

National Transport Authority

BusConnects Cork

Core Bus Corridor 8 - Feasibility and Options Assessment Report

Reference: REP/008

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Ove Arup & Partners Ireland Limited
One Albert Quay
Cork
T12 X8N6
Ireland
arup.com

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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 (packaged together as 'Project B' of the overall city and suburban area). These four corridors are as follows:

- CBC 8 – West of Ballincollig to City Centre via Mardyke;
- CBC 7 – 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 8 of BusConnects Infrastructure Cork (BCIC) (Ballincollig to City Centre via Mardyke) and makes a recommendation on a preferred route. The report also details the initial concept design developed for the bus priority and cycle infrastructure provision along the CBC 8 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.

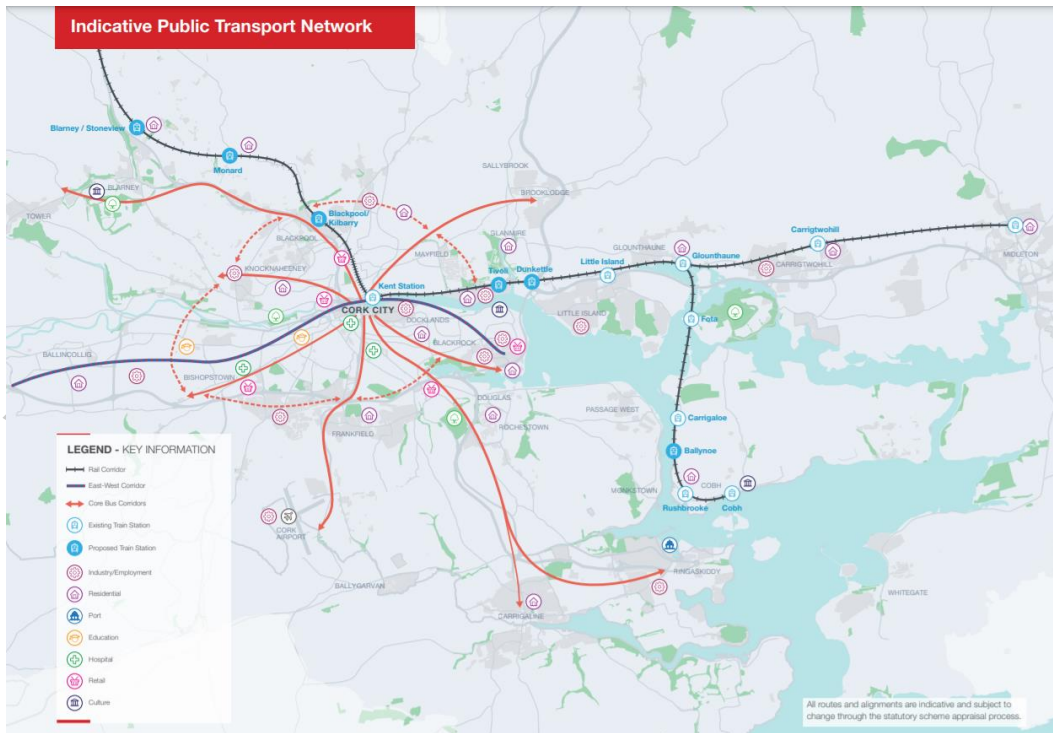


Figure 2: Indicative Public Transport Network [Source: CMATS]

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.

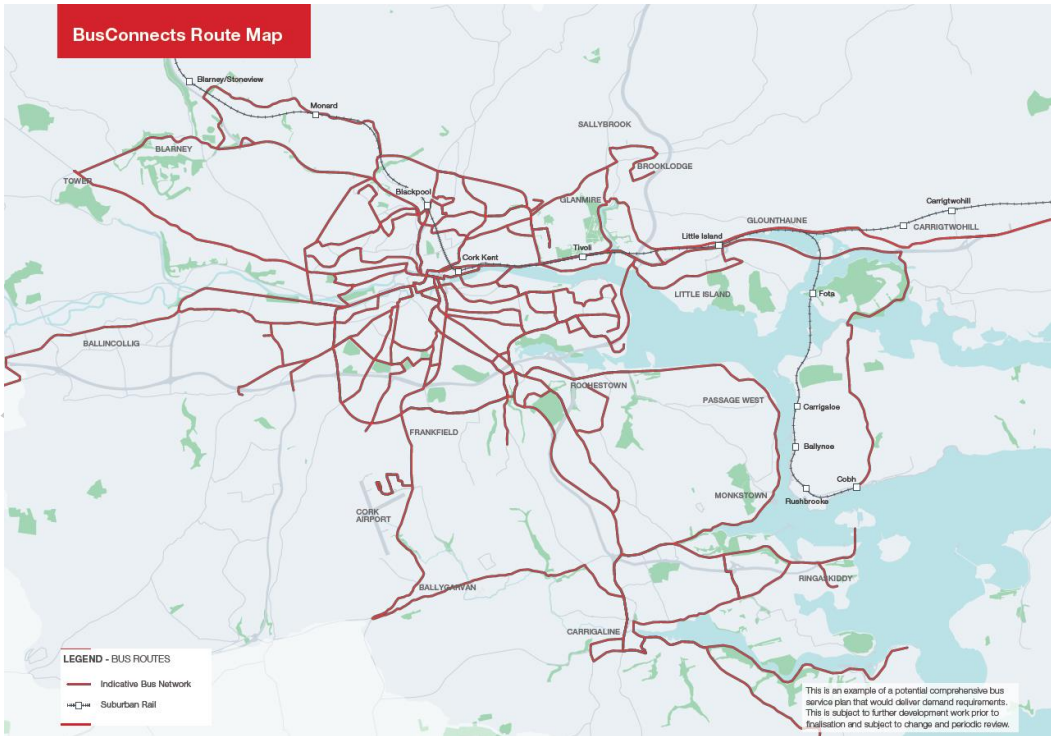


Figure 3: BusConnects Route Map [Source: CMATS]

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.

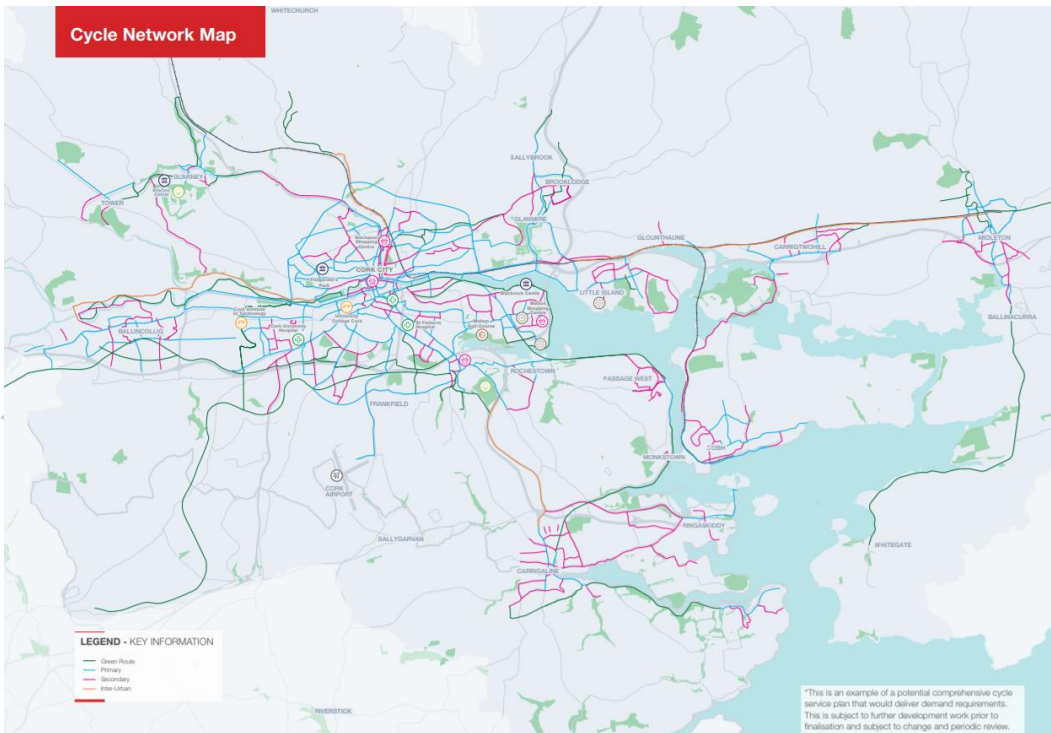


Figure 4: Cycle Network Map [Source: CMATS]

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 Draft Cork City Development Plan 2022-2028

The Draft 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. Figure 5 below illustrates the proposed Cork City network.

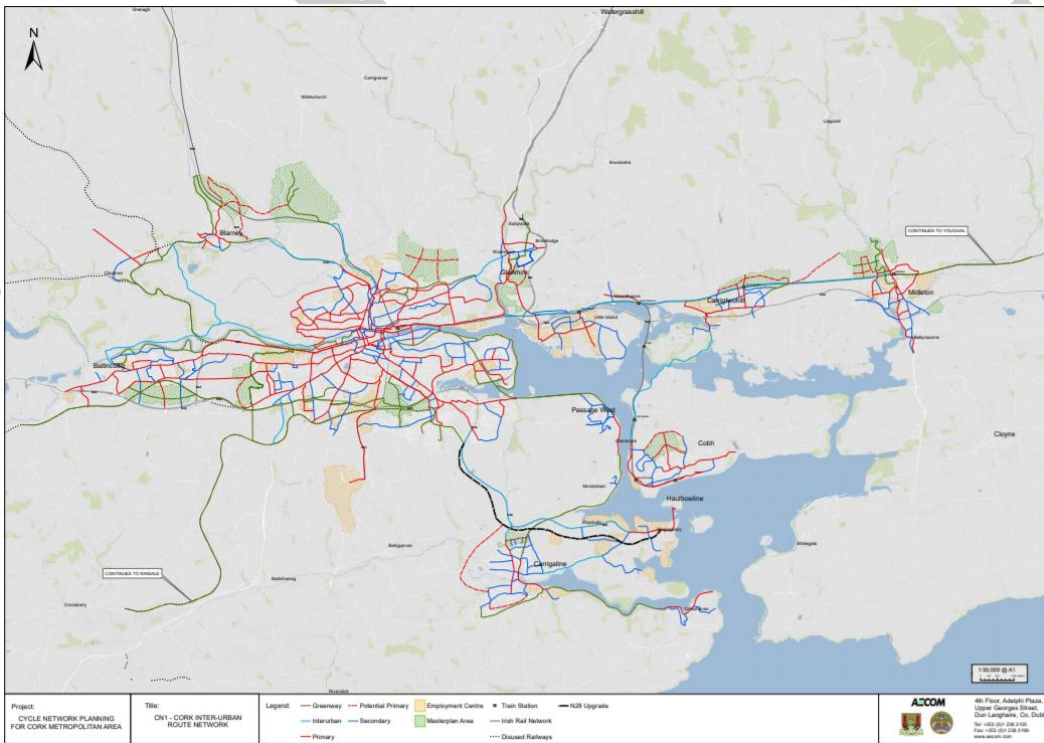


Figure 5: Cycle Network Map [Source: Cork Cycle Network Plan 2017]

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; and
- Greenways, representing 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 8 Study Area

The extent of the CBC 8 corridor 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 junction of Spur Hill and Sarsfield Road, to the south of the N40 Sarsfield Road Interchange. Potential route options were developed from this notional starting point. The notional end point of the CBC 8 corridor was identified as the junction of Washington Street and Grand Parade in the centre of Cork City.

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

In some instances, where very local route options were available, these were analysed as part of a localised option assessment process.

At the southern end of CBC 8, the study area was developed to include all relevant streets and roads, including Spur Hill, Sarsfield Road, Lehenaghmore Road, Togher Road and Pouladuff Road. Continuing north, Glasheen Road, Lough Road, Vicars Road and Pearse Road were included, continuing north to Bandon Road, Noonan Road, Gregg Road, Gillabbey Street, Bishop Street, Sharman Crawford Street, Proby's Quay, South Main Street and Washington Street.

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 6 (Ballincollig to City Centre) and CBC 7 (Bishopstown to City Centre).

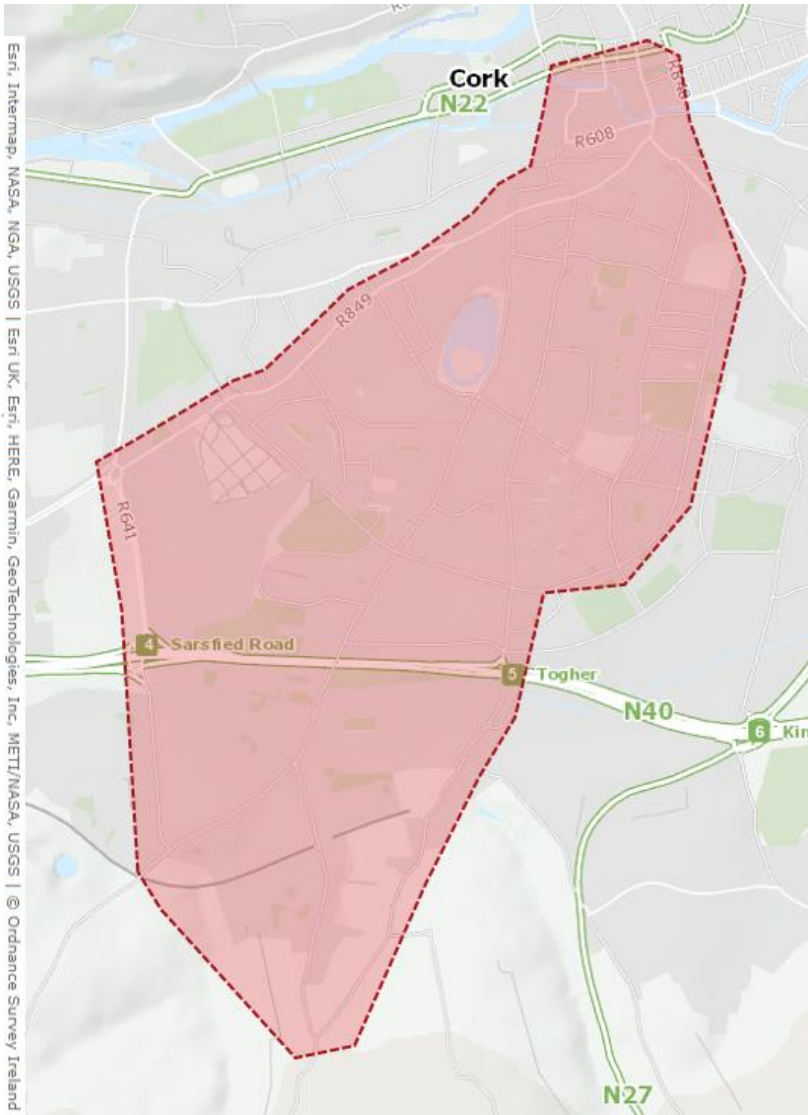


Figure 6: CBC 8 Study Area

4.1 Study Area Sub-Sections

As outlined above, the study area for CBC 8 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 – Spur Hill to Bishop Street; and
- Section 2 – Bishop Street to City Centre.

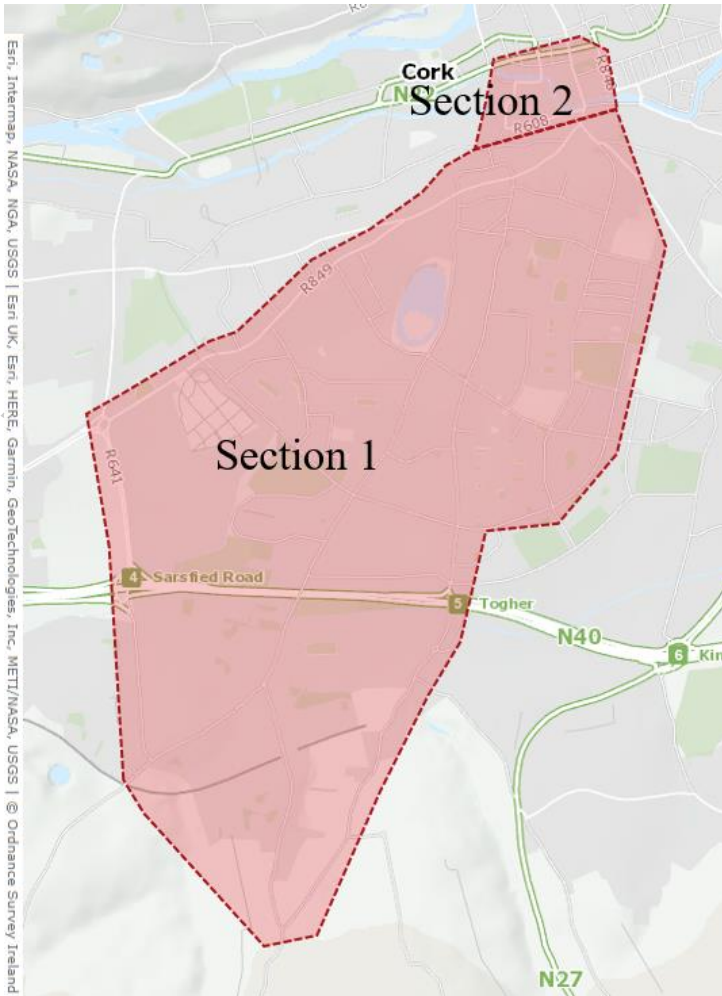


Figure 7: Individual Study Area Sections

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, the N22 Western Road/Dyke Parade/Lancaster Quay/Washington Street, etc. and the major junctions on these routes;
- The R641 Sarsfield Road, a key traffic route linking the N40 South Ring Road to the N22 Western Road/Carrigrohane Road;
- The River Lee (including north and south channels) and Curraheen River;
- Public park areas including Togher Community Park, Neenan Park, Clashdub Park, the amenity space at The Lough, etc.;
- Numerous NIAH-designated and protected structures/monuments along the route;
- The existing urban and suburban roads and street networks, including a number of streets that currently operate as one-way routes due to their physical constraints;
- 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
- Significant numbers of 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 planned BRT/LRT system for Cork, linking Ballincollig to Mahon via the City Centre (currently at route selection stage, with an indicative route set out within CMATS);
- The BusConnects Cork City Network Route Map, outlined in the Cork Metropolitan Area Transport Strategy (CMATS);
- Other proposed BusConnects Cork CBC 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 and Kent Rail Station.

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 under a controlled environment. 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 or general traffic 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.

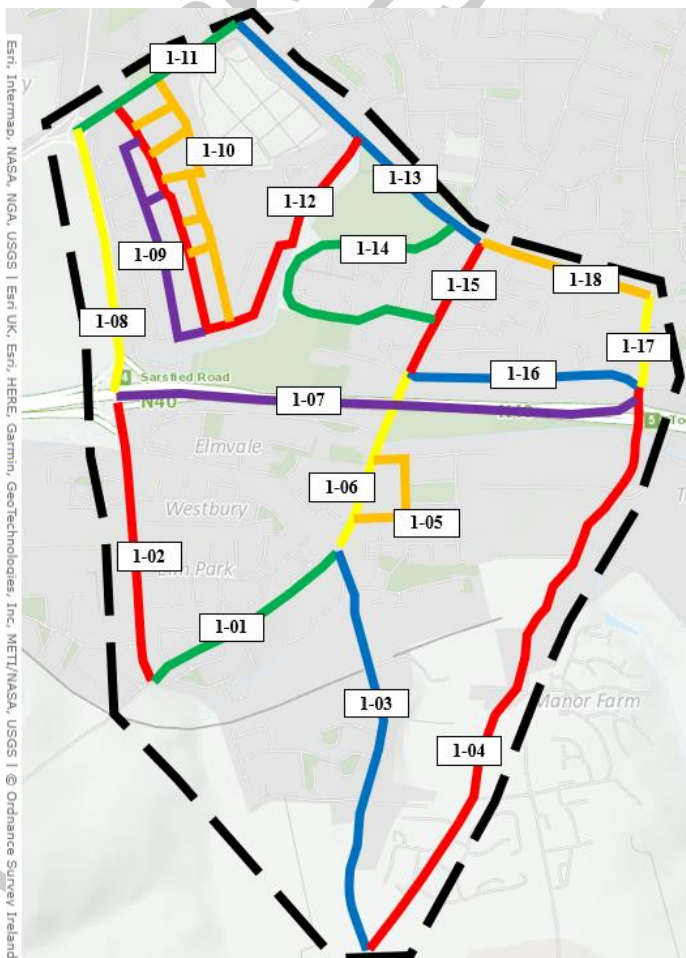


Figure 8: Sample Spiders Web of Route Options

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 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.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). Earthworks (embankment treatments retaining walls, slopes re-grading, etc).	€1,400,000

Category	Construction Works	Cost
	Pavement full depth reconstruction. Property boundary reinstatement works (walls, gates, driveways landscaping etc).	

1.a. 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 15-minute 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.

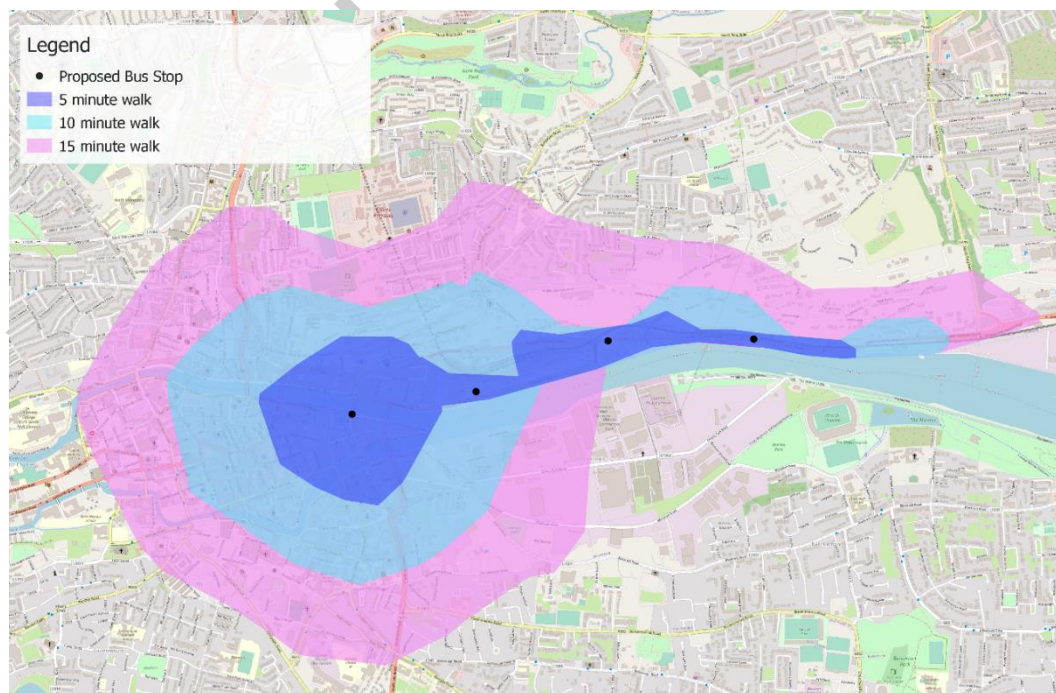


Figure 9: Sample bus stop catchment map with walking isochrones shown at 5/10/15 minute intervals

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.

2d 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; and
- 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
Light Red	Some disadvantages compared to the other options
Red	Significant disadvantages compared to the other options

NOTE: Where all options assessed are considered comparatively equal in terms of advantage/disadvantage they are 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 criteria 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 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.

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 – Spur Hill to Bishop Street

Section 1 of CBC 8 comprises potential options that are available between the junction of Spur Hill and Sarsfield Road to the south and the junction of Bishop Street/Gillabbe Street to the north.

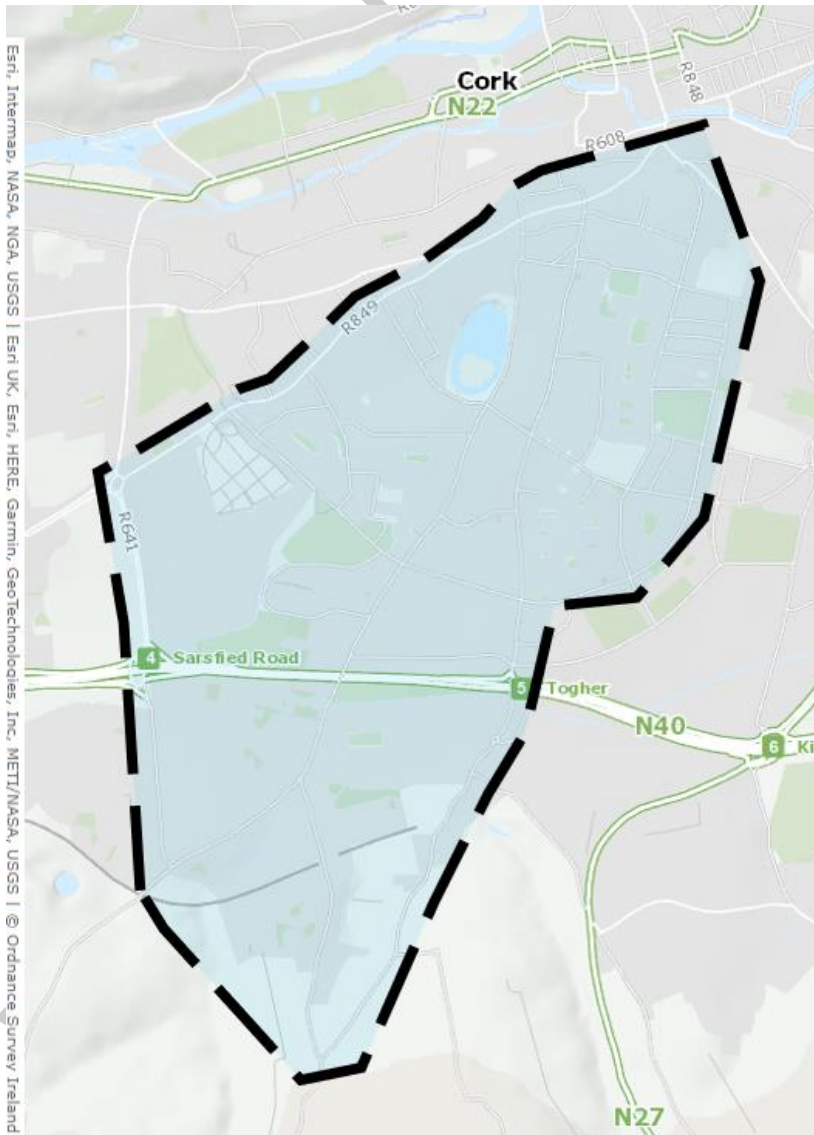


Figure 10: Section 1 – Extent of Study Area

Due to the number of potential route options available, for legibility the study area for Section 1 has been divided into two smaller areas (for the purpose of the Stage 1 Assessment only), comprising the southern portion of the Stage 1 Study Area (up to the Clashdub Road and Vicars Road/Connolly Road) and the northern portion (up to Bishop Street).

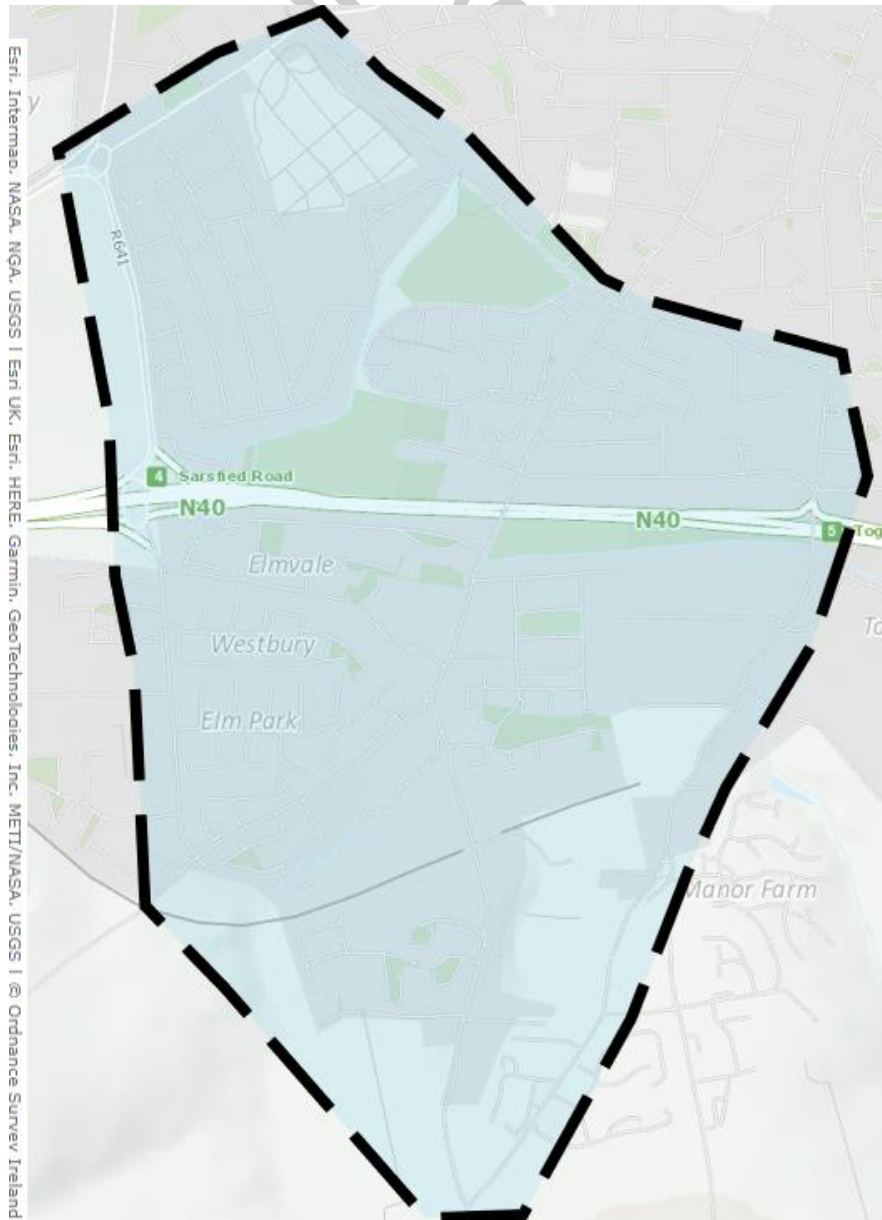


Figure 11: Section 1 Study Area – Southern Portion

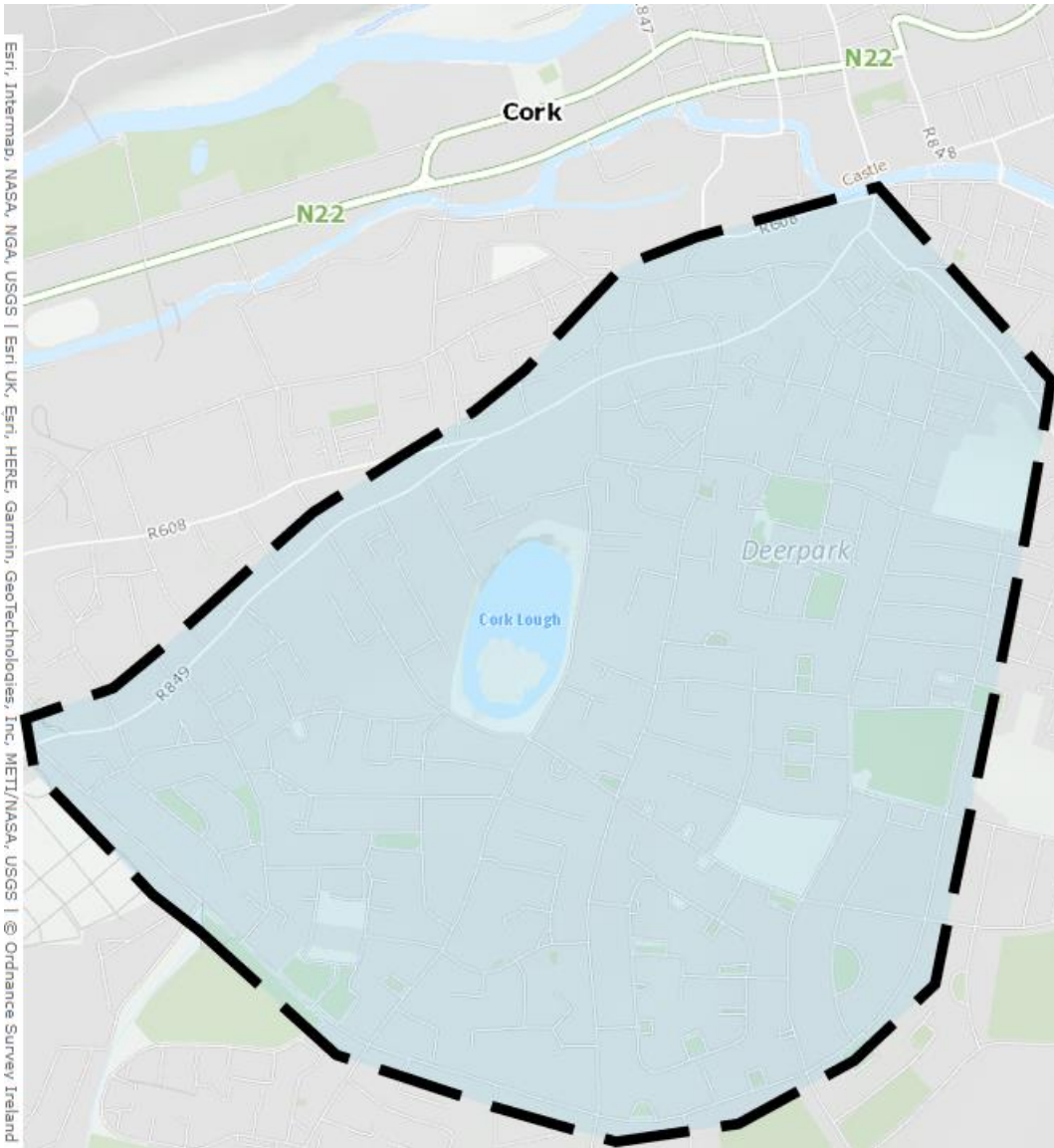


Figure 12: Section 1 Study Area – Northern Portion

The Stage 1 Assessment includes for the sifting of all possible through links within the study area and Figure 13 presents the links within the southern portion of the study area that have been initially identified.

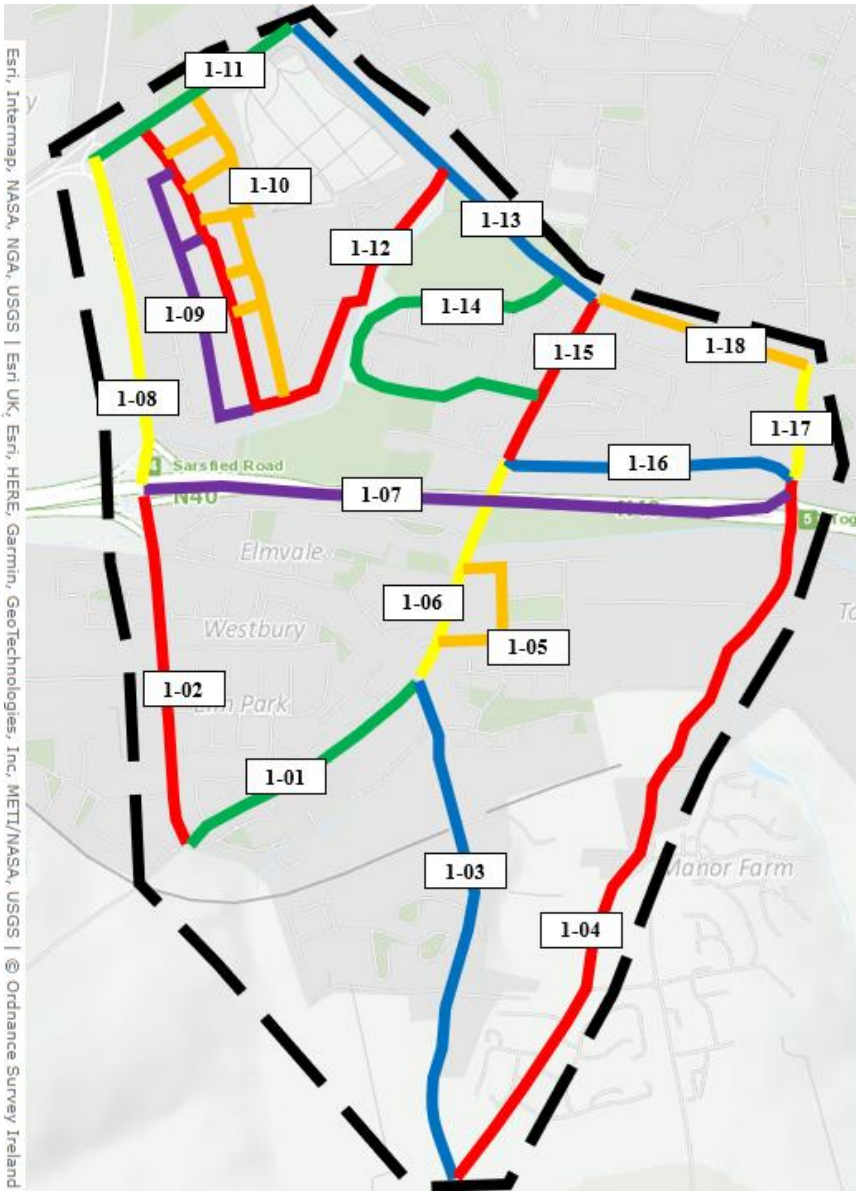


Figure 13: Section 1 – Southern Portion Stage 1 Assessment Links

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

Table 5: Section 1 – Southern Portion - Route Option Sifting (Stage 1) Summary

Route Option Number	Description	Part of CMATS Cycle Network	Comments	Pass/Fail
1-01	Spur Hill, from Sarsfield Road to the Roundabout at Togher Road	Primary	Spur Hill, from Sarsfield Road to the entrance roundabout at Togher Village is a standard two-lane carriageway with a footpath present on both sides of the for the majority. There are houses and housing estates along this route with access onto it or with boundaries directly adjacent. Typical width along this section of the route is 8-12m. Localised widening of the route to 16m would be possible with land acquisition, whereas widening to 20m would require more significant land acquisition. This is therefore considered feasible as a connecting route and is carried forward to the Stage 2 assessment.	Pass
1-02	Sarsfield Road, from the Sarsfield Road Roundabout to Spur Hill.	Secondary	Sarsfield Road, along the route between the Sarsfield Road Roundabout and Spur Hill is a two-way single carriageway, with localised widening towards the southern end to accommodate right-turning lanes at the junction with Eagle Valley. It has footpaths present on both sides of the road and is bounded by residential and industrial properties and green	Pass

Route Option Number	Description	Part of CMATS Cycle Network	Comments	Pass/Fail
			<p>buffer space adjacent to the carriageway. The typical width of this carriageway is approximately 10m but could easily be widened to 20m due to there being grasses areas on either side of the road.</p> <p>This is therefore considered feasible and is carried forward to the Stage 2 assessment.</p>	Pass
1-03	Togher Road (south), from Spur Hill to Lehenaghmore	Partially Secondary	<p>Togher Road (south) is an urban road that quickly transitions to a rural two-way traffic route as it heads south from Togher Village. There are footpaths on both sides from the roundabout to the Cork Recycling Centre, a footpath on one side to the Alderbrook Estate and then no footpaths on the remainder. It has a typical width of 6-12m. There are a number of properties on either side of the route with direct accesses onto the route. Localised widening of the route to 16m would require land acquisition (walls, gardens and agricultural land), whereas widening to 20m would require more significant land acquisition.</p> <p>This represents an indirect route and would require buses to follow a substantial deviation south and then north via Lehenaghmore Road, and as such it is not considered feasible and is not carried forward to the Stage 2 assessment.</p>	Fail
1-04	Lehenaghmore/Pouladuff Road from Togher Road to Tramore Road Roundabout north of N40.	Secondary	<p>This link is a two-way carriageway route throughout with little to no footpaths present along much of the link. There are 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 and is very rural in character towards the southern end.</p> <p>There is a roundabout at the northern end route with links to the N40 South Ring Road and to Sitecast Industrial Estate. The route transverses the N40 at a bridge with width of 11-12m.</p> <p>Widening of the route to 16m would involve land acquisition (walls, gardens & driveways), whereas widening to 20m would involve more significant land acquisition.</p> <p>This represents an indirect route and would require buses to follow a substantial deviation south via Togher Road from Spur Hill and then north via Lehenaghmore Road, and as such it is not considered feasible and is not carried forward to the Stage 2 assessment.</p>	Fail
1-05	Greenwood Estate from Togher Rd (S) to Togher Rd (N)	No	<p>This section is a two-lane carriageway with footpaths on both sides. There are properties along the route with direct access onto the road. There is on street parking throughout on both sides. Typical width along this section of the route is 10m. 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 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
1-06	Togher Road, Tramore Road to Spur Hill.	Primary	<p>Togher Road is an urban two-way traffic route which passes directly through Togher Village. There are footpaths on both sides. It has a typical width of 12-24m width. There are a number of properties on either side of the route with direct accesses onto the route.</p> <p>An urban realm improvement scheme is currently under construction in the village centre by Cork City Council, which will see enhanced footpaths and cycle facilities and a reduction of carriageway space for other uses.</p> <p>Localised widening of the route to 16m would require land acquisition (walls and gardens), whereas widening to 20m would require more significant land acquisition.</p> <p>Although widening of the link may not be desirable due to the impact on the public realm improvement scheme being constructed at present, the</p>	Pass

Route Option Number	Description	Part of CMATS Cycle Network	Comments	Pass/Fail
			route remains a feasible route as a connecting onward link and as such is carried forward to the Stage 2 assessment.	
1-07	N40 South Ring Road, Pouladuff Road to Sarsfield Road	No	<p>This section is a two-way dual carriageway road with three lanes running in each direction. The typical width of this section is 25m. Routing of buses along this link would be feasible through re-designation of existing lanes (although no bus priority would be possible on the slip lanes).</p> <p>This link is however considered undesirable as a route as it would require buses to deviate significantly east or west from the corridor, and as such is not carried forward to the Stage 2 assessment.</p>	Fail
1-08	R641 Sarsfield Road from the Wilton Roundabout to the Sarsfield Road Roundabout	Secondary	<p>The Sarsfield Road, between the Wilton Roundabout and the Sarsfield Interchange is a dual carriageway route. Heading north from the Sarsfield Interchange, the route has two northbound traffic lanes, subsequently widening to provide a northbound bus lane/left-turning lane into Wilton Shopping Centre and a right-turning lane to Wilton Court, a northbound raised adjacent cycle lane, and two southbound traffic lanes from the Wilton Shopping Centre entrance, widening to three lanes to facilitate a turning lane into the ESB depot, and a southbound raised adjacent cycle lane, with a concrete central median.</p> <p>From the Wilton Shopping Centre to Wilton Roundabout, the northbound bus lane merges with general traffic for a portion of the route, before the northbound side of the route then widens again to provide an additional section of northbound bus lane, which then merges back into the two/three traffic lanes at the roundabout. There is also a raised adjacent/on-road northbound cycle lane, which continues up to the Wilton Roundabout. In the southbound direction there are two traffic lanes and a raised adjacent cycle lane.</p> <p>Typical width along this section of the route varies from 20-35m depending on the lane configuration and the adjacent land uses. Provision of bus priority along this route would likely involve road re-designation and some potential land acquisition, and this route is therefore considered feasible and is carried forward to the Stage 2 assessment.</p>	Pass
1-09	Summerstown Drive, Summerstown Road to Southbury Road	No	<p>This section is a two-lane carriageway with footpaths on both sides. There are properties along the route with direct access onto the road. There is on street parking throughout on both sides. Typical width along this section of the route is 10m. 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 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
1-10	Summerstown Grove and Green Park, Southbury Road to Glasheen Road	No	<p>This section is a two-lane carriageway with footpaths on both sides. There are properties along the route with direct access onto the road. Typical width along this section of the route is 10m. 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 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
1-11	R849 Glasheen Road, Wilton Road Roundabout to Clashduv Road	Primary	<p>R849 Glasheen Road, between the Wilton Road Roundabout and Clashduv Road is a two-lane carriageway with footpaths on both sides. There are properties along the route with direct access onto the road on both sides throughout and St. Finbarr's Cemetery to the south, as well as some street</p> <p>Typical width along this section of the route is 11-14.5m. 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>However the route is an important connecting link and as such has been retained for the Stage 2 assessment.</p>	Pass

Route Option Number	Description	Part of CMATS Cycle Network	Comments	Pass/Fail
1-12	Summerstown Road/ Sandymount Avenue/ Riverview estate from Glasheen Road to Clashduv Road	No	<p>This section is a residential road with two-lane carriageway throughout, footpaths on both sides and on street parking. Typical width is 6m. Widening to 16m or 20m would involve 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
1-13	Clashduv Road, Glasheen Road to Togher Road	Secondary	<p>This section is a two lane carriageway with footpaths and grass verges 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 15-16m. Localised widening of the route to 20m would require land acquisition (walls & gardens).</p> <p>This is, however, a key link and is therefore carried forward to the Stage 2 assessment.</p>	Pass
1-14	Deanrock Ave, from Clashduv Road to Togher Rd	No	<p>This section is a two-lane carriageway with footpaths on both sides along with grass areas surrounding the road. There are properties along one side of the route with indirect access onto the road via small feeder roads. Typical width along this section of the route varies considerably due to the nature of the green areas adjacent. 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 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
1-15	Togher Road, Tramore Road to Vicars Road	Primary	<p>This section is a two-lane 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 11-13m. Localised widening of the route to the north to 16m is achievable but constraints to the south would require land acquisition (walls & gardens), whereas widening to 20m would require more significant land acquisition.</p> <p>The route is a connecting route and as such is carried forward to the Stage 2 assessment.</p>	Pass
1-16	Tramore Road, roundabout at Pouladuff Road to roundabout at Togher Road	No	<p>This section is a two-lane 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 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>The route is a suitable connecting link between Togher Road and Pouladuff Road and as such is carried forward to the Stage 2 assessment.</p>	Pass
1-17	Lower Pouladuff Road, Tramore Road to Connolly Road	Secondary	<p>This section is a two-lane carriageway with footpaths on both sides and an on road cycle lane on the western side. There are a number of properties along the route with direct access onto the route. 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 link is nevertheless a connecting route and is therefore carried forward to the Stage 2 assessment.</p>	Pass
1-18	Vicars Road, Pouladuff Road to Togher Road	Secondary	<p>This link is a two-lane carriageway route throughout with grass verges and lots of trees on both sides, footpaths on both sides of the route and a cycle lane on the southern aspect of the route. The route is characterised by properties and businesses on both sides of the route and a filling station to the south of the route, majority of which are set back a distance from the route. Widening the route to 16m would be possible with a moderate</p>	Pass

Route Option Number	Description	Part of CMATS Cycle Network	Comments	Pass/Fail
			<p>degree of intervention, whereas widening to 20m would involve land acquisition (surface carparking and green areas predominantly).</p> <p>The route is therefore considered feasible and as such is carried forward to the Stage 2 assessment.</p>	

Following the Stage 1 sifting exercise, 10 of the 18 route options assessed passed the initial sifting stage and were progressed to the next assessment stage. These route options are presented in Figure 14.

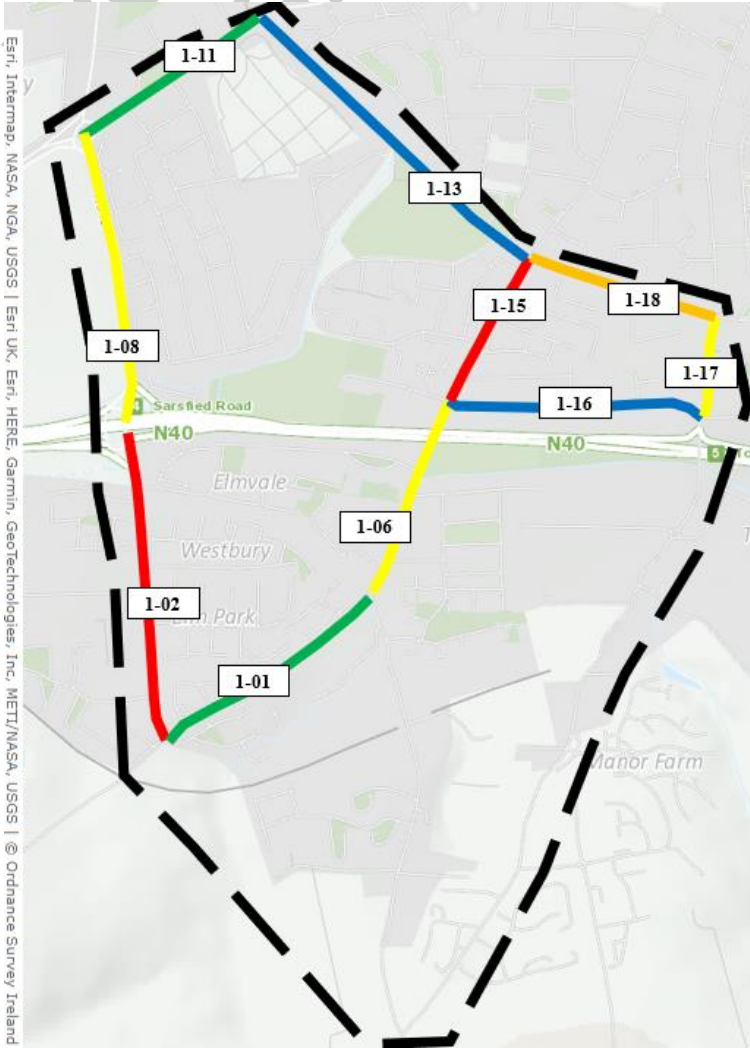


Figure 14: Section 1 – Southern Portion Route Options remaining after Stage 1 Sift

For the northern portion of Section 1, Figure 15 presents the links within the southern portion of the study area that have been initially identified.

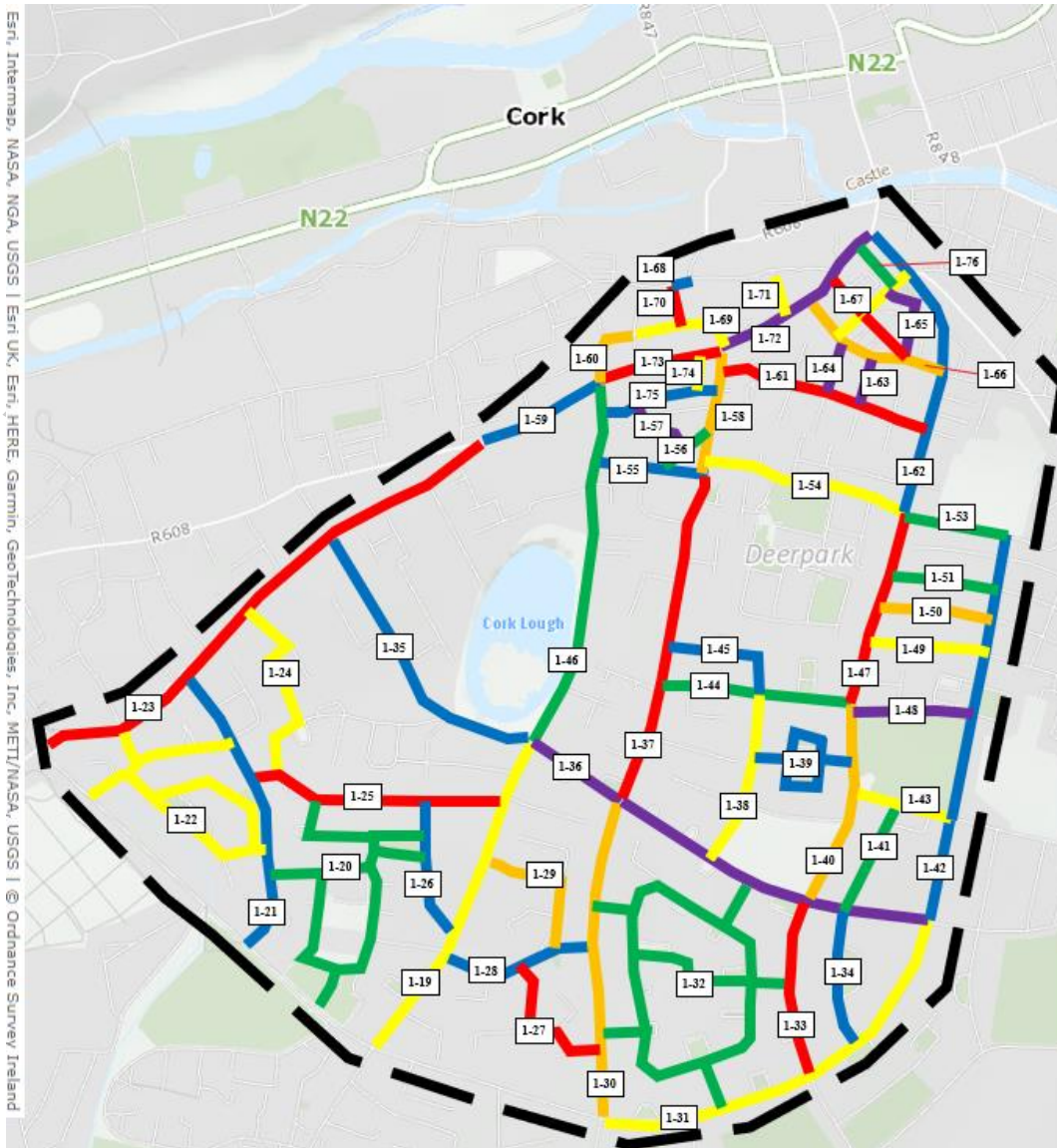


Figure 15: Section 1 – Northern Portion Stage 1 Assessment Links

A summary of the Stage 1 route options sifting process for the northern portion is presented in Table 6.

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

Route Option Number	Description	Part of CMATS Cycle Network	Comments	Pass/Fail
1-19	Togher Road, from Vicars Road to Pearse Road	Primary	<p>Togher Road, from Vicars Road to Pearse Road is a standard two-lane carriageway with footpaths on both sides, and on-street parking on one or both sides. There are a number of residential properties along the route with direct access onto the route. Typical width along this section of the route varies from between 12m-20m with a number of pinch points where building to building width is approximately 10m.</p> <p>Localised widening to 16m would be possible for most of the route through land acquisition (primarily gardens or driveways), whereas widening to 20m would require more extensive land acquisition.</p> <p>This route is considered feasible and is carried forward to the Stage 2 assessment.</p>	Pass
1-20	Elm Road, Hazel Road, Cherry Tree Road, Earlwood Estate	No	<p>Elm Road, Hazel Road, Cherry Tree Road and Earlwood Estate are predominantly residential estate roads, with Lidl also accessed via Elm Road. These routes are typically fronted by residential properties with direct access, with footpaths and on-street parking on both sides. Typical width is 10-13m.</p>	Fail

Route Option Number	Description	Part of CMATS Cycle Network	Comments	Pass/Fail
	Earlwood Estate		These are considered indirect routes for buses through predominantly residential estate roads and as such are not carried forward to the Stage 2 assessment.	
1-21	Whitebeam Road/Hillside Road, Clashdub Road to Glasheen Road	No	Whitebeam Road/Hillside Road are connecting roadways between Clashdub Road and Glasheen Road. The routes are bounded by residential properties on both sides, with footpaths present and on-street parking on one side of the road. Typical width is approximately 12-13m. These are considered indirect routes for buses through predominantly residential estate roads and as such are not carried forward to the Stage 2 assessment.	Fail
1-22	Glendale Road/ Glendale Grove	No	Glendale Road/ Glendale Grove are predominantly residential estate roads. These routes are typically fronted by residential properties with direct access, with footpaths and on-street parking on both sides. Typical width is 10-13m. These are considered indirect routes for buses through predominantly residential estate roads and as such are not carried forward to the Stage 2 assessment.	Fail
1-23	R849 Glasheen Road, Clashdub to Bandon Road	Primary	R849 Glasheen Road, Clashdub Road to Bandon Road is a two-lane carriageway with footpaths on both sides. There are a properties along the route with direct access onto the road on both sides throughout as well as some street fronting businesses towards Bandon Road and sections of on street parking throughout on one side of the route (both parallel and perpendicular to the route). Typical width along this section of the route is varies from 8-9m to 13-14m. Localised widening of the route to 16m would require land acquisition (walls & gardens), whereas widening to 20m would require more significant land acquisition. However, this is a feasible connecting route and as such this link has been retained for the Stage 2 assessment.	Pass
1-24	Croaghta Park, Glasheen Road to Leafdale	No	Croaghta Park, Glasheen Road to Leafdale is a narrow carriageway with one section of footpath at the northern end but no footpaths on either side to the south. There are properties along the route with direct access onto the road. Typical width along this section of the route is 4.5-8.5m. Localised widening of the route to 16m would require land acquisition (properties, walls & gardens). This is not considered a feasible route and is not carried forward to the Stage 2 assessment.	Fail
1-25	Hillside Drive/ Earlwood Estate	No	Hillside Drive/ Earlwood Estate are typically two-lane carriageway with footpaths and grass verges 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 13.5m. Localised widening of the route to 16m would require land acquisition (walls & gardens), whereas widening to 20m would require more significant land acquisition. These are considered indirect routes for buses through predominantly residential estate roads and as such are not carried forward to the Stage 2 assessment.	Fail
1-26	Earlwood Estate (south), to Togher Road	No	Earlwood Estate (south), to Togher Road is a two-lane 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 13.5-15m. Localised widening of the route would require land acquisition (walls & gardens), whereas widening to 20m would require more significant land acquisition. This is considered an indirect route for buses through predominantly residential estate roads and as such is not carried forward to the Stage 2 assessment.	Fail
1-27	Charles Daly Road/Michael	No	Charles Daly Road/Michael Fitzgerald Road are typically two-lane carriageway with footpaths on both sides along most of the route, only	Fail

Route Option Number	Description	Part of CMATS Cycle Network	Comments	Pass/Fail
	Fitzgerald Road		<p>one footpath is present in sections. There are a number of properties along the route with direct access onto the route. Typical width along this section of the route is 7.5-10m. Localised widening of the route to 16m but would require land acquisition (walls & gardens), whereas widening to 20m would require more significant land acquisition.</p> <p>This is considered an indirect route for buses through predominantly residential estate roads and as such is not carried forward to the Stage 2 assessment.</p>	Fail
1-28	Edward Walsh Road	No	<p>Edward Walsh Road is a two-lane carriageway with footpaths on both sides. There are numerous properties along the route with direct access onto the route. Typical width along this section of the route is 14-15m. 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>The route is potentially suitable as a connecting link from Togher Road to Pouladuff Road and as such is carried forward to the Stage 2 assessment.</p>	Pass
1-29	Ardmanning Avenue and Patrick Trahy Road, Togher Road to Edward Walsh Road	No	<p>Ardmanning Avenue and Patrick Trahy Road, Togher Road to Edward Walsh Road is a two-lane carriageway with footpaths on both sides. There are a number of properties along the route with direct access onto the route and parking on both sides of the route. Typical width along this section of the route is 7.5-10m. 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 considered an indirect route for buses through predominantly residential estate roads and as such is not carried forward to the Stage 2 assessment.</p>	Fail
1-30	Pouladuff Road, Vicars Road to Pearse Road	No	<p>Pouladuff Road, Vicars Road to Pearse Road is typically a two-lane carriageway throughout with on-street parking on one or both sides of the route, and footpaths either side. The route is bounded on both sides by predominantly residential properties, many of which have front gardens or driveways. Typical width is 12-15m.</p> <p>Localised widening to 16m would require land acquisition (driveways or gardens) whereas widening to 20m would potentially require property demolition.</p> <p>The route is a connecting link and is therefore considered feasible and is carried forward to the Stage 2 assessment.</p>	Pass
1-31	Connolly Road, Pouladuff Road to Pearse Road	Secondary	<p>Connolly Road, Pouladuff Road to Pearse Road is typically a two-lane carriageway throughout with on-street parking on one or both sides of the route, and footpaths either side. The route is bounded on both sides by predominantly residential properties, many of which have front gardens or driveways. Typical width is 15-16m.</p> <p>Localised widening to 16m would require limited land acquisition (portions driveways or gardens) whereas widening to 20m would require more extensive land acquisition.</p> <p>The route is a connecting link and is therefore considered feasible and is carried forward to the Stage 2 assessment.</p>	Pass
1-32	Connolly Green, McDonagh Road, Plunkett Road, Father Dominic Road	No	<p>These roads are residential estate roads, and are typically two-lane carriageway with footpaths on both sides and on-street parking on one or both sides.</p> <p>Typical width is approximately 10m. Widening to 16m or 20m would involve extensive land acquisition and potential property demolition.</p> <p>These are considered indirect routes for buses through predominantly residential estate roads and as such are not carried forward to the Stage 2 assessment.</p>	Fail
1-33	Lower Friar's Walk, from Connolly	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</p>	Fail

Route Option Number	Description	Part of CMATS Cycle Network	Comments	Pass/Fail
	Road to Pearse Road		the building-to-building pinch point width is 22m, so local widening to 16m or 20m would require land acquisition of front gardens. This link is considered not feasible and is not carried forward to the Stage 2 assessment.	
1-34	Clarke's Road, from Connolly Road to Pearse Road	No	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). 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
1-35	Glendalough Park/ Hartland's Avenue	Primary	Glendalough Park/ Hartland's Avenue is typically a two lane carriageway with footpaths on both sides. There are a number of properties along the route with direct access onto the route and there is some parking on the eastern side of the route. The Lough also bounds Glendalough Park to the north. Typical width along this section of the route is 8-9m. Localised widening of the route to 16m require land acquisition (walls & gardens), whereas widening to 20m would require more significant land acquisition. This link is considered not feasible and is not carried forward to the Stage 2 assessment.	Fail
1-36	Pearse Road, from Togher Road/Lough Road to Connolly Road	Primary	Pearse Road, from Togher Road/Lough Road to Connolly Road is a two-lane carriageway with footpaths and grass verges on both sides. There are a number of residential properties along the route with direct access onto the route and there is parking on both sides of the road. Typical width along this section of the route is 17-18m. Localised widening of the route to 20m but would require land acquisition (walls & gardens). This is therefore considered feasible and is carried forward to the Stage 2 assessment.	Pass
1-37	Pouladuff Road, from Pearse Road to Gould Street	No	Pouladuff Road, from Pearse Road to Gould Street is a two-lane carriageway with footpaths on both sides and 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 varies significantly, from 7.5-16m. Localised widening of the route to 16m would require land acquisition (properties, walls & gardens) in places. The route is a connecting link and is therefore considered feasible and is carried forward to the Stage 2 assessment.	Pass
1-38	Nun's Walk, from Pearse Road to Clareville Estate	No	Nun's Walk, from Pearse Road to Clareville Estate is a residential estate road, with two-lane carriageway throughout. There are a number of residential properties along the route with direct access onto the route and there is parking on both sides of the road. Typical width along this section of the route is 9-10m. Localised widening of the route to 16m would require land acquisition (walls & gardens), whereas widening to 20m would require more significant land acquisition. This link is considered not feasible and is not carried forward to the Stage 2 assessment.	Fail
1-39	Loretto Park	No	Loretto Park is a series of residential estate roads, with two-lane carriageway throughout and footpaths generally on one side of the road. There are a number of residential properties along the route with direct access onto the route and there is parking on both sides of the road. Typical width along this section of the route is 9-10m. Localised widening of the route to 16m would require land acquisition (walls & gardens), whereas widening to 20m would require more significant land 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.	Fail

Route Option Number	Description	Part of CMATS Cycle Network	Comments	Pass/Fail
1-40	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>From Pearse Road to Tory Top Road it 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>Although this portion of Friar's Walk would be considered feasible, it connects to a link that has not passed further north and as such this link is considered not feasible and is not carried forward to the Stage 2 assessment.</p>	Fail
1-41	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. Typical width is approximately 9m. Widening of the route to 16m or 20m would involve extensive land and property acquisition.</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
1-42	Connolly Road/Mount Pleasant Road, from Connolly Road to St. Patricks Road	No	<p>Connolly 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> <p>Localised widening of the route to 16m or 20m would involve land and potential property acquisition (walls, gardens, driveways & green area).</p> <p>In addition, routing via Mount Pleasant Road represents an indirect route for buses along the corridor compared to other route options, and therefore this is not considered feasible and is therefore not carried forward to the Stage 2 assessment.</p>	Fail
1-43	Tory Top Road, south of Tory Top Park	No	<p>Tory Top Road, south of Tory Top Park 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 commercial properties on the southern side of the route with direct access and Ballyphehane Community Centre, and Tory Top Library are also along the route.</p> <p>Typical width is approximately 17m. Widening of the route to 20m would involve land acquisition.</p> <p>This would be considered a feasible route; however, it connects to other links that have not, and as such it is therefore considered not feasible and is not carried forward to the Stage 2 assessment.</p>	Fail
1-44	Clareville Estate/Reendowney Place	No	<p>Clareville Estate is a two-lane carriageway with footpaths on both sides and parking on the northern side. There are a number of residential properties along the route with direct access onto the route. Reendowney Place is a two-lane carriageway with footpaths on both sides and parking on the southern side. There are also a number of residential properties along the route with direct access onto the route.</p>	Fail

Route Option Number	Description	Part of CMATS Cycle Network	Comments	Pass/Fail
			<p>Typical width along this section of the route is 10m. 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 not considered feasible and is therefore not carried forward to the Stage 2 assessment.</p>	
1-45	Nun's Walk, from Clareville Estate to Pouladuff Road	No	<p>Nun's Walk, from Clareville Estate to Pouladuff Road is a two lane carriageway with footpaths on both sides and parking scattered throughout. There are a number of properties along the route with direct access onto the route. Typical width along this section of the route is 10m. 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 not considered feasible and is therefore not carried forward to the Stage 2 assessment.</p>	Fail
1-46	Lough Road, from Pearse Road to Bandon Road	Primary	<p>Lough Road, from Pearse Road to Bandon Road is a two lane carriageway with footpaths on both sides and parking scattered throughout on the eastern side. There are a number of residential properties along the route with direct access onto the route, and the route is bounded to the west by the Lough and the green area adjacent. The Church of the Immaculate Conception bounds the road to the west at the northern end.</p> <p>Typical width along the southern end is approximately 10m.</p> <p>To the north, the route narrows significantly after passing Valentine Villas, to a pinch point width of 7m (boundary to boundary). Further north, approaching the junction with Bandon Road the typical width is approximately 9m.</p> <p>Localised widening of the route at the southern end would require encroachment into the green area adjacent to the Lough, whereas widening towards the northern end would require demolition of buildings.</p> <p>This is however an important connecting route to the city and as such it is carried forward to the Stage 2 assessment.</p>	Pass
1-47	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
1-48	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
1-49	Derrynane Road, from Mount Pleasant Road	No	<p>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</p>	Fail

Route Option Number	Description	Part of CMATS Cycle Network	Comments	Pass/Fail
	to Friar's Walk		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.	
1-50	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
1-51	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
1-53	St. Patrick's Road, from Mount Pleasant Road to Friar's Walk	Primary	St. Patrick's Road, from Mount Pleasant Road to Friar's Walk is a two-lane carriageway with footpaths on both sides and on-street parking on the southern side. The route is fronted by residential properties to the south and bounded to the north by the boundary wall of Deerpark CBS sports grounds and Deerpark CBS itself. The on-street parking narrows the available carriageway width to the extent that two-way traffic must operate on a give-way basis. Typical width is approximately 9.5m. Widening the route would involve land acquisition. This route is therefore considered not feasible and is not carried forward to the Stage 2 assessment.	Fail
1-54	Deerpark, from Friar's Walk to Pouladuff Road	Primary	Deerpark, from Friar's Walk to Pouladuff Road is a two-lane carriageway with footpaths on both sides and parking on the northern side. There are a number of properties along the route with direct access onto the route. Typical width along this section of the route is 11.5m. Localised widening of the route to 16m would require land acquisition (walls & gardens), whereas widening to 20m would require more significant land acquisition. This route would represent an indirect route for buses along the corridor and connects to other route option links that have not passed. This route is therefore considered not feasible and is not carried forward to the Stage 2 assessment.	Fail
1-55	Gould Street, Greenmount to Lough Road	Primary	Gould Street, Greenmount to Lough Road is a narrow carriageway with footpaths on both sides and parking scattered throughout. There are a number of properties along the route with direct access onto the route. Typical width along this section of the route is 6.5-9m. Localised widening of the route to 16m would require land acquisition (properties, walls & gardens). This route is therefore considered not feasible and is not carried forward to the Stage 2 assessment.	Fail
1-56	Greenmount, Gould Street to Green Street	Primary	Greenmount, Gould Street to Green Street is a narrow carriageway with footpaths of varying width on both sides and on-street parking scattered throughout. There are a number of properties along the route with direct access onto the route.	Fail

Route Option Number	Description	Part of CMATS Cycle Network	Comments	Pass/Fail
			<p>The presence of on-street parking narrows the carriageway in locations that requires two-way traffic to operate on a shuttle basis.</p> <p>Typical width along this section of the route is 9m, with a section towards the south where wider footpaths increase the width to 15.5m. Localised widening of the route to 16m would require land acquisition (properties, walls & gardens).</p> <p>This route is therefore considered not feasible and is not carried forward to the Stage 2 assessment.</p>	
1-57	Greenmount Crescent, Greenmount to Greenmount Avenue		<p>Greenmount Crescent, Greenmount to Greenmount Avenue is a narrow carriageway with no footpaths and parking scattered throughout. There are a number of properties along the route with direct access onto the route. Typical width along this section of the route is 4-5.5m. Localised widening of the route to 16m would require land acquisition (properties, walls & gardens)</p> <p>This route is therefore considered not feasible and is not carried forward to the Stage 2 assessment.</p>	Fail
1-58	Pouladuff Road/Green Street, from Gould Street to Bandon Road	Partial Primary	<p>Pouladuff Road/Green Street, from Gould Street to Bandon Road is a two-lane carriageway with footpaths on both sides and on-street parking scattered throughout, typically on one side of the road. There are a number of residential properties along the route with direct front door access onto the route. Greenmount National School is also located on the eastern side of the road.</p> <p>Typical width along this section of the route is 10-11m. Localised widening of the route to 16m would require land acquisition (properties, walls & gardens).</p> <p>This is an onward connecting route and as such it is retained and carried forward to the Stage 2 assessment.</p>	Pass
1-59	Bandon Road, from Magazine Road to St. Finbarr's Road	Primary	<p>Bandon Road, from Magazine Road to St. Finbarr's Road is a two-lane carriageway with footpaths on both sides and on-street parking scattered throughout on one or both sides of the road. There are a number of residential and some commercial properties along the route with direct access onto the route. Typical width along this section of the route is approximately 10-12m. Localised widening of the route to 16m would require land acquisition (properties, walls & gardens).</p> <p>This is an onward connecting route and as such it is retained and carried forward to the Stage 2 assessment.</p>	Pass
1-60	St. Finbarr's Road, Bandon Road to Gregg Road	No	<p>St. Finbarr's Road, from Bandon Road to Gregg Road is a narrow carriageway with footpaths of varying width on both sides and parking scattered throughout. There are a number of properties along the route with direct access onto the route and a small section of green area to the west. Typical width along this section of the route is 7.5-12.5m.</p> <p>The route continues through to Noonan Road, where the typical width is approximately 15m, and there is on-street parking on both sides of the road.</p> <p>Localised widening of the route to 16m would require land acquisition (properties, walls & gardens) at the southern end. However, this link is suitable as a connecting route and therefore this route is considered feasible and is carried forward to Stage 2 assessment.</p>	Pass
1-61	Mount Sion Road and Desmond Square, Green Street to Friar's Walk	No	<p>Mount Sion Road and Desmond Square, Green Street to Friar's Walk is a two-way carriageway with footpaths on both sides and parking on the southern side. There are a number of properties along the route with direct access onto the route. Typical width along this section of the route is 11m. Localised widening of the route to 16m would require land acquisition (properties, walls & gardens).</p> <p>This route is therefore considered not feasible and is not carried forward to the Stage 2 assessment.</p>	Fail
1-62	Friar's Walk (upper) and	No	<p>Friar's Walk (upper) is a two-lane two-way carriageway route with on-street parking on the eastern side of the road and is fronted by residential</p>	Fail

Route Option Number	Description	Part of CMATS Cycle Network	Comments	Pass/Fail
	Friar Street/ Evergreen Street, from Deerpark to Barrack Street		<p>properties which open directly onto the street. Typical width is approximately 9m, with a pinch point of approximately 7m between buildings.</p> <p>Friar Street is also a two-way, two-lane carriageway route with footpaths and on-street parking on both sides of the route, with numerous residential properties with direct street access. Typical width is approximately 12m.</p> <p>Evergreen Street is a two-way, two-lane carriageway with on-street parking on the western side, and with footpaths on both sides. Again, there are numerous residential properties opening directly onto the street. Typical width is approximately 9m.</p> <p>Widening along these links would involve land and property acquisition, and these are also considered to form an indirect route as buses would have to route back west via Proby's Quay and Bishop Street to access the city centre.</p> <p>This route is therefore considered not feasible and is not carried forward to the Stage 2 assessment.</p>	
1-63	Presentation Place	No	<p>Presentation Place is a narrow carriageway with no footpaths and parking scattered throughout. There are a number of properties along the route with direct access onto the route. Typical width along this section of the route is 3.5-4.5m. Localised widening of the route to 16m would require land acquisition (properties, walls & gardens).</p> <p>This route is therefore considered not feasible and is not carried forward to the Stage 2 assessment.</p>	Fail
1-64	Mount Carmel Road	No	<p>Mount Carmel Road is a two-way carriageway with footpaths on both sides and parking scattered throughout. There are a number of properties along the route with direct access onto the route. Typical width along this section of the route is 12m. Localised widening of the route to 16m would require land acquisition (properties, walls & gardens).</p> <p>This route is therefore considered not feasible and is not carried forward to the Stage 2 assessment.</p>	Fail
1-65	Stephen Street	No	<p>Stephen Street is a very narrow carriageway with no footpaths on Stephen Street and informal on-street parking on one side. 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 approximately 3-4m. Localised widening of the route to 16m would require land acquisition (properties, walls & gardens).</p> <p>This route is therefore considered not feasible and is not carried forward to the Stage 2 assessment.</p>	Fail
1-66	Tower Street, from Friar's Walk to Barrack Street	Secondary	<p>Tower Street, from Friar's Walk to Barrack Street is a narrow two-lane carriageway with footpaths and parking on both sides along the majority of the route. Typical width is approximately 7-10m, however there is a significant pinch point at the approach to Barrack Street where there is approximately 3m available between buildings. The route is fronted by residential properties.</p> <p>This route is therefore considered not feasible and is not carried forward to the Stage 2 assessment.</p>	Fail
1-67	Reed's Square/St. Kevin's Street	No	<p>St. Kevin's Street is a two-lane carriageway with footpaths and parking on both sides. There are a number of properties along the route. Typical width along this section of the route is 7-9m.</p> <p>Reed's Square is a two-lane carriageway with a footpath and parking on the northern side. There are a number of properties along the route. Typical width along this section of the route is 8m. Localised widening of the route to 20m would require land acquisition (properties, walls & gardens).</p> <p>Localised widening of the route to 16m would require land acquisition (properties, walls & gardens).</p>	Fail

Route Option Number	Description	Part of CMATS Cycle Network	Comments	Pass/Fail
			These routes are therefore considered not feasible and are not carried forward to the Stage 2 assessment.	
1-68	Gillabbe Street, 98 Street to Bishop Street	Primary	Gillabbe Street, from 98 Street to Bishop Street is a two-lane carriageway with footpaths on both sides and perpendicular on-street parking on the southern side. There are properties throughout on both sides of the route. Typical width along this section of the route is approximately 9m. Localised widening of the route to 16m would require land acquisition (properties). However, this route is suitable as a connecting route and this link has been retained for the Stage 2 assessment.	Pass
1-69	Noonan Road, St. Finbarr's Road to Bandon Road	Secondary	Noonan Road, from St. Finbarr's Road to Bandon Road is a two-lane carriageway with footpaths on both sides and parking on the northern side throughout, and to a lesser extent to the south. The route is characterised by residential properties throughout on both sides. Typical width along this section of the route is 15m. Localised widening of the route to 16m would be possible with minor land acquisition, whereas widening to 20m would require more significant land and potential property acquisition. This route is deemed to be feasible as it is a connecting route and is therefore carried forward to the Stage 2 assessment.	Pass
1-70	Gregg Road, Noonan Road to Gillabbe Street	Secondary	Gregg Road, from Noonan Road to Gillabbe Street is a two-lane carriageway with footpaths and parking on both sides of the route throughout. The route is characterised by residential properties throughout on both sides of the route. Typical width along this section of the route is 14-15m. Localised widening of the route to 16m would require a moderate degree of land acquisition (walls & gardens) whereas widening to 20m would require more significant land and potential property acquisition. This route is deemed feasible as it is a connecting route and is therefore carried forward to stage 2 assessment.	Pass
1-71	Vicar Street	No	Vicar Street is a single lane carriageway with footpaths on both sides and parking on the northern section. There are a number of properties along the route. Typical width along this section of the route is 3.5-7.5m. Localised widening of the route to 16m would require land acquisition (properties). These routes are therefore considered not feasible and are not carried forward to the Stage 2 assessment.	Fail
1-72	R608 Barrack Street, Noonan Road to French's Quay	Primary	Barrack Street, from Noonan Road to Vicar Street is a single lane carriageway with footpaths on both sides and on-street parking on the northern side throughout. The route is characterised by street fronting properties (residential and commercial) throughout the route on both sides, with a number of locations where urban realm improvements and landscaping are present. Typical width along this section of the route is 8.5-9.5m. Localised widening of the route to 16m or 20m would require significant land acquisition (properties). From Evergreen Street to French's Quay Barrack Street is a two-lane carriageway with footpaths and on street parking/loading on both sides. There are street front properties along both sides of the route throughout (primarily commercial). Typical width along this section of the route is 15m. Localised widening of the route to 16m or 20m would require property acquisition. Barrack Street as a whole is therefore not considered feasible and is not carried forward to the Stage 2 assessment.	Fail
1-73	Bandon Road, from Lough Road to Pouladuff Road	No	Bandon Road, between Lough Road and Pouladuff Road is a two-lane, two-way traffic route with footpaths on both sides and on-street residential parking on the northern side. The route is primarily residential in character, with directly-fronting properties (some commercial) on the street.	Pass

Route Option Number	Description	Part of CMATS Cycle Network	Comments	Pass/Fail
			<p>Typical width along this section of the route is 9-12m. Localised widening of the route to 16m would require significant property acquisition).</p> <p>However, this route currently carries bus services in a shared environment and is a connecting route as such is considered feasible as a possible connecting route and is carried forward to the Stage 2 assessment.</p>	
1-74	Greenmount Place	No	<p>Greenmount Place is a narrow laneway with no footpaths. There are a number of properties along the route with direct access onto the route. Typical width along this section of the route is 3-4m. Localised widening of the route to 16m would require land acquisition (properties, walls & gardens).</p> <p>This route is therefore considered not feasible and is not carried forward to the Stage 2 assessment.</p>	Fail
1-75	Greenmount Avenue	No	<p>Greenmount Avenue is a two-lane carriageway with footpaths on both sides and parking on the southern side. There are a number of properties along the route with direct access onto the route. Typical width along this section of the route is 6-6.5m. Localised widening of the route to 16m would require land acquisition (properties, walls & gardens).</p> <p>This route is therefore considered not feasible and is not carried forward to the Stage 2 assessment.</p>	Fail
1-76	Evergreen Buildings	No	<p>Evergreen Buildings is a two-way carriageway with footpaths and parking on both sides. There are a number of properties along the route. Typical width along this section of the route is 10.5-11m. Localised widening of the route to 20m would require land acquisition (properties, walls & gardens).</p> <p>This route is therefore considered not feasible and is not carried forward to the Stage 2 assessment.</p>	Fail

Following the Stage 1 sifting exercise, 15 of the route options assessed passed the initial sifting stage and were progressed to the next assessment stage. These route options are presented in Figure 16.

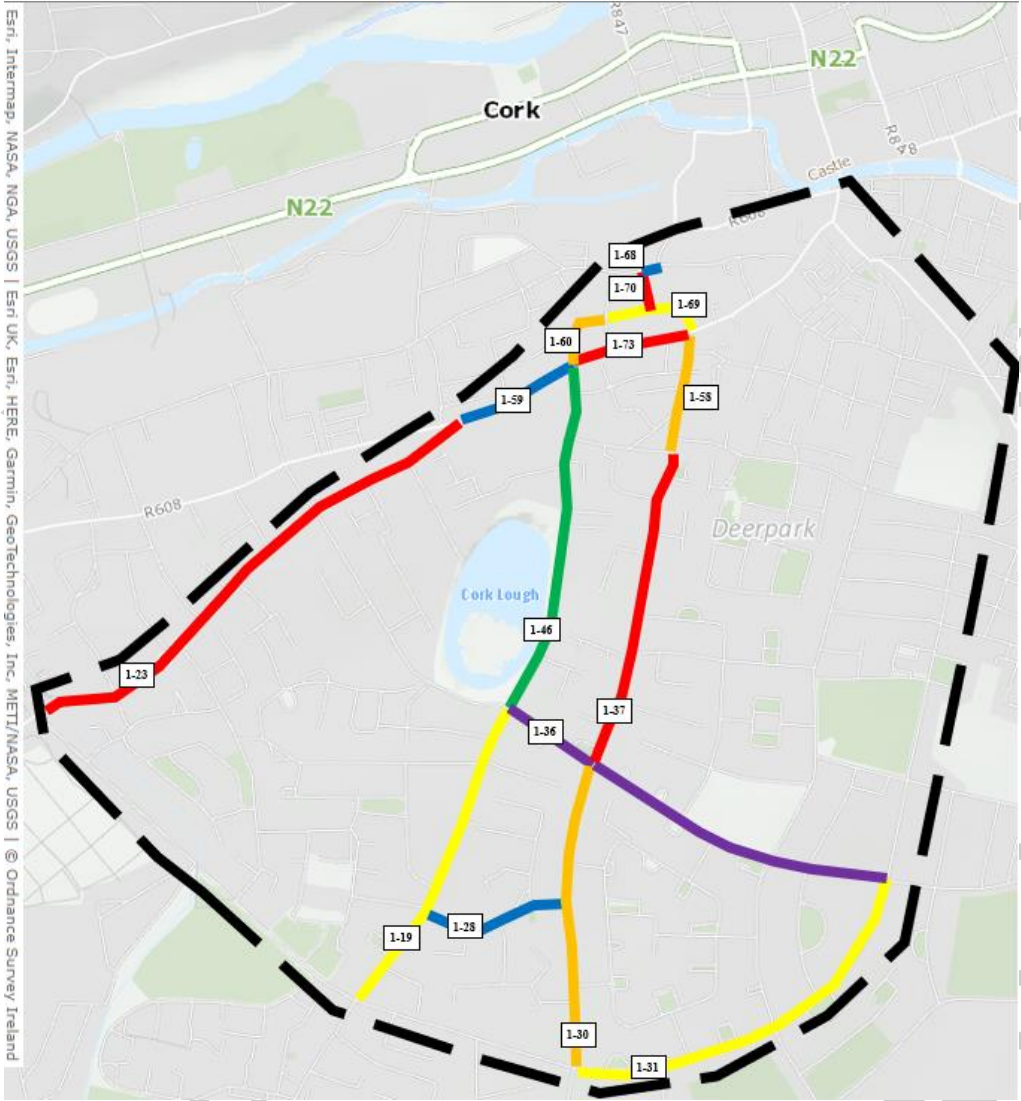


Figure 16: Section 1 – Northern Portion Route Options remaining after Stage 1 Sift

The combined route options for the northern and southern portions of Section 1 are shown below in Figure 17.

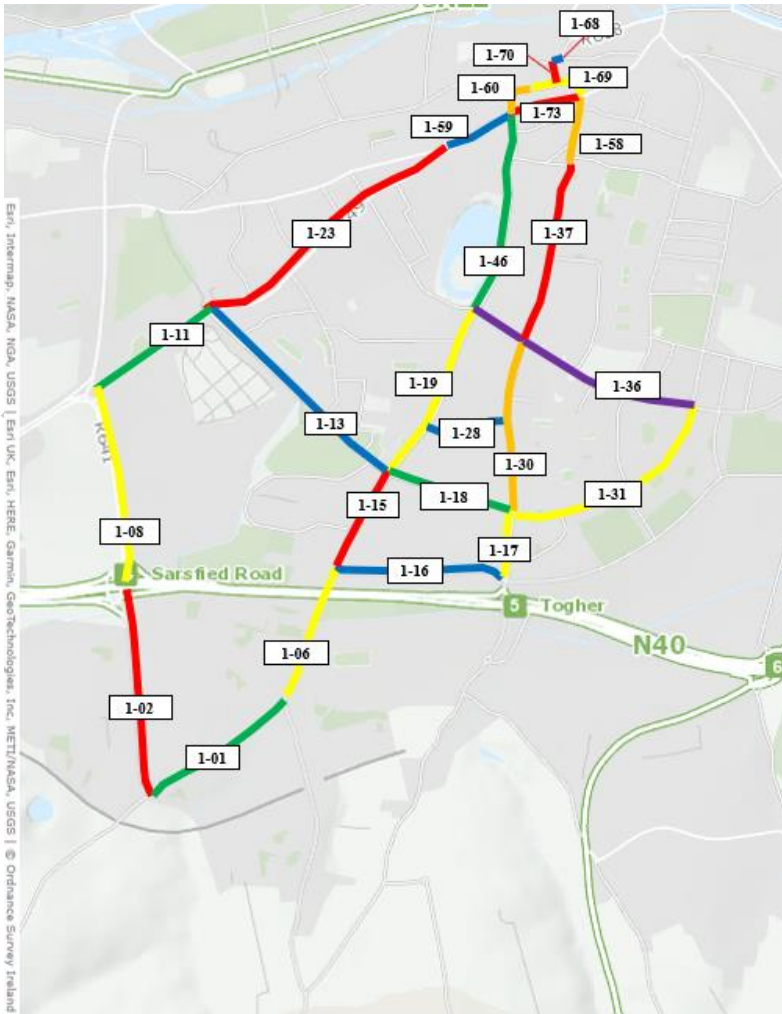


Figure 17: Section 1 – All Route Options remaining after Stage 1 Sift

A further review was undertaken, and the following additional links were removed from the route options passing the Stage 1 sift –

- **Tramore Road (1-16) and Pouladuff Road Lower (1-17):** It was considered that better alternative options are available to route buses from Togher Road to Pouladuff Road which would require less land acquisition (using Vicars Road or Pearse Road) and as such these links were removed;
- **Edward Walsh Road (1-28)** – Again, significant land acquisition would be required and both Vicars Road or Pearse Road are better alternatives locally;
- **Sarsfield Road (1-02 and 1-08)** – It was considered that the use of Sarsfield Road would represent a less direct route for buses which would result in longer bus journey times without increasing residential catchment significantly (as a result link 1-11 was also omitted); and
- **Connolly Road (1-31)** – Again the use of Connolly Road and Pearse Road (east) would represent indirect routing resulting in longer bus journey times with better alternatives available via Lough Road or Pouladuff Road. As a result, the extent of link 1-36 was also reduced.

The final links brought forward to the Stage 2 are presented in Figure 18.

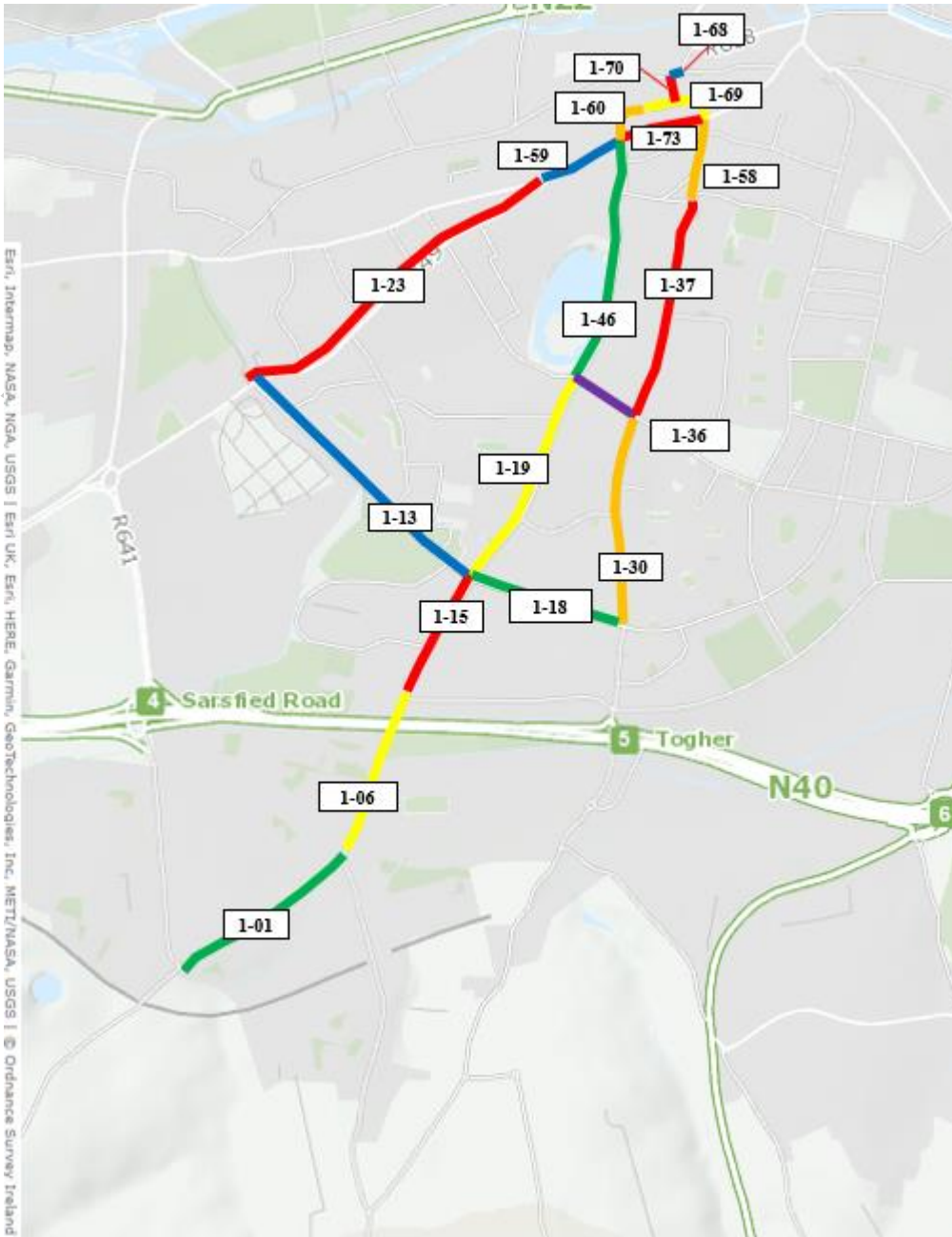


Figure 18: Section 1 – All Route Options carried forward to Stage 2 assessment

6.2 Study Area Section 2 – Bishop Street to City Centre

For Section 2, the notional start point of the section is the junction of Bishop Street and Gillabey Street. The end point for Section 2 is the junction of Washington Street and Grand Parade in the city centre.

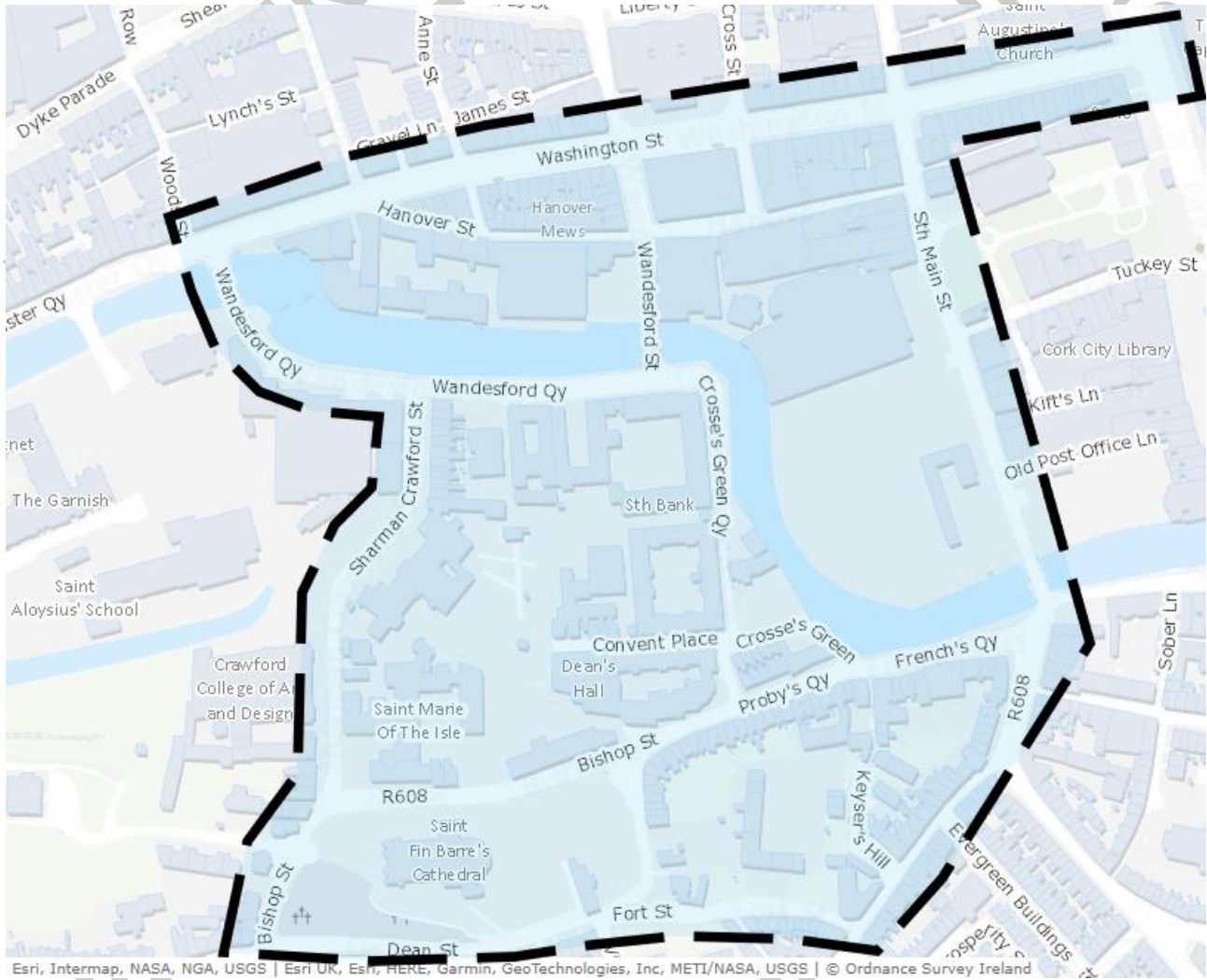


Figure 19: Section 2 Study Area

The Stage 1 Assessment includes for the sifting of all possible through links within the study area and Figure 20 presents the links within the study area that have been initially identified.

WORK IN
PROGRESS

WORK IN
PROGRESS

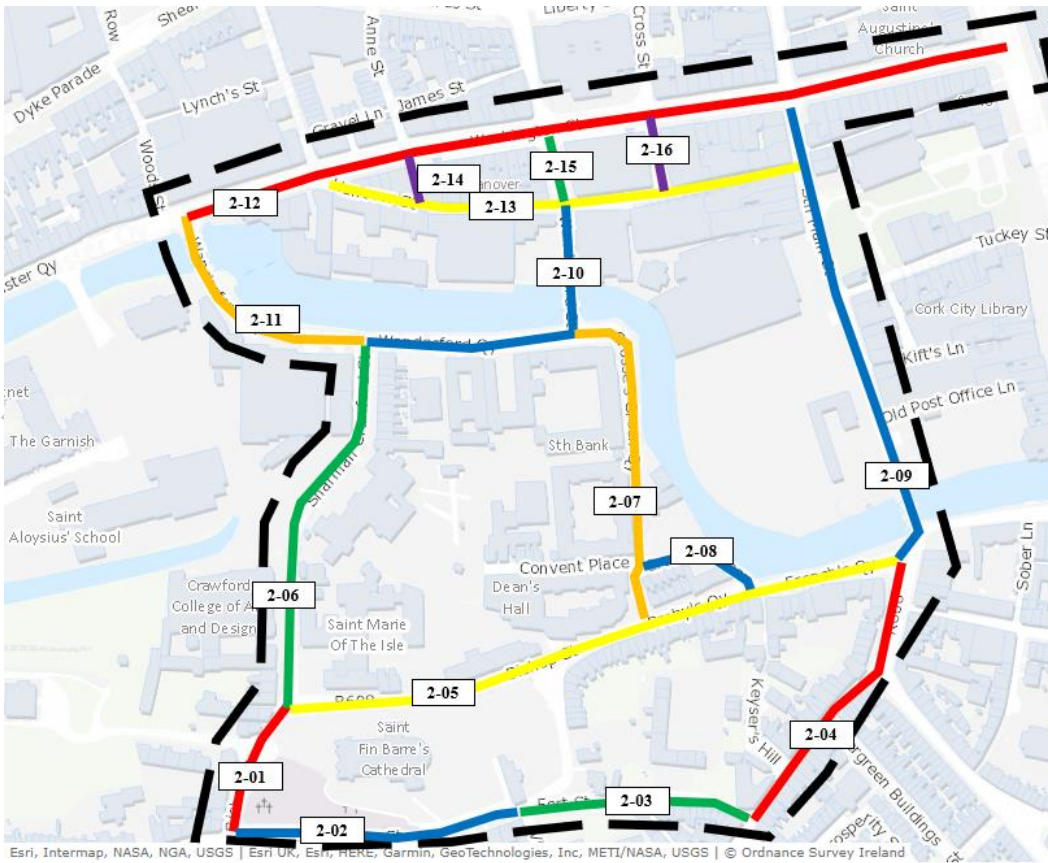


Figure 20: Section 2 Stage 1 Assessment Links

A summary of the Stage 1 route options sifting process is presented in Table 7.

Table 7: Section 2 – Route Option Sifting (Stage 1) Summary

Route Option Number	Description	Part of CMATS Cycle Network	Comments	Pass/Fail
2-01	Bishop Street, from Dean Street to Sharman Crawford Street	Primary	Bishop Street, Dean Street to Sharman Crawford Street is a two-lane carriageway with footpaths on both sides. There are a number of properties along the route. Typical width along this section of the route is 8.5-11m. Localised widening of the route to 16m would require land acquisition (properties, walls and gardens). However, this is a connecting route from Section 1 of the study area and as such it is retained and carried forward to the Stage 2 Assessment.	Pass
2-02	Dean Street, from Bishop Street to Vicar Street	No	Dean Street, from Bishop Street to Vicar Street is a two-way carriageway with footpaths and sporadic parking on one side. There are a number of properties along the route and it is bounded to the north by the grounds and boundary wall of St. Finbarr's Cathedral. Typical width along this section of the route is 4.5-11m. Localised widening of the route to 16m would require significant land acquisition (properties, walls & gardens). This route is therefore not considered feasible and is not carried forward to the Stage 2 assessment.	Fail
2-03	Fort Street, Barrack Street to Vicar Street	No	Fort Street, Barrack Street to Vicar Street is a two-way carriageway with footpaths on one or both sides, and sporadic parking throughout. There are a number of properties along the route. Typical width along this section of the route is 8.5-12m. Localised widening of the route to 16m would require land acquisition (properties, walls & gardens). This route is therefore not considered feasible and is not carried forward to the Stage 2 assessment.	Fail
2-04	Barrack Street, Fort Street to	Primary	Barrack Street, from Fort Street to French's Quay is a single lane one-way northbound carriageway with footpaths on both sides. There are a number of residential and commercial properties along the route. North	Fail

Route Option Number	Description	Part of CMATS Cycle Network	Comments	Pass/Fail
	French's Quay		<p>of the junction with Evergreen Street, Barrack Street is a two-lane, two-way route with footpaths and on-street parking on both sides.</p> <p>Typical width along this section of the route is 7m on the one-way section.</p> <p>Localised widening of the route to 16m would require land acquisition (properties).</p> <p>This route is therefore not considered feasible and is not carried forward to the Stage 2 assessment.</p>	Fail
2-05	Bishop Street/Proby's Quay, from Sharman Crawford Street to South Gate Bridge	Primary	<p>Bishop Street/Proby's Quay is a one-way westbound traffic route, with a single traffic lane and on-street parking on the southern side and a contra-flow segregated cycle lane on the northern side from South Gate Bridge. Continuing west, the route remains similar, with the on-street parking present on the north side, and the route then widens to two entry lanes approaching the junction with Sharman Crawford Street. There are a number of residential and commercial properties along the street, along with the grounds of St. Finbarr's Cathedral and St. Maries of the Isle National School. The River Lee also bounds Proby's Quay to the north.</p> <p>Typical width varies from 7-12m. This is an important connecting route from the city centre and as such it is retained and carried forward to the Stage 2 assessment.</p>	Pass
2-06	Sharman Crawford Street, Bishops Street to Wandesford Quay	Secondary	<p>Sharman Crawford Street, from Bishops Street to Wandesford Quay is a single lane carriageway with footpaths on both sides and a brief section of parking on one side at the northern end. There are a number of properties along the route with various designations, including the Crawford College or Art and Design and the grounds of St. Maries of the Isle school and convent. Typical width along this section of the route is 8-12m. Localised widening of the route to 16m would require land acquisition (properties).</p> <p>This is an important connecting route from the city centre and as such it is retained and carried forward to the Stage 2 assessment.</p>	Pass
2-07	Crosse's Green, from Wandesford Quay to Proby's Quay	No	<p>Crosse's Green, from Wandesford Quay to Proby's Quay is a narrow local one-way southbound access route for the majority, with footpaths and on-street parking on both sides at the northern end, but a significant pinch point at the southern end where the presence of buildings on both sides limit the route to a single lane of traffic and footpath on one side. Towards the southern end, approaching Proby's Quay the remainder of the route is two-way traffic, with footpaths on both sides.</p> <p>The route is primarily bounded by residential apartment buildings, some commercial buildings and the River Lee towards the northern end.</p> <p>Typical width varies significantly, from 10-12m to a pinch point of 4.5m between buildings.</p> <p>This route is therefore not considered feasible and is not carried forward to the Stage 2 assessment.</p>	Fail
2-08	Crosse's Green (rear access lane at Forde's Funeral Home)	No	<p>The access lane at Crosses Green to the rear of Forde's Funeral home is a narrow one-way road with a footpath on one side and on-street parking on the other. The road is bounded by residential and commercial properties on the southern side and by a private car park and the River Lee to the north. Typical width is 5-6m</p> <p>This route is therefore not considered feasible and is not carried forward to the Stage 2 assessment.</p>	Fail
2-09	South Main Street, Hanover Street to French's Quay	Primary	<p>South Main Street, Hanover Street to French's Quay is a single lane carriageway with footpaths on both sides, parking on the eastern side and a contra-flow northbound cycle lane on the western side. There are a number of primarily commercial properties along the route, along with a student accommodation building and the proposed Event Centre site on the western side of the route, and the grounds of Bishop Lucy Park on the eastern side. Typical width along this section of the route is 10-12m.</p> <p>This is an important connecting route from the city centre and as such it is retained and carried forward to the Stage 2 assessment.</p>	Pass

Route Option Number	Description	Part of CMATS Cycle Network	Comments	Pass/Fail
2-10	Wandesford Quay, Clarkes Bridge and Wandesford Street, Sharman Crawford Street to Hanover Street	No	<p>This section is a single lane carriageway with footpaths on both sides and parking on the northern side of Wandesford Quay. There are a number of properties along the route. Typical width along this section of the route is 8-13.5m.</p> <p>Clarke's Bridge is a one-way northbound crossing of the River Lee, with footpaths on both sides and a wide single carriageway.</p> <p>This is an important connecting route to the city centre and as such it is retained and carried forward to the Stage 2 assessment.</p>	Pass
2-11	Wandesford Quay/St. Finbarr's Bridge	Secondary	<p>Wandesford Quay/St. Finbarr's Bridge, from Washington Street to Sharman Crawford Street is a two-way carriageway with footpaths on both sides. There are a number of residential (apartment) and commercial properties along the route. Typical width along this section of the route is 11.5-14.5m.</p> <p>St. Finbarr's Bridge is also a two-way, two-lane route with footpaths either side. Typical width is 11m</p> <p>This is an important connecting route to and from the city centre and as such it is retained and carried forward to the Stage 2 assessment.</p>	Pass
2-12	Washington Street, St. Finbarr's Bridge to Grand Parade	Primary	<p>Washington Street, from St. Finbarr's Bridge to Grand Parade is a wide roadway with one outbound traffic lane and one outbound bus lane, on-street parking/loading and in inbound contra-flow cycle lane between St. Finbarr Bridge and Courthouse Street. East of Courthouse Street it is a two-way traffic route, with an inbound bus lane and traffic lane, an outbound traffic lane and cycle lanes on both sides of the route. There are footpaths on both sides of the route.</p> <p>Typical width varies from 15-18m.</p> <p>This is an important connecting route to and from the city centre and as such it is retained and carried forward to the Stage 2 assessment.</p>	Pass
2-13	Hanover Street	No	<p>Hanover Street is a narrow two-way laneway type route with footpaths on both sides at the western end, reducing to a one-way eastbound only route at the eastern end approaching South Main Street. There are a number of commercial properties along the route. Typical width along this section of the route is 5-6m.</p> <p>This route is therefore not considered feasible and is not carried forward to the Stage 2 assessment.</p>	Fail
2-14	Little Ann Street	No	<p>Little Ann Street is a narrow, two-lane route linking Washington Street to Hanover Street. It is bounded on both sides by commercial properties. Typical width is approximately 5.5m.</p> <p>This route is therefore not considered feasible and is not carried forward to the Stage 2 assessment.</p>	Fail
2-15	Hanover Place, north of Hanover Street	No	<p>North of Hanover Street, Hanover Place is also a one-way northbound traffic route to the junction with Washington Street, from here the route widens significantly to provide three northbound traffic lanes entering Washington Street.</p> <p>The route is bounded by commercial properties on both sides. Typical width is 12-14m.</p> <p>This is an important connecting route to the city centre and as such it is retained and carried forward to the Stage 2 assessment.</p>	Pass
2-16	Little Cross Street	No	<p>Little Cross Street is a local access street between Washington Street and Hanover Street. The route is bounded on both sides by commercial properties, and typical width is approximately 7-8m. This street has also been pedestrianised as of late 2021 by Cork City Council for use as an outdoor seating area.</p> <p>This route is therefore not considered feasible and is not carried forward to the Stage 2 assessment.</p>	Fail

Following the Stage 1 sifting exercise, 8 of the 16 links assessed passed the initial sifting stage and were progressed to the next assessment stage. These route options are presented in Figure 21.

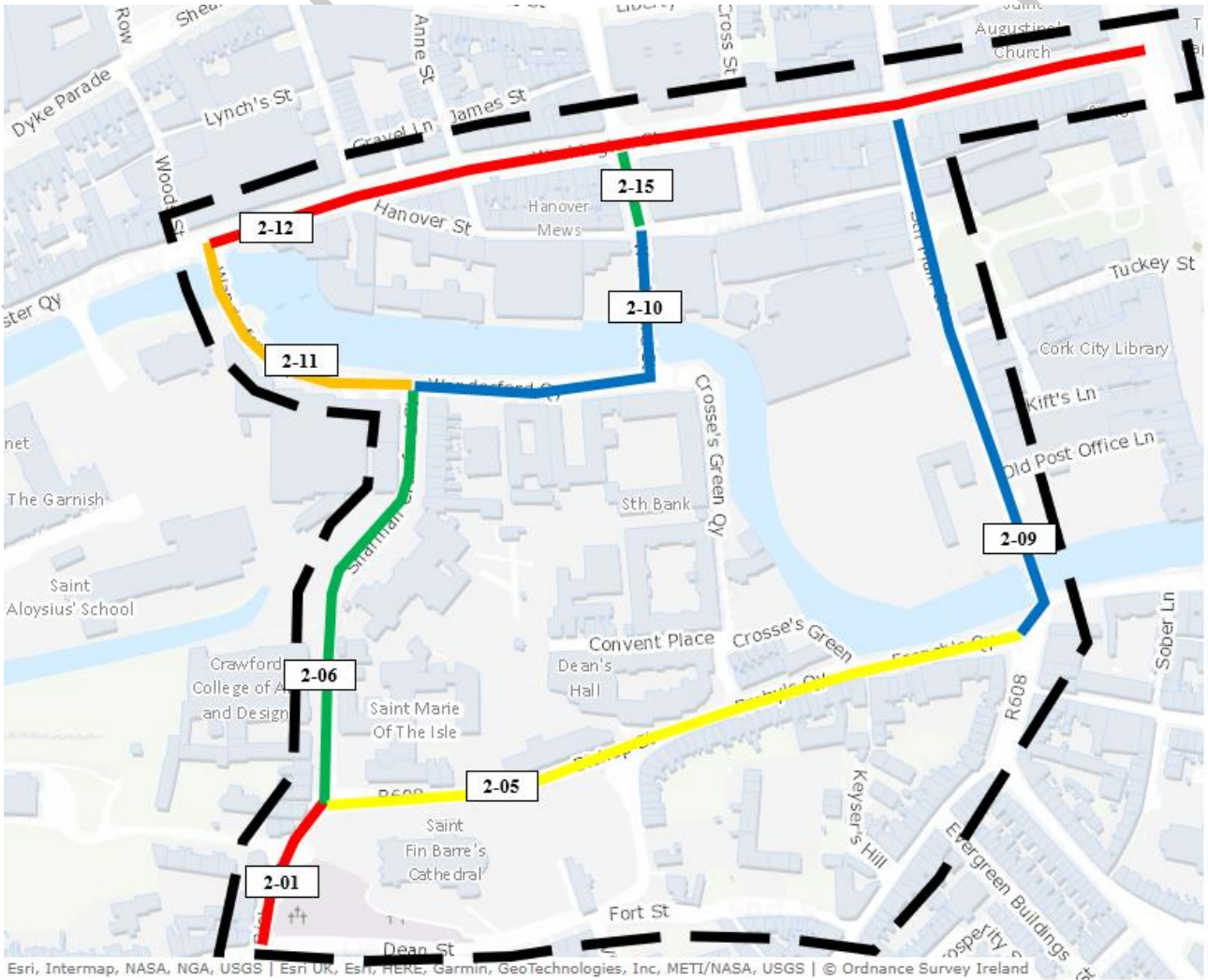


Figure 21: Section 2 – Route Options remaining after Stage 1 Sift

WORK IN PROGRESS

WORK IN PROGRESS

7. Stage 2 Assessments

Following the Stage 1 assessment for each individual subsection, the remaining links have been combined into potential route options. Initially, this is undertaken on a section-by-section basis, with route options that are then considered preferable brought forward for consideration as part of full 'end-to-end' option assessments.

7.1 Study Area Section 1 – Spur Hill to Bishop Street

For potential route options at the in Section 1 of CBC 8, a number of options have been developed using the route options that are remaining following the Stage 1 Assessment (for both the southern and northern portions of the Section 1 study area).

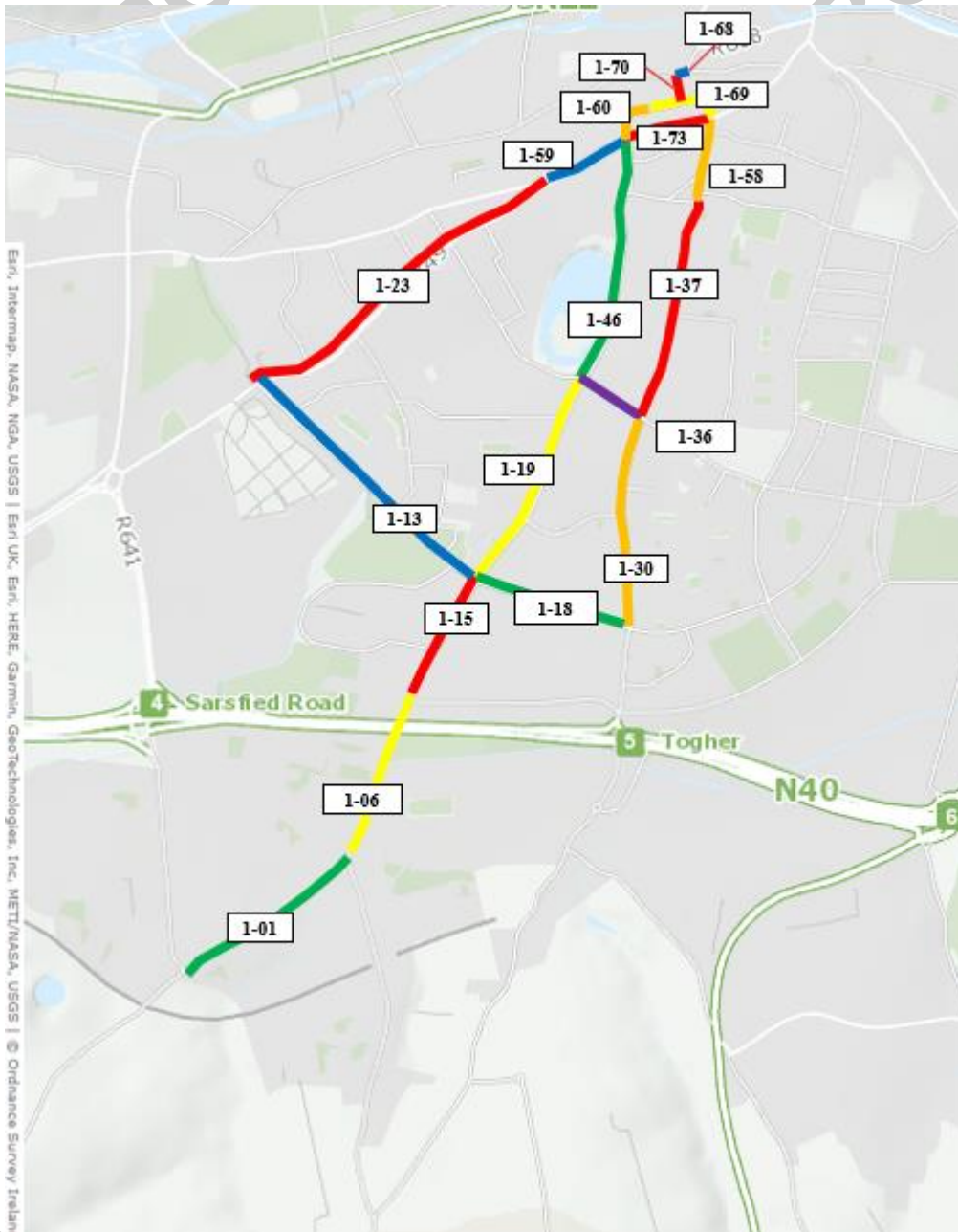


Figure 22: Section 1 – Route Options remaining after Stage 1 Sift

Following the Stage 1 sift, six possible route options have been identified for Section 1 as follows:

- **Option 1** – buses routed via Togher Road, Clashdubv Road, Glasheen Road and Bandon Road, with cyclists routed via Togher Road, Lough Road, St Finbarr’s Road with both travelling along Gregg Road/Gillabbey Street;
- **Option 2** – both buses and cyclists routed via Togher Road, Lough Road and St. Finbarr’s Road, with both travelling along Noonan Road and Gregg Road to Gillabbey Street;
- **Option 3** – buses routed via Togher Road, Vicars Road, Pouladuff Road and through to Noonan Road, with cyclists routed via Togher Road and Lough Road to St. Finbarr’s Road. Buses and cyclists continue through to Gregg Road/Gillabbey Street;
- **Option 4** – buses and cyclists routed via Togher Road, Vicars Road, Pouladuff Road and through to Noonan Road, Gregg Road and Gillabbey Street; and
- **Option 5** – buses routed via Togher Road, Pearce Road, Pouladuff Road and through to Noonan Road, with cyclists routed via Togher Road and Lough Road to St. Finbarr’s Road. Buses and cyclists continue through to Gregg Road/Gillabbey Street;

These options are described in greater detail below.

7.1.1 Option 1 – Buses routed via Spur Hill/Togher Road/Glasheen Road – cyclists via Spur Hill/Togher Road/Lough Road

7.1.1.1 Route Description

Route Option 1 is presented in **Figure 23** and described in the following text.

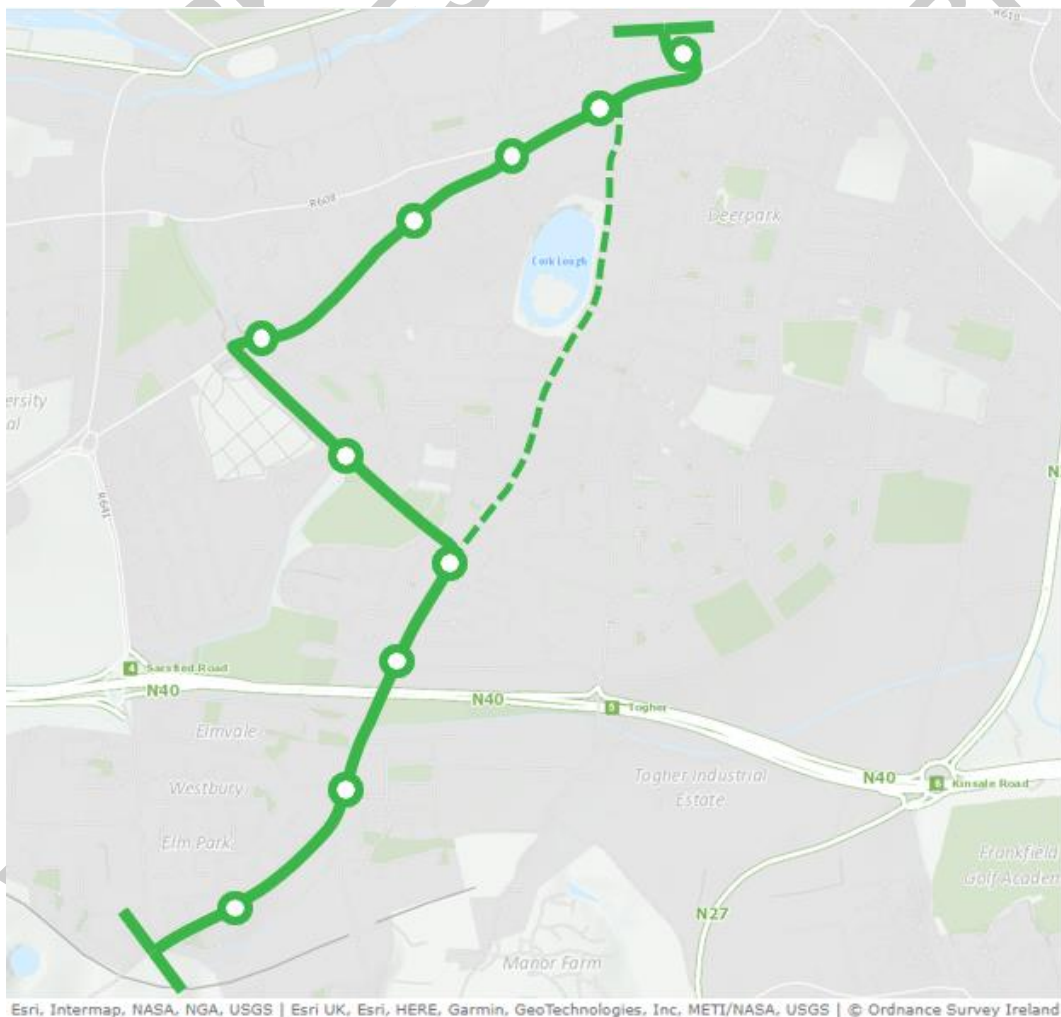


Figure 23: Section 1, Proposed Option 1 – Route Overview

Route Option 1 commences at the junction of Sarsfield Road/Spur Hill to the south of Togher. The route travels through the centre of Togher and passes over the N40 South Ring Road along Togher Road. At the junction of Clashduv Road/Vicars Road/Togher Road buses are diverted onto Clashduv Road, and then to Glasheen Road and Bandon Road. Buses continue on Bandon Road before turning to Noonan Road and Gregg Road and Gillabbey Street before reaching Bishop Street.

Cyclists follow the route of buses from the start of the route as far as the junction of Clashduv Road/Vicars Road/Togher Road where cyclists continue along Lough Road and St Finbarr's Road before re-joining the route for buses on Gregg Road. It is envisaged that this option would likely accommodate a total of 10 bus stops in each direction.

7.1.1.2 Indicative Scheme Design

Figure 24 illustrates the indicative scheme design for this route option along with the location of cross sections and junctions referenced in subsequent sections.

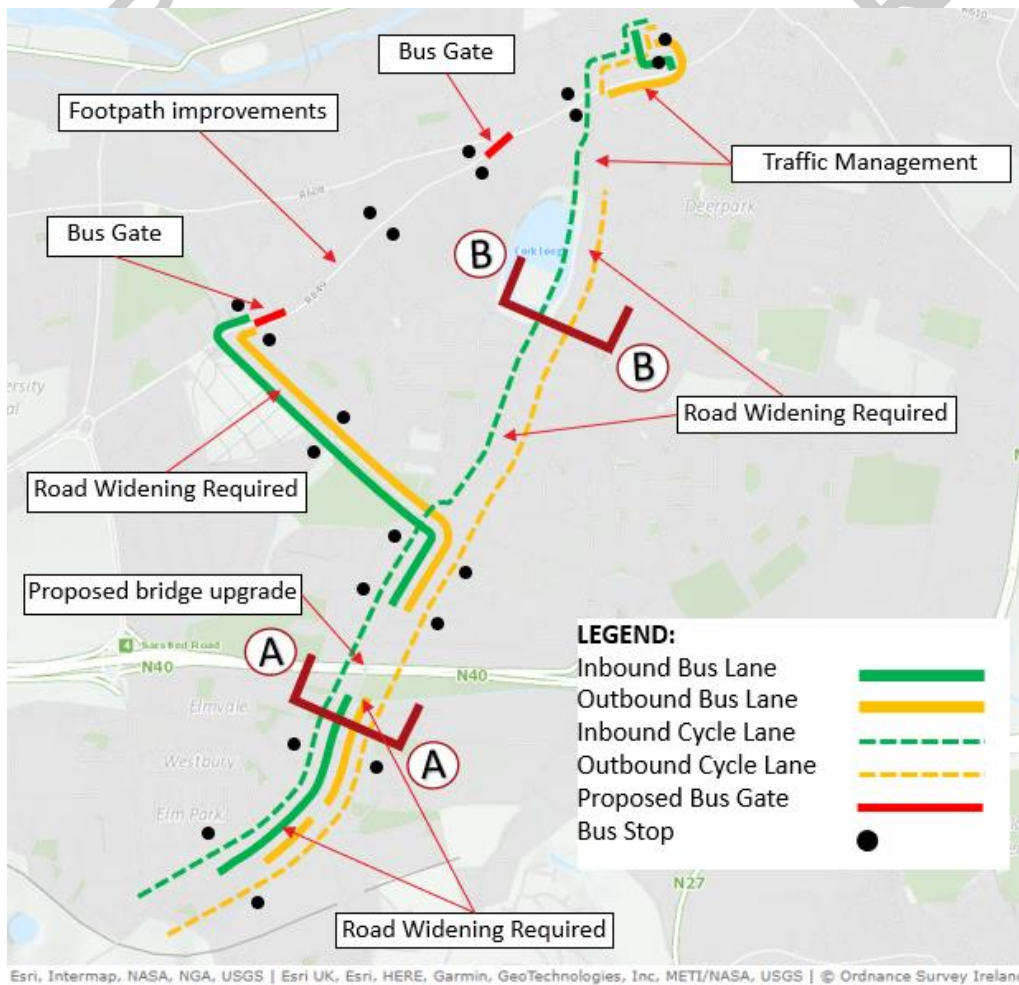


Figure 24: Section 1, Proposed Option 1 – Indicative Scheme Design

Along Spur Hill between Sarsfield Road and Togher Village it is proposed to provide cycle lanes in both directions along the entire length. In terms of bus lanes an inbound bus lane is proposed between Fernwood Close and the roundabout junction with Lehenaghmore Road, while an outbound bus lane is proposed for a short section of Spur Hill, south of the junction with Lehenaghmore Road. The proposed bus and cycle infrastructure will be delivered via road widening and land acquisition on the southern side of Spur Hill between Lehenaghmore Road and Fernwood Close.

Through Togher Village dedicated cycle lanes and bus lanes in both directions are proposed along with two general traffic lanes, which will require some limited land acquisition on the western side of the road. It is proposed to upgrade the N40 bridge overpass to provide for cycle lanes in both directions over the bridge. On Togher Road north of the South Ring Road dedicated cycle lanes are provided in both directions between

Tramore Road and Vicars Road, with inbound and outbound bus lanes proposed between Deanrock Avenue and Vicars Road.

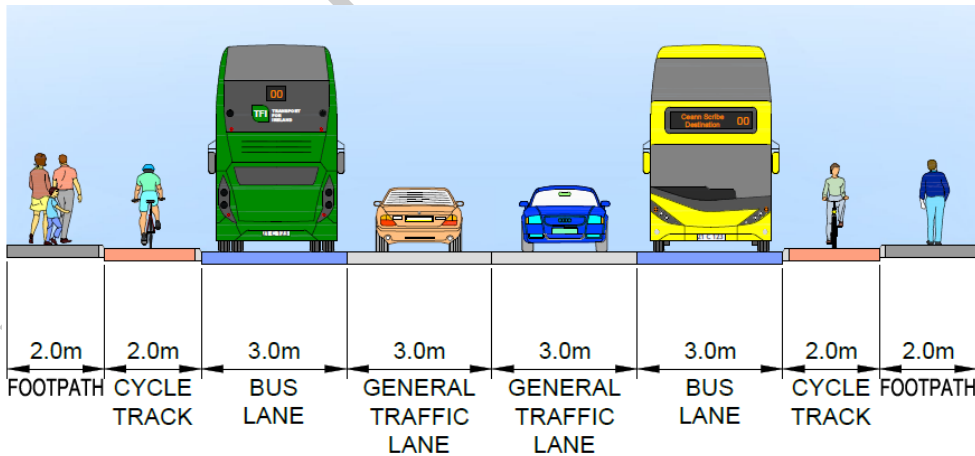


Figure 25: Section 1, Proposed Option 1 – Cross Section A-A

At the junction of Clashdub Road/Togher Road/Vicars Road the routes for buses and cyclists diverge with cyclists remaining on Togher Road traveling towards Lough Road, while buses are diverted onto Clashdub Road. Along Clashdub Road bus lanes are proposed in both directions, which will be facilitated through road widening and land acquisition. However, on Glasheen Road there is not sufficient space between buildings to provide dedicated bus lanes so bus priority will be delivered through the introduction of a bus gate on Glasheen Road north of the junction of Glasheen Road/Clashdub Road, and a further bus gate is proposed south of the junction of Magazine Road/Bandon Road to ensure the local roads serving Glasheen Road (such as Tara Lawn and Harland’s Avenue, etc.) can access the route but cannot use the route as a through-traffic route. At other locations along Glasheen Road, some land acquisition is proposed in order to facilitate road widening and footpath improvements along the route to a minimum standard.

Again, due to constraints no bus priority measures are proposed for Bandon Road between Magazine Road and St Finbarr’s Road. An outbound bus lane is proposed on Bandon Road between Green Street and St Finbarr’s Road, which will result in this portion of Bandon Road becoming one-way eastbound through to Barrack Street. Westbound traffic will be diverted from Gregg Road to Noonan Road and St. Finbarr’s Road to access Bandon Road.

Bus lanes in both directions are also proposed for Noonan Road between Gregg Road and Bandon Road, while on Gregg Road itself a new inbound bus lane is proposed. This will also result in Noonan Road becoming one-way north/westbound for general traffic (to loop back to St. Finbarr’s Road) and Gregg Road will also become one-way southbound for general traffic (again to route via St, Finbarr’s Road to access Bandon Road).

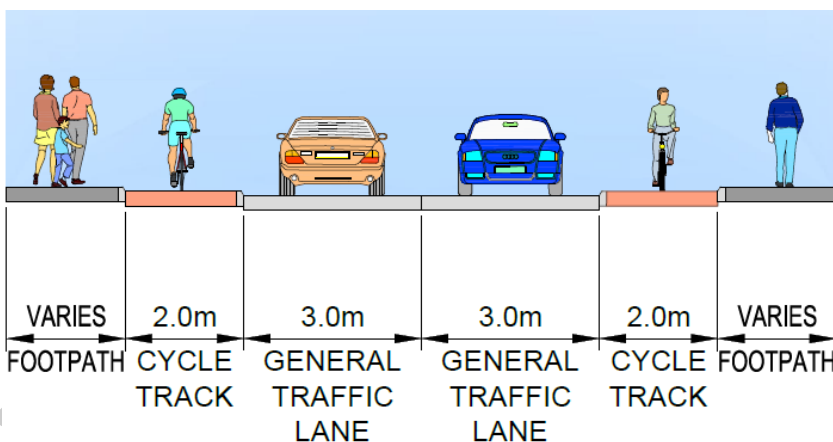


Figure 26: Section 1, Proposed Option 1 – Cross Section B-B

Inbound cycle facilities are provided along the entirety of Lough Road from Togher Road through to Bandon Road while in the outbound direction the proposal includes a dedicated cycle lane from Valentine Villas to Pearse Road while for the remaining section of Lough Road cyclists will have to share the road space with general traffic in a low-flow, low-speed environment. This will result in a portion of Lough Road between Valentine Villas and Bandon Road becoming one-way southbound. General traffic seeking to travel north can do so via Pouladuff Road as an alternative. The cycle lane proposals on Lough Road will be facilitated through road re-designation and localised widening/land acquisition.

Cyclists will then continue through from Lough Road to St. Finbarr's Road, where a dedicated inbound cycle lane will be provided, continuing through to Noonan Road, Gregg Road and Gillabbeey Street. Outbound cyclists will follow the same route via Gillabbeey Street, Gregg Road, Noonan Road and St. Finbarr's Road using a dedicated cycle lane; however, at the western end of St. Finbarr's Road and on Lough Road as far as Valentine Villas, outbound cyclists will have to share with general traffic.

To facilitate the delivery of the bus priority measures and cycle facilities proposed above, it is proposed to make the following changes in traffic management:

- Bandon Road will become one-way eastbound for general traffic between St Finbarr's Road and Green Street;
- Noonan Road will become one way north/westbound for general traffic between St Finbarr's Road and Bandon Road;
- Gregg Road will become one-way southbound for general traffic;
- St Finbarr's Road will become one-way northbound for general traffic from Noonan's Road to Gillabbeey Street, and one-way southbound from Noonan Road to Bandon Road; and
- Lough Road will become one-way southbound from Bandon Road to Valentine Villas.

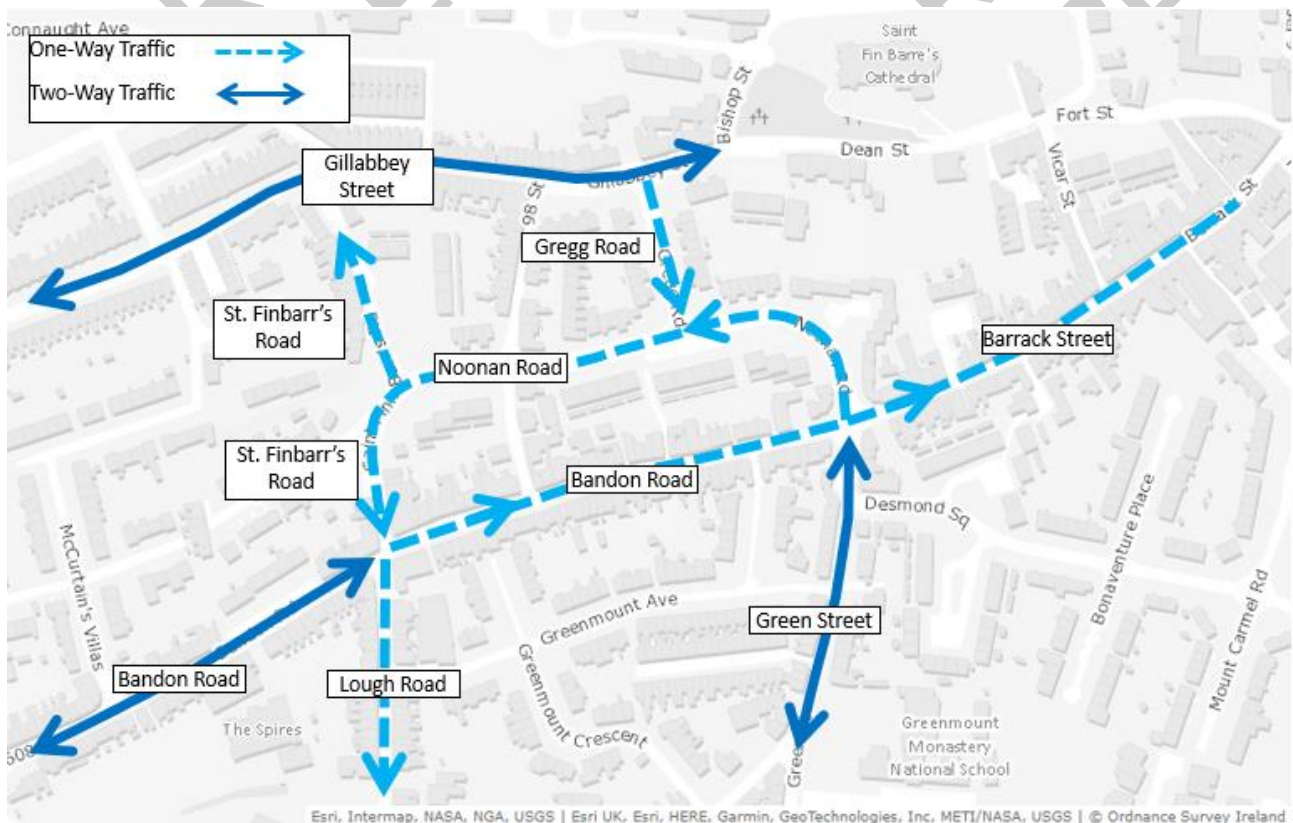


Figure 27: Section 1, Proposed Option 1 – Traffic Management Measures

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

- Partial bus lanes on Spur Hill in both directions;

- Bus lanes on both sides of the road through Togher Village;
- Bus lanes on both sides of the road on Togher Road approaching the junction with Vicars Road/Clashduv Road;
- Bus lanes in both directions on Clashduv Road;
- Bus gates on Glasheen Road, at the junctions with Clashduv Road and Magazine Road;
- An outbound bus lane on a section of Bandon Road between the junctions with Pouladuff Road and Lough Road;
- Bus lanes on both sides of Noonan Road and an outbound bus lane on Gregg Road;
- Raised adjacent cycle lanes along the majority of the route with a small section of Lough Road where a low-flow, low-speed environment has been provided and outbound cyclists would share with general traffic;
- Upgrade of the N40 overbridge on Togher Road to provide cycle facilities; and
- Land acquisition estimated from 106 properties.

7.1.2 Option 2 – Buses and Cyclists routed via Spur Hill/Togher Road/Lough Road

7.1.2.1 Route Description

Route Option 2 is presented in Figure 28 and described in the following text.

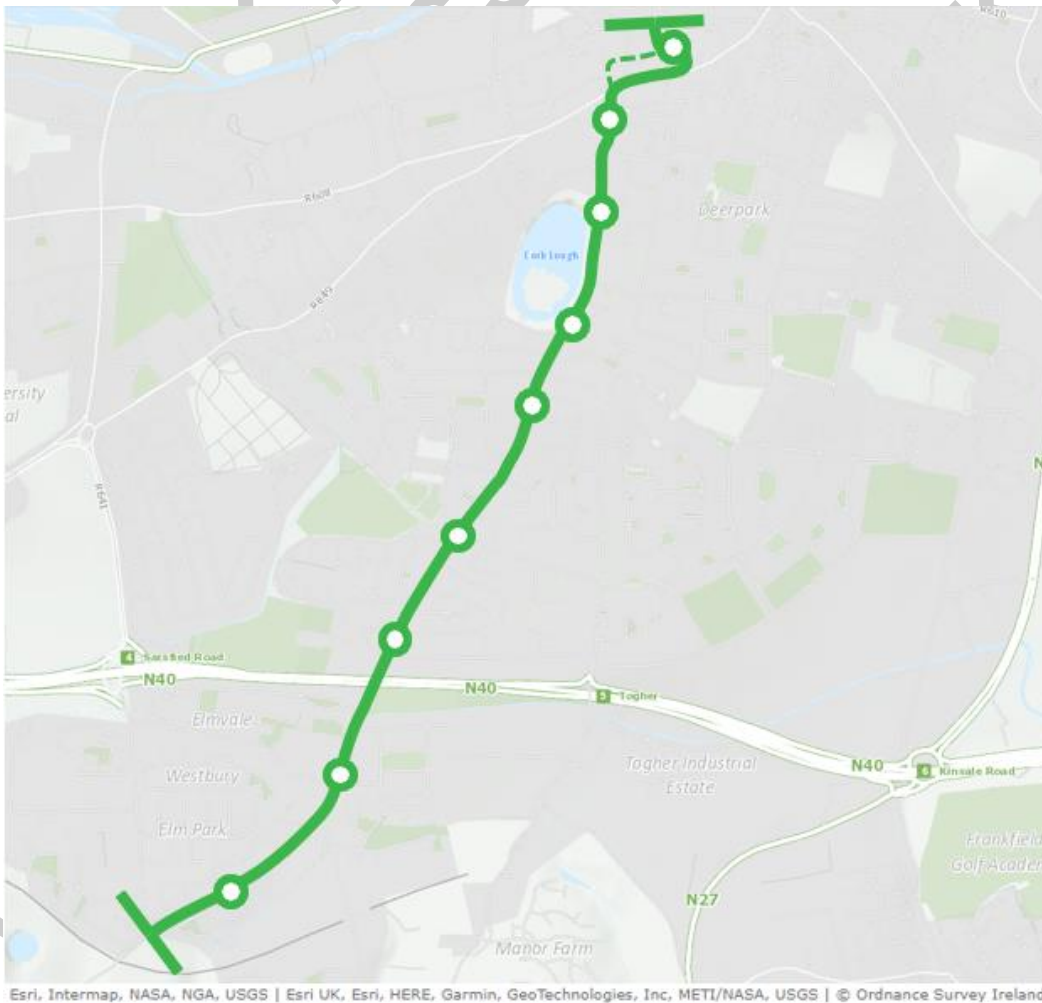


Figure 28: Section 1, Proposed Option 2 – Route Overview

Route Option 2 also commences at the junction of Sarsfield Road/Spur Hill to the south of Togher. Option 2 travels through the centre of Togher and passes over the N40 South Ring Road along Togher Road as per Option 1.

At the junction of Vicars Road/Togher Road both buses and cyclists continue along Lough Road and through to St. Finbarr's Road. At the junction of St. Finbarr's Road/Bandon Road inbound buses are directed along St. Finbarr's Road before accessing Gregg Road, Gillabbeey Street and connecting with Bishop Street. Outbound buses are directed along Gregg Road Noonan Road and Bandon Road to the junction with Lough Road.

From St. Finbarr's Road, cyclists are retained two-way on St. Finbarr's Road and Noonan Road between Lough Road and Gregg Road.

It is envisaged that this option would likely accommodate a total of 9 bus stops in each direction.

7.1.2.2 Indicative Scheme Design

Figure 29 illustrates the indicative scheme design for this route option along with the location of cross sections and junctions referenced in subsequent sections.

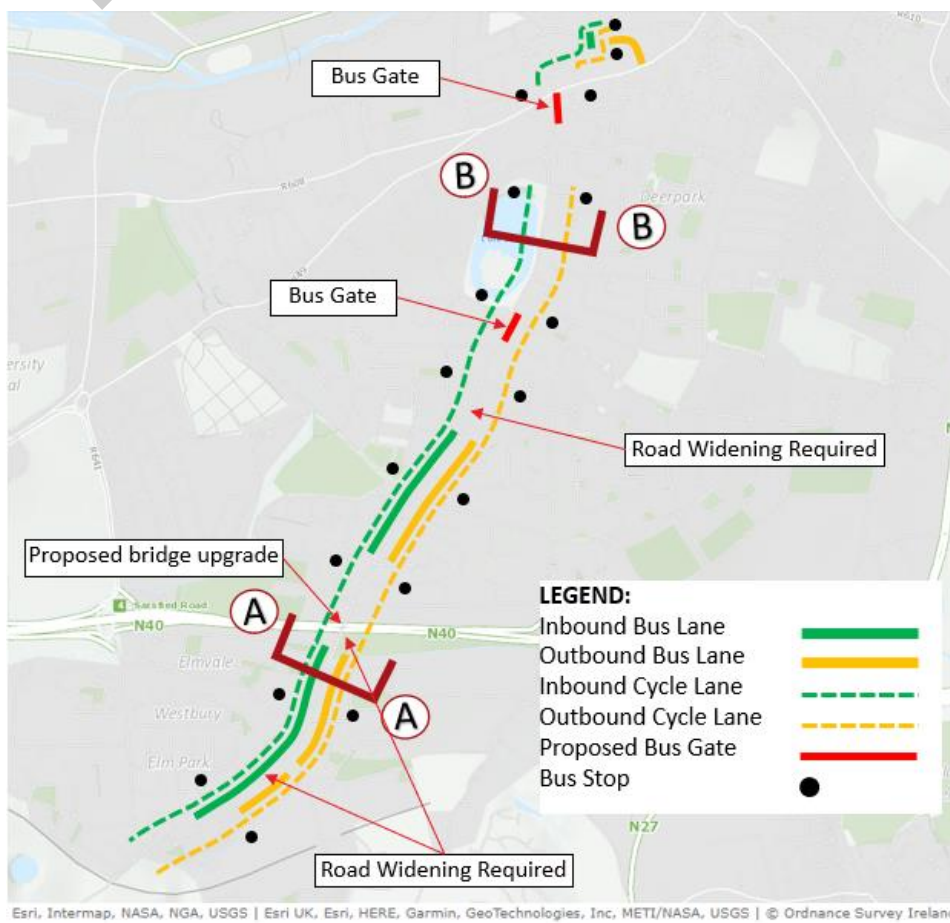


Figure 29: Section 1, Proposed Option 2 – Indicative Scheme Design

Along Spur Hill between Sarsfield Road and Togher Village it is proposed to provide cycle lanes in both directions along the entire length. In terms of bus lanes an inbound bus lane is proposed between Fernwood Close and the roundabout junction with Lehenaghmore Road, while an outbound bus lane is proposed for a short section of Spur Hill, south of the junction with Lehenaghmore Road. The proposed bus and cycle infrastructure will be delivered via road widening and land acquisition on the southern side of Spur Hill between Lehenaghmore Road and Fernwood Close.

Through Togher Village dedicated cycle lanes and bus lanes in both directions are proposed along with two general traffic lanes, which will require some limited land acquisition on the western side of the road. It is proposed to upgrade the N40 bridge overpass to provide for cycle lanes in both directions over the bridge. On Togher Road north of the South Ring Road dedicated cycle lanes are provided in both directions between

Tramore Road and Vicars Road, with inbound and outbound bus lanes proposed between Deanrock Avenue and Vicars Road.

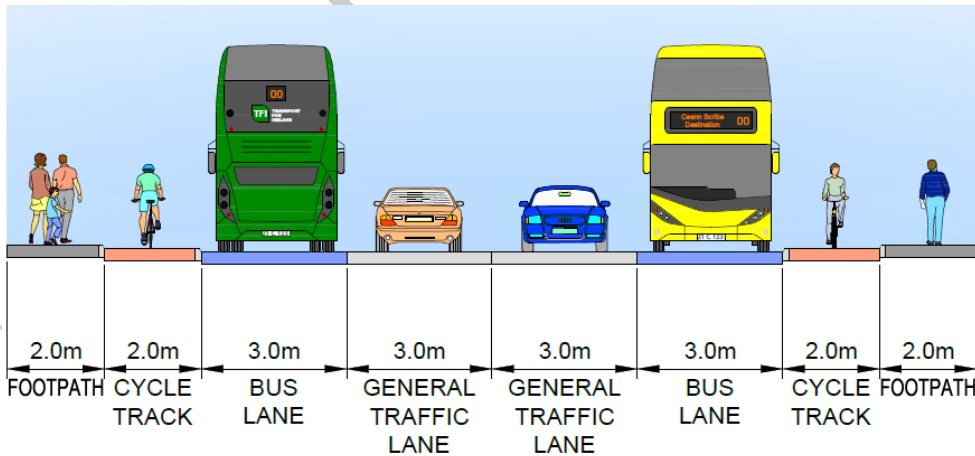


Figure 30: Section 1, Proposed Option 2 – Cross Section A-A

Between Vicars Road and Edward Walsh Road, dedicated bus lanes and cycle lanes in both directions are proposed along Togher Road. From Edward Walsh Road to Pearse Road cycle lanes are proposed in both directions, however there is insufficient space to also provide dedicated bus lanes in both directions and bus priority is therefore proposed to be delivered through the provision of a bus gate on Togher Road south of its junction with Pearse Road in order to control through traffic flow along this portion of the route.

In terms of cycle facilities on Lough Road, as per Option 1 inbound and outbound cycle facilities are provided along Lough Road between Valentine Villas and Pearse Road while for the remaining section of Lough Road between Valentine Villas and St. Finbarr’s Road cyclists will share the road space with general traffic in a low-flow, low-speed environment created by the introduction of a bus gate south of the junction of Bandon Road/Lough Road. This proposed bus gate will also provide for improved bus reliability along this section of Lough Road.

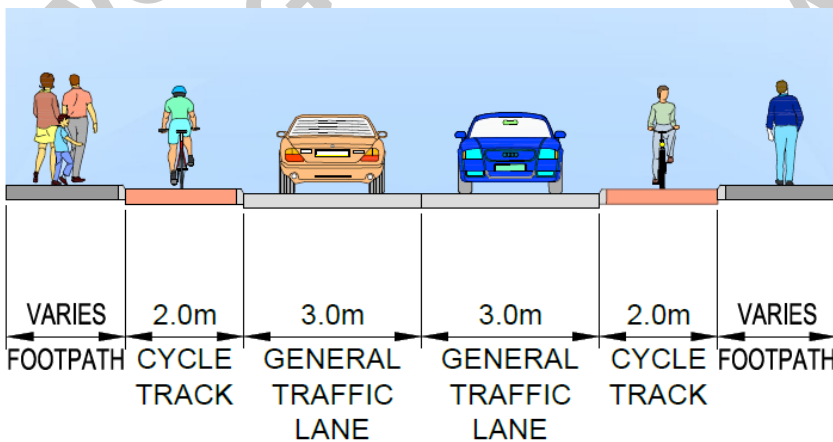


Figure 31: Section 1, Proposed Option 2 – Cross Section B-B

Cyclists will continue through from Lough Road to St. Finbarr’s Road, where a dedicated inbound cycle lane will be provided, continuing through to Noonan Road, Gregg Road and Gillabbey Street. Outbound cyclists will follow the same route via Gillabbey Street, Gregg Road, Noonan Road and St. Finbarr’s Road using a dedicated cycle lane; however, at the western end of St. Finbarr’s Road and on Lough Road as far as Valentine Villas, outbound cyclists will have to share with buses and local access traffic.

An inbound bus lane is proposed for Gregg Road and an outbound bus lane on Noonan Road between Gregg Road and Bandon Road.

To facilitate the delivery of the bus priority measures and cycle facilities it is proposed to make the following changes in traffic management:

- No through route for general traffic on St Finbarr’s Road between Noonan Road and Bandon Road;
- Gregg Road will become one-way southbound for general traffic;
- St Finbarr’s Road will become one-way northbound for general traffic from Noonan’s Road; and
- No through traffic will be permitted on Lough Road from either end between its junctions with Bandon Road and Pearse Road due to the introduction of bus gates.

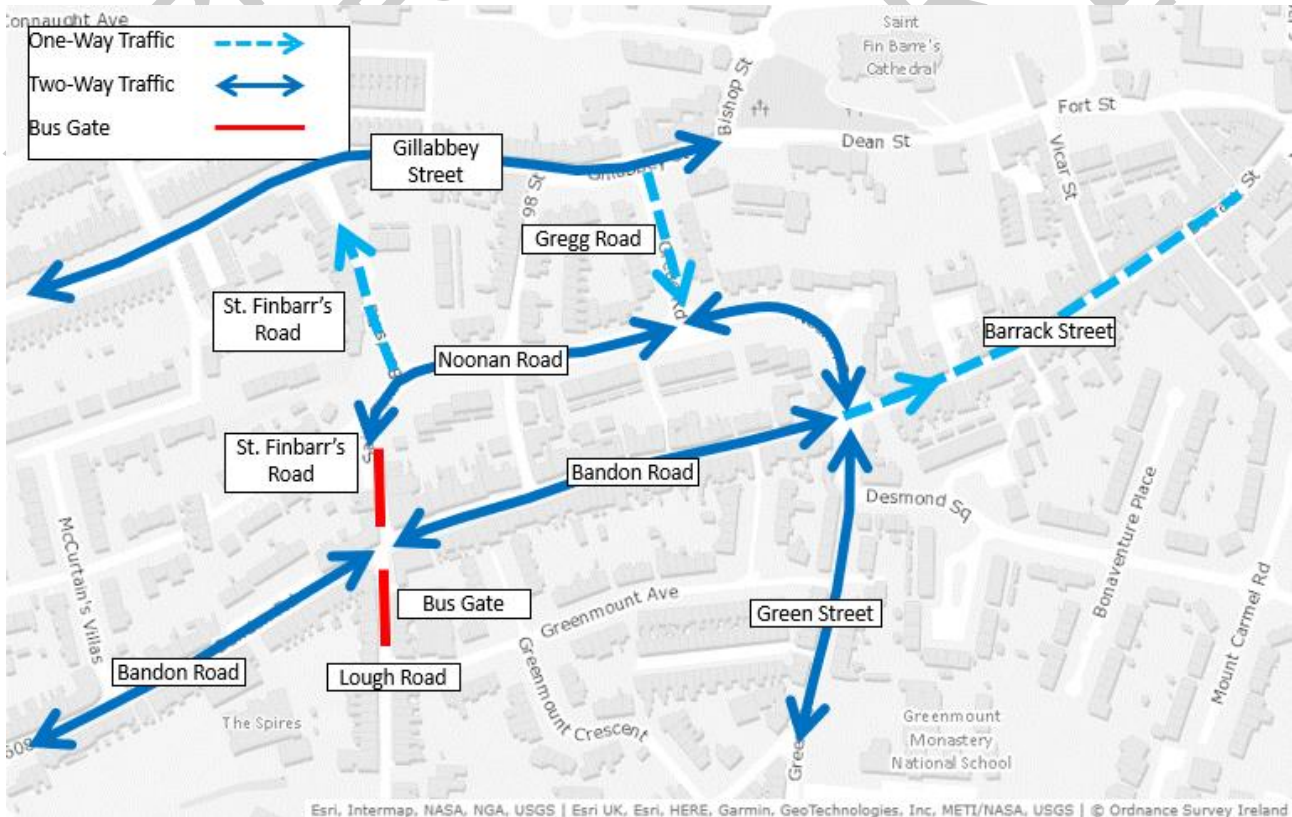


Figure 32: Section 1, Proposed Option 2 – Traffic Management Measures

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

- Partial bus lanes on Spur Hill in both directions;
- Bus lanes on both sides of the road through Togher Village;
- Bus lanes on both sides of the road on Togher Road approaching the junction with Vicars Road;
- Bus lanes on both sides of Togher Road between Vicars Road and Edward Walsh Road;
- A bus gate on Togher Road, south of the junction with Pearse Road;
- A bus gate on Lough Road south of the junction with Bandon Road;
- Partial inbound bus lanes on Noonan Road and outbound on Gregg Road
- Raised adjacent cycle lanes along most of the route with a small section of Lough Road and St. Finbarr’s Road where a low flow low speed environment has been provided;
- Upgrade of the N40 overbridge on the Togher Road to provide cycle facilities; and
- Land acquisition estimated from 38 properties.

7.1.3 Option 3 – Buses routed via Spur Hill/Togher Road/Vicars Road/Pouladuff Road – cyclists via Spur Hill/Togher Road/Lough Road

7.1.3.1 Route Description

Route Option 3 is presented in Figure 33 and described in the following text.

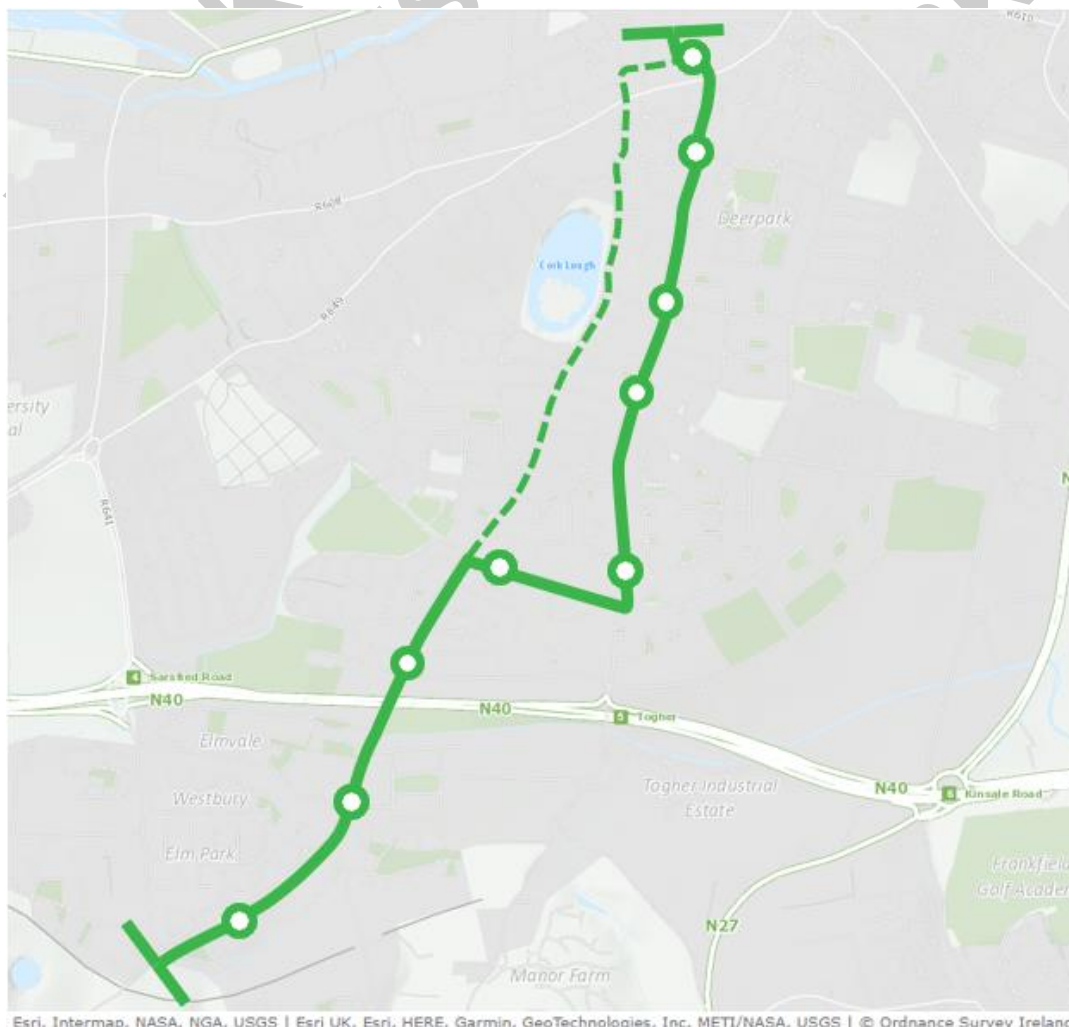


Figure 33: Section 1, Proposed Option 3 – Route Overview

As per Options 1 and 2, Route Option 3 also commences at the junction of Sarsfield Road/Spur Hill to the south of Togher, and travels through the centre of Togher and passes over the N40 South Ring Road along Togher Road.

At the junction of Vicars Road/Togher Road buses are diverted onto Vicars Road, Pouladuff Road and Green Street. The route ends at the Bishop's Street with buses travelling along Noonan Road and Greg Road between Green Street and Bishops Street.

Cyclists follow the route of buses from the start of the route as far as the junction of Vicars Road/Togher Road; from here cyclists continue along Togher Road, Lough Road and St Finbarr's Road (as per Options 1 and 2) before re-joining the route for buses on Gregg Road. It is envisaged that this option would likely accommodate a total of 9 bus stops in each direction.

7.1.3.2 Indicative Scheme Design

Figure 34 illustrates the indicative scheme design for this route option along with the location of cross sections and junctions referenced in subsequent sections.

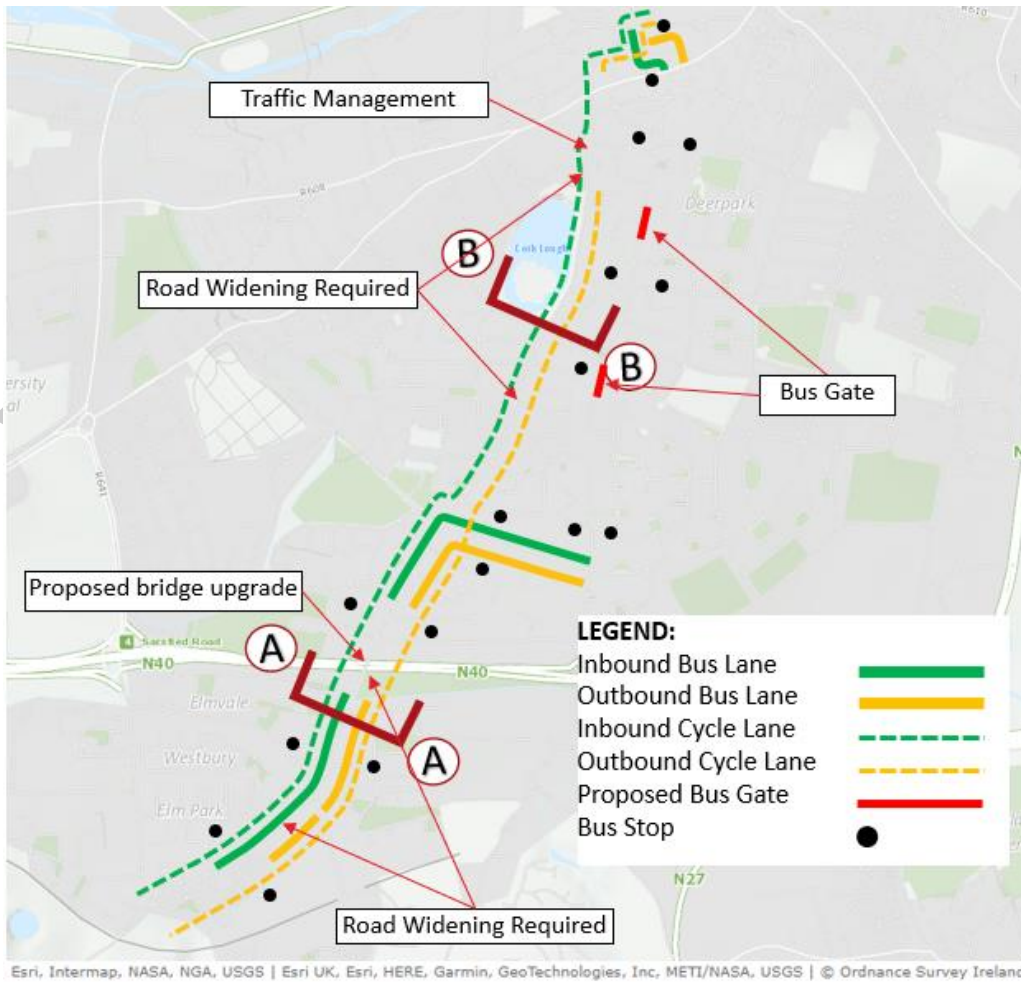


Figure 34: Section 1, Proposed Option 3 – Indicative Scheme Design

As per Options 1 and 2, along Spur Hill between Sarsfield Road and Togher Village it is proposed to provide cycle lanes in both directions along the entire length. In terms of bus lanes an inbound bus lane is proposed between Fernwood Close and the roundabout junction with Lehenaghmore Road, while an outbound bus lane is proposed for a short section of Spur Hill, south of the junction with Lehenaghmore Road. The proposed bus and cycle infrastructure will be delivered via road widening and land acquisition on the southern side of Spur Hill between Lehenaghmore Road and Fernwood Close.

Through Togher Village dedicated cycle lanes and bus lanes in both directions are proposed along with two general traffic lanes, which will require some limited land acquisition on the western side of the road. It is proposed to upgrade the N40 bridge overpass to provide for cycle lanes in both directions over the bridge. On Togher Road north of the South Ring Road dedicated cycle lanes are provided in both directions between Tramore Road and Vicars Road, with inbound and outbound bus lanes proposed between Deanrock Avenue and Vicars Road.

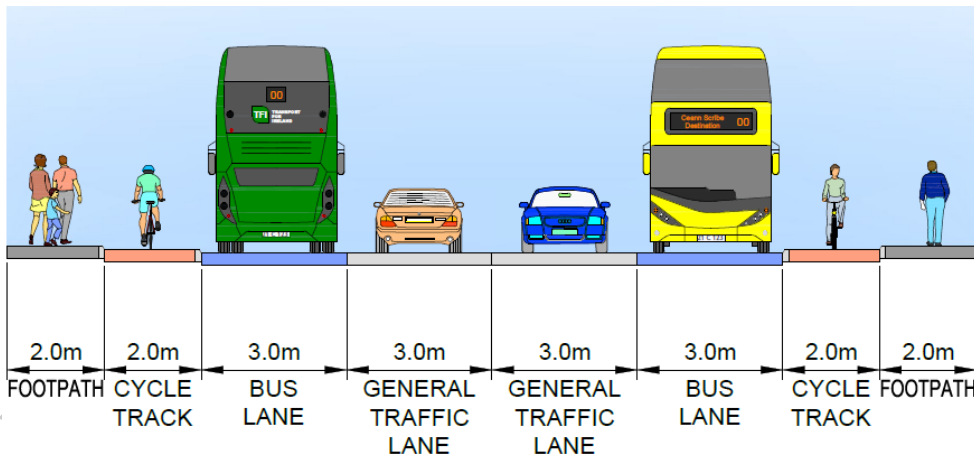


Figure 35: Section 1, Proposed Option 3 – Cross Section A-A

At the junction of Togher Road/Vicars Road the routes for buses and cyclists diverge with cyclists remaining on Togher Road traveling through to Lough Road, while buses divert onto Vicars Road and on to Pouladuff Road. Along Vicars Road bus lanes are proposed in both directions through road redesignation and localised widening. However, on Pouladuff Road there is not sufficient space between buildings to provide dedicated bus lanes, therefore bus priority will be delivered through the introduction of a bus gate south of the junction of Pearse Road/Pouladuff Road. A further bus gate is proposed on Pouladuff Road at Pouladuff Villas, just south of Marian Park. The proposed bus gates will facilitate local access but will prohibit through traffic flow along the route, thereby improving bus journey time reliability. At a number of locations on Pouladuff Road, road widening and land acquisition is proposed to facilitate footpath enhancements.

As per Option 1, bus lanes in both directions are proposed for Noonan Road between Gregg Road and Bandon Road, while on Gregg Road itself a new inbound bus lane is proposed.

In terms of cycle facilities, as per Option 1 inbound cycle facilities are provided along the entirety of Lough Road while in the outbound direction the proposal includes a dedicated cycle lane from Valentine Villas to Pearse Road while for the remaining section of Lough Road cyclists will have to share the road space with general traffic in a low-flow, low-speed environment. The cycle lane proposals on Lough Road will be facilitated through road re-designation and localised widening/land acquisition.

Cyclists will continue through from Lough Road to St. Finbarr's Road, where a dedicated inbound cycle lane will be provided, continuing through to Noonan Road, Gregg Road and Gillabbey Street. Outbound cyclists will follow the same route via Gillabbey Street, Gregg Road, Noonan Road and St. Finbarr's Road using a dedicated cycle lane; however at the western end of St. Finbarr's Road and on Lough Road as far as Valentine Villas, outbound cyclists will have to share with buses and local access traffic.

To facilitate the delivery of the bus priority measures and cycle facilities it is proposed to make the following changes in traffic management:

- Noonan Road will become one-way westbound for general traffic between Bandon Road and St Finbarr's Road;
- Gregg Road will become one-way southbound for general traffic;
- St Finbarr's Road will become one-way northbound for general traffic from Noonan's Road and one-way southbound for general traffic between Noonan Road and Bandon Road; and
- Lough Road will become one-way southbound for general traffic from Bandon Road to Valentine Villas.

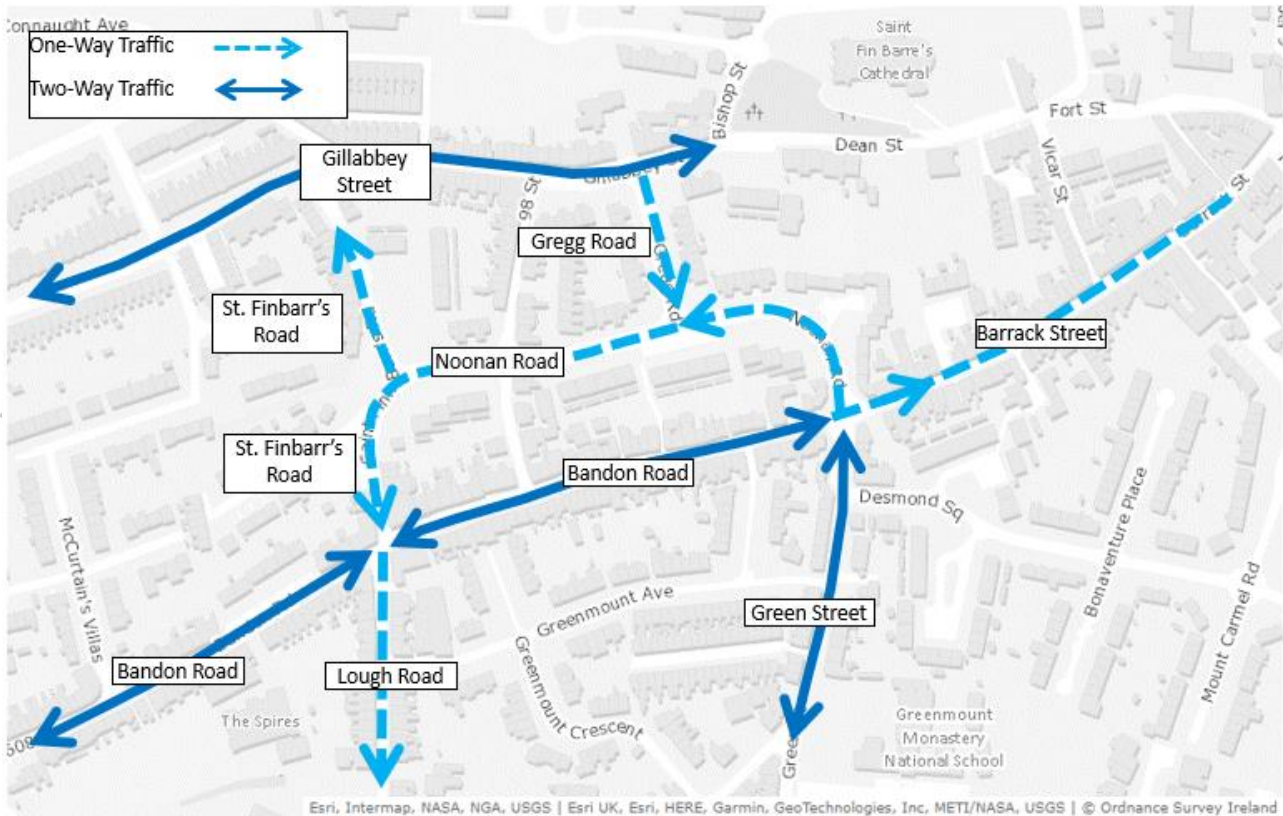


Figure 36: Section 1, Proposed Option 3 – Traffic Management Measures

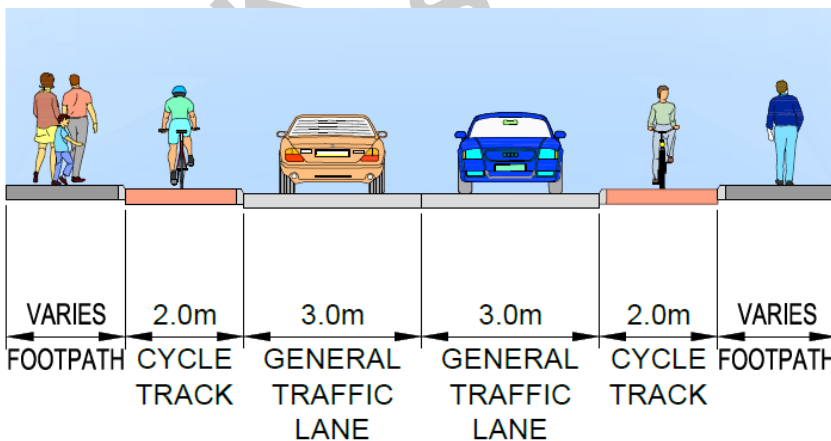


Figure 37: Section 1, Proposed Option 3 – Cross Section B-B

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

- Partial bus lanes on Spur Hill in both directions;
- Bus lanes on both sides of the road through Togher Village;
- Bus lanes on both sides of the road on Togher Road approaching the junction with Vicars Road;
- Dedicated bus lanes in both directions on Vicars Road
- Two bus gates on Pouladuff Road, to the south of the junction with Pearse Road and to the south of Marian Park;
- Bus lanes on both sides of Noonan Road and an outbound bus lane on Gregg Road;
- Raised adjacent cycle lanes along the majority of the route with a small section of Lough Road/St. Finbarr's Road where a low-flow, low-speed environment has been provided;
- Upgrade of the N40 overbridge on Togher Road to provide cycle facilities; and

- Land acquisition estimated from 52 properties.

7.1.4 Option 4 – Buses and cyclists routed via Spur Hill/Togher Road/Vicars Road/Pouladuff Road

7.1.4.1 Route Description

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

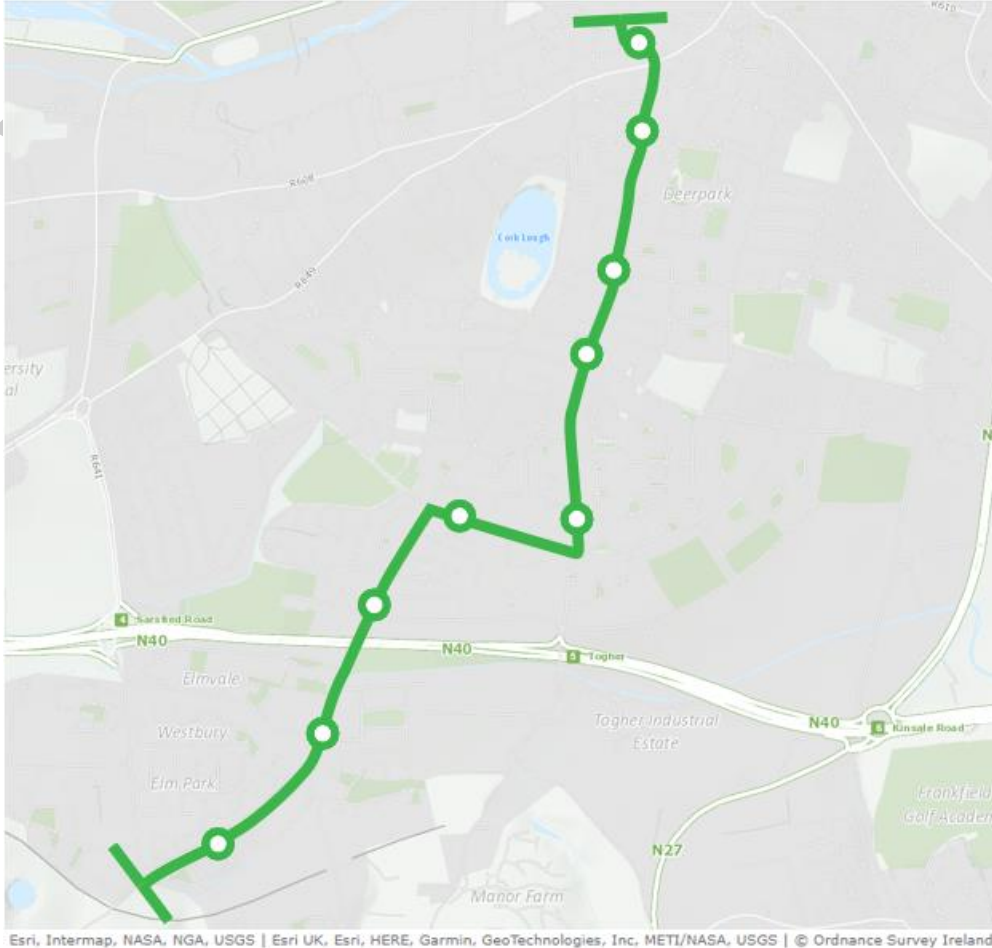


Figure 38: Section 1, Proposed Option 4 – Route Overview

As with Options 1-3, Route Option 4 also commences at the junction of Sarsfield Road/Spur Hill to the south of Togher. Option 4 travels through the centre of Togher and passes over the N40 South Ring Road along Togher Road. At the junction of Vicars Road/Togher Road buses and cyclists are diverted onto Vicars Road, Pouladuff Road and Green Street. The route ends at Bishop Street with buses and cyclists travelling along Noonan Road, Gregg Road and Gillabbey Street between Green Street and Bishop Street.

It is envisaged that this option would likely accommodate a total of 9 bus stops in each direction.

7.1.4.2 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.

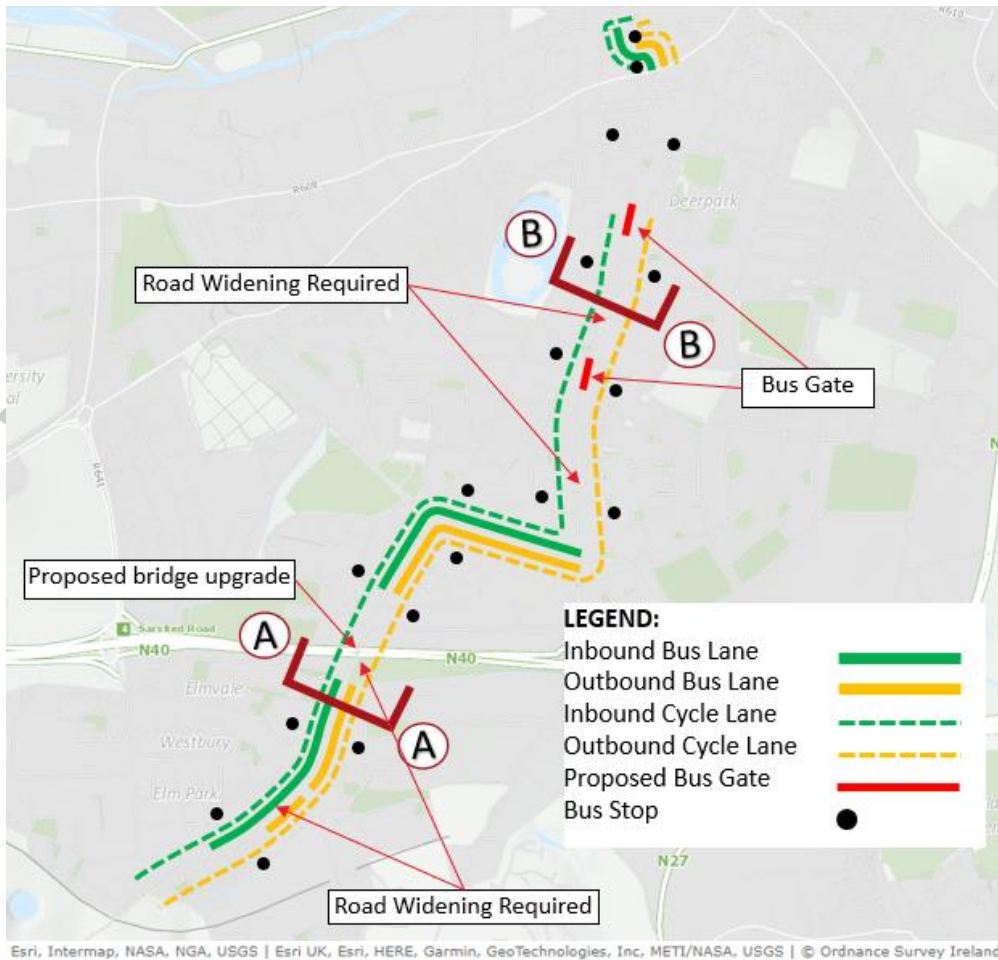


Figure 39: Section 1, Proposed Option 4 – Indicative Scheme Design

As per Options 1-3, along Spur Hill between Sarsfield Road and Togher Village it is proposed to provide cycle lanes in both directions along the entire length. In terms of bus lanes an inbound bus lane is proposed between Fernwood Close and the roundabout junction with Lehenaghmore Road, while an outbound bus lane is proposed for a short section of Spur Hill, south of the junction with Lehenaghmore Road. The proposed bus and cycle infrastructure will be delivered via road widening and land acquisition on the southern side of Spur Hill between Lehenaghmore Road and Fernwood Close.

Through Togher Village dedicated cycle lanes and bus lanes in both directions are proposed along with two general traffic lanes, which will require some limited land acquisition on the western side of the road. It is proposed to upgrade the N40 bridge overpass to provide for cycle lanes in both directions over the bridge. On Togher Road north of the South Ring Road dedicated cycle lanes are provided in both directions between Tramore Road and Vicars Road, with inbound and outbound bus lanes proposed between Deanrock Avenue and Vicars Road.

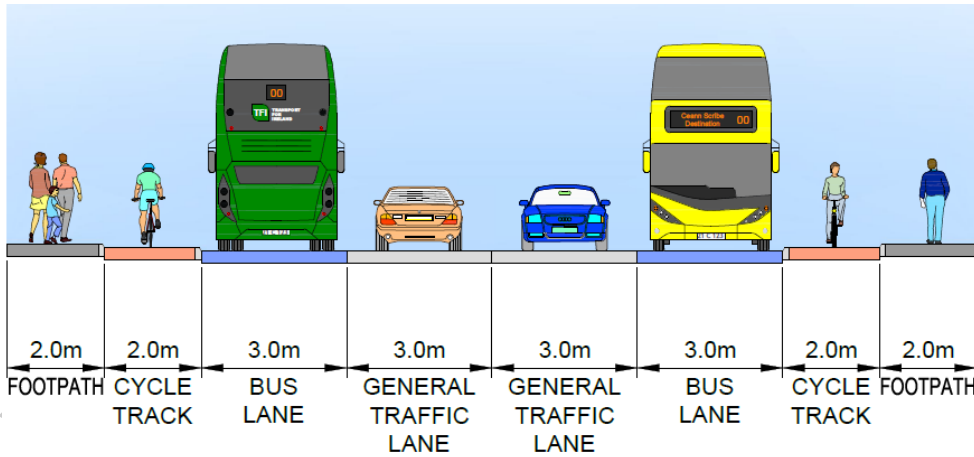


Figure 40: Section 1, Proposed Option 4 – Cross Section A-A

At the junction of Togher Road/Vicars Road both buses and cyclists are directed onto Vicars Road where both dedicated bus and cycles lanes are possible through localise road widening. On Pouladuff Road there is not sufficient space between buildings to provide dedicated bus lanes, so similar to Option 3 bus priority has been delivered through the introduction of a bus gate south of the junction of Pearse Road/Pouladuff Road and a further bus gate is proposed on Pouladuff Road at Pouladuff Villas south of Marian Park. At a number of locations on Pouladuff Road, road widening and land acquisition is proposed to facilitate footpath enhancements.

Bus lanes in both directions are proposed for Noonan Road between Gregg Road and Bandon Road (with a small gap in the inbound direction in order to accommodate cycle lanes on Noonan Road, whilst on Gregg Road itself a new inbound bus lane is proposed.

In terms of cycle facilities dedicated cycle facilities are provided along Pouladuff Road between Vicars Road and Pouladuff Villas, through road widening and land acquisition. For the remaining section of Pouladuff Road, north of the proposed bus gate cyclists will to share the road space with general traffic in a low-flow, low-speed environment created by the bus gates. Cycle lanes are provided in both directions on both Gregg Road, Noonan Road and Gillabbey Street.

To facilitate the delivery of the bus priority measures and cycle facilities it is proposed to make the following changes in traffic management:

- Noonan Road will become one-way westbound for general traffic between Bandon Road and Gregg Road;
- Gregg Road will become one-way southbound for general traffic; and
- No through traffic will be permitted on Pouladuff Road between Vicars Road and Noonan Road through the introduction of bus gates.

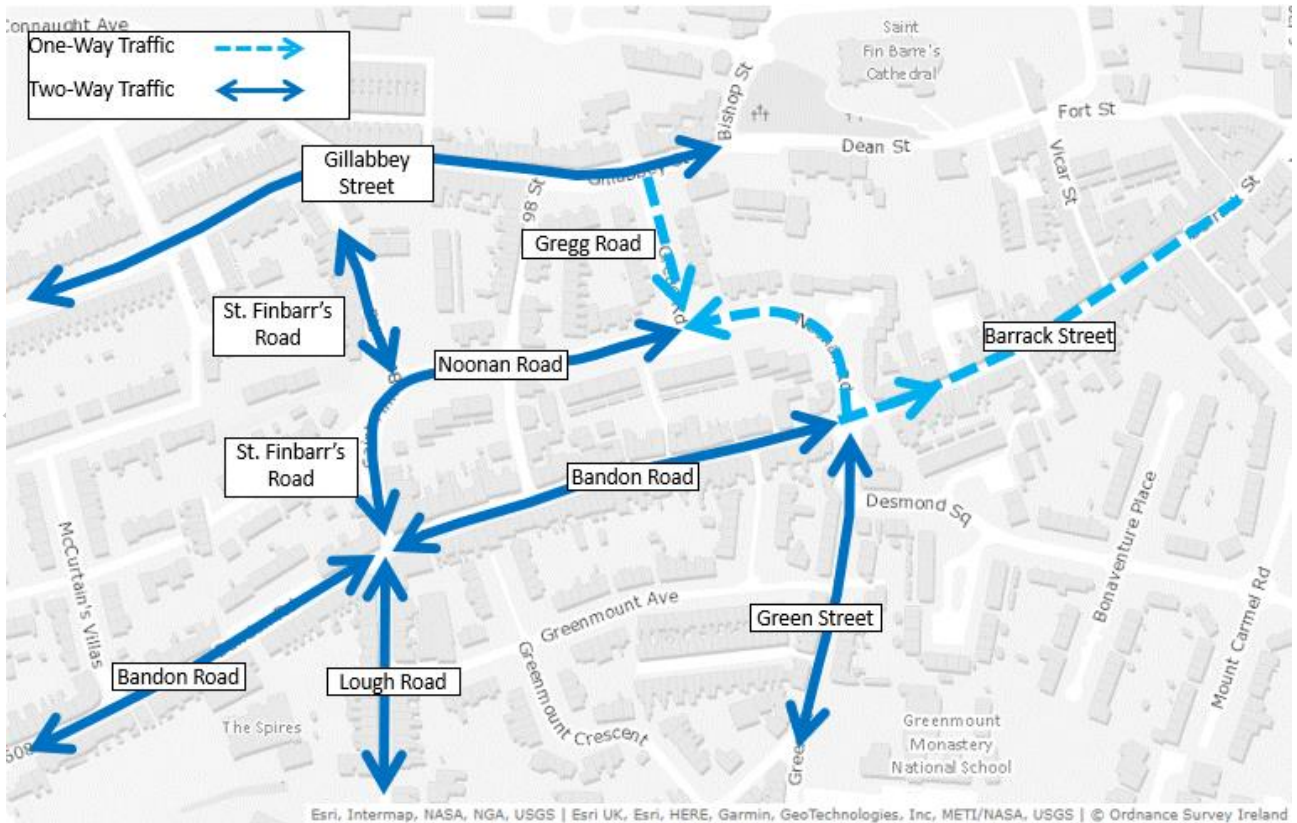


Figure 41: Section 1, Proposed Option 4 – Traffic Management Measures

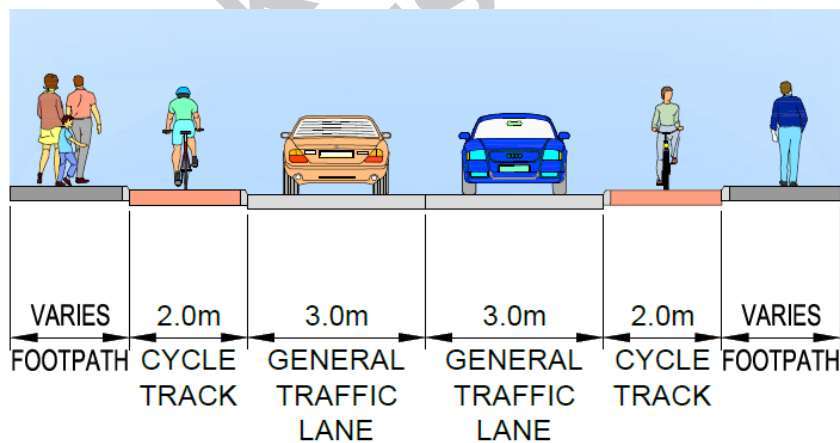


Figure 42: Section 1, Proposed Option 4 – Cross Section B-B

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

- Partial bus lanes on Spur Hill in both directions;
- Bus lanes on both sides of the road through Togher Village;
- Upgrade of the N40 overbridge on the Togher Road to provide cycle facilities;
- Bus lanes on both sides of the road on Togher Road approaching the junction with Vicars Road;
- Dedicated bus lanes in both directions on Vicars Road;
- Two bus gates on Pouladuff Road, to the south of the junction with Pearse Road and south of the junction at Marian Park;
- Bus lanes in both directions along the majority of Noonan Road and outbound on Gregg Road;

- Raised adjacent cycle lanes along the majority of the route with the exception of a section of Pouladuff Road between Bandon Road and Pouladuff Villas where a low-flow, low-speed environment has been provided through the use of bus gates; and
- Land acquisition estimated from 75 properties.

7.1.5 Option 5 – Buses routed via Spur Hill/Togher Road/Pearse Road/Pouladuff Road – cyclists routed via Spur Hill/Togher Road/Lough Road

7.1.5.1 Route Description

Route Option 5 is presented in Figure 43 and described in the following text.

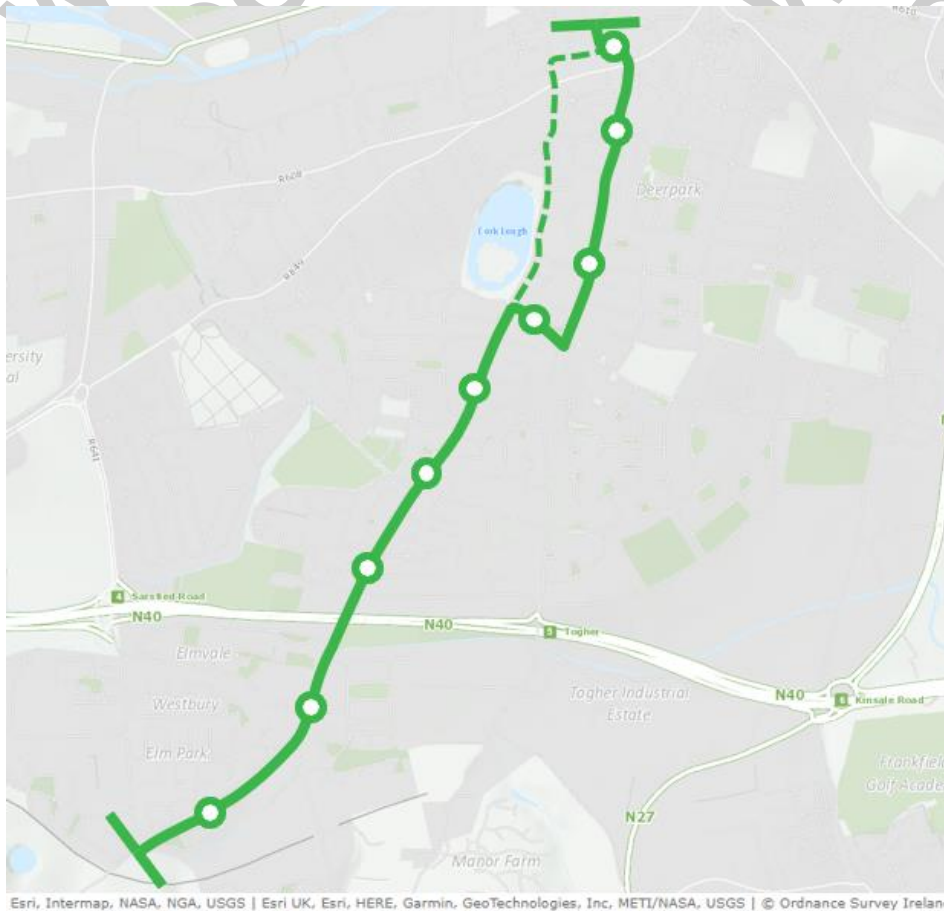


Figure 43: Section 1, Proposed Option 5 – Route Overview

As with Options 1-4, Route Option 5 also commences at the junction of Sarsfield Road/Spur Hill to the south of Togher. Option 4 travels through the centre of Togher and passes over the N40 South Ring Road along Togher Road. At the junction of Togher Road/Pearse Road buses are diverted onto Pearse Road, Pouladuff Road and Green Street. The route ends at Bishop Street with buses and cyclists travelling along Noonan Road, Gregg Road and Gillabbey Street between Green Street and Bishop Street.

Cyclists follow the route of buses from the start of the route as far as the junction of Pearse Road/Togher Road; from here cyclists continue along Lough Road and St Finbarr’s Road before re-joining the route for buses on Gregg Road. It is envisaged that this option would likely accommodate a total of 9 bus stops in each direction.

7.1.5.2 Indicative Scheme Design

Figure 44 illustrates the indicative scheme design for this route option along with the location of cross sections and junctions referenced in subsequent sections.

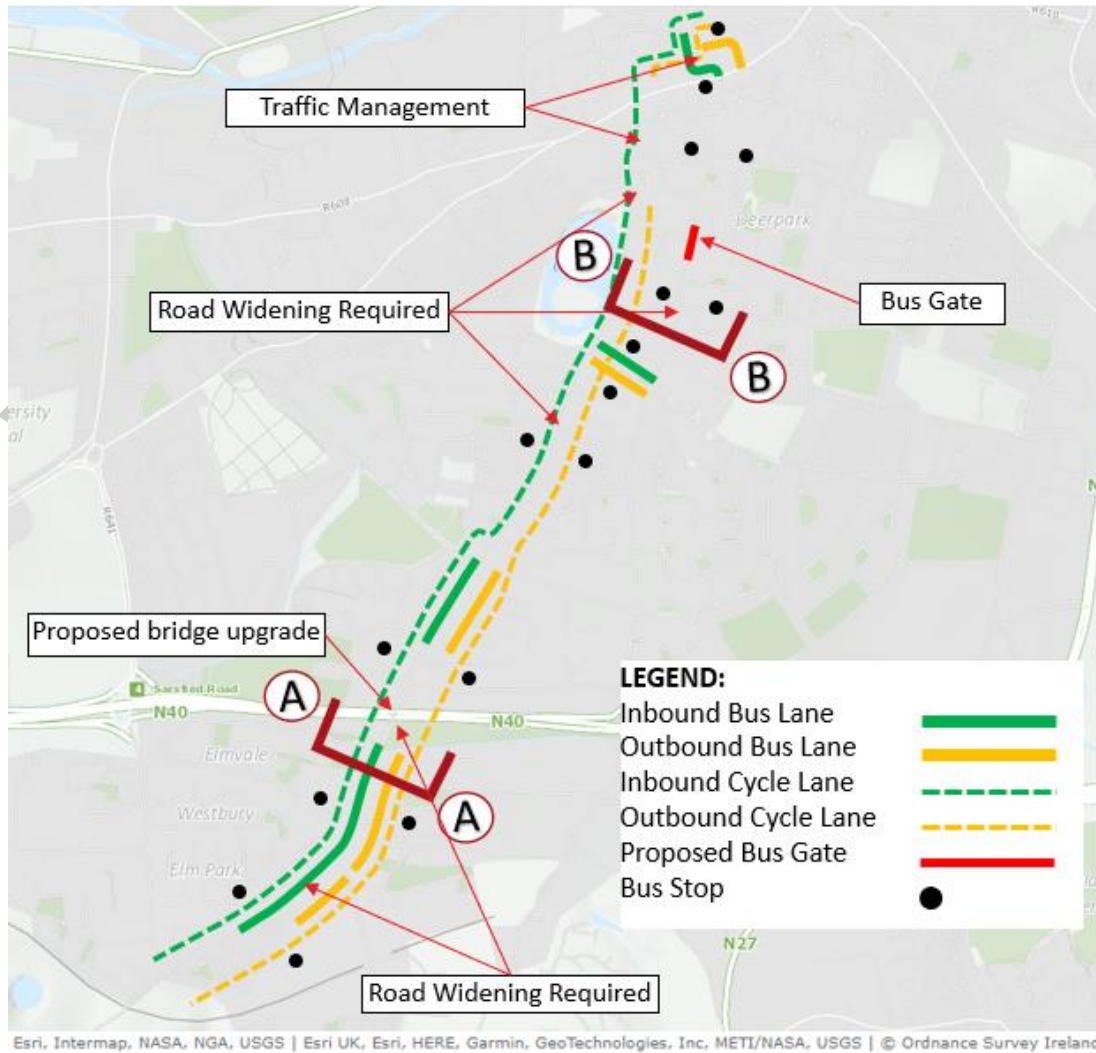


Figure 44: Section 1, Proposed Option 5 – Indicative Scheme Design

As per Options 1-4, along Spur Hill between Sarsfield Road and Togher Village it is proposed to provide cycle lanes in both directions along the entire length. In terms of bus lanes an inbound bus lane is proposed between Fernwood Close and the roundabout junction with Lehenaghmore Road, while an outbound bus lane is proposed for a short section of Spur Hill, south of the junction with Lehenaghmore Road. The proposed bus and cycle infrastructure will be delivered via road widening and land acquisition on the southern side of Spur Hill between Lehenaghmore Road and Fernwood Close.

Through Togher Village dedicated cycle lanes and bus lanes in both directions are proposed along with two general traffic lanes, which will require some limited land acquisition on the western side of the road. It is proposed to upgrade the N40 bridge overpass to provide for cycle lanes in both directions over the bridge. On Togher Road north of the South Ring Road dedicated cycle lanes are provided in both directions between Tramore Road and Vicars Road, with inbound and outbound bus lanes proposed between Deanrock Avenue and Vicars Road. Dedicated cycle lanes are continued through to the junction of Togher Road/Pearse Road; however, along this section no bus lanes are proposed.

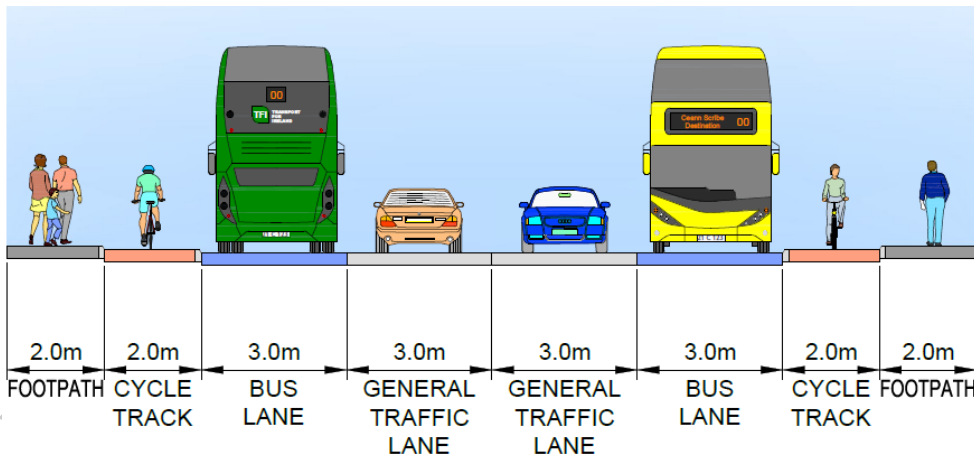


Figure 45: Section 1, Proposed Option 5 – Cross Section A-A

At the junction of Togher Road/ Pearce Road the routes for buses and cyclists diverge with cyclists staying on Lough Road traveling towards St Finbarr’s Road, while buses divert onto Pearse Road and on to Pouladuff Road/Green Street. Along Pearse Road bus lanes are proposed in both directions through road re-designation and localised widening.

However, on Pouladuff Road between Pearse Road and Bandon Road there is not sufficient space between buildings to provide dedicated bus lanes so bus priority has been delivered through the introduction of a bus gate on Pouladuff Road at Pouladuff Villas, south of Marian Park. At a number of locations on Pouladuff Road, road widening and land acquisition is proposed to facilitate footpath enhancements.

Continuing north, bus lanes in both directions are proposed for Noonan Road between Gregg Road and Bandon Road, while on Gregg Road itself a new inbound bus lane is proposed.

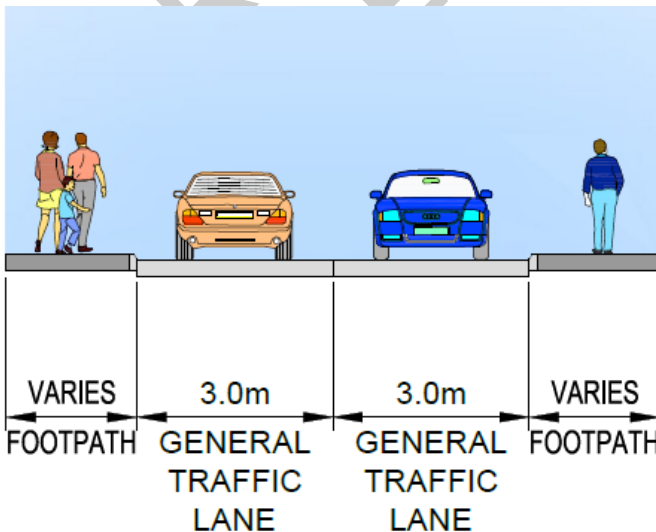


Figure 46: Section 1, Proposed Option 5 – Cross Section B-B

In terms of cycle facilities inbound cycle facilities are provided along the entirety of Lough Road while in the outbound direction the proposal includes a dedicated cycle lane from Valentine Villas to Pearse Road while for the remaining section of Lough Road cyclists will have to share the road space with general traffic in a low-flow, low-speed environment. Cycle lanes are provided in both directions on both Gregg Road and Noonan Road. The cycle lane proposals on Lough Road will be facilitated through road re-designation and localised widening/land acquisition.

Cyclists will continue through from Lough Road to St. Finbarr’s Road, where a dedicated inbound cycle lane will be provided, continuing through to Noonan Road, Gregg Road and Gillabbey Street. Outbound cyclists will follow the same route via Gillabbey Street, Gregg Road, Noonan Road and St. Finbarr’s Road using a dedicated cycle lane; however, at the western end of St. Finbarr’s Road and on Lough Road as far as Valentine Villas, outbound cyclists will have to share with buses and local access traffic.

To facilitate the delivery of the bus priority measures and cycle facilities it is proposed to make the following changes in traffic management:

- Noonan Road will become one-way westbound for general traffic between Bandon Road and St Finbarr's Road;
- Gregg Road will become one-way southbound for general traffic;
- St Finbarr's Road will become one-way northbound from Noonan's Road;
- No through general traffic will be permitted on Pouladuff Road between Bandon Road and Pearse Road due to the introduction of a bus gate; and
- Lough Road will become one-way southbound for general traffic from Bandon Road to Valentine Villas.

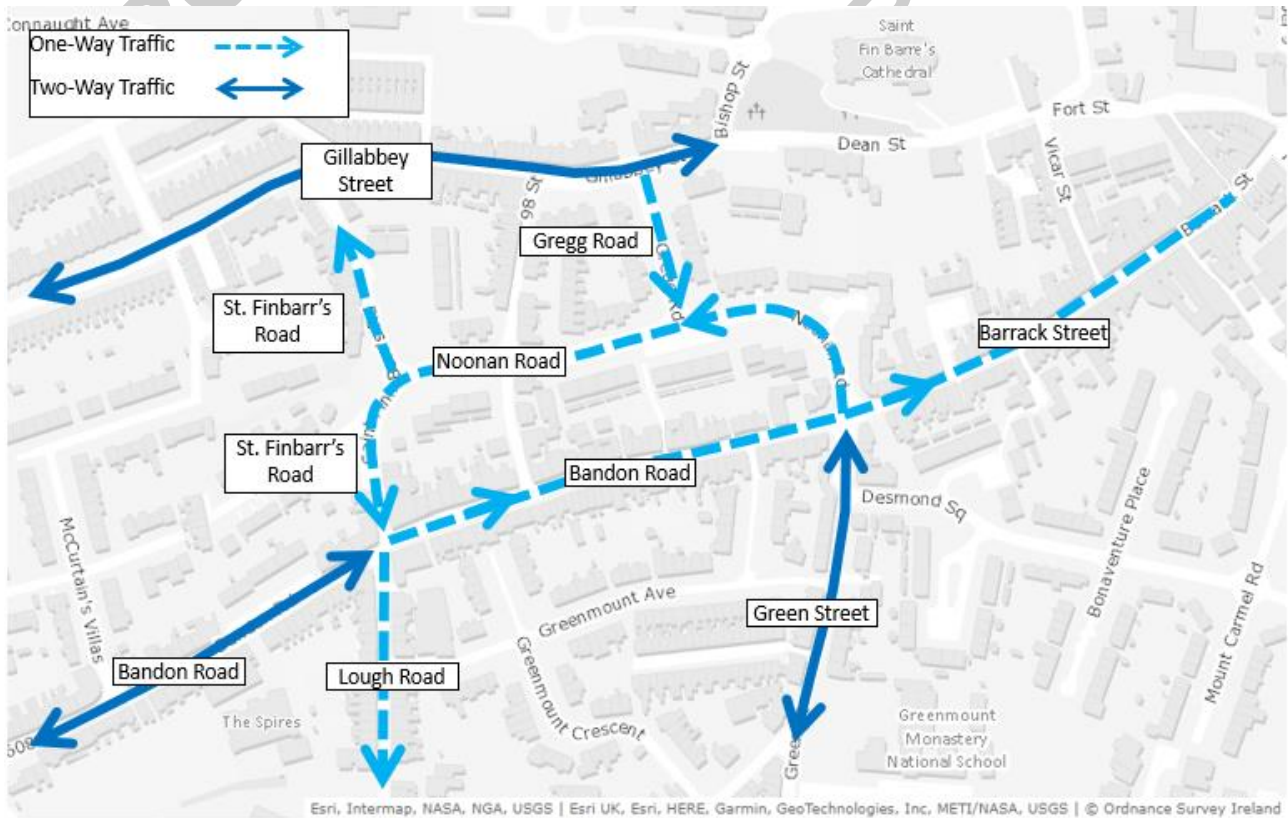


Figure 47: Section 1, Proposed Option 5 – Traffic Management Measures

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

- Partial bus lanes on Spur Hill in both directions;
- Bus lanes on both sides of the road through Togher Village;
- Upgrade of the N40 overbridge on the Togher Road to provide cycle facilities;
- Bus lanes on both sides of the road on Togher Road approaching the junction with Vicars Road;
- Dedicated bus lanes in both directions on Pearse Road
- Bus gate on Pouladuff Road, at Pouladuff Villas;
- Bus lanes in both directions on Noonan Road and outbound on Gregg Road
- Raised adjacent cycle lanes along the majority of the route with a small section of Lough Road and St. Finbarr's Road where a low-flow, low-speed environment has been provided; and
- Land acquisition estimated from 52 properties.

7.1.6 Route Options Assessment

Details of the Stage 2 route options assessment undertaken for the options outlined above for Section 1 are presented in Appendix B and the relative ranking of route options against the scheme assessment sub-criteria is summarised in Table 8.

Table 8: Section 1, Spur Hill to Bishops Street Options Assessment Summary (Sub-Criteria)

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

From an **Economy** perspective, there are little differences between the options in terms of overall construction costs, however Option 2 which includes the bus priority measures on the Lough Road is deemed the most favourable with respect to journey times.

In terms of **Integration**, Option 2 is considered to have slightly less residential catchment compared to the other options, with its catchment impacted by the nearby amenity space in and around the Lough. In terms of cycling all options are considered equal however Option 4 is considered less desirable due to the deviation of the route from the natural desire line travelling towards the city centre, although it is recognised that the route does provide dedicated segregated cycle facilities.

From an **Accessibility and Social Inclusion** perspective, Option 1 provides greater access to the University buildings and Hospital on College Road, however a number of the other routes (Options 3,4 and 5) better serve the Deprived Geographical Areas. In terms of **Safety**, all options are considered equal.

Under **Environment**, Option 2 is considered the most favourable in that the infrastructure is limited to one route only, thereby reducing the extent of impact on the receiving environment. All other options perform similarly in terms of potential impacts on the receiving built and natural environment.

From the above assessment it has been identified that **Option 5** is the preferred option, as it provides a good level of bus priority within a large and established catchment. It is noted that the delivery of Option 5 will impact on the Cork Lough proposed National Heritage Area and the detailed design of the cycle facilities through this area will need to ensure the integrity of the site is maintained and enhanced where possible. It is therefore recommended that Option 5 be considered as the preferred option for Section 1 and is brought forward as part of the emerging preferred route.

7.2 Study Area Section 2 – Bishop Street to City Centre

This section of CBC 8 has been evaluated following the determination of a preferred option for Section 1 (Spur Hill to Bishop Street)

For Section 2, the notional start point of the section is the junction of Bishop Street and Gillabbeey Street. The end point for Section 2 is the junction of Washington Street and Grand Parade in the city centre.

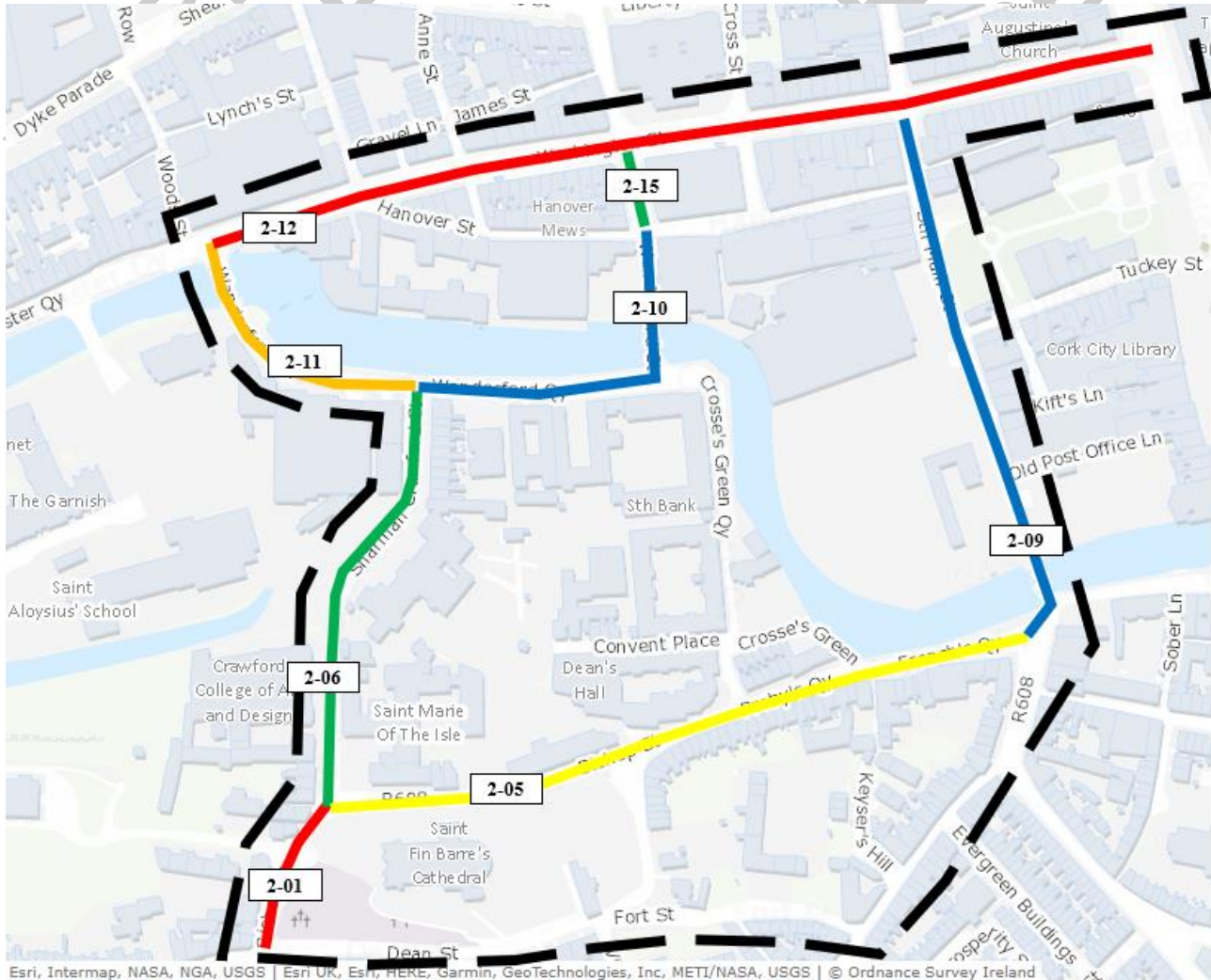


Figure 48: Section 2 – Route Options remaining after Stage 1 Sift

Following the Stage 1 sift, a number of route options have been identified within this section:

- **Option 1** – Inbound buses via Sharman Crawford Street, Wandesford Quay, St. Finbar's Bridge and Washington Street, with outbound buses via Washington Street, South Main Street, Proby's Quay, and Bishop Street. Inbound cyclists via Bishop Street, Proby's Quay, South Main Street and Washington Street, with outbound cyclists via Washington Street, Hanover Place, Clarke's Bridge, Crosse's Green, Proby's Quay and Bishop Street;
- **Option 2** – Routing for buses as per Option 1, but with additional traffic management at South Main Street/Sullivan's Quay/French's Quay. Inbound cyclists via Bishop Street, Proby's Quay, South Main Street and Washington Street, with outbound cyclists via Washington Street, Hanover Place, Clarke's Bridge, Crosse's Green, Proby's Quay and Bishop Street;
- **Option 3** – Inbound and outbound buses via Sharman Crawford Street (operating under a shuttle arrangement), Wandesford Quay, St. Finbar's Bridge and Washington Street. Inbound cyclists via Bishop Street, Proby's Quay, South Main Street and Washington Street, with outbound cyclists via Washington Street, Hanover Place, Clarke's Bridge, Crosse's Green, Proby's Quay and Bishop Street;

- **Option 4** – Inbound buses via Sharman Crawford Street, Wandesford Quay, St. Finbarr’s Bridge and Washington Street, with outbound buses via Washington Street, Hanover Place, Clarke’s Bridge, Wandesford Quay and Sharman Crawford Street (operating under a shuttle arrangement with inbound buses along Sharman Crawford Street). Inbound cyclists via Bishop Street, Proby’s Quay, South Main Street and Washington Street, with outbound cyclists via Washington Street, Hanover Place, Clarke’s Bridge, Crosse’s Green, Proby’s Quay and Bishop Street);
- **Option 5** – Inbound buses via Sharman Crawford Street, Wandesford Quay, Clarke’s Bridge and Washington Street, with outbound buses via Washington Street, South Main Street, Proby’s Quay, and Bishop Street. Inbound and outbound cyclists via Bishop Street, through the grounds of St. Mary of the Isle Convent and adjacent to Wandesford House Apartments, Wandesford Quay, Clarke’s Bridge, Hanover Place and Washington Street; and
- **Option 6** – Inbound buses via Sharman Crawford Street, Wandesford Quay, Clarke’s Bridge, Hanover Place and Washington Street, with outbound buses via Washington Street, South Main Street, Proby’s Quay, and Bishop Street. Inbound and outbound cyclists via Bishop Street, Proby’s Quay, Crosse’s Green, Wandesford Quay, Clarke’s Bridge, Hanover Place and Washington Street;

These options are described in greater detail below.

7.2.1 Option 1 – Inbound buses via St. Finbarr’s Bridge; Outbound buses via South Main Street, Inbound cycle route retained; Outbound cycle route Crosses’s Green

7.2.1.1 Route Description

Route Option 1 is presented in Figure 49 and described in the following text.



Figure 49: Section 2, Proposed Option 1 – Route Option Overview

Option 1 routes inbound buses via Sharman Crawford Street and Wandesford Quay, over St. Finbarr’s Bridge and on to Washington Street, with outbound buses using Washington Street, South Main Street and Proby’s Quay/Bishop Street.

Inbound cyclists use the existing contra-flow cycle facilities on Bishop Street/Proby’s Quay and South Main Street, and outbound cyclists use Hanover Place/Clarke’s Bridge and Crosses Green.

It is envisaged that this option would accommodate a total of 3 bus stops in each direction.

7.2.1.2 Indicative Scheme Design

Figure 50 illustrates the indicative scheme design for this route option along with the location of cross sections and junctions referenced in subsequent sections.

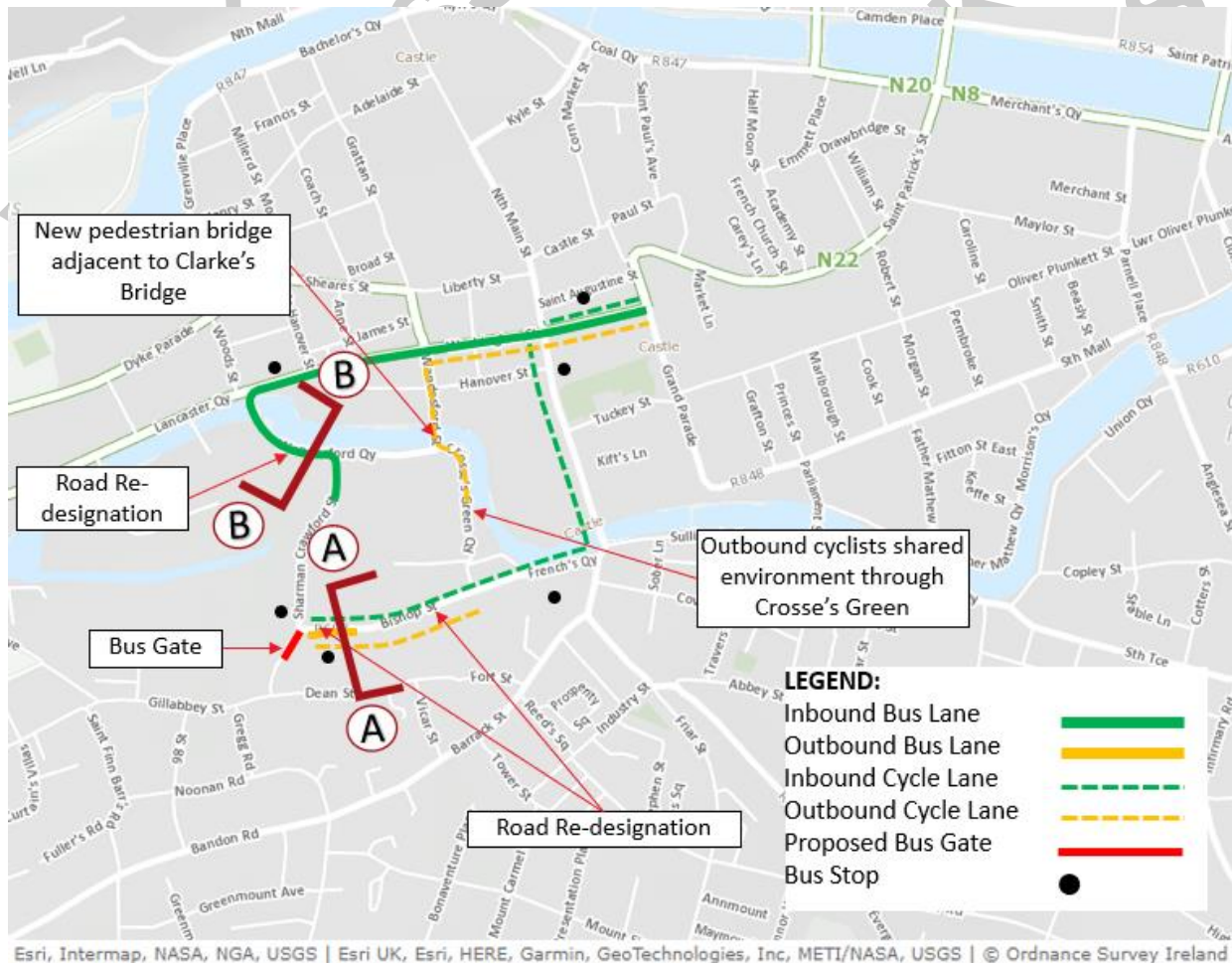


Figure 50: Section 2, Proposed Option 1 – Indicative Scheme Design

Along Bishop Street, between the junction with Gillabbeey Street and the junction with Sharman Crawford Street it is not possible to provide additional bus lanes due to the proximity of buildings and St. Finbarr's Cathedral boundary walls. Therefore, under this option it is proposed to manage the flow of through traffic by providing a bus gate on Bishop Street, north of the entrance to the Bishop's Palace. This will facilitate local two-way access along Bishop Street from Gillabbeey Street but will not permit through traffic to Sharman Crawford Street and will also not permit outbound traffic on Proby's Quay and Bishop Street to turn left to route south. This bus gate will consequently support improved bus journey time and reliability through this portion of the corridor.

From the junction of Bishop Street and Sharman Crawford Street it is not possible to widen Sharman Crawford Street towards the southern end due to the proximity of the Crawford College of Art and Design to the west and the grounds of St. Mary of the Isle Convent to the east (both of which are protected structures). Continuing north, passing St. Aloysius Secondary School it is however possible to widen Sharman Crawford Street to accommodate an inbound bus lane and an inbound traffic lane through to Wandesford Quay. On Wandesford Quay, between Sharman Crawford Street and Washington Street it is possible to provide an inbound traffic lane and an inbound bus lane through redesignation of the existing outbound traffic lane and conversion of this portion of the route to one-way inbound only.

From the junction with Washington Street, an inbound bus lane is proposed through to the junction at Grand Parade through removal of the on-street loading present on the northern side of the route before connecting to the existing inbound bus lane commencing after Courthouse Street.

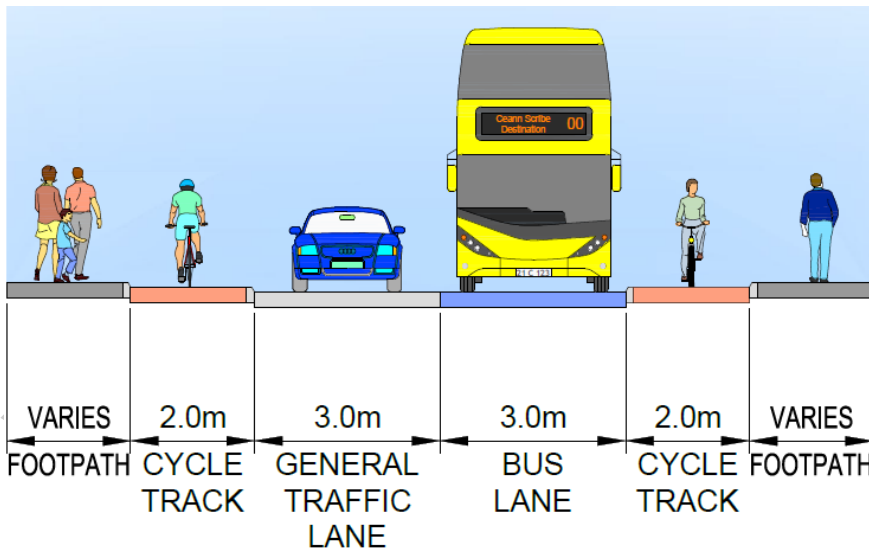


Figure 51: Section 2, Proposed Option 1 – Cross Section A-A

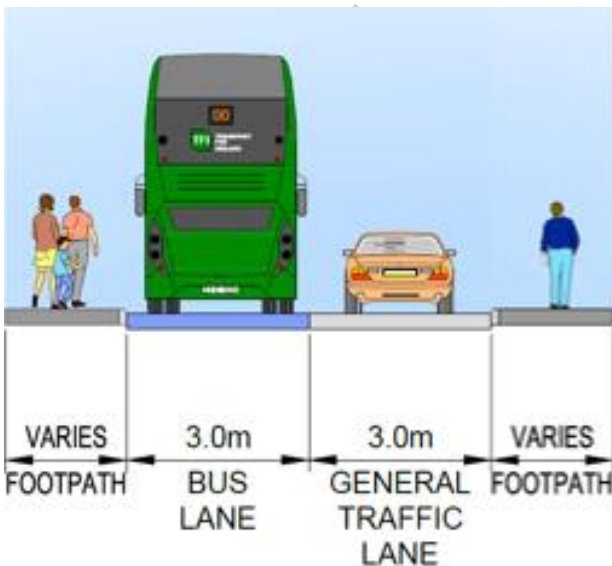


Figure 52: Section 2, Proposed Option 1 – Cross Section B-B

Outbound buses will share with general traffic on Washington Street, South Main Street and Proby’s Quay as it is not possible to provide dedicated bus priority along this portion of the route. On Bishop Street, approaching the junction with Sharman Crawford Street it is possible to provide a short section of outbound bus lane through redesignation of the short section of additional outbound traffic lane at this location.

As part of this option, inbound cyclists would initially share with buses through the bus gate on Bishop Street before continuing east on Bishop Street using an inbound, contra-flow raised adjacent cycle lane (similar to the existing route for cyclists at this location). This would continue through to South Main Street (again using the existing inbound contra-flow cycle lane), Washington Street and on to Grand Parade.

Outbound cyclists would route via Washington Street, Hanover Place and across Clarke’s Bridge using a contra-flow raised adjacent cycle facility to connect to Wandesford Quay. It is likely that the existing cross-section on Clarke’s Bridge would need to be amended to facilitate the contra-flow cycle lane, with the transference of pedestrians away from the bridge to a new adjacent bridge structure to the west proposed. Outbound cyclists would then route through Crosse’s Green using a combination of dedicated cycle facilities and sharing with local traffic towards the southern end of Crosse’s Green where physical space constraints do not permit dedicated cycling infrastructure to be implemented. At the junction with Proby’s Quay,

cyclists would transition back to Proby's Quay and route west to Bishop Street using a raised adjacent outbound cycle facility.

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

- Proposed bus gate on Bishop Street, south of the junction with Sharman Crawford Street;
- Proposed inbound bus lane on Sharman Crawford Street (north of St. Aloysius School), Wandersford Quay and Washington Street;
- Proposed inbound bus lane on Washington Street between St. Finbarr's Bridge and Courthouse Street (tying into the existing inbound bus lane thereafter);
- Footpath improvement works on Bishop Street and Sharman Crawford Street;
- A short section of outbound bus lane on Bishop Street approaching the junction with Sharman Crawford Street from the east;
- Proposed raised adjacent inbound cycle lane on Bishop Street and South Main Street (to replace the existing on-road contra-flow cycle lane) and on Washington Street;
- Proposed raised adjacent outbound cycle lane on Washington Street, Hanover Place, Clarke's Bridge (contra-flow) and Crosse's Green (northern end), and a proposed raised adjacent cycle lane outbound on Proby's Quay and Bishop Street;
- Provision of a new parallel pedestrian structure to the west of Clarke's Bridge; and
- Land acquisition estimated from 1 property.

7.2.2 Option 2 – Routing as per Option 1, with additional traffic management

7.2.2.1 Route Description

Route Option 2 is presented in Figure 53 and described in the following text.

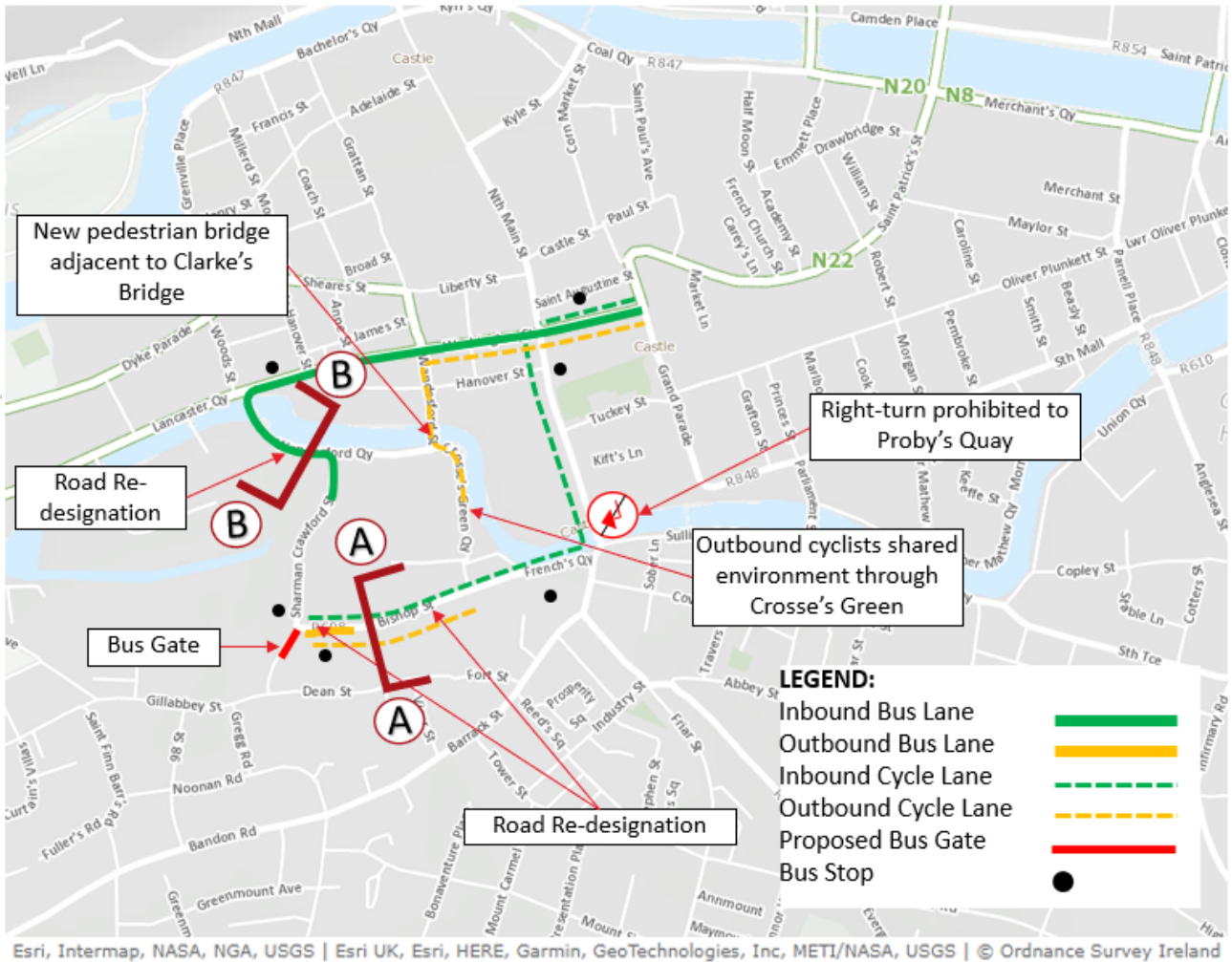


Figure 53: Section 2, Proposed Option 2 – Route Option Overview

Option 2 is the same as Option 1, with the sole additional proposal to include additional traffic management measures at the junction of South Main Street/Sullivan’s Quay/Proby’s Quay. These traffic management measures would involve the prohibition of the right-turning traffic (except for buses and cyclists) from South Main Street to Proby’s Quay, with all outbound traffic directed south instead routing via Barrack Street and Evergreen Street.

As with Option 1, in summary this route option, subject to confirmation at the scheme design stage, would result in the following characteristics:

- Proposed bus gate on Bishop Street, south of the junction with Sharman Crawford Street;
- Proposed inbound bus lane on Sharman Crawford Street (north of St. Aloysius School), Wandersford Quay to the junction with Washington Street;
- Proposed inbound bus lane on Washington Street between St. Finbarr’s Bridge and Courthouse Street (tying into the existing inbound bus lane thereafter);
- Footpath improvement works on Bishop Street and Sharman Crawford Street;
- A short section of outbound bus lane on Bishop Street approaching the junction with Sharman Crawford Street from the east;
- Proposed raised adjacent inbound cycle lane on Bishop Street and South Main Street (to replace the existing on-road contra-flow cycle lane) and on Washington Street;
- Proposed raised adjacent outbound cycle lane on Washington Street, Hanover Place, Clarke’s Bridge (contra-flow) and Crosse’s Green (northern end), and a proposed raised adjacent cycle lane outbound on Proby’s Quay and Bishop Street;

- Provision of a new parallel pedestrian structure to the west of Clarke’s Bridge; and
- Land acquisition estimated from 1 property.

7.2.3 Option 3 – Inbound and Outbound buses via Sharman Crawford Street/Wandesford Quay, inbound cyclists via Bishop Street/Proby’s Quay/South Main Street/Washington Street, outbound cyclists via Washington Street/Hanover Place/Clarke’s Bridge/Crosses’s Green/Bishop Street

7.2.3.1 Route Description

Route Option 3 is presented in Figure 49 and described in the following text.

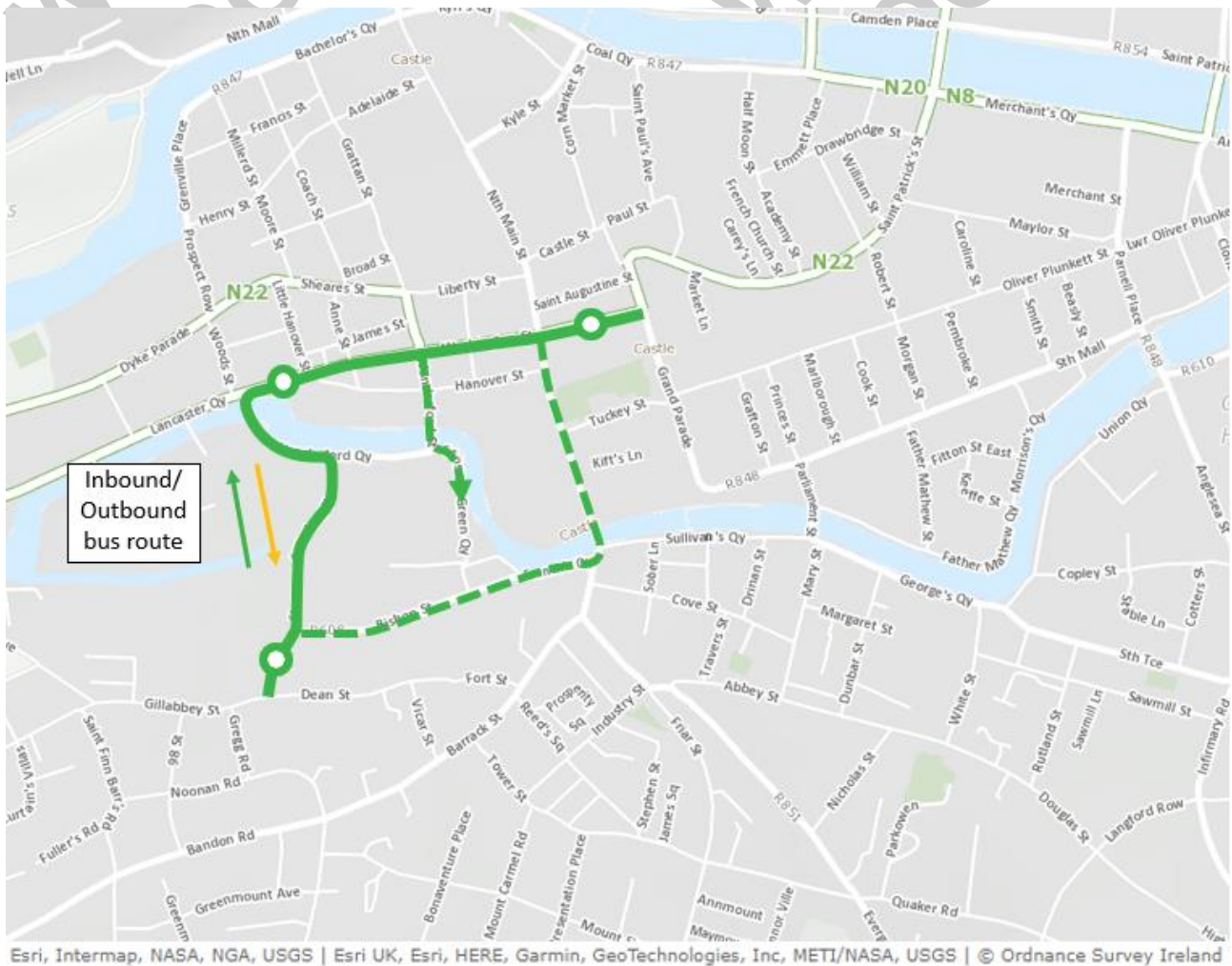


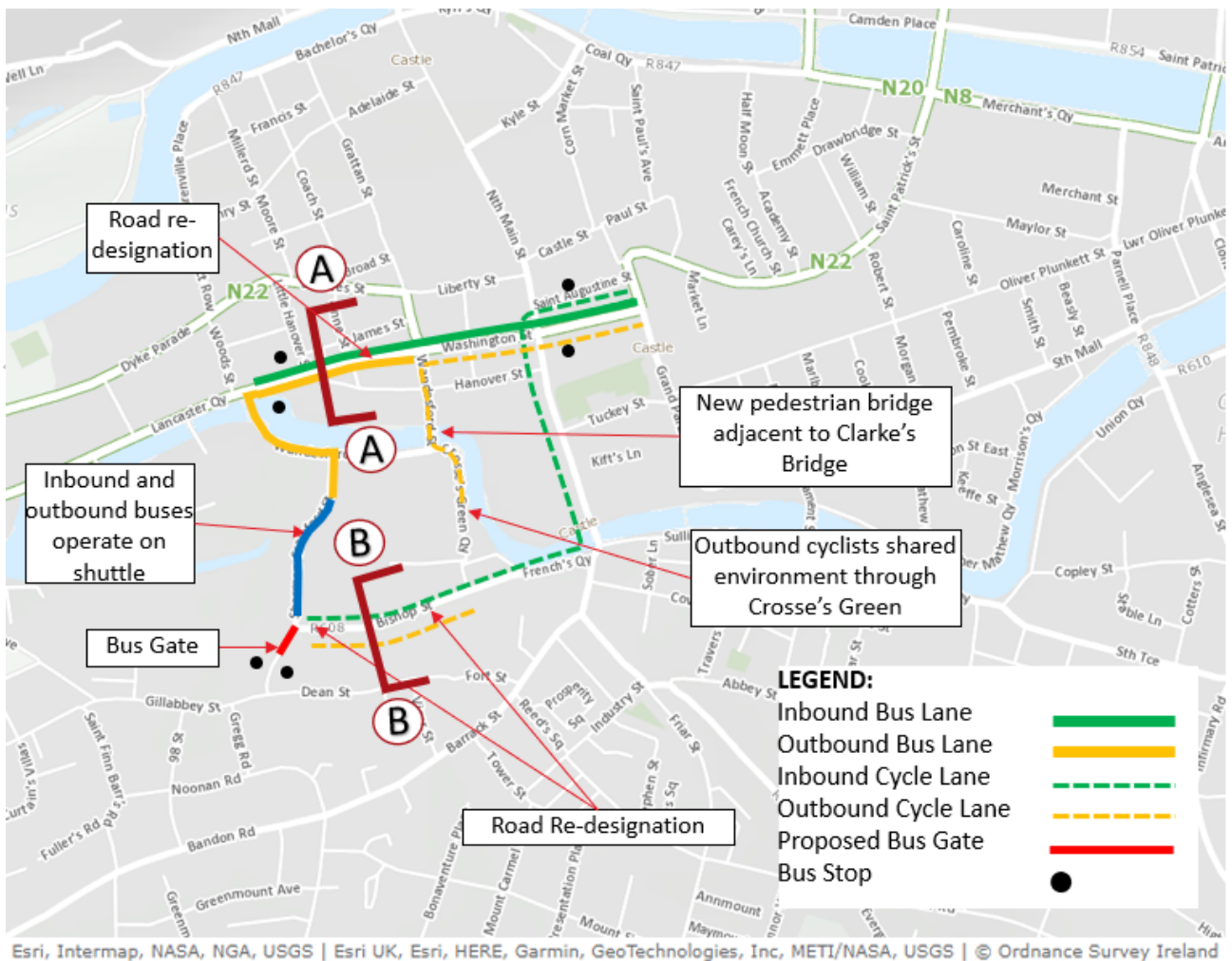
Figure 54: Section 2, Proposed Option 3 – Route Option Overview

Option 3 routes both inbound and outbound buses via Sharman Crawford Street and Wandesford Quay, over St. Finbarr’s Bridge and on to Washington Street. Inbound cyclists will use the existing contra-flow cycle facilities on Bishop Street/Proby’s Quay and South Main Street/Washington, and outbound cyclists on Washington Street use Hanover Place/Clarke’s Bridge/Crosse’s Green and Proby’s Quay/Bishop Street.

It is envisaged that this option would accommodate a total of 3 bus stops in each direction.

7.2.3.2 Indicative Scheme Design

Figure 54 illustrates the indicative scheme design for this route option along with the location of cross sections and junctions referenced in subsequent sections.



Esri, Intermap, NASA, NGA, USGS | Esri UK, Esri, HERE, Garmin, GeoTechnologies, Inc, METI/NASA, USGS | © Ordnance Survey Ireland
Figure 55: Section 2, Proposed Option 3 – Indicative Scheme Design

Along Bishop Street, between the junction with Gillabbeey Street and the junction with Sharman Crawford Street it is not possible to provide additional bus lanes due to the proximity of buildings and St. Finbarr's Cathedral boundary walls. Therefore, under this option as with Option 1 and 2 it is proposed to manage the flow of through traffic by providing a bus gate on Bishop Street, north of the entrance to the Bishop's Palace. This will facilitate local two-way access along Bishop Street, but will not permit through traffic to Sharman Crawford Street, and will also not permit outbound traffic on Proby's Quay and Bishop Street to turn left to route south. This bus gate will consequently support bus journey time and reliability through this portion of the corridor.

From the junction of Bishop Street and Sharman Crawford Street it is not possible to widen Sharman Crawford Street towards the southern end due to the proximity of the Crawford College of Art and Design to the west and the grounds of St. Mary of the Isle Convent to the east. Continuing north, passing St. Aloysius Secondary School it is possible to widen Sharman Crawford Street to accommodate an outbound bus lane and an inbound traffic lane through to Wandesford Quay.

Routing buses in both directions along this portion of the route will result in a requirement to implement a shuttle traffic management system to allow buses to travel southbound and hold northbound general traffic flows at the junction of Bishop Street/Sharman Crawford Street.

On Wandesford Quay, between Sharman Crawford Street and Washington Street it is possible to provide an inbound traffic lane and an inbound bus lane through redesignation of the existing outbound traffic lane and conversion of this portion of the route to one-way inbound traffic route only.

From the junction with Washington Street, an inbound bus lane is proposed through to the junction at Grand Parade requiring the removal of the on-street loading present on the northern side of the route before connecting to the existing inbound bus lane commencing after Courthouse Street.

Outbound buses will share with general traffic on Washington Street between Grand Parade and Hanover Place. Between Hanover Place and St Finbarr’s Bridge a dedicated outbound bus lane is proposed.

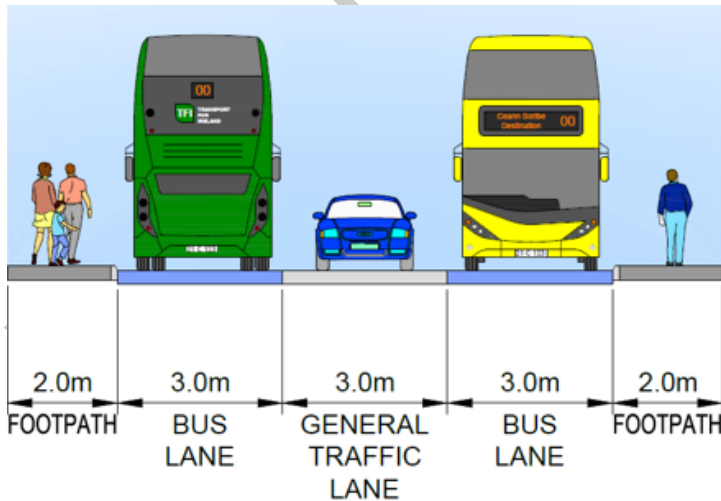


Figure 56: Section 2, Proposed Option 3 – Cross Section A-A

As part of this option, inbound cyclists would initially share with buses through the bus gate on Bishop Street before continuing east on Bishop Street using an inbound, contra-flow raised adjacent cycle lane (similar to the existing route for cyclists at this location). This would continue through to South Main Street (again using the existing inbound contra-flow cycle lane), Washington Street and on to Grand Parade.

Outbound cyclists would route via Washington Street, Hanover Place and across Clarke’s Bridge using a contra-flow raised adjacent cycle facility to connect to Wandesford Quay. It is likely that the existing cross-section on Clarke’s Bridge would need to be amended to facilitate the contra-flow cycle lane, with the transference of pedestrians away from the bridge to a new adjacent bridge structure to the west proposed. Outbound cyclists would then route through Crosse’s Green using a combination of dedicated cycle facilities and sharing with local traffic towards the southern end of Crosse’s Green where physical space constraints do not permit dedicated cycling infrastructure to be implemented. At the junction with Proby’s Quay, cyclists would transition back to on-street and route west to Bishop Street using a raised adjacent outbound cycle facility.

The proposed bus gate on Bishop Street, south of the junction with Sharman Crawford Street will prohibit left-turning traffic from the Proby’s Quay approach; therefore, this approach route would be reduced to a single outbound traffic lane.

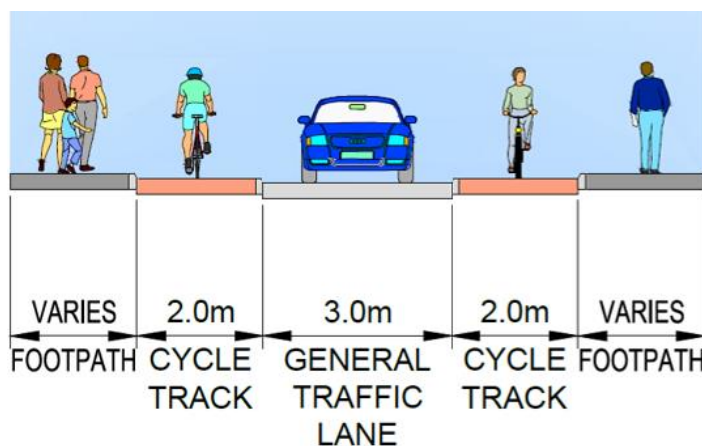


Figure 57: Section 2, Proposed Option 3 – Cross Section B-B

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

- Proposed bus gate on Bishop Street, south of the junction with Sharman Crawford Street;
- Proposed outbound bus lane on Sharman Crawford Street (north of St. Aloysius School) and a complimentary shuttle traffic system to allow buses travel two-way on Sharman Crawford Street,
- Proposed inbound bus lane over St Finbarr’s Bridge;
- Proposed inbound bus lane on Washington Street between St. Finbarr’s Bridge and Courthouse Street (tying into the existing inbound bus lane thereafter);
- Proposed outbound bus lane on Washington Street between Courthouse Street and St. Finbarr’s Bridge;
- Footpath improvement works on Bishop Street and Sharman Crawford Street;
- Proposed raised adjacent inbound cycle lane on Bishop Street and South Main Street (to replace the existing on-road contra-flow cycle lane) and on Washington Street between South Main Street and Grand Parade;
- Proposed raised adjacent outbound cycle lane on Washington Street (between Grand Parade and South Main Street), Hanover Place, Clarke’s Bridge (contra-flow) and Crosse’s Green (northern end), and a proposed raised adjacent cycle lane outbound on Proby’s Quay and Bishop Street
- Provision of a new parallel pedestrian structure to the west of Clarke’s Bridge; and
- Land acquisition estimated from 1 property.

7.2.4 Option 4 – Inbound Buses via Sharman Crawford Street/Wandesford Quay/St Finbarr’s Bridge/Washington Street; Outbound buses via Washington Street/Hanover Place/Clarke’s Bridge/Wandesford Quay/Sharman Crawford Street, inbound cyclists via Bishop Street/Proby’s Quay/South Main Street/Washington Street, outbound cyclists via Washington Street/Hanover Place/Clarke’s Bridge/Crosses’s Green/Bishop Street

7.2.4.1 Route Description

Route Option 4 is presented in Figure 58 and described in the following text.

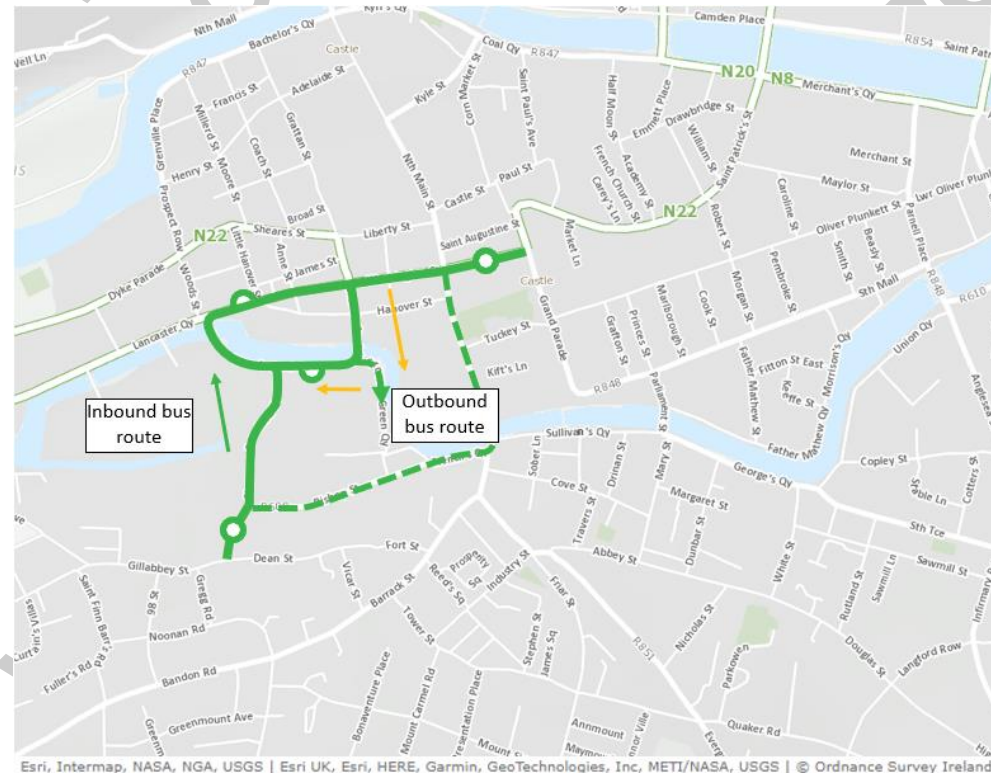


Figure 58: Section 2, Proposed Option 4 – Route Option Overview

Option 4 routes both inbound and outbound buses via Sharman Crawford Street, however from the junction with Wandersford Quay inbound buses are directed on Wandersford Quay (west), over St. Finbarr's Bridge and on to Washington Street while outbound buses travel via Hanover Place, over Clarke's Bridge and on to Wandersford Quay (east). Inbound cyclists use the existing contra-flow cycle facilities on Bishop Street/Proby's Quay and South Main Street/Washington Street, and outbound cyclists use Washington Street/Hanover Place/Clarke's Bridge and Crosse's Green/Proby's Quay.

It is envisaged that this option would accommodate a total of 3 bus stops in each direction.

7.2.4.2 Indicative Scheme Design

Figure 50 illustrates the indicative scheme design for this route option along with the location of cross sections and junctions referenced in subsequent sections.

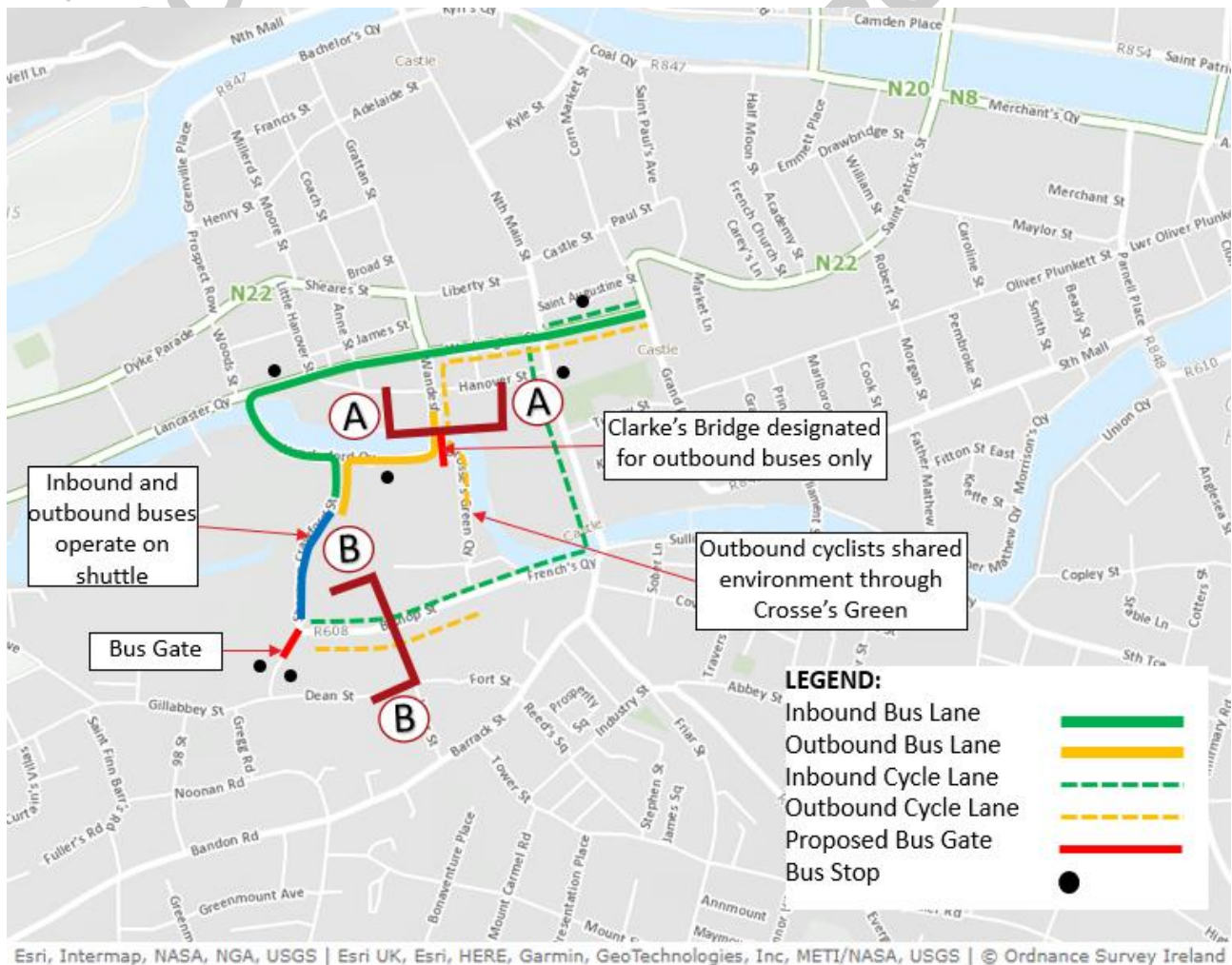


Figure 59: Section 2, Proposed Option 4 – Indicative Scheme Design

Along Bishop Street, between the junction with Gillabbey Street and the junction with Sharman Crawford Street it is not possible to provide additional bus lanes due to the proximity of buildings and St. Finbarr's Cathedral boundary walls. Therefore, as with Options 1-3 under this option it is proposed to manage the flow of through traffic by providing a bus gate on Bishop Street, north of the entrance to the Bishop's Palace. This will facilitate local two-way access along Bishop Street, but will not permit through traffic to Sharman Crawford Street, and will also not permit outbound traffic on Proby's Quay and Bishop Street to turn left to route south. This bus gate will consequently support bus journey time and reliability through this portion of the corridor.

From the junction of Bishop Street and Sharman Crawford Street it is not possible to widen Sharman Crawford Street towards the southern end due to the proximity of the Crawford College of Art and Design to the west and the grounds of St. Mary of the Isle Convent to the east. Continuing north, passing St. Aloysius

Secondary School it is possible to widen Sharman Crawford Street to accommodate an outbound bus lane and an inbound traffic lane through to Wandesford Quay. There will be a requirement to provide a shuttle traffic management system to allow buses to travel southbound and stop northbound general traffic flows. On Wandesford Quay, between Sharman Crawford Street and Washington Street it is possible to provide an inbound bus lane through redesignation of the existing outbound traffic lane and conversion of this portion of the route to one-way inbound only.

In the outbound direction, Clarke's Bridge will be designated for buses only and an outbound bus lane will be provided along Wandesford Quay between Clarke's Bridge and Sharman Crawford Street through road re-designation. An inbound (eastbound) general traffic lane will be retained along this portion of the route for local access to Crosse's Green and properties along Wandesford Quay (east).

As Clarke's Bridge would be designated as bus-only, local access to properties on Hanover Place, south of Hanover Street would be facilitated by making this portion of the route two-way for general traffic (between Hanover Street and the private car park adjacent to the Social Welfare office north of Clarke's Bridge) and via Little Cross Street, which would be opened for local access only.

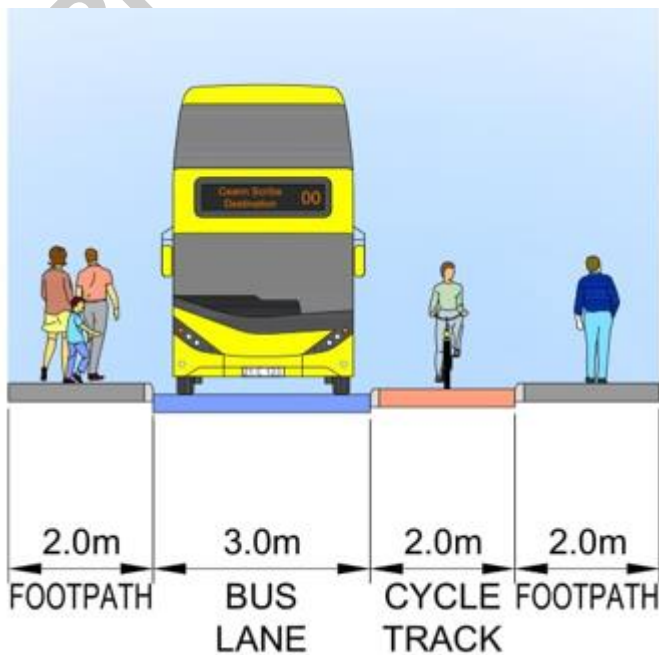


Figure 60: Section 2, Proposed Option 4 – Cross Section A-A

From the junction of St Finbarr's Bridge/Washington Street, an inbound bus lane is proposed through to the junction at Grand Parade requiring the removal of some on-street loading present on the northern side of the route before connecting to the existing inbound bus lane commencing after Courthouse Street. No outbound bus lanes are proposed for Washington street in the outbound direction between Grand Parade and Hanover Place.

As part of this option, inbound cyclists would initially share with buses through the bus gate on Bishop Street before continuing east on Bishop Street using an inbound, contra-flow raised adjacent cycle lane (similar to the existing route for cyclists at this location). This would continue through to South Main Street (again using the existing inbound contra-flow cycle lane), Washington Street and on to Grand Parade.

Outbound cyclists would route via Washington Street and Hanover Place using a dedicated outbound cycle facility and would then share with outbound buses across Clarke's Bridge using the proposed bus only section of this route. Outbound cyclists would then route through Crosse's Green using a combination of dedicated cycle facilities and sharing with local traffic towards the southern end of Crosse's Green where physical space constraints do not permit dedicated cycling infrastructure to be implemented. At the junction with Proby's Quay, cyclists would transition back to on-street and route west to Bishop Street using a raised adjacent outbound cycle facility.

The proposed bus gate on Bishop Street, south of the junction with Sharman Crawford Street will prohibit left-turning traffic from the Proby's Quay approach; therefore, this approach route would be reduced to a single outbound traffic lane.

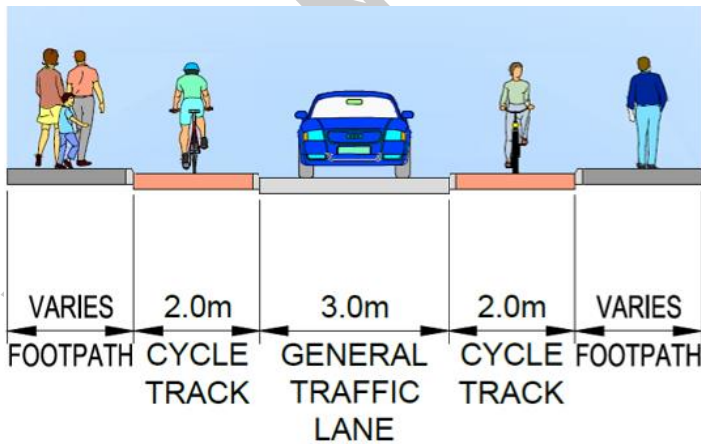


Figure 61: Section 2, Proposed Option 4 – Cross Section B-B

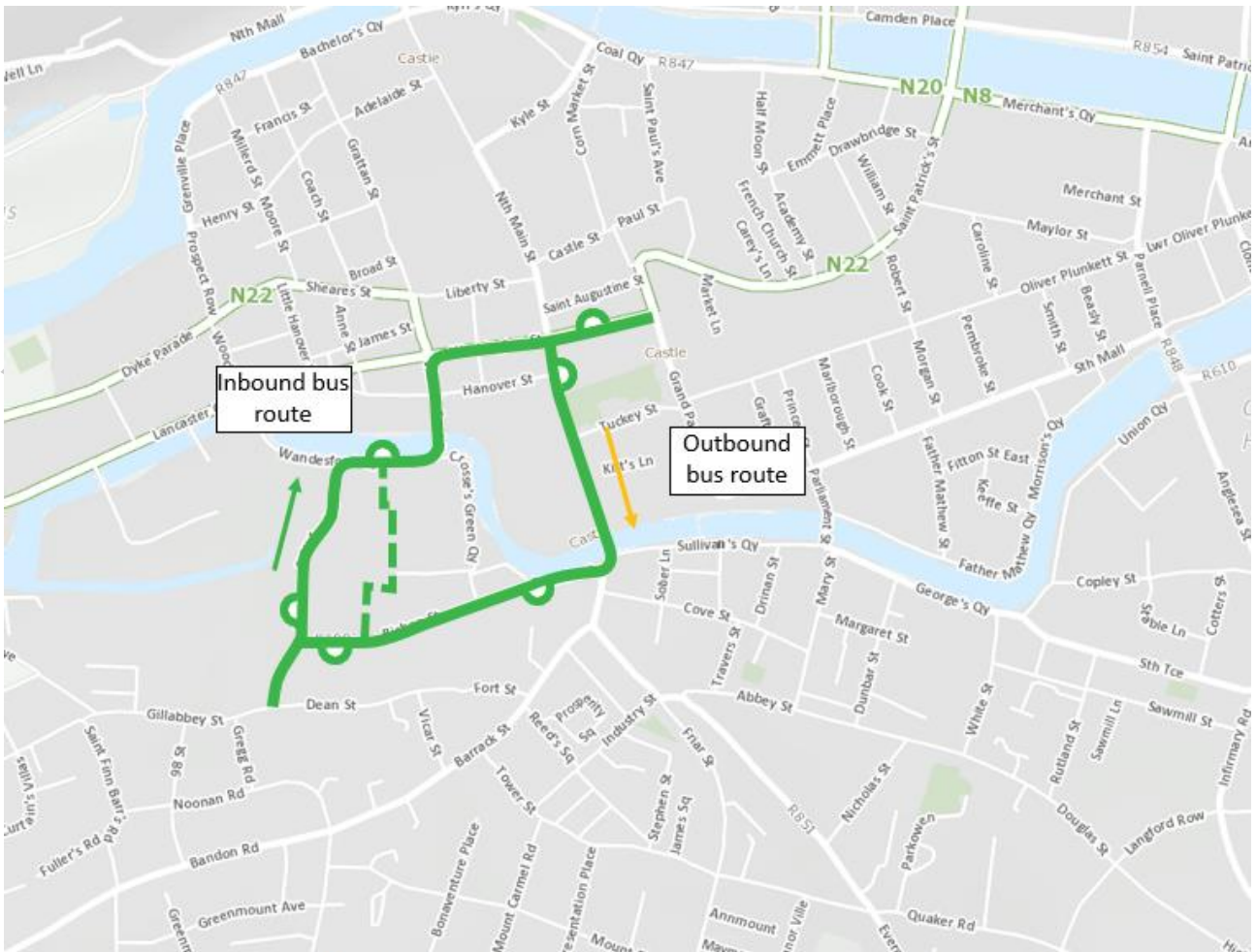
In summary this route option, subject to confirmation at the scheme design stage, would result in the following characteristics:

- Proposed bus gate on Bishop Street, south of the junction with Sharman Crawford Street;
- Proposed outbound bus lane on Sharman Crawford Street (north of St. Aloysius School) and a complimentary shuttle traffic system to allow buses travel two-way on Sharman Crawford Street;
- Proposed inbound bus lane over St Finbarr's Bridge;
- Proposed outbound bus lane on Wandesford Quay;
- Proposed inbound bus lane on Washington Street between St. Finbarr's Bridge and Courthouse Street (tying into the existing inbound bus lane thereafter);
- Footpath improvement works on Bishop Street and Sharman Crawford Street;
- Proposed raised adjacent inbound cycle lane on Bishop Street and South Main Street (to replace the existing on-road contra-flow cycle lane) and on Washington Street between South Main Street and Grand Parade;
- Proposed raised adjacent outbound cycle lane on Washington Street (between Grand Parade and South Main Street), Hanover Place, Clarke's Bridge (shared facility) and Crosse's Green (northern end), and a proposed raised adjacent cycle lane outbound on Proby's Quay and Bishop Street; and
- Land acquisition estimated from one property.

7.2.5 Option 5 – Inbound Buses via Clarke's Bridge; Outbound buses via South Main Street; Cyclists routed via the grounds of St Marie of the Isle Convent

7.2.5.1 Route Description

Route Option 5 is presented in Figure 49 and described in the following text.



Esri, Intermap, NASA, NGA, USGS | Esri UK, Esri, HERE, Garmin, GeoTechnologies, Inc, METI/NASA, USGS | © Ordnance Survey Ireland

Figure 62: Section 2, Proposed Option 5 – Route Option Overview

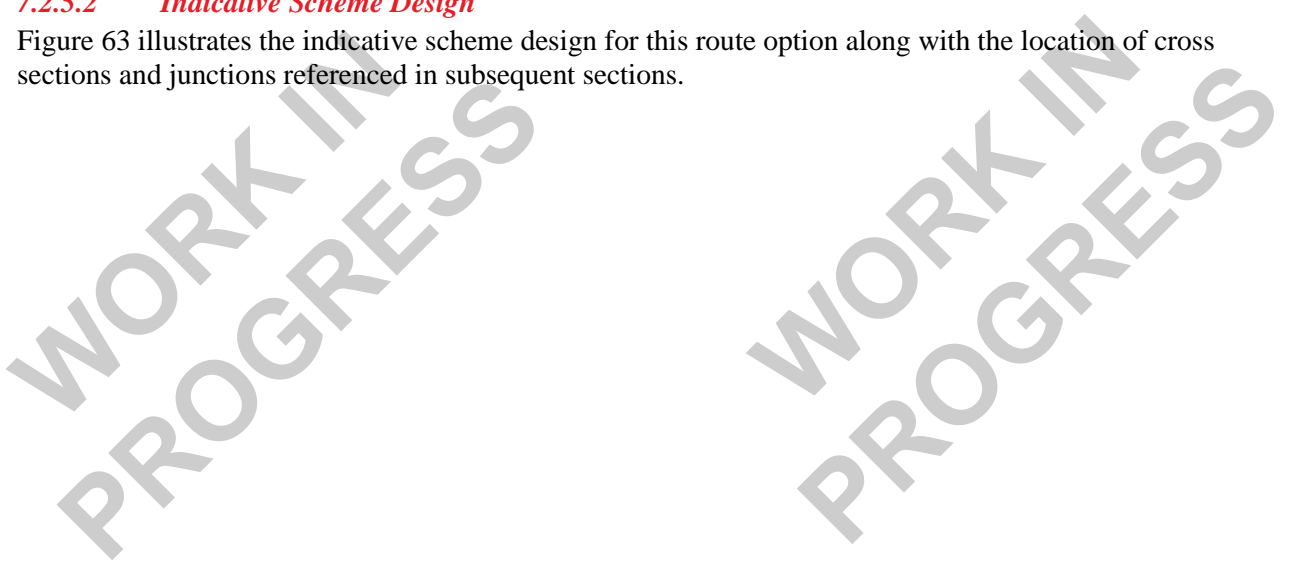
Option 5 routes inbound buses via Sharman Crawford Street and Wandersford Quay, over Clarke’s Bridge and on to Washington Street, with outbound buses using South Main Street and Proby’s Quay/Bishop Street.

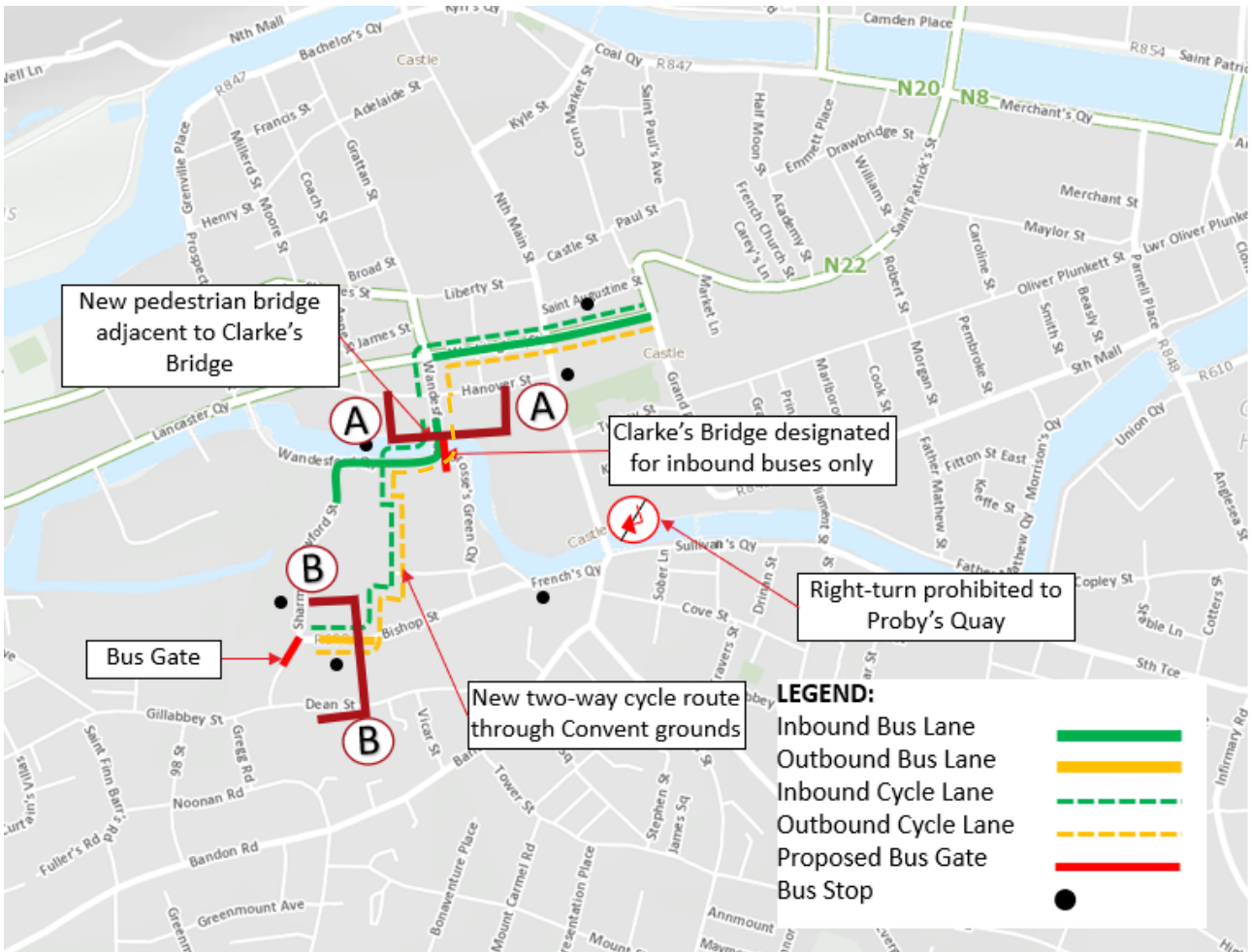
Inbound and outbound cyclists are routed along Bishop Street, through the grounds of St Maries of the Isle Convent, lands adjacent to Wandersford House Apartments, Wandersford Quay and over Clarke’s Bridge and onto Hanover Place and Washington Street.

It is envisaged that this option would accommodate a total of 3 bus stops in each direction.

7.2.5.2 Indicative Scheme Design

Figure 63 illustrates the indicative scheme design for this route option along with the location of cross sections and junctions referenced in subsequent sections.





Esri, Intermap, NASA, NGA, USGS | Esri UK, Esri, HERE, Garmin, GeoTechnologies, Inc, METI/NASA, USGS | © Ordnance Survey Ireland
Figure 63: Section 2, Proposed Option 5 – Indicative Scheme Design

Similar to previous options, it is not possible to provide additional bus lanes due to streetside constraints and under this option it is proposed to manage the flow of through traffic by providing a bus gate on Bishop Street, north of the entrance to the Bishop’s Palace. This will facilitate local two-way access along Bishop Street, but will not permit through traffic to Sharman Crawford Street, and will also not permit outbound traffic on Proby’s Quay and Bishop Street to turn left to route south. This bus gate will consequently support enhanced bus journey times and reliability through this portion of the corridor.

Additionally, a proposed restriction on right-turning traffic is also proposed at the junction of South Gate Bridge and Sullivan’s Quay to reduce traffic flow on this section of the route and increase bus journey time reliability.

Along Sharman Crawford Street a small section of inbound bus lane is proposed on the approach to Wandesford Quay, along with a bus lane on Wandesford Quay (east) and on Clarke’s Bridge it is proposed to restrict the use of the bridge to inbound buses, and inbound and outbound cyclists only.

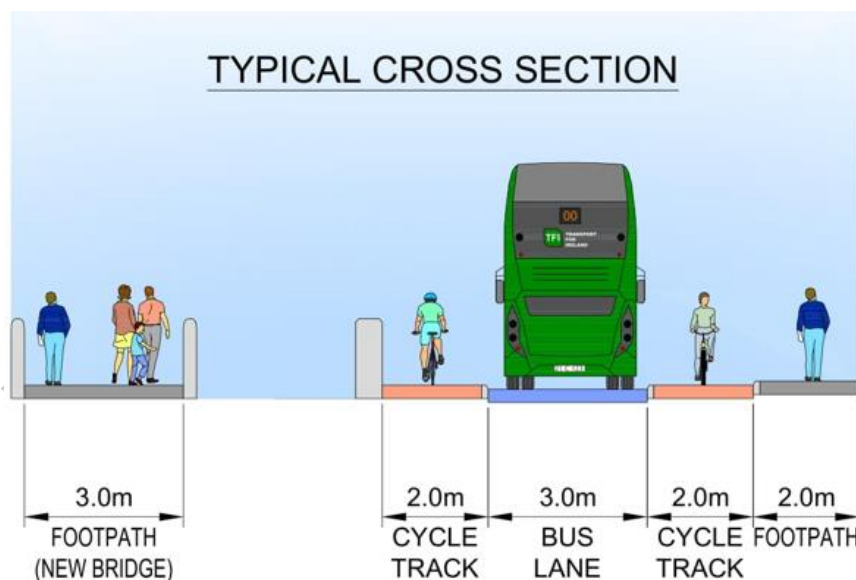


Figure 64: Section 2, Proposed Option 5 – Cross Section A-A

An inbound bus lane is proposed for Washington Street between Clarke’s Bridge and Grand Parade (requiring the removal of some on-street loading present on the northern side of the route before connecting to the existing inbound bus lane commencing after Courthouse Street). In the outbound direction a small section of bus lane is proposed for Bishop Street approaching Sharman Crawford Street, while the introduction of traffic management restrictions at the junction of South Main Street/Proby’s Quay will also reduce the attractiveness of this bus route for general traffic.

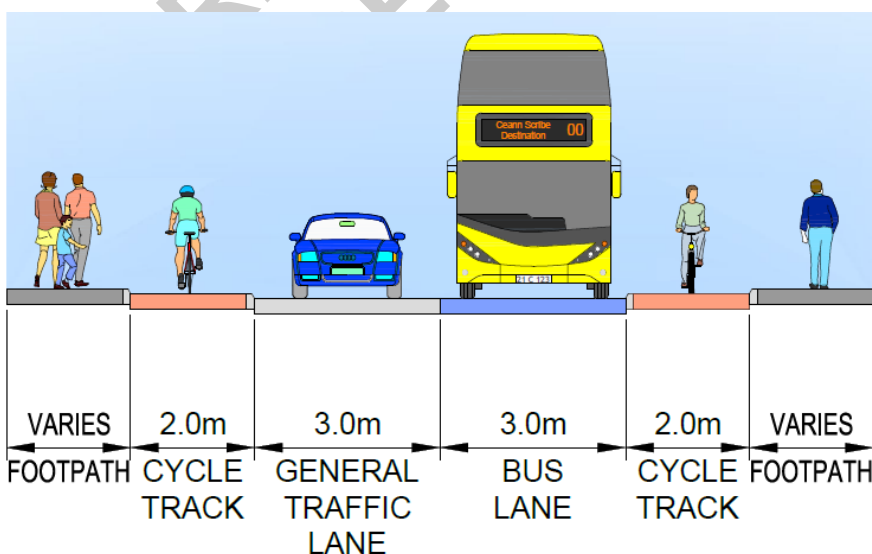


Figure 65: Section 2, Proposed Option 5 – Cross Section B-B

Cyclists will be kept to the same route in both the inbound and outbound directions. Dedicated cycle facilities will be provided on Bishop Street to connect to the proposed new cycle route through the grounds of St Marie of the Isle Convent. The routing of the cycle facility through the grounds of the convent and the adjacent Crawford Business Centre will need to be cognisant of existing parking and traffic management requirements in both premises. On Wandesford Quay (east) and Clarke’s Bridge inbound cyclists will share the inbound bus lane and an outbound, contra-flow cycle lane is proposed over Clarke’s Bridge (this will require pedestrians to be relocated from Clarke’s Bridge to a parallel pedestrian structure to the west). Inbound and outbound cyclists would then share with general traffic to the north of Clarke’s Bridge, before transitioning to dedicated cycle lanes on Hanover Place (north of Hanover Street) and on Washington Street between Hanover Place and Grand Parade.

As Clarke's Bridge would be designated as bus-only, local access to properties on Hanover Place, south of Hanover Street would be facilitated by making this portion of the route two-way for general traffic (between Hanover Street and the private car park adjacent to the Social Welfare office north of Clarke's Bridge) and via Little Cross Street, which would be opened for local access only.

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

- Proposed bus gate on Bishop Street, south of the junction with Sharman Crawford Street;
- Proposed inbound bus lane on Sharman Crawford Street (north of St. Aloysius School),
- Proposed inbound bus lane on Wandesford Quay (east);
- Bus-Only inbound lane over Clarke's Bridge along with a contra-flow outbound cycle lane;
- Proposed new pedestrian structure to the west of Clarke's Bridge;
- Footpath improvement works on Sharman Crawford Street, Proby's Quay and South Main Street; and
- Proposed raised adjacent inbound and outbound cycle lane on Bishop Street, and a two-way cycle facility through the St Marie of the Isle Convent and lands adjacent to Wandesford House Apartments;
- Outbound cycle lane on Wandesford Quay (east) between Clarke's Bridge and the proposed two-way cycle route through private lands;
- Inbound and outbound cycle facilities on Hanover Place, north of Hanover Street, and on Washington Street between Hanover Place and Grand Parade; and
- Land acquisition estimated from 3 properties.

7.2.6 Option 6 – Inbound Buses via Clarke's Bridge; Outbound buses via South Main Street; Cyclists routed via Crosses' Green

7.2.6.1 Route Description

Route Option 6 is presented in Figure 66 and described in the following text.

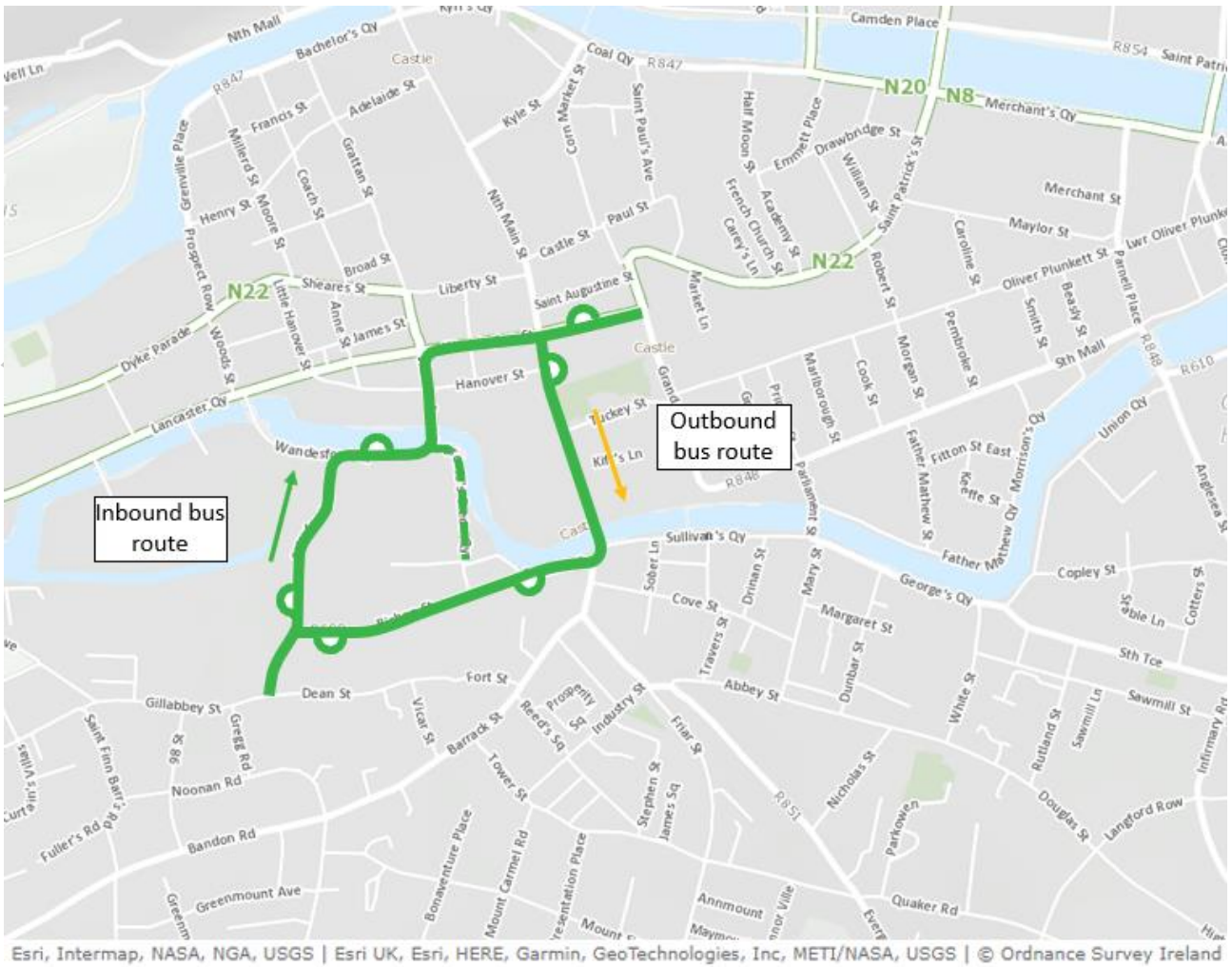


Figure 66: Section 2, Proposed Option 6 – Route Option Overview

Option 6 is similar to Option 5, and routes inbound buses via Sharman Crawford Street and Wandersford Quay, over Clarke's Bridge and on to Washington Street, with outbound buses using South Main Street and Proby's Quay/Bishop Street.

However, in Option 6, inbound and outbound cyclists are routed along Bishop Street and Proby's Quay, through Crosse's Green, over Clarke's Bridge onto Hanover Place and Washington Street.

It is envisaged that this option would accommodate a total of 3 bus stops in each direction.

7.2.6.2 Indicative Scheme Design

Figure 67 illustrates the indicative scheme design for this route option along with the location of cross sections and junctions referenced in subsequent sections.

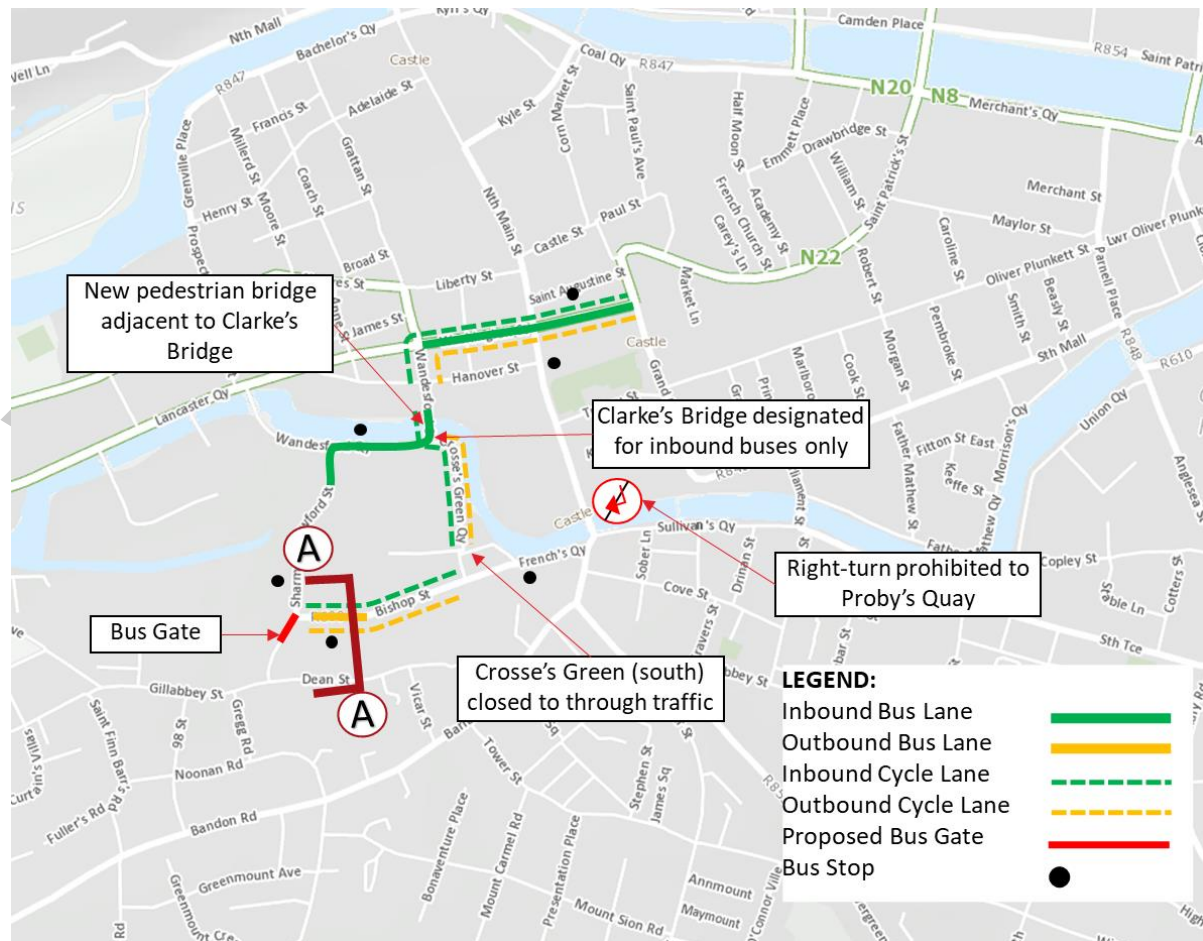


Figure 67: Section 2, Proposed Option 6 – Indicative Scheme Design

Similar to previous options, it is not possible to provide additional bus lanes due to streetside constraints and under this option it is proposed to manage the flow of through traffic by providing a bus gate on Bishop Street, north of the entrance to the Bishop's Palace. This will facilitate local two-way access along Bishop Street, but will not permit through traffic to Sharman Crawford Street, and will also not permit outbound traffic on Proby's Quay and Bishop Street to turn left to route south. This bus gate will consequently support enhanced bus journey times and reliability through this portion of the corridor.

Additionally, a proposed restriction on right-turning traffic is also proposed at the junction of South Gate Bridge and Sullivan's Quay to reduce traffic flow on this section of the route and increase bus journey time reliability.

Along Sharman Crawford Street a small section of inbound bus lane is proposed on the approach to Wandesford Quay, along with a bus lane on Wandesford Quay (east) and on Clarke's Bridge it is proposed to restrict the use of the bridge to inbound buses, and inbound and outbound cyclists only.

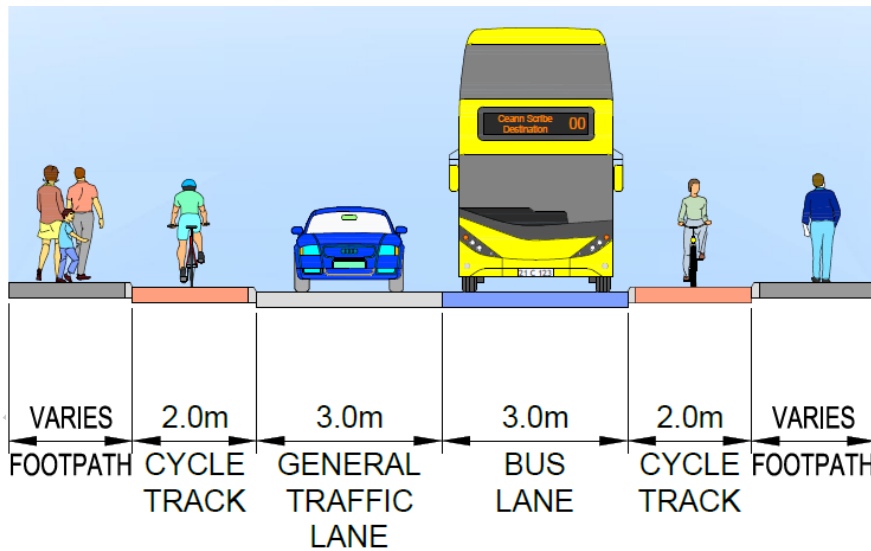


Figure 68: Section 2, Proposed Option 6 – Cross Section A-A

An inbound bus lane is proposed for Washington Street between Clarke’s Bridge and Grand Parade (requiring the removal of some on-street loading present on the northern side of the route before connecting to the existing inbound bus lane commencing after Courthouse Street). In the outbound direction a small section of bus lane is proposed for Bishop Street approaching Sharman Crawford Street, while the introduction of traffic management restrictions at the junction of South Main Street/Proby’s Quay will also reduce the attractiveness of this bus route for general traffic.

Cyclists will be kept to the same route in both the inbound and outbound directions. Dedicated cycle facilities will be provided on Bishop Street as far as Proby’s Quay. From here, cyclists will share with general traffic through Crosse’s Green until the Meitheal Mara building. At this location it is proposed to close Crosse’s Green to through-traffic and share cyclists with pedestrians along the narrow section between Meitheal Mara and the adjacent student accommodation building. Continuing north, cyclists would continue to share with pedestrians and limited local access traffic on Crosse’s Green to Clarke’s Bridge.

On Clarke’s Bridge inbound cyclists will share the inbound bus lane and an outbound, contra-flow cycle lane is proposed over Clarke’s Bridge (this will require pedestrians to be relocated from Clarke’s Bridge to a parallel pedestrian structure to the west). Inbound and outbound cyclists would then share with general traffic to the north of Clarke’s Bridge, before transitioning to dedicated cycle lanes on Hanover Place (north of Hanover Street) and on Washington Street between Hanover Place and Grand Parade.

As Clarke’s Bridge would be designated as bus-only, local access to properties on Hanover Place, south of Hanover Street would be facilitated by making this portion of the route two-way for general traffic (between Hanover Street and the private car park adjacent to the Social Welfare office north of Clarke’s Bridge) and via Little Cross Street, which would be opened for local access only.

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

- Proposed bus gate on Bishop Street, south of the junction with Sharman Crawford Street;
- Proposed inbound bus lane on Sharman Crawford Street (north of St. Aloysius School),
- Proposed inbound bus lane on Wandesford Quay (east);
- Bus-Only inbound lane over Clarke’s Bridge along with a contra-flow outbound cycle lane;
- New pedestrian structure parallel to and west of Clarke’s Bridge;
- Restriction of a portion of Crosse’s Green to pedestrian/cycle only;
- Footpath improvement works on Sharman Crawford Street, Proby’s Quay and South Main Street;

- Two-way cycle facility on Crosse’s Green (north);
- Proposed raised adjacent inbound cycle lane on Bishop Street and Proby’s Quay and on Washington Street between Hanover Place and Grand Parade; and
- Land acquisition estimated from one property.

7.2.7 Route Options Assessment

Details of the Stage 2 route options assessment undertaken for the options outlined above for Section 1A are presented in **Error! Reference source not found.** and the relative ranking of route options against the scheme assessment sub-criteria is summarised in Table 9.

Table 9: Section 2, Bishop Street to City Centre Options Assessment Summary (Sub-Criteria)

Assessment Criteria	Assessment Sub-Criteria	RO 1	RO 2	RO 3	RO 4	RO 5	RO 6
Economy	Capital Cost	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
	Transport Reliability	Red	Red	Green	Green	Red	Red
Integration	Land Use Integration	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
	Catchments	Red	Red	Green	Green	Red	Red
	Transport Network Integration	Green	Green	Red	Red	Red	Green
	Cycling Integration	Red	Red	Red	Red	Green	Green
	Pedestrian Network Integration	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
Accessibility & Social Inclusion	Key Trip Attractors	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
	Deprived Geographic Areas	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
Safety	Road Safety	Red	Red	Green	Red	Red	Red
Environment	Archaeology and Cultural Heritage	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
	Biodiversity	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
	Soils and Geology	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
	Hydrology	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
	Landscape and Visual	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow

Assessment Criteria	Assessment Sub-Criteria	RO 1	RO 2	RO 3	RO 4	RO 5	RO 6
	Air Quality	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
	Land Use Character	Green	Green	Green	Green	Red	Green

From the **Economy** perspective, all routes are expected to cost similarly and have the same return in terms of journey time reliability, however Route Options 3 and 4 both offer improved wayfinding as the bus services are not split between different routes and are considered the more favourable.

In terms of **Integration**, Options 3 and 4 are considered the least favourable due to the provision of a relatively long one-way shuttle system on Sharman Crawford Street, where there is the potential that traffic could become congested on this route preventing outbound buses from exiting the city. Route Options 5 and 6 are considered the most favourable with respect to cycling infrastructure due to their non split provision ensuring all cyclists, whether travelling inbound or outbound have access to the same route.

From an **Accessibility and Social Inclusion** there was no difference between the options. In terms of **Safety**, Option 3 is considered to perform best as it has the least number of potential conflicts as the bus priority measures are retained along a single route.

Under **Environment**, only Option 5 is considered less favourable as the alignment of the cycle route through the St Marie of the Isle Convent has the potential to impact the character of the existing gardens to the rear of the convent.

From the above assessment, **Option 6** has been identified as the preferred route as it provides a relatively good level of bus priority, the cycle infrastructure is on the same route in both directions, and there is little impact on the natural and built environment. It is therefore recommended that Option 6 be considered the preferred option for this section of the study area.

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 8 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 69 presents the alignment of the end-to-end option.

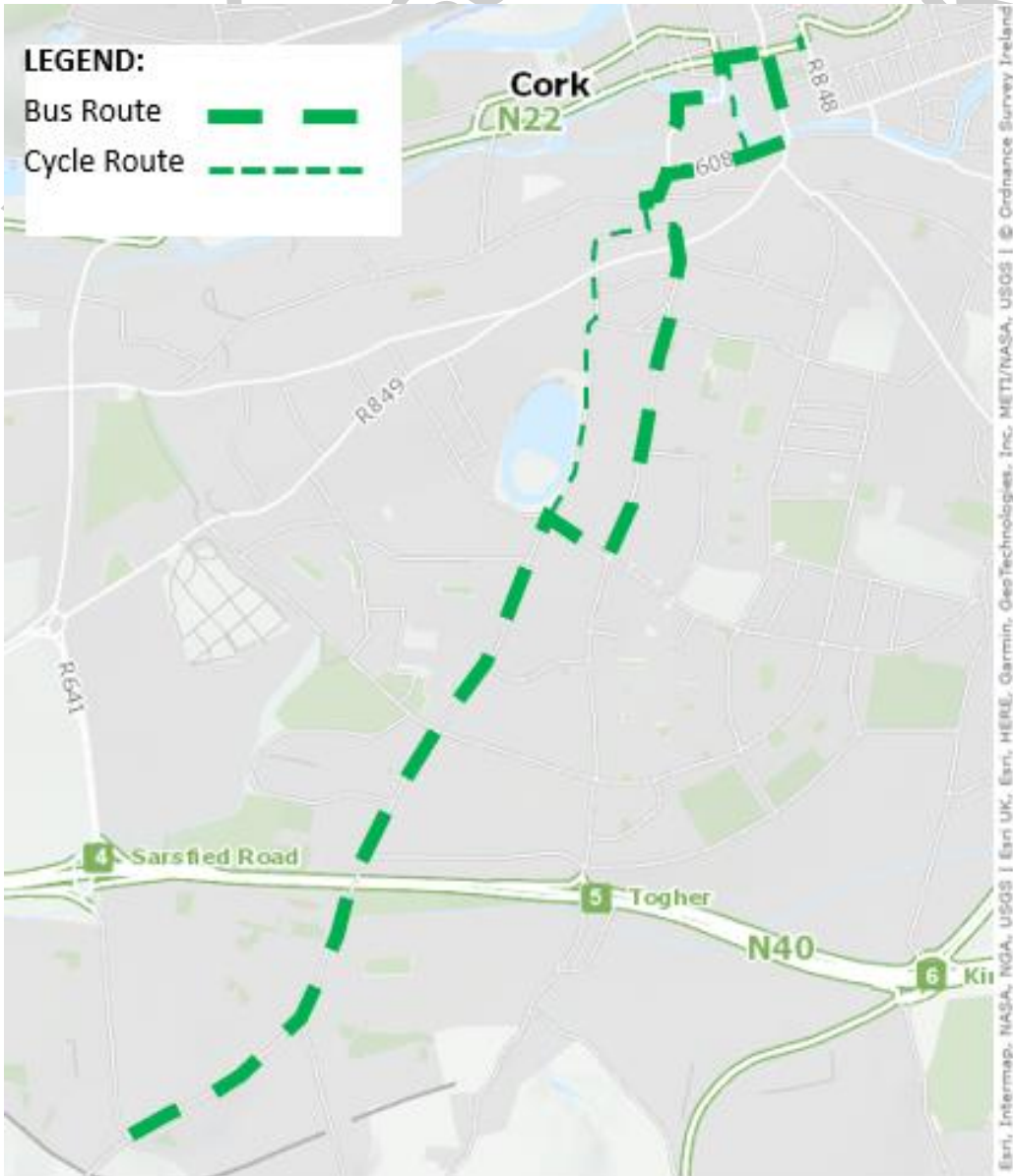


Figure 69: End-to-End Route Option

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, emerging preferred route sections were combined to create a number of potentially viable end-to-end emerging routes, which have been subject to a further multi-criteria analysis to identify an overall emerging preferred end-to-end route option.

This section of the report presents and describes the emerging preferred route identified and the concept scheme design developed.

8.2 Recommended Preferred Route

The emerging preferred route is presented in Figure 70 and described in this section in the Spur Hill to city centre direction. Unless specified, both buses and cyclists will follow the same route.

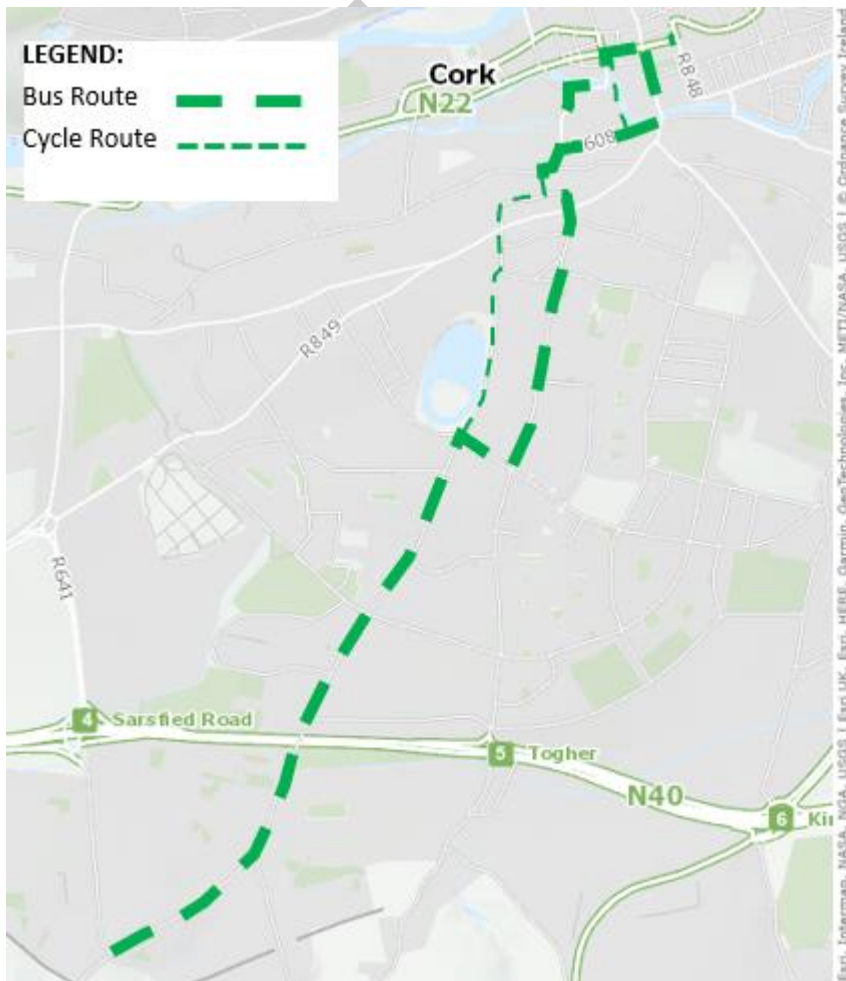


Figure 70: Emerging Preferred Route – Core Bus Corridor 8

The proposed route will start at the junction of Spur Hill and Sarsfield Road and from here will continue north along Spur Hill, through to Togher Road and over the N40 South Ring Road, continuing on the Togher Road to the junction with Pearse Road and Lough Road.

From here, the proposed routes for buses and cyclists differ, with buses proposed to route on to Pearse Road before turning on to Pouladuff Road, continuing on Pouladuff Road, through to Green Street and on to Noonan Road, Gregg Road, Gillabbey Street and Bishop Street, continuing thereafter to the junction with Sharman Crawford Street.

Cyclists are proposed to remain on Lough Road, through to St. Finbarr's Road and on to Noonan Road before merging with buses at Gregg Road and continuing through Gillabbey Street and Bishop Street to the junction with Sharman Crawford Street.

From this location, again the proposed routes for buses and cyclists differ. Inbound buses will continue to Sharman Crawford Street, on to Wandesford Quay and over Clarke's Bridge, through to Hanover Place and on to Washington Street and continue thereafter to the junction at Grand Parade. Outbound buses will route along Washington Street to the junction with South Main Street, before turning to South Main Street, heading south over South Gate Bridge before turning on to Proby's Quay and Bishop Street to the junction with Sharman Crawford Street.

Inbound cyclists will route along Bishop Street using a contra-flow cycle facility (similar to the existing scenario), before turning off at Proby's Quay on to Crosse's Green. From here, inbound cyclists will share with pedestrians through Crosse's Green, before crossing over Clarke's Bridge (sharing with inbound buses), through to Hanover Place (on to a dedicated inbound cycle facility) and on to a proposed inbound cycle facility on Washington Street, continuing thereafter to the junction at Grand Parade. Outbound cyclists will route along Washington Street on a dedicated cycle facility to the junction with Hanover Place, before turning and heading south along Hanover Place and crossing Clarke's Bridge (using a contra-flow cycle facility) and continuing through to Crosse's Green. As with inbound cyclists, outbound cyclists will share with pedestrians and limited local traffic through Crosse's Green, before turning on to Proby's Quay and Bishop Street, heading west to the junction with Sharman Crawford Street using a dedicated cycle facility. The southern portion of Crosse's Green will be closed to through-traffic (adjacent to Meitheal Mara), with local traffic access facilitated from the north and south of Crosse's Green as required.

The following lists the proposed interventions along CBC 8:

Walking/Cycling:

- Additional footpaths implemented at specific locations along Spur Hill, between the Sarsfield Road junction and the Togher Road roundabout junction;
- Raised adjacent cycle lanes on both sides of the road on Spur Hill between the Sarsfield Road junction and the Togher Road roundabout junction;
- Upgrade of the Togher Road roundabout junction to a signalised junction with improved pedestrian and cycle facilities;
- Raised adjacent cycle lanes on both sides of the road along Togher Road and across the N40 South Ring Road overbridge, through to the junction of Pearse Road and Lough Road;
- Upgrade of the Togher Road roundabout junction with Tramore Road to a signalised crossroad junction and to provide enhanced pedestrian and cycle facilities;
- Upgrade of the Togher Road junction with Vicars Road to provide enhanced pedestrian and cycle facilities;
- Upgrade of the Togher Road junction with Edward Walsh Road to provide enhanced pedestrian and cycle facilities;
- Upgrade of the Togher Road junction with Pearse Road/Lough Road to provide enhanced pedestrian and cycle facilities;
- Upgrade of the Pearse Road junction with Pouladuff Road to provide enhanced pedestrian and cycle facilities;
- Footpath improvement works along Pouladuff Road;
- An inbound raised adjacent cycle lane along the entirety of Lough Road, from the junction with Pearse Road through to the junction with Bandon Road/St. Finbarr's Road;

- An outbound raised adjacent cycle lane on Lough Road, commencing to the south of the junction with Valentine Villas, and continuing to the junction with Pearse Road/Togher Road;
- An inbound raised adjacent cycle lane along St. Finbarr's Road, from the junction with Bandon Road through to Noonan Road, Gregg Road, Gillabbey Street and the junction with Bishop Street;
- An outbound raised adjacent cycle lane Gillabbey Street, Gregg Road, Noonan Road and St. Finbarr's Road, terminating slightly north of the junction with Bandon Road;
- Raised adjacent cycle lanes on both sides of the road on Bishop Street and Proby's Quay, from the junction with Sharman Crawford Street to the junction at Proby's Quay/Crosse's Green;
- A shared pedestrian/cyclist/local access traffic route through Crosse's Green;
- A raised adjacent, outbound contra-flow cycle lane across Clarke's Bridge;
- A new parallel pedestrian bridge to the west of Clarke's Bridge;
- Raised adjacent cycle lanes on both sides of the road along Hanover Place, from the south side of the junction with Hanover Street to the junction with Washington Street; and
- Raised adjacent cycle lanes on both sides of the road along Washington Street, from the junction with Hanover Street to the junction at Grand Parade;

Public Transport:

- A proposed inbound bus lane on Spur Hill, commencing to the north of the junction with Fernwood Close and through to the Togher Road and north to the Togher Community Centre;
- A proposed outbound bus lane on the Togher Road, commencing south of the Togher Community Centre and continuing south to the Togher Road roundabout, on to Spur Hill, terminating to the north of the junction with Fernwood Close;
- Proposed inbound and outbound bus lanes on the Togher Road, from the Deanrock Grove junction to the junction with Vicars Road;
- Proposed inbound and outbound bus lanes on Pearse Road between the junctions with Lough Road and Pouladuff Road;
- A proposed bus gate on Pouladuff Road, in the vicinity of Pouladuff Villas;
- Proposed inbound and outbound bus lanes on Noonan Road, between the junction with Bandon Road and the junction with Gregg Road;
- A proposed inbound bus lane on Gregg Road;
- A proposed bus gate on Bishop Street, north of the entrance to the Bishop's Palace;
- A section of inbound bus lane on Sharman Crawford Street, commencing to the north of the entrance to St. Aloysius School and continuing to the junction with Sharman Crawford Street and continuing on Wandersford Quay (east) to Clarke's Bridge;
- Conversion of Clarke's Bridge to an inbound, bus-only bridge;
- A proposed inbound bus lane on Washington Street, between Hanover Place and Grand Parade; and
- A proposed outbound bus lane on Bishop Street, commencing approximately 60m east of the junction with Sharman Crawford Street and continuing to the junction with Sharman Crawford Street.

9. Recommendations for progression to consultation

9.1 Overlap with Core Bus Corridor 7

Following the determination of the emerging preferred route for CBC 8, a further check has been undertaken to investigate the relationship between CBC 8 and CBC 7 (Bishopstown to City). In particular, there is overlap noted between the two CBC routes on Washington Street. The proposals outlined for CBC 7 along Washington Street for buses and cyclists are complementary to the proposed CBC 8 route.

9.2 Recommended amendments to Emerging Preferred Route

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, CBC 8 will be progressed to consultation as ‘**Sustainable Transport Corridor G – Togher to City**’;
- It is recommended that the CBC 8 proposals should terminate at Hanover Place/Washington Street and on Proby’s Quay (east of Crosse’s Green) as it is possible at this location to tie-in to the proposals in CBC 7 for both buses and cyclists and the proposals being developed by Cork City Council as part of the Beamish & Crawford Quarter Improvement Scheme;
- It is recommended that the proposed bus route would commence at the junction of Togher Road/Lough Road/Pearse Road, as the requirement for dedicated bus priority measures along Togher Road to the south of this junction is considered unwarranted due to prevailing traffic conditions, and the potential impact on the Togher Village improvement scheme being constructed at present by Cork City Council;
- The proposed bus gate on Pouladuff Road is recommended to be omitted and a portion of inbound bus priority is to be implemented on Pouladuff Road between Pearse Road and Nun’s Walk;
- It is recommended that the proposed cycle route on Togher Road between Pearse Road and the junction of Spur Hill and Sarsfield Road be omitted at this time and progressed as a standalone scheme in the future, which would also take cognisance of the Togher Village improvement scheme;
- It is recommended that the proposed cycle route along Lough Road between Togher Road and the junction of Noonan Road and Gregg Road be omitted at this time and developed as a standalone scheme in the future by Cork City Council;

The proposed bus lanes on Pearse Road between Lough Road and Pouladuff Road are recommended to be amended so as to accommodate dedicated cycle facilities in both directions along this portion of the route to connect to the proposed bus route on Pouladuff Road.

Appendix A

Route Option Assessment Tables

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A.1 Section 1 – Spur Hill to Bishop’s Street

Assessment Criterion	Assessment Sub-Criterion	Section 1 Option 1	Section 1 Option 2	Section 1 Option 3	Section 1 Option 4	Section 1 Option 5	
Economy (Cost Assessment and Transport Economic Indicators)	Capital Cost	<p>Total Capital Cost (€18.05m)</p> <p>Indicative Scheme Infrastructure Works Cost (€6.19m)</p> <p>Land Acquisition Cost (€11.86m)</p> <p>This section of the route requires the acquisition of 7,908m² of land, 3,757 of which are private lands and 4,151 are public lands. This section of the proposed route has the potential to partially or fully impact 106 properties.</p>	<p>Total Capital Cost (€15.77m)</p> <p>Indicative Scheme Infrastructure Works Cost (€5.11m)</p> <p>Land Acquisition Cost (€10.66m)</p> <p>This section of the route requires the acquisition of 7,108m² of land, 3,171 of which are private lands and 3,937 are public lands. This section of the proposed route has the potential to partially or fully impact 38 properties.</p>	<p>Total Capital Cost (€17.56m)</p> <p>Indicative Scheme Infrastructure Works Cost (€5.82m)</p> <p>Land Acquisition Cost (€11.74m)</p> <p>This section of the route requires the acquisition of 7,826m² of land, 3,332 of which are private lands and 4,494 are public lands. This section of the proposed route has the potential to partially or fully impact 52 properties.</p>	<p>Total Capital Cost (€16.49m)</p> <p>Indicative Scheme Infrastructure Works Cost (€5.82m)</p> <p>Land Acquisition Cost (€10.67m)</p> <p>This section of the route requires the acquisition of 7,115m² of land, 3,657 of which are private lands and 3,458 are public lands. This section of the proposed route has the potential to partially or fully impact 75 properties.</p>	<p>Total Capital Cost (€16.76m)</p> <p>Indicative Scheme Infrastructure Works Cost (€5.82m)</p> <p>Land Acquisition Cost (€10.94m)</p> <p>This section of the route requires the acquisition of 7,295m² of land, 3,332 of which are private lands and 3,963 are public lands. This section of the proposed route has the potential to partially or fully impact 52 properties.</p>	
	<i>Rank</i>						
	Transport Reliability and Quality of Service		<p>Journey Time: 10.8 mins</p> <p>The length of the cycle section is 3390m; and the length of the inbound bus section is 4360m and the length of the outbound bus section is 4360m.</p>	<p>Journey Time: 9.4 mins</p> <p>The length of the cycle section is 3390m; and the length of the inbound bus section is 3390m and the length of the outbound bus section is 3535m.</p>	<p>Journey Time: 10.6 mins</p> <p>The length of the cycle section is 3390m; and the length of the inbound bus section is 3900m and the length of the outbound bus section is 3900m.</p>	<p>Journey Time: 10.6 mins</p> <p>The length of the cycle section is 3900m; and the length of the inbound bus section is 3900m and the length of the outbound bus section is 3900m.</p>	<p>Journey Time: 10.9 mins</p> <p>The length of the cycle section is 3390m; and the length of the inbound bus section is 3670m and the length of the outbound bus section is 3670m.</p>

		No. of Major/ Signalised Junctions: 9 Outbound bus lanes are provided along 45% of this route option, and inbound bus lanes are provided along 46% of this route option, resulting in good journey time reliability of bus services.	No. of Major/ Signalised Junctions: 8 Outbound bus lanes are provided along 31% of this route option, and inbound bus lanes are provided along 37% of this route option, resulting in good journey time reliability of bus services.	No. of Major/ Signalised Junctions: 9 Outbound bus lanes are provided along 33% of this route option, and inbound bus lanes are provided along 40% of this route option, resulting in good journey time reliability of bus services.	No. of Major/ Signalised Junctions: 9 Outbound bus lanes are provided along 33% of this route option, and inbound bus lanes are provided along 39% of this route option, resulting in good journey time reliability of bus services.	No. of Major/ Signalised Junctions: 9 Outbound bus lanes are provided along 28% of this route option, and inbound bus lanes are provided along 36% 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
	Rank					
	Residential Population and Employment Catchments	Residential Population Catchments 5 minute walking catchment of approximately 11,300 10 minute walking catchment of approximately 23,000 15 minute walking catchment of approximately 34,500 Employment catchments 5 minute walking catchment of approximately 2,400 10 minute walking catchment of approximately 9,600 15 minute walking catchment of approximately 22,700	Residential Population Catchments 5 minute walking catchment of approximately 9,300 10 minute walking catchment of approximately 19,600 15 minute walking catchment of approximately 30,500 Employment catchments 5 minute walking catchment of approximately 1,900 10 minute walking catchment of approximately 7,000 15 minute walking catchment of approximately 17,800	Residential Population Catchments 5 minute walking catchment of approximately 11,000 10 minute walking catchment of approximately 22,100 15 minute walking catchment of approximately 32,200 Employment catchments 5 minute walking catchment of approximately 2,100 10 minute walking catchment of approximately 7,500 15 minute walking catchment of approximately 19,100	Residential Population Catchments 5 minute walking catchment of approximately 11,000 10 minute walking catchment of approximately 21,900 15 minute walking catchment of approximately 32,200 Employment catchments 5 minute walking catchment of approximately 2,100 10 minute walking catchment of approximately 7,400 15 minute walking catchment of approximately 19,100	Residential Population Catchments 5 minute walking catchment of approximately 10,600 10 minute walking catchment of approximately 21,800 15 minute walking catchment of approximately 32,200 Employment catchments 5 minute walking catchment of approximately 1,900 10 minute walking catchment of approximately 7,000 15 minute walking catchment of approximately 18,200

<i>Rank</i>					
Transport Network Integration	This route coincides with portions of existing bus routes 214, 216 and 219.	This route coincides with portions of existing bus routes 214, 216 and 219.	This route coincides with portions of existing bus routes 203, 209A, 214, 216 and 219.	This route coincides with portions of existing bus routes 203, 209A, 214, 216 and 219.	This route coincides with portions of existing bus routes 214, 216 and 219.
	There would be Moderate impact on general traffic.	There would be Moderate impact on general traffic.	There would be Moderate impact on general traffic.	There would be Moderate impact on general traffic.	There would be Moderate impact on general traffic.
<i>Rank</i>					
Cycling integration	This route option is identified in CMATS as forming parts of primary routes CCC-U22, CCC-U24, CCC-U26, CCC-U27, CCC-U28, CSW-U17, CSW-U4, CSW-U7, CSW-U8, CSW-U9, unnamed primary routes, secondary routes CCC-U46, CSW-U6, greenway routes CSW-GW3, unnamed greenway routes. Dedicated raised adjacent cycle lanes are proposed in the outbound direction for 86% of this route, and are proposed in the inbound for 96% of this route	This route option is identified in CMATS as forming parts of primary routes CCC-U22, CSW-U17, CSW-U4, CSW-U7, CSW-U8, unnamed primary routes, secondary route CCC-U46, unnamed greenway routes. Dedicated raised adjacent cycle lanes are proposed in the outbound direction for 85% of this route, and are proposed in the inbound for 87% of this route	This route option is identified in CMATS as forming parts of primary routes CCC-U22, CCC-U28, CSW-U17, CSW-U4, CSW-U7, CSW-U8, unnamed primary routes, secondary routes CCC-U46, CSW-U6, unnamed greenway routes. Dedicated raised adjacent cycle lanes are proposed in the outbound direction for 86% of this route, and are proposed in the inbound for 96% of this route	This route option is identified in CMATS as forming parts of primary routes CCC-U22, CCC-U28, CSW-U17, CSW-U4, CSW-U8, secondary routes CCC-U46, CSW-U6, unnamed greenway routes. Dedicated raised adjacent cycle lanes are proposed in the outbound direction for 84% of this route, and are proposed in the inbound for 84% of this route	This route option is identified in CMATS as forming parts of primary routes CCC-U22, CCC-U28, CSW-U17, CSW-U4, CSW-U8, unnamed primary routes, secondary route CCC-U46, unnamed greenway routes. Dedicated raised adjacent cycle lanes are proposed in the outbound direction for 86% of this route, and are proposed in the inbound for 96% of this route
	<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	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	The existing pedestrian network is good and will be further enhanced as part of the proposed development

Accessibility and Social Inclusion	<i>Rank</i>					
	Key Trip Attractors (Education/Health/Commercial/Employment)	The following attractors are located within a 10-min walking distance of the route: 3 hospitals, 7 primary schools, 2 post-primary schools, 21 offices, 80 shops, 18 restaurants/bars/pubs and 21 tourist facilities/attractions.	The following attractors are located within a 10-min walking distance of the route: 1 hospital, 6 primary schools, 2 post-primary schools, 20 offices, 73 shops, 14 restaurants/bars/pubs and 11 tourist facilities/attractions.	The following attractors are located within a 10-min walking distance of the route: 1 hospital, 8 primary schools, 3 post-primary schools, 20 offices, 91 shops, 12 restaurants/bars/pubs and 11 tourist facilities/attractions.	The following attractors are located within a 10-min walking distance of the route: 1 hospital, 8 primary schools, 3 post-primary schools, 20 offices, 91 shops, 12 restaurants/bars/pubs and 11 tourist facilities/attractions.	The following attractors are located within a 10-min walking distance of the route: 1 hospital, 7 primary schools, 3 post-primary schools, 17 offices, 78 shops, 12 restaurants/bars/pubs and 11 tourist facilities/attractions.
	<i>Rank</i>					
	Deprived Geographic Areas	In terms of the Pobal Deprivation Index, the areas within the catchment of the proposed route option are 10% very disadvantaged, 10% disadvantaged, 20% marginally below average, 40% marginally above average, 20% affluent and less than 5% very affluent. The 10-min walking catchment of the route includes approximately 70% of the Togher/Mahon/Ballyphane RAPID area.	In terms of the Pobal Deprivation Index, the areas within the catchment of the proposed route option are 10% very disadvantaged, 10% disadvantaged, 20% marginally below average, 40% marginally above average, 20% affluent and less than 5% very affluent. The 10-min walking catchment of the route includes approximately 70% of the Togher/Mahon/Ballyphane RAPID area.	In terms of the Pobal Deprivation Index, the areas within the catchment of the proposed route option are 10% very disadvantaged, 20% disadvantaged, 30% marginally below average, 40% marginally above average, 10% affluent and less than 5% very affluent. The 10-min walking catchment of the route includes approximately 90% of the Togher/Mahon/Ballyphane RAPID area.	In terms of the Pobal Deprivation Index, the areas within the catchment of the proposed route option are 10% very disadvantaged, 20% disadvantaged, 30% marginally below average, 40% marginally above average, 10% affluent and less than 5% very affluent. The 10-min walking catchment of the route includes approximately 90% of the Togher/Mahon/Ballyphane RAPID area.	In terms of the Pobal Deprivation Index, the areas within the catchment of the proposed route option are 10% very disadvantaged, 10% disadvantaged, 30% marginally below average, 40% marginally above average, 20% affluent and less than 5% very affluent. The 10-min walking catchment of the route includes approximately 80% of the Togher/Mahon/Ballyphane RAPID area.
	<i>Rank</i>					
Safety	Road Safety	No. of Junctions: 36 5 turning movements are required in each direction (2 left and 3 right in both inbound	No. of Junctions: 34 4 turning movements are required in each direction (2 left and 2 right in both inbound	No. of Junctions: 35 4 turning movements are required in each direction (1 left and 3 right in both inbound	No. of Junctions: 35 4 turning movements are required in each direction (1 left and 3 right in both inbound	No. of Junctions: 36 4 turning movements are required in each direction (1 left and 3 right in both inbound

		and outbound directions).	and outbound directions).	and outbound directions).	and outbound directions).	and outbound directions).
	<i>Rank</i>					
Environment	Archaeology Architectural and Cultural Heritage	<p>This section of the proposed route infringes or runs close to the following Architectural Conservation Areas: 39-43 Bandon Road.; Greenmount ACA, Gould St.; Southparish ACA.</p> <p>There are 18 No. structures listed on the NIAH along this option (18 of regional significance). Of these, 1 structure of regional significance (1 No. house) has the potential to be impacted by the proposed project, in the absence of intervention.</p> <p>There are 4 No. protected structures along this option, of which none have the potential to be impacted by the proposed project.</p> <p>There are no recorded monuments to be potentially impacted by the proposed route.</p>	<p>This section of the proposed route infringes or runs close to the following Architectural Conservation Areas: 39-43 Bandon Road.; Southparish ACA.</p> <p>There are 13 No. structures listed on the NIAH along this option (13 of regional significance). Of these, 1 structure of regional significance (1 No. house) has the potential to be impacted by the proposed project, in the absence of intervention.</p> <p>There are 2 No. protected structures along this option, of which none have the potential to be impacted by the proposed project.</p> <p>There are no recorded monuments to be potentially impacted by the proposed route.</p>	<p>This section of the proposed route infringes or runs close to the following Architectural Conservation Areas: 39-43 Bandon Road.; Greenmount ACA, Gould St.; Southparish ACA.</p> <p>There are 17 No. structures listed on the NIAH along this option (17 of regional significance). Of these, 1 structure of regional significance (1 No. house) has the potential to be impacted by the proposed project, in the absence of intervention.</p> <p>There are 5 No. protected structures along this option, of which none have the potential to be impacted by the proposed project.</p> <p>There is 1 No. recorded monument located along this section of the proposed route,</p>	<p>This section of the proposed route infringes or runs close to the following Architectural Conservation Areas: Greenmount ACA, Gould St.; Southparish ACA.</p> <p>There are 6 No. structures listed on the NIAH along this option (6 of regional significance). Of these, 1 structure of regional significance (1 No. house) has the potential to be impacted by the proposed project, in the absence of intervention.</p> <p>There are 4 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 monument located along this section of the proposed route,</p>	<p>This section of the proposed route infringes or runs close to the following Architectural Conservation Areas: 39-43 Bandon Road.; Greenmount ACA, Gould St.; Southparish ACA.</p> <p>There are 17 No. structures listed on the NIAH along this option (17 of regional significance). Of these, 1 structure of regional significance (1 No. house) has the potential to be impacted by the proposed project, in the absence of intervention.</p> <p>There are 4 No. protected structures along this option, of which none have the potential to be impacted by the proposed project.</p> <p>There is 1 No. recorded monument located along this section of the proposed route, which</p>

			which does not have the potential to be either directly or indirectly affected by the proposed project.	which does not have the potential to be either directly or indirectly affected by the proposed project.	does not have the potential to be either directly or indirectly affected by the proposed project.
<i>Rank</i>					
Biodiversity	<p>This option has the potential to result in the loss of 151 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 option has the potential to result in the loss of 68 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 option has the potential to result in the loss of 105 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 option has the potential to result in the loss of 103 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 option has the potential to result in the loss of 73 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>

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Biodiversity	<p>Road widening associated with this section of the proposed route occurs within the Cork Lough PNHA.</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>Road widening associated with this section of the proposed route occurs within the Cork Lough PNHA.</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>Road widening associated with this section of the proposed route occurs within the Cork Lough PNHA.</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>Road widening associated with this section of the proposed route occurs within 181m of the Cork Lough PNHA.</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>Road widening associated with this section of the proposed route occurs within the Cork Lough PNHA.</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>	<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>	<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 traverses 2 Rivers, 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.	This section of the proposed route traverses 1 River, 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, 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, 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, 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.
<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 151 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 68 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 105 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 103 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 73 trees as well as grass verges which may be of ecological value.
<i>Rank</i>					
Air Quality, Noise & Vibration	Of the 1055 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	Of the 523 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	Of the 934 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	Of the 647 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	Of the 817 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.	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.	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.	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.	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 7,908m ² of land, 3,757 of which are private lands and 4,151 are public lands.	This section of the route requires the acquisition of 7,108m ² of land, 3,171 of which are private lands and 3,937 are public lands.	This section of the route requires the acquisition of 7,826m ² of land, 3,332 of which are private lands and 4,494 are public lands.	This section of the route requires the acquisition of 7,115m ² of land, 3,657 of which are private lands and 3,458 are public lands.	This section of the route requires the acquisition of 7,295m ² of land, 3,332 of which are private lands and 3,963 are public lands.
<i>Rank</i>					

A.2 Section 2 – Bishop’s Street to City Centre

Assessment Criterion	Assessment Sub-Criterion	Section 2 Option 1	Section 2 Option 2	Section 2 Option 3	Section 2 Option 4	Section 2 Option 5	Section 2 Option 6	
Economy (Cost Assessment and Transport Economic Indicators)	Capital Cost	<p>Total Capital Cost (€3.16m)</p> <p>Indicative Scheme Infrastructure Works Cost (€3.12m)</p> <p>Land Acquisition Cost (€0.04m)</p> <p>This section of the route requires the acquisition of 82 m2 of land, 26 m2 of which are private lands and 56 m2 are public lands. This section of the proposed route has the potential to partially or fully impact 01 properties.</p>	<p>Total Capital Cost (€2.9m)</p> <p>Indicative Scheme Infrastructure Works Cost (€2.81m)</p> <p>Land Acquisition Cost (€0.09m)</p> <p>This section of the route requires the acquisition of 113 m2 of land, 57 m2 of which are private lands and 56 m2 are public lands. This section of the proposed route has the potential to partially or fully impact 01 properties.</p>	<p>Total Capital Cost (€2.27m)</p> <p>Indicative Scheme Infrastructure Works Cost (€2.23m)</p> <p>Land Acquisition Cost (€0.04m)</p> <p>This section of the route requires the acquisition of 82 m2 of land, 26 m2 of which are private lands and 56 m2 are public lands. This section of the proposed route has the potential to partially or fully impact 01 properties.</p>	<p>Total Capital Cost (€2.83m)</p> <p>Indicative Scheme Infrastructure Works Cost (€2.79m)</p> <p>Land Acquisition Cost (€0.04m)</p> <p>This section of the route requires the acquisition of 82 m2 of land, 26 m2 of which are private lands and 56 m2 are public lands. There are no properties affected by the proposed route option.</p>	<p>Total Capital Cost (€2.23m)</p> <p>Indicative Scheme Infrastructure Works Cost (€2.15m)</p> <p>Land Acquisition Cost (€0.08m)</p> <p>This section of the route requires the acquisition of 63 m2 of land, 52 m2 of which are private lands and 11 m2 are public lands. This section of the proposed route has the potential to partially or fully impact 01 properties.</p>	<p>Total Capital Cost (€2.93m)</p> <p>Indicative Scheme Infrastructure Works Cost (€1.86m)</p> <p>Land Acquisition Cost (€1.07m)</p> <p>This section of the route requires the acquisition of 768 m2 of land, 712 m2 of which are private lands and 56 m2 are public lands. This section of the proposed route has the potential to partially or fully impact 01 properties.</p>	
	Rank							
	Transport Reliability and Quality of Service	<p>Journey Time: 4 mins</p> <p>The length of the inbound cycle section is 850m and the length of the outbound cycle</p>	<p>Journey Time: 4 mins</p> <p>The length of the inbound cycle section is 850m and the length of the outbound cycle</p>	<p>Journey Time: 3.6 mins</p> <p>The length of the inbound cycle section is 850m and the length of the outbound cycle</p>	<p>Journey Time: 3.6 mins</p> <p>The length of the inbound cycle section is 850m and the length of the outbound cycle</p>	<p>Journey Time: 3.4 mins</p> <p>The length of the inbound cycle section is 870m and the length of the outbound cycle</p>	<p>Journey Time: 3.4 mins</p> <p>The length of the inbound cycle section is 870m and the length of the outbound cycle</p>	

		section is 870m; and the length of the inbound bus section is 915m and the length of the outbound bus section is 850m. No. of Major/Signalised Junctions: 6 Outbound bus lanes are provided along 8% of this route option, and inbound bus lanes are provided along 69% of this route option, resulting in good journey time reliability of bus services.	section is 870m; and the length of the inbound bus section is 915m and the length of the outbound bus section is 850m. No. of Major/Signalised Junctions: 6 Outbound bus lanes are provided along 8% of this route option, and inbound bus lanes are provided along 69% of this route option, resulting in good journey time reliability of bus services.	section is 870m; and the length of the inbound bus section is 915m and the length of the outbound bus section is 915m. No. of Major/Signalised Junctions: 5 Outbound bus lanes are provided along 44% of this route option, and inbound bus lanes are provided along 49% of this route option, resulting in good journey time reliability of bus services.	section is 870m; and the length of the inbound bus section is 915m and the length of the outbound bus section is 805m. No. of Major/Signalised Junctions: 5 Outbound bus lanes are provided along 25% 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.	section is 870m; and the length of the inbound bus section is 805m and the length of the outbound bus section is 850m. No. of Major/Signalised Junctions: 4 Outbound bus lanes are provided along 8% of this route option, and inbound bus lanes are provided along 53% of this route option, resulting in good journey time reliability of bus services.	section is 870m; and the length of the inbound bus section is 805m and the length of the outbound bus section is 850m. No. of Major/Signalised Junctions: 4 Outbound bus lanes are provided along 8% of this route option, and inbound bus lanes are provided along 54% of this route option, resulting in good journey time reliability of bus services.
	<i>Rank</i>						
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
	<i>Rank</i>						
	Residential Population and Employment Catchments	Residential Population Catchments 5 minute walking catchment of approximately 4,000 10 minute walking catchment of approximately 13,100	Residential Population Catchments 5 minute walking catchment of approximately 4,000 10 minute walking catchment of approximately 13,100	Residential Population Catchments 5 minute walking catchment of approximately 5,400 10 minute walking catchment of approximately 14,000	Residential Population Catchments 5 minute walking catchment of approximately 4,900 10 minute walking catchment of approximately 13,600	Residential Population Catchments 5 minute walking catchment of approximately 4,000 10 minute walking catchment of approximately 13,100	Residential Population Catchments 5 minute walking catchment of approximately 4,000 10 minute walking catchment of approximately 13,100

	<p>15 minute walking catchment of approximately 21,600</p> <p>Employment catchments</p> <p>5 minute walking catchment of approximately 6,700</p> <p>10 minute walking catchment of approximately 15,400</p> <p>15 minute walking catchment of approximately 23,900</p>	<p>15 minute walking catchment of approximately 21,600</p> <p>Employment catchments</p> <p>5 minute walking catchment of approximately 6,700</p> <p>10 minute walking catchment of approximately 15,400</p> <p>15 minute walking catchment of approximately 23,900</p>	<p>15 minute walking catchment of approximately 23,500</p> <p>Employment catchments</p> <p>5 minute walking catchment of approximately 8,300</p> <p>10 minute walking catchment of approximately 16,400</p> <p>15 minute walking catchment of approximately 24,600</p>	<p>15 minute walking catchment of approximately 22,700</p> <p>Employment catchments</p> <p>5 minute walking catchment of approximately 7,700</p> <p>10 minute walking catchment of approximately 16,200</p> <p>15 minute walking catchment of approximately 24,300</p>	<p>15 minute walking catchment of approximately 21,600</p> <p>Employment catchments</p> <p>5 minute walking catchment of approximately 6,700</p> <p>10 minute walking catchment of approximately 15,400</p> <p>15 minute walking catchment of approximately 23,800</p>	<p>15 minute walking catchment of approximately 21,600</p> <p>Employment catchments</p> <p>5 minute walking catchment of approximately 6,700</p> <p>10 minute walking catchment of approximately 15,400</p> <p>15 minute walking catchment of approximately 23,800</p>
<i>Rank</i>						
Transport Network Integration	<p>This route coincides with portions of existing bus routes 205, 208, 214, 216, 220, 220X and 226X.</p> <p>There would be Minimal impact on general traffic.</p>	<p>This route coincides with portions of existing bus routes 205, 208, 214, 216, 220, 220X and 226X.</p> <p>There would be Minimal impact on general traffic.</p>	<p>This route coincides with portions of existing bus routes 205, 208, 214, 216, 220, 220X and 226X.</p> <p>There would be Moderate impact on general traffic.</p>	<p>This route coincides with portions of existing bus routes 205, 208, 214, 216, 220, 220X and 226X.</p> <p>There would be Moderate impact on general traffic.</p>	<p>This route coincides with portions of existing bus routes 205, 208, 214, 216, 220, 220X and 226X.</p> <p>There would be Moderate impact on general traffic.</p>	<p>This route coincides with portions of existing bus routes 205, 208, 214, 216, 220, 220X and 226X.</p> <p>There would be Minimal impact on general traffic.</p>
<i>Rank</i>						
Cycling integration	<p>This route option is identified in CMATS as forming parts of primary routes CCC-U10, CCC-U2, CCC-U21, CCC-U22, CCC-U27, CCC-U5, unnamed primary routes,</p>	<p>This route option is identified in CMATS as forming parts of primary routes CCC-U10, CCC-U2, CCC-U21, CCC-U22, CCC-U27, CCC-U5, unnamed primary routes,</p>	<p>This route option is identified in CMATS as forming parts of primary routes CCC-U10, CCC-U2, CCC-U21, CCC-U22, CCC-U27, CCC-U5, unnamed primary routes,</p>	<p>This route option is identified in CMATS as forming parts of primary routes CCC-U10, CCC-U2, CCC-U21, CCC-U22, CCC-U27, CCC-U5, unnamed primary routes,</p>	<p>This route option is identified in CMATS as forming parts of primary routes CCC-U10, CCC-U21, CCC-U22, CCC-U27, CCC-U5, unnamed primary routes, secondary route CCC-U40.</p>	<p>This route option is identified in CMATS as forming parts of primary routes CCC-U10, CCC-U21, CCC-U22, CCC-U27, CCC-U5, unnamed primary routes, secondary route CCC-U40.</p>

		secondary route CCC-U40. Dedicated raised adjacent cycle lanes are proposed in the outbound direction for 71% of this route, and are proposed in the inbound for 84% of this route	secondary route CCC-U40. Dedicated raised adjacent cycle lanes are proposed in the outbound direction for 71% of this route, and are proposed in the inbound for 84% of this route	secondary route CCC-U40. Dedicated raised adjacent cycle lanes are proposed in the outbound direction for 71% of this route, and are proposed in the inbound for 84% of this route	secondary route CCC-U40. Dedicated raised adjacent cycle lanes are proposed in the outbound direction for 63% of this route, and are proposed in the inbound for 84% of this route	Dedicated raised adjacent cycle lanes are proposed in the outbound direction for 76% of this route, and are proposed in the inbound for 65% of this route	Dedicated raised adjacent cycle lanes are proposed in the outbound direction for 74% of this route, and are proposed in the inbound for 70% of this route
	<i>Rank</i>						
	Pedestrian Integration	The existing pedestrain network is good and will be further enhanced as part of the proposed development	The existing pedestrain network is good and will be further enhanced as part of the proposed development	The existing pedestrain network is good and will be further enhanced as part of the proposed development	The existing pedestrain network is good and will be further enhanced as part of the proposed development	The existing pedestrain network is good and will be further enhanced as part of the proposed development	The existing pedestrain network is good and will be further enhanced as part of the proposed development
	<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: 1 hospital, 5 primary schools, 3 post-primary schools, 41 offices, 298 shops, 84 restaurants/bars/pubs and 31 tourist facilities/attractions	The following attractors are located within a 10-min walking distance of the route: 1 hospital, 5 primary schools, 3 post-primary schools, 41 offices, 298 shops, 84 restaurants/bars/pubs and 31 tourist facilities/attractions	The following attractors are located within a 10-min walking distance of the route: 1 hospital, 6 primary schools, 3 post-primary schools, 50 offices, 311 shops, 88 restaurants/bars/pubs, 41 tourist facilities/attractions and 1 bus/rail stations.	The following attractors are located within a 10-min walking distance of the route: 1 hospital, 6 primary schools, 3 post-primary schools, 50 offices, 311 shops, 88 restaurants/bars/pubs, 41 tourist facilities/attractions and 1 bus/rail stations.	The following attractors are located within a 10-min walking distance of the route: 1 hospital, 5 primary schools, 3 post-primary schools, 41 offices, 298 shops, 84 restaurants/bars/pubs and 31 tourist facilities/attractions	The following attractors are located within a 10-min walking distance of the route: 1 hospital, 5 primary schools, 3 post-primary schools, 41 offices, 298 shops, 84 restaurants/bars/pubs and 31 tourist facilities/attractions
	<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, 20% marginally below average, 40% marginally above average, 30% affluent and 10% very affluent. The 10-min walking catchment of the route includes the fringes of the Fairhill/Gurranabraher/Farranree 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 the fringes of the Fairhill/Gurranabraher/Farranree RAPID area.	In terms of the Pobal Deprivation Index, the areas within the catchment of the proposed route option are less than 5% very disadvantaged, less than 5% disadvantaged, 10% marginally below average, 40% marginally above average, 30% affluent and 10% very affluent. The 10-min walking catchment of the route includes the fringes of the Knocknaheeny/Hollyhill/Churchfield RAPID area and the fringes of the Fairhill/Gurranabraher/Farranree RAPID area.	In terms of the Pobal Deprivation Index, the areas within the catchment of the proposed route option are less than 5% very disadvantaged, less than 5% disadvantaged, 10% marginally below average, 40% marginally above average, 30% affluent and 10% very affluent. The 10-min walking catchment of the route includes the fringes of the Fairhill/Gurranabraher/Farranree 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 the fringes of the Fairhill/Gurranabraher/Farranree 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 the fringes of the Fairhill/Gurranabraher/Farranree RAPID area.
	<i>Rank</i>						
Safety	Road Safety	No. of Junctions: 13 3 turning movements are required in each direction (1 left and 2 right in both inbound and outbound directions).	No. of Junctions: 13 3 turning movements are required in each direction (1 left and 2 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).	No. of Junctions: 10 4 turning movements are required in each direction (2 left and 2 right in both inbound and outbound directions).	No. of Junctions: 12 5 turning movements are required in each direction (2 left and 3 right in both inbound and outbound directions).	No. of Junctions: 12 5 turning movements are required in each direction (2 left and 3 right in both inbound and outbound directions).
	<i>Rank</i>						

Environment	Archaeology Architectural and Cultural Heritage	<p>This section of the proposed route infringes or runs close to the following Architectural Conservation Areas: North Main Street ACA; Southparish ACA; North Mall - Marsh Architectural Area Proposal.</p> <p>There are 102 No. structures listed on the NIAH along this option (1 of international significance, 1 of national significance, 100 of regional significance). Of these, 1 structure of international significance (1 No. cathedral) has the potential to be impacted by the proposed project, in the absence of intervention.</p> <p>There are 77 No. protected structures along this option, of which 1 has the potential to be impacted by the proposed project, in</p>	<p>This section of the proposed route infringes or runs close to the following Architectural Conservation Areas: North Main Street ACA; Southparish ACA; North Mall - Marsh Architectural Area Proposal.</p> <p>There are 102 No. structures listed on the NIAH along this option (1 of international significance, 1 of national significance, 100 of regional significance). Of these, 1 structure of international significance (1 No. cathedral) has the potential to be impacted by the proposed project, in the absence of intervention.</p> <p>There are 77 No. protected structures along this option, of which 1 has the potential to be impacted by the proposed project, in</p>	<p>This section of the proposed route infringes or runs close to the following Architectural Conservation Areas: North Main Street ACA; Southparish ACA; North Mall - Marsh Architectural Area Proposal.</p> <p>There are 102 No. structures listed on the NIAH along this option (1 of international significance, 1 of national significance, 100 of regional significance). Of these, 1 structure of international significance (1 No. cathedral) has the potential to be impacted by the proposed project, in the absence of intervention.</p> <p>There are 77 No. protected structures along this option, of which 1 has the potential to be impacted by the proposed project, in</p>	<p>This section of the proposed route infringes or runs close to the following Architectural Conservation Areas: North Main Street ACA; Southparish ACA; North Mall - Marsh Architectural Area Proposal.</p> <p>There are 104 No. structures listed on the NIAH along this option (1 of international significance, 1 of national significance, 102 of regional significance). Of these, 1 structure of international significance (1 No. cathedral) has the potential to be impacted by the proposed project, in the absence of intervention.</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</p>	<p>This section of the proposed route infringes or runs close to the following Architectural Conservation Areas: North Main Street ACA; Southparish ACA; North Mall - Marsh Architectural Area Proposal.</p> <p>There are 83 No. structures listed on the NIAH along this option (1 of international significance, 2 of national significance, 80 of regional significance). Of these, 1 structure of international significance (1 No. cathedral), 1 structure of regional significance (1 No. store/warehouse) have the potential to be impacted by the proposed project, in the absence of intervention.</p> <p>There are 58 No. protected structures along this option, of which 1 has the</p>	<p>This section of the proposed route infringes or runs close to the following Architectural Conservation Areas: North Main Street ACA; Southparish ACA; North Mall - Marsh Architectural Area Proposal.</p> <p>There are 83 No. structures listed on the NIAH along this option (1 of international significance, 2 of national significance, 80 of regional significance). Of these, 1 structure of international significance (1 No. cathedral) has the potential to be impacted by the proposed project, in the absence of intervention.</p> <p>There are 58 No. protected structures along this option, of which 1 has the potential to be impacted by the proposed project, in</p>
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	the absence of intervention.	the absence of intervention.	the absence of intervention.	the absence of intervention.	potential to be impacted by the proposed project, in the absence of intervention.	the absence of intervention.
	There are 9 No. recorded monuments located along this section of the proposed route, of which 2 (2 No. Graveyard, 2 No. Cathedral) have the potential to be either directly or indirectly affected by the proposed project, in the absence of intervention.	There are 9 No. recorded monuments located along this section of the proposed route, of which 2 (2 No. Graveyard, 2 No. Cathedral) have the potential to be either directly or indirectly affected by the proposed project, in the absence of intervention.	There are 9 No. recorded monuments located along this section of the proposed route, of which 2 (2 No. Graveyard, 2 No. Cathedral) have the potential to be either directly or indirectly affected by the proposed project, in the absence of intervention.	There are 9 No. recorded monuments located along this section of the proposed route, of which 2 (2 No. Graveyard, 2 No. Cathedral) have the potential to be either directly or indirectly affected by the proposed project, in the absence of intervention.	There are 8 No. recorded monuments located along this section of the proposed route, of which 2 (2 No. Graveyard, 2 No. Cathedral) have the potential to be either directly or indirectly affected by the proposed project, in the absence of intervention.	There are 9 No. recorded monuments located along this section of the proposed route, of which 2 (2 No. Graveyard, 2 No. Cathedral) have the potential to be either directly or indirectly affected by the proposed project, in the absence of intervention.
<i>Rank</i>						

WORK IN PROGRESS

WORK IN PROGRESS

<p>Biodiversity</p>	<p>This option has the potential to result in the loss of 3 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 3 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>No road widening associated with this section of the proposed route is located within 500m of a 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 3 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 5 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 6 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 4 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>Rank</p>						

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.
<i>Rank</i>						
Hydrology	This section of the proposed route traverses 1 Tidal River (River Lee), 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.	This section of the proposed route traverses 1 Tidal River (River Lee), 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.	This section of the proposed route traverses 1 Tidal River (River Lee), 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.	This section of the proposed route traverses 1 Tidal River (River Lee), 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.	This section of the proposed route traverses 1 Tidal River (River Lee), 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.	This section of the proposed route traverses 1 Tidal River (River Lee), 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 does not infringe on areas of High Landscape Sensitivity. This option has the potential to result in the loss of 3 trees as well as grass verges which may be of ecological value.	This section of the proposed route does not infringe on areas of High Landscape Sensitivity. This option has the potential to result in the loss of 3 trees as well as grass verges which may be of ecological value.	This section of the proposed route does not infringe on areas of High Landscape Sensitivity. This option has the potential to result in the loss of 3 trees as well as grass verges which may be of ecological value.	This section of the proposed route does not infringe on areas of High Landscape Sensitivity. This option has the potential to result in the loss of 5 trees as well as grass verges which may be of ecological value.	This section of the proposed route does not infringe on areas of High Landscape Sensitivity. This option has the potential to result in the loss of 6 trees as well as grass verges which may be of ecological value.	This section of the proposed route does not infringe on areas of High Landscape Sensitivity. This option has the potential to result in the loss of 4 trees as well as grass verges which may be of ecological value.
<i>Rank</i>						

Air Quality, Noise & Vibration	Of the 240 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 240 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 240 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 241 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 187 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 188 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 83m ² of land, 37 of which are private lands	This section of the route requires the acquisition of 83m ² of land, 37 of which are private lands	This section of the route requires the acquisition of 83m ² of land, 37 of which are private lands	This section of the route requires the acquisition of 63m ² of land, all of which are private lands.	This section of the route requires the acquisition of 770m ² of land, 724 of which are private	This section of the route requires the acquisition of 128m ² of land, 82 of which are private

		and 46 are public lands.	and 46 are public lands.	and 46 are public lands.		lands and 46 are public lands.	lands and 46 are public lands.
	Rank						

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Appendix B
Traffic Management Drawing

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