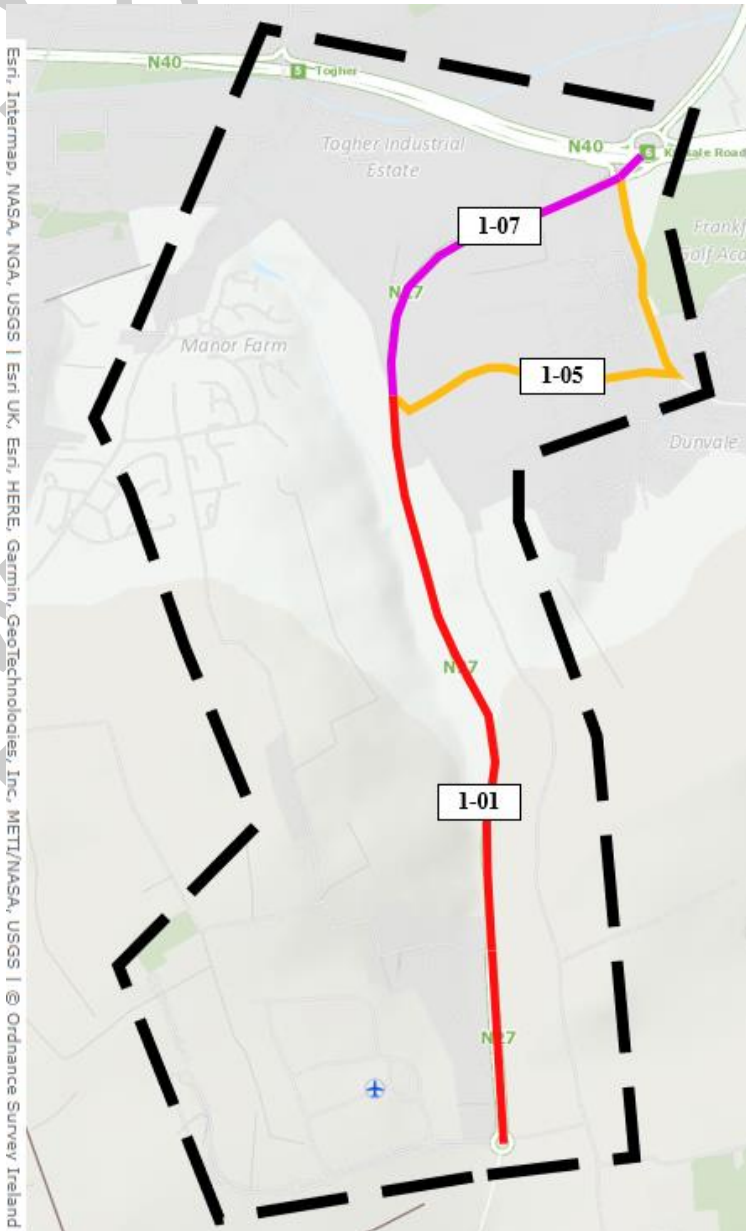


Figure 17 Section 1 – Route Options remaining after Stage 1 Sift

For Section 1, between Cork Airport and the Kinsale Road Roundabout the following route options have been identified:

- **Option 1** – Buses and cyclists routing via the N27 Airport Road from the Airport Roundabout to the Kinsale Road Roundabout;

- **Option 2** – Buses routed along the N27 Airport Road - Ballycureen Road and Frankfield Road while cyclists are retained along the N27 Airport Road;

7.1.1 Option 1 – Routing via the N27 Airport Road

7.1.1.1 Route Description

Route Option 1 is presented in Figure 18 and described in the following text.

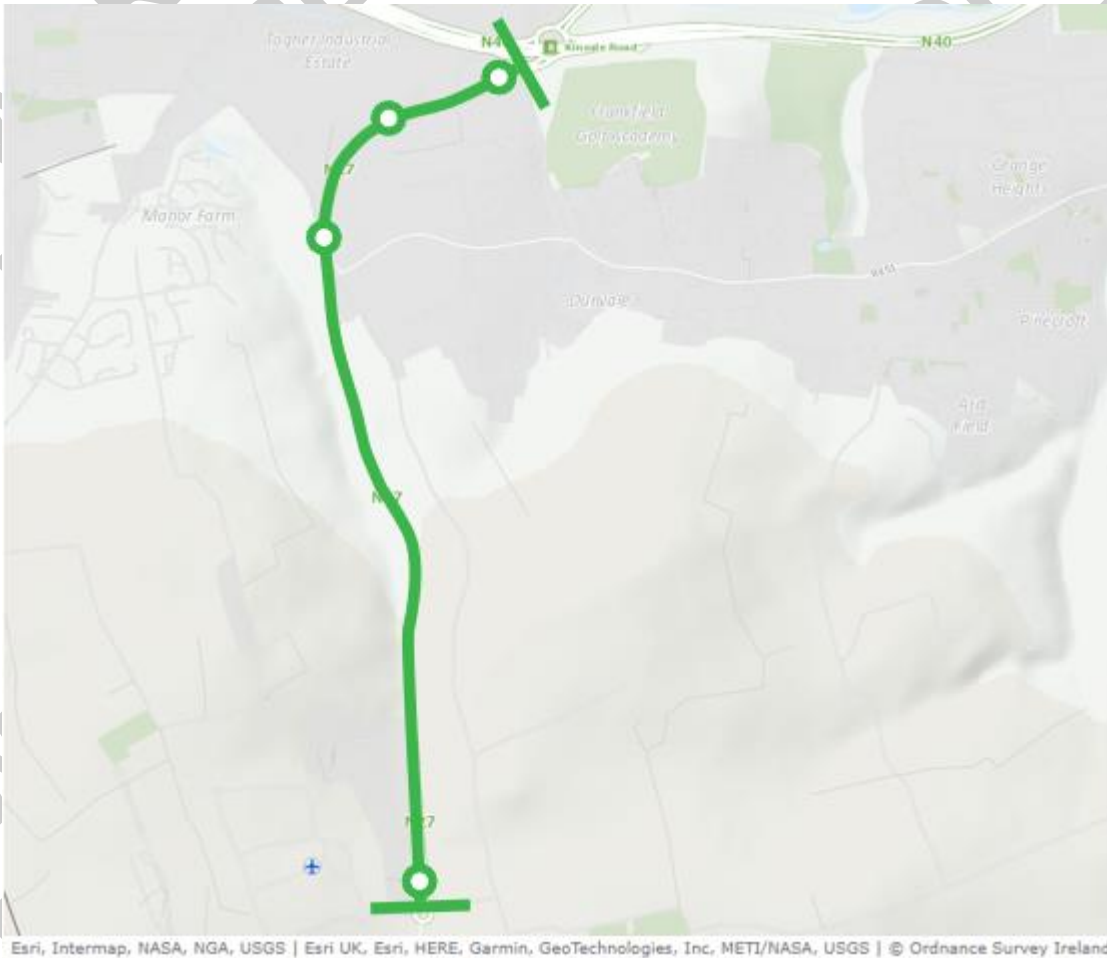


Figure 18: Section 1, Proposed Option 1 – Route Option Overview

Under Option 1 buses and cyclists are routed from the Airport Roundabout along the N27 Airport Road through the junction of Ballycureen Road/Airport Road and on towards the Kinsale Road Roundabout. It is envisaged that this option would accommodate a total of 4 bus stops in each direction.

7.1.1.2 Indicative Scheme Design

Figure 19 illustrates the indicative scheme design for this route option along with the location of cross sections and junctions referenced in subsequent sections.

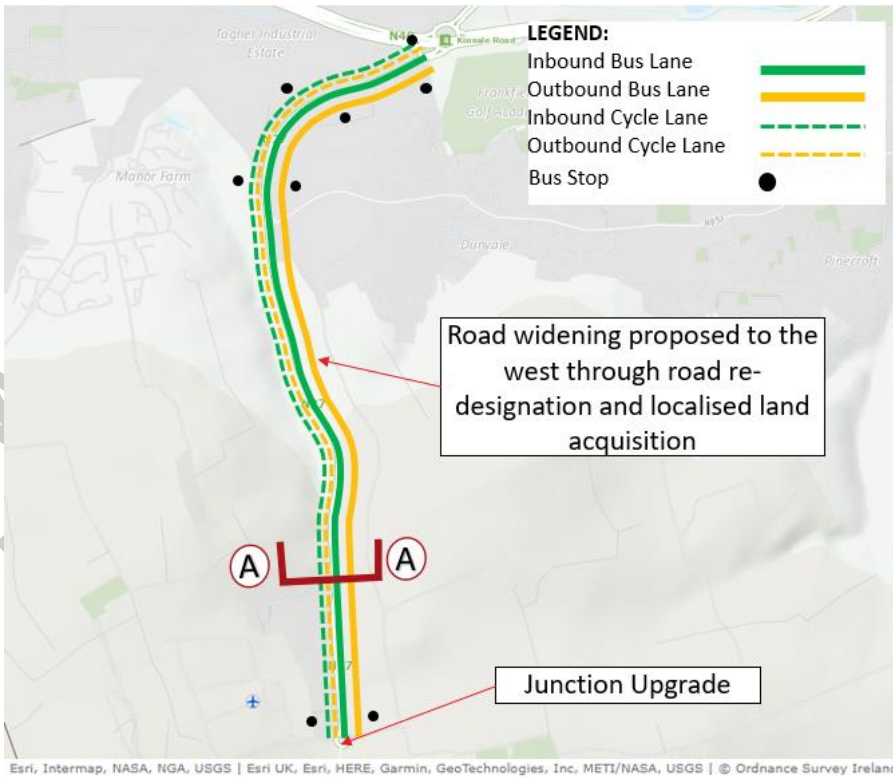


Figure 19: Section 1, Proposed Option 1 – Indicative Scheme Design

For the entire length of the N27 Airport Road from the Airport Roundabout to the Kinsale Road Roundabout a two-way dedicated cycle facility is proposed for the western side of the roadway. In addition bus lanes are proposed in both directions along this section of the corridor. The delivery of the bus lanes and proposed cycle facility will require some road widening along with the redesignation of the existing road space.

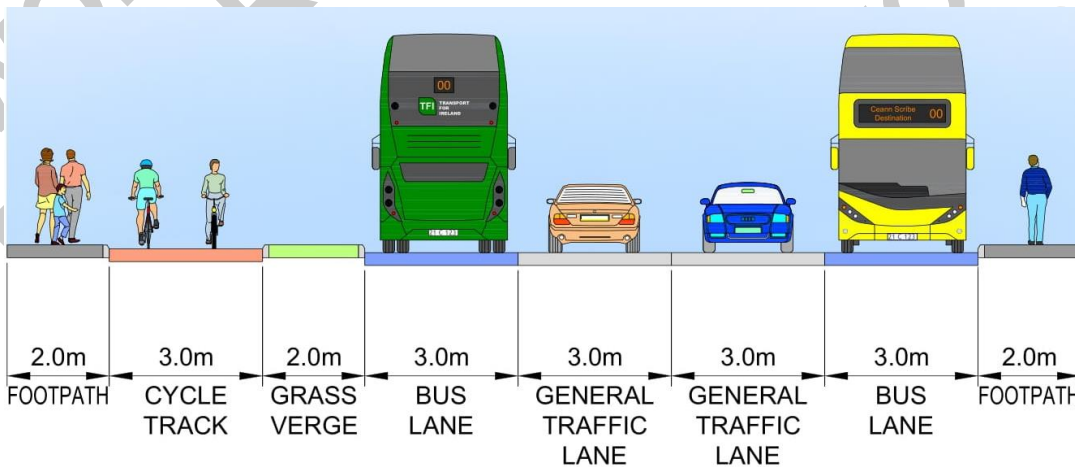


Figure 20: Section 1, Proposed Option 1 – Cross Section A-A

This route option would include the upgrade of the Airport entrance roundabout junction to a signalised crossroad junction, in addition to the upgrade of the existing signalised junctions on the N27 Kinsale Road (Airport Road) with Ballycurreen Road and Frankfield Road.

In summary this route option, subject to confirmation at the scheme design stage, would result in the following characteristics:

- Bus lanes in both directions along the entire N27 Kinsale Road (Airport Road) from the Airport entrance roundabout to the N40 Kinsale Road Roundabout;
- A raised adjacent two-way cycle facility along the entirety of the route;
- New and improved footpaths along the entirety of the route;

- An additional pedestrian crossing on the N27 Kinsale Road (Airport Road) in the vicinity of the entrance to SISK Cork;
- Upgrade of the Airport entrance roundabout junction to a signalised crossroad junction;
- Upgrade of the existing signalised junctions on the N27 Kinsale Road (Airport Road) at Ballycurreen Road and Frankfield Road to include improvements to pedestrian and cyclist facilities; and
- Land acquisition estimated from 9 properties.

7.1.2 Option 2 – Bus Routing via Ballycurreen Road and cyclists via the N27 Airport Road

7.1.2.1 Route Description

Route Option 2 is presented in Figure 21 and described in the following text.

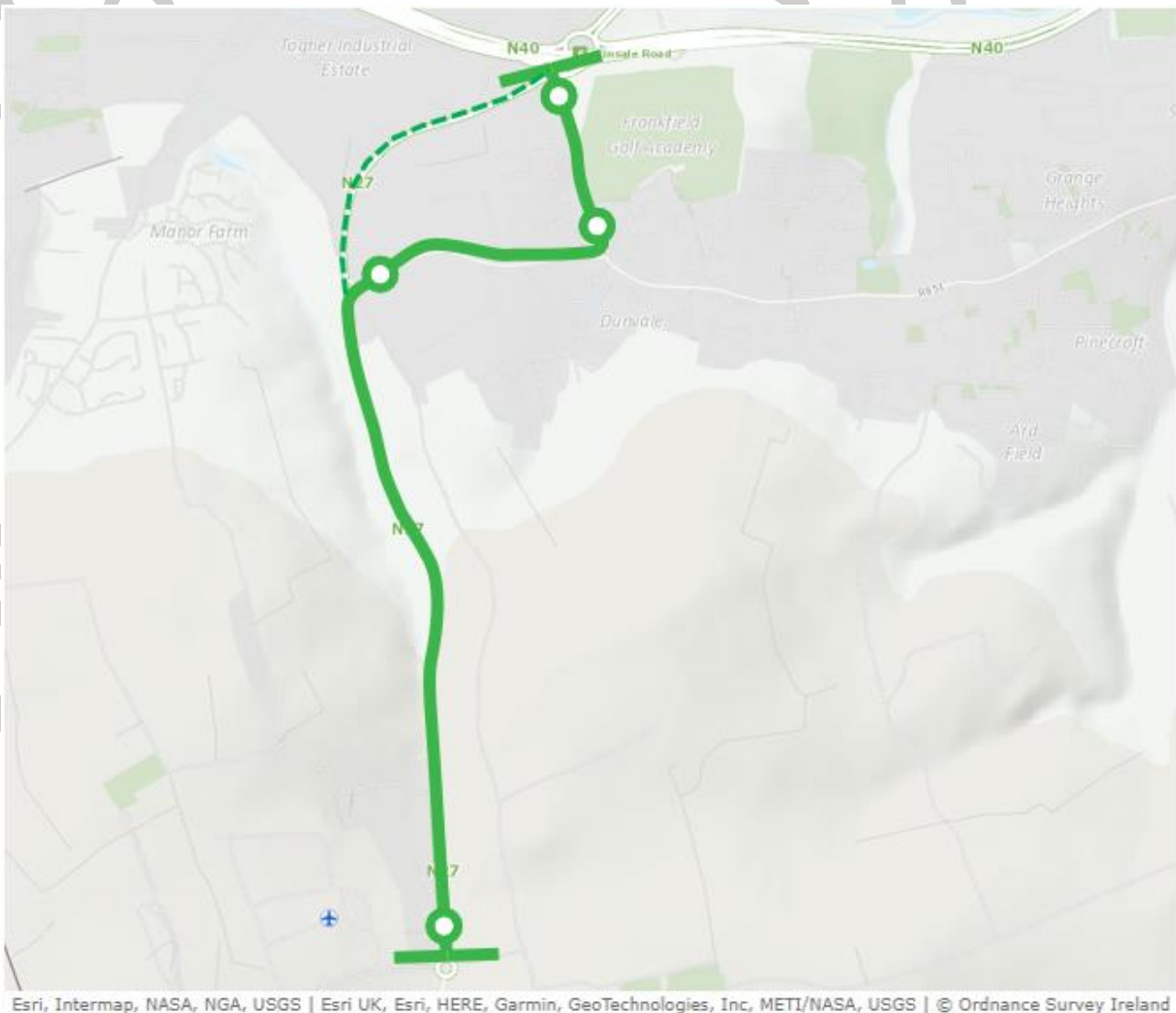


Figure 21: Section 1, Proposed Option 2 – Route Option Overview

Option 2 is largely similar to Option 1, but at the N27 Airport Road/Ballycurreen Road junction Option 2 would see cyclists retained along the N27 Airport Road using a two-way facility with buses routed along Ballycurreen Road and Frankfield Road and on towards the N40 Kinsale Road Roundabout. It is envisaged that this option would accommodate a total of 4 bus stops in each direction.

7.1.2.2 Indicative Scheme Design

Figure 22 illustrates the indicative scheme design for this route option along with the location of cross sections and junctions referenced in subsequent sections.

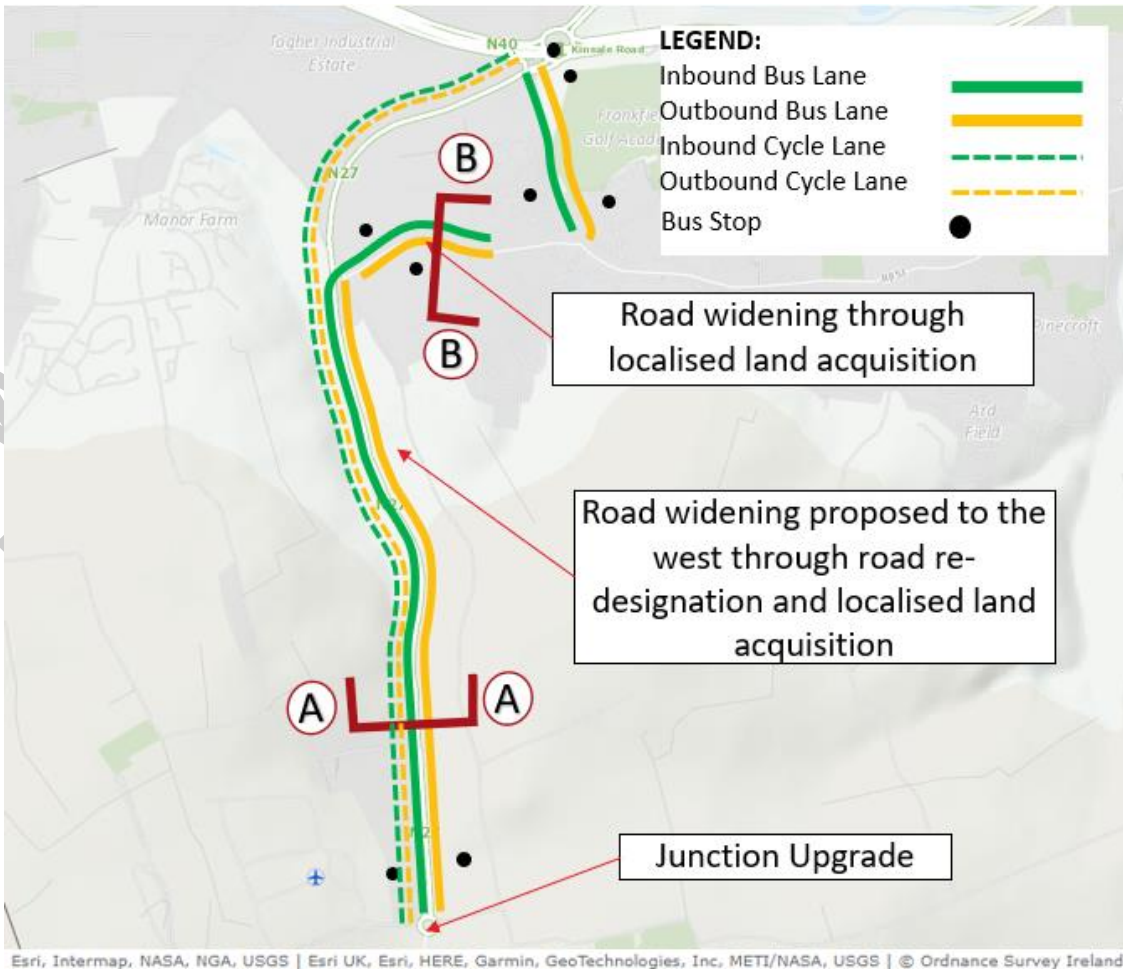


Figure 22: Section 1, Proposed Option 2 – indicative Scheme Design

As with Option 1, cyclists will be provided with dedicated infrastructure in both directions along the N27 Airport Road, on the western side of the roadway. In terms of bus priority measures, bus lanes will be provided in both directions along the N27 Airport Road between the Airport Roundabout and its junction with Ballycurreen Road.

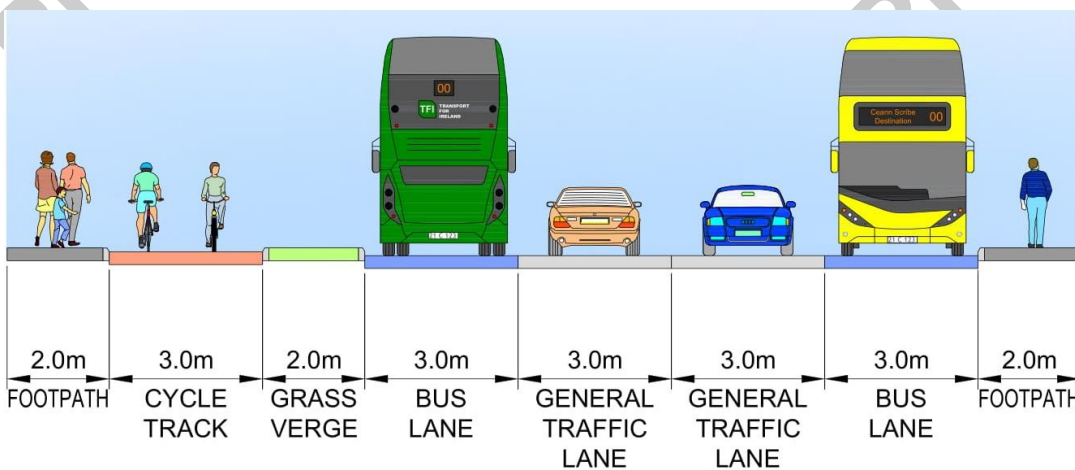


Figure 23: Section 1, Proposed Option 2 – Cross Section A-A

Along the Ballycurreen Road bus lanes in both the inbound and outbound direction will be provided for part of this road. Due to existing building and topographical constraints, it is not possible to provided dedicated bus lanes on a portion Ballycurreen Road approaching the junction with Frankfield Road. Along Frankfield Road between Ballycurreen Road and the N27, bus lanes will be provided in both directions for the entire length of the roadway.

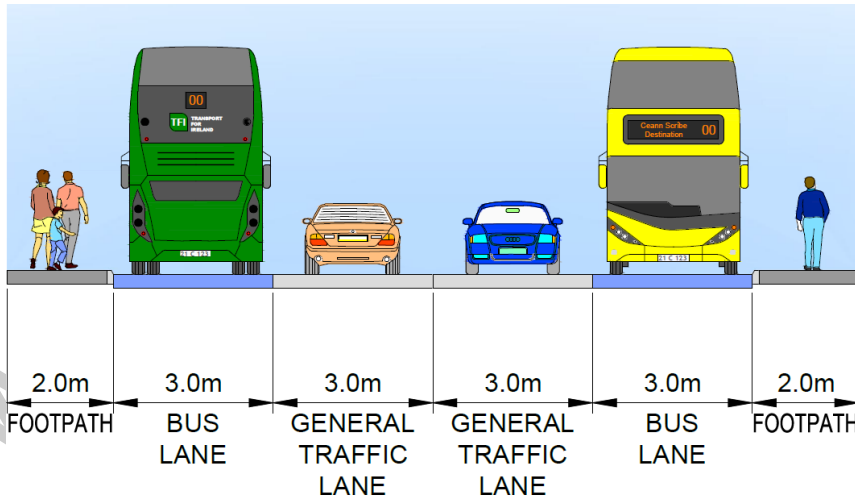


Figure 24: Section 1, Proposed Option 2 – Cross Section B-B

As with Option 1, this route option would include the introduction of new traffic signals to replace the existing Airport Roundabout in addition to the upgrade of the existing signalised junctions with Ballycurreen Road and Frankfield Road.

In summary this route option, subject to confirmation at the scheme design stage, would result in the following characteristics:

- Bus lanes in both directions along the entire N27 Kinsale Road (Airport Road) from the Airport entrance roundabout to the Ballycurreen Road junction;
- Bus lanes in both directions along the majority of Ballycurreen Road between the N27 Kinsale Road (Airport Road) and Frankfield Road (with some minor interruptions to the extent of bus lane proposed due to constraints along the route);
- A raised adjacent two-way cycle facility along the entirety of the route;
- New and improved footpaths along the entire N27 Kinsale Road (Airport Road) from the Airport entrance roundabout to the N40 Kinsale Road Interchange and along the Ballycurreen Road and Frankfield Road;
- An additional pedestrian crossing on the N27 Kinsale Road (Airport Road) in the vicinity of the entrance to SISK Cork;
- Upgrade of the Airport entrance roundabout junction to a signalised crossroad junction;
- Upgrade of the existing signalised junctions on the N27 Kinsale Road (Airport Road) at Ballycurreen Road and Frankfield Road and the junction of Frankfield Road and Ballycurreen Road to include improvements to pedestrian and cyclist facilities; and
- Land acquisition estimated from 20 properties.

7.1.3 Route Options Assessment

Details of the Stage 2 route options assessment undertaken for the options outlined above for Section 1 are presented in Appendix A and the relative ranking of route options against the scheme assessment sub-criteria is summarised in Table 7.

Table 7: Section 1, Airport to Kinsale Road Roundabout Options Assessment Summary

Assessment Criteria	Assessment Sub-Criteria	Option 1	Option 2
Economy	Capital Cost	Green	Red
	Transport Reliability	Green	Red
Integration	Land Use Integration	Yellow	Yellow
	Catchments	Yellow	Yellow
	Transport Network Integration	Yellow	Yellow
	Cycling Integration	Yellow	Yellow
	Pedestrian Network Integration	Yellow	Yellow
Accessibility & Social Inclusion	Key Trip Attractors	Yellow	Yellow
	Deprived Geographic Areas	Yellow	Yellow
Safety	Road Safety	Green	Red
Environment	Archaeology Architectural and Cultural Heritage	Yellow	Yellow
	Biodiversity	Green	Red
	Soils and Geology	Yellow	Yellow
	Hydrology	Green	Red
	Landscape and Visual	Green	Red
	Air Quality, Noise & Vibration	Green	Red
	Land Use Character	Green	Red

From the **Economy** perspective, Route Option 1 is considered the most favourable as it can be delivered with a reduced amount of land take and in terms of journey time reliability Option 1 also performs better than Option 2.

In terms of **Integration**, both options are considered broadly similar, with Option 2 better integrated with the existing built up area, while Option 1 has is better aligned to support new development along the N27 corridor. Option 1 integrates more with regional services using the national road network, whereas Option 2 does not integrate with any bus services on Ballycurreen Road but runs close to the existing 206 service on Frankfield Road. Option 1 and Option 2 are considered similar in terms of cycle and pedestrian network integration.

From an **Accessibility and Social Inclusion** perspective, both options perform similarly in terms of serving key attractors and designated Deprived Geographic Areas.

In terms of **Safety**, Option 1 is considered to perform better due to the directness of the route and reduced number of junctions and associated turning movements along the route when compared to Option 2.

On the **Environment**, Option 1 is the most favourable in that it does not cross any water course, whereas Option 2 runs proximate to a small stream. Option 1 also involves the loss of less trees compared with Option 2, has the potential to impact less residential receptors than Option 2, and requires less land take.

From the above assessment, **Option 1** has been identified as the preferred route as it provides more direct bus and cycle connectivity and has a reduced land acquisition requirement and a cost estimate compared to Option 2. Option 2 would also have a more direct impact on a limited number of properties on Ballycurreen Road due to the proposed road widening compared to that of Option 1. It is therefore recommended that Option 1 be considered the preferred option for this section of the study area and is carried forward for consideration in conjunction with options to be developed for Section 2 of the CBC 9 study area.

7.2 Study Area Section 2 – Kinsale Road Roundabout to City Centre

This section of the CBC examines potential localised route options available between the Kinsale Road Roundabout and the city centre.



Figure 25 Section 2 – Route Options remaining after Stage 1 Sift

In total 5 options have been identified (including a number of sub options). The following options have been identified for Section 2:

- **Option 1** – Buses routed along the N27 South City Link Road to Old Station Road, Anglesea Street and Parnell Place, with cyclists also routed along the N27 South City Link Road to the South Douglas access ramp and continuing via Evergreen Road, Summerhill South, Langford Row, Infirmary Road, Anglesea Street and Parnell Place;
- **Option 2** – Buses routed along the N27 South City Link Road to Old Station Road, Anglesea Street and Parnell Place, with cyclists routed via the Kinsale Road, Curragh Road, Evergreen Road, Summerhill South, Langford Row, Infirmary Road, Anglesea Street and Parnell Place;

- **Option 3** – Buses routed along the Kinsale Road between the Kinsale Road Roundabout and Mick Barry Road, before joining the N27 South City Link Road via Mick Barry Road and continuing along the N27 South City Link Road to Old Station Road, Anglesea Street and Parnell Place, with cyclists routed via the Kinsale Road, Curragh Road, Evergreen Road, Summerhill South, Langford Row, Infirmary Road, Anglesea Street and Parnell Place;
- **Option 4a** – Buses routed along the Kinsale Road (with some specific traffic management proposals at the Kinsale Road arm of the Kinsale Road Roundabout to provide the necessary bus priority along the Kinsale Road), Curragh Road and Evergreen Road before joining the N27 South City Link Road and continuing to Old Station Road, Anglesea Street and Parnell Place, with cyclists routed via the Kinsale Road, Curragh Road, Evergreen Road, Summerhill South, Langford Row, Infirmary Road, Anglesea Street and Parnell Place;
- **Option 4b** – A similar option to Option 4a, but with additional road widening proposed along the Kinsale Road to provide the necessary bus priority instead of additional traffic management proposals as identified in Option 4a;
- **Option 4c** – Buses routed along the Kinsale Road (with some specific traffic management proposals at the Kinsale Road arm of the Kinsale Road Roundabout to provide the necessary bus priority along the Kinsale Road as per Option 4a), Curragh Road and Evergreen Road before joining the N27 South City Link Road and continuing to Eglinton Street, Clontarf Street and Anderson’s Quay/Parnell Place, with cyclists routed via the Kinsale Road, Curragh Road, Evergreen Road, Summerhill South, Langford Row, Infirmary Road, Anglesea Street and Parnell Place; and
- **Option 5** – Buses and cyclists routed along the Kinsale Road (with additional road widening on the Kinsale Road to provide the necessary bus priority along the Kinsale Road), Curragh Road and Evergreen Road, continuing through to Summerhill South, Langford Row, Infirmary Road, Anglesea Street and Parnell Place.

7.2.1 Option 1 – Buses via the N27 South City Link Road, Old Station Road, Anglesea Street and Parnell Place, with cyclists via the N27 South City Link Road, South Douglas Road, Evergreen Road, Summerhill South, Langford Row, Infirmary Road, Anglesea Street and Parnell Place

7.2.1.1 Route Description

Route Option 1 is presented in **Figure 26** and described in the following text.

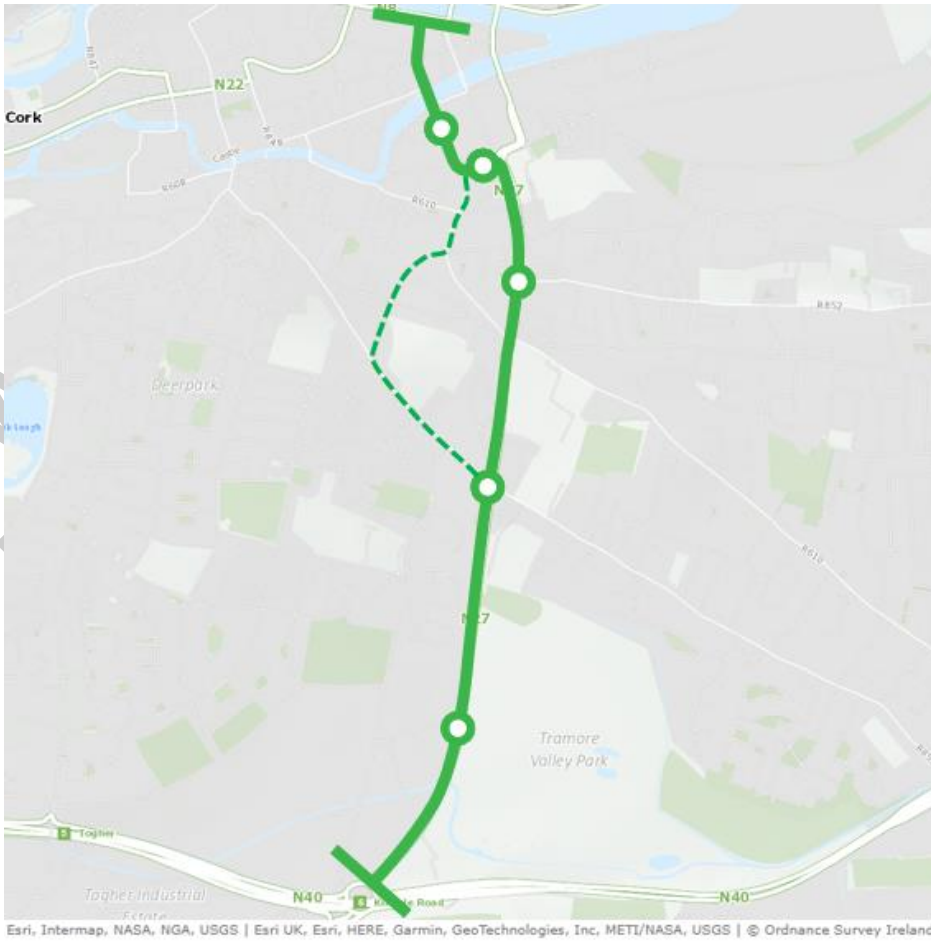


Figure 26: Section 2, Proposed Option 1 – Route Overview

Under Option 1 both buses and cyclists are routed along the N27 South City Link Road between the Kinsale Road Roundabout and the South Douglas Road Interchange. At the interchange buses would continue on the N27 South City Link Road accessing the city via Old Station Road and Anglesea Street. Cyclists would be diverted onto the northbound off-ramp and routed along Evergreen Street, Summerhill South, Infirmary Road, and Anglesea Street. It is envisaged that this option would accommodate a total of 5 bus stops in each direction.

7.2.1.2 Indicative Scheme Design

Figure 27 illustrates the indicative scheme design for this route option along with the location of cross sections and junctions referenced in subsequent sections.

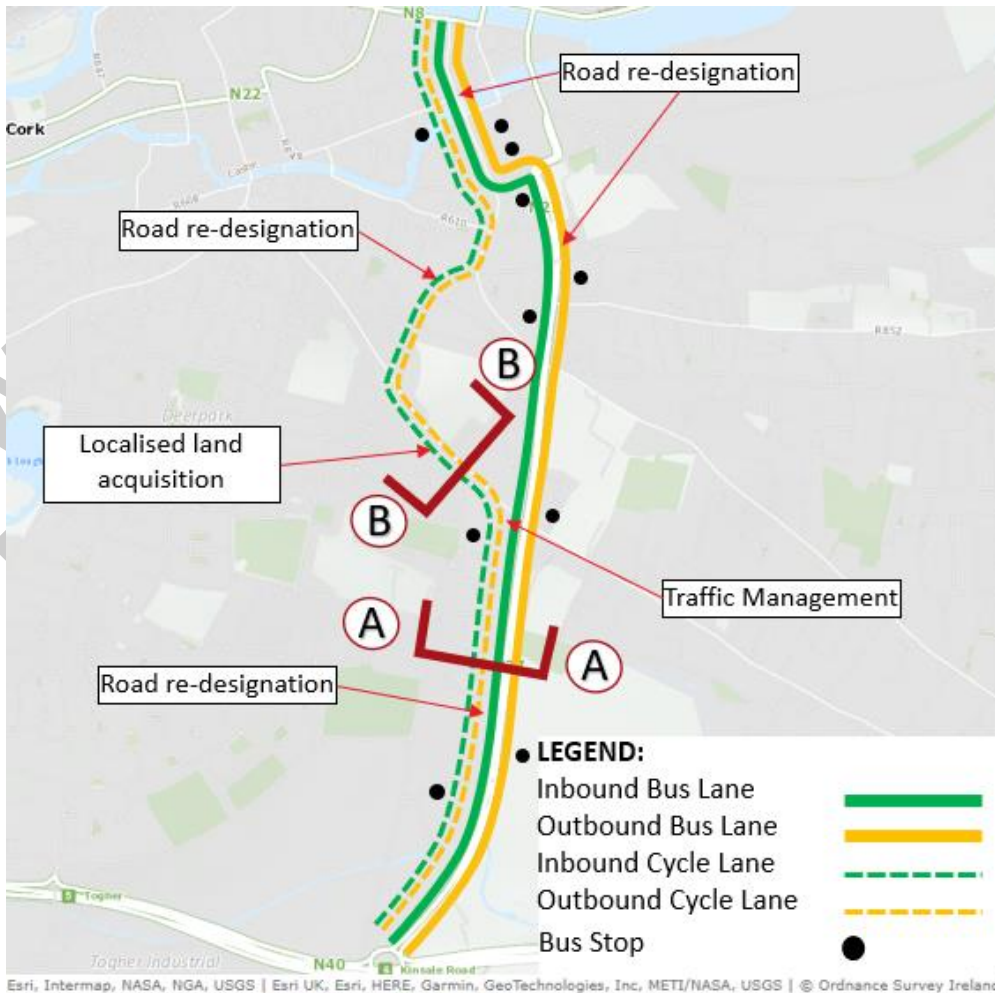


Figure 27: Section 2, Proposed Option 1 – Indicative Scheme Design

Option 1 includes the provision of bus lanes in both directions on the N27 South City Link Road between the Kinsale Road Roundabout and the South Douglas Road Interchange, and a two-way cycle facility on the western side of the route. This is achieved through re-designation of the existing roadway along this portion of the route, and the existing dual carriageway national road is also retained along this section of the N27 South City Link Road.

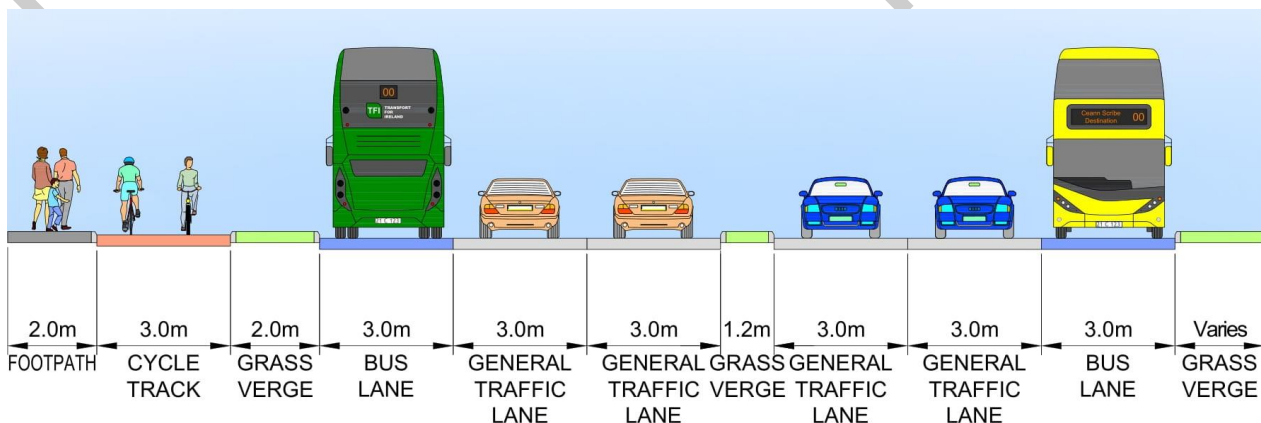


Figure 28: Section 2, Proposed Option 1 – Cross Section A-A

At the South Douglas Road Interchange buses remain on the South City Link Road and bus lanes are possible in both directions by way of removal of one general traffic lane in each direction on the South City Link Road between the South Douglas Interchange and its junction with Old Station Road; north of the Old Blackrock Road overbridge on the immediate approach to the junction of South City Link Road/Old Station Road it is possible to retain two inbound and two outbound general traffic lanes as well as the proposed bus lanes.

Along Old Station Road it is possible to provide bus lanes in both directions through the removal of a number of the existing general traffic lanes. On Anglesea Street between Old Station Road and Terrace McSweeney Quay (which is currently a one-way southbound route) both an inbound contra-flow and outbound with-flow bus lane are proposed; again through redesignation of the existing roadway and removal of some on-street parking. On Parnell Bridge it is possible to retain two-way general traffic over the bridge and provide an inbound and outbound bus lane. Finally, at Parnell Place both an outbound contra-flow bus lane and an inbound with-flow bus lane are proposed through redesignation of the existing roadway and the reduction of the number of general inbound traffic lanes to one.

For cyclists, a two-way cycle facility along the N27 South City Link Road between the Kinsale Road Roundabout and the South Douglas Road ramp is proposed; this facility will be separated from the traffic lanes by a suitable buffer to maintain the safe operation of the route. On South Douglas Road a change in traffic management is required to continue this two-way cycle facility between the interchange ramp and the junction with Curragh Road. The change in traffic management would require converting the existing South Douglas Road between these two locations from two-way flow to one-way inbound only. General traffic seeking to access the South Douglas Road east of the junction with the interchange ramp would be able to route via Southern Road or High Road to access Capwell Road and then route to the South Douglas Road.

On Evergreen Street, Summerhill South, Langford Row, Infirmary Road and Anglesea Street dedicated cycle facilities are proposed for both sides of the roadway. No significant change in traffic management is proposed along this portion of the cycle corridor to deliver the necessary infrastructure.

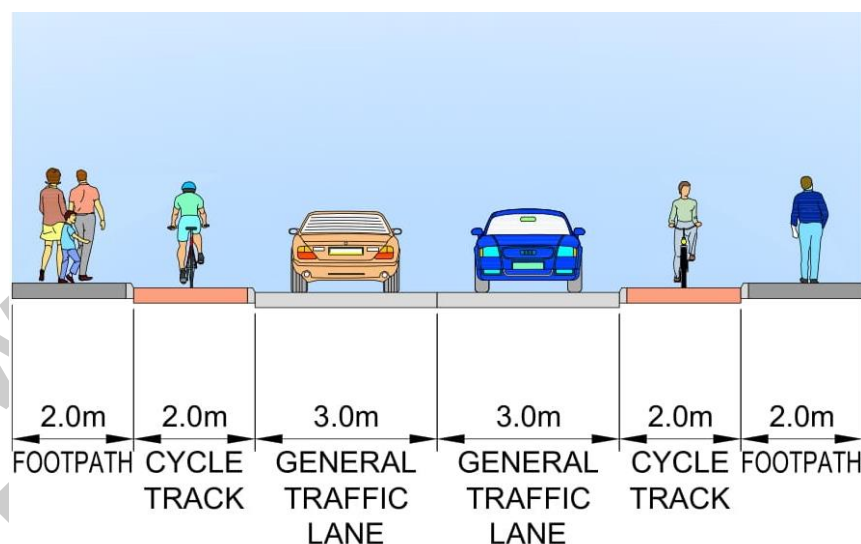


Figure 29: Section 2, Proposed Option 1 – Cross Section A-A

This option would require very limited road widening, however a significant change in on-street parking would be required along Evergreen Road, Langford Row, Infirmary Road and Anglesea Street. In addition, the removal of general traffic lanes from the South City Link Road between the South Douglas Road and Eglinton Street will potentially impact strategic traffic movements in the wider city area.

In summary, this option (subject to confirmation at scheme design stage) would result in the following:

- Bus lanes on both sides of the N27 South City Link Road between the Kinsale Road Roundabout and the junction with Old Station Road/Eglinton Street;
- Bus lane on both sides of Old Station Road;
- A contra-flow and with-flow bus lanes on Anglesea Street between Old Station Road and Terrence McSweeney Quay;
- A contraflow and with flow bus lane on Parnell Bridge and on to Parnell Place;
- A segregated two-way cycle facility on the N27 South City Link Road between the Kinsale Road Roundabout and the South Douglas Road exit ramp;

- A segregated two-way cycle facility on the southern side of the South Douglas Road between the N27 off-ramp and the junction with Curragh Road;
- Dedicated cycle facilities on both sides of the street along Evergreen Street, Summerhill South, Langford Row, Infirmary Road, Anglesea Street and Parnell Place
- Upgrade of the junction serving the entrance to the Tramore Valley Park and Mick Barry Road;
- Upgrade to all the other existing junctions along the route to better serve active travel modes; and
- Land acquisition estimated from 7 properties.

7.2.2 Option 2 – Buses via the N27 South City Link Road, Old Station Road, Anglesea Street and Parnell Place, with cyclists via the Kinsale Road, Curragh Road, Evergreen Road, Summerhill South, Langford Row, Infirmary Road, Anglesea Street and Parnell Place

7.2.2.1 Route Description

Route Option 2 is presented in Figure 30 and described in the following text.

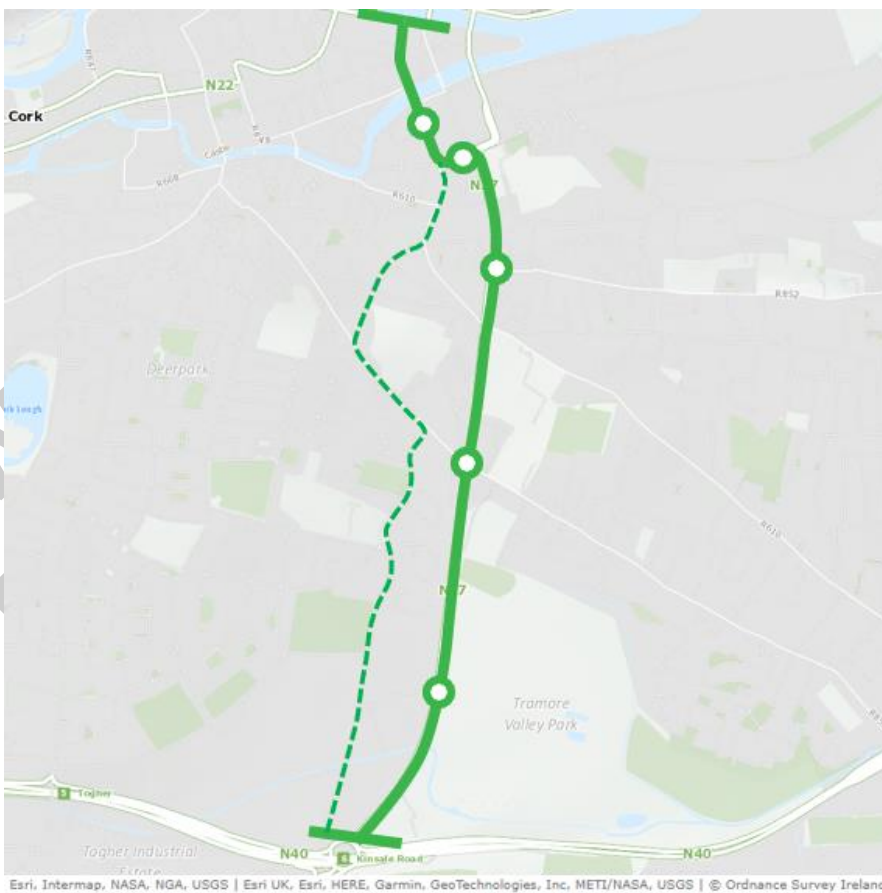


Figure 30: Section 2, Proposed Option 2 – Route Overview

Option 2 is similar to Option 1 for the proposed routing of buses, along the N27 South City Link Road to the junction with Old Station Road, before continuing through to Old Station Road, Anglesea Street and Parnell Place; however, in this option it is proposed to route cyclists along the Kinsale Road and Curragh Road before tying back into the cycle facilities proposed for Evergreen Street, Summerhill South, Langford Row, Infirmary Road, Anglesea Street and Parnell Place as outlined in Option 1. As with Option 1, a total of 5 bus stops in each direction are envisaged.

7.2.2.2 Indicative Scheme Design

Figure 31 illustrates the indicative scheme design for this route option along with the location of cross sections and junctions referenced in subsequent sections.

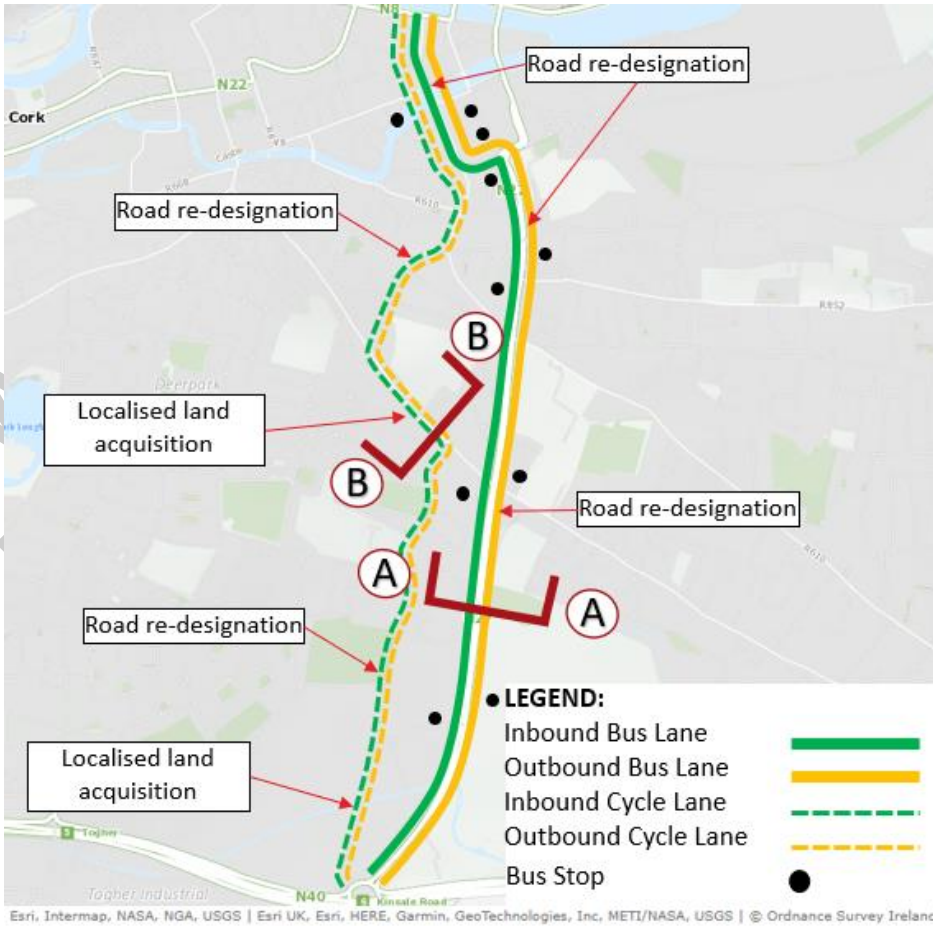


Figure 31: Section 2, Proposed Option 2 – Indicative Scheme Design

Similar to Option 1, Option 2 includes the provision of bus lanes in both directions on the N27 South City Link Road between the Kinsale Road Roundabout and the South Douglas Road Interchange.

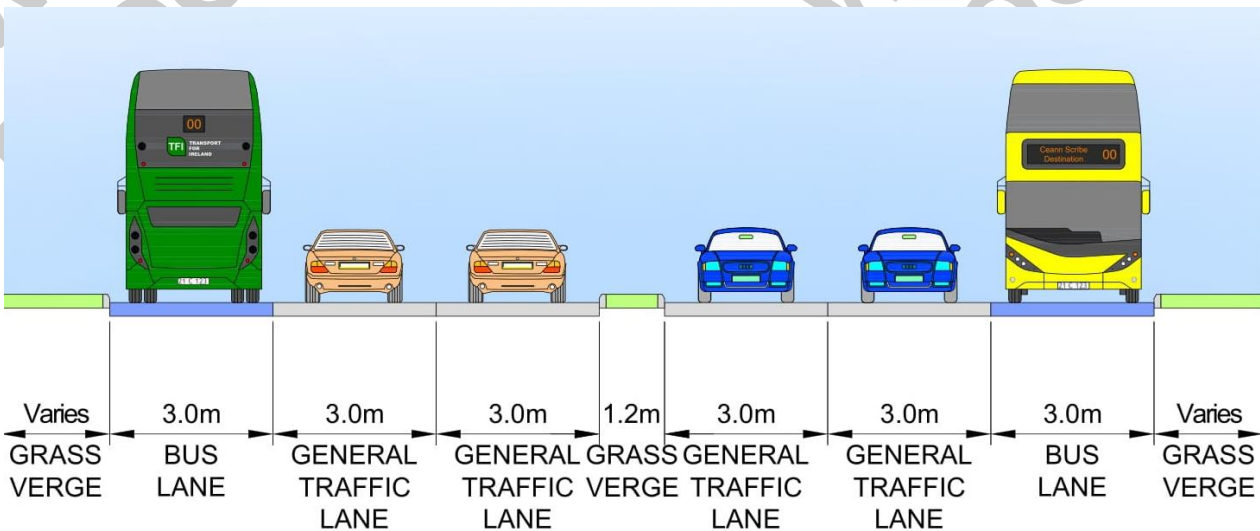


Figure 32: Section 2, Proposed Option 2 – Cross Section A-A

For cyclists, Option 2 includes the provision of dedicated cycle facilities on both sides of the Kinsale Road and Curragh Road and similar proposals to Option 1 along Evergreen Street, Summerhill South, Langford Row, Infirmary Road, Anglesea Street and Parnell Place. The provision of dedicated cycle facilities along the Kinsale Road in Option 2 is facilitated through road re-designation and localised widening works on the Kinsale Road and Curragh Road.

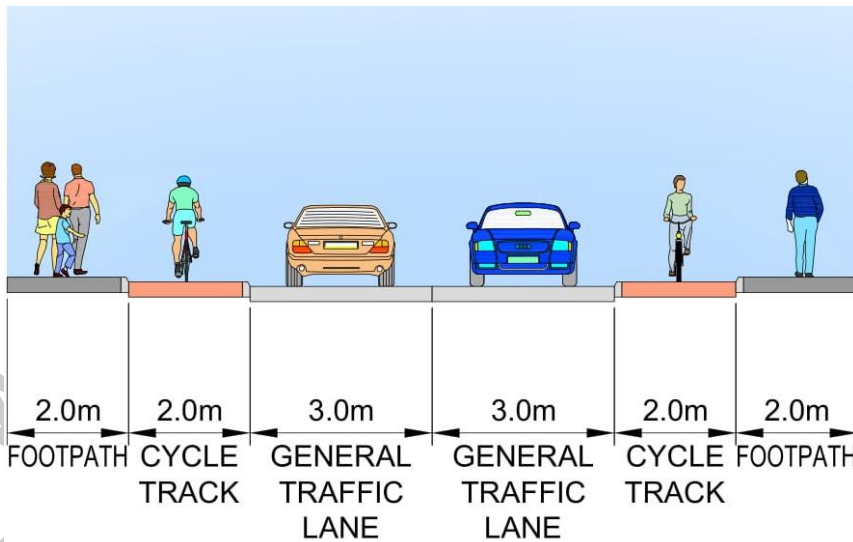


Figure 33: Section 2, Proposed Option 2 – Cross Section B-B

As with Option 1, Option 2 would require very limited road widening, however as with Option 1 changes in on-street parking would be required along the route and the proposed changes along South City Link Road will impact strategic traffic movements in the wider city area. Routing cyclists via the Kinsale Road as opposed to the N27 South City Link Road (as per Option 1) results in the South Douglas Road remaining a two-way traffic route (i.e., there would be no need for a portion of the South Douglas Road to become a one-way route to facilitate the implementation of dedicated cycle facilities).

In summary, this option (subject to confirmation at scheme design stage) would result in the following:

- Bus lanes on both sides of the N27 South City Link Road between the Kinsale Road Roundabout and the junction with Old Station Road/Eglinton Street;
- Bus lane on both sides of Old Station Road;
- A contra-flow and with-flow bus lanes on Anglesea Street between Old Station Road and Terrence McSweeney Quay;
- A contraflow and with flow bus lane on Parnell Bridge and on to Parnell Place;
- Dedicated cycle facilities along Kinsale Road, Curragh Road, Evergreen Street, Summerhill South, Langford Row, Infirmary Road, Anglesea Street and Parnell Place;
- Upgrade of the junction serving the entrance to the Tramore Valley Park;
- Upgrade to all the junctions along the route to better serve active travel modes; and
- Land acquisition estimated from 33 properties.

7.2.3 Option 3 – Buses via the Kinsale Road, Mick Barry Road, N27 South City Link Road, Old Station Road, Anglesea Street and Parnell Place, with cyclists via the Kinsale Road, Curragh Road, Evergreen Road, Summerhill South, Langford Row, Infirmary Road, Anglesea Street and Parnell Place

7.2.3.1 Route Description

Route Option 3 is presented in Figure 35 and described in the following text.

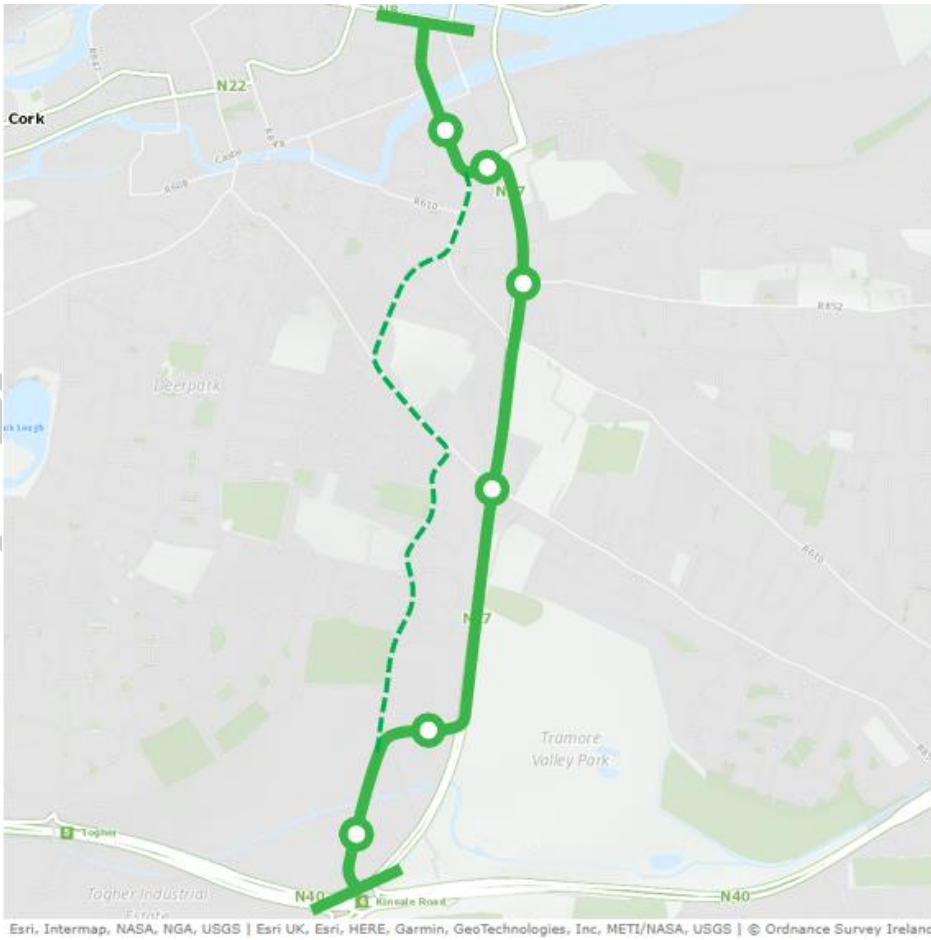


Figure 34: Section 2, Proposed Option 3 – Route Overview

Option 3 is similar to Option 2 for bus routing, with buses initially routed via the Kinsale Road from the Kinsale Road Roundabout. However, in this option buses are then routed on to Mick Barry Road before joining the N27 South City Link Road and traveling towards the city centre as described under Options 1 and 2 (continuing through to Old Station Road, Anglesea Street and Parnell Place). For Option 3 an additional set of bus stops will be required to better serve the Kinsale Road catchment and to allow interchange with the Black Ash site and the access to Tramore Valley Park, with a resultant total of 6 bus stops in each direction envisaged.

For cyclists, Option 3 is similar to Option 2 with cyclists also routed along the Kinsale Road, Curragh Road before tying back into the cycle infrastructure proposed along Evergreen Street, Summerhill South, Infirmary Road, Langford Row, Anglesea Street and Parnell Place.

7.2.3.2 Indicative Scheme Design

Figure 35 illustrates the indicative scheme design for this route option along with the location of cross sections and junctions referenced in subsequent sections.

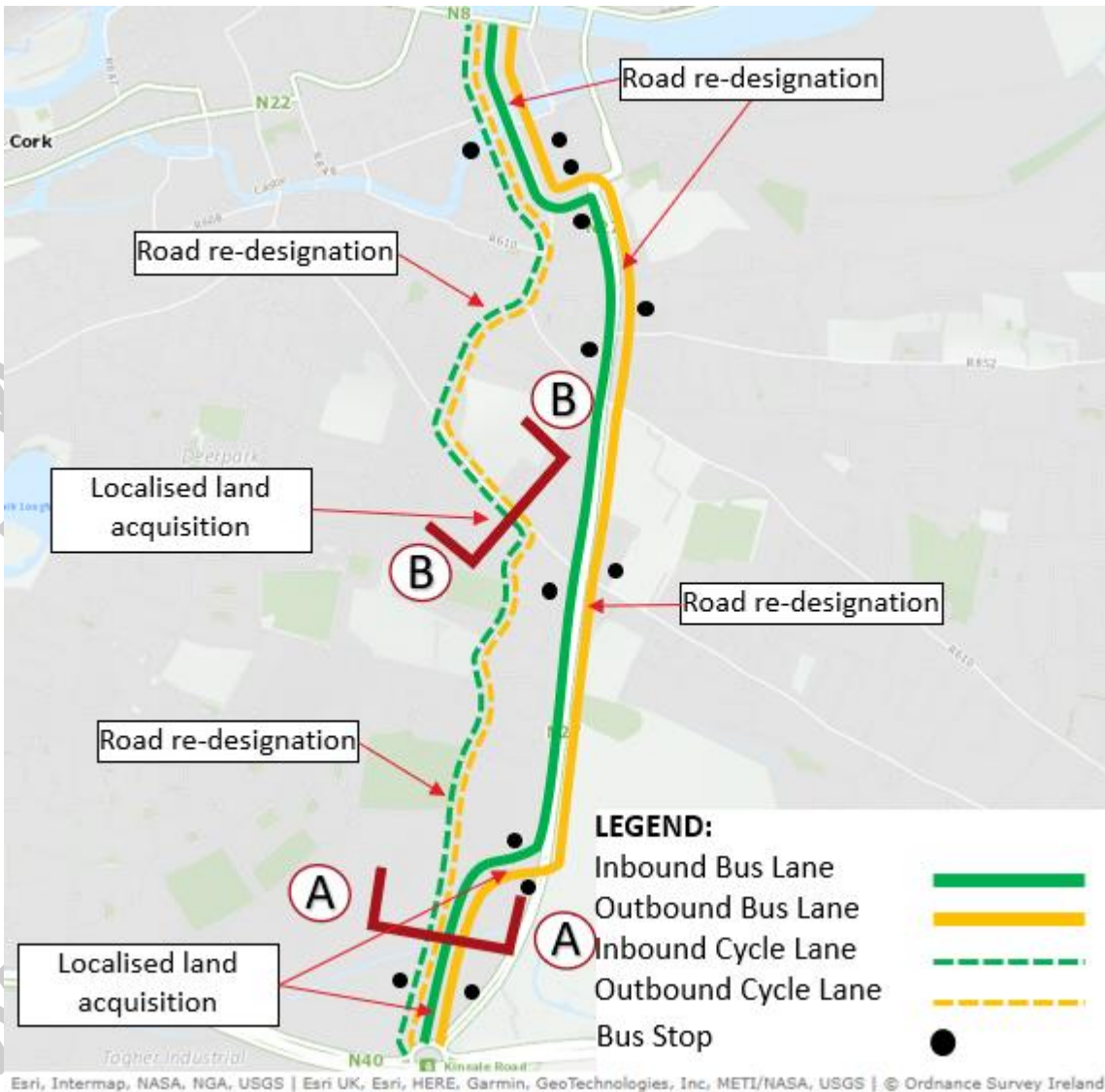


Figure 35: Section 2, Proposed Option 3 – Indicative Scheme Design

From the Kinsale Road Roundabout, Option 3 proposes to route buses and cyclists along the Kinsale Road to the junction with Mick Barry Road. This is facilitated through road redesignation and road widening through land acquisition.

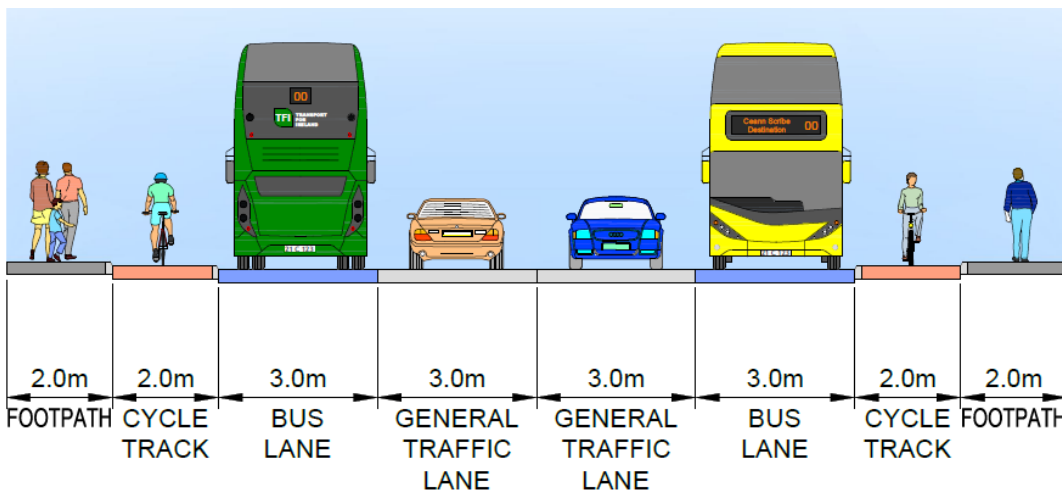


Figure 36: Section 2, Proposed Option 3 – Cross Section A-A

On Mick Barry Road bus lanes are proposed on both sides of the road, again this requires localised land acquisition and re-designation of the existing road space.

As with Option 2, Option 3 then includes the provision of bus lanes in both directions on the N27 South City Link Road from Mick Barry Road to Old Station Road, Anglesea Street and Parnell Place, through re-designation of the existing road space and, continuing north the removal of one of the general traffic lanes in both directions on the N27 for the majority of the route between Mick Barry Road and Old Station Road.

For cyclists, Option 3 includes the same cycle facilities proposed for Option 2, routing cyclists along Kinsale Road, Curragh Road, Evergreen Street, Summerhill South, Langford Row, Infirmary Road, Anglesea Street and Parnell Place.

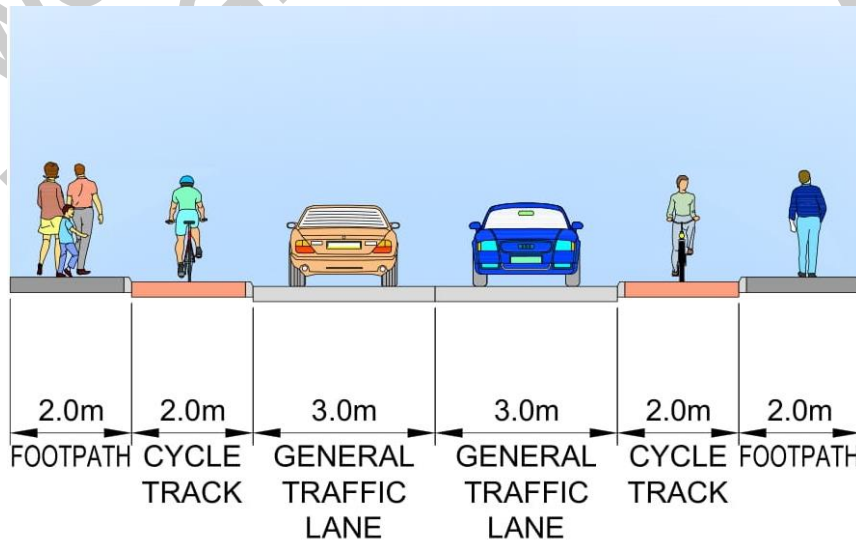


Figure 37: Section 2, Proposed Option 3 – Cross Section B-B

Option 3 requires additional road widening compared to Option 2 due to the need to widen both Kinsale Road and Mick Barry Road. As with the two previous options changes in on-street parking would be required along the route and the proposed changes along the N27 South City Link Road will potentially impact strategic traffic movements in the wider city area.

In summary, this option (subject to confirmation at scheme design stage) would result in the following:

- Bus lanes on both sides of the Kinsale Road between Kinsale Road Roundabout and Mick Barry Road;
- Bus lanes on both sides of Mick Barry Road;
- Bus lanes on both sides of the N27 South City Link Road between Mick Barry Road and Eglinton Street/Old Station Road;
- Bus lane on both sides of Old Station Road
- A contra flow and with flow bus lanes on Anglesea Street between Old Station Road and Terrace McSweeney Quay;
- A contraflow and with flow bus lane on Parnell Place;
- Dedicated cycle facilities along Kinsale Road, Curragh Road, Evergreen Street, Summerhill South, Langford Row, Infirmary Road, Anglesea Street and Parnell Place;
- Upgrade of the junction serving the entrance to the Tramore Valley Park;
- Upgrade to all the junctions along the route to better serve active travel modes; and
- Land acquisition estimated from 38 properties.

7.2.4 Option 4a – Buses via the Kinsale Road, Curragh Road, N27 South City Link Road, Old Station Road, Anglesea Street and Parnell Place, with cyclists via the Kinsale Road, Curragh Road, Evergreen Road, Summerhill South, Langford Row, Infirmary Road, Anglesea Street and Parnell Place

7.2.4.1 Route Description

Route Option 4a is presented in Figure 38 and described in the following text.

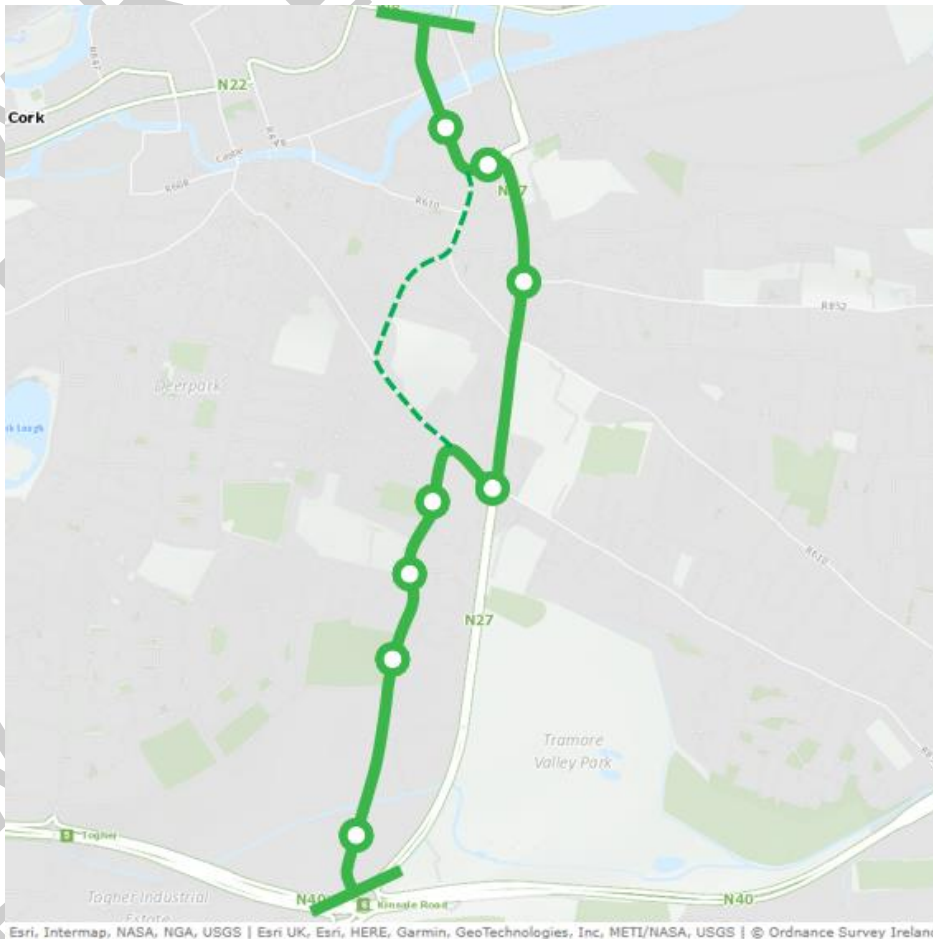


Figure 38: Section 2, Proposed Option 4a – Route Overview

Option 4a routes both buses and cyclists along the Kinsale Road and Curragh Road, with buses then diverting via the South Douglas Road and accessing the N27 South City Link Road and continuing through to Old Station Road, Anglesea Street and Parnell Place.

Similar to Option 3, cyclists are proposed to be routed along Kinsale Road, Curragh Road, Evergreen Road, Summerhill South, Langford Row, Infirmary Road, Anglesea Street and Parnell Place, and travelling in towards the city centre. Under Option 4a additional bus stops will be provided to serve the increased catchment along Kinsale Road and Curragh Road, resulting in a total of 8 bus stops in each direction.

7.2.4.2 Indicative Scheme Design

Figure 39 illustrates the indicative scheme design for this route option along with the location of cross sections and junctions referenced in subsequent sections.

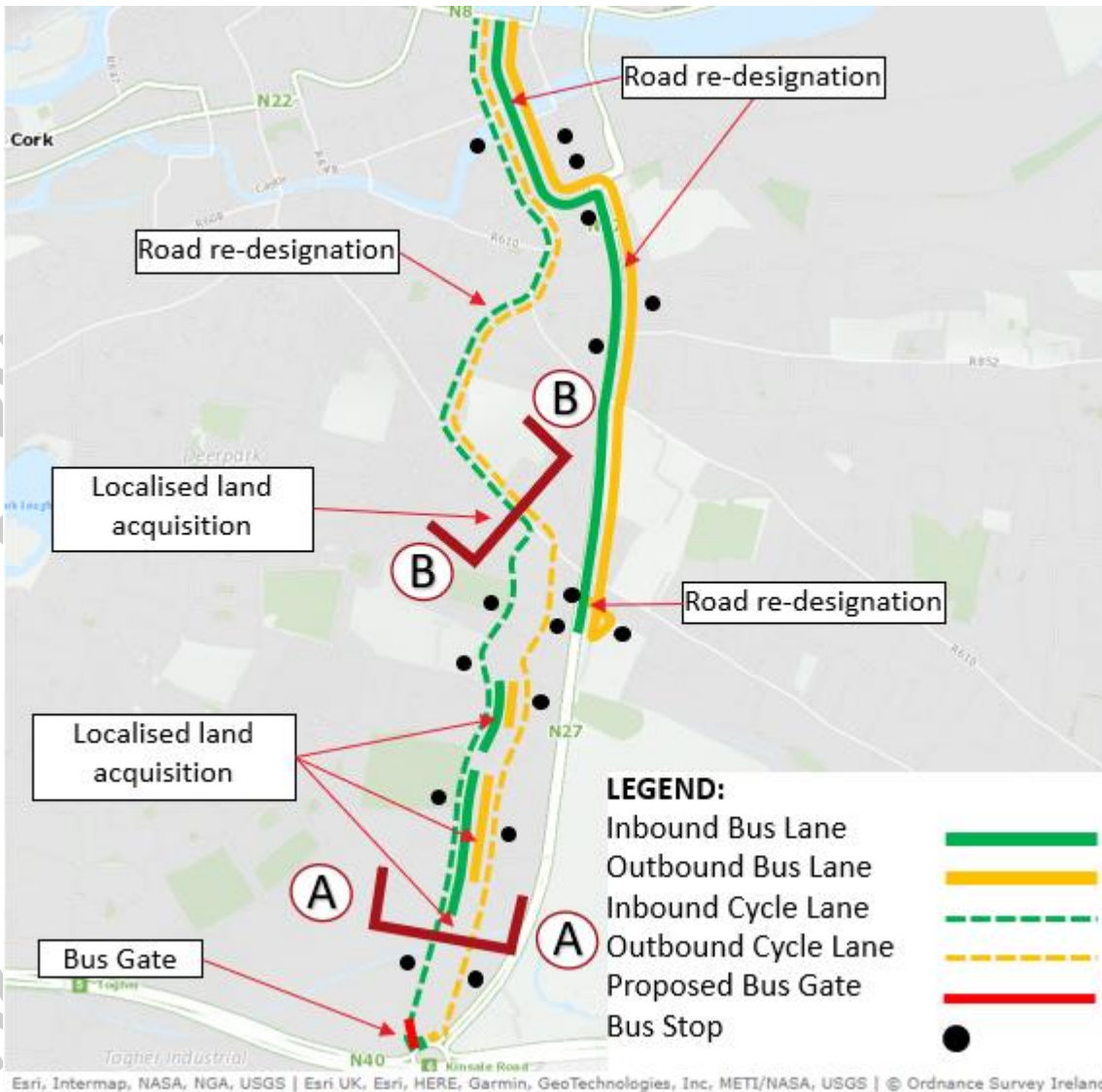


Figure 39: Section 2, Proposed Option 4a – Indicative Scheme Design

Between the Kinsale Road Roundabout and Evergreen Road, it is only possible to provide limited sections of bus priority, particularly to the north of the junction with Pearse Road where the route is particularly constrained. Therefore, to reduce the attractiveness of the corridor to general traffic, Option 4a proposes to implement traffic management measures at the southern end of Kinsale Road. These measures include the implementation of a bus gate on the Kinsale Road exit arm of the Kinsale Road Roundabout, with only buses and cyclists permitted through the bus gate at this location. This will manage the flow of traffic on the southern portion of the Kinsale Road and support the efficient and reliable routing of bus services.

Local access would be facilitated via Mick Barry Road, with the junction of the N27 South City Link Road and Mick Barry Road requiring amendment to permit right-turning general traffic from the N27 to both Mick Barry Road and to Tramore Valley Park.

The provision of the proposed bus gate will therefore eliminate the requirement for inbound and outbound bus lanes on the Kinsale Road between the Kinsale Road Roundabout and south of Mick Barry Road. Cycle facilities on both sides and two traffic lanes are proposed along this section, along with a third central lane for turning manoeuvres to avoid delaying the through-flow of buses and general traffic. This will be facilitated through localised road widening and land acquisition.

Intermittent sections of bus lane in both directions are then proposed from the southern approach to Mick Barry Road and the junction with Pearse Road, along with two general traffic lanes and cycle facilities on both sides of the route. Again, this is facilitated through road re-designation and localised widening/land acquisition. Where bus lanes cannot be implemented, signal controlled bus priority will be used to support bus services along this portion of the route.

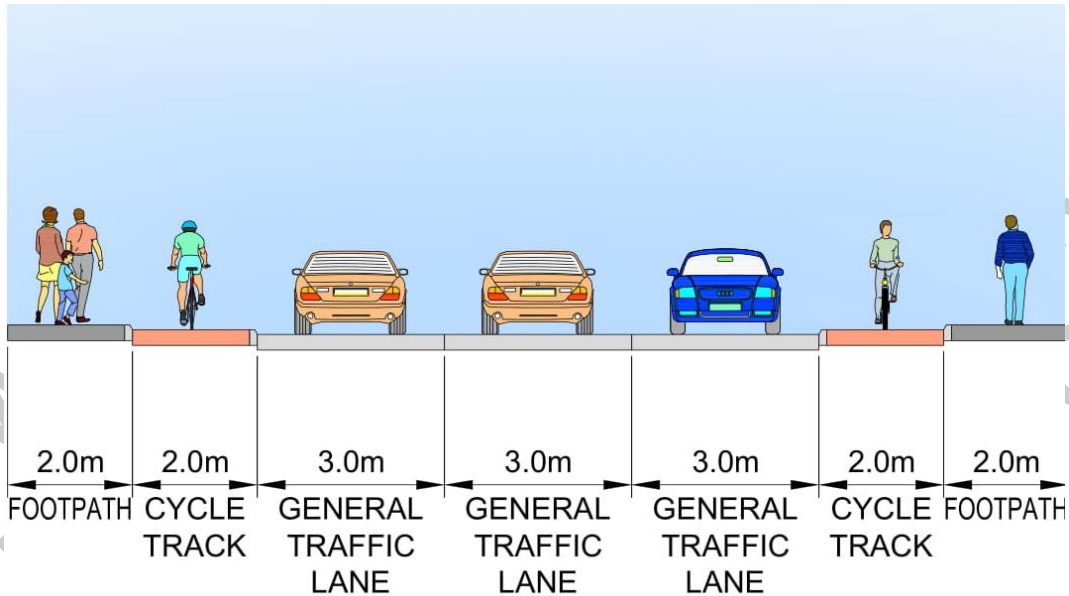


Figure 40: Section 2, Proposed Option 4a – Cross Section A-A

North of the junction with Pearse Road it is not possible to provide dedicated bus lanes; therefore, cycle facilities and two general traffic lanes are proposed on Curragh Road through to the junction with Evergreen Road, facilitated through road re-designation and localised widening/land acquisition. The proposed bus gate on the Kinsale Road arm of the Kinsale Road Roundabout will reduce through traffic flows and support improved and reliable bus journey time along this portion of the route, and signal controlled priority for buses will be used at locations where buses require to share with general traffic.

From the junction of Curragh Road and Evergreen Road, the routes for buses and cyclists diverge. As with Option 3, Option 4a includes the provision of bus lanes in both directions on the N27 South City Link Road from the South Douglas Road Interchange to Old Station Road, on Old Station Road, Anglesea Street and Parnell Place. For cyclists, Option 4a includes the cycle facilities proposed for Option 3 along Evergreen Road, Summerhill South, Langford Row, Infirmary Road, Anglesea Street and Parnell Place.

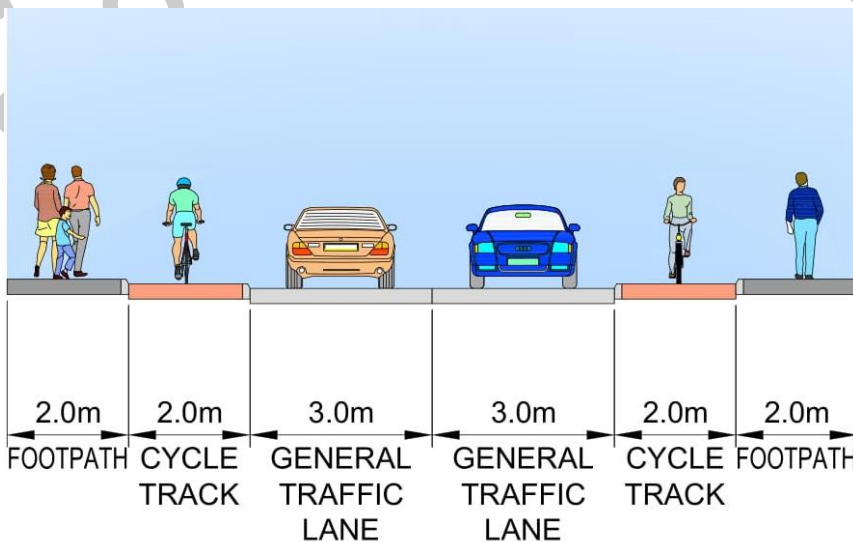


Figure 41: Section 2, Proposed Option 4a – Cross Section B-B

Option 4a requires slightly more road widening compared to Option 3 with some further widening required along Kinsale Road between Mick Barry Road and Pearse Road to facilitate the proposed bus and cycle facilities. As with all the options presented for Section 2, changes in on-street parking would be required along the route and the proposed changes along the N27 South City Link Road will potentially impact strategic traffic movements in the wider city area.

In summary, this option (subject to confirmation at scheme design stage) would result in the following:

- A bus gate on the Kinsale Road exit arm of the Kinsale Road Roundabout;
- Bus lanes on one or both sides of Kinsale Road between the south side of Mick Barry Road and the north side of Tramore Road;
- Short sections of bus lanes on Kinsale Road in the inbound and outbound directions between Tramore Road and Pearse Road (with some gaps in provision);
- Bus lanes on both sides of the N27 South City Link Road between the South Douglas Road Interchange and the Old Station Road/Eglinton Street junction;
- Bus lanes on both sides of Old Station Road;
- Contra-flow inbound and with-flow outbound bus lanes on Anglesea Street between Old Station Road and Terrace McSweeney Quay;
- A contra-flow outbound and with-flow inbound bus lane on Parnell Place;
- Dedicated cycle facilities along Kinsale Road, Curragh Road, Evergreen Street, Summerhill South, Langford Row, Infirmary Road, Anglesea Street and Parnell Place;
- Upgrade to all the junctions along the route to better serve active travel modes; and
- Land acquisition estimated from 44 properties.

7.2.5 Option 4b – Buses via the Kinsale Road, Curragh Road, N27 South City Link Road, Old Station Road, Anglesea Street and Parnell Place, with cyclists via the Kinsale Road, Curragh Road, Evergreen Road, Summerhill South, Langford Row, Infirmary Road, Anglesea Street and Parnell Place

7.2.5.1 Route Description

Route Option 4b is presented in Figure 42 and described in the following text.

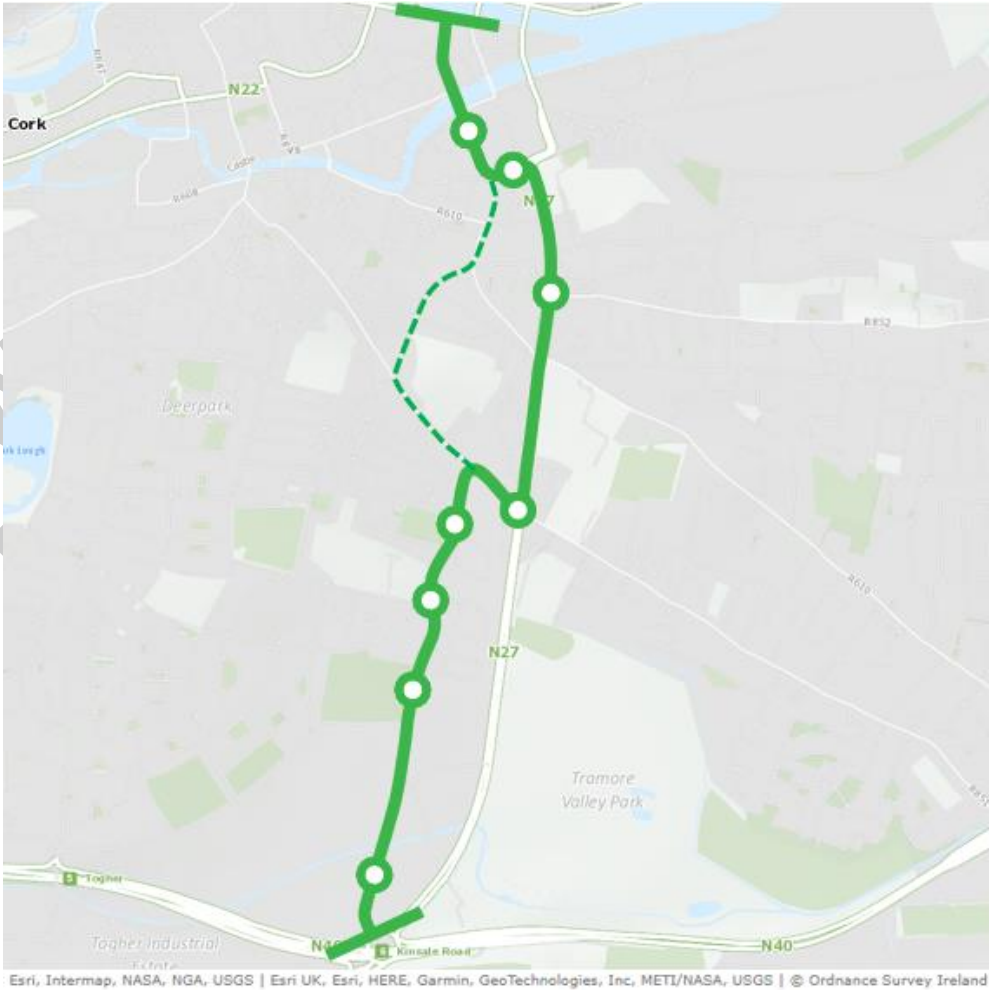


Figure 42: Section 2, Proposed Option 4b – Route Overview

Option 4b is a variation of Option 4a, which also routes both buses and cyclists along the Kinsale Road and Curragh Road, with buses then diverting via the South Douglas Road and accessing the N27 South City Link Road and continuing through to Old Station Road, Anglesea Street and Parnell Place.

Whereas Option 4a included traffic management measures along the Kinsale Road (namely the provision of a bus gate on the Kinsale Road arm of the Kinsale Road Roundabout), Option 4b proposes road widening works on the Kinsale Road in order to provide the necessary bus priority.

Similar to Option 4a, cyclists are proposed to be routed along Kinsale Road, Curragh Road, Evergreen Road, Summerhill South, Langford Row, Infirmaroy Road, Anglesea Street and Parnell Place, and travelling in towards the city centre. Under Option 4b additional bus stops will be provided to serve the increased catchment along Kinsale Road and Curragh Road, resulting in a total of 8 bus stops in each direction.

7.2.5.2 Indicative Scheme Design

Figure 43 illustrates the indicative scheme design for this route option along with the location of cross sections and junctions referenced in subsequent sections.

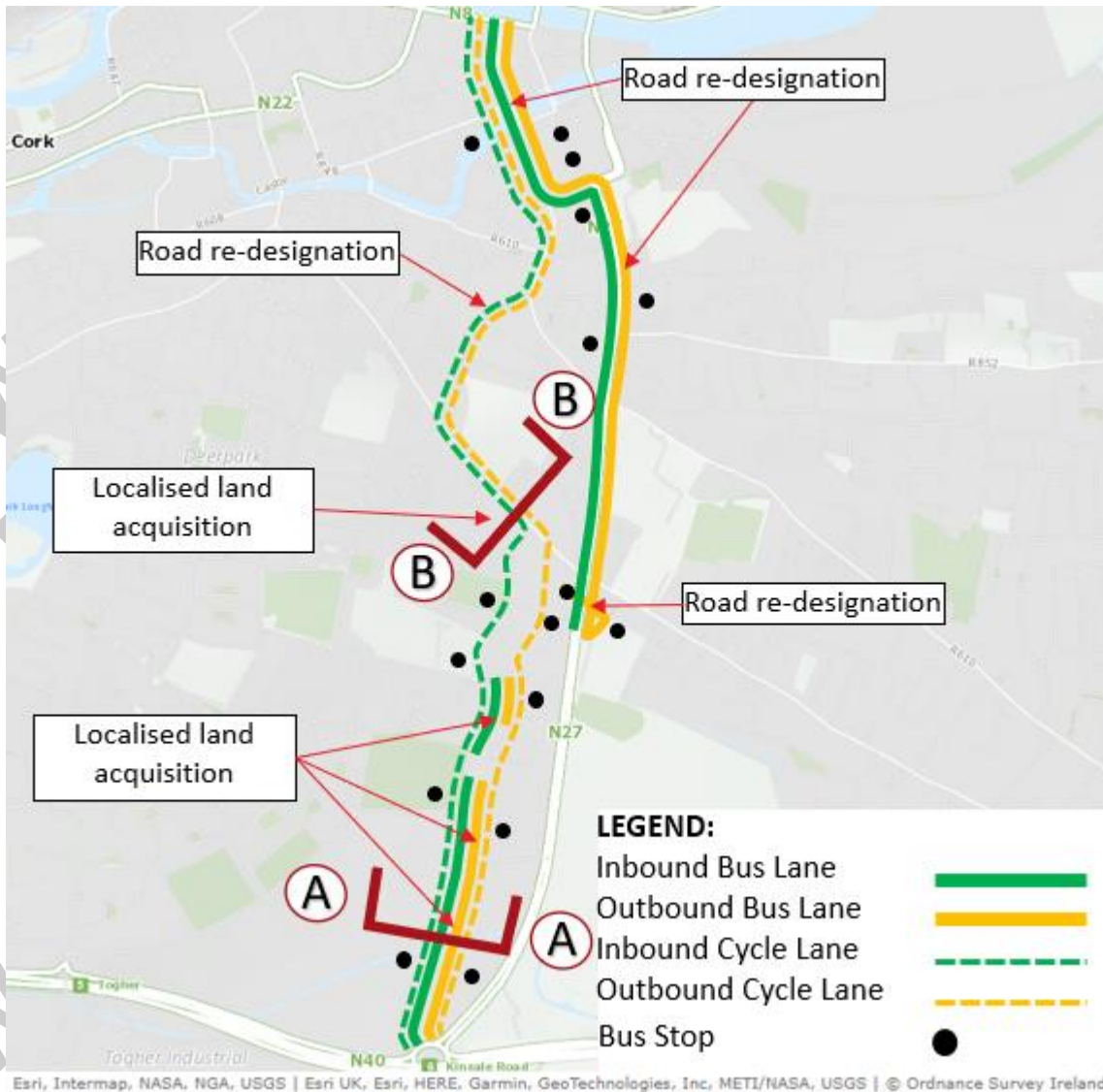


Figure 43: Section 2, Proposed Option 4b – Indicative Scheme Design

Between the Kinsale Road Roundabout and Tramore Road, dedicated inbound and outbound bus lanes and cycle lanes are proposed, along with two general traffic lanes. This is facilitated through road widening and land acquisition.

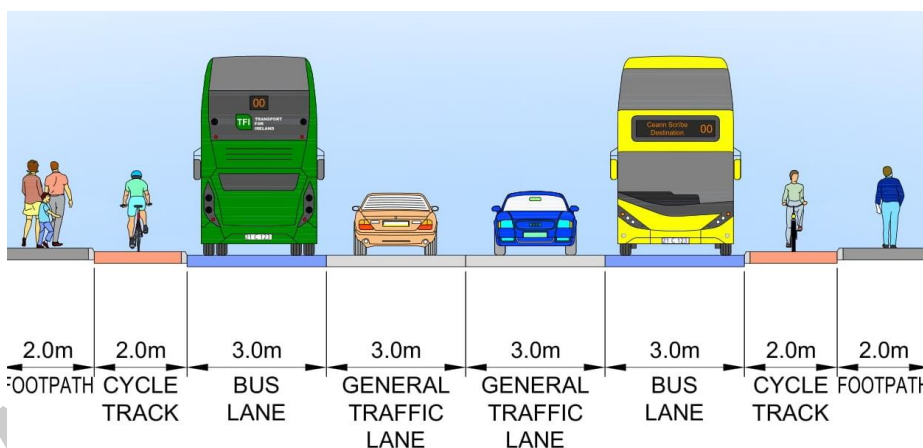


Figure 44: Section 2, Proposed Option 4b – Cross Section A-A

Between the Tramore Road junction and Evergreen Road, it is only possible to provide limited sections of bus priority, particularly to the north of the junction with Pearse Road where the route is particularly constrained. Signal controlled bus priority would be utilised where possible to support bus services along this portion of the route.

Sections of bus priority, two general traffic lanes and cycle facilities are proposed on both sides of the route along this section. Again, this is facilitated through road re-designation and localised widening/land acquisition.

North of the junction with Pearse Road it is not possible to provide dedicated bus lanes; therefore, cycle facilities and two general traffic lanes are proposed on Curragh Road through to the junction with Evergreen Road, facilitated through road re-designation and localised widening/land acquisition. The proposed bus gate on the Kinsale Road arm of the Kinsale Road Roundabout will reduce through traffic flows and support improved and reliable bus journey time along this portion of the route.

From the junction of Curragh Road and Evergreen Road, the routes for buses and cyclists diverge. As with Option 4a, Option 4b includes the provision of bus lanes in both directions on the N27 South City Link Road from the South Douglas Road Interchange to Old Station Road, on Old Station Road, Anglesea Street and Parnell Place, facilitated through the removal of a general traffic lane in both directions.

For cyclists, Option 4b includes the cycle facilities proposed for Option 4a along Evergreen Road, Summerhill South, Langford Row, Infirmary Road, Anglesea Street and Parnell Place.

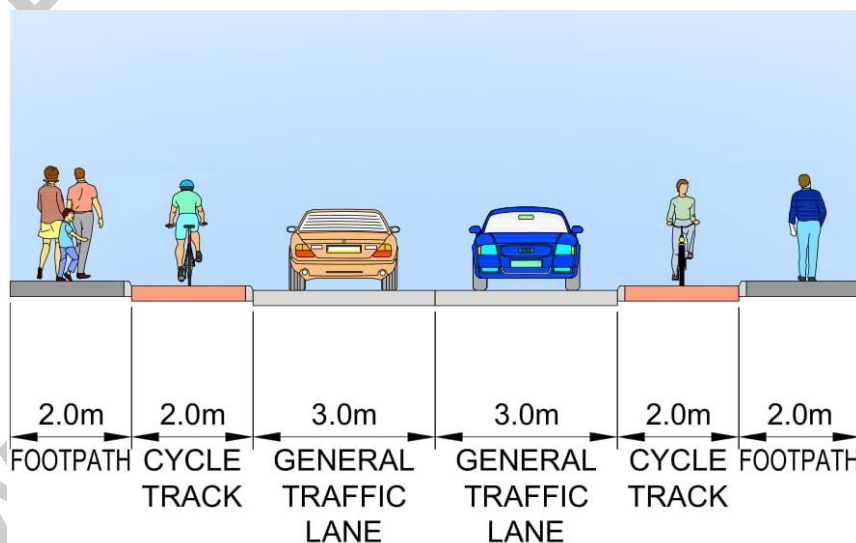


Figure 45: Section 2, Proposed Option 4b – Cross Section B-B

Option 4b requires slightly more road widening and land acquisition compared to Option 4a with more extensive widening required along Kinsale Road between the Kinsale Road Roundabout and Tramore Road to facilitate the proposed bus and cycle facilities. As with all the options presented for Section 2, changes in on-street parking would be required along the route and the proposed changes along the N27 South City Link Road will potentially impact strategic traffic movements in the wider city area.

In summary, this option (subject to confirmation at scheme design stage) would result in the following:

- Bus lanes on both sides of the Kinsale Road between the Airport Roundabout and north of Tramore Road;
- Short sections of bus lanes on Kinsale Road in the inbound and outbound directions between Tramore Road and Pearse Road (with some gaps in provision);
- Bus lanes on both sides of the N27 South City Link Road between the South Douglas Road Interchange and the Old Station Road/Eglinton Street junction;
- Bus lanes on both sides of Old Station Road;
- Contra-flow inbound and with-flow outbound bus lanes on Anglesea Street between Old Station Road and Terrace McSweeney Quay;
- A contra-flow outbound and with-flow inbound bus lane on Parnell Place;
- Dedicated cycle facilities along Kinsale Road, Curragh Road, Evergreen Street, Summerhill South, Langford Row, Infirmary Road, Anglesea Street and Parnell Place;

- Upgrade to all the junctions along the route to better serve active travel modes; and
- Land acquisition estimated from 44 properties.

7.2.6 Option 4c – Buses via the Kinsale Road, Curragh Road, N27 South City Link Road, Eglinton Street and Clontarf Street, with cyclists via the Kinsale Road, Curragh Road, Evergreen Road, Summerhill South, Langford Row, Infirmary Road, Anglesea Street and Parnell Place

7.2.6.1 Route Description

Route Option 4c is a variation of Route Option 4a and is represented in Figure 46 and described in the following text.

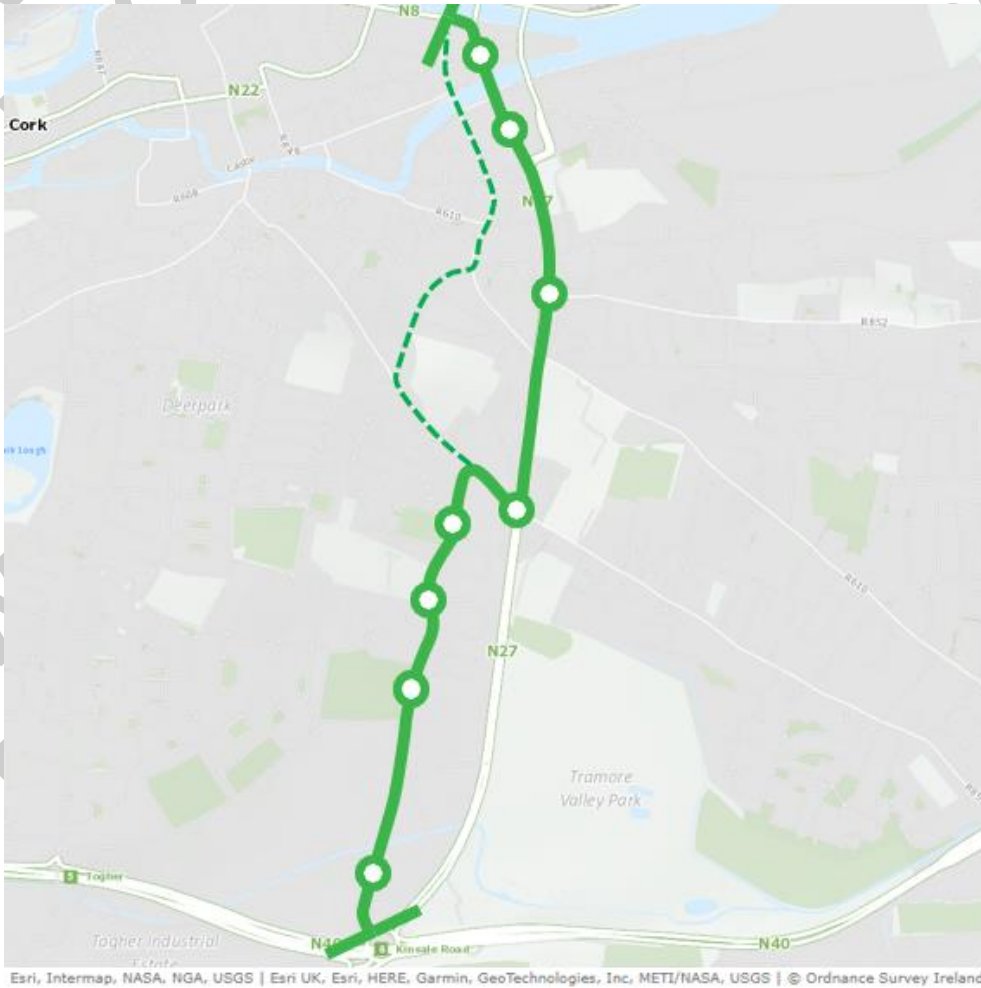


Figure 46: Section 2, Proposed Option 4c – Route Overview

The routing of Option 4c is primarily the same as Option 4a and 4b except as it enters the city centre. The principal difference for Route Option 4c is that buses routed along the N27 South City Link Road continue directly through to Eglinton Street and Clontarf Street (as opposed to routing via Old Station Road, Anglesea Street and Parnell Place).

Similar to Option 4a and 4b, cyclists are proposed to be routed along Kinsale Road, Curragh Road, Evergreen Road, Summerhill South, Langford Row, Infirmary Road, Anglesea Street and Parnell Place, and travelling in towards the city centre. As with Options 4a and 4b, Option 4c has additional bus stops that will be provided to serve the increased catchment along Kinsale Road and Curragh Road, resulting in a total of 8 bus stops in each direction along the route.

7.2.6.2 Indicative Scheme Design

Figure 47 illustrates the indicative scheme design for this route option along with the location of cross sections and junctions referenced in subsequent sections.

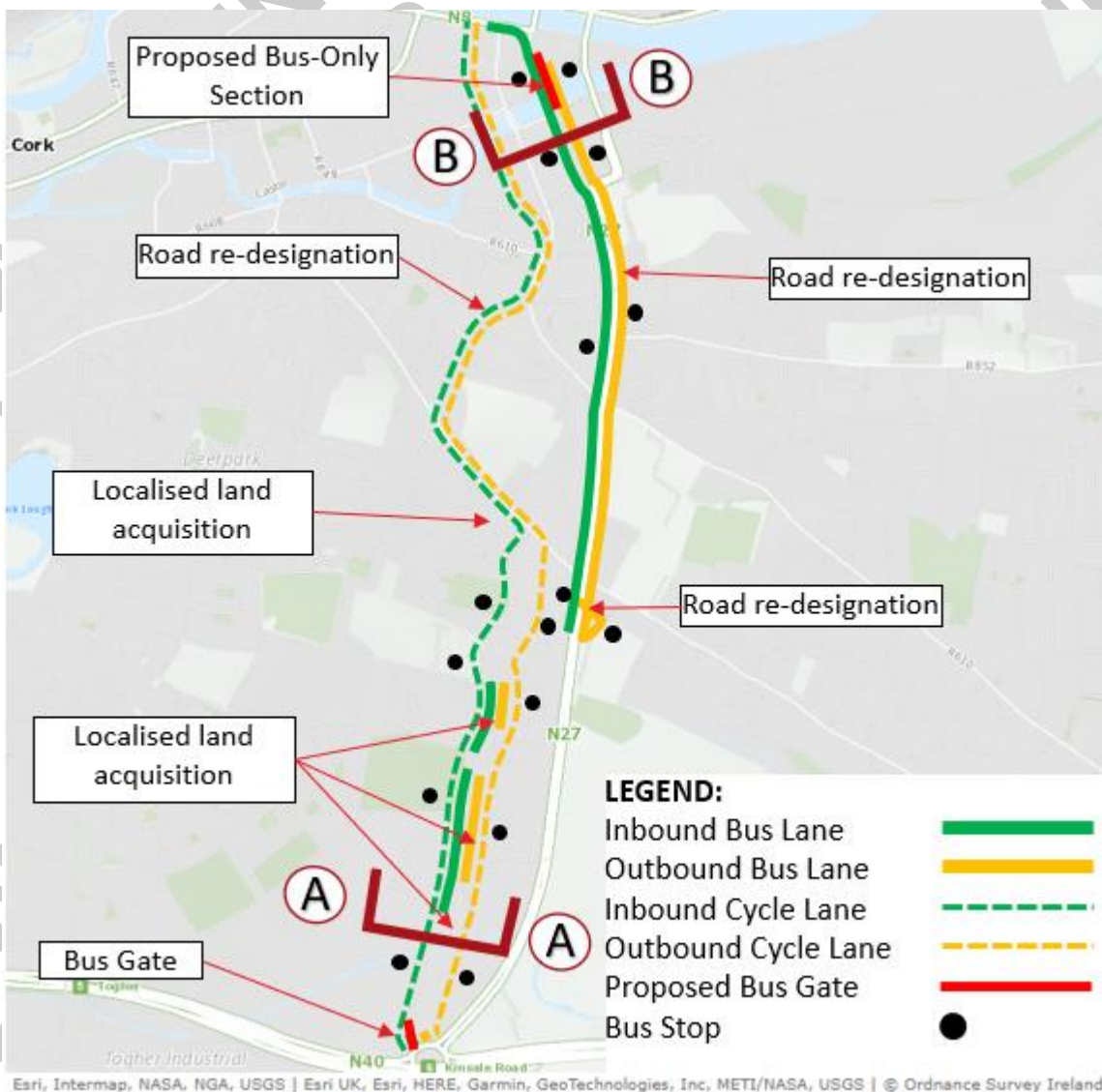


Figure 47: Section 2, Proposed Option 4c – Indicative Scheme Design

Similar to Option 4a, due to the physical constraints present on the Kinsale Road between the Kinsale Road Roundabout and Evergreen Road, it is proposed to implement traffic management measures on this portion of the route. As with Option 4a, these will consist of a new bus gate on the Kinsale Road exit arm of the Kinsale Road Roundabout, with only buses and cyclists permitted through the bus gate at this location. This will manage the flow of traffic on the southern portion of the Kinsale Road and support the efficient and reliable routing of bus services.

Local access would be facilitated via the Mick Barry Road, with the junction of the N27 South City Link Road and Mick Barry Road requiring amendment to permit right-turning general traffic from the N27 to both Mick Barry Road and to Tramore Valley Park.

The provision of the proposed bus gate will therefore eliminate the requirement for inbound and outbound bus lanes on the Kinsale Road between the Kinsale Road Roundabout and south of Mick Barry Road. Cycle facilities on both sides and two traffic lanes are proposed along this section, along with a third central lane for turning manoeuvres to avoid delaying the through-flow of buses and general traffic. This will be facilitated through localised road widening and land acquisition.

Intermittent sections of bus lane in both directions are then proposed from the southern approach to Mick Barry Road and the junction with Pearse Road, along with two general traffic lanes and cycle facilities on

both sides of the route. Again, this is facilitated through road re-designation and localised widening/land acquisition. Where bus lanes cannot be implemented, signal-controlled bus priority will be used to support bus services along this portion of the route.

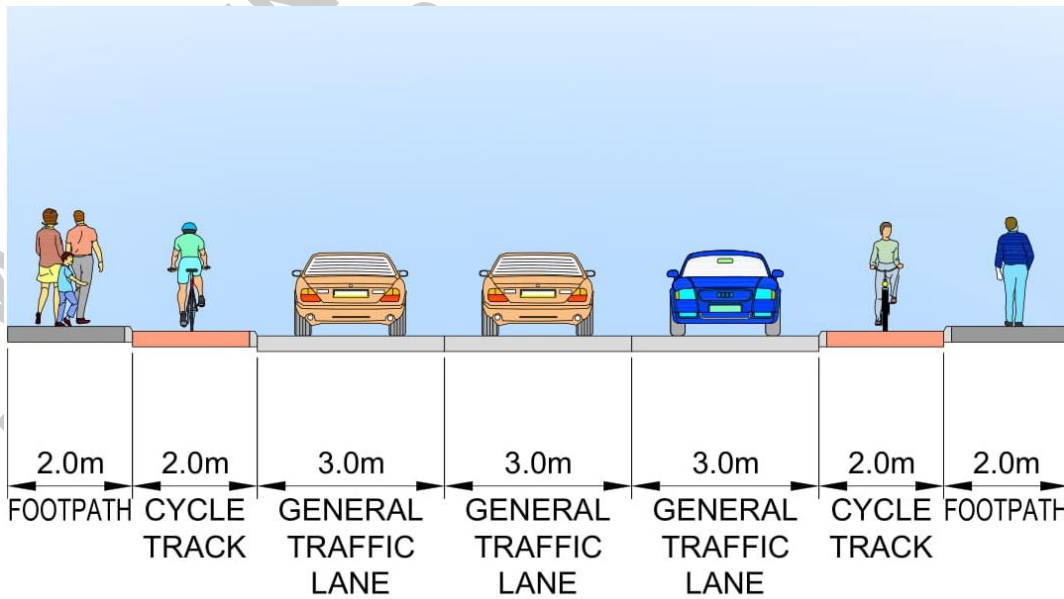


Figure 48: Section 2, Proposed Option 4c – Cross Section A-A

North of the junction with Pearse Road, as with Options 4a and 4b it is not possible to provide dedicated bus lanes; therefore, cycle facilities and two general traffic lanes are proposed on Curragh Road through to the junction with Evergreen Road, facilitated through road re-designation and localised widening/land acquisition. The proposed bus gate on the Kinsale Road arm of the Kinsale Road Roundabout will reduce through traffic flows and support improved and reliable bus journey time along this portion of the route, and signal-controlled priority for buses will be used at locations where buses require to share with general traffic.

From the junction of Curragh Road and Evergreen Road, again the routes for buses and cyclists diverge. As with Options 4a and 4b, Option 4c includes the provision of bus lanes in both directions on the N27 South City Link Road from the South Douglas Road Interchange to the Old Station Road/Eglinton Street junction.

At this location Option 4c proposes to route buses directly through to Eglinton Street, Clontarf Street and on to Anderson’s Quay to the junction with Parnell Place. On Eglinton Street, due to the proximity of buildings to the carriageway it is not possible to widen in order to provide additional bus lanes; therefore, it is proposed to provide dedicated inbound and outbound bus lanes through reallocation of the existing three inbound traffic lanes present. One inbound traffic lane will also be retained.

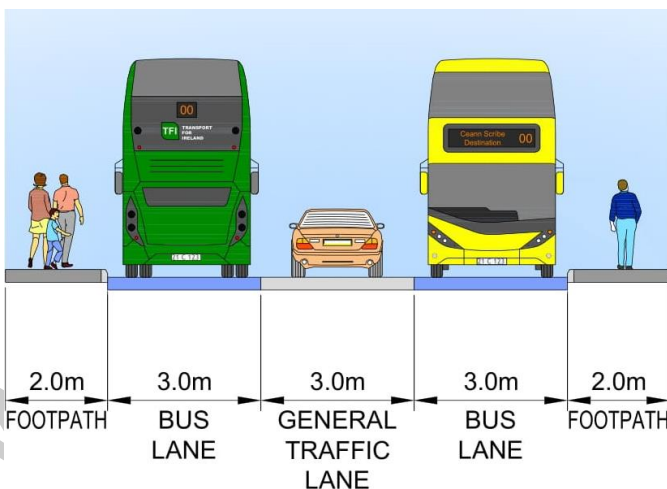


Figure 49: Section 2, Proposed Option 4c – Cross Section B-B

North of Clontarf Bridge, on Clontarf Street itself between Anderson's Quay and Oliver Plunkett Street Lower, it is proposed to implement a northbound bus lane. This will be achieved by removal of one of the two southbound traffic lanes, with the other retained for local access. On Anderson's Quay, a short section of westbound

South of Oliver Plunkett Street Lower, in order to support the reliability and frequency of bus services, it is proposed to restrict through-traffic flow on this section of Clontarf Street. Therefore, it is proposed to introduce a bus gate between Oliver Plunkett Street Lower and Lapp's Quay. Access to Lapp's Quay would be facilitated from Parnell Place (as per the existing scenario). Traffic approaching from the north via the quays or via Brian Boru Bridge would be permitted to use Clontarf Street for local access only, with through traffic flow routed to Anderson's Quay (east) and the N27/Eamon de Valera Bridge, Albert Street and through to the junction of the N27 South City Link Road/Old Station Road.

On Clontarf Bridge itself, it is proposed to implement inbound and outbound bus lanes, and a southbound traffic lane to facilitate local traffic exiting from Lapp's Quay only.

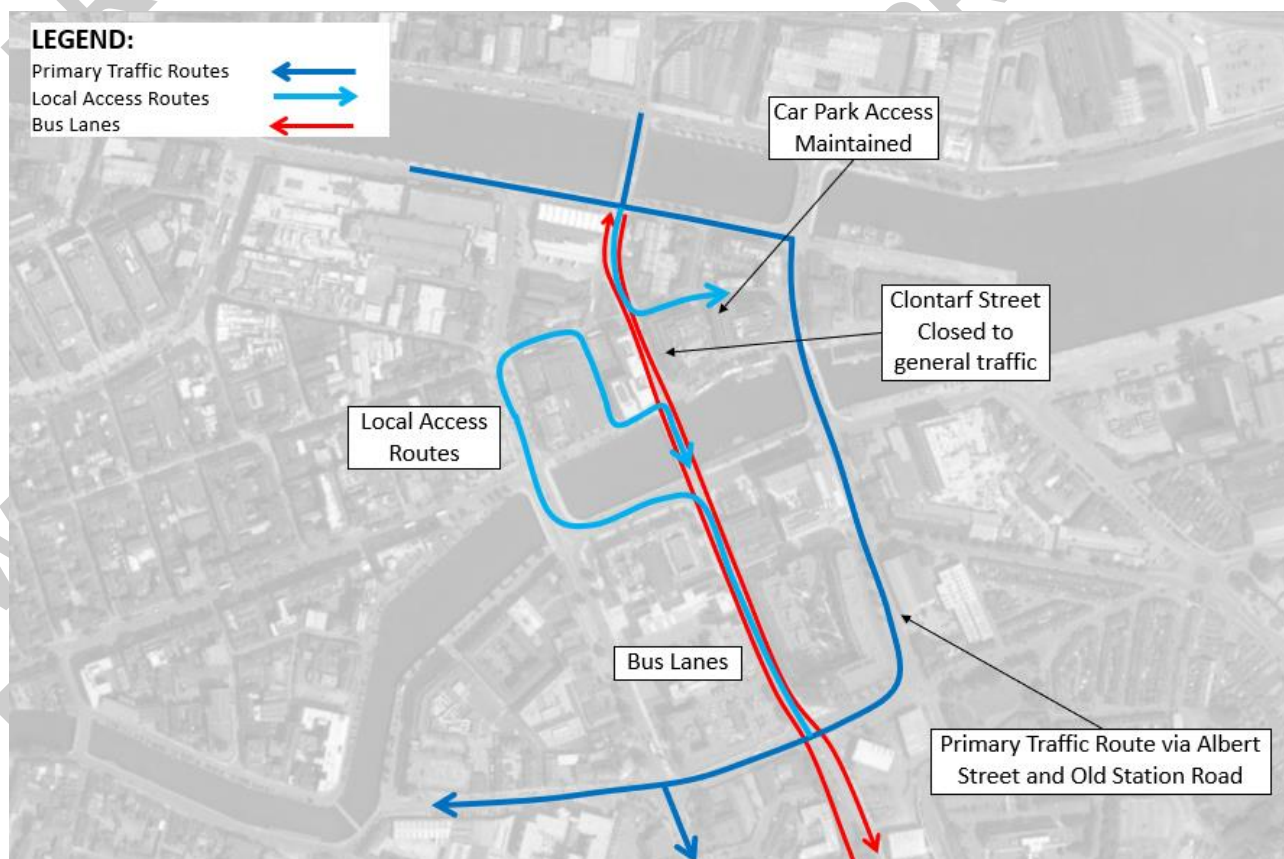


Figure 50: Section 2, Proposed Option 4c – Traffic Management Measures

For cyclists, Option 4c includes the cycle facilities proposed for Option 4a and 4b along Evergreen Road, Summerhill South, Langford Row, Infirmary Road, Anglesea Street and Parnell Place.

Option 4c requires a similar amount of road widening and land acquisition as Option 4a. As with all the options presented for Section 2, changes in on-street parking would be required along the route and the proposed changes along the N27 South City Link Road may potentially impact strategic traffic movements in the wider city area.

The indicative scheme design for Option 4c would result in the following:

- The provision of a bus gate on Kinsale Road north of the Kinsale Road Roundabout;
- An inbound bus lane on the Kinsale Road northbound approach to Mick Barry Road;
- Short sections of bus lanes on Kinsale Road in both directions between Mick Barry Road and Pearse Road;

- Bus lanes on both sides of the N27 South City Link Road between the South Douglas Road Interchange and Old Station Road/Eglinton Street;
- Bus lanes on both sides of Eglinton Street;
- Bus lanes on both sides of Clontarf Street, between Clontarf Bridge and Oliver Plunkett Street Lower;
- A bus gate section of Clontarf Street between Lapp's Quay and Oliver Plunkett Street Lower;
- A short section of northbound bus lane on Clontarf Street
- Dedicated cycle facilities along Kinsale Road, Curragh Road, Evergreen Street, Summerhill South, Langford Row, Infirmary Road, Anglesea Street, and Parnell Place;
- Upgrade to the N27 junction with Mick Barry Road and Tramore Valley Park;
- Upgrade to all the junctions along the route to better serve active travel modes; and
- Land acquisition estimated from 44 properties.

7.2.7 Option 5 –Buses and cyclists via the Kinsale Road, Curragh Road, Evergreen Road, Summerhill South, Langford Row, Infirmary Road, Anglesea Street and Parnell Place

7.2.7.1 Route Description

Route Option 5 is presented in Figure 51 and described in the following text.

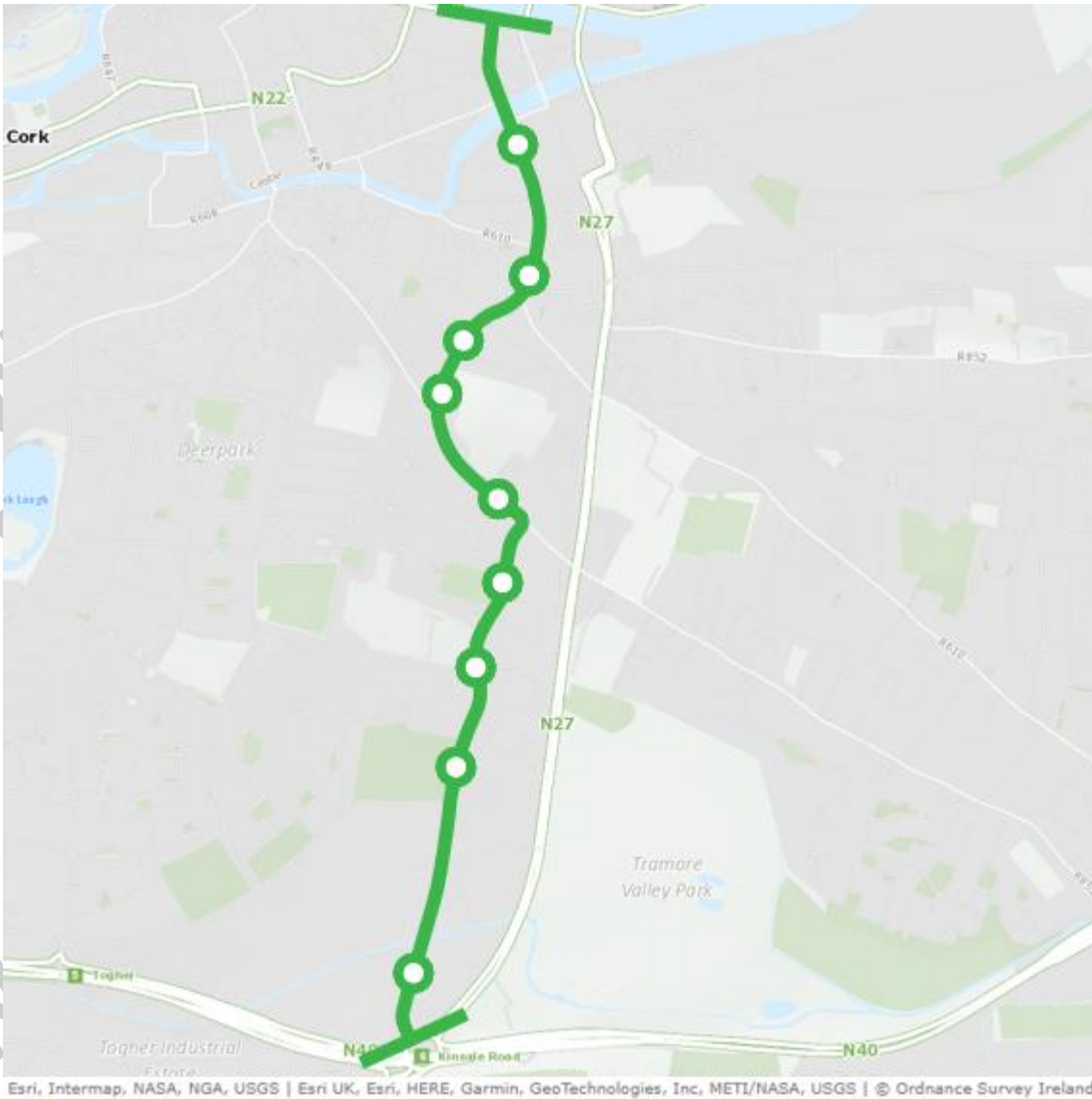


Figure 51: Section 2, Proposed Option 5 – Route Overview

The southern portion of Route Option 5 is similar to route options 4a, 4b and 4c, between the Kinsale Road Roundabout and Evergreen Road. However, the principal difference is in Option 5 it is not proposed to route bus services via the N27 South City Link Road from Evergreen Road. Instead, buses will follow the same route as cyclists.

The overall route for buses and cyclists is therefore via the Kinsale Road and Curragh Road until its junction with Evergreen Road. At this junction, the route continues to Evergreen Street, Summerhill South, Langford Row, Infirmery Road and onwards to Anglesea Street and onto Parnell Place. Under Option 5 a total of 9 bus stops in each direction are proposed.

7.2.7.2 Indicative Scheme Design

Figure 52 illustrates the indicative scheme design for this route option along with the location of cross sections and junctions referenced in subsequent sections.

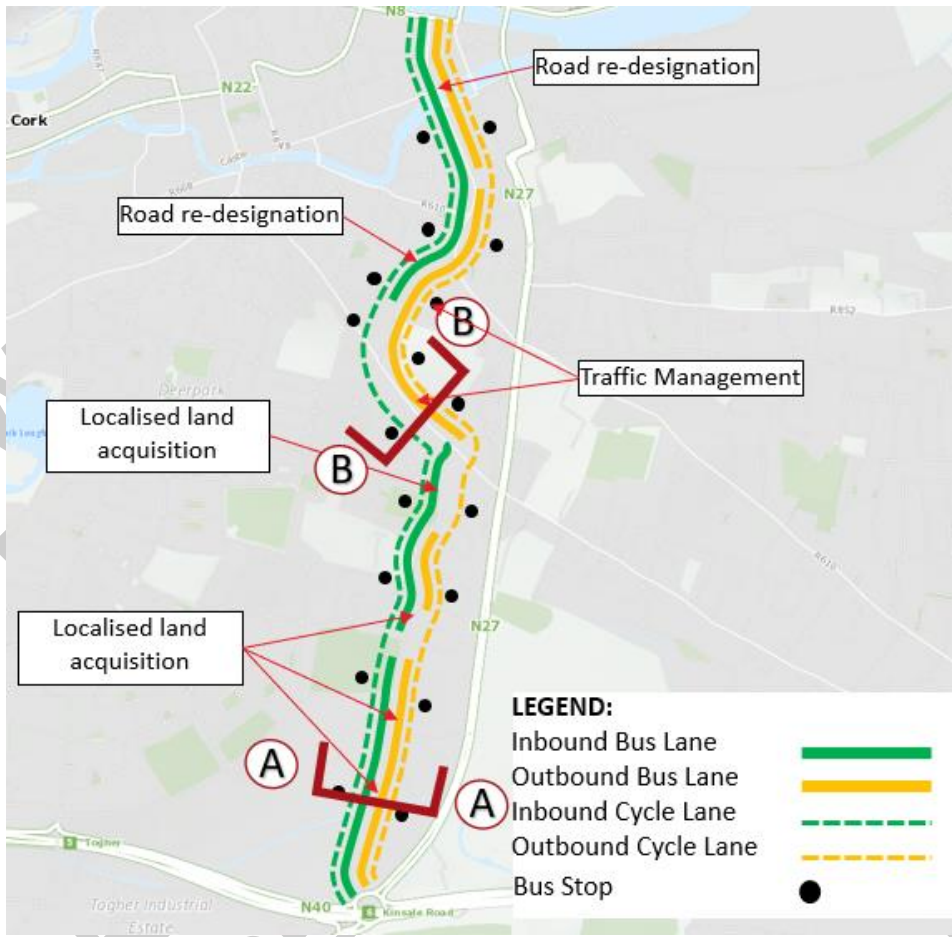


Figure 52: Section 2, Proposed Option 5 – Indicative Scheme Design

Option 5 includes the provision of dedicated bus lanes on both sides of the Kinsale Road from the Kinsale Road Roundabout to the north of Tramore Road. From this point, intermittent sections of bus lane in both directions are proposed due to constraints. North of Slieve Mish Park, it is proposed to provide dedicated bus lanes in both directions to the junction with Mercier Park, with the inbound bus lane continuing through to Curragh Road as far the junction with Evergreen Road, and outbound buses sharing with general traffic between Evergreen Road and Mercier Park.

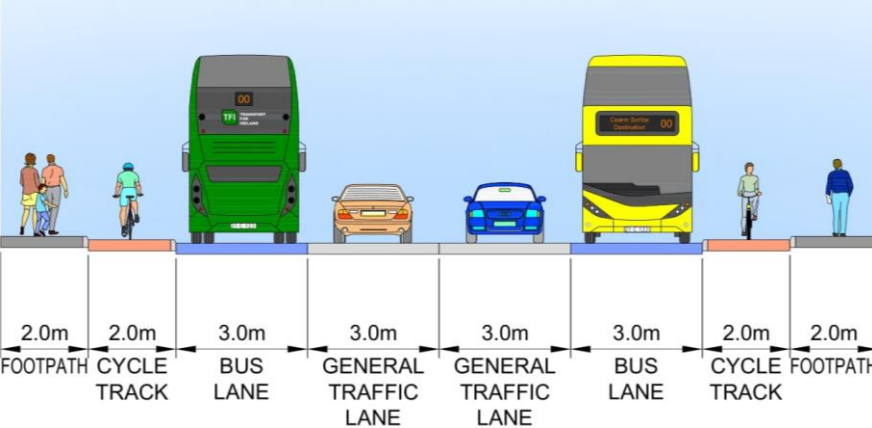


Figure 53: Section 2, Proposed Option 5 – Cross Section A-A

The provision of an inbound bus lane on this portion of Curragh Road will require changes to traffic management along this portion of the route as it is not possible to provide additional lanes; therefore, it is proposed to re-designate the existing inbound traffic lane as an inbound bus lane to the north of the junction with Tory Top Road, with inbound general traffic diverted onto Tory Top Road and St Patrick’s Road.

On Evergreen Road it is proposed to provide an outbound bus lane by redesignating the existing outbound general traffic lane between Summerhill South and Curragh Road, with outbound general traffic diverted to Southern Road/High Road and Capwell Road.

On Summerhill South and on Langford Row it is proposed to provide an outbound bus lane through re-designation of the existing outbound traffic lane between Southern Road and Evergreen Road. Outbound general traffic would be diverted to Southern Road and Capwell Road. North of Quaker Street it is also proposed to provide an inbound bus lane and an inbound general traffic lane on Summerhill South and through to Langford Row, through re-designation of the existing road space and removal of the right-turning lanes.

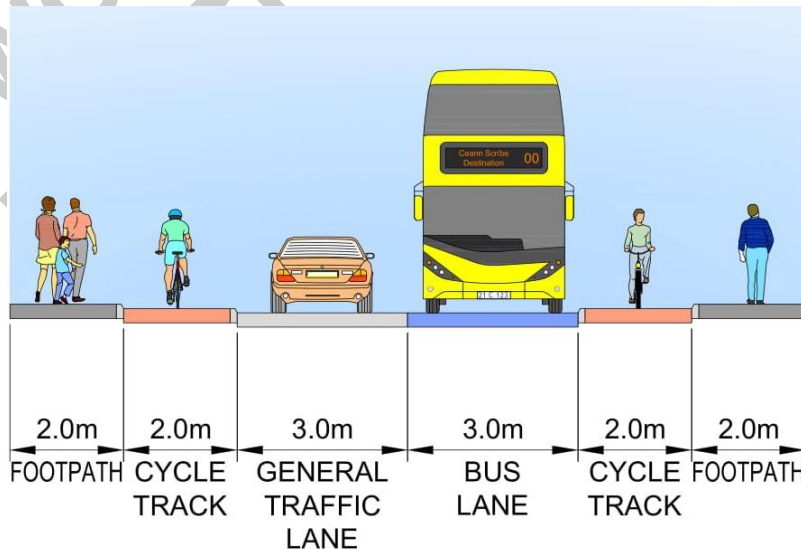


Figure 54: Section 2, Proposed Option 5 – Cross Section A-A

Finally dedicated bus lanes are also proposed in both directions on Infirmary Road, Anglesea Street and through to Parnell Place (with a minor gap in provision on Anglesea Street to the south of Old Station Road) along with two-way traffic on Infirmary Road/Anglesea Street to the junction with Old Station Road, and one-way traffic southbound on Anglesea Street from Terence McSweeney Quay. On Parnell Place, north of Parnell Bridge it is proposed to remove two general northbound traffic lanes to facilitate bus lanes in both directions.

For cyclists, Option 5 includes dedicated cycle facilities along the entire length of Kinsale Road, Curragh Road, Evergreen Street, Summerhill South, Langford Row, Infirmary Road, Anglesea Street and Parnell Place.

Option 5 requires some road widening along Kinsale Road, Curragh Road and Evergreen Street. Option 5 requires changes to the provision of on-street parking along the route particularly on Curragh Road, Evergreen Street, Infirmary Road, and Anglesea Street. In summary, this option (subject to confirmation at scheme design stage) would result in the following:

- The provision of a bus gate on Kinsale Road north of the Kinsale Road Roundabout;
- An inbound bus lane on Kinsale Road's approach to Mick Barry Road;
- Short sections of bus lanes on Kinsale Road between Tramore Road and Pearce Road;
- Inbound bus lane on Curragh Road;
- Outbound bus lane on Evergreen Street and Summerhill South,
- Bus lanes on both sides of Langford Road, Infirmary Road
- A contra flow and with flow bus lanes on Anglesea Street between Old Station Road and Terrace McSweeney Quay;
- A contraflow and with flow bus lane on Parnell Place;

- Dedicated cycle facilities along Kinsale Road, Curragh Road, Evergreen Street, Summerhill South, Langford Row, Infirmary Road, Anglesea Street;
- Upgrade to the entrance to Tramore Valley Park; and
- Upgrade to all the junctions along the route to better serve active travel modes.

7.2.8 Route Options Assessment

Details of the Stage 2 route options assessment undertaken for the options outlined above for Section 2 and the relative ranking of route options against the scheme assessment sub-criteria is summarised in Table 8.

Table 8: Section 2, Kinsale Road Roundabout to City Centre Options Assessment Summary (Sub-Criteria)

Assessment Criteria	Assessment Sub-Criteria	RO 1	RO 2	RO 3	RO 4a	RO 4b	RO 4c	RO 5
Economy	Capital Cost	Green	Green	Light Green	Light Red	Light Red	Light Green	Light Red
	Transport Reliability	Light Green	Light Green	Light Green	Light Red	Light Red	Light Red	Red
Integration	Land Use Integration	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
	Catchments	Red	Red	Light Red	Light Green	Light Green	Green	Green
	Transport Network Integration	Light Green	Light Green	Light Green	Light Green	Light Green	Light Green	Red
	Cycling Integration	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
	Pedestrian Network Integration	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
Accessibility & Social Inclusion	Key Trip Attractors	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
	Deprived Geographic Areas	Light Red	Light Red	Light Red	Light Green	Light Green	Light Red	Light Green
Safety	Road Safety	Green	Green	Light Green	Light Red	Light Red	Light Red	Light Red
Environment	Archaeology and Cultural Heritage	Light Green	Light Green	Light Green	Light Green	Light Green	Light Red	Green
	Biodiversity	Light Red	Light Green	Light Red	Light Red	Light Red	Light Red	Light Green
	Soils and Geology	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
	Hydrology	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
	Landscape and Visual	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
	Air Quality	Light Red	Light Red	Light Red	Light Red	Light Red	Light Red	Light Green

Assessment Criteria	Assessment Sub-Criteria	RO 1	RO 2	RO 3	RO 4a	RO 4b	RO 4c	RO 5
	Land Use Character							

From the **Economy** perspective, Route Options 1 and 2 are considered the most favourable due to the reduced level of road widening along Kinsale Road along its entire length, followed by Route Option 3 and 4c which also includes limited road widening along sections of Kinsale Road. Options 4a, 4b and 5 are deemed to have similar construction costs. In terms of journey time reliability, Route Options 1,2 and 3 were deemed the most favourable as the bus priority measures were largely confined to the South Link Road, Route Options 4 (including all sub-options), and Option 5 were deemed to be slightly slower, however it is important to recognise that under Option 5 there would be a significant redistribution of general traffic which would have the potential to impact bus routes on other routes in the vicinity of the corridor.

In terms of **Integration**, Option 1, 2 and 3 are deemed to have a reduced catchment compared to Option 4 (including all sub options) and Option 5. While Option 5 is expected to have a negative impact on traffic flows in the vicinity of Evergreen Street, Summerhill South potentially impacting bus services on other routes. All options performed equally well in terms of cyclists and pedestrians, however in an overall sense Option 4c performed best.

From an **Accessibility and Social Inclusion** all routes offered equal access to key trip attractors, however Options 4a, 4b and Option 5 provided marginally better accessibility to deprived geographical areas.

In terms of **Safety**, Options 1, 2 and 3 were considered the best as they are primarily routed along the South Link Road where there are less junctions and reduced opportunities for conflict.

While all of these Options rank very similarly, from an **Environmental perspective**, Option 5 is the preferred Option in that there are less impacts on features of architectural heritage, less trees required to be felled, and the potential for less impacts on residential receptors than the other options.

From the above assessment it has been determined that **Option 4c** is the preferred option as it provides good bus priority along its entire length without having any significant impacts on general traffic flows. Option 4c provides good catchment and integration with existing and proposed bus services on Clontarf Street. The delivery of Option 4c will have a manageable impact on the receiving environment.

7.3 End-to-End Option

Following the analyses conducted in the previous sections of this assessment, which sought to identify a recommended preferred option within each individual sub-section of the overall CBC 9 study area, only a single end-to-end route has been identified utilising the emerging preferred option for Section 1 combined with the emerging preferred option for Section 2. Figure 55 presents the alignment of this option.

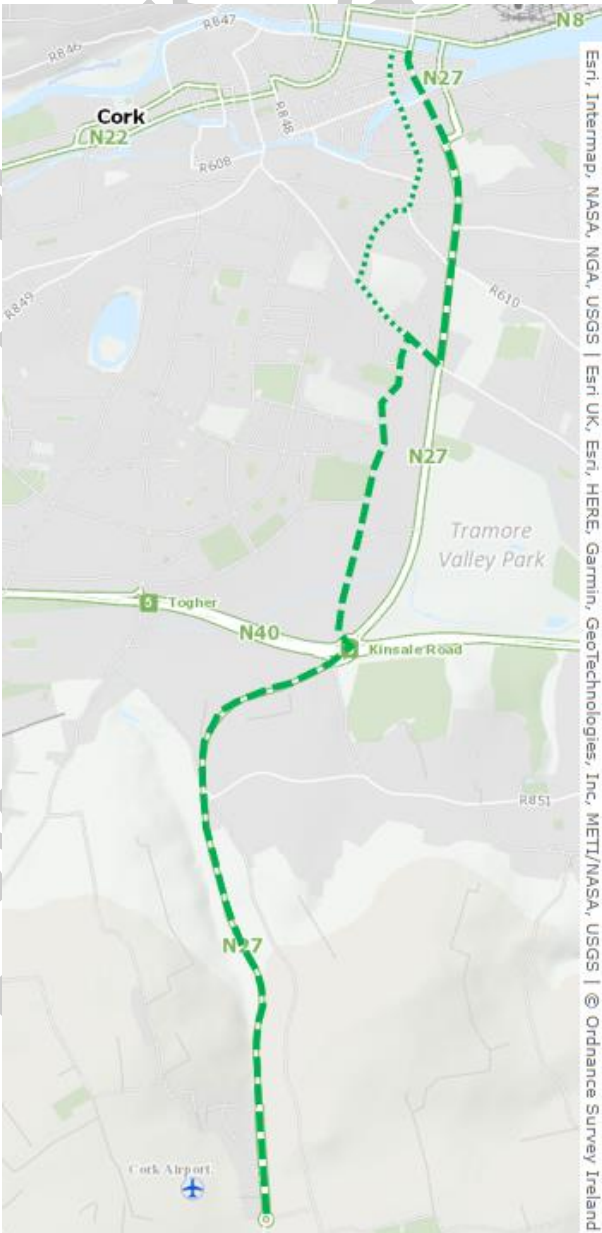


Figure 55: End-to-End Route Option

8. Emerging Preferred Route

8.1 Introduction

The earlier sections of this report presented an appraisal of each of the potential route options for the individual study area sections identified. Within each study area section, where potential route options were considered to be available, they have been assessed in accordance with the methodology set out under a 'Multi-Criteria Analysis' under the headings of Economy, Integration, Accessibility and Social Inclusion, Safety and Environment.

Following this appraisal, a single emerging preferred route was identified, and this section of the report presents and describes this emerging preferred route and the concept scheme design developed.

8.2 Recommended Preferred Route

The emerging preferred route is presented in Figure 56 and described in this section in the Airport Road to city centre direction and as illustrated the buses and cyclists will follow separate routes on the approach to the city centre for a portion of the route.

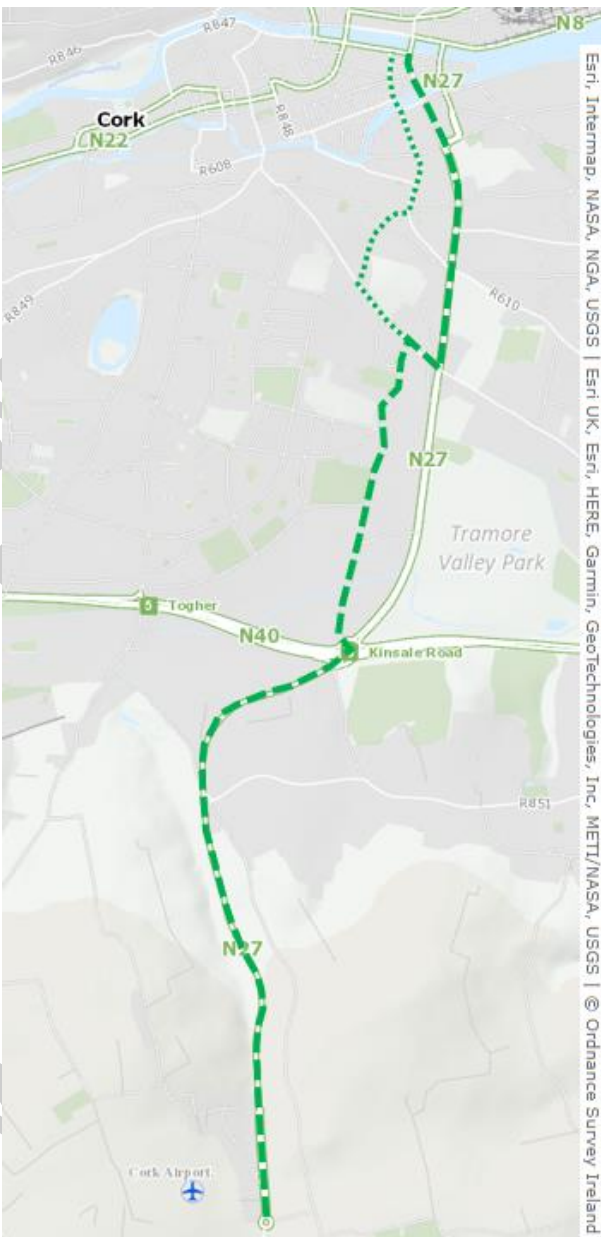


Figure 56: Emerging Preferred Route – CBC 9

The proposed route starts at the Airport entrance roundabout on the N27 Kinsale/Airport Road and continues north to the N40 Airport Road Interchange. The route continues through the interchange on to the Kinsale Road approach arm. From here the route remains on the Kinsale Road and through to Curragh Road and on to the junction with Evergreen Road and the South Douglas Road.

At this location the proposed routes for buses and cyclists diverge, with buses to be routed to and from the N27 South City Link Road via the ramped accesses at the South Douglas Road. Buses continue via the N27 South City Link Road through to the junction with Old Station Road and Eglinton Street. From here, buses continue through to Eglinton Street and to Clontarf Street, terminating at Anderson's Quay.

From the Curragh Road/Evergreen Road junction, cyclists continue on to Evergreen Road before turning on to Summerhill South, Langford Row, Infirmary Road, Anglesea Street and on to Parnell Place, continuing to the junction of Parnell Place and Merchant's Quay.

The following lists the proposed interventions along Core Bus Corridor 9:

Walking/Cycling:

- The upgrade of the Airport entrance roundabout junction to include dedicated pedestrian and cycle crossings;
- New or improved footpaths and a new two-way cycle facility along the N27 Kinsale Road (Airport Road) between the Airport entrance junction and the N40 Kinsale Road Interchange;
- A new signalised pedestrian crossing on the N27 Kinsale Road (Airport Road) to the south-west of the entrance to SISK Cork;
- Provision of a two-way cycle facility through the N40 Kinsale Interchange;
- A new toucan crossing at the Kinsale Road entry arm of the N40 Kinsale Interchange;
- New dedicated cycle facilities in both directions on the Kinsale Road, from the N40 Kinsale Interchange through to Curragh Road, Evergreen Road, Summer Hill South, Langford Row, Infirmary Road, Anglesea Street and Parnell Place;
- A new signalised pedestrian crossing on the Kinsale Road adjacent to the entrance to the Harvey Norman store;
- Enhanced pedestrian and cycle facilities at the following junctions:
 - Kinsale Road and Mick Barry Road;
 - Kinsale Road and Tramore Road;
 - Kinsale Road/Curragh Road and Pearse Road;
 - Curragh Road and Evergreen Road/South Douglas Road;
 - Evergreen Road and Summer Hill South;
 - Summer Hill South and Langford Row;
 - Langford Row and Infirmary Road;
 - Infirmary Road and Anglesea Street/Old Station Road;
 - Anglesea Street/ Terence McSweeney Quay;
 - Parnell Place/ Lapps' Quay
 - Parnell Place/ Merchant's Quay
- Enhanced pedestrian facilities at the following junctions
 - Eglinton Street/N27/Old Station Road;
 - Eglinton Street and Terence McSweeney Quay;
 - Clontarf Street and Lapp's Quay;

– Clontarf Street and Oliver Plunkett Street Lower.

- Improved footpaths on Clontarf Street.

Public Transport:

- Proposed bus lanes in both directions on the N27 Kinsale Road (Airport Road) between the Airport entrance junction and the N40 Kinsale Road Roundabout;
- Proposed inbound bus lane through the N40 Kinsale Road Roundabout through to the Kinsale Road exit arm;
- Proposed new bus gate on the Kinsale Road exit arm from the N40 Kinsale Road Roundabout;
- Proposed inbound bus lane on the Kinsale Road, commencing to the south of Mick Barry Road, through the junction with Tramore Road and up to the Pearse Road/Curragh Road junction;
- Proposed outbound bus lane on the Kinsale Road, commencing to the north of the junction with Tramore Road and continuing to the junction with Mick Barry Road;
- Proposed inbound bus lane on the South Douglas Road on-ramp to the N27 South City Link Road;
- Proposed inbound bus lane on the N27 South City Link Road from the South Douglas entry ramp to the junction with Eglinton Street/Old Station Road;
- Proposed short section of outbound bus lane on the N27 South City Link Road, commencing at the junction with Old Station Road/Eglinton Street and merging before the Old Blackrock Road overpass;
- Proposed inbound and outbound bus lanes on Eglinton Street and Clontarf Street, commencing at the junction with Old Station Road and continuing through to the junction at Anderson's Quay.

9. Recommendations for progression to consultation

The following additional changes to the emerging preferred route outlined above are recommended for inclusion within the scheme concept design to be progressed to public consultation:

- In line with the renaming of the Core Bus Corridor schemes for BusConnects Cork as ‘Sustainable Transport Corridor’ schemes, and the re-titling of the individual routes, Core Bus Corridor 9 will be progressed to consultation as ‘**Sustainable Transport Corridor H – Airport Road to City**’;
- It is recommended that the proposed CBC should commence at the N27 Kinsale Road (Airport Road) and Ballycurreen Road junction (the Bull McCabe junction) and not at the Airport entrance junction, as it is considered that dedicated bus priority facilities are not warranted further south than this location, due to combination of current prevailing traffic conditions and the expected number of bus services expected to use this section of the route;
- To safeguard the strategic capacity of the N27 South City Link Road, it is recommended that the provision of additional bus lanes along this portion of the route, between the South Douglas Interchange and Old Station Road/Eglinton Street would be additional to the existing dual carriageway arrangement along the route (i.e., that the removal of a general traffic lane in both directions would not be considered). It is therefore recommended that localised improvement works to the N27 South City Link Road along this portion of the route be carried out to narrow the existing traffic lanes and the existing central median and to implement a new inbound bus lane to the existing dual carriageway. Preliminary investigations of the corridor along this section indicate that this appears feasible without requiring adjustments to the existing structures in place along the route. However, the final traffic management plan is subject to confirmation at the detailed design stage and if a continuous inbound bus lane is not possible then signal controlled priority will need to be installed at any pinch points created by the existing structures. In the interim, it is recommended that an inbound bus lane and two inbound and outbound traffic lanes be implemented to the north side of the Old Blackrock Road overbridge – north of this location it is possible to widen the route and provide additional bus lanes and traffic lanes approaching the junction at Eglinton Street/Old Station Road;
- It is recommended that the proposed two-way cycle facility on the N27 Kinsale Road (Airport Road) would also commence at the Ballycurreen Road junction; further south of this junction, cyclists will avail of a proposed cycle route scheme being developed separately by Cork City Council (as part of the N27 Kinsale Road/Airport Hill improvement scheme);
- It is recommended that the proposed cycle facilities on Anglesea Street Lower should continue to the junction with Old Station Road only; from this location, cyclists would avail of the existing facilities present on Anglesea Street and Parnell Place to the junction at Merchant’s Quay; and
- It is recommended that the proposed bus route should terminate at the junction at Anderson’s Quay, with onward routing of buses to be determined within the overall city centre traffic management and movement context.

Appendix A

Route Option Assessment Tables

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A.1 Section 1 – Airport to Kinsale Road Roundabout

Assessment Criterion	Assessment Sub-Criterion	Section 1 Option 1	Section 1 Option 2
Economy (Cost Assessment and Transport Economic Indicators)	Capital Cost	<p>Total Capital Cost (€14.15m)</p> <p>Indicative Scheme Infrastructure Works Cost (€3.11m)</p> <p>Land Acquisition Cost (€11.04m)</p> <p>This section of the route requires the acquisition of 7,363m² of land, 587 of which are private lands and 6,776 are public lands.</p> <p>This section of the proposed route has the potential to partially or fully impact 09 properties.</p>	<p>Total Capital Cost (€22.35m)</p> <p>Indicative Scheme Infrastructure Works Cost (€3.74m)</p> <p>Land Acquisition Cost (€18.61m)</p> <p>This section of the route requires the acquisition of 12,409m² of land, 3,457 of which are private lands and 8,952 are public lands.</p> <p>This section of the proposed route has the potential to partially or fully impact 20 properties.</p>
	<i>Rank</i>		
	Transport Reliability and Quality of Service	<p>Journey Time: 4.7 mins</p> <p>The length of the cycle section is 3140m and the length of the bus section is 3140m.</p> <p>No. of Major/ Signalised Junctions: 2</p> <p>Outbound bus lanes are provided along 88% of this route option, and inbound bus lanes are provided along 88% of this route option, resulting in good journey time reliability of bus services.</p>	<p>Journey Time: 5.7 mins</p> <p>The length of the cycle section is 3140m and the length of the bus section is 3555m.</p> <p>No. of Major/ Signalised Junctions: 3</p> <p>Outbound bus lanes are provided along 84% of this route option, and inbound bus lanes are provided along 86% of this route option, resulting in good journey time reliability of bus services.</p>
<i>Rank</i>			

Integration	Land Use Integration	This route comprises of the road passing through a greenfield area (classified as public open zone), which has the potential to enable development in this area, particularly to the east.	This route comprises of the road passing through a greenfield area (classified as public open zone), which has the potential to enable development in this area, particularly to the east.
	Rank		
	Residential Population and Employment Catchments	<p>Residential Population Catchments</p> <p>5 minute walking catchment of approximately 300</p> <p>10 minute walking catchment of approximately 900</p> <p>15 minute walking catchment of approximately 2,400</p> <p>Employment catchments</p> <p>5 minute walking catchment of approximately 1,500</p> <p>10 minute walking catchment of approximately 4,400</p> <p>15 minute walking catchment of approximately 7,000</p>	<p>Residential Population Catchments</p> <p>5 minute walking catchment of approximately 500</p> <p>10 minute walking catchment of approximately 1,100</p> <p>15 minute walking catchment of approximately 2,400</p> <p>Employment catchments</p> <p>5 minute walking catchment of approximately 1,300</p> <p>10 minute walking catchment of approximately 4,300</p> <p>15 minute walking catchment of approximately 6,900</p>
	Rank		
	Transport Network Integration	This route coincides with portions of existing bus routes 225, 226 and 226X.	This route coincides with portions of existing bus routes 225, 226 and 226X.
		There would be No Impact on general traffic.	There would be No Impact on general traffic.
	Rank		
Cycling integration	This route option is identified in CMATS as forming parts of primary routes CSW-U19, CSW-U20, secondary route CSW-U18. Dedicated raised adjacent cycle lanes are proposed in the outbound direction for 88% of this route, and are proposed in the inbound for 88% of this route	This route option is identified in CMATS as forming parts of primary routes CSW-U19, CSW-U20, secondary route CSW-U18. Dedicated raised adjacent cycle lanes are proposed in the outbound direction for 88% of this route, and are proposed in the inbound for 88% of this route	

Accessibility and Social Inclusion	<i>Rank</i>		
	Pedestrian Integration	The existing pedestrian network is good and will be further enhanced as part of the proposed development	The existing pedestrian network is good and will be further enhanced as part of the proposed development
	<i>Rank</i>		
	Key Trip Attractors (Education/Health/Commercial/Employment)	The following attractors are located within a 10-min walking distance of the route: 1 airport, 32 offices, 48 shops, 3 tourist facilities/attractions and 1 park and ride facility.	The following attractors are located within a 10-min walking distance of the route: 1 airport, 32 offices, 48 shops, 3 tourist facilities/attractions and 1 park and ride facility.
	<i>Rank</i>		
	Deprived Geographic Areas	In terms of the Pobal Deprivation Index, the areas within the catchment of the proposed route option are less than 5% disadvantaged, 30% marginally below average, 10% marginally above average, 60% affluent and less than 5% very affluent. The 10-min walking catchment of the route includes the fringes of the Togher/Mahon/Ballyphehane RAPID area.	In terms of the Pobal Deprivation Index, the areas within the catchment of the proposed route option are less than 5% disadvantaged, 20% marginally below average, 10% marginally above average, 70% affluent and less than 5% very affluent. The 10-min walking catchment of the route includes the fringes of the Togher/Mahon/Ballyphehane RAPID area.
	<i>Rank</i>		
Safety	Road Safety	No. of Junctions: 5 0 turning movements are required in each direction (0 left and 0 right in both inbound and outbound directions).	No. of Junctions: 8 2 turning movements are required in each direction (1 left and 1 right in both inbound and outbound directions).
	<i>Rank</i>		
Environment	Archaeology Architectural and Cultural Heritage	This section of the proposed route does not cross any Architectural Conservation Areas.	This section of the proposed route does not cross any Architectural Conservation Areas.

	<p>There are no structures listed in the NIAH along this option.</p> <p>There are no protected structures located along the proposed route.</p> <p>There are no recorded monuments to be potentially impacted by the proposed route.</p>	<p>There are no structures listed in the NIAH along this option.</p> <p>There are no protected structures located along the proposed route.</p> <p>There are no recorded monuments to be potentially impacted by the proposed route.</p>
<i>Rank</i>		
Biodiversity	<p>This option has the potential to result in the loss of 61 trees as well as grass verges which may be of ecological value.</p> <p>No road widening associated with this section of the proposed route is located within 500m of a Natural Heritage Area.</p> <p>This section of the proposed route does not cross any Proposed Natural Heritage Area.</p> <p>No road widening associated with this section of the proposed route is located within 500m of a SPA.</p> <p>No road widening associated with this section of the proposed route is located within 500m of a SAC.</p>	<p>This option has the potential to result in the loss of 81 trees as well as grass verges which may be of ecological value.</p> <p>No road widening associated with this section of the proposed route is located within 500m of a Natural Heritage Area.</p> <p>This section of the proposed route does not cross any Proposed Natural Heritage Area.</p> <p>No road widening associated with this section of the proposed route is located within 500m of a SPA.</p> <p>No road widening associated with this section of the proposed route is located within 500m of a SAC.</p>
<i>Rank</i>		
Soils and Geology	<p>There are no geological heritage sites located along this option. There is no potential for impacts to soils and geology and no evidence of historic industries or gravel pits that could give rise to potential contamination.</p>	<p>There are no geological heritage sites located along this option. There is no potential for impacts to soils and geology and no evidence of historic industries or gravel pits that could give rise to potential contamination.</p>
<i>Rank</i>		

Hydrology	This section of the proposed route does not traverse any streams or rivers so diversion works or construction of bridges or culverts is not required.	This section of the proposed route traverses 1 Stream, and as such, there is potential for either direct or indirect effects on the water sources as a result of pollution events, in the absence of intervention.
<i>Rank</i>		
Landscape and Visual	This section of the proposed route infringes on an area of High Landscape Sensitivity. This option has the potential to result in the loss of 61 trees as well as grass verges which may be of ecological value.	This section of the proposed route infringes on an area of High Landscape Sensitivity. This option has the potential to result in the loss of 81 trees as well as grass verges which may be of ecological value.
<i>Rank</i>		
Air Quality, Noise & Vibration	Of the 24 residential receptors along this section of the proposed route, there is potential that road widening/road works along this section of the proposed route could bring traffic closer to residential receptors. This has potential to increase pollutant and noise concentrations at these receptors. However, any potential increase in proximity is expected to be marginal. Further, any decrease in air quality at residential receptors as a result of increased proximity to traffic is likely to be counteracted by the increased use of public and active travel which the proposed project will facilitate.	Of the 49 residential receptors along this section of the proposed route, there is potential that road widening/road works along this section of the proposed route could bring traffic closer to residential receptors. This has potential to increase pollutant and noise concentrations at these receptors. However, any potential increase in proximity is expected to be marginal. Further, any decrease in air quality at residential receptors as a result of increased proximity to traffic is likely to be counteracted by the increased use of public and active travel which the proposed project will facilitate.
<i>Rank</i>		
Land Use Character	This section of the route requires the acquisition of 7,363m ² of land, 587 of which are private lands and 6,776 are public lands.	This section of the route requires the acquisition of 12,409m ² of land, 3,457 of which are private lands and 8,952 are public lands.
<i>Rank</i>		

A.2 Section 2 – Kinsale Road Roundabout to City Centre

Assessment Criterion	Assessment Sub-Criterion	Section 2 Option 1	Section 2 Option 2	Section 2 Option 3	Section 2 Option 4a	Section 2 Option 4b	Section 2 Option 4c	Section 2 Option 5
Economy (Cost Assessment and Transport Economic Indicators)	Capital Cost	Total Capital Cost (€8.44m)	Total Capital Cost (€7.64m)	Total Capital Cost (€10.29m)	Total Capital Cost (€13.62m)	Total Capital Cost (€13.71m)	Total Capital Cost (€11.02m)	Total Capital Cost (€12.19m)
		Indicative Scheme Infrastructure Works Cost (€7.2m)	Indicative Scheme Infrastructure Works Cost (€6.01m)	Indicative Scheme Infrastructure Works Cost (€4.96m)	Indicative Scheme Infrastructure Works Cost (€9.02m)	Indicative Scheme Infrastructure Works Cost (€7.91m)	Indicative Scheme Infrastructure Works Cost (€6.42m)	Indicative Scheme Infrastructure Works Cost (€6.33m)
	Land Acquisition Cost (€1.24m)	Land Acquisition Cost (€1.63m)	Land Acquisition Cost (€5.33m)	Land Acquisition Cost (€4.6m)	Land Acquisition Cost (€5.8m)	Land Acquisition Cost (€4.6m)	Land Acquisition Cost (€5.86m)	
		This section of the route requires the acquisition of 4,282 m2 of land, 828 m2 of which are private lands and 3,454 m2 are public lands. This section of the proposed route has the potential to partially or fully impact 07 properties.	This section of the route requires the acquisition of 1,411 m2 of land, 1,088 m2 of which are private lands and 323 m2 are public lands. This section of the proposed route has the potential to partially or fully impact 33 properties.	This section of the route requires the acquisition of 4,175 m2 of land, 3,554 m2 of which are private lands and 621 m2 are public lands. This section of the proposed route has the potential to partially or fully impact 38 properties.	This section of the route requires the acquisition of 3,590 m2 of land, 3,068 m2 of which are private lands and 522 m2 are public lands. This section of the proposed route has the potential to partially or fully impact 44 properties.	This section of the route requires the acquisition of 4,580 m2 of land, 3,866 m2 of which are private lands and 714 m2 are public lands. This section of the proposed route has the potential to partially or fully impact 44 properties.	This section of the route requires the acquisition of 3,731 m2 of land, 3,068 m2 of which are private lands and 663 m2 are public lands. This section of the proposed route has the potential to partially or fully impact 44 properties.	This section of the route requires the acquisition of 4,621 m2 of land, 3,907 m2 of which are private lands and 714 m2 are public lands. This section of the proposed route has the potential to partially or fully impact 44 properties.
	<i>Rank</i>							
	Transport Reliability and	Journey Time: 7 mins	Journey Time: 7 mins	Journey Time: 7.3 mins	Journey Time: 10.9 mins	Journey Time: 10.5 mins	Journey Time: 11.4 mins	Journey Time: 9.7 mins

	Quality of Service	The length of the cycle section is 3490m and the length of the bus section is 3400m. No. of Major/Signalised Junctions: 7 Outbound bus lanes are provided along 91% of this route option, and inbound bus lanes are provided along 91% of this route option, resulting in good journey time reliability of bus services.	The length of the cycle section is 3410m and the length of the bus section is 3400m. No. of Major/Signalised Junctions: 7 Outbound bus lanes are provided along 91% of this route option, and inbound bus lanes are provided along 91% of this route option, resulting in good journey time reliability of bus services.	The length of the cycle section is 3410m and the length of the bus section is 3570m. No. of Major/Signalised Junctions: 7 Outbound bus lanes are provided along 90% of this route option, and inbound bus lanes are provided along 90% of this route option, resulting in good journey time reliability of bus services.	The length of the cycle section is 3410m; and the length of the inbound bus section is 4020m and the length of the outbound bus section is 4000m. No. of Major/Signalised Junctions: 10 Outbound bus lanes are provided along 60% of this route option, and inbound bus lanes are provided along 63% of this route option, resulting in good journey time reliability of bus services.	The length of the cycle section is 3410m; and the length of the inbound bus section is 4020m and the length of the outbound bus section is 4000m. No. of Major/Signalised Junctions: 11 Outbound bus lanes are provided along 72% of this route option, and inbound bus lanes are provided along 71% of this route option, resulting in good journey time reliability of bus services.	The length of the cycle section is 3410m; and the length of the inbound bus section is 3920m and the length of the outbound bus section is 3895m. No. of Major/Signalised Junctions: 11 Outbound bus lanes are provided along 54% of this route option, and inbound bus lanes are provided along 60% of this route option, resulting in good journey time reliability of bus services.	The length of the cycle section is 3410m and the length of the bus section is 3410m. No. of Major/Signalised Junctions: 12 Outbound bus lanes are provided along 76% of this route option, and inbound bus lanes are provided along 72% of this route option, resulting in good journey time reliability of bus services.
	Rank							
Integration	Land Use Integration	This route serves an area which is largely developed, with limited scope for further development	This route serves an area which is largely developed, with limited scope for further development	This route serves an area which is largely developed, with limited scope for further development	This route serves an area which is largely developed, with limited scope for further development	This route serves an area which is largely developed, with limited scope for further development	This route serves an area which is largely developed, with limited scope for further development	This route serves an area which is largely developed, with limited scope for further development
	Rank							
	Residential Population and Employment Catchments	Residential Population Catchments 5 minute walking catchment of approximately 4,400	Residential Population Catchments 5 minute walking catchment of approximately 4,400	Residential Population Catchments 5 minute walking catchment of approximately 4,600	Residential Population Catchments 5 minute walking catchment of approximately 5,700	Residential Population Catchments 5 minute walking catchment of approximately 5,700	Residential Population Catchments 5 minute walking catchment of approximately 5,600	Residential Population Catchments 5 minute walking catchment of approximately 6,600

	10 minute walking catchment of approximately 11,100	10 minute walking catchment of approximately 11,100	10 minute walking catchment of approximately 11,300	10 minute walking catchment of approximately 13,100	10 minute walking catchment of approximately 13,100	10 minute walking catchment of approximately 14,000	10 minute walking catchment of approximately 14,700
	15 minute walking catchment of approximately 20,400	15 minute walking catchment of approximately 20,400	15 minute walking catchment of approximately 21,100	15 minute walking catchment of approximately 23,300	15 minute walking catchment of approximately 23,300	15 minute walking catchment of approximately 25,500	15 minute walking catchment of approximately 24,400
	Employment catchments	Employment catchments	Employment catchments	Employment catchments	Employment catchments	Employment catchments	Employment catchments
	5 minute walking catchment of approximately 8,500	5 minute walking catchment of approximately 8,500	5 minute walking catchment of approximately 9,100	5 minute walking catchment of approximately 9,700	5 minute walking catchment of approximately 9,700	5 minute walking catchment of approximately 10,600	5 minute walking catchment of approximately 10,100
	10 minute walking catchment of approximately 17,800	10 minute walking catchment of approximately 17,800	10 minute walking catchment of approximately 19,000	10 minute walking catchment of approximately 19,500	10 minute walking catchment of approximately 19,500	10 minute walking catchment of approximately 20,500	10 minute walking catchment of approximately 19,600
	15 minute walking catchment of approximately 24,700	15 minute walking catchment of approximately 24,700	15 minute walking catchment of approximately 25,500	15 minute walking catchment of approximately 25,900	15 minute walking catchment of approximately 25,900	15 minute walking catchment of approximately 27,200	15 minute walking catchment of approximately 25,600
Rank							
Transport Network Integration	This route coincides with portions of existing bus routes 202, 202A, 203, 205, 206, 207, 207A, 208, 209, 209A, 212, 213, 214, 215, 215A, 216, 219, 220, 220X, 223,	This route coincides with portions of existing bus routes 202, 202A, 203, 205, 206, 207, 207A, 208, 209, 209A, 212, 213, 214, 215, 215A, 216, 219, 220, 220X, 223,	This route coincides with portions of existing bus routes 202, 202A, 203, 205, 206, 207, 207A, 208, 209, 209A, 212, 213, 214, 215, 215A, 216, 219, 220, 220X, 223,	This route coincides with portions of existing bus routes 202, 202A, 203, 205, 206, 207, 207A, 208, 209, 209A, 212, 213, 214, 215, 215A, 216, 219, 220, 220X, 223,	This route coincides with portions of existing bus routes 202, 202A, 203, 205, 206, 207, 207A, 208, 209, 209A, 212, 213, 214, 215, 215A, 216, 219, 220, 220X, 223,	This route coincides with portions of existing bus routes 202, 202A, 203, 205, 206, 207, 207A, 208, 209, 209A, 212, 213, 214, 215, 215A, 216, 219, 220, 220X, 223,	This route coincides with portions of existing bus routes 202, 202A, 203, 205, 206, 207, 207A, 208, 209, 209A, 212, 213, 214, 215, 215A, 216, 219, 220, 220X, 223,

	223X, 225, 226 and 226X.	223X, 225, 226 and 226X.	223X, 225, 226 and 226X.	223X, 225, 226 and 226X.	223X, 225, 226 and 226X.	223X, 225, 226 and 226X.	223X, 225, 226 and 226X.
	This option offers potential for interchange with 0. There would be Minimal impact on general traffic.	This option offers potential for interchange with 0. There would be Minimal impact on general traffic.	This option offers potential for interchange with 0. There would be Minimal impact on general traffic.	This option offers potential for interchange with 0. There would be Minimal impact on general traffic.	This option offers potential for interchange with 0. There would be Minimal impact on general traffic.	This option offers potential for interchange with 0. There would be Minimal impact on general traffic.	This option offers potential for interchange with 0. There would be Major impact on general traffic.
<i>Rank</i>							
Cycling integration	This route option is identified in CMATS as forming parts of primary routes CCC-U15, CCC-U17, CCC-U18, CCC-U31, CCC-U32, CCC-U33, CSE-U1, CSE-U1A, unnamed primary routes, secondary routes CCC-U34, CCC-U35, CCC-U36, CCC-U37, CSE-U9, greenway route CSW-GW1.	This route option is identified in CMATS as forming parts of primary routes CCC-U15, CCC-U17, CCC-U18, CCC-U31, CCC-U32, CCC-U33, CSE-U1, CSE-U1A, CSW-U2, CSW-U3, unnamed primary routes, secondary routes CCC-U34, CCC-U35, CCC-U36, CCC-U37, CSE-U9, greenway route CSW-GW1.	This route option is identified in CMATS as forming parts of primary routes CCC-U15, CCC-U17, CCC-U18, CCC-U31, CCC-U32, CCC-U33, CSE-U1, CSE-U1A, CSW-U2, CSW-U3, unnamed primary routes, secondary routes CCC-U34, CCC-U35, CCC-U36, CCC-U37, CSE-U9, greenway route CSW-GW1.	This route option is identified in CMATS as forming parts of primary routes CCC-U15, CCC-U17, CCC-U18, CCC-U31, CCC-U32, CCC-U33, CSE-U1, CSE-U1A, CSW-U2, CSW-U3, CSW-U4, unnamed primary routes, secondary routes CCC-U34, CCC-U35, CCC-U36, CCC-U37, CSE-U9, greenway route CSW-GW1.	This route option is identified in CMATS as forming parts of primary routes CCC-U15, CCC-U17, CCC-U18, CCC-U31, CCC-U32, CCC-U33, CSE-U1, CSE-U1A, CSW-U2, CSW-U3, CSW-U4, unnamed primary routes, secondary routes CCC-U34, CCC-U35, CCC-U36, CCC-U37, CSE-U9, greenway route CSW-GW1.	This route option is identified in CMATS as forming parts of primary routes CCC-U15, CCC-U17, CCC-U18, CCC-U31, CCC-U32, CCC-U33, CSE-U1, CSE-U1A, CSW-U2, CSW-U3, CSW-U4, unnamed primary routes, unnamed possible primary routes, secondary routes CCC-U13, CCC-U34, CCC-U35, CCC-U36, CCC-U37, CSE-U9, greenway route CSW-GW1, unnamed feeder routes.	This route option is identified in CMATS as forming parts of primary routes CCC-U15, CCC-U17, CCC-U18, CCC-U31, CCC-U32, CCC-U33, CSW-U2, CSW-U3, CSW-U4, unnamed primary routes, secondary routes CCC-U35, CCC-U36, CCC-U37, CSE-U9, greenway route CSW-GW1.

		Dedicated raised adjacent cycle lanes are proposed in the outbound direction for 89% of this route, and are proposed in the inbound for 89% of this route	Dedicated raised adjacent cycle lanes are proposed in the outbound direction for 90% of this route, and are proposed in the inbound for 90% of this route	Dedicated raised adjacent cycle lanes are proposed in the outbound direction for 90% of this route, and are proposed in the inbound for 90% of this route	Dedicated raised adjacent cycle lanes are proposed in the outbound direction for 91% of this route, and are proposed in the inbound for 91% of this route	Dedicated raised adjacent cycle lanes are proposed in the outbound direction for 91% of this route, and are proposed in the inbound for 91% of this route	Dedicated raised adjacent cycle lanes are proposed in the outbound direction for 91% of this route, and are proposed in the inbound for 91% of this route	Dedicated raised adjacent cycle lanes are proposed in the outbound direction for 91% of this route, and are proposed in the inbound for 91% of this route
	<i>Rank</i>							
	Pedestrian Integration	Good Pedestrian Connectivity	Good Pedestrian Connectivity	Good Pedestrian Connectivity	Good Pedestrian Connectivity	Good Pedestrian Connectivity	Good Pedestrian Connectivity	Good Pedestrian Connectivity
	<i>Rank</i>							
Accessibility and Social Inclusion	Key Trip Attractors (Education/Health/Commercial/Employment)	The following attractors are located within a 10-min walking distance of the route: 2 hospitals, 4 primary schools, 4 post-primary schools, 2 special primary schools, 65 offices, 249 shops, 71 restaurants/bars/pubs, 33 tourist facilities/attractions, 1 park and ride facility and 2 buss/rail stations.	The following attractors are located within a 10-min walking distance of the route: 2 hospitals, 4 primary schools, 4 post-primary schools, 2 special primary schools, 65 offices, 249 shops, 71 restaurants/bars/pubs, 33 tourist facilities/attractions, 2 buss/rail stations and 1 park and ride facility.	The following attractors are located within a 10-min walking distance of the route: 2 hospitals, 4 primary schools, 4 post-primary schools, 2 special primary schools, 69 offices, 267 shops, 71 restaurants/bars/pubs, 34 tourist facilities/attractions, 1 park and ride facility and 2 buss/rail stations.	The following attractors are located within a 10-min walking distance of the route: 2 hospitals, 5 primary schools, 4 post-primary schools, 2 special primary schools, 70 offices, 277 shops, 71 restaurants/bars/pubs, 34 tourist facilities/attractions, 1 park and ride facility and 2 buss/rail stations.	The following attractors are located within a 10-min walking distance of the route: 2 hospitals, 5 primary schools, 4 post-primary schools, 2 special primary schools, 70 offices, 277 shops, 71 restaurants/bars/pubs, 34 tourist facilities/attractions, 2 buss/rail stations and 1 park and ride facility.	The following attractors are located within a 10-min walking distance of the route: 2 hospitals, 5 primary schools, 6 post-primary schools, 2 special primary schools, 73 offices, 293 shops, 74 restaurants/bars/pubs, 41 tourist facilities/attractions, 3 buss/rail stations and 1 park and ride facility.	The following attractors are located within a 10-min walking distance of the route: 2 hospitals, 3 primary schools, 5 post-primary schools, 1 special primary school, 71 offices, 287 shops, 72 restaurants/bars/pubs, 36 tourist facilities/attractions, 1 park and ride facility and 2 buss/rail stations.
	<i>Rank</i>							

	Deprived Geographic Areas	In terms of the Pobal Deprivation Index, the areas within the catchment of the proposed route option are 20% marginally below average, 50% marginally above average, 30% affluent and 10% very affluent. The 10-min walking catchment of the route includes the fringes of the Togher/Mahon/Ballyphehane RAPID area.	In terms of the Pobal Deprivation Index, the areas within the catchment of the proposed route option are 20% marginally below average, 50% marginally above average, 30% affluent and 10% very affluent. The 10-min walking catchment of the route includes the fringes of the Togher/Mahon/Ballyphehane RAPID area.	In terms of the Pobal Deprivation Index, the areas within the catchment of the proposed route option are less than 5% disadvantaged, 20% marginally below average, 50% marginally above average, 30% affluent and 10% very affluent. The 10-min walking catchment of the route includes the fringes of the Togher/Mahon/Ballyphehane RAPID area.	In terms of the Pobal Deprivation Index, the areas within the catchment of the proposed route option are 10% disadvantaged, 20% marginally below average, 40% marginally above average, 30% affluent and less than 5% very affluent. The 10-min walking catchment of the route includes approximately 10% of the Togher/Mahon/Ballyphehane RAPID area.	In terms of the Pobal Deprivation Index, the areas within the catchment of the proposed route option are 10% disadvantaged, 20% marginally below average, 40% marginally above average, 30% affluent and less than 5% very affluent. The 10-min walking catchment of the route includes approximately 10% of the Togher/Mahon/Ballyphehane RAPID area.	In terms of the Pobal Deprivation Index, the areas within the catchment of the proposed route option are less than 5% disadvantaged, 20% marginally below average, 40% marginally above average, 30% affluent and 10% very affluent. The 10-min walking catchment of the route includes approximately 10% of the Togher/Mahon/Ballyphehane RAPID area.	In terms of the Pobal Deprivation Index, the areas within the catchment of the proposed route option are 10% disadvantaged, 20% marginally below average, 50% marginally above average, 20% affluent and less than 5% very affluent. The 10-min walking catchment of the route includes approximately 10% of the Togher/Mahon/Ballyphehane RAPID area.
	<i>Rank</i>							
Safety	Road Safety	No. of Junctions: 7 2 turning movements are required in each direction (1 left and 1 right in both inbound and outbound directions).	No. of Junctions: 7 2 turning movements are required in each direction (1 left and 1 right in both inbound and outbound directions).	No. of Junctions: 7 4 turning movements are required in each direction (2 left and 2 right in both inbound and outbound directions).	No. of Junctions: 15 4 turning movements are required in each direction (2 left and 2 right in both inbound and outbound directions).	No. of Junctions: 16 4 turning movements are required in each direction (2 left and 2 right in both inbound and outbound directions).	No. of Junctions: 17 2 turning movements are required in each direction (1 left and 1 right in both inbound and outbound directions).	No. of Junctions: 17 1 turning movements are required in each direction (1 left and 0 right in both inbound and outbound directions).
	<i>Rank</i>							

Environment	Archaeology Architectural and Cultural Heritage	This section of the proposed route infringes or runs close to the following Architectural Conservation Areas: Nos 1-13 Railway Cottages, Anglesea Street; 1-4 Franconia, Evergreen Road.; Southparish ACA.	This section of the proposed route infringes or runs close to the following Architectural Conservation Areas: Nos 1-13 Railway Cottages, Anglesea Street; 1-4 Franconia, Evergreen Road.; Southparish ACA.	This section of the proposed route infringes or runs close to the following Architectural Conservation Areas: Nos 1-13 Railway Cottages, Anglesea Street; 1-4 Franconia, Evergreen Road.; Southparish ACA.	This section of the proposed route infringes or runs close to the following Architectural Conservation Areas: Nos 1-13 Railway Cottages, Anglesea Street; 1-4 Franconia, Evergreen Road.; Southparish ACA.	This section of the proposed route infringes or runs close to the following Architectural Conservation Areas: Nos 1-13 Railway Cottages, Anglesea Street; 1-4 Franconia, Evergreen Road.; Southparish ACA.	This section of the proposed route infringes or runs close to the following Architectural Conservation Areas: Nos 1-13 Railway Cottages, Anglesea Street; 1-4 Franconia, Evergreen Road.; Southparish ACA.	This section of the proposed route infringes or runs close to the following Architectural Conservation Areas: 1-4 Franconia, Evergreen Road.; Southparish ACA.
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	<p>There are 134 No. structures listed on the NIAH along this option (1 of national significance, 133 of regional significance). Of these, none have the potential to be impacted by the proposed project.</p> <p>There are 75 No. protected structures along this option, of which 1 has the potential to be impacted by the proposed project, in the absence of intervention.</p> <p>There is 1 No. recorded monuments located along this section of the proposed route. However, there is no potential for this to be either directly or indirectly affected by the proposed project.</p>	<p>There are 135 No. structures listed on the NIAH along this option (1 of national significance, 134 of regional significance). Of these, none have the potential to be impacted by the proposed project.</p> <p>There are 75 No. protected structures along this option, of which 1 has the potential to be impacted by the proposed project, in the absence of intervention.</p> <p>There is 1 No. recorded monuments located along this section of the proposed route. However, there is no potential for this to be either directly or indirectly affected by the proposed project.</p>	<p>There are 135 No. structures listed on the NIAH along this option (1 of national significance, 134 of regional significance). Of these, none have the potential to be impacted by the proposed project.</p> <p>There are 75 No. protected structures along this option, of which 1 has the potential to be impacted by the proposed project, in the absence of intervention.</p> <p>There is 1 No. recorded monuments located along this section of the proposed route. However, there is no potential for this to be either directly or indirectly affected by the proposed project.</p>	<p>There are 135 No. structures listed on the NIAH along this option (1 of national significance, 134 of regional significance). Of these, none have the potential to be impacted by the proposed project.</p> <p>There are 75 No. protected structures along this option, of which 1 has the potential to be impacted by the proposed project, in the absence of intervention.</p> <p>There is 1 No. recorded monuments located along this section of the proposed route. However, there is no potential for this to be either directly or indirectly affected by the proposed project.</p>	<p>There are 135 No. structures listed on the NIAH along this option (1 of national significance, 134 of regional significance). Of these, none have the potential to be impacted by the proposed project.</p> <p>There are 75 No. protected structures along this option, of which 1 has the potential to be impacted by the proposed project, in the absence of intervention.</p> <p>There is 1 No. recorded monuments located along this section of the proposed route. However, there is no potential for this to be either directly or indirectly affected by the proposed project.</p>	<p>There are 142 No. structures listed on the NIAH along this option (1 of national significance, 141 of regional significance). Of these, none have the potential to be impacted by the proposed project.</p> <p>There are 78 No. protected structures along this option, of which 1 has the potential to be impacted by the proposed project, in the absence of intervention.</p> <p>There are 2 No. recorded monuments located along this section of the proposed route, of which none have the potential to be either directly or indirectly affected by the proposed project.</p>	<p>There are 134 No. structures listed on the NIAH along this option (1 of national significance, 133 of regional significance). Of these, none have the potential to be impacted by the proposed project.</p> <p>There are 75 No. protected structures along this option, of which 1 has the potential to be impacted by the proposed project, in the absence of intervention.</p> <p>There are no recorded monuments to be potentially impacted by the proposed route.</p>
<i>Rank</i>							

Biodiversity	<p>This option has the potential to result in the loss of 104 trees as well as grass verges which may be of ecological value.</p> <p>No road widening associated with this section of the proposed route is located within 500m of a Natural Heritage Area.</p> <p>This section of the proposed route does not cross any Proposed Natural Heritage Area.</p> <p>No road widening associated with this section of the proposed route is located within 500m of a SPA.</p> <p>No road widening associated with this section of the proposed route is located within 500m of a SAC.</p>	<p>This option has the potential to result in the loss of 54 trees as well as grass verges which may be of ecological value.</p> <p>No road widening associated with this section of the proposed route is located within 500m of a Natural Heritage Area.</p> <p>This section of the proposed route does not cross any Proposed Natural Heritage Area.</p> <p>No road widening associated with this section of the proposed route is located within 500m of a SPA.</p> <p>No road widening associated with this section of the proposed route is located within 500m of a SAC.</p>	<p>This option has the potential to result in the loss of 74 trees as well as grass verges which may be of ecological value.</p> <p>No road widening associated with this section of the proposed route is located within 500m of a Natural Heritage Area.</p> <p>This section of the proposed route does not cross any Proposed Natural Heritage Area.</p> <p>No road widening associated with this section of the proposed route is located within 500m of a SPA.</p> <p>No road widening associated with this section of the proposed route is located within 500m of a SAC.</p>	<p>This option has the potential to result in the loss of 76 trees as well as grass verges which may be of ecological value.</p> <p>No road widening associated with this section of the proposed route is located within 500m of a Natural Heritage Area.</p> <p>This section of the proposed route does not cross any Proposed Natural Heritage Area.</p> <p>No road widening associated with this section of the proposed route is located within 500m of a SPA.</p> <p>No road widening associated with this section of the proposed route is located within 500m of a SAC.</p>	<p>This option has the potential to result in the loss of 80 trees as well as grass verges which may be of ecological value.</p> <p>No road widening associated with this section of the proposed route is located within 500m of a Natural Heritage Area.</p> <p>This section of the proposed route does not cross any Proposed Natural Heritage Area.</p> <p>No road widening associated with this section of the proposed route is located within 500m of a SPA.</p> <p>No road widening associated with this section of the proposed route is located within 500m of a SAC.</p>	<p>This option has the potential to result in the loss of 86 trees as well as grass verges which may be of ecological value.</p> <p>No road widening associated with this section of the proposed route is located within 500m of a Natural Heritage Area.</p> <p>This section of the proposed route does not cross any Proposed Natural Heritage Area.</p> <p>No road widening associated with this section of the proposed route is located within 500m of a SPA.</p> <p>No road widening associated with this section of the proposed route is located within 500m of a SAC.</p>	<p>This option has the potential to result in the loss of 59 trees as well as grass verges which may be of ecological value.</p> <p>No road widening associated with this section of the proposed route is located within 500m of a Natural Heritage Area.</p> <p>This section of the proposed route does not cross any Proposed Natural Heritage Area.</p> <p>No road widening associated with this section of the proposed route is located within 500m of a SPA.</p> <p>No road widening associated with this section of the proposed route is located within 500m of a SAC.</p>
<i>Rank</i>							

Soils and Geology	There are no geological heritage sites located along this option. There is no potential for impacts to soils and geology and no evidence of historic industries or gravel pits that could give rise to potential contamination.	There are no geological heritage sites located along this option. There is no potential for impacts to soils and geology and no evidence of historic industries or gravel pits that could give rise to potential contamination.	There are no geological heritage sites located along this option. There is no potential for impacts to soils and geology and no evidence of historic industries or gravel pits that could give rise to potential contamination.	There are no geological heritage sites located along this option. There is no potential for impacts to soils and geology and no evidence of historic industries or gravel pits that could give rise to potential contamination.	There are no geological heritage sites located along this option. There is no potential for impacts to soils and geology and no evidence of historic industries or gravel pits that could give rise to potential contamination.	There are no geological heritage sites located along this option. There is no potential for impacts to soils and geology and no evidence of historic industries or gravel pits that could give rise to potential contamination.	There are no geological heritage sites located along this option. There is no potential for impacts to soils and geology and no evidence of historic industries or gravel pits that could give rise to potential contamination.
Rank							
Hydrology	This section of the proposed route traverses 1 River (Tramore River), 1 Tidal River (River Lee), and as such, there is potential for either direct or indirect effects on the water source as a result of pollution events, in the absence of intervention.	This section of the proposed route traverses 1 River (Tramore River), 1 Tidal River (River Lee), and as such, there is potential for either direct or indirect effects on the water source as a result of pollution events, in the absence of intervention.	This section of the proposed route traverses 1 River (Tramore River), 1 Tidal River (River Lee), and as such, there is potential for either direct or indirect effects on the water source as a result of pollution events, in the absence of intervention.	This section of the proposed route traverses 1 River (Tramore River), 1 Tidal River (River Lee), and as such, there is potential for either direct or indirect effects on the water source as a result of pollution events, in the absence of intervention.	This section of the proposed route traverses 1 River (Tramore River), 1 Tidal River (River Lee), and as such, there is potential for either direct or indirect effects on the water source as a result of pollution events, in the absence of intervention.	This section of the proposed route traverses 1 River (Tramore River), 1 Tidal River (River Lee), and as such, there is potential for either direct or indirect effects on the water source as a result of pollution events, in the absence of intervention.	This section of the proposed route traverses 1 River (Tramore River), 1 Tidal River (River Lee), and as such, there is potential for either direct or indirect effects on the water source as a result of pollution events, in the absence of intervention.
Rank							

Landscape and Visual	This section of the proposed route does not infringe on any High Landscape Sensitivity area. This option has the potential to result in the loss of 104 trees as well as grass verges which may be of ecological value.	This section of the proposed route does not infringe on any High Landscape Sensitivity area. This option has the potential to result in the loss of 54 trees as well as grass verges which may be of ecological value.	This section of the proposed route does not infringe on any High Landscape Sensitivity area. This option has the potential to result in the loss of 74 trees as well as grass verges which may be of ecological value.	This section of the proposed route does not infringe on any High Landscape Sensitivity area. This option has the potential to result in the loss of 76 trees as well as grass verges which may be of ecological value.	This section of the proposed route does not infringe on any High Landscape Sensitivity area. This option has the potential to result in the loss of 80 trees as well as grass verges which may be of ecological value.	This section of the proposed route does not infringe on any High Landscape Sensitivity area. This option has the potential to result in the loss of 86 trees as well as grass verges which may be of ecological value.	This section of the proposed route does not infringe on any High Landscape Sensitivity area. This option has the potential to result in the loss of 59 trees as well as grass verges which may be of ecological value.
Rank							
Air Quality, Noise & Vibration	Of the 475 residential receptors along this section of the proposed route, there is potential that road widening/road works along this section of the proposed route could bring traffic closer to residential receptors. This has potential to increase pollutant and noise concentrations at these receptors. However, any potential increase in proximity is expected to be	Of the 530 residential receptors along this section of the proposed route, there is potential that road widening/road works along this section of the proposed route could bring traffic closer to residential receptors. This has potential to increase pollutant and noise concentrations at these receptors. However, any potential increase in proximity is expected to be	Of the 530 residential receptors along this section of the proposed route, there is potential that road widening/road works along this section of the proposed route could bring traffic closer to residential receptors. This has potential to increase pollutant and noise concentrations at these receptors. However, any potential increase in proximity is expected to be	Of the 553 residential receptors along this section of the proposed route, there is potential that road widening/road works along this section of the proposed route could bring traffic closer to residential receptors. This has potential to increase pollutant and noise concentrations at these receptors. However, any potential increase in proximity is expected to be	Of the 553 residential receptors along this section of the proposed route, there is potential that road widening/road works along this section of the proposed route could bring traffic closer to residential receptors. This has potential to increase pollutant and noise concentrations at these receptors. However, any potential increase in proximity is expected to be	Of the 560 residential receptors along this section of the proposed route, there is potential that road widening/road works along this section of the proposed route could bring traffic closer to residential receptors. This has potential to increase pollutant and noise concentrations at these receptors. However, any potential increase in proximity is expected to be	Of the 385 residential receptors along this section of the proposed route, there is potential that road widening/road works along this section of the proposed route could bring traffic closer to residential receptors. This has potential to increase pollutant and noise concentrations at these receptors. However, any potential increase in proximity is expected to be

	marginal. Further, any decrease in air quality at residential receptors as a result of increased proximity to traffic is likely to be counteracted by the increased use of public and active travel which the proposed project will facilitate.	marginal. Further, any decrease in air quality at residential receptors as a result of increased proximity to traffic is likely to be counteracted by the increased use of public and active travel which the proposed project will facilitate.	marginal. Further, any decrease in air quality at residential receptors as a result of increased proximity to traffic is likely to be counteracted by the increased use of public and active travel which the proposed project will facilitate.	marginal. Further, any decrease in air quality at residential receptors as a result of increased proximity to traffic is likely to be counteracted by the increased use of public and active travel which the proposed project will facilitate.	marginal. Further, any decrease in air quality at residential receptors as a result of increased proximity to traffic is likely to be counteracted by the increased use of public and active travel which the proposed project will facilitate.	marginal. Further, any decrease in air quality at residential receptors as a result of increased proximity to traffic is likely to be counteracted by the increased use of public and active travel which the proposed project will facilitate.	marginal. Further, any decrease in air quality at residential receptors as a result of increased proximity to traffic is likely to be counteracted by the increased use of public and active travel which the proposed project will facilitate.
<i>Rank</i>							
Land Use Character	This section of the route requires the acquisition of 4,309m2 of land, 975 of which are private lands and 3,334 are public lands.	This section of the route requires the acquisition of 1,432m2 of land, 1,244 of which are private lands and 188 are public lands.	This section of the route requires the acquisition of 4,195m2 of land, 3,742 of which are private lands and 453 are public lands.	This section of the route requires the acquisition of 3,614m2 of land, 3,238 of which are private lands and 376 are public lands.	This section of the route requires the acquisition of 4,610m2 of land, 4,055 of which are private lands and 555 are public lands.	This section of the route requires the acquisition of 3,761m2 of land, 3,238 of which are private lands and 523 are public lands.	This section of the route requires the acquisition of 4,622m2 of land, 4,096 of which are private lands and 526 are public lands.
<i>Rank</i>							