National Transport Authority

BUSCONNECTS INFRASTRUCTURE CORK

East of Mayfield to City Centre via Montenotte (CBC2) Draft Emerging Preferred Options Report

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CONTENTS

TABLES

FIGURES

APPENDICES

EXECUTIVE SUMMARY

The National Transport Authority (NTA) is seeking to explore route options and develop Draft Emerging Preferred Routes for thirteen Core Bus Corridors (CBCs) in the Cork Metropolitan Area. These CBCs form part of the bus network as defined in the Cork Metropolitan Area Transport Strategy (CMATS) published by the NTA in collaboration with Cork City Council, Cork County Council and TII in 2020.

WSP has been commissioned by the NTA to carry out a study to explore route options and develop Draft Preferred Routes for Project A. Project A consists of:

- **CBC 2 East of Mayfield to City Centre via Montenotte;**
- CBC 3 Ballyvolane to City Centre via Montenotte;
- CBC 4 North of Dublin Hill to City Centre via Blackpool; and
- CBC 5 Hollyhill / Apple to City Centre via Shandon area.

This report presents the outcome of the route options assessment undertaken for the CBC2 East of Mayfield via Montenotte to City Centre Core Bus Corridor (CBC) scheme and makes a recommendation on an Emerging Preferred Route.

SCHEME 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.

The Study Area

The study area was taken to include the area between Cork City Centre and East of Mayfield, including the Victorian Quarter of the City Centre, the districts of Montenotte, Mayfield and Lotabeg. The extents of the study area is presented in Figure (i) below.

Figure i - Study Area Map

The proposed Cork City Centre to East of Mayfield Core Bus Corridor (CBC2) will serve a transport corridor with several key destinations along, or close to, the route. These include;

- Cork Prison;
- Collin's Barracks Military Museum;
- Mayfield Sports Complex;
- The Tank Field;
- Mayfield Library;
- Glen Amenity Park;
- Mayfield Shopping Centre and Industrial Estate; and
- Numerous notable education and religious centres.

Assessment Process

A two-stage assessment was adopted:

- An initial 'Stage 1' high-level route sections assessment or 'sifting' process.

  An initial 'spiders-web' of potential route sections that could possibly accommodate the proposed bus corridor between Cork City Centre and East of Mayfield, was identified for the study area. This 'spiders-web' of route sections was chosen with reference to the CBC characteristics and in order to meet the scheme objectives. Initial route sections consisted of every through road and a number of offline paths in the study

area. To allow for diversions onto adjacent routes each road was split into sections where two or more routes intersect.

A high-level qualitative assessment was then undertaken based on professional engineering judgement and a general appreciation for existing physical conditions / constraints within the study area from available survey information and site visits. This assessment identified route sections that would either not achieve the scheme objectives or would be subject to excessive cost and/or impact to achieve these objectives (e.g. the demolition of consecutive residential properties).

- A detailed 'Stage 2' Multi Criteria Analysis Process.

  All route options that progressed to this stage were compared against one another using a detailed Multi-Criteria Analysis (MCA) in accordance with the Department of Transport Document "Common Appraisal Framework for Transport Projects and Programmes".

  Each route was comparatively assessed against the study objectives using the Key Performance Indicators (KPIs) and method of measurements identified below.

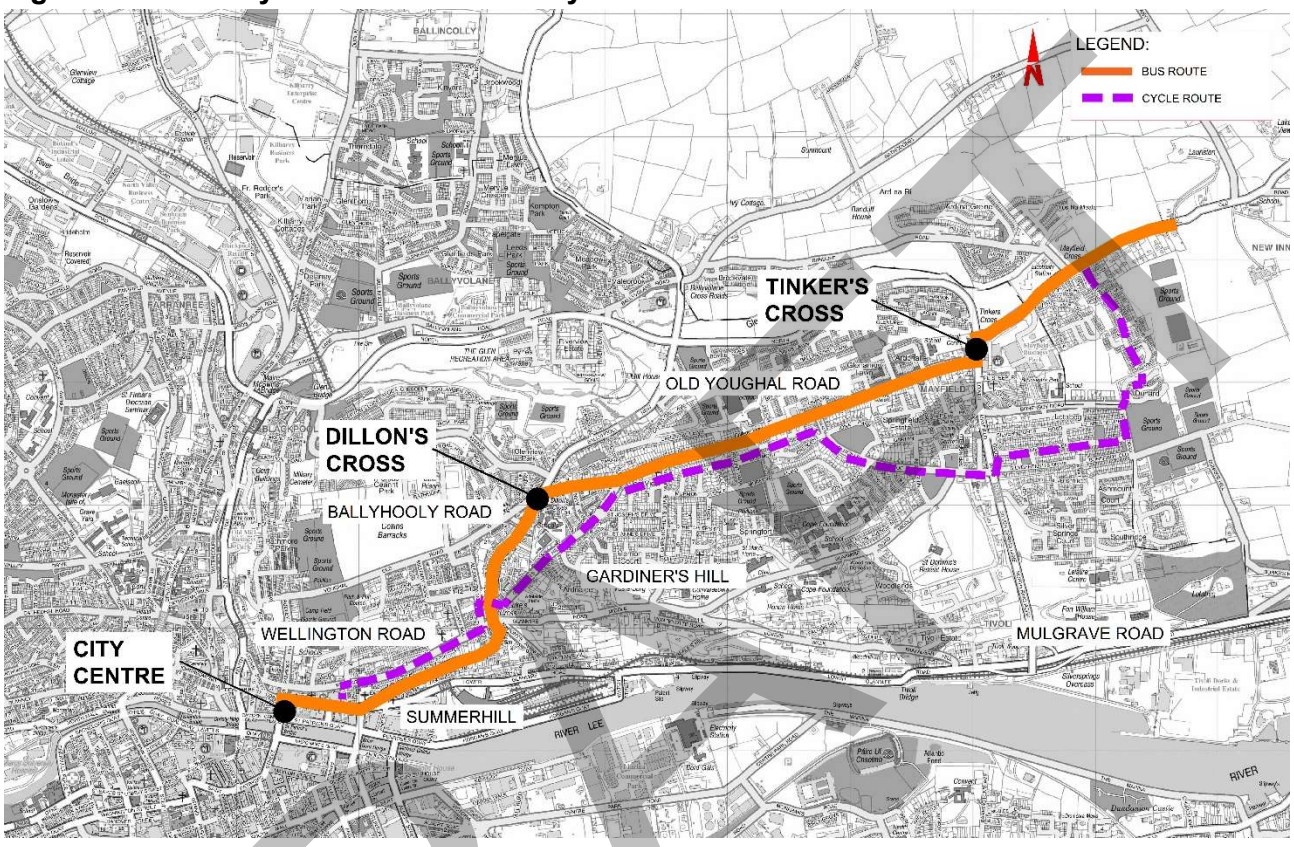
  In accordance with the Department of Transport "Guidelines on a Common Appraisal Framework for Transport Projects", the multi-criteria analysis considered Economy; Integration; Accessibility and Social Inclusion; Safety and Environment. The Physical Activity criterion has not been assessed as a standalone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

  The route options were then ranked in order of best performance against the various criteria to identify the Emerging Preferred Route Option.

Emerging Preferred Route

Based on the outcomes from the route options assessment process, the Emerging Preferred Route (EPR) has been identified and is presented in Figure (ii).

Figure ii - Cork City Centre to East of Mayfield EPR



The emerging preferred route description below comprises of two sections and commences at the northern end of the City Centre, north of the River Lee, heads towards Dillon's Cross and finishes East of Mayfield.

SECTION 1: CITY CENTRE TO DILLON'S CROSS

Length of Section: 1.7km

Indicative Cost Estimate (used for comparative purposes): €3.5

Along the Emerging Preferred Route, there is an existing outbound (towards Mayfield) bus lane at the start of Study Area Section No.1 (i.e. from Bridge Street to the MacCurtain Street/Summerhill North Junction) and no existing cycle lanes. Overall, the EPR for this section requires the introduction of new bus and active travel facilities along the majority of its length.

The emerging preferred bus route travels along Bridge Street, MacCurtain Street (which forms part of the MacCurtain Street Public Transport Improvement Scheme) and up Summerhill North towards the St Luke's Cross Junction. The route continues along Ballyhooly Road towards the Dillon's Cross Junction.

The cycle route commences on York Street, continuing along Wellington Road and Ballyhooly Road. A 'quiet streets' cycle route via Gardiner's Hill is proposed. This cycle route bypasses the Dillon's Cross Junction and links into Old Youghal Road east of the Dillon's Cross Junction.

Both outbound and inbound bus lanes are provided along Bridge Street which results in the removal of the right turn lane on Bridge Street to MacCurtain Street. The existing outbound bus lane and one-way system on MacCurtain Street will be replaced by widened footways and a two-way general traffic carriageway. The typical cross-sectional width along MacCurtain Street is approx. 18m, this will provide 6m wide footways on both sides of a 6m wide carriageway. Loading bays will be retained along MacCurtain Street where possible. Buses in this section travel in general traffic lanes in both directions. Some minor, parallel street parking will also be retained. Altered traffic arrangements adjacent to MacCurtain Street will remove through traffic from MacCurtain Street

York Street will remain a one-way northbound street. However, on street parking on York Street will be removed to provide a northbound with-flow and a southbound contra-flow cycle track, linking MacCurtain Street to Wellington Road. Both inbound and outbound cycle tracks are provided along Wellington Road between York Street and Ballyhooly Road. On-street parking on the southern side of Wellington Road will be retained where possible. A short section of potential land acquisition may be required to facilitate the continuation of the proposed active travel facilities, between Military Hill and Alexandra Road, on the northern side of the existing boundary.

The proposed bus lane provision alternates from inbound to outbound along Summerhill North. From the MacCurtain Street/Summerhill North Junction, outbound buses use a general traffic lane for approximately 300m. An outbound bus lane then commences from just west of Clifton Terrace to just east of Clarence Terrace, where it terminates at St. Luke's Avenue with bus priority traffic signals, which means that buses will get a ''head-start'' over cars. Outbound buses then re-join a general traffic northbound lane for the remainder of Summerhill North. An inbound (towards the city) bus lane on Summerhill North is proposed from York Hill to the southwest end of Summerhill North. This includes bus priority signals, which provide buses with a ''head-start'' over cars at the proposed Toucan Crossing and the junction with Lower Glanmire Road.

Inbound buses along the remainder of Summerhill North use a general traffic lane. On street parking will be removed along the majority of Summerhill North as the typical cross-sectional width is quite constrained at approx. 12m. However, some parallel on-street parking will be retained just south of St Luke's Church. The St Luke's Cross Junction has been converted to a signalised junction, providing bus priority. Pedestrian and cycle improvements have also been provided, as well as the removal of Middle Glanmire Road left turn slip lane.

From St Luke's Cross Junction to Dillon's Cross via Ballyhooly Road, both inbound and outbound buses use general traffic lanes. Ballyhooly Road is very restrained with a typical cross-sectional width of approx. 12m. Consequently, when on-street parking is required to be retained, there is limited scope for bus lane provision. A short section of a two-way cycle track is proposed along Ballyhooly Road between Wellington Road and Gardiner's Hill. Cyclists can then re-join the general traffic northbound lane towards Dillon's Cross or continue along an alternate "quiet street" cycle route via Gardiner's Hill. The majority of the cycle route via Gardiner's Hill will also be in general traffic lanes but the route should only be used by local vehicles. A right turn ban from Ballyhooly Road to Gardiner's Hill is proposed to reduce traffic on Gardiner's Hill.

SECTION 2 DILLON'S CROSS TO EAST OF TINKER'S CROSS

Length of Section: 2.8km

Indicative Cost Estimate (used for comparative purposes): €19.1M

Along the Emerging Preferred Route, there is an existing inbound bus lane in Study Area Section No.2 (i.e. two sections along Old Youghal Road) and no existing cycle lanes. Overall, the EPR for this section requires the introduction of new bus and active travel facilities along the majority of its length.

The emerging preferred bus route travels from Dillon's Cross along Old Youghal Road to its junction with the North Ring Road. It then continues northbound on the short section of the North Ring Road as far as Tinker's Cross. Routing the bus along Old Youghal Road has larger employment and residential catchments than via the North Ring Road and has similar but slightly smaller catchments than via Colmcille Avenue or Murmont Road. However, the emerging preferred route is more direct.

A small section of potential land acquisition may be required to achieve bus turning movements and provide adequate footway provision at the Dillon's Cross Junction, between Ballyhooly Road and Old Youghal Road. This may result in the partial loss of front gardens from two properties.

On Old Youghal Road, a short section of an inbound bus lane is proposed on approach to Dillon's Cross. Outbound buses will continue along Old Youghal Road in a general traffic lane until New Road Junction, where a bus gate (short sections of bus/cycle-only roadway) is proposed. The carriageway along this section of Old Youghal Road is constrained with an average width of 10m, these proposals result in the loss of most of the on-street parking. However, where possible, on-street parking has been retained. Inbound on Old Youghal Road, a bus gate (short sections of bus/cycle-only roadway) is also proposed at the junction with Murmont Park.

To the east of Murmont Lawn, the existing on-street parking on the northern side of Old Youghal Road will be retained while additional on-street parking will replace the existing bus lane on the southern side. The typical cross-sectional width along this stretch is approx. 18m.

From the Murmont Park Junction to just east of the Mount Brosna Junction, both inbound and outbound buses use the general traffic lanes. On-street parking will be retained on the southern side of the Old Youghal Road carriageway where possible. On approach to the Iona Park Signalised Junction, an outbound bus lane is proposed in conjunction with bus priority signals. This allows bus priority along Old Youghal Road by providing a right turn lane for general traffic.

An outbound bus gate is proposed on Old Youghal Road at the Iona Park Junction and an inbound bus gate is proposed at the North Ring Road Junction. In this section of Old Youghal Road, local access will be maintained via Kerry Road. Egress will be via Kerry Road or Old Youghal Road. On-street parking will be retained on both sides of the carriageway, where possible.

These proposed bus gates will reduce traffic volumes on Old Youghal Road, which allows buses to move freely.

City bound through traffic will be directed onto:

- North Ring Road to the N20;
- North Ring Road to Lower Glanmire Road(N8), via Silversprings

A short strip of potential land acquisition may be required on the south-western quadrant of the Iona Park junction to provide adequate footway widths and a general traffic right turn lane. Another short section of potential land acquisition may be required on the southern side of the Old Youghal Road, outside No.10 & Newbury House, this may result in the partial loss of front gardens from two or three private dwellings.

Outbound buses re-join a general traffic lane on a short section of the North Ring Road to Tinker's Cross. An inbound right turn bus lane from the North Ring Road onto Old Youghal Road is also proposed. This will replace a right turn lane for general traffic. The inbound and outbound bus lanes continue along Old Youghal Road, east of Tinker's Cross to the termination point, just west of The Barn Gastropub.

The preferred cycle route through this section bypasses Dillon's Cross, using quiet, local streets. The cycle route continues from Gardiner's Hill Junction through Ashburton Hill and St Joseph's Drive. A northbound cycle track commences in the triangular greenspace between Gardiner's Hill and Ashburton Hill and continues along Ashburton Hill to St Joseph's Drive. It is proposed that the traffic flow is rearranged to include the outbound cycle track, Ashburton Hill and a section of St Joseph's Drive will become one-way inbound. This will create a maximum diversion of 650m via Old Youghal Road and Murmont Lawn for vehicles travelling up Gardiner's Hill, this will also result in the removal of some on street parking along St Joseph's Drive.

A short section of 'quiet streets' cycle route, along St Joseph's Drive cul-de-sac links the outbound cycle track on Ashburton Hill to a proposed two-way off-road cycle track, at the northern end of St Joseph's Drive. This cycle track will run adjacent to the existing St Joseph's Church access. The proposed two-way cycle track will continue along the southern boundary of the church and adjoining presbytery grounds where it will link onto Murmont Lawn. The proposed cycle track will require land acquisition but will avoid the church's grotto, church extension and the presbytery's garages.

A northbound and southbound cycle track on Murmont Lawn will then link up with the proposed eastbound and westbound cycle tracks on Old Youghal Road while also re-joining the proposed bus route at this point. Further land acquisition along a short section of Murmont Lawn may also be required to accommodate the proposed northbound and southbound cycle tracks.

The proposed uni-directional cycle tracks continue from Murmont Lawn along Old Youghal Road in both directions as far as the Iona Park Signalised Junction. Both cycle tracks are continuous across side roads and accesses along this section and the route in general. At the Iona Park Junction, the proposed bus route and cycle route diverge, with both cycle tracks continuing along Iona Park. The cycle tracks also cross the side roads on Iona Park and Colmcille Avenue as continuous crossings. These cycle tracks will narrow when passing adjacent to proposed bus stops along this route, providing sufficient space for the provision of boarding/alighting platforms for bus passengers.

These uni-directional cycle tracks on Colmcille Avenue will cross the North Ring Road as a part of a cyclops junction, linking cyclists with the quiet general traffic lanes of Silverheights

Drive. The 'quiet streets' cycle route continues along Silverheights Drive, Silverheights Avenue, Boherboy Road, Dunard, Liosard, Lotamore Drive and then rejoins the preferred bus route with segregated cycle tracks along Old Youghal Road to the termination point just west of The Barn Gastropub.

SCHEME BENEFITS

The Emerging Preferred Route is approximately 4.5 km in total length from Cork City Centre to Old Youghal Road, east of Tinker's Cross. Along this EPR, there is currently only limited bus lanes and no cycle lanes.

The current lack of bus lane/priority provision results in varying overall journey times and reliability.

This section of Northeast Cork City suburbs is extremely restricted due to narrow streetscapes and steep topography. Therefore, bus priority is provided through a series of different measures including bus lanes, bus gates and signalised priority.

Based on the above, a conclusion can be drawn that by improving the provision of bus priority along the proposed route, coupled with the introduction of cashless fares, the risk of turbulence to bus journeys would be significantly reduced. Consequently, allowing the buses to move along the route quicker and with more consistent journey times. The extent of these benefits will be confirmed and quantified at the next design stage.

COST ESTIMATE

A cost estimate for the EPR can be found below.

This cost estimate was developed for each route option primarily for comparative purposes, based on elemental rates from similar schemes. Therefore, this is not an absolute cost and should not be relied upon as a detailed estimate. Further cost estimate work is recommended, particularly around areas of risk such as utilities and land acquisition. It is also worth noting the current challenge of rising construction costs and the need to keep this under constant review.

Study Area Section (SAS) No. 1 €3.5M

Study Area Section (SAS) No. 2 €19.1M

Total of SAS No.1 & SAS No. 2 €22.6M

NEXT STAGES OF DESIGN DEVELOPMENT

This report has identified an emerging preferred route for the bus infrastructure along this Core Bus Corridor for which a concept design has been developed.

Within this CBC, the City Centre to Tinker's Cross section has the highest proposed bus service frequency and therefore only this section will be carried forward for Public Consultation at present.

1 BACKGROUND

1 BACKGROUND

1.1 INTRODUCTION

BusConnects is the National Transport Authority's programme to greatly improve bus services in Irish cities. It is a key part of the Government's policy to improve public transport and address climate change across Ireland.

BusConnects Cork is a derivative of the following Government policy strategies:

- The National Development Plan 2021 – 2030 (NDP);
- The Cork Metropolitan Area Transport Strategy (CMATS) 2040;
- National Sustainable Mobility Policy;
- Connecting Ireland;
- Proposed Cork City Development Plan 2022-2028 (PCCDP) and;
- Climate Action Plan 2021.

Relevant extracts from the aforementioned documents are outlined in Chapter 2 of this report and commentary on same provided where necessary.

1.2 PROJECT BRIEF

The National Transport Authority (NTA), The Authority is seeking to explore route options and develop Draft Preferred Routes for thirteen Core Bus Corridors (CBCs) in the Cork Metropolitan Area. These CBCs form part of the bus network as defined in the Cork Metropolitan Area Transport Strategy (CMATS) published by the NTA in collaboration with Cork City Council, Cork County Council and TII in 2020.

SCHEME 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.

CORRIDORS AND PROJECTS

WSP has been commissioned by the NTA to carry out a study to explore route options and develop a Draft Preferred Routes for Project A. Project A consists of:

- **CBC 2 East of Mayfield to City Centre via Montenotte;**
- CBC 3 Ballyvolane to City Centre via Montenotte;
- CBC 4 North of Dublin Hill to City Centre via Blackpool; and
- CBC 5 Hollyhill / Apple to City Centre via Shandon Area.

WSP has provided a multi-disciplinary team that has contributed to the stage 1 sifting process and stage 2 multi-criteria analysis as well as development of the Draft Emerging Preferred Option.

This Assessment Report covers the CBC 2 East of Mayfield to City Centre via Montenotte route. This route is presented as STC B in the public consultation drawings. The infrastructure corridors were renamed from numbers to letters to avoid confusion with the bus routing naming (the routes that the individual buses follow are labelled using numbers and the infrastructure corridors are labelled using letters).

1.3 REPORT STRUCTURE

The route option assessment process and corresponding report structure are detailed below:

- Chapter 1 – Introduction, background, aims and objectives.
- Chapter 2 – The strategic policy context in relation to CBC 2 is outlined.
- Chapter 3 – The proposed study area is described and key constraints are identified.
- Chapter 4 – The assessment methodology including the stage 1 sifting process and stage 2 multi criteria analysis.
- Chapter 5 – Sets out the stage 1 route options assessment, the sifting stage, including the ‘spiders web’ of the network of sections examined
- Chapter 6 – Sets out the stage 2 route options assessment, the multi criteria analysis, including the introduction of study area sections.
- Chapter 7 – The preferred route for the proposed scheme is described, its cost estimate presented and the next steps for the project are set out in this chapter.

2

TRANSPORT PLANNING AND POLICY CONTEXT

2 TRANSPORT PLANNING AND POLICY CONTEXT

2.1 TRANSPORT CONTEXT

The National Development Plan (NDP) envisages that Cork will become the fastest-growing city region in Ireland with a projected 50% to 60% increase of its population in the period up to 2040. [CMATS 2020]

The NDP sets out a ten-year investment plan to underpin the National Planning Framework's ten National Strategic Outcomes (NSOs). National Strategic Outcome 4 – Sustainable Mobility and 8 – Transition to a Low- Carbon and Climate Resilient Society commit to implementing BusConnects Cork and the delivery of "…sustainable travel measures, including comprehensive Cycling and Walking Networks for metropolitan areas of Ireland's cities, and expanded Greenways."

The NDP states that "An environmentally sustainable public transport system will enable growth and change, meet the significant increase in travel demand and urban congestion while also contributing to our national policy vision of a low-carbon economy."

Guiding Principle 02 of CMATS is "to prioritise sustainable and active travel and reduce car dependency within the Cork Metropolitan Area."

Bus Éireann figures presented as part of the MacCurtain Street Public Transport Improvement Scheme show that customer journeys increased on average by 13% year on year between 2016 and 2019 inclusive. The brochure also noted that approx. fifty thousand customer journeys occurred every day in the Cork area in 2019.

The NDP envisages that a significantly enhanced BusConnects service for Cork "will carry around 45 million passengers per annum and 32,000 passengers during the AM morning peak" by 2027 and CMATS recognises that buses will "... provide an increasingly important interchange service between the InterCity, suburban rail and light rail stations and the Park and Ride network."

CMATS outlines an indicative Core Radial Bus Network which would connect external corridors to the City Centre whilst pairing Cross-City travel demand to maximise the utilisation of the bus service. Mayfield is identified as a core trip origin / destination.

CMATS also outlines an indicative Orbital Bus Network "which are proposed to serve a multiple of key destinations outside the City Centre." Mayfield is identified as a key destination outside the City Centre.

The proposed increase in bus services and vehicle numbers will benefit a significant proportion of the Cork's population but will not succeed if bus priority is not implemented in full as buses will be held up in general traffic."

CMATS describes existing bus priority measures through Cork City as "particularly limited" and acknowledges that "… prioritising bus services above general traffic is critical to the delivery of an efficient, frequent and reliable bus system and is a major part of the overall BusConnects programme."

CMATS recognises that the "overprovision of car parking (including the continued use of minimum standards in some cases) is undermining the viability and attractiveness of public transport."

CMATS states that "the focus should be on identification and implementation of bus priority measures through town centres and noted pinch-points. These should be considered in tandem with proposed

public realm projects and/or the realisation of distributor roads to remove through traffic from town centres."

In order to achieve the objective of end-to-end bus priority in each direction, where practicable CMATS acknowledges that "measures including the removal of some on-street car parking and the compulsory purchase of some private land will be required to facilitate bus priority lanes and footpaths to provide access to the bus network itself." Measures such as "bus gates, protected laybys and bus priority at signalised junctions" are also identified in CMATS as means of prioritising bus services above general traffic.

CMATS also advises that in cross-city services through Cork City Centre, a number of guiding principles were applied, of which minimising "…divided services on one-way sections or routes where possible" was one. The existing 208 Lotabeg – City Centre route is currently split in the inbound and outbound directions between the N8 Lower Glanmire Road and Patrick's Street.

"CMATS proposes a limited number of new road-based projects required to facilitate the sustainable movement of people, goods and services, and to complement public transport, walking, cycling and traffic management objectives. … CMATS instead prioritises the provision of reliable and efficient public transport and enhanced walking and cycling routes to minimise the need to travel by car." [CMATS]

Proposed Cork City Development Plan 2022-2028 (PCCDP) states that the City Suburbs is the largest population base (almost two thirds) within the city. The PCCDP advises that "the area remains heavily dependent on private transport, with 63% of residents using their car/van/etc to get to work or education and only 9% using public transport."

The National Sustainable Mobility Policy sets out a strategic framework to 2030 for active travel (walking and cycling) and public transport journeys to help Ireland meet its climate obligations. 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. It will make it easier for people to choose walking, cycling and use public transport daily instead of having to use a petrol or diesel car.

Connecting Ireland highlights that the transport sector is one of the largest contributors to Ireland's carbon emissions with reliance on the car to get around being the key reason for this. 7 out of every 10 trips undertaken in Ireland is by car, and to make matters worse, half of short trips under 2km in length are made by car. There is a need to change this habitual travel behaviour, leave the car at home more often and commute by alternative means. Without a change in the right direction Ireland will continue to experience traffic congestion on journeys to, from and within our towns and cities and all the associated damaging impacts on our rapidly changing climate.

The Climate Action Plan recognises that expanding sustainable mobility options to provide meaningful alternatives to everyday private car journeys is necessary to reduce transport emissions. The Climate Action Plan commits to delivering an additional 500,000 daily sustainable journeys by 2030 through the implementation of major transport projects such as BusConnects.

BusConnects in Cork (i.e. Core Bus Corridor Infrastructure Works) is specifically referenced as part of the Climate Action Plan Annex of Actions

While the National Investment Framework for Transport in Ireland (NIFTI) 'prioritises investment in decarbonisation and the most environmentally sustainable transport modes. This will include the development of cycle networks throughout the country, the delivery of major new public transport'.

2.2 CYCLING CONTEXT

CMATS advised that while there have been significant improvements in cycling infrastructure primarily within in the City Centre "… the present network is disjointed and of variable quality."

The objective of the Cork Cycle Network Plan (CCNP), which formed the basis of the Cycle Network development in CMATS, "… is to provide a clear plan for the future development of the cycling network within the Metropolitan Area to encourage greater use of cycling for trips to work, school, recreation and leisure…" by recommending cycling infrastructure to create "an integrated and coherent cycling network."

Cycling connections in the north of the city on the N20 corridor, North Ring Road, Summerhill North, Middle Glanmire Road, Ballyhooly Road and Old Youghal to connect to Mayfield are recommended in the CCNP.

Within the East of Mayfield to City Centre via Montenotte (CBC2) corridor several routes are identified in the CCNP (see Table 2.1 below).

Table 2-1 – Route Descriptions

Route Code	Road Name	Section	Route Category
CCN-U12	N20 North City Link Road	Pope's Quay to Assumption Rd and Commons Rd to junction with Lower Kileens Rd	Primary
CCN-U14	North Ring Road	Glen Avenue to Ballyhooly Road	Primary
CCN-U15	Glen Avenue	North Ring Road to Ballyhooly Road	Primary
CCN-U18	Ballyhooly Road	Middle Glanmire Road to Glen Avenue	Primary
CCN-U19	Summerhill	MacCurtain Street to Middle Glanmire Road	Primary
CCN-U21	Old Youghal Road	Ballyhooly Road to North Ring Road	Primary
CCN-U22	Middle Glanmire Road, Colmcille Avenue	Approximately 100 metres west of Tracton Avenue to Summerhill North	Primary
CCN-U23	North Ring Road	From Ballyhooly Road connecting to Greenway CCN-GW2 and on to Colmcille Avenue.	Primary
CCN-U24	Boherboy Road	North Ring Road to Glanmire Wood Amenity Route	Primary

CCN-U25	North Ring Road	From Junction with N8 to Colmcille Avenue	Primary
CCN-U34	Wellington Road via Bridge Street and St. Patricks Hill south	Bridge Street to Summerhill North	Secondary
CCN-U35	Old Youghal Road	Richmond Hill to Ballyhooly Road	Secondary
CCN-U36	Murmount Avenue/ Murmont Road	Colmcille Avenue to Gardiner's Hill	Secondary
CCN-U37	Colmcille Avenue	Old Youghal Road to North Ring Road	Secondary
CCN-U39	Assumption Road	Glen Avenue to N20	Secondary
CCN-U41	Old Youghal Road	Tinkers Cross to Church Hill	Secondary
CCN-GW1	The Glen Greenway	North Ring Road to Ballyhooly Road and North Ring Road	Greenway
CCN-GW2	Mayfield Greenway	Ballyhooly Road to Rathcooney Road	Greenway

CCNP Section 07

Where route categorisation of Primary, Secondary or Feeder was assigned using the descriptions in Table 2.2 (below).

Table 2-2 – Cycle Network Categorisation

Route Category	Description
Primary	Main cycle arteries that cross the urban area and carry most cycle traffic
Secondary	Link between principal cycle routes and zones
Feeder	Cycle routes within local zones and/or connections from zones to the network levels above (primary and secondary)
Greenway^	A predominantly traffic free path, designated for use by pedestrians, cyclists and other non-motorised users such as wheelchair users, families with buggies etc.

CCNP Table 5.1 + ^ Sport Ireland

2.3 WALKING CONTEXT

The Cork Walking Strategy 2013-2018 "proposed the development of a walking network that connects neighbourhoods, origins and destinations, increases the permeability of the built environment, and creates an attractive, safe environment…" [CMATS]. CMATS advises that walking provision should be upgraded in tandem with BusConnects corridor improvements.

The Walking Strategy identified Strategic Routes "… where investment in pedestrian infrastructure would deliver most benefits to modal shift." CMATS advises that these Strategic Routes are particularly relevant "… in the context of planned population growth and residential development on Cork's Northside." The Walking Strategy also identified a number of 'Gateways' for pedestrian upgrades of which the North City/Shandon area is included.

Within the East of Mayfield to City Centre via Montenotte (CBC2) corridor several Strategic Routes, including their purpose and upgrade proposals are identified in the Walking Strategy (see Table 2.3 below).

Table 2-3 – Walking Network Improvements

Route	Purpose and Upgrade Proposal
Ballyhooly Road	To support on-going regeneration in the Ballyvolane UEA area and access to increased bus services
Old Youghal Road and Colmcille Avenue	Upgrade the pedestrian route through Mayfield and connecting into St. Lukes, Dillon's Cross and to the City
Lower Glanmire Road	To support planned regeneration of Tivoli Docks including new rail station and greenway route to Cork City

CMATS Chapter 06 Walking

2.4 PROPOSED SCHEMES

The following planned scheme is within the Study Area for the proposed East of Mayfield to City Centre via Montenotte Core Bus Corridor (CBC2) and has been considered as part of this Assessment:

- MacCurtain Street Public Transport Improvement (PTI) Scheme; and

3 STUDY AREA

3 STUDY AREA

3.1 INTRODUCTION

Arising from the transport planning and policy documents referenced in Chapter 2, a study area has been identified for CBC2. The study area was taken to include the area between Bridge Street in Cork City and Old Youghal Road, east of Tinker's Cross.

The study area includes the localities of Mayfield, Lotabeg, Montenotte / St. Luke's, Dillon's Cross and the Glen.

The extent of the study area is presented in Figure 3.1 below.

Figure 3-1 - Proposed Scheme Study Area

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3.2 STUDY AREA

A review of the Cork City Development Plan (CCDP) 2015-2021** (See Figure 3-2 below) indicates that land is predominantly “Residential, Local Services and Institutional” with the Local Centres of St. Luke’s, Dillon’s Cross and Neighbourhood Centre of Mayfield. The Summerhill and St. Luke’s areas consists of Inner City Residential Neighbourhoods.

The Coburg Street ACA, Wellington Rd/ St. Luke’s ACA and Grattan Hill / Lincoln Place / Hackett’s Terrace / Mahony’s Avenue areas are each identified as Architectural Conservation Areas.

There are extensive areas to the south of the Middle Glanmire Road which are identified as Areas of High Value Landscape.

Notable areas of public open space / sports grounds include Collin’s Pitch and Putt, Brian Dillon’s GAA, Mayfield GAA and the Glen River Park.

Notable centres for education include Hewitt College, St. Angela’s College, Bruce College, Christian Brother’s College, Scoil Mhuire, Griffith College, Cork Educate Together, St. Luke’s Mixed National School, St. Patrick’s College and National Schools, St. Mark’s National School, St. Brendan’s Catholic School, Mayfield Community College, Scoil Éanna, Scoil Bernadette, Saint Paul’s Special School, St. Killian’s Special School and Scoil Mhuire Agus Eoin.

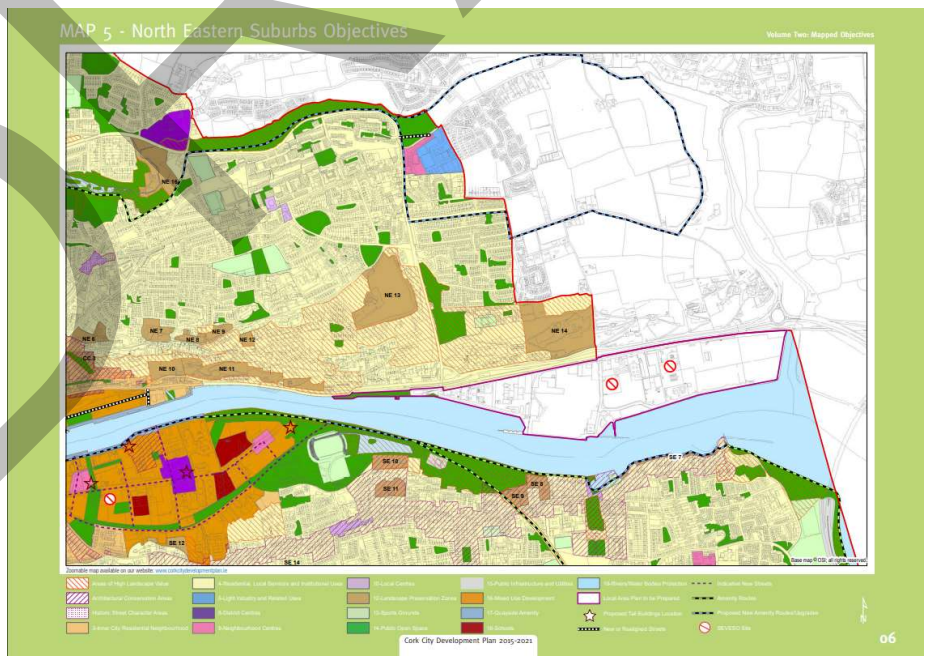
Notable areas for Light Industry and related use include Mayfield Business Park and Glen Industrial Park.

Notable trip attractors include Collin’s Barracks and Mayfield Shopping Centre.

The individual route sections identified within the study area are illustrated and described in Chapter 6.

** Cork City Council is due to adopt the new Cork City Development Plan 2022-2028 later this year.

Figure 3-2 – CCDP Objectives Mapping



3.3 PHYSICAL CONSTRAINTS

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

- The River Lee Quays;
- Existing and committed future development along the route, including Architectural Conservation Areas;
- Restricted carriageway cross sections between existing building lines;
- Steep (>10%) natural gradients;
- Architectural, archaeological and heritage sites and features;
- Protected structures adjacent to the route;
- Street trees and other natural features along the route;
- The replacement of parallel parking;
- Existing urban and sub-urban road and street network;
- Limited availability of land in urban and suburban areas and;
- The need to maintain traffic flow for all modes during construction and subsequent operation of the CBC.

4 ASSESSMENT METHODOLOGY

4 ASSESSMENT METHODOLOGY

4.1 ASSESSMENT PROCESS

This chapter of the report presents the methodology used for the assessment of route options within the subject study area. A two-stage assessment was adopted:

- An initial 'Stage 1' high-level route sections assessment or 'sifting' process which appraised route sections in terms of their ability to achieve scheme objectives as outlined in Paragraph 1.2 and whether they could be practicably delivered; and
- Potential route options which passed this initial stage were taken forward to a more detailed 'Stage 2' Multi Criterial Analysis.

4.2 STAGE 1: SIFTING STAGE

An initial "spider's web" of potential route sections that could possibly accommodate the bus corridor between Cork City Centre and East of Mayfield, via Montenotte were identified for the study area. This "spider's web" of route sections consists of every existing through road/street and several offline paths in the study area.

A high-level qualitative assessment was then undertaken based on professional engineering judgement and a general appreciation for existing physical conditions and geometrical and environmental constraints within the study area from available survey information and site visits. This assessment identified route sections that would either not achieve the scheme objectives or would be subject to excessive cost and/or impact to achieve these objectives (e.g. the demolition of consecutive residential properties).

Due to the constrained nature of the corridor and the limited number of routes with the potential to achieve all of the scheme objectives outlined in Paragraph 1.2, the following considerations were also applied:

- Existing bus routes were passed through to Stage 2; and
- Alternative routes suitable for upgrades to cycling and walking facilities only, were passed through to Stage 2.

The resulting "spider's web" of identified potential route sections are presented in Chapter 5 of this report.

4.3 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) in accordance with the Department of Transport Document "Common Appraisal Framework for Transport Projects and Programmes".

Each route was comparatively assessed against the study objectives using the KPIs and method of measurements identified below. The route options were then ranked in order of best performance against the various criteria 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.

Table 4.1 presents a summary of the assessment criteria and sub criteria used as part of the 'Stage 2' Multi Criteria Analysis process.

Table 4-1 – 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	Environmental	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

ECONOMY (1)

Capital Cost (1.a.)

The capital cost of a scheme is comprised of 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. For all other sections requiring significant road widening major works have been assumed. Moderate works have been assumed where the existing road corridor will be reconfigured to provide the bus priority measures and 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 4-2 – Link Cost Rates per km

Category	Construction Works	Cost Rate per km
Minor	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)	General site clearance (street furniture removal / relocation, etc). Services protection 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). Minor property boundary reinstatement works (walls, gates, landscaping etc).	€1,500,000
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.

Table 4-3 – Junction Cost Rates

Category	Construction Works	Cost Rate
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). Pavement full depth reconstruction. Property boundary reinstatement works (walls, gates, driveways landscaping etc).	€1,400,000

Land Acquisition Costs

The land acquisition costs cover 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 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 has been applied to each option.

Average Bus Journey Time (1.b)

Typically, shorter bus journey times supports higher patronage as people can get to their destination in shorter time. 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 using the following assumptions:

- Buses travel at an assumed speed unless they are delayed.
- Dwell time of 10-60 secs per stop depending on usage.
- Delay of 15–120 secs per junction depending on level of priority achievable.

Further delays are anticipated 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.

Bus Journey Time Reliability (1.c)

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. 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)

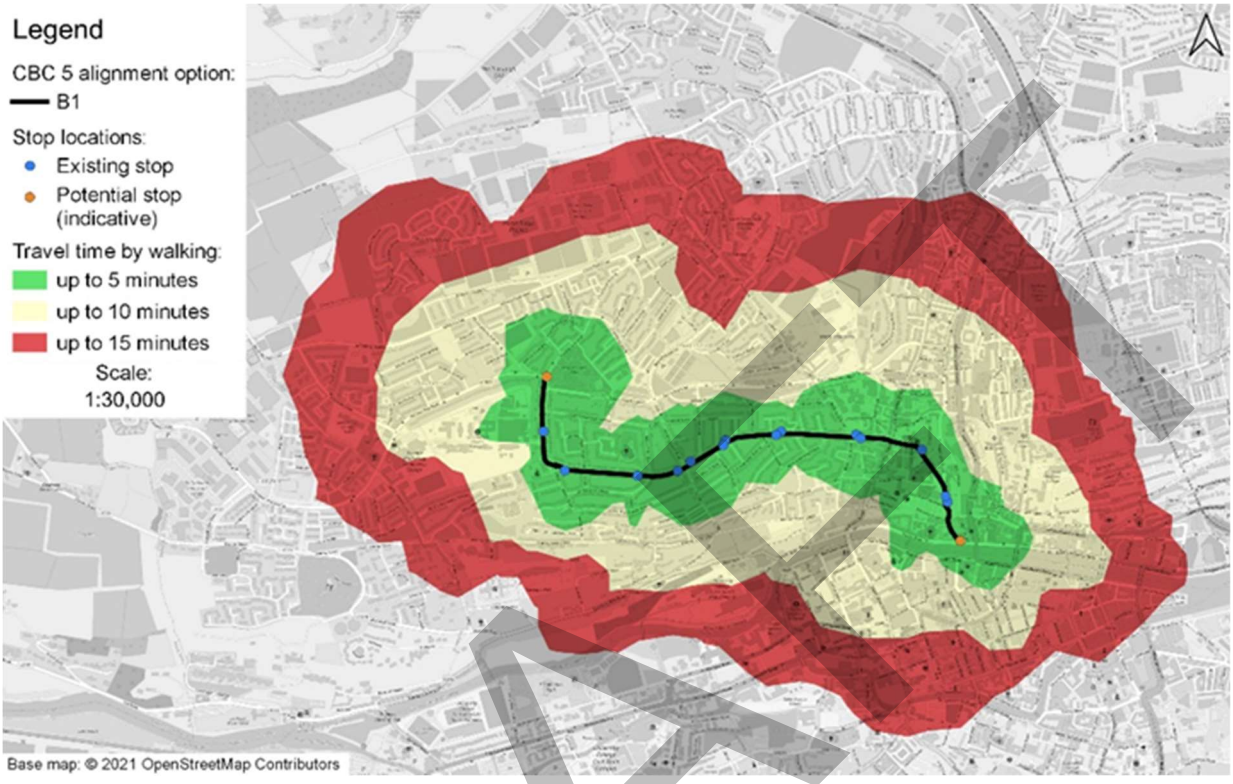
Land Use Integration (2.a)

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.

Residential Population and Employment Catchments (2.b)

The current residential and employment population within a particular walking distance for each of the CBC stops is calculated in order to determine the number of potential users for each scheme option. To assess the potential population and employment catchments the walking distance from bus stop locations along each route was analysed using the network analyst module of ArcGIS to create walk time isochrones from each stop. The distances to the stops correlate to walk times of five, ten and 15min intervals and were estimated based on an average walking speed of 5kph. The population and employment within the isochrones were then calculated based on planning data received from the NTA at CSO small area and work zone levels. 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 Figure 4-1 below.

Figure 4-1 - Sample bus stop catchment map with walking isochrones shown at 5/10/15 minute intervals



Transport Network Integration (2.c)

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 emphasis placed on TEN-T routes.

Cyclist Integration (2.d)

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

Pedestrian Integration (2.e)

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

ACCESSIBILITY AND SOCIAL INCLUSION (3)

Key Trip Attractors (3.a)

This assessment criterion identifies key trip attractors located within appropriate walking catchments which would generate significant demand for bus services, that 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.).

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 which seeks to improve the lives of the residents in these 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 (4)

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. Differential 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)

Archaeological, Architectural and Cultural Heritage (5.a)

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.

Biodiversity (5.b)

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.

Soils and Geology (5.c)

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.

Water Resources (5.d)

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.

Landscape and Visual (5.e)

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, green spaces or the altering of streetscapes, character and features. Different route options are compared, and negative effects considered under this criterion.

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

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

Noise, Vibration and Air (5.f)

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.

Land Use and the Built Environment (5.g)

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.

ROUTE OPTIONS SUMMARY TABLE

Route 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 4.4 below.

Table 4-4 - MCA comparative advantage/disadvantage colour ranking table

Colour	Description
	Significant advantages over the other options
	Some advantages over the other options
	Neutral compared to other options
	Some disadvantages compared to the other options
	Significant disadvantages compared to the other options

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

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

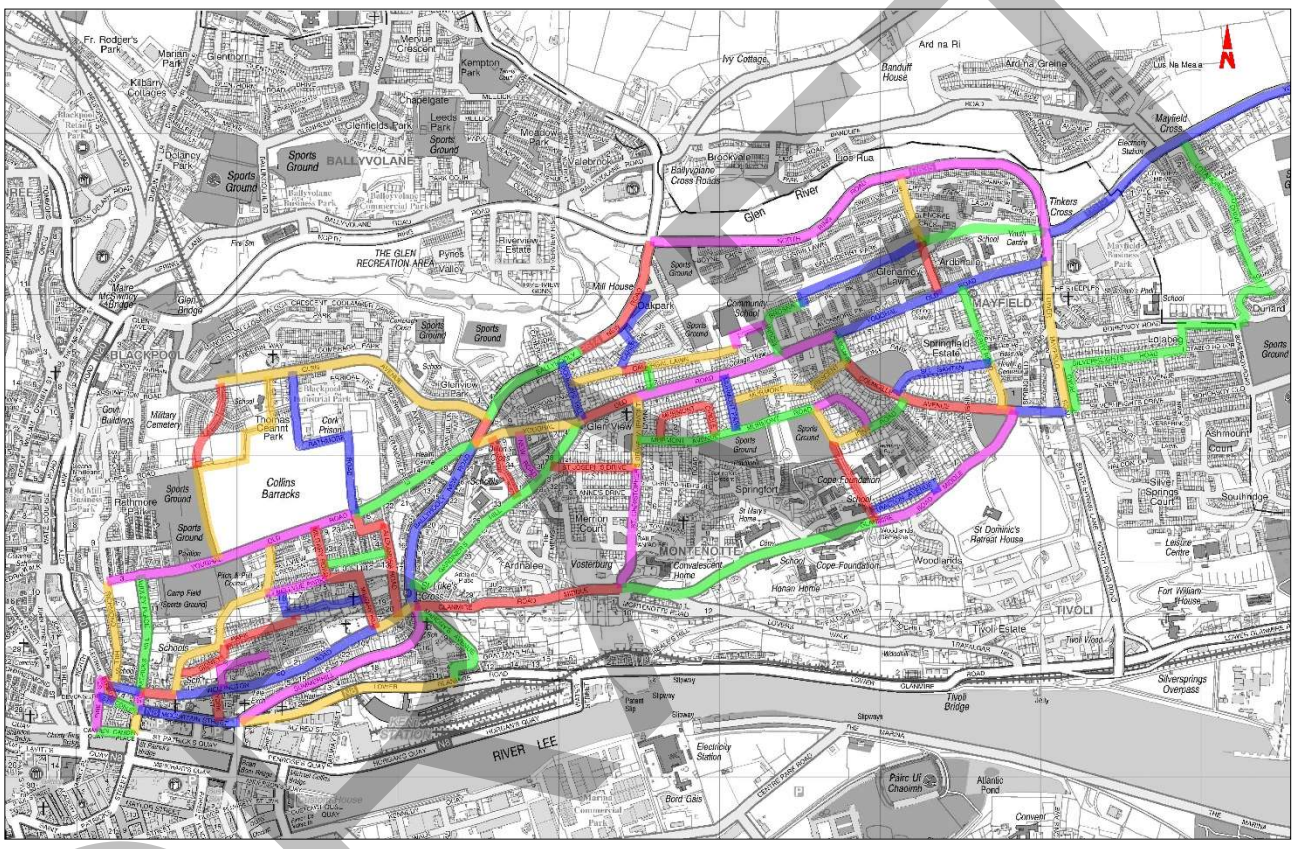
The outcome and findings of the multi-criteria analysis are then finally considered in a holistic manner to derive a preferred end-to-end route for the proposed end-to-end CBC scheme.

5 STAGE 1: SIFTING STAGE

5 STAGE 1: SIFTING STAGE

All roads, streets and offline paths within the study area were identified using Ordinance Survey Mapping, Open Source Mapping and site visits. Following this, a total of 80no. links make up the initial "Spider's Web", as shown in Figure 5.1 below. Please refer to Appendix A for a larger image and description of all links.

Figure 5-1 - Initial Spider's Web



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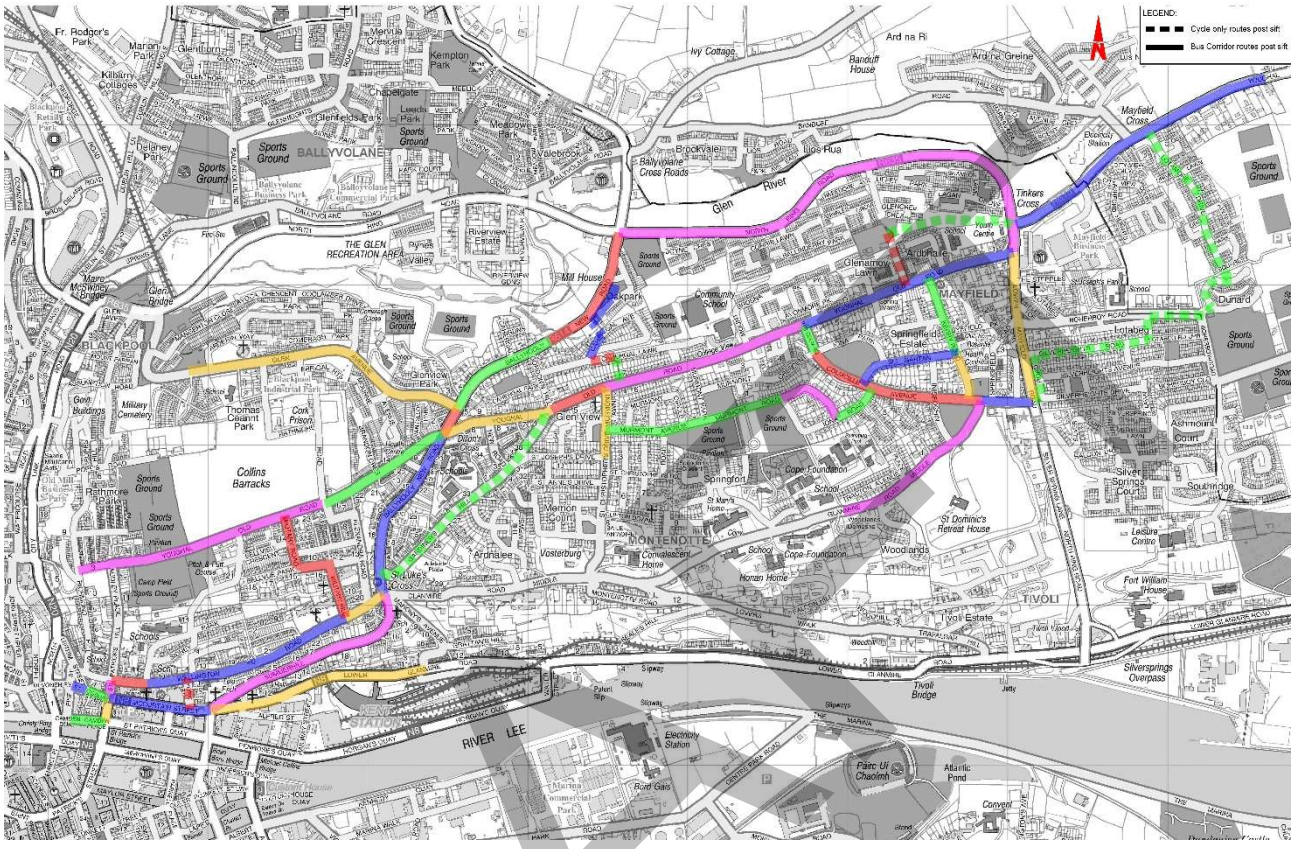
Using the assessment methodology outlined in Paragraph 4.2 of this Report, a total of 37 no. links were identified as being unsuitable in achieving the scheme objectives. A further 8 no. links were identified as unsuitable as through bus route but were retained as potential cycle-routes for Stage 2. These are links 0002_019, 0002_040, 0002_076, 0002_080, 0002_082, 0002_083, 0002_084 and 0002_096.

Figure 5.2 below shows the 52 no. links which passed the initial sift consisting of 43 no. through bus routes and 8 no. potential cycle routes.

Figure 5-2 - Routes Passing Initial Sift



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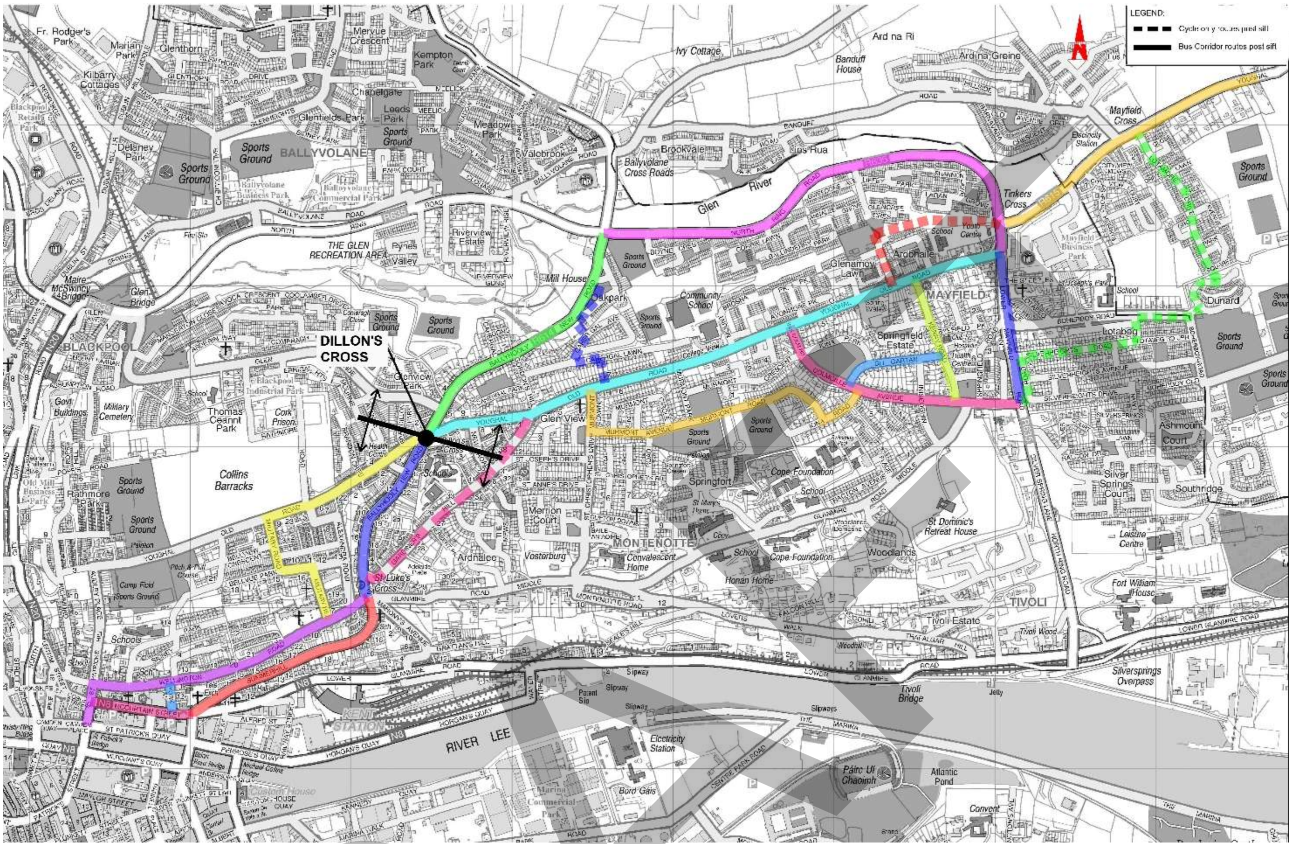
Five no. links (i.e. 0002_04, 0002_05, 0002_08,0002_28 and 0002_68) are disconnected and could not form part of a City Centre to East of Mayfield CBC route and therefore have been removed at this stage.

Following the Stage 1 sift and the subsequent removal of disconnected links a total of 38 no. links were identified as suitable to achieve the scheme objectives. These viable links are shown in Figure 5.3 and were brought forward for Stage 2 Multi-Criteria Analysis, please refer to Chapter 6 of this Report.

Figure 5-3 - Route Options Remaining Post Stage 1 Assessment



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Interrogation of the above links brought forward to the Stage 2 Multi Criteria Analysis (MCA) resulted in Dillon’s Cross as being the optimum location to split the Study Area for the Stage 2 MCA. This is further described in Chapter 6.

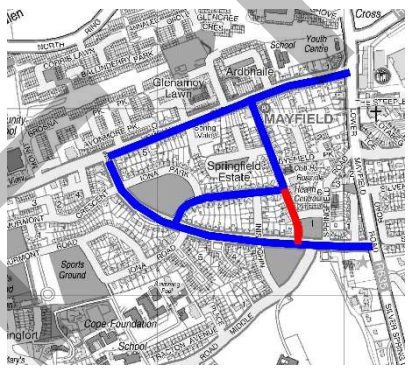
A full summary of the route option link descriptions and Stage 1 Route Options Assessment (“Sifting”) results are included in Appendix A

5.1 PRELIMINARY ROUTE ASSESSMENT

A preliminary route assessment was carried out in order to identify routes that would perform worse than adjacent routes in an MCA analysis. Routes which were identified with the latter characteristic were then removed prior to commencing the Stage 2 MCA.

A summary of this Preliminary Route Assessment is presented in Table 5.1 below:

Table 5-1 - Preliminary Route Assessment

Road Names	Comments	Map
Kerry Road from its junction with Sli Gartan to its junction with Colmcille Avenue	This section of Kerry Road would result in the route being circuitous, for this reason this route will not be carried forward to Stage 2 MCA.	

6

STAGE 2: MULTI CRITERIA ANALYSIS

6 STAGE 2: MULTI CRITERIA ANALYSIS

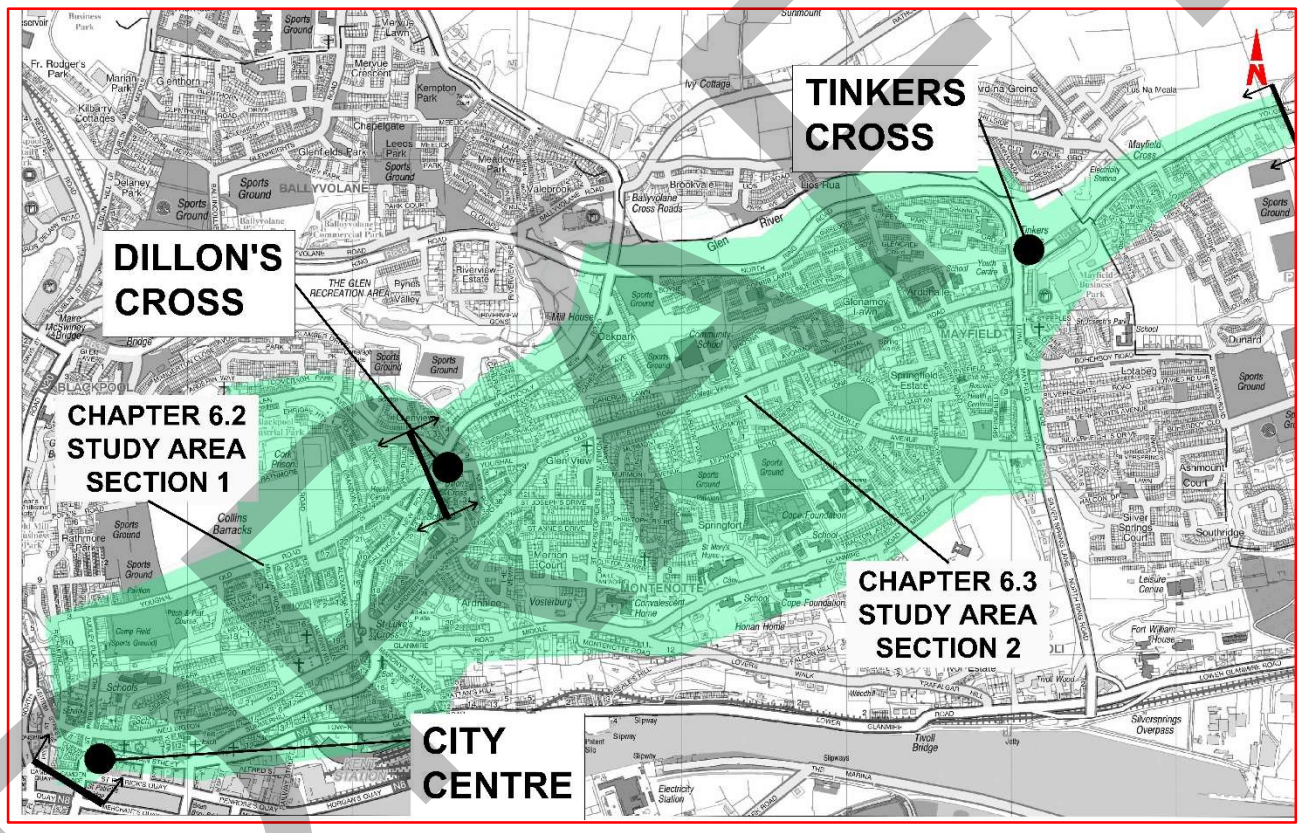
6.1 STUDY AREA SECTIONS

The study area has been divided in two sections as follows to assist with the detailed assessment of the overall study area:

- Study Area Section (SAS) No. 1 – Cork City Centre to Dillon's Cross (Chapter 6.2)
- Study Area Section (SAS) No. 2 – Dillon's Cross to Old Youghal Road, East of Tinker's Cross. (Chapter 6.3)

The extent of each of these study area sections is presented in Figure 6-1 below.

Figure 6-1 - Study Area Sections



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6.2 SECTION 1: CITY CENTRE TO DILLON'S CROSS OPTIONS ASSESSMENT

Study Area Section (SAS) 1, which is presented in Figure 6-2, consists of all the suitable links between Cork City Centre and Dillon's Cross, as identified following the Stage 1 sifting process. The remaining suitable links can be consolidated to form different viable public transport and active travel route options which are summarised as follows:

- Option A1, comprising of;
  - A bus route via Bridge Street, St. Patrick's Hill, St. Patrick's Place, Sidney Place, Wellington Road, Military Hill, Military Road and Old Youghal Road; and
  - A cycle route via Summerhill North and Ballyhooly Road.

- Option A2, comprising of;
  - A bus route via Bridge Street, MacCurtain Street, Summerhill North and Ballyhooly Road; and
  - Option A1 cycle route.

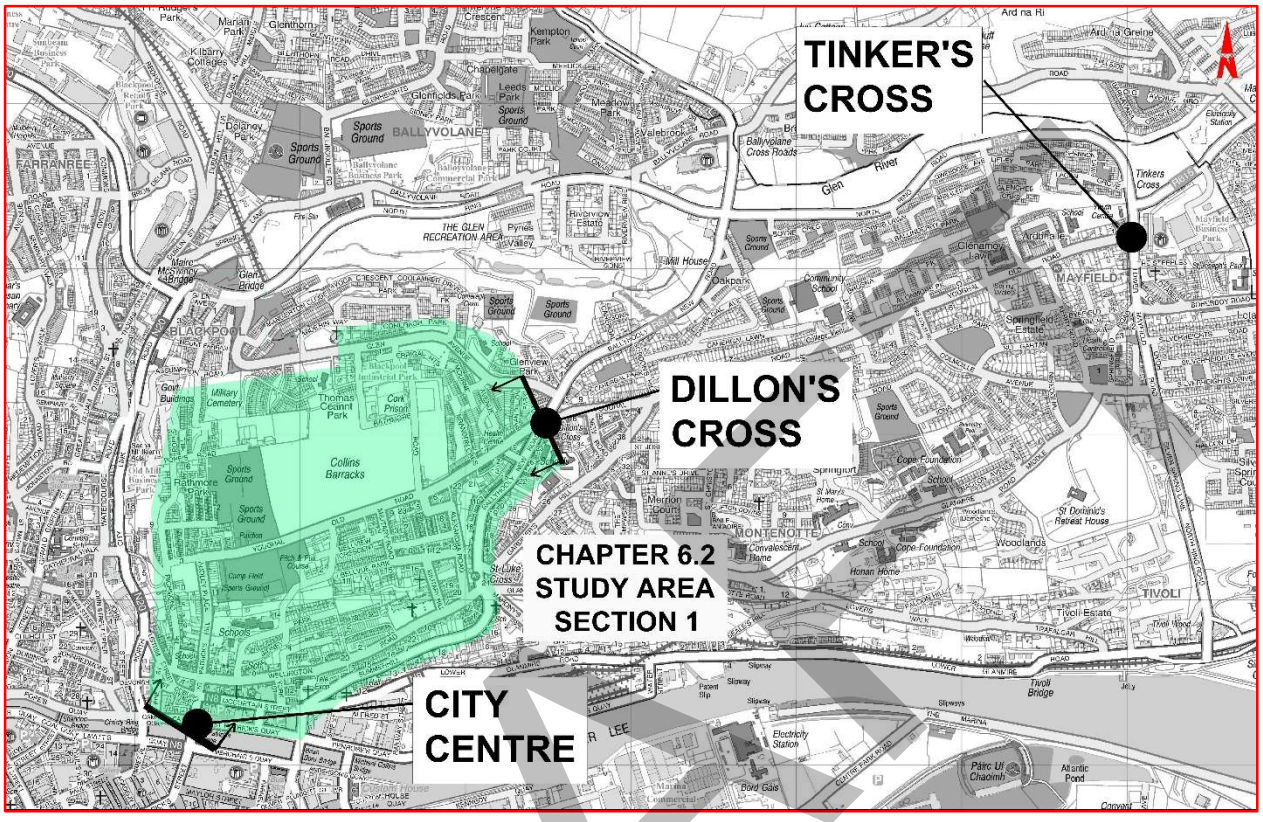
- Option A3, comprising of;
  - A bus route via Bridge Street, St. Patrick's Hill, St. Patrick's Place, Sidney Place, Wellington Road and Ballyhooly Road; and
  - Option A1 cycle route.

- Option A4, comprising of;
  - Option A2 bus route; and
  - A cycle route via MacCurtain Street, York Street, Wellington Road, Ballyhooly Road and Gardiner's Hill.

- Options A5, comprising of;
  - Option A3 bus route; and
  - Option A4 cycle route..

An overview of each of the aforementioned route options that were assessed within SAS 1 are further described in the subsequent pages.

Figure 6-2 - Study Area Section No. 1 (SAS 1)



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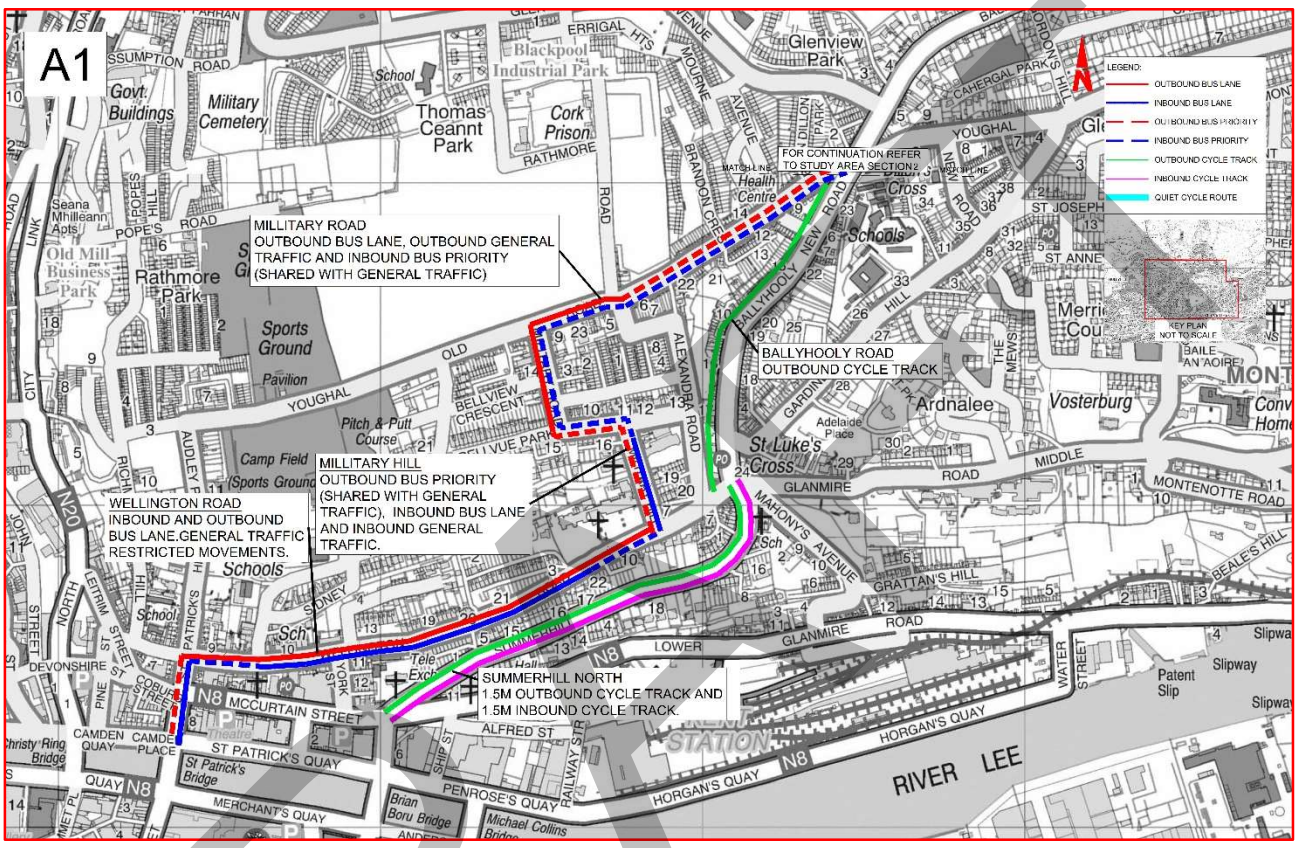
SAS 1 - OPTION A1

An outline of Option A1 is shown in **Figure 6-3** below and is then described in greater detail in the subsequent text.

Figure 6-3 – SAS 1 Option A1 Outline



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Outbound Bus Route

- Shared bus / general traffic lane along Bridge Street and St. Patrick's Hill to junction with St. Patrick's Place;
- Dedicated bus lane along St. Patrick's Place, Sidney Place to junction with York Street;
- Dedicated bus and general traffic lanes along Wellington Road to York Hill;
- Dedicated bus lane along Wellington Road to junction with Military Hill;
- Shared bus / general traffic lane along Military Hill and Military Road to junction at Bellevue Park;
- Dedicated bus and general traffic lanes along Military Road and Old Youghal Road to junction with Rathmore Road; and
- Shared bus / general traffic lane along Old Youghal Road to end of section at junction at Ballyhooly Road.

Inbound Bus Route

- Shared bus / general traffic lane along Old Youghal Road, Military Road and Military Hill to junction with Sunmount;
- Dedicated bus and general traffic lanes along Military Hill to junction with Wellington Road;
- Shared bus / general traffic lane along Wellington Road to junction with Griffith College;

- Dedicated bus and general traffic lanes along Wellington Road to junction with York Hill;
- Dedicated bus lane along Wellington Road to York Street;
- Dedicated bus and general traffic lanes along Sidney Place to junction with Sidney Hill;
- Shared bus / general lane along St. Patrick's Place to junction with St. Patrick's Hill;
- Dedicated bus lane along St. Patrick's Hill to junction with Bridge Street; and
- Shared bus / general traffic lane along Bridge Street to end of section.

Cycle Routes

- Provision of inbound and outbound cycle tracks along Sumerhill North; and
- Provision of outbound cycle tracks along Ballyhooly Road to Dillon's Cross.

Route Constraints

The route as a whole is constrained resulting in the separation of bus and cycle routes. Within the bus route, there are constraints due to width of the cross-section throughout. As such, there is an inability to provide dedicated bus lanes throughout the full extents of the route, meaning that both the inbound and outbound bus route is shared in sections, as described above. Swept path analysis for bus turning movements has also identified potential conflicts at certain, constrained junctions, resulting in potential delays to bus journey time, this is especially evident for turning movements from St Patrick's Hill to St Patrick's Place where signalisation of the junction with setback stop lines is proposed. Therefore, journey time may be increased when there are high general traffic volumes through the route.

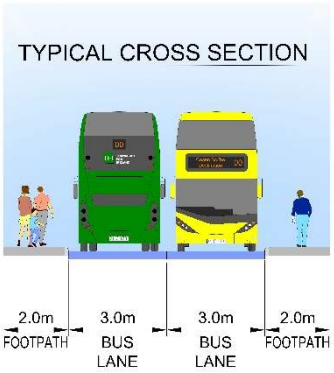
Cycle network integration is also adversely impacted by difficult gradients for cyclists to negotiate throughout the section negatively impacting journey time and adding a significant amount of physical activity.

There are a significant number of designated National Inventory of Architectural Heritage (NIAH) sites and protected structures along both the bus and cycle routes which need to be considered with regard to the works that can take place in their vicinity. Pre and post-condition surveys may be required along with vibration monitoring for the duration of work on the scheme.

Bus Stops

Existing bus stops and shelters will be refreshed as part of the BusConnects Cork programme. There are two individual bus stops currently along this section and it is estimated that 16 stops would be required on the route (eight in each direction) assuming stops every 250m indicatively. As such, 14 further stops would be required.

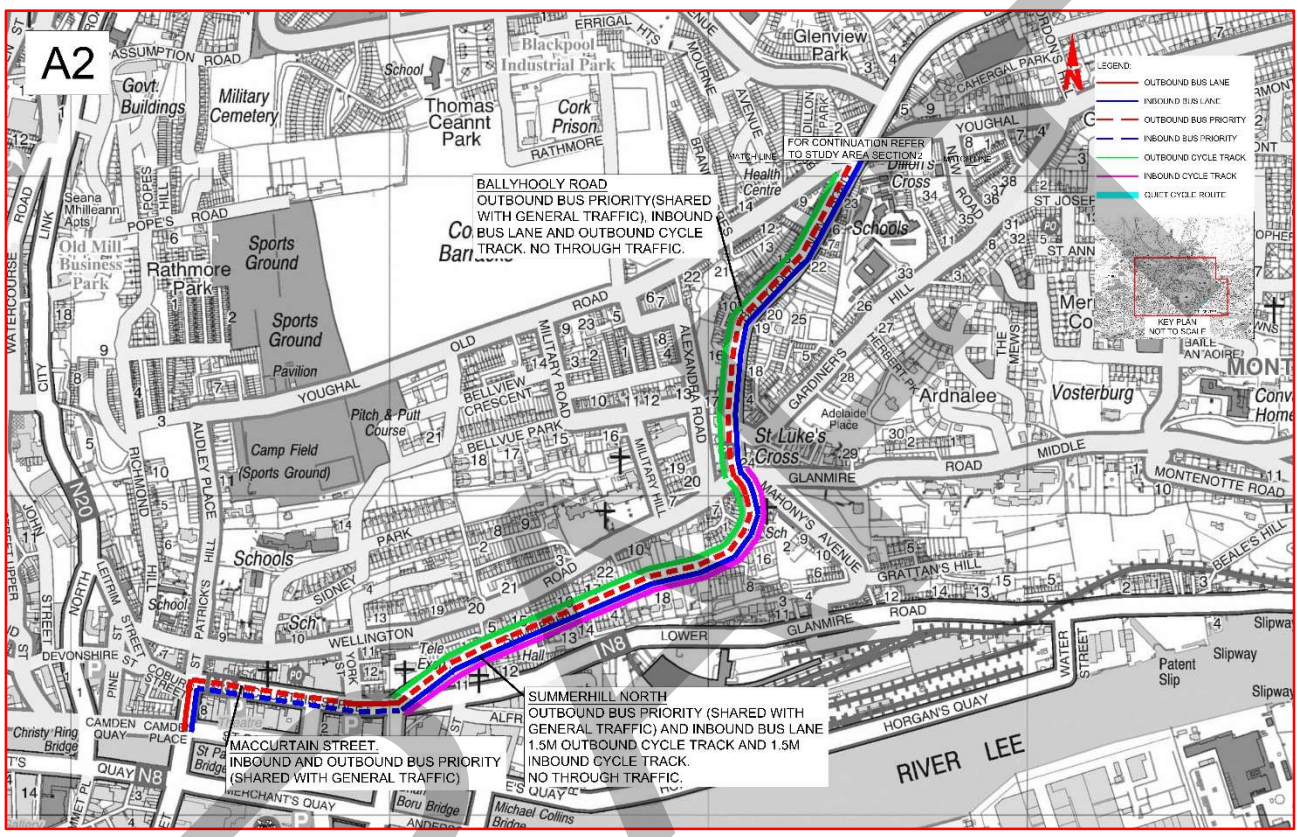
Figure 6-4 – Option A1 Typical Cross Section Along Wellington Road



SAS 1 - OPTION A2

An outline of Option A2 is shown in Figure 6-5 below and is then described in greater detail in the subsequent text.

Figure 6-5 – SAS 1 Option A2 Outline



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Outbound Bus Route

- Dedicated bus and general traffic lanes along Bridge Street to junction with MacCurtain Street;
- Shared bus / general traffic lane along MacCurtain Street to junction with York Street;
- Dedicated bus and general traffic lanes along MacCurtain Street to junction with Summerhill North;
- Shared bus / general traffic lane along Summerhill North to south of the Ballyhooly Road junction, with bus gate (short sections of bus/cycle-only roadway) on approach to the junction. General traffic to egress via Mahony's Avenue; and
- Shared bus / general traffic lane along Ballyhooly Road for duration of section to junction with Old Youghal Road (Dillon's Cross).

Inbound Bus Route

- Bus gate (short sections of bus/cycle-only roadway) along Ballyhooly Road and Summerhill North to junction with MacCurtain Street;
- Shared bus / general traffic lane along MacCurtain Street to junction with Bridge Street; and
- Dedicated bus lane along Bridge Street to end of section.

Cycle Routes

- Provision of inbound and outbound cycle tracks along Summerhill North; and
- Provision of outbound cycle tracks along Ballyhooly Road to the Dillon's Cross.

Route Constraints

Within the bus route, there are constraints due to width of the cross-section throughout. As such, there is an inability to provide dedicated bus lanes throughout the entirety of the route, meaning the majority of the outbound bus route is shared with general traffic, as is a section of the inbound route as described above. Along Summerhill North the outbound lane is shared as far as Mahony's Avenue, with egress via Mahony's Avenue for local access. Therefore., journey time may be increased when there are high local traffic volumes through the route. No inbound through traffic is permitted along Summerhill North, general traffic will be diverted via Wellington Road.

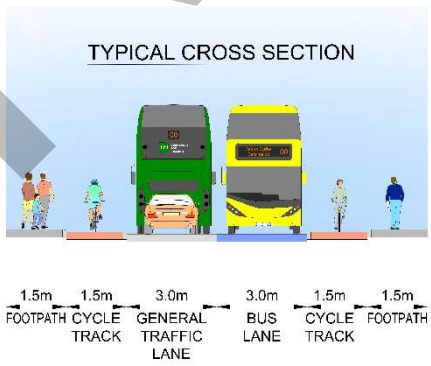
Cycle network integration is also adversely impacted with no segregated inbound cycle track on Ballyhooly Road. There are also difficult gradients for cyclists to negotiate throughout the section, negatively impacting journey time and adding a significant amount of physical activity.

There are a significant number of designated National Inventory of Architectural Heritage (NIAH) sites and protected structures along both the bus and cycle routes which need to be considered with regard to the works that can take place in their vicinity. Pre- and post-condition surveys may be required along with vibration monitoring for the duration of work on the scheme.

Bus Stops

Existing bus stops and shelters will be refreshed as part of the BusConnects Cork programme. There are 14 individual bus stops currently along this section and it is estimated that 14 stops would be required on the route (seven in each direction) assuming stops every 250m indicatively. As such, no further bus stops are required but the exact locations are subject to change.

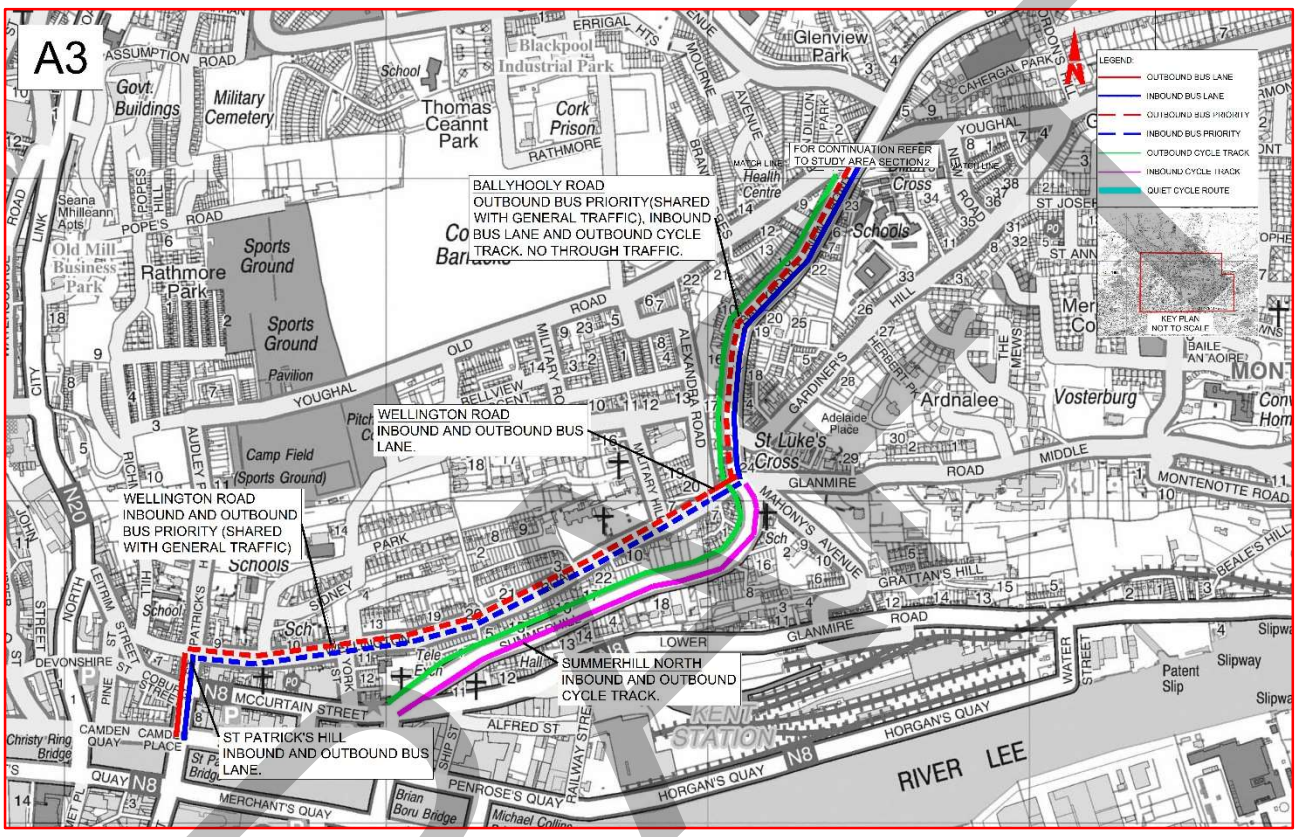
Figure 6-6 – Option A2 Typical Cross Section Summerhill



SAS 1 - OPTION A3

An outline of Option A3 is shown in Figure 6-7 below and is then described in greater detail in the subsequent text.

Figure 6-7 – SAS 1 Option A3 Outline



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Outbound Bus Route

- Dedicated bus and general traffic lanes along Bridge Street;
- Dedicated bus lane along St. Patrick's Hill to junction with St. Patrick's Place;
- Shared bus / general traffic lane along St. Patrick's Place, Wellington Road to junction with St Luke's Avenue;
- Short section of dedicated bus lane on Wellington Road to Ballyhooly Road junction; and
- Shared bus / general traffic lane along Ballyhooly Road to Dillon's Cross.

Inbound Bus Route

- Bus gate (short sections of bus/cycle-only roadway) along Ballyhooly Road,
- Dedicated bus lane along Wellington Road to junction with St. Luke's Avenue;
- Shared bus / general traffic lane along Wellington Road and St. Patrick's Place to junction with St. Patrick's Hill; and
- Dedicated bus lane along St. Patrick's Hill.

Cycle Routes

- Provision of inbound and outbound cycle tracks along Summerhill North; and
- Provision of outbound only cycle track along Ballyhooly Road to Dillon's Cross.

Route Constraints

The route as a whole is constrained resulting in the separation of bus and cycle routes. Within the bus route, there are constraints due to width of the cross-section throughout, but particularly evident on Wellington Road. As such, there is an inability to provide dedicated inbound and outbound bus lanes along the length of the route, meaning the majority of bus route is shared with general traffic, as described above. Swept path analysis for bus turning movements has also identified potential conflicts at certain, constrained junctions, resulting in potential delays to bus journey time, this is especially evident for turning movements from St Patrick's Hill to St Patrick's Place where signalisation of the junction with setback stop lines is proposed. Therefore, journey time may be increased when there are high general traffic volumes through the route.

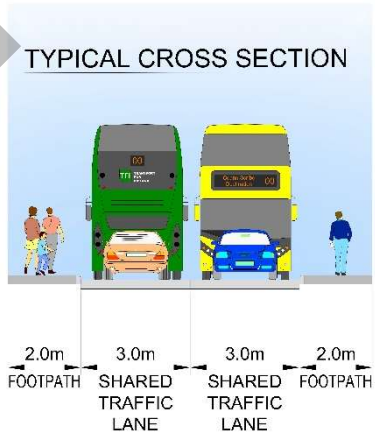
Cycle network integration is also adversely with no proposed segregated inbound cycle route on Ballyhooly Road. There are also difficult gradients for cyclists to negotiate throughout the section, negatively impacting journey time and adding a significant amount of physical activity.

There are a significant number of designated National Inventory of Architectural Heritage (NIAH) sites and protected structures along both the bus and cycle routes which need to be considered with regard to the works that can take place in their vicinity. Pre- and post-condition surveys may be required along with vibration monitoring for the duration of work on the scheme.

Bus Stops

Existing bus stops and shelters will be refreshed as part of the BusConnects Cork programme. There are six individual bus stops currently along this section and it is estimated that 12 stops would be required on the route (six in each direction) assuming stops every 250m indicatively. As such, six further stops would be required.

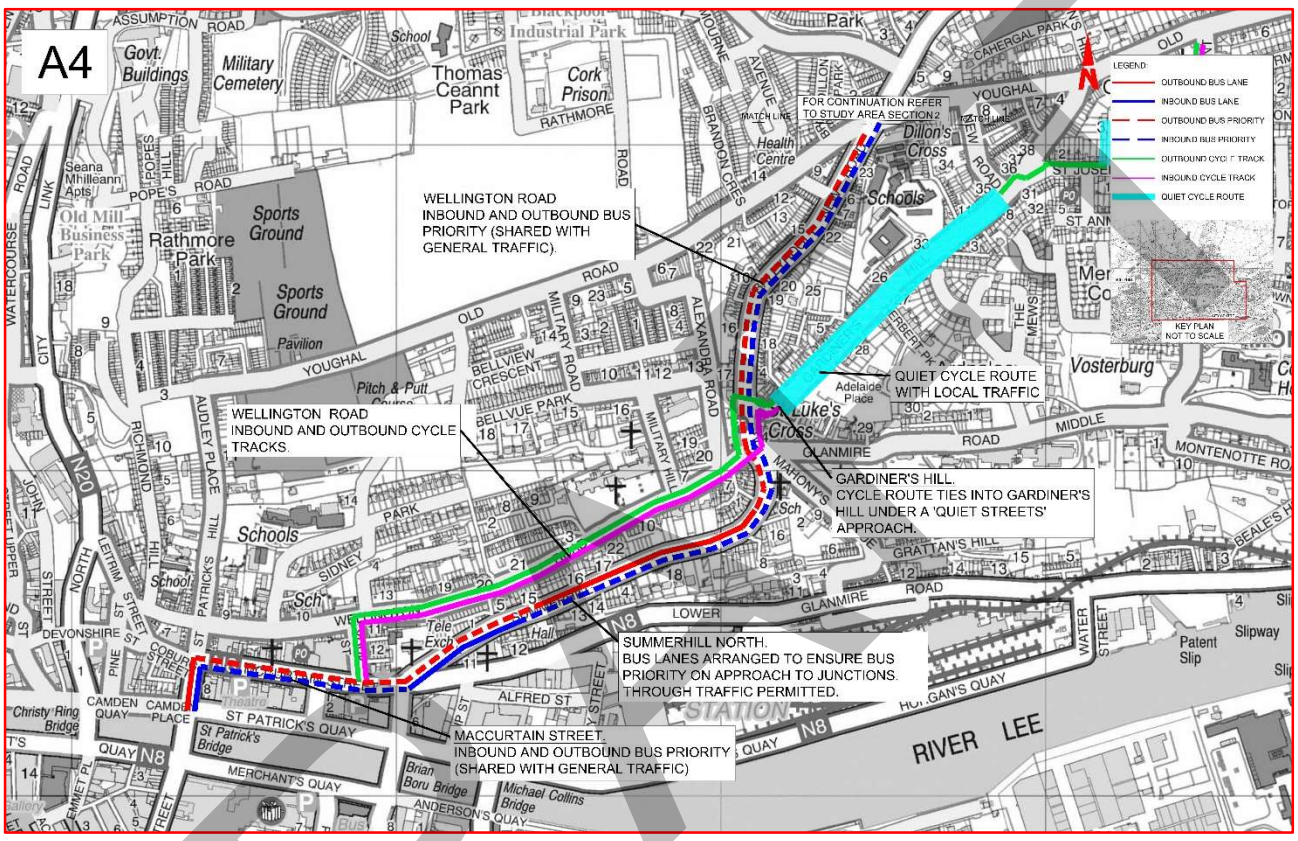
Figure 6-8 – Option A3 Typical Cross Section Wellington Road



SAS 1 - OPTION A4

An outline of Option A4 is shown in Figure 6-9 below and is then described in greater detail in the subsequent text.

Figure 6-9 – SAS 1 Option A4 Outline



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Outbound Bus Route

- Dedicated bus and general traffic lanes along Bridge Street to junction with MacCurtain Street;
- Shared bus / general traffic lane along MacCurtain Street to junction with Summerhil North;
- Shared bus and general traffic lanes along Summerhill North to junction with York Hill;
- Dedicated bus lane along Summerhill North to south of the junction with Ballyhooly Road with signal priority; and
- Shared bus / general traffic lane along Ballyhooly Road to end of section.

Inbound Bus Route

- Shared bus / general traffic lane along Ballyhooly Road to junction with Summerhill North;
- Shared bus / general traffic lane along Summerhill North to junction with York Hill;
- Dedicated bus lane along Summerhill North to junction with MacCurtain Street with signal priority;
- Shared bus / general traffic lane along MacCurtain Street to junction with Bridge Street; and
- Dedicated bus lane along Bridge Street to end of section.

Cycle Routes

- Provision of inbound and outbound cycle tracks along York Street, Wellington Road and Ballyhooly Road to junction with Gardiner's Hill; and
- "Quiet Streets" cycle route along Gardiner's Hill, shared with local traffic.

Route Constraints

The route as a whole is constrained resulting in the separation of bus and cycle routes. Within the bus route, there are constraints due to width of the cross-section throughout, but particularly evident on Ballyhooly Road where no designated bus lanes are provided. Therefore, journey time may be increased when there are high general traffic volumes through the route.

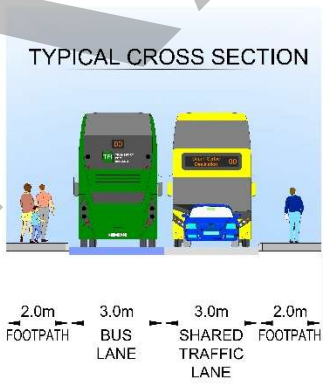
Cycle network integration is also adversely impacted by difficult gradients for cyclists to negotiate throughout the section, negatively impacting journey time and adding a significant amount of physical activity.

There are a significant number of designated National Inventory of Architectural Heritage (NIAH) sites and protected structures along both the bus and cycle routes which need to be considered with regard to the works that can take place in their vicinity. Pre- and post-condition surveys may be required along with vibration monitoring for the duration of work on the scheme.

Bus Stops

Existing bus stops and shelters will be refreshed as part of the BusConnects Cork programme. There are 14 individual bus stops currently along this section and it is estimated that 14 stops would be required on the route (seven in each direction) assuming stops every 250m indicatively. As such, no further bus stops are required but the exact locations are subject to change.

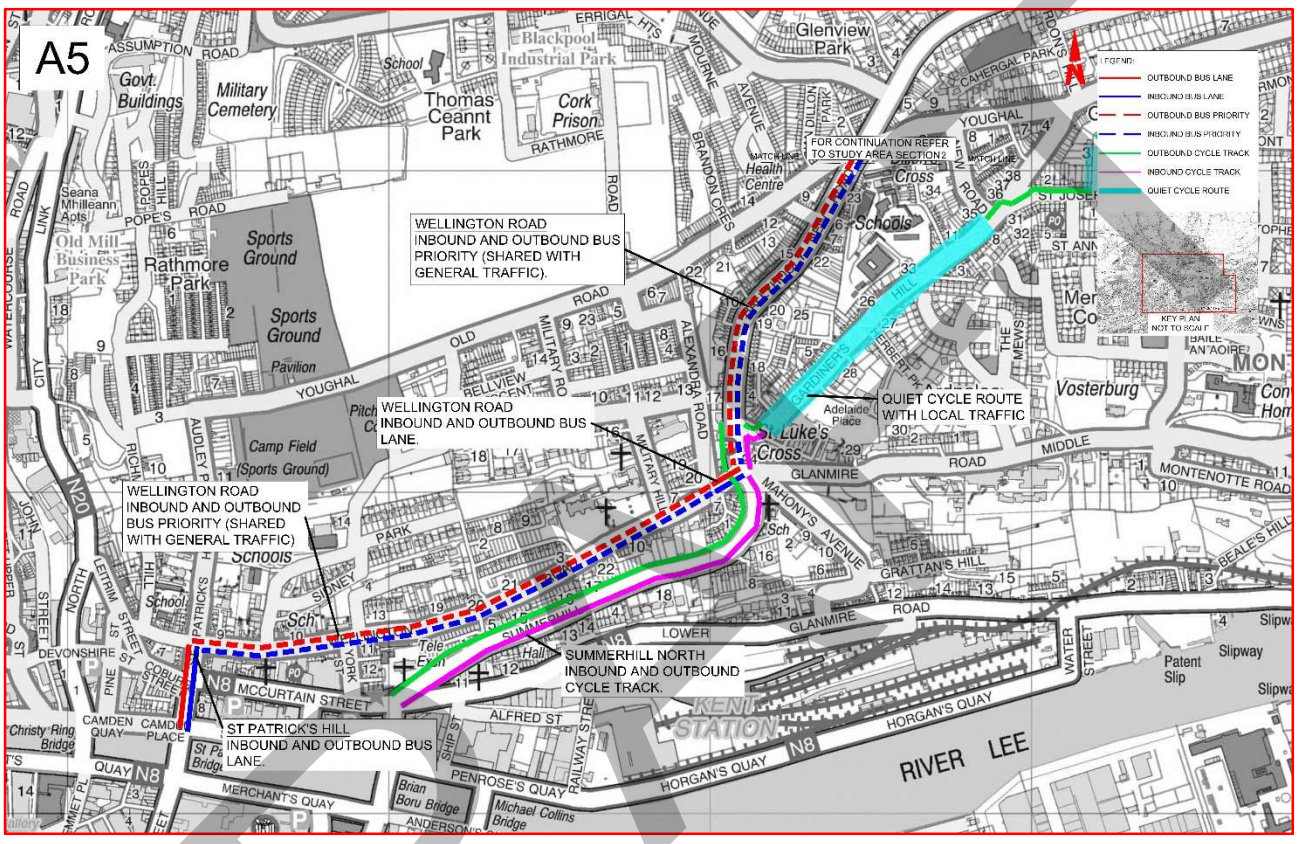
Figure 6-10 – Option A4 Typical Cross Section Summerhill North



SAS 1 - OPTION A5

An outline of Option A5 is shown in Figure 6-11 below and is then described in greater detail in the subsequent text.

Figure 6-11 - Option A5 Outline



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Outbound Bus Route

- Dedicated bus and general traffic lanes along Bridge Street;
- Dedicated bus lane along St. Patrick's Hill to junction with St. Patrick's Place;
- Shared bus / general traffic lane along St. Patrick's Place, Sidney Place, Wellington Road and to junction with St Luke's Avenue;
- Dedicated bus lane approach along Wellington Road to junction with Ballyhooly Road; and
- Shared bus / general traffic lane on Ballyhooly Road to end of section.

Inbound Bus Route

- Shared bus / general traffic lane along Ballyhooly Road;
- Short section of dedicated bus lane along Wellington Road to junction St Luke's Avenue;
- Shared bus / general traffic lane Wellington Road, Sidney Place and St. Patrick's Place to junction with St. Patrick's Hill; and
- Dedicated bus lane along St. Patrick's Hill to end of section at junction with Bridge Street.

Cycle Routes

- Provision of inbound and outbound cycle tracks along Summerhill North; and
- Provision of inbound and outbound cycle tracks along Ballyhooly Road to junction with Gardiner's Hill.
- "Quiet Streets" cycle route along Gardiner's Hill, shared with local traffic.

Route Constraints

The route as a whole is constrained resulting in the separation of bus and cycle routes. Within the bus route, there are constraints due to width of the cross-section throughout, but this is particularly evident on Wellington Road and Ballyhooly Road where limited bus lanes are provided. Swept path analysis for bus turning movements has also identified potential conflicts at certain, constrained junctions, resulting in potential delays to bus journey time, this is especially evident for turning movements from St Patrick's Hill to St Patrick's Place where signalisation of the junction with setback stop lines is proposed. Therefore, journey time may be increased when there are high general traffic volumes through the route

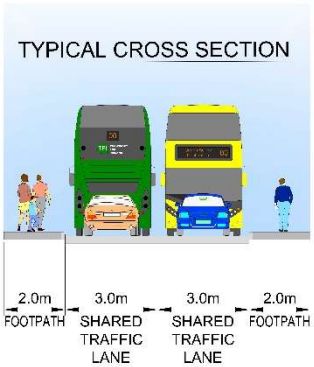
Cycle network integration is also adversely impacted through reduced widths along Summerhill North as well as no provision in City Centre or Ballyhooly Road. There are also difficult gradients for cyclists to negotiate throughout the section, negatively impacting journey time and adding a significant amount of physical activity.

There are a significant number of designated National Inventory of Architectural Heritage (NIAH) sites and protected structures along both the bus and cycle routes which need to be considered with regard to the works that can take place in their vicinity. Pre- and post-condition surveys may be required along with vibration monitoring for the duration of work on the scheme.

Bus Stops

Existing bus stops and shelters will be refreshed as part of the BusConnects Cork programme. There are six individual bus stops currently along this section and it is estimated that 12 stops would be required on the route (six in each direction) assuming stops every 250m indicatively. As such, six further stops would be required.

Figure 6-12 – Option A5 Typical Cross Section Summerhill North



SAS 1 STAGE 2 OPTION MULTI CRITERIA ANALYSIS SUMMARY

The Study Area Section (SAS) 1 City Centre to Dillon's Cross Stage 2 MCA summary tables, including justification for the sub-criteria scoring, are included in Appendix B.

The relative ranking of options against the MCA sub-criteria is summarised in Table 6-1 below

Table 6-1 - Study Area Section 1 MCA Sub-Criteria Summary

		Option A1	Option A2	Option A3	Option A4	Option A5
Economy	1a.Capital Cost					
	1b. Average Journey-time					
	1c. Journey-time reliability and Consistency					
Integration	2a.Land Use Integration					
	2b.Residential Population and Employment Catchments					
	2c.Transport Network Integration					
	2d. Cyclists Integration					
	2e Pedestrian Integration					
Accessibility and Social Inclusion	3a.Key Trip Attractors (Education/ Health/ Commercial)					
	3b.Deprived Geographic Areas					
Safety	4. Road User Safety					
Environment	5a.Archaeology and Cultural heritage					
	5b.Biodiversity					
	5c.Soils and Geology					
	5d.Water Resources					
	5e. Landscape and Visual					

	5f.Noise, Vibration & Air					
	5g. Land Use and the Built Environment					

Economy

In terms of Economy, the differentiator between routes is that A2 and A4 are cheapest in terms of capital cost. In terms of Journey time reliability, Options A1, A3 and A5 incurs the largest potential delays.

Integration

In terms of Integration, the main differentiator between routes is that Option A2 has the greatest impact on the Transport Network

Accessibility and Social Inclusion

In terms of Accessibility and Social Inclusion, Options A1, A2 and A4 serve a greater number of key trip attractors and A1 serves a marginally more deprived area

Safety

Under Safety, Option A1 ranks slightly lower than the rest as it is less direct and has more turning movements

Environment

In terms of environment, Options A2 and A3 ranks lower under Noise, Vibration and Air as the proposed bus gates on Ballyhooly Road could result in vehicular traffic using parallel roads as diversion/through routes. In terms of landscape and visual A2, A3 and A5 score higher as they have less potential landtake

Based on the above MCA, SAS 1- Option A4 is the best performing route from city centre to Dillon's Cross as it offers a good level of bus priority, with reduced traffic impact when compared to other options and is at the low end of capital cost.

6.3 SECTION 2: DILLON'S CROSS TO OLD YOUGHAL ROAD, EAST OF TINKER'S CROSS

Study Area Section (SAS) 2, which is presented in Figure 6-13, consists of the suitable links between Dillon's Cross and Old Youghal Road, east of Tinker's Cross, as identified following the Stage 1 sifting process. The various options consist of

- Option B1, comprising of;
  - A bus route via Old Youghal Road, North Ring Road and Old Youghal Road beyond Tinker's Cross; and
  - A cycle route via Ashburton Hill, St Joseph's Drive, Murmont Lawn and Old Youghal Road, Glenamoy Lawn and Old Youghal Road beyond Tinker's Cross;

- Option B2, comprising of;
  - A bus route via Old Youghal Road, Iona Park, Colmcille Road, North Ring Road and Old Youghal Road beyond Tinker's Cross; and
  - A cycle route via Ashburton Hill, St Joseph's Drive, Murmont Lawn, Old Youghal Road, Iona Park, Colmcille Avenue, Silverheights Drive, Silverheights Avenue, Boherboy Road, Dunard, Liosard, Lotamore Drive;

- Option B3, comprising of;
  - Option B1 bus route; and
  - Option B2 cycle route;

- Option B4, comprising of;
  - A bus route via Old Youghal Road, Murmont Lawn, Murmont Avenue, Murmont Road, Iona Road, Sli Gartan, Kerry Road, North Ring Road and Old Youghal Road beyond Tinker's Cross; and
  - Option B1 cycle route;

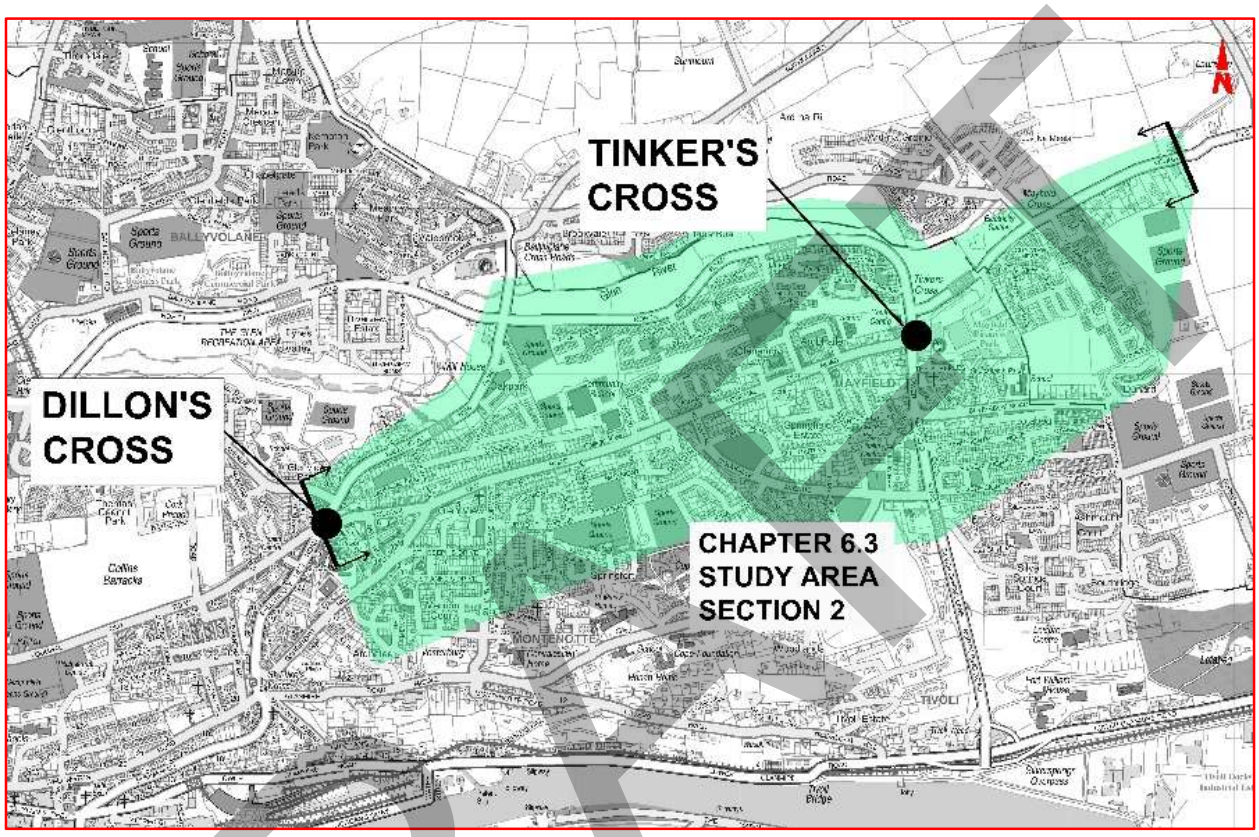
- Option B5, comprising of;
  - A bus route via Ballyhooly Road, North Ring Road and Old Youghal Road; and
  - Option B2 cycle route;

- Option B6, comprising of;
  - Option B5 bus route; and
  - A cycle route via Ashburton Hill, St Joseph's Drive, Murmont Lawn, Old Youghal Road Cahergal Lawn, Cahergal Avenue, Ballyhooly Road, North Ring Road and Old Youghal Road beyond Tinker's Cross;

- Option B7, comprising of;
  - Option B3 bus route, except with increased bus lane provision along Old Youghal Road; and
  - Option B3 cycle route.

An overview of each of the Route Options assessed, B1 to B7, are further described in the subsequent pages

Figure 6-13 - Study Area Section 2 (SAS 2)

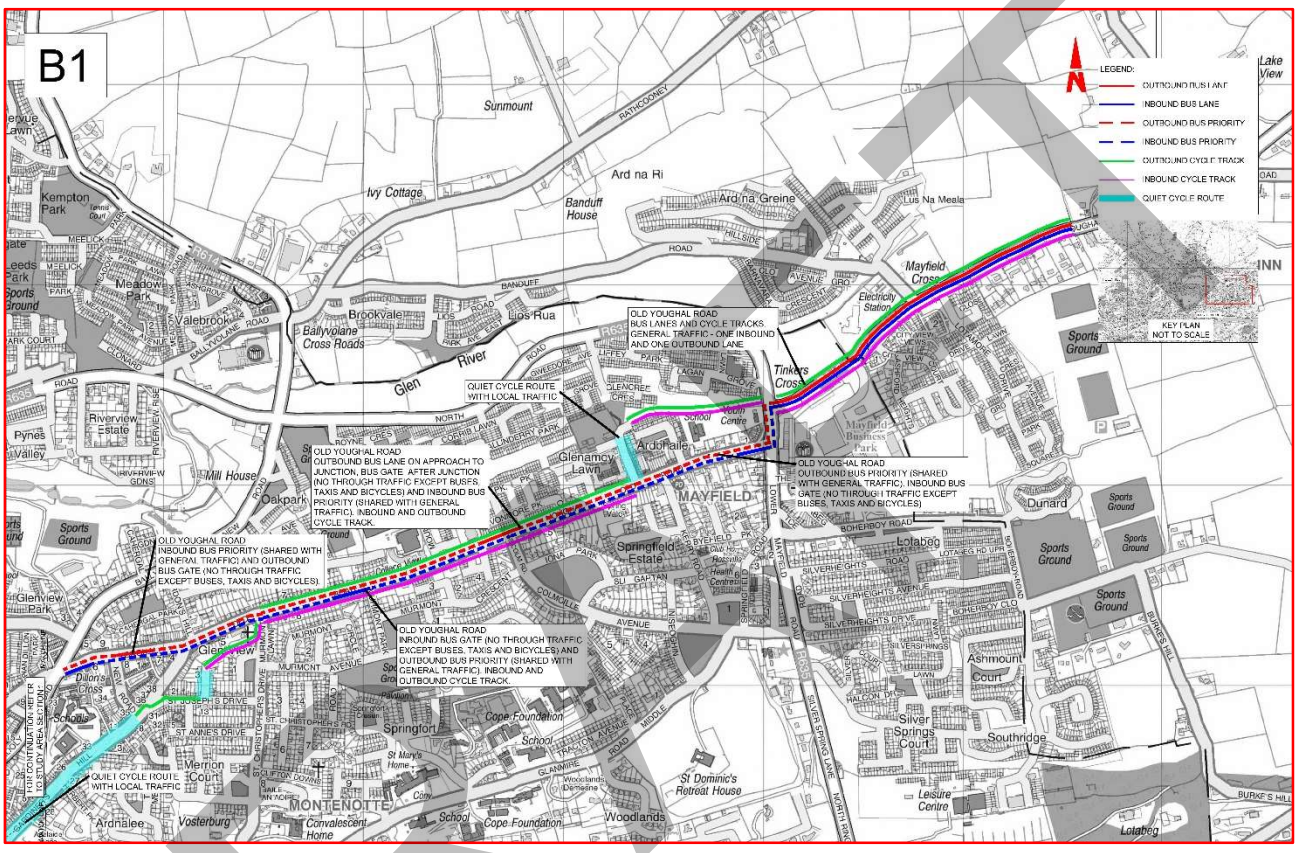


An overview of each of the aforementioned route options that were assessed within SAS 1 are further described in the subsequent pages

SAS 2 - OPTION B1

An outline of Option B1 is shown in Figure 6-14 below and is then described in greater detail in the subsequent text.

Figure 6-14 – SAS 2 Option B1 Outline



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Outbound Bus Route

- Shared bus / general traffic lane along Old Youghal Road to junction with New Road;
- Bus gate(short sections of bus/cycle-only roadway) on Old Youghal Road at junction with New Road,
- Shared bus / general traffic lane along Old Youghal Road from Kelleher's Buildings to junction with Knight's Court;
- Dedicated bus and general traffic approach lanes to Iona Park Junction;
- Bus gate(short sections of bus/cycle-only roadway) on Old Youghal Road at junction with Iona Park,
- Shared bus / general traffic lane along remainder of Old Youghal Road and Mayfield Park to Tinker's Cross; and
- Dedicated bus and general traffic lanes along Old Youghal Road from Tinker's Cross to end of section.

Inbound Bus Route

- Dedicated bus and general traffic lanes along Old Youghal Road to Tinker's Cross;
- Shared bus / general traffic lane along Mayfield Park;

- Bus gate (short sections of bus/cycle-only roadway) on Old Youghal Road at Mayfield Park junction,
- Shared bus / general traffic lane on Old Youghal Road to junction with Murmont Park;
- Bus gate (short sections of bus/cycle-only roadway) on Old Youghal Road at junction with Murmont Park,
- Shared bus / general traffic lane along Old Youghal Road to east of junction with Ballyhooly Road; and
- Dedicated bus and general traffic approach lanes to Old Youghal Road / Ballyhooly Road junction.

Cycle Routes

- Provision of "quiet cycle routes" along Gardiner's Hill, Ashburton Hill, St Joseph's Drive, with proposed short section of outbound cycle track on Gardiner's Hill and Ashburton Hill;
- Proposed off-road cycle route through private land to Murmont Lawn;
- Inbound and outbound cycle tracks on Old Youghal Road between Murmont Lawn and Glenamoy Lawn;
- Provision of "quiet streets" cycle route along Glenamoy Lawn;
- Proposed off-road cycle route through Glenamoy Lawn Park to Tinker's Cross; and
- Inbound and outbound cycle tracks on Old Youghal Road from Tinker's Cross to end of section.

Route Constraints

The route as a whole is constrained resulting in the inability to provide a complete corridor along the section. Within the bus route, there are constraints due to width of the cross-section, where buses share general traffic lanes along Old Youghal Road. Therefore, journey time may be increased when there are high general traffic volumes through the route. Bus gates have been provided along a significant portion of Old Youghal Road to mitigate this.

Diversions for local traffic at the outbound bus gate at the New Road junction would be via New Road and Gardiner's Gordon's Hill. This would be a diversion of over 200m. The inbound bus gate at Murmont Park would create a diversion of almost 400m via Murmont Park, Murmont Avenue and Murmont Lawn. The outbound bus gate at the Iona Park Junction would create a 450m diversion via Colmcille Avenue, Sli Gartan and Kerry Road and the inbound bus gate at the North Ring Road junction would create a 600m diversion via Colmcille Avenue and Iona Park.

City bound through traffic will be directed onto:

- North Ring Road to the N20;
- North Ring Road to Lower Glanmire Road(N8), via Silversprings

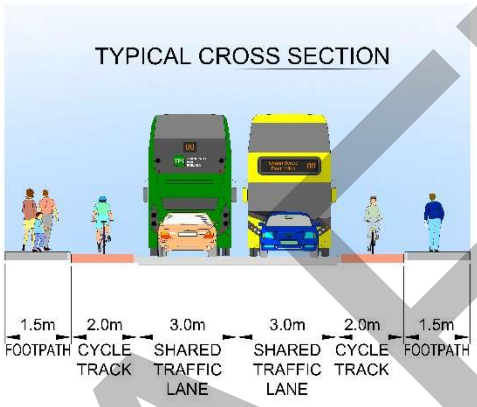
Cycle network integration is adversely impacted by difficult gradients for cyclists to negotiate throughout the section negatively impacting journey time and adding a significant amount of physical activity.

There are four designated National Inventory of Architectural Heritage (NIAH) sites along the corridor which need to be considered with regard to the works that can take place in their vicinity. Pre- and post-condition surveys may be required along with vibration monitoring for the duration of work on the scheme.

Bus Stops

Existing bus stops and shelters will be refreshed as part of the BusConnects Cork programme. There are nine individual bus stops currently along this section and it is estimated that 22 stops would be required on the route (11 in each direction) assuming stops every 250m indicatively. As such, 13 further stops would be required.

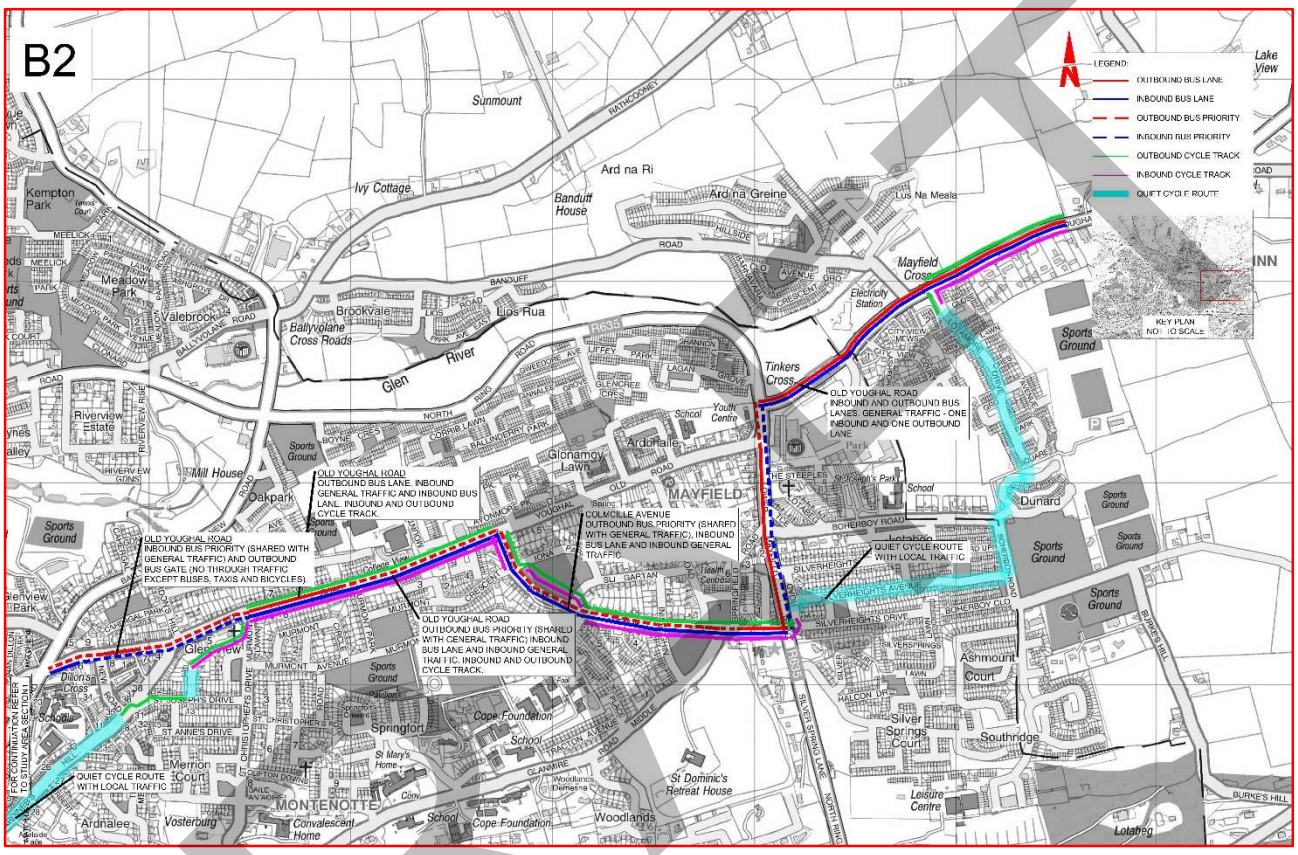
Figure 6-15 – Option B1 Typical Cross Section Old Youghal Road



SAS 2 - OPTION B2

An outline of Option B2 is shown in Figure 6-16 below and is then described in greater detail in the subsequent text.

Figure 6-16 – SAS 2 Option B2 Outline



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Outbound Bus Route

- Shared bus / general traffic lane along Old Youghal Road to junction with New Road;
- Bus gate (short sections of bus/cycle-only roadway) on Old Youghal Road at junction with New Road;
- Shared bus / general traffic lane along Old Youghal Road to junction Murmont Lawn;
- Dedicated bus lane along Old Youghal Road to junction with Murmont Park;
- Shared bus / general traffic lane along Old Youghal Road to junction with Iona Park;
- Shared bus / general traffic lane along Iona Park and Colmcille Avenue to junction with Springfield Road;
- Dedicated bus and general traffic lanes along remainder of Colmcille Avenue and North Ring Road to junction with Old Youghal Road;
- Short section of shared bus / general traffic lane along Mayfield Park to Tinker's Cross; and
- Dedicated bus and general traffic lanes along Old Youghal Road from Tinker's Cross to end of section.

Inbound Bus Route

- Dedicated bus and general traffic lanes along Old Youghal Road to Tinker's Cross;
- Shared bus / general traffic lane along Mayfield Park / North Ring Road to junction with Colmcille Avenue;
- Dedicated bus and general traffic lanes along Colmcille Avenue, Iona Park and Old Youghal Road to junction with Murmont Lawn;
- Shared bus / general traffic lane on Old Youghal Road to east of Ballyhooly Road junction; and
- Dedicated bus and general traffic approach lanes to Old Youghal Road / Ballyhooly Road junction.

Cycle Routes

- Provision of "quiet streets" cycle routes along Gardiner's Hill, Ashburton Hill, St Joseph's Drive, with proposed short section of outbound cycle track on Gardiner's Hill and Ashburton Hill;
- Proposed off-road cycle route through private land to Murmont Lawn;
- Inbound and outbound cycle tracks along Murmont Lawn, Old Youghal Road, Iona Park and Colmcille Avenue across North Ring Road junction;
- Continuation of 'quiet streets' cycle route through Silverheights Drive, Silverheights Avenue, Boherboy Road, Dunard, Liosard, Lotamore Drive; and
- Inbound and outbound cycle tracks along Old Youghal Road to end of section.

Route Constraints

The route as a whole is constrained resulting in the separation of the bus and cycle provision along portions of the route. Within the bus route, there are constraints due to width of the cross-section throughout, where a bus lane is only provided in one-direction along the majority of the route. Therefore, journey time may be increased when there are high general traffic volumes through the route.

Diversions for local traffic at the outbound bus gate at the New Road junction would be via New Road and Gardiner's Hill. This would be a diversion of over 200m. The inbound bus gate at Murmont Park would create a diversion of almost 400m via Murmont Park, Murmont Avenue and Murmont Lawn.

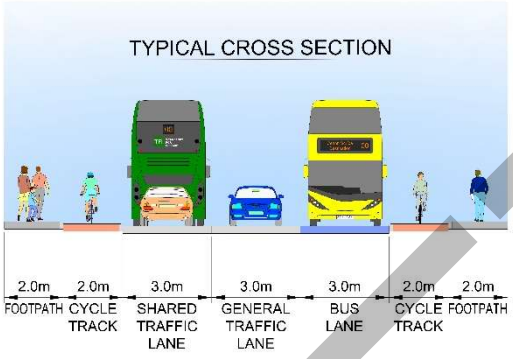
Cycle network integration is adversely impacted by difficult gradients for cyclists to negotiate throughout the section negatively impacting journey time and adding a significant amount of physical activity.

There are four designated National Inventory of Architectural Heritage (NIAH) sites along the corridor which need to be considered with regard to the works that can take place in their vicinity. Pre- and post-condition surveys may be required along with vibration monitoring for the duration of work on the scheme.

Bus Stops

Existing bus stops and shelters will be refreshed as part of the BusConnects Cork programme. There are 13 individual bus stops currently along this section and it is estimated that 26 stops would be required on the route (13 in each direction) assuming stops every 250m indicatively. As such, 13 further stops would be required.

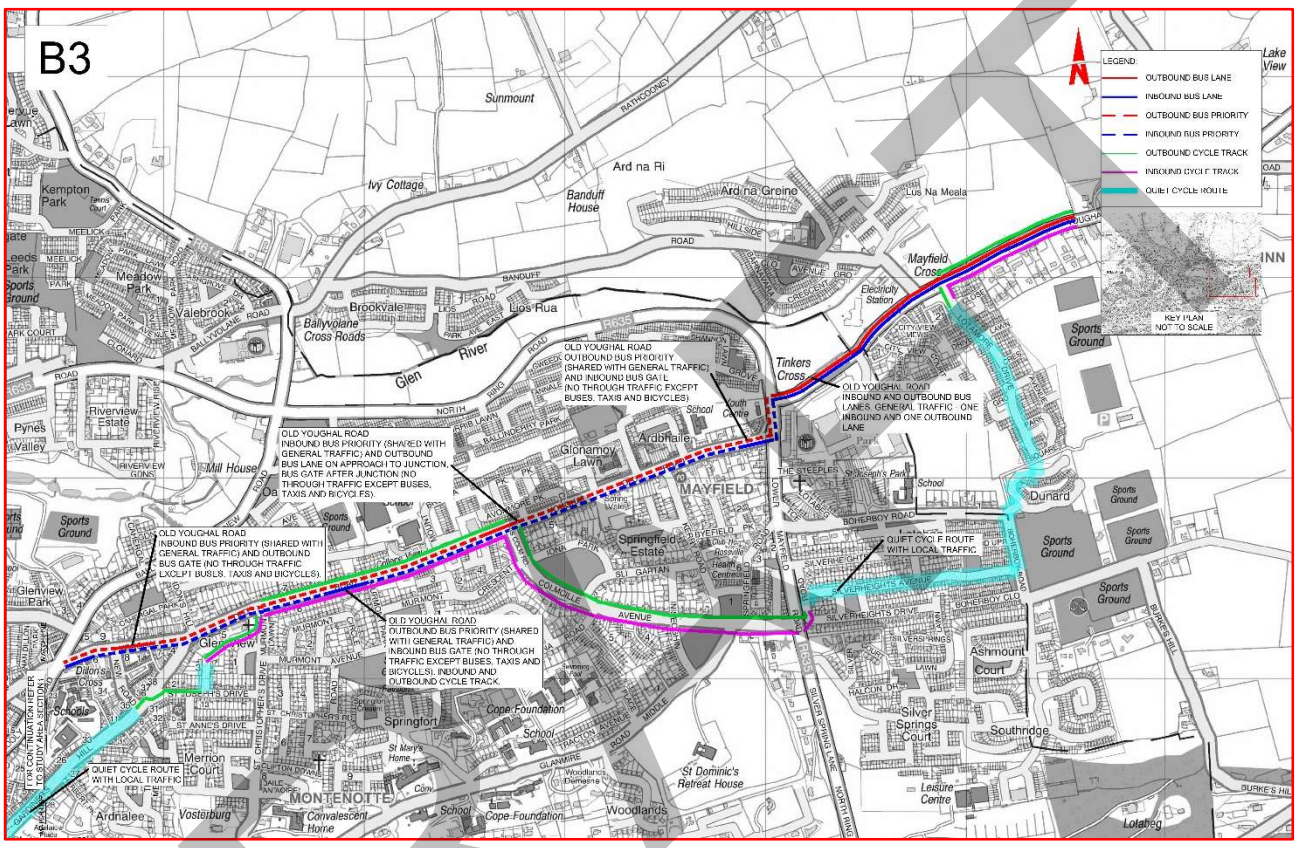
Figure 6-17 – Option B2 Typical Cross Section Old Youghal Road



SAS 2 - OPTION B3

An outline of Option B3 is shown in Figure 6-18 below and is then described in greater detail in the subsequent text.

Figure 6-18 – SAS 2 Option B3 Outline



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Outbound Bus Route

- Shared bus / general traffic lane along Old Youghal Road between Dillon's Cross and New Road;
- Bus gate (short sections of bus/cycle-only roadway) on Old Youghal Road at junction with New Road;
- Shared bus / general traffic lane along Old Youghal Road to west of junction with Iona Park;
- Dedicated bus and general traffic approach lanes to Iona Park Junction;
- Bus gate (short sections of bus/cycle-only roadway) on Old Youghal Road at Iona Park junction;
- Shared bus / general traffic lane along the remainder of Old Youghal Road and Mayfield Park (North Ring Road) to Tinker's Cross; and
- Dedicated bus and general traffic lanes along Old Youghal Road from Tinker's Cross to end of section.

Inbound Bus Route

- Dedicated bus and general traffic lanes along Old Youghal Road to Tinker's Cross;
- Shared bus / general traffic lane along Mayfield Park (North Ring Road);
- Bus gate (short sections of bus/cycle-only roadway) on Old Youghal Road at the Mayfield Park Junction;

- Shared bus / general traffic lane on Old Youghal Road between Iona Park and Murmont Park;
- Bus gate (short sections of bus/cycle-only roadway) on Old Youghal Road at junction with Murmont Park;
- Shared bus / general traffic lane on Old Youghal Road to west of the Ballyholly Road junction; and
- Dedicated bus and general traffic approach lanes along Old Youghal Road to Ballyhooly Road junction.

Cycle Routes

- Provision of "quiet streets" cycle routes along Gardiner's Hill, Ashburton Hill, St Joseph's Drive, with proposed short section of outbound cycle track on Gardiner's Hill and Ashburton Hill;
- Proposed off-road cycle route through private land to Murmont Lawn;
- Inbound and outbound cycle tracks along Murmont Lawn, Old Youghal Road, Iona Park and Colmcille Avenue across the North Ring Road junction;
- Continuation of cycle route along "quiet streets" through Silverheights Drive, Silverheights Avenue, Boherboy Road, Dunard, Liosard, Lotamore Drive; and
- Inbound and outbound cycle tracks along Old Youghal Road to end of section.

Route Constraints

The route as a whole is constrained resulting in the inability to provide a complete corridor along the section, as well as splitting bus and cycle routes. Within the bus route, there are constraints due to width of the cross-section, resulting in shared provisions along the majority of the route. Therefore, journey time may be increased when there are high general traffic volumes through the route. Bus gates have been provided along a significant portion of Old Youghal Road to mitigate this.

Diversions for local traffic at the outbound bus gate at the New Road junction would be via New Road and Gardiner's Hill. This would be a diversion of over 200m. The inbound bus gate at Murmont Park would create a diversion of almost 400m via Murmont Park, Murmont Avenue and Murmont Lawn. The outbound bus gate at the Iona Park Junction would create a 450m diversion via Colmcille Avenue, Sli Gartan and Kerry Road and the inbound bus gate at the North Ring Road junction would create a 600m diversion via Colmcille Avenue and Iona Park.

City bound through traffic will be directed onto:

- North Ring Road to the N20;
- North Ring Road to Lower Glanmire Road(N8), via Silversprings

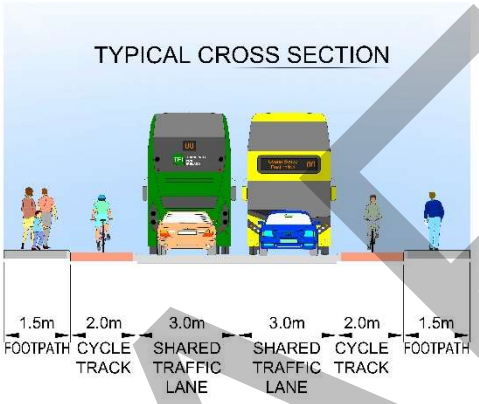
Cycle network integration is also adversely impacted through a reduced width provision in sections. There are also difficult gradients for cyclists, negatively impacting journey time and adding a significant amount of physical activity.

There are five designated National Inventory of Architectural Heritage (NIAH) sites along the corridor which need to be considered with regard to the works that can take place in their vicinity. Pre- and post-condition surveys may be required along with vibration monitoring for the duration of work on the scheme.

Bus Stops

Existing bus stops and shelters will be refreshed as part of the BusConnects Cork programme. There are nine individual bus stops currently along this section and it is estimated that 22 stops would be required on the route (11 in each direction) assuming stops every 250m indicatively. As such, 13 further stops would be required.

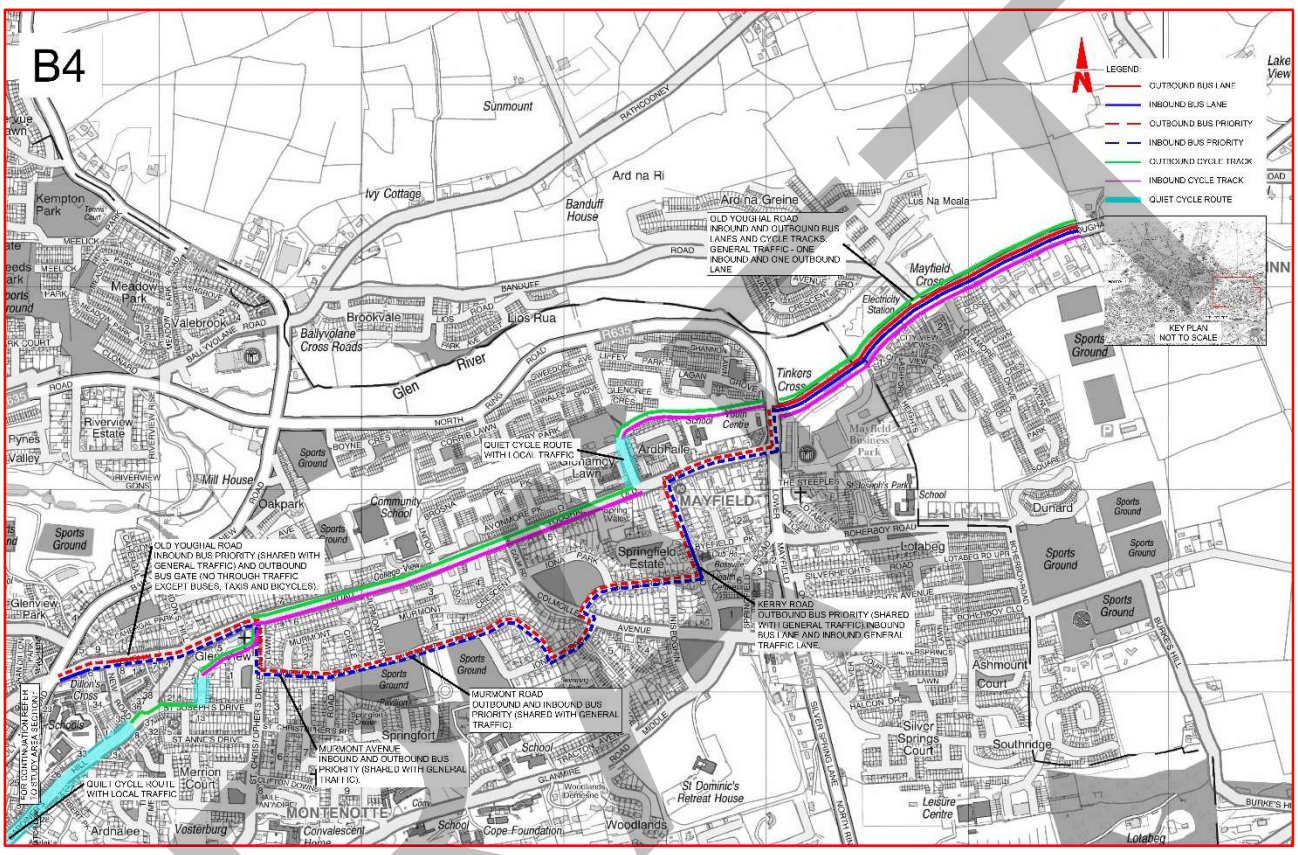
Figure 6-19 – Option B3 Typical Cross Section Old Youghal Road



SAS 2 – OPTION B4

An outline of Option B4 is shown in Figure 6-20 below below and is then described in greater detail in the subsequent text.

Figure 6-20 – SAS 2 Option B4 Outline



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Outbound Bus Route

- Shared bus / general traffic lane along Old Youghal Road with bus gate at the New Road junction;
- Shared bus / general traffic along route on Old Youghal Road, Murmont Lawn, Murmont Avenue, Murmont Road, Iona Road, Colmcille Avenue, Sli Gartan, Kerry Road, Old Youghal Road and Mayfield Park to Tinker's Cross; and
- Dedicated bus and general traffic lanes along Old Youghal Road from Tinker's Cross to end of section.

Inbound Bus Route

- Dedicated bus and general traffic lanes along Old Youghal Road to Tinker's Cross;
- Shared bus / general traffic along route on Mayfield Park, Old Youghal Road and Kerry Road to Springfield Estate;
- Dedicated bus and general traffic lanes along the remainder of Kerry Road;
- Shared bus / general traffic along route on Sli Gartan, Colmcille Avenue, Iona Road and Murmont Road;
- Short Section of dedicated bus and general traffic lanes along Murmont Road adjacent to Brian Dillon's GAA Club;

- Shared bus / general traffic along route on Murmont Avenue, Murmont Lawn and Old Youghal Road to east of junction with Ballyhooly Road; and
- Dedicated bus and general traffic approach lanes to Ballyhooly Road junction.

Cycle Routes

- Provision of "quiet streets" cycle routes along Gardiner's Hill, Ashburton Hill, St Joseph's Drive, with proposed short section of outbound cycle track on Gardiner's Hil and Ashburton Hill;
- Proposed off-road cycle route through private land to Murmont Lawn;
- Inbound and outbound cycle tracks along Old Youghal Road to the Glenamoy Lawn junction;
- Provision of "quiet streets" cycle route along Glenamoy Lawn;
- Proposed off-road cycle route through Glenamoy Lawn Park to Tinker's Cross; and
- Inbound and outbound cycle tracks on Old Youghal Road from Tinker's Cross to end of section.

Route Constraints

The route as a whole is constrained resulting in the inability to provide a complete corridor along the section, as well as splitting bus and cycle routes. Within the bus route, there are constraints due to width of the cross-section, resulting in shared provisions along the majority of the route to Tinker's Cross. Therefore, journey time may be increased when there are high general traffic volumes through the route, but it should be a slight improvement than the current provision. This route follows the existing Route 209 bus service so the swept paths on the narrower junctions should be adequate.

Diversions for general traffic at the outbound bus gate at the New Road junction would be via New Road and Gardiner's Hill. This would be a diversion of over 200m.

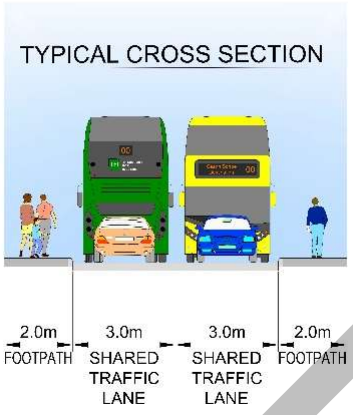
Cycle network integration is also adversely impacted by difficult gradients for cyclists to negotiate throughout the section negatively impacting journey time and adding a significant amount of physical activity.

There are four designated National Inventory of Architectural Heritage (NIAH) sites along the corridor which need to be considered with regard to the works that can take place in their vicinity. Pre- and post-condition surveys may be required along with vibration monitoring for the duration of work on the scheme.

Bus Stops

Existing bus stops and shelters will be refreshed as part of the BusConnects Cork programme. There are 10 individual bus stops currently along this section and it is estimated that 28 stops would be required on the route (14 in each direction) assuming stops every 250m indicatively. As such, 18 further stops would be required.

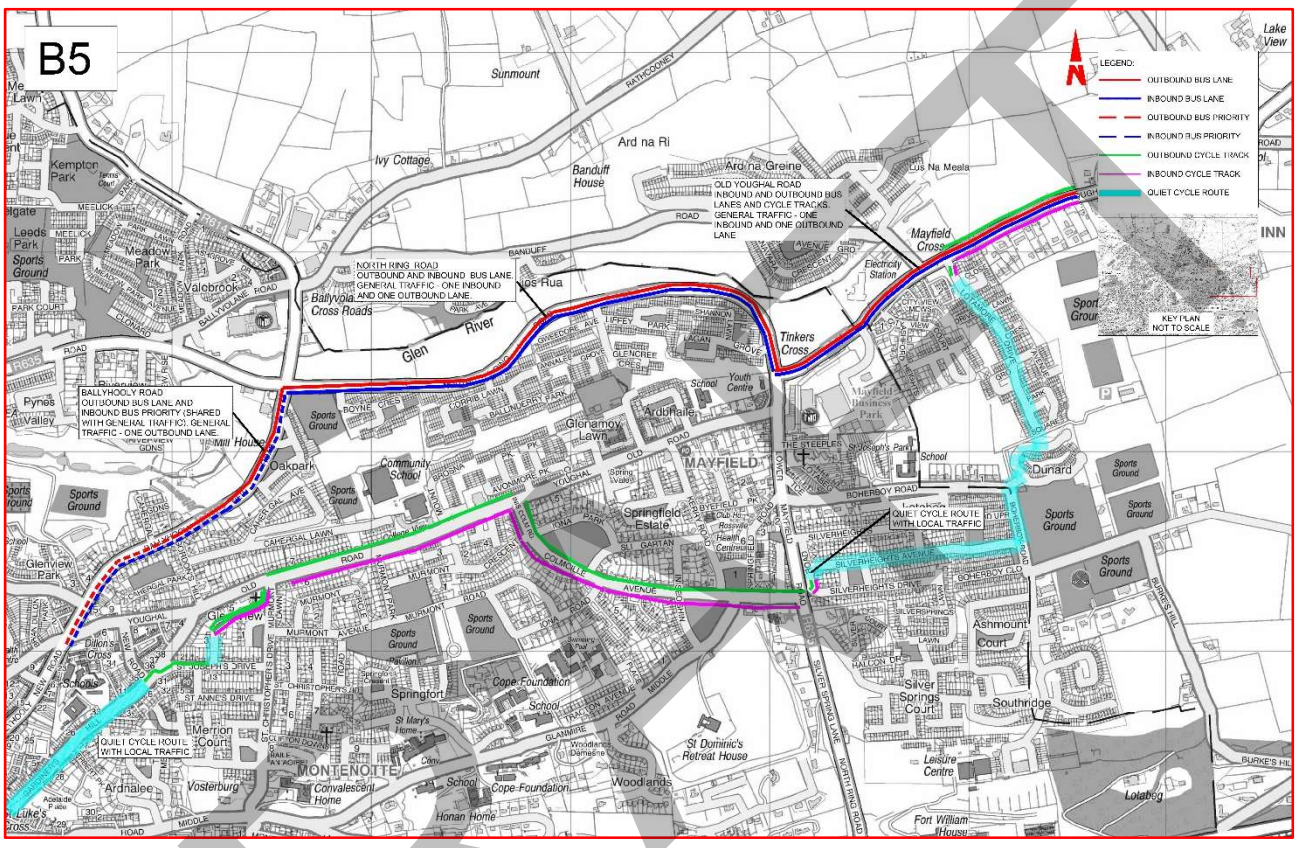
Figure 6-21 – Option B4 Typical Cross Section Old Youghal Road



SAS 2 - OPTION B5

An outline of Option B5 is shown in Figure 6-22 below and is then described in greater detail in the subsequent text.

Figure 6-22 – SAS 2 Option B5 Outline



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Outbound Bus Route

- Shared bus / general traffic lane along Ballyhooly Road to the junction with Gordon's Hill; and
- Dedicated bus and general traffic lanes along the remainder of Ballyhooly Road, the North Ring Road and Old Youghal Road to end of section.

Inbound Bus Route

- Dedicated bus and general traffic lanes along Old Youghal Road and the North Ring Road; and
- Shared bus / general traffic lane along Ballyhooly Road to Dillon's Cross and end of section.

Cycle Routes

- Provision of "quiet cycle routes" along Gardiner's Hill, Ashburton Hill, St Joseph's Drive, with proposed short section of outbound cycle track on Gardiner's Hill and Ashburton Hill;
- Proposed off-road cycle route through private land to Murmont Lawn;
- Inbound and outbound cycle tracks along Murmont Lawn, Old Youghal Road, Iona Park and Colmcille Avenue across North Ring Road junction;

- Continuation of cycle route along quiet streets through Silverheights Drive, Silverheights Avenue, Boherboy Road, Dunard, Liosard, Lotamore Drive; and
- Inbound and outbound cycle tracks along Old Youghal Road to end of section.

Route Constraints

Within the bus route, there are constraints due to width of the cross-section, resulting in shared provision along the majority of Ballyhooly Road. Therefore, journey time may be increased when there are high general traffic volumes through this portion of the route. A significant number of trees will be removed to facilitate the widened corridor along the North Ring Road.

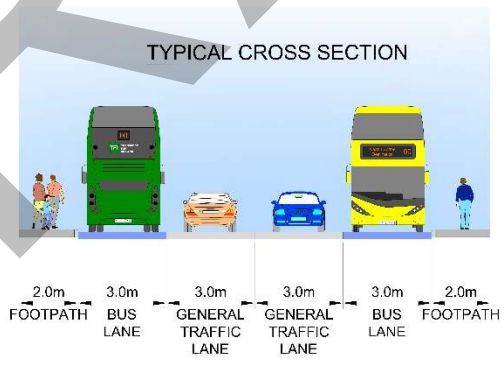
Cycle network integration is also adversely impacted through difficult gradients for cyclists to negotiate throughout the section, negatively impacting journey time and adding a significant amount of physical activity.

There are four designated National Inventory of Architectural Heritage (NIAH) sites along the corridor which need to be considered with regard to the works that can take place in their vicinity. Pre- and post-condition surveys may be required along with vibration monitoring for the duration of work on the scheme.

Bus Stops

Existing bus stops and shelters will be refreshed as part of the BusConnects Cork programme. There are 11 individual bus stops currently along this section and it is estimated that 26 stops would be required on the route (four in each direction) assuming stops every 250m indicatively. As such, 15 further stops would be required.

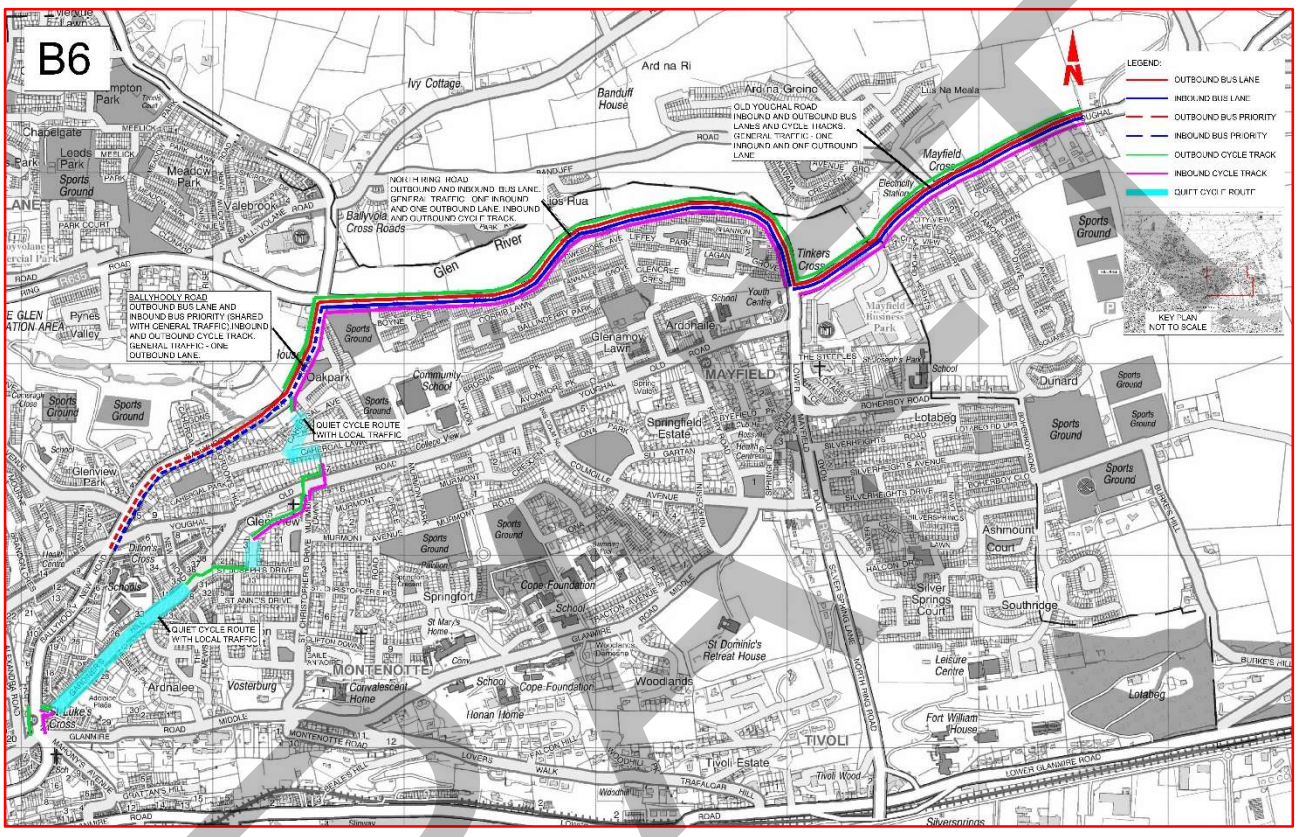
Figure 6-23 – Option B5 Typical Cross Section North Ring Road



SAS 2 - OPTION B6

An outline of Option B6 is shown in Figure 6-24 below and is then described in greater detail in the subsequent text.

Figure 6-24 – SAS 2 Option B6 Outline



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Outbound Bus Route

- Shared bus / general traffic lane along Ballyhooly Road to the junction with Gordon's Hill; and
- Dedicated bus and general traffic lanes along the remainder of Ballyhooly Road, the North Ring Road and Old Youghal Road to end of section.

Inbound Bus Route

- Dedicated bus and general traffic lanes along Old Youghal Road and the North Ring Road; and
- Shared bus / general traffic lane along Ballyhooly Road to Dillon's Cross and end of section.

Cycle Routes

- Provision of "quiet streets" cycle routes along Gardiner's Hill, Ashburton Hill, St Joseph's Drive, with proposed short section of outbound cycle track on Gardiner's Hil and Ashburton Hill;
- Proposed off-road cycle route through private land to Murmont Lawn;
- Provision of inbound and outbound cycle track along Murmont Lawn and short section on Old Youghal Road;
- Cycle wheel ramps and steps linking Old Youghal Road to Cahergal Lawn;

- Provision of cycle route along quiet streets on Cahergal Lawn and Cahergal Avenue and off-road route to Ballyhooly Road;
- Provision of inbound and outbound cycle track Ballyhooly Road, North Ring Road and Old Youghal Ring Road.

Route Constraints

The route is constrained in certain locations resulting in the inability to provide a complete corridor along the full length of the section, as well as partially splitting bus and cycle routes. Within the bus route, there are constraints due to width of the cross-section on Ballyhooly Road, resulting in shared provisions inbound. Therefore, journey time may be increased when there are high general traffic volumes through the route. A significant number of trees will be removed to facilitate the widened corridor along the North Ring Road.

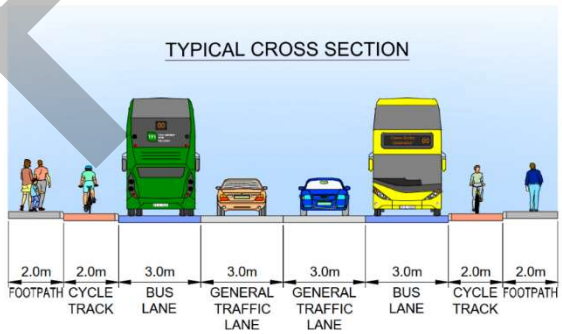
Cycle network integration is also adversely impacted through difficult gradients for cyclists to negotiate throughout the section and a need to dismount at the linkage between Old Youghal Road and Cahergal Lawn, negatively impacting journey time and adding a significant amount of physical activity.

There are three designated National Inventory of Architectural Heritage (NIAH) sites along the corridor which need to be considered with regard to the works that can take place in their vicinity. Pre- and post-condition surveys may be required along with vibration monitoring for the duration of work on the scheme.

Bus Stops

Existing bus stops and shelters will be refreshed as part of the BusConnects Cork programme. There are 11 individual bus stops currently along this section and it is estimated that 26 stops would be required on the route (four in each direction) assuming stops every 250m indicatively. As such, 15 further stops would be required.

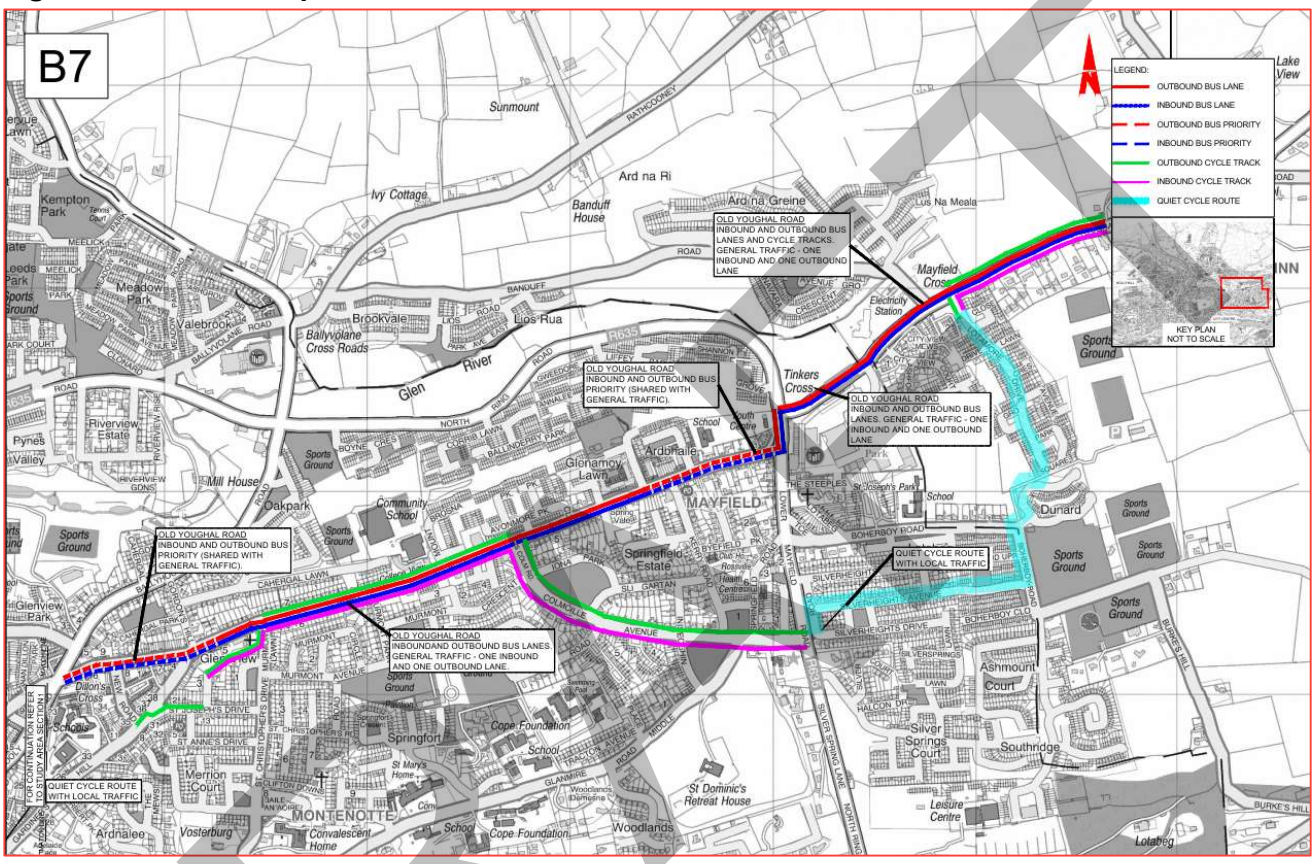
Figure 6-25 – Option B6 Typical Cross North Ring Road



SAS 2 - OPTION B7

An outline of Option B7 is shown in Figure 6-26 below and is then described in greater detail in the subsequent text.

Figure 6-26 - SAS 2 Option B7 Outline



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Outbound Bus Route

- Shared bus / general traffic lane along Old Youghal Road between Dillon's Cross and west of Murmont Lawn;
- Dedicated bus and general traffic lanes along Old Youghal Road between west of Murmont Lawn and Glenamoy Lawn;
- Shared bus / general traffic lane along the remainder of Old Youghal Road to Mayfield Park; and
- Dedicated bus and general traffic lanes along Mayfield Park and Old Youghal Road from Tinker's Cross to end of section.

Inbound Bus Route

- Dedicated bus and general traffic lanes along Old Youghal Road and Mayfield Park;
- Shared bus / general traffic lane along Old Youghal Road to Glenamoy Lawn;
- Dedicated bus and general traffic lanes along Old Youghal Road between Glenamoy Lawn and west of Murmont Lawn; and
- Shared bus / general traffic lane along the remainder of Old Youghal Road to Dillon's Cross.

Cycle Routes

- Provision of “quiet streets” cycle routes along Gardiner’s Hill, Ashburton Hill, St Joseph’s Drive, with proposed short section of outbound cycle track on Gardiner’s Hill and Ashburton Hill;
- Proposed off-road cycle route through private land to Murmont Lawn;
- Inbound and outbound cycle tracks along Murmont Lawn, Old Youghal Road, Iona Park and Colmcille Avenue across the North Ring Road junction;
- Continuation of cycle route along “quiet streets” through Silverheights Drive, Silverheights Avenue, Boherboy Road, Dunard, Liosard, Lotamore Drive; and
- Inbound and outbound cycle tracks along Old Youghal Road to end of section.

Route Constraints

The route as a whole is constrained resulting in the inability to provide a complete corridor along the section, as well as partially splitting bus and cycle routes. Along the bus route there are constraints due to the width of the cross-section, resulting in the need to acquire private gardens, remove on street parking and mature trees along Old Youghal Road between Murmont Lawn and Glenamoy Lawn, to provide dedicated bus lane provision. In addition to this, there are further pinch points along Old Youghal Road, which is particularly constrained east of Dillon’s Cross and west of Mayfield Park, resulting in the need for shared bus and general traffic lanes to avoid the acquisition and demolition of private residences.

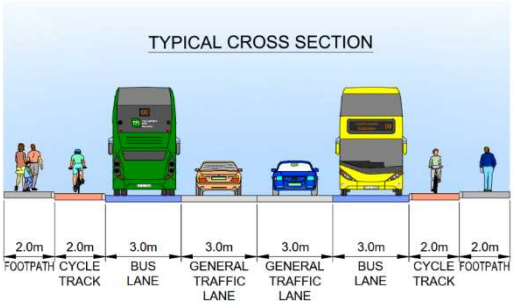
Cycle network integration is also adversely impacted through a reduced width provision in sections. There are also difficult gradients for cyclists, negatively impacting journey time and adding a significant amount of physical activity.

There are five designated National Inventory of Architectural Heritage (NIAH) sites along the corridor which need to be considered with regard to the works that can take place in their vicinity. Pre- and post-condition surveys may be required along with vibration monitoring for the duration of work on the scheme.

Bus Stops

Existing bus stops and shelters will be refreshed as part of the BusConnects Cork programme. There are nine individual bus stops currently along this section and it is estimated that 22 stops would be required on the route (11 in each direction) assuming stops every 250m indicatively. As such, 13 further stops would be required.

Figure 6-27 – Option B7 Typical Cross Section Old Youghal Road



SAS 2 STAGE 2 OPTION MULTI CRITERIA ANALYSIS SUMMARY

The Study Area Section (SAS) 2 Dillon's Cross to Old Youghal Road, East of Tinker's Cross Stage 2 MCA summary tables, including justification for the sub-criteria scoring, are included in Appendix C.

The relative ranking of options against the MCA sub-criteria is summarised in Table 6-2 below

Table 6-2 - Study Area Section 2 MCA Sub-Criteria Summary

		Option B1	Option B2	Option B3	Option B4	Option B5	Option B6	Option B7
Economy	1a.Capital Cost							
	1b. Average Journey-time							
	1c. Journey-time reliability and Consistency							
Integration	2a.Land Use Integration							
	2b.Residential Population and Employment Catchments							
	2c.Transport Network Integration							
	2d. Cyclists Integration							
	2e Pedestrian Integration							
Accessibility and Social Inclusion	3a.Key Trip Attractors (Education/ Health/ Commercial)							
	3b.Deprived Geographic Areas							
Safety	4. Road User Safety							
Environment	5a.Archaeology and Cultural heritage							
	5b.Biodiversity							
	5c.Soils and Geology							

	5d.Water Resources							
	5e. Landscape and Visual							
	5f.Noise, Vibration & Air							
	5g. Land Use and the Built Environment							

Economy

In terms of Economy, the differentiator between routes is that B4 and B7 score poorly in terms of capital cost. In terms of Journey time reliability, Options B1, B3, B5, B6 and B7 score highest.

Integration

In terms of Integration, the main differentiator between routes is that Options B5 and B6 has lowest Residential Population and Employment Catchment as the bus route is along the North Ring Road.

Accessibility and Social Inclusion

In terms of Accessibility and Social Inclusion, Options B1, B3 and B7 serve a greater number of key trip attractors and B1, B3, B4 and B7 serving a marginally more deprived area

Safety

Under Safety, Option B4 ranks slightly lower than the rest as it is less direct and has more turning movements

Environment

In terms of environment, Options B5 and B6 ranks lower under Biodiversity, Water Resources, Landscape & Visual and Land Use and Built Environment due to proposed wider cross-section and removal of trees along the North Ring Road. Options B7 also scores poorly against these environmental criteria due to likely acquisition of private gardens, removal on street parking and mature trees along Old Youghal Road.

Based on the above MCA, SAS 2- Option B3 is the best performing route from Dillon's Cross to Old Youghal Road, East of Tinker's Cross as it offers a good level of bus priority, hits the big trip attractors, and scores well against the environmental criteria.

7 EMERGING PREFERRED ROUTE

7 EMERGING PREFERRED ROUTE

7.1 INTRODUCTION

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

ROUTE OPTIONS ASSESSMENT CONCLUSIONS

Chapter 5 of this Report presented the Stage 1 Sifting Process which helped inform the Study Area Section split, designing of options and subsequent multi criteria analysis. This MCA is covered in Chapter 6 and recommends:

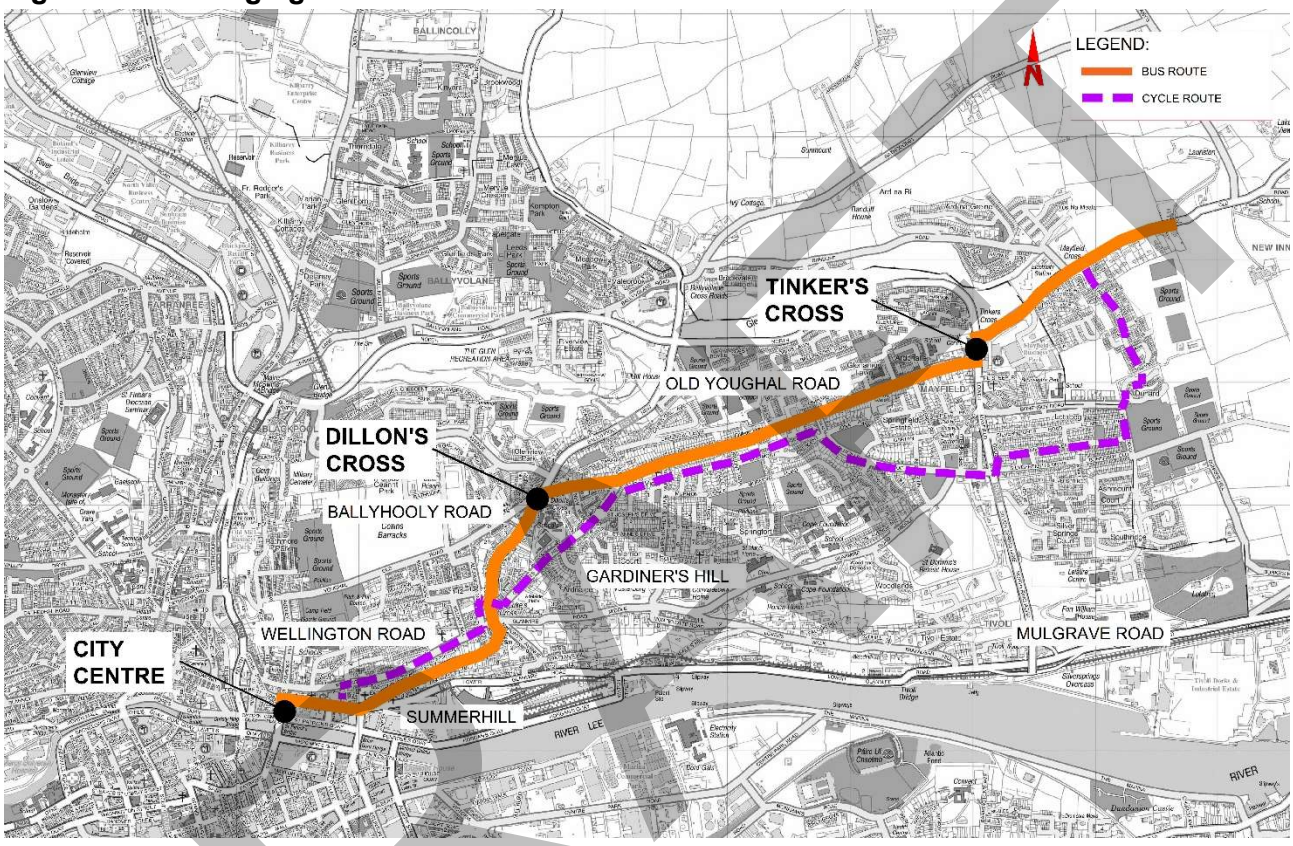
- Option A4 is the preferred option for Study Area Section No.1 comprising of;
  - A bus route via Bridge Street, MacCurtain Street, Summerhill North and Ballyhooly Road; and
  - A cycle route via York Street, Wellington Road, Ballyhooly Road and Gardiner's Hill.

- Option B3 is the preferred option for Study Area Section No. 2 comprising of;
  - A bus route via Old Youghal Road, the North Ring Road and Old Youghal Road; and
  - A cycle route via Ashburton Hill, St Joseph's Drive, Murmont Lawn and Old Youghal Road, Iona Park, Colmcille Avenue, Lotabeg and Old Youghal Road.

EMERGING PREFERRED ROUTE

The emerging preferred route is presented in Figure 7.1 below and is described in more detail in the subsequent paragraphs. The emerging preferred route commences at the northern end of Cork City Centre, north of the River Lee, heads towards Dillon's Cross and finishes East of Mayfield.

Figure 7-1 - Emerging Preferred Route



SECTION 1: CITY CENTRE TO DILLON'S CROSS

Length of Section: 1.7km

Indicative Cost Estimate (used for comparative purposes): €3.5M

Along the Emerging Preferred Route, there is an existing outbound (towards Mayfield) bus lane at the start of Study Area Section No.1 (i.e. from Bridge Street to the MacCurtain Street/Summerhill North Junction) and no existing cycle lanes. Overall, the EPR for this section requires the introduction of new bus and active travel facilities along the majority of its length.

The emerging preferred bus route travels along Bridge Street, MacCurtain Street (which forms part of the MacCurtain Street Public Transport Improvement Scheme) and up Summerhill North towards the St Luke's Cross Junction. The route continues along Ballyhooly Road towards the Dillon's Cross Junction.

The cycle route commences on York Street, continuing along Wellington Road and Ballyhooly Road.. A quiet streets' cycle route via Gardiner's Hill is also proposed. This alternative cycle route bypasses the Dillon's Cross Junction and links into Old Youghal Road east of the Dillon's Cross Junction.

Both outbound and inbound bus lanes are provided along Bridge Street which results in the removal of the right turn lane on Bridge Street to MacCurtain Street. The existing outbound bus lane and one-way system on MacCurtain Street will be replaced by widened footways and a two-way general traffic carriageway. The typical cross-sectional width along MacCurtain Street is approx. 18m, this will provide 6m wide footways on both sides of a 6m wide carriageway. Loading bays will be retained along MacCurtain Street where possible. Buses in this section travel in general traffic lanes in both directions. Some minor, parallel street parking will also be retained. Altered traffic arrangements adjacent to MacCurtain Street will remove through traffic from MacCurtain Street

York Street will remain a one-way northbound street. However, on street parking on York Street will be removed to provide a northbound with-flow and a southbound contra-flow cycle track, linking MacCurtain Street to Wellington Road. Both inbound and outbound cycle tracks are provided along Wellington Road between York Street and Ballyhooly Road. On-street parking on the southern side of Wellington Road will be retained where possible. A short section of potential land acquisition may be required to facilitate the continuation of the proposed active travel facilities, between Military Hill and Alexandra Road, on the northern side of the existing boundary.

The proposed bus lane provision alternates from inbound to outbound along Summerhill North. From the MacCurtain Street/Summerhill North Junction, outbound buses use a general traffic lane for approximately 300m. An outbound bus lane then commences from just west of Clifton Terrace to just east of Clarence Terrace, where it terminates at St. Luke's Avenue with bus priority traffic signals, which means that buses will get a ''head-start'' over cars. Outbound buses then re-join a general traffic northbound lane for the remainder of Summerhill North. An inbound (towards the city) bus lane on Summerhill North is proposed from York Hill to the southwest end of Summerhill North. This includes bus priority signals, which provide buses with a ''head-start'' over cars at the proposed Toucan Crossing and the junction with Lower Glanmire Road.

Inbound buses along the remainder of Summerhill North use a general traffic lane. On street parking will be removed along the majority of Summerhill North as the typical cross-sectional width is quite constrained at approx. 12m. However, some parallel on-street parking will be retained just south of St Luke's Church. The St Luke's Cross Junction has been converted to a signalised junction, providing bus priority. Pedestrian and cycle improvements have also been provided, as well as the removal of Middle Glanmire Road left turn slip lane.

From St Luke's Cross Junction to Dillon's Cross via Ballyhooly Road, both inbound and outbound buses use general traffic lanes. Ballyhooly Road is very restrained with a typical cross-sectional width of approx. 12m. Consequently, when on-street parking is required to be retained, there is limited scope for bus lane provision. A short section of a two-way cycle track is proposed along Ballyhooly Road between Wellington Road and Gardiner's Hill. Cyclists can then re-join the general traffic northbound lane towards Dillon's Cross or continue along an alternate "quiet street" cycle route via Gardiner's Hill. The majority of the cycle route via Gardiner's Hill will also be in general traffic lanes but the route should only be used by local vehicles. A right turn ban from Ballyhooly Road to Gardiner's Hill is proposed to reduce traffic on Gardiner's Hill.

SECTION 2 DILLON'S CROSS TO TINKER'S CROSS

Length of Section: 2.8km

Indicative Cost Estimate (used for comparative purposes): €19.1M

Along the Emerging Preferred Route, there is an existing inbound bus lane in Study Area Section No.2 (i.e. two sections along Old Youghal Road) and no existing cycle lanes. Overall, the EPR for this section requires the introduction of new bus and active travel facilities along the majority of its length.

The emerging preferred bus route travels from Dillon's Cross along Old Youghal Road to its junction with the North Ring Road. It then continues northbound on the short section of the North Ring Road as far as Tinker's Cross. Routing the bus along Old Youghal Road has larger employment and residential catchments than via the North Ring Road and has similar but slightly smaller catchments than via Colmcille Avenue or Murmont Road. However, the emerging preferred route is more direct.

A small section of potential land acquisition may be required to achieve bus turning movements and provide adequate footway provision at the Dillon's Cross Junction, between Ballyhooly Road and Old Youghal Road. This may result in the partial loss of front gardens from two properties.

On Old Youghal Road, a short section of an inbound bus lane is proposed on approach to Dillon's Cross. Outbound buses will continue along Old Youghal Road in a general traffic lane until New Road Junction, where a bus gate (short sections of bus/cycle-only roadway) is proposed. The carriageway along this section of Old Youghal Road is constrained with an average width of 10m, these proposals result in the loss of most of the on-street parking. However, where possible, on-street parking has been retained. Inbound on Old Youghal Road, a bus gate (short sections of bus/cycle-only roadway) is also proposed at the junction with Murmont Park.

To the east of Murmont Lawn, the existing on-street parking on the northern side of Old Youghal Road will be retained while additional on-street parking will replace the existing bus lane on the southern side. The typical cross-sectional width along this stretch is approx. 18m.

From the Murmont Park Junction to just east of the Mount Brosna Junction, both inbound and outbound buses use the general traffic lanes. On-street parking will be retained on the southern side of the Old Youghal Road carriageway where possible. On approach to the Iona Park Signalised Junction, an outbound bus lane is proposed in conjunction with bus priority signals. This allows bus priority along Old Youghal Road by providing a right turn lane for general traffic.

An outbound bus gate is proposed on Old Youghal Road at the Iona Park Junction and an inbound bus gate is proposed at the North Ring Road Junction. In this section of Old Youghal Road, local access will be maintained via Kerry Road. Egress will be via Kerry Road or Old Youghal Road. On-street parking will be retained on both sides of the carriageway, where possible.

These proposed bus gates will reduce traffic volumes on Old Youghal Road, which allows buses to move freely.

City bound through traffic will be directed onto:

- North Ring Road to the N20;
- North Ring Road to Lower Glanmire Road(N8), via Silversprings

A short strip of potential land acquisition may be required on the south-western quadrant of the Iona Park junction to provide adequate footway widths and a general traffic right turn lane. Another short section of potential land acquisition may be required on the southern side of the Old Youghal Road, outside No.10 & Newbury House, this may result in the partial loss of front gardens from two or three private dwellings.

Outbound buses re-join a general traffic lane on a short section of the North Ring Road to Tinker's Cross. An inbound right turn bus lane from the North Ring Road onto Old Youghal Road is also proposed. This will replace a right turn lane for general traffic. The inbound and outbound bus lanes continue along Old Youghal Road, east of Tinker's Cross to the termination point, just west of The Barn Gastropub.

The preferred cycle route through this section bypasses Dillon's Cross, using quiet, local streets. The cycle route continues from Gardiner's Hill Junction through Ashburton Hill and St Joseph's Drive. A northbound cycle track commences in the triangular greenspace between Gardiner's Hill and Ashburton Hill and continues along Ashburton Hill to St Joseph's Drive. It is proposed that the traffic flow is rearranged to include the outbound cycle track, Ashburton Hill and a section of St Joseph's Drive will become one-way inbound. This will create a maximum diversion of 650m via Old Youghal Road and Murmont Lawn for vehicles travelling up Gardiner's Hill, this will also result in the removal of some on street parking along St Joseph's Drive.

A short section of 'quiet streets' cycle route, along St Joseph's Drive cul-de-sac links the outbound cycle track on Ashburton Hill to a proposed two-way off-road cycle track, at the northern end of St Joseph's Drive. This cycle track will run adjacent to the existing St Joseph's Church access. The proposed two-way cycle track will continue along the southern boundary of the church and adjoining presbytery grounds where it will link onto Murmont Lawn. The proposed cycle track will require land acquisition but will avoid the church's grotto, church extension and the presbytery's garages.

A northbound and southbound cycle track on Murmont Lawn will then link up with the proposed eastbound and westbound cycle tracks on Old Youghal Road while also re-joining the proposed bus route at this point. Further land acquisition along a short section of Murmont Lawn may also be required to accommodate the proposed northbound and southbound cycle tracks.

The proposed uni-directional cycle tracks continue from Murmont Lawn along Old Youghal Road in both directions as far as the Iona Park Signalised Junction. Both cycle tracks are continuous across side roads and accesses along this section and the route in general. At the Iona Park Junction, the proposed bus route and cycle route diverge, with both cycle tracks continuing along Iona Park. The cycle tracks also cross the side roads on Iona Park and Colmcille Avenue as continuous crossings. These cycle tracks will narrow when passing adjacent to proposed bus stops along this route, providing sufficient space for the provision of boarding/alighting platforms for bus passengers.

These uni-directional cycle tracks on Colmcille Avenue will cross the North Ring Road as a part of a cyclops junction, linking cyclists with the quiet general traffic lanes of Silverheights Drive. The 'quiet streets' cycle route continues along Silverheights Drive, Silverheights Avenue, Boherboy Road, Dunard, Liosard, Lotamore Drive and then rejoins the preferred bus route with segregated cycle tracks along Old Youghal Road to the termination point just west of The Barn Gastropub.

SCHEME BENEFITS

The Emerging Preferred Route is approximately 4.5 km in total length from Cork City Centre to Old Youghal Road, east of Tinker's Cross. Along this EPR, there is currently only limited bus lanes and no cycle lanes.

The current lack of bus lane/priority provision results in varying overall journey times and reliability.

This section of Northeast Cork City Suburbs is extremely restricted due to narrow streetscapes and steep topography. Therefore, bus priority is provided through a series of different measures including bus lanes, bus gates and signalised priority.

Based on the above, a conclusion can be drawn that by improving the provision of bus priority along the route, coupled with the introduction of cashless fares, the risk of turbulence to bus journeys would be significantly reduced. Consequently, allowing the buses to move along the route quicker and with more consistent journey times. The extent of these benefits will be confirmed and quantified at the next design stage.

COST ESTIMATE

A cost estimate for the EPR can be found below.

This cost estimate was developed for each route option primarily for comparative purposes, based on elemental rates from similar schemes. Therefore, this is not an absolute cost and should not be relied upon as a detailed estimate. Further cost estimate work is recommended, particularly around areas of risk such as utilities and land acquisition. It is also worth noting the current challenge of rising construction costs and the need to keep this under constant review.

Study Area Section (SAS) No. 1 €3.5M

Study Area Section (SAS) No. 2 €19.1M

Total of SAS No.1 & SAS No. 2 €22.6M

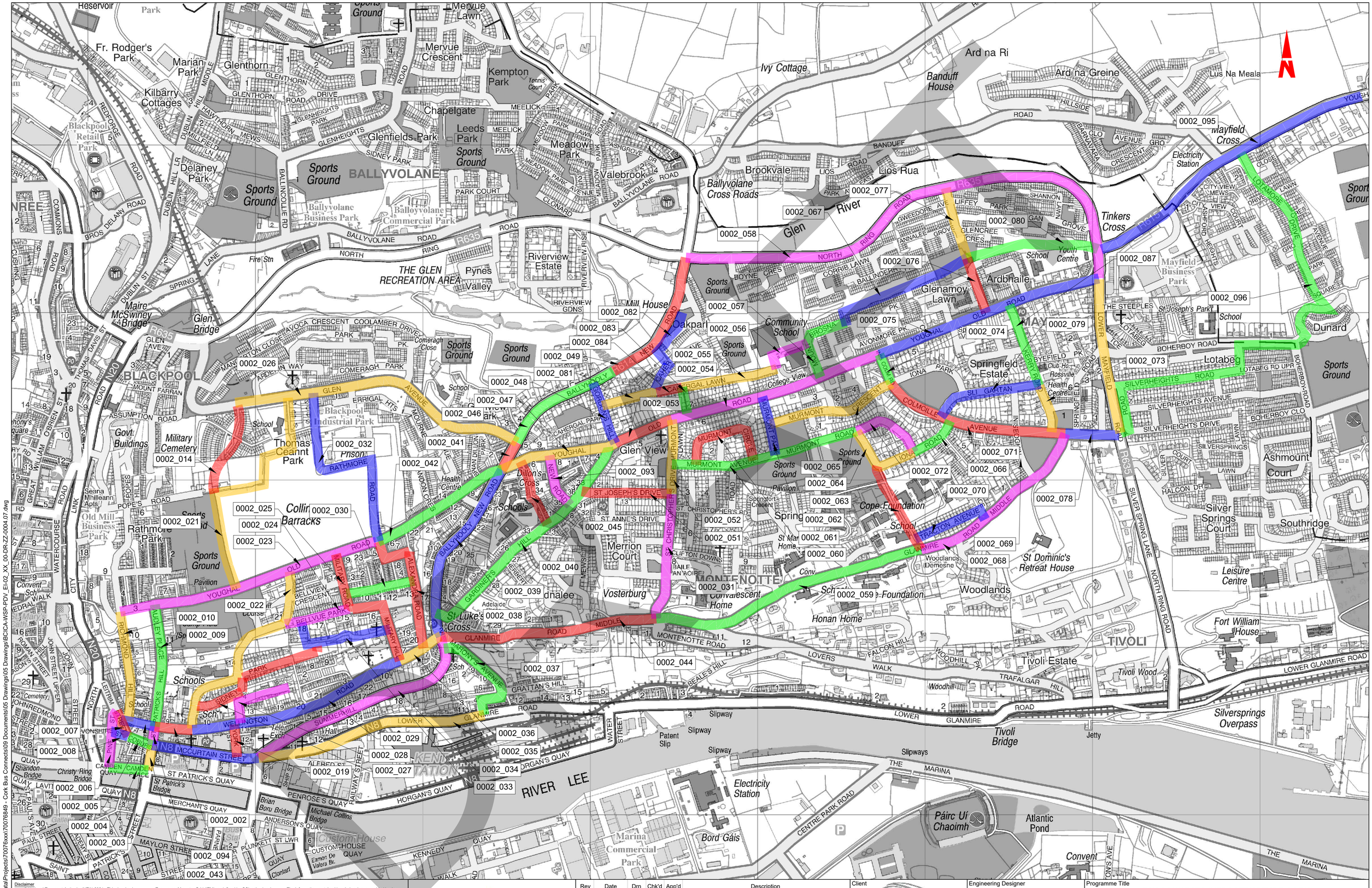
NEXT STAGES OF DESIGN DEVELOPMENT

This report has identified an emerging preferred route for the bus infrastructure along this Core Bus Corridor for which a concept design has been developed.

Within this CBC, the City Centre to Tinker's Cross section has a proposed highest frequency of bus service and therefore only this section will be carried forward for Public Consultation at present.

Appendix A

STAGE 1: SIFTING STAGE



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Project Ireland 2040
Building Ireland's Future

Rev	Date	Drn	Chk'd	App'd	Description

Client
NTA
Údarás Náisiúnta Iompair
National Transport Authority

Engineering Designer
wsp

Programme Title
BUSCONNECTS INFRASTRUCTURE CORK

Drawing Title
CORRIDOR 2 - POTENTIAL ROUTE OPTIONS

Date: 25/02/2022
Scale: 1:5000 @ A1
1:10000 @ A3
Drawn: JS
Checked:
Approved:
Project Code: BCICA
Originator Code: WSP
QMS Code:
Drawing File Name: BCICA-WSP-PDV_EI-02_XX_00-DR-ZZ-0004.07
Sheet Number: 1 of 1
Status: S0
Rev: L01

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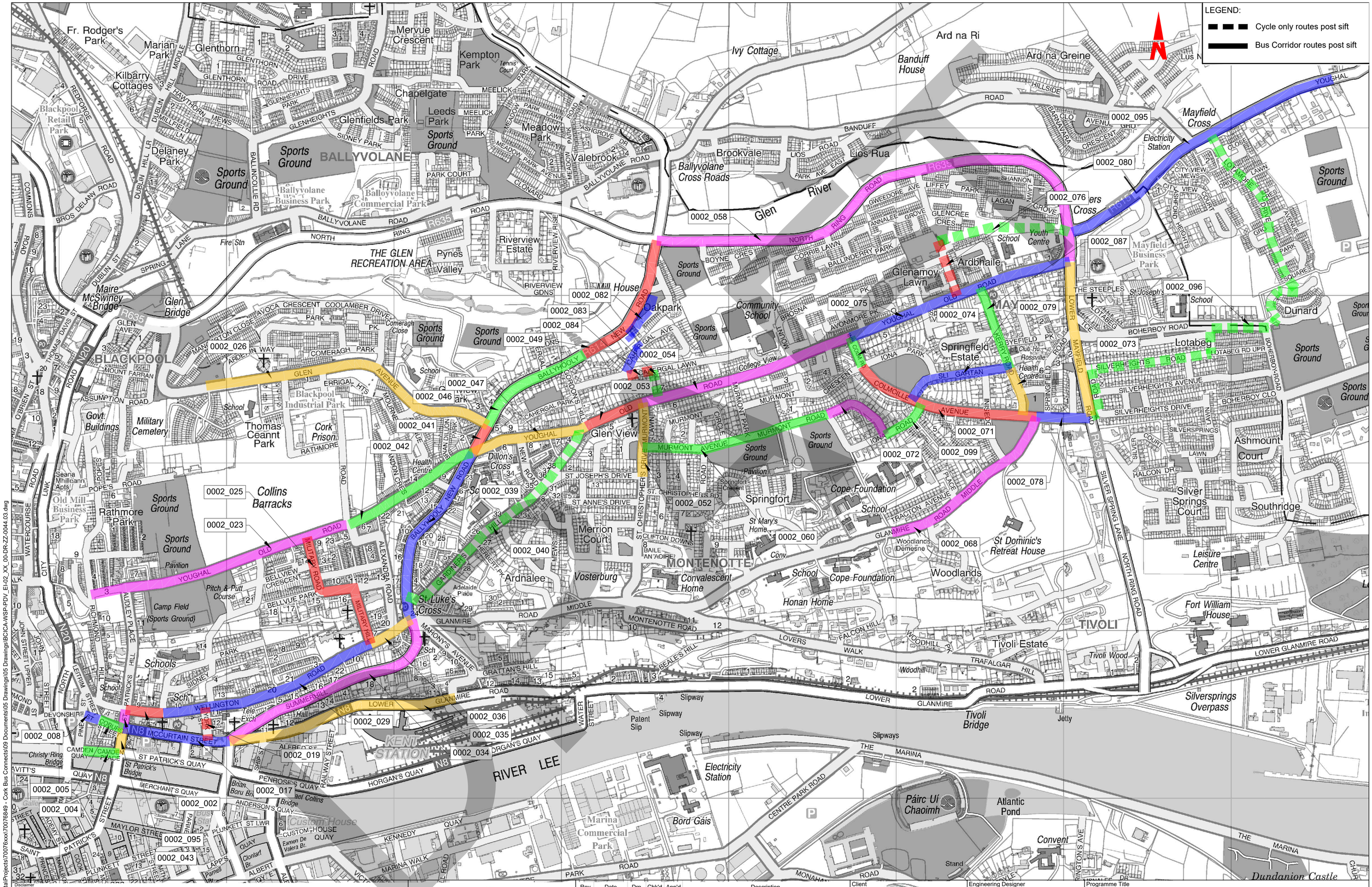

Project Ireland 2040
Building Ireland's Future

Rev	Date	Drn	Chk'd	App'd	Description

Client: NTA — Údarás Náisiúnta Iompair / National Transport Authority

Engineering Designer: wsp

Programme Title: **BUSCONNECTS INFRASTRUCTURE CORK**

Drawing Title: CORRIDOR 2 - ROUTES PASSING THE INITIAL STAGE 1 SIFT

Date	Scale	Drawn	Checked	Approved
25/02/2022	1:5000 @ A1 1:10000 @ A3	JS		

Project Code	Originator Code	QMS Code	Drawing File Name	Sheet Number	Status	Rev
BCICA	WSP		BCICA-WSP-PDV_EI-02_XX_00-DR-ZZ-0044.03	1 of 1	S0	L01

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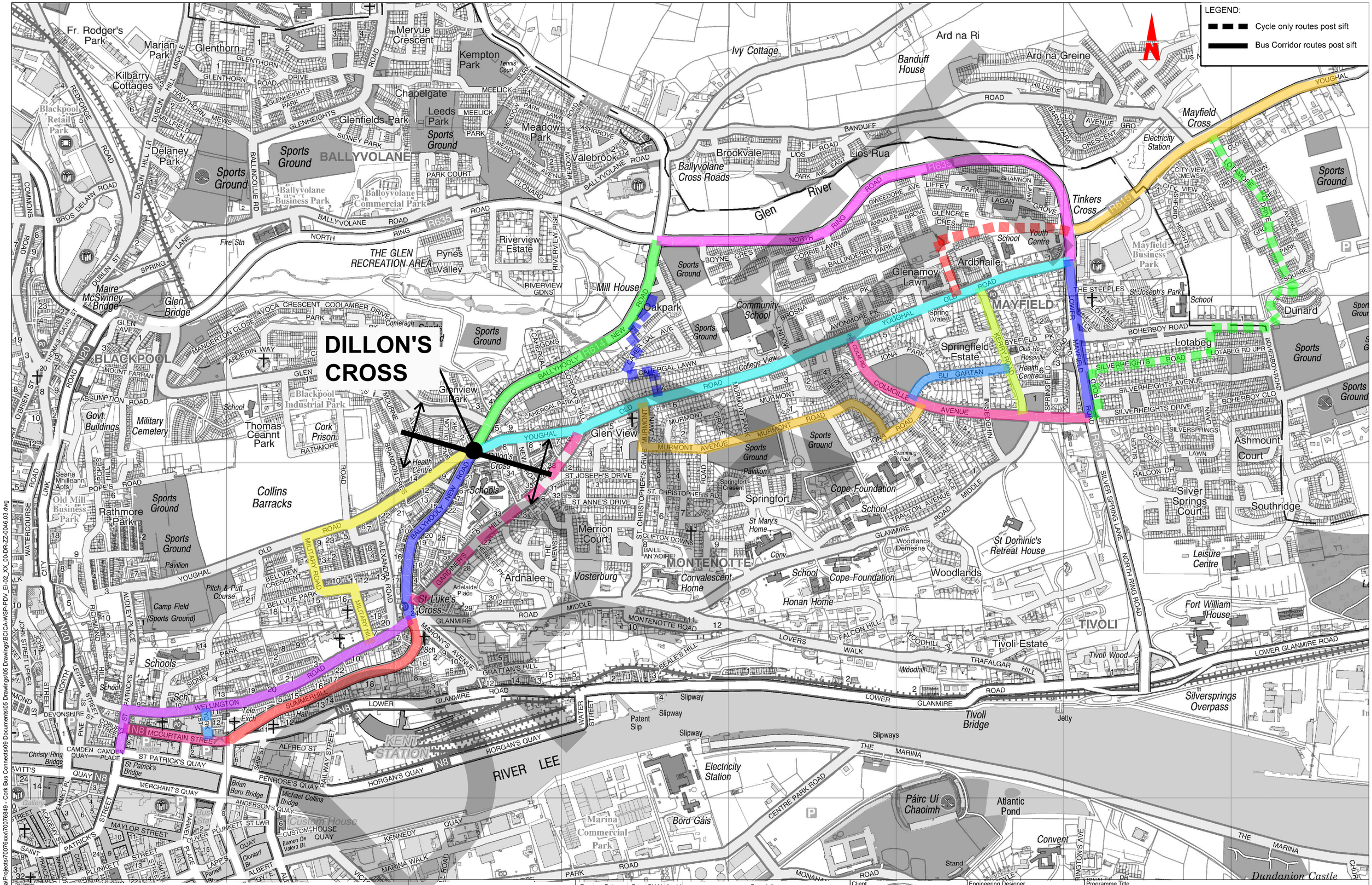

LEGEND:

- ▬ ▬ Cycle only routes post sift
- ▬▬ Bus Corridor routes post sift

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Client
NTA
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National Transport Authority

Engineering Designer
wsp

Programme Title
BUSCONNECTS INFRASTRUCTURE CORK

Drawing Title
CORRIDOR 2 - ROUTE OPTIONS FOR STAGE 2 MULTI CRITERIA ANALYSIS

Date	Scale	Drawn	Checked	Approved
25/02/2022	1:5000 @ A1 1:10000 @ A3	JS		

Project Code	Originator Code	QMS Code	Drawing File Name	Sheet Number	Status	Rev
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KEY
Fail - Not carried forward to Stage 2 Multi Criteria Analysis
Pass* - Carried forward to Stage 2 Multi Criteria Analysis as a potential cycle link only
Pass - Carried forward to Stage 2 Multi Criteria Analysis

Line Code_ID Code	Location(From - To)	Description	Comment	Pass / Fail
0002_001	Not Used	-	-	-
0002_002	Wellington Road/ St Patrick's Place from its junction with St Patricks Hill to its junction with Sidney Hill.	Single two-way carriageway bounded by buildings on both sides with a cross section 7.5-12m. There are footways on both sides of the road and on-street parking is prohibited. As part of the MacCurtain Street Public Transport Improvement Scheme, where construction is due to commence in the Autumn of 2021 it is proposed to provide enhanced pedestrian facilities including a new pedestrian signalised crossings and a raised pedestrian table. Not an existing bus route. Identified as a future Secondary Cycle Route CCN-U34 in Cork Cycle Network Plan 2015.	Limited opportunity to gain additional width due to the existing building line and presence of retaining structures to the back of footway. As there are no other alternatives to the existing bus route through this section this link will be taken to Stage 2 Multi Criteria Analysis.	Pass
0002_003	Hardwick Street from St Patricks Hill to Leitrim Street	Single two-way carriageway bounded by buildings with narrow footways. Cross section 7.5-8m from back of footway to back of footway. Not an existing bus route. Identified as Secondary cycle route CCN-U34 in Cork Cycle Network Plan 2015.	Limited opportunity to provide bus priority due to scope of the works, the gradient and existing building line. As alternative routes are available this section will not be carried forward to the Stage 2 Multi Criteria Analysis.	Fail
0002_004	Camden Quay/Place between Pine Street and Bridge Street	One-way two lane street with additional contraflow bus lane connecting to Bridge Street. Footways on both sides of the road with building line to the back of the footway and the River Lee on the other side. Advance stop line for cyclists at the junction with Carroll's Quay. Signalised pedestrian crossings at both junctions. Cross section approx. 14m. As part of the MacCurtain Street Public Transport Improvement Scheme, where construction is due to commence in the Autumn of 2021 it is proposed "*to provide a new footpath and a new two-way cycle track to replace the existing southern footpath* ", to "*remove the eastbound contra flow bus lane .. .*", "*... upgrade the junction of Camden Quay/Christy Ring Bridge to ... include for the provision of CCTV and new traffic signals and bus priority measures*" and a new bus stop on Camden Quay. Existing bus route. (202, 203, 215, 742) Identified as Primary Route CCC-U11 in Cork Cycle Network Plan 2015.	As bus priority is planned at each of the junctions and segregated cycling facilities will be provided this section it will be carried forward to the Stage 2 Multi Criteria Analysis.	Pass

0002_005	Coburg Street from MacCurtain/ Bridge Street to Leitrim Street	One-way two lane street with on-street echelon parking on the south side bounded by commercial properties on both sides. There are footways on both sides of the road and signalised pedestrian crossing at the junction with MacCurtain Street. Cross section 16-18m. There is a public bike share point at the junction with MacCurtain Street. As part of the MacCurtain Street Public Transport Improvement Scheme, where construction is due to commence in the Autumn of 2021 it is proposed to convert Coburg Street from two eastbound general traffic lanes to one new westbound general traffic lane and one eastbound bus lane (24 hour), to provide two new bus stops, upgrade footways, provide set down spaces and loading bay and introduce a bus priority signalised junction at the junction of Bridge Street with Coburg Street. Not an existing bus route. Not identified as a future cycling route in Cork Cycle Network Plan 2015.	Provision of bus priority, segregated cycling facilities and general traffic is not viable due to the existing building lines. However, as this section will become a bus route it will be carried forward to the Stage 2 Multi Criteria Analysis.	Pass
0002_006	Pine Street from Camden Place to Leitrim Street	One-way northbound single carriageway which is bounded on both sides by footways to the back of which is the building line. The cross section approx. 8m. As part of the MacCurtain Street Public Transport Improvement Scheme, where construction is due to commence in the Autumn of 2021 additional on street parking and loading bay will be provided and existing footpaths and public lighting will be upgraded. Not an existing bus route. Not Identified as a future cycling route in the Cork Cycle Network Plan 2015.	Provision of bus priority, segregated cycling facilities and general traffic is not viable due to the existing property lines. As alternative routes are available this section will not be carried forward to the Stage 2 Multi Criteria Analysis.	Fail
0002_007	Leitrim Street from Coburg/ Devonshire Street to the junction with Pine street.	One-way carriageway with 2 inbound general traffic lanes and on-street parking on the south side of the carriageway. Footways on both sides with building coming to the back of the footways. Cross section approx. 11-12m. As part of the MacCurtain Street Public Transport Improvement Scheme, where construction is due to commence in the Autumn of 2021 it is proposed to provide an inbound cycle lane, an outbound cycle track (partial) and reduce the number of general traffic lanes. Not an existing bus route. Identified as a Secondary route CCN-U34 in Cork Cycle Network Plan 2015.	Provision of bus priority, segregated cycling facilities and general traffic is not viable due to the scale of works and impact to existing property lines. As alternative routes are available this section will not be carried forward to the Stage 2 Multi Criteria Analysis.	Fail
0002_008	Devonshire Street between Coburg Street and Pine Street	One way. Footways throughout and bounded by buildings up to the back of the footways. Cross section ~10m with on street parking on the one-way section. As part of the MacCurtain Street Public Transport Improvement Scheme, where construction is due to commence in the Autumn of 2021 it is proposed to replace the existing eastbound lane with a westbound general traffic lane and provide a westbound bus lane. There will also be a new signalised junction at the intersection of N20 North Link Road and Devonshire Street. Not an existing bus route. Not Identified as a future cycling route in the Cork Cycle Network Plan 2015.	Limited opportunity to acquire additional width but potential to accommodate one-way bus priority and/or segregated two-way cycling facilities. This will be taken to Stage 2 Multi Criteria Analysis.	Pass

0002_009	St Patrick's Hill / Audrey Place between St Patrick's Place / Hardwick Street/ Wellington Road and Old Youghal Road	Single lane one-way (southbound) carriageway bounded by buildings on both sides of the road. There is a steep slope with a cross section of 6-14m. As part of the MacCurtain Street Public Transport Improvement Scheme, where construction is due to commence in the Autumn of 2021 it is proposed to reverse this section from southbound to northbound traffic flow and to relocate the existing on-street parking from the western side of the street to the eastern side. Not an existing bus route. Not Identified as a future cycling route in the Cork Cycle Network Plan 2015.	Due to the width constraints and steep slope, this link would not be appropriate for public transport or cycling infrastructure and will not be taken to Stage 2 Multi Criteria Analysis.	Fail
0002_010	Richmond Hill between Hardwick Street and Old Youghal Road.	Single two-way carriageway with on street parking and narrow footways. Cross section 4-7.5m. Steep gradient. Not an existing bus route. Identified as a Secondary route CCN-U35 in Cork Cycle Network Plan 2015.	Limited opportunity to provide bus priority due to scope of the works, steep gradient and existing building line. As alternative routes are available this section will not be carried forward to the Stage 2 Multi Criteria Analysis.	Fail
0002_011	Not Used	-	-	-
0002_012	Not Used	-	-	-
0002_013	Not USed	-	-	-
0002_014	A new link from Popes Hill / Popes Road to Glen Avenue via Glentrasna Drive.	Potential new link through greenspace to connect Glen Avenue with Popes Hill / Popes Road via Glentrasna Drive. Residential cul-de-sacs. Not an existing through route. Not an existing bus route. Not identified in Cork Cycle Network Plan 2015.	As this is not currently a through route or an existing bus route and alternative routes are available this section will not be carried forward to the Stage 2 Multi Criteria Analysis.	Fail
0002_015	Not Used	-	-	-
0002_016	Not Used	-	-	-
0002_017	MacCurtain Street between Bridge Street and the junction with Lower Glanmire Road/ Summerhill North.	One-way (west to east) carriageway with 2 general traffic lanes, a bus lane and parallel on street parking. Cross section of 18m. As part of the MacCurtain Street Public Transport Improvement Scheme, where construction is due to commence in the Autumn of 2021 it is proposed to convert MacCurtain Street from one way eastbound to two-way traffic, to provide enhanced public realm, a paved shared surface area, two new bus stops and upgrades existing traffic signals and public lighting. Existing bus route (205, 207,207A, 208, 209,212,214,248,) Identified as Primary Routes CCC-U12 and CCN-U19 in Cork Cycle Network Plan 2015.	Provision of bus priority, segregated cycling facilities and general traffic is not viable due to the existing building lines. However, as this section is an existing bus route it will be carried forward to the Stage 2 Multi Criteria Analysis.	Pass
0002_018	Not Used	-	-	-

0002_019	York Street between MacCurtain Street and Wellington Road / Sidney Place.	One-way single lane carriageway with parallel parking on the east side. Cross section approx. 9m with building line at the back of the footway. Steep slope. Not an existing bus route. Not identified as a future cycling route in Cork Cycle Network Plan 2015.	There is limited opportunity to gain additional width due to building lines to provide bus priority within this route. However, this provides a connection between Wellington Road which is identified as a seconday cycle route and MacCurtain Street which is identified as a primary cycle route, due to this it will be carried forward to the Stage 2 Multi Criteria Analysis as an alternative NMU route only.	Pass*
0002_020	Not Used			
0002_021	New link from Old Youghal Road to Glen Avenue.	Potential for a new link to connect Old Youghal Road to Glen Avenue which follows the western boundary of Collins Barracks . Thomas Kent Park has cross section approx. 6m. Not currently a through route. Not an existing bus route. Not Identified as a future cycling route in the Cork Cycle Network Plan 2015.	As this is not currently a through route or an existing bus route and alternative routes are available this section will not be carried forward to the Stage 2 Multi Criteria Analysis.	Fail
0002_022	Sidney Hill/Sydney Terrace from Wellington Road to Old Youghal Road via Christian Brothers College	Not currently a through route. The new link begins on Sydney Hill before joining the Christian Brothers College access. It then follows discontinuous internal roads and paths before tying into the Old Youghal road via a new junction. As part of the MacCurtain Street Public Transport Improvement Scheme, where construction is due to commence in the Autumn of 2021 it is proposed to provide a raised pedestrian table at the junction of Sidney Hill. Not Identified as a future cycling route in the Cork Cycle Network Plan 2015.	As this is not currently a through route or an existing bus route and alternative routes are available this section will not be carried forward to the Stage 2 Multi Criteria Analysis.	Fail
0002_023	Old Youghal Road from Richmond Hill to Rathmore Road.	Single two way carriageway with footways on both sides of the road, bounded by residential properties, a sports field(s) and Collins Barracks. The cross section varies from approx. 6m to the west to approx. 15m to the east. Existing bus route. (209) (Eastern portion) Identified as a future Secondary Cycle Route CCN-U35 in Cork Cycle Network Plan 2015.	At the western end there is limited opportunity to provide bus priority due to the constrained space and existing building line. At the eastern end bus priority, segregated cycling facilities and general traffic could be accommodated by removing on street parking. As this end of the link is an existing bus route it will be carried forward to the Stage 2 Multi Criteria Analysis.	Pass
0002_024	Bellevue Park from Sidney Terrace to Military Road	Single two-carriageway bounded by residential/ commercial properties. Not currently a through route. Cross section 9-15m. Not an existing bus route. Not identified as a future cycling route in Cork Cycle Network Plan 2015.	As this is not currently a through route or an existing bus route and alternative routes are available this section will not be carried forward to the Stage 2 Multi Criteria Analysis.	Fail

0002_025	Military Hill/Road between Wellington Road and Old Youghal Road	Single two-way carriageway bounded by residential properties with footways. Steep gradients with cross section varying from approx. 12-15m from back of footway to back of footway. Not an existing bus route. Noted as "feeder" route in the Cork Cycle Network Plan 2015.	Limited opportunity to gain additional width due to the existing building line and presence of retaining structures to the back of footway. However as there are no other alternatives to the existing parallel bus route it will be taken to Stage 2 Multi Criteria Analysis.	Pass
0002_026	Glen Avenue from Glentrasna Drive to Ballyhooly Road	Single two-way carriageway with ghost island turning lanes and bus laybys. The road is bounded by residential properties and greenspace. Cross section approx. 12-17m. Existing bus stop (207, 207A, 248) Identified as a future Primary Cycling Route CCN-U15 in Cork Cycle Network Plan 2015.	Additional width could be achieved through extending the alignment into existing greenspace and the removal of on street parking and reallocation general traffic lanes. However as this is an existing bus route it will be taken to Stage 2 Multi Criteria Analysis.	Pass
0002_027	Sydney Park from Sydney Hill to cul de sac	Steep, narrow, retaining wall. On street parking resulting in traffic shuttling. Footway on single side of the road. Not an existing through route. Not an existing bus route. Not Identified as a future cycling route in the Cork Cycle Network Plan 2015.	As this is not currently a through route or an existing bus route and alternative routes are available this section will not be carried forward to the Stage 2 Multi Criteria Analysis.	Fail
0002_028	Ascaill Belgrave from its junction with Wellingtone Road to cul de sac	Single two-carriageway bounded by residential properties. Not currently a through route. The cross section varies from approx. 5-8m. Not an existing bus route. Not identified as a future cycling route in Cork Cycle Network Plan 2015.	Limited opportunity to gain additional width due to the existing building line. As this is not currently a through route or an existing bus route and alternative routes are available this section will not be carried forward to the Stage 2 Multi Criteria Analysis.	Fail
0002_029	Wellington Road/Sidney Place from Sidney Hill to Military Road	Single two-way carriageway without centre line road markings. On street parking predominantly on the south side of the street with sections of parking on both sides of the street. Trees throughout. Level difference between footway and carriageway in sections. Cross section 13-20m. As part of the MacCurtain Street Public Transport Improvement Scheme, where construction is due to commence in the Autumn of 2021 it is proposed to provide a raised pedestrian table at the junction of Sidney Hill and modify the existing parking in the vicinity of Sidney Hill to include the provision of set down spaces and a coach parking area. Not an existing bus route. Identified as a Secondary Route in Cork Cycle Network Plan 2015 (CCN-U34).	Limited opportunity to gain additional width due to the existing building line and presence of retaining structures to the back of footway. However, bus priority lane(s) and/or segregated cycling facilities could be accommodated within existing road boundary. As there are no other alternatives to the existing bus route through this section this link will be taken to Stage 2 Multi Criteria Analysis.	Pass

0002_030	Access road between Alexandra Road and Military Road	Single carriageway two-way with single footway on the north side. Cross section approx. 8m. Formal on-street parallel parking is provided along one side of the carriageway at the western end of this section. At the eastern end parking is prohibited. Not an existing bus route. Not identified as a future cycling route in Cork Cycle Network Plan 2015.	There is limited opportunity to gain additional width due to building lines. As alternative routes are available this section will not be carried forward to the Stage 2 Multi Criteria Analysis.	Fail
0002_031	Leycester's Lane / St Christopher's Drive from St Joseph's Drive to Middle Glanmire Road	Single two way carriageway with footways on both sides of the road, bounded by residential properties and greenspace. Steep gradient throughout with on street parking at sections and off road private off street parking throughout. Most properties are set back from the footway but there are a number at the back of the footway. Cross section 9-11m. Murmont Lawn is an existing bus route. (209) Identified as "feeder" route and partially CCN-U36 in Cork Cycle Network Plan 2015.	Provision of bus priority, segregated cycling facilities and general traffic is not viable due to the scale of works and impact to existing property lines. As alternative routes are available this section will not be carried forward to the Stage 2 Multi Criteria Analysis.	Fail
0002_032	Rathmore Road / Thomas Kent Park between Old Youghal Road and Glen Avenue.	Single two-way carriageway bounded by residential properties, Collins Barracks and Cork prison. At the northern end of this section at the junction with Glen Avenue there is currently perpendicular parking on one side of the carriageway to access the supermarket. The cross section varies from approx. 6-18m. Not an existing bus route. Not Identified as a future cycling route in the Cork Cycle Network Plan 2015.	Limited opportunity to provide bus priority due to scope of the works, the constrained space and existing building line. As alternative routes are available this section will not be carried forward to the Stage 2 Multi Criteria Analysis.	Fail
0002_033	Private road / access from its junction with Military Road to Holy Family Roman Catholic Church linking to Shrewbury Villas	Potential for a new link through church grounds which back onto a residential cul-de-sac(s). Not currently a through route. The cross section varies from approx. 7-10m. Not an existing bus route. Not identified as a future cycling route in Cork Cycle Network Plan 2015.	As this is not currently a through route or an existing bus route and alternative routes are available this section will not be carried forward to the Stage 2 Multi Criteria Analysis.	Fail
0002_034	Summerhill North from its junction with Lower Glanmire Road/ MacCurtain Street to Middle Glanmire Road.	Single two-way carriageway with two southbound / left turn lanes developing on the approach to the junction with MacCurtain Street. Cross section of approx. 13m from back of footway to back of footway. As part of the MacCurtain Street Public Transport Improvement Scheme, where construction is due to commence in the Autumn of 2021, "*a bus only right turn lane from Summerhill North to MacCurtain Street.* " Existing bus route. (207, 207A,208, 209) Identified as a Primary Route in Cork Cycle Network Plan 2015 (CCN-U19).	There is limited opportunity to gain additional width due to building lines (including protected retaining structures) and level difference. However, as this is an existing bus route it will be taken forward to the Stage 2 Multi Criteria Analysis.	Pass

0002_035	N8 Lower Glanmire Rd from Mahony's Avenue/ Lower Grattan Hill to its junction with Summerhill North.	One-way carriageway with 2 outbound general traffic lanes and on-street parking on both sides of the carriageway however these are not continuous. Existing cyclist parking at the southern end of this section. An inbound and outbound cycle track has been provided on the southern side of the carriageway from the entrance to Kent Station to the cyclist parking.Wide (>2m) footways on both sides. Cross section approx. 17.5m. Existing bus route. (200, 208, 214, 241, 261, 600) Identified as a Primary route CCN-U26 in Cork Cycle Network Plan 2015.	As bus priority, segregated cycling facilities and general traffic could be accommodated by reallocating the existing lanes and removing on street parking this section will be carried forward to the Stage 2 Multi Criteria Analysis.	Pass
0002_036	Wellington Road from junction at Military Road to Ballyhooly Road.	Single two-way carriageway with additional (east bound) left turning lane at St Luke's Cross. On Street parking on southside of the carriageway. Cross section of 9-11m from back of footway to back of footway. Not an existing bus route. Identified as a Secondary Route in Cork Cycle Network Plan 2015 (CCN-U34).	Limited opportunity to gain additional width due to the existing building line and presence of retaining structures to the back of footway. As there are no other alternatives to the existing bus route through this section this link will be taken to Stage 2 Multi Criteria Analysis.	Pass
0002_037	Mahony's Avenue/Lower Grattan Hill between Summerhill North and Lower Glanmire Road	Single two-way carriageway with on street parking bounded by residential properties with a narrow footway on one side with a boundary wall opposite. Steep gradient. Not an existing bus route. Not Identified as a future cycling route in the Cork Cycle Network Plan 2015.	Provision of bus priority, segregated cycling facilities and general traffic is not viable due to the scale of works and impact to adjacent houses. As alternative routes are available this section will not be carried forward to the Stage 2 Multi Criteria Analysis.	Fail
0002_038	Alexandra Road/ Charleville Cottages from Old Youghal Road to Wellington Road.	Single two-way carriageway bounded by residential buildings to the west and retaining wall(s) to the east. Informal on street parking throughout this section. Steep gradient. The cross section varies from 5.5-7m. Not an existing bus route. Identified as a "feeder" route in Cork Cycle Network Plan 2015.	Limited opportunity to provide bus priority due to scope of the works, the level difference to the east and existing building line. As alternative routes are available this section will not be carried forward to the Stage 2 Multi Criteria Analysis.	Fail
0002_039	Ballyhooly Road from its junction with Middle Glanmire Road to Old Youghal Road.	Single two-way carriageway with footways on both sides of the road, on street parallel parking on the east side with a moderate. Cross section of 11-12m. Existing bus route. (248, 207, 207A, 208, 209) Identified as a future Primary Cycling Route CCN-U18 in Cork Cycle Network Plan 2015.	Limited opportunity to provide bus priority due to the constrained space, level differences and existing building line. However as this is an existing bus route it will be taken to Stage 2 Multi Criteria Analysis.	Pass

0002_040	Gardiners Hill from Ballyhooly Road to Old Youghal Road.	Single two-way carriageway bounded by residential properties this narrows to outbound traffic only at the northern end. Steep gradient with single footway on one side of the road only for long sections. The cross section varies from approx. 6.5-9m. Not an existing bus route. Identified as a "feeder" route in Cork Cycle Network Plan 2015.	Limited opportunity to provide bus priority due to scope of the works, the constrained space, level differences and existing building line. However, as alternative cycle routes are limited and this route has been identified as a "feeder route" in the Cork Cycle Network Plan it will be carried forward to the Stage 2 Multi Criteria Analysis as an alternative NMU route Only.	Pass*
0002_041	Ballyhooly Road from its junction with the Old Youghal Road to Glen Avenue	Single two-way carriageway with footways on both sides and on street parking on the west side. The road is bounded by residential properties on both sides of the road with building lines to the back of footways. Cross section 10-11m. Existing bus route. (207,248) Identified as a future Primary Cycling Route CCN-U18 in Cork Cycle Network Plan 2015.	Limited opportunity to provide bus priority due to the constrained space and existing building line. However as this is an existing bus route it will be taken to Stage 2 Multi Criteria Analysis.	Pass
0002_042	Old Youghal Road between Rathmore Road / Charleville Cottages and Glen Avenue.	Single two way carriageway with footways on both sides of the road, bounded by residential properties. On street parking throughout and a cross section which varies from 9-11m. Existing bus route. (209) Identified as a future Secondary Cycle Route CCN-U35 in Cork Cycle Network Plan 2015.	Limited opportunity to provide bus priority due to the constrained space and existing building line. However as this is an existing bus route it will be taken to Stage 2 Multi Criteria Analysis.	Pass
0002_043	Bridge Street from Camden Place/ St Patricks Quay to Coburg Street/ MacCurtain Street.	Single two-way carriageway with footways on both sides of the road, on street parallel parking on the east side with a moderate gradient. Cross section of 11-12m. Existing bus route. (200,205, 207, 207A, 208, 209,212) Identified as a future Primary Cycling Route CCN-U18 in Cork Cycle Network Plan 2015.	Limited opportunity to provide bus priority due to the constrained space, level differences and existing building line. However as this is an existing bus route it will be taken to Stage 2 Multi Criteria Analysis.	Pass
0002_044	Middle Glanmire Road between Ballyhooly Road and Leycester's Lane.	Single two-way carriageway bounded by residential properties and retaining walls. The cross section varies from approx. 5-9m. Not an existing bus route. Moderate slope throughout. Identified as a future Primary Cycling Route CCN-U22 in Cork Cycle Network Plan 2015.	Limited opportunity to provide bus priority due to scope of the works, the constrained space, level differences and existing building line. As alternative routes are available this section will not be carried forward to the Stage 2 Multi Criteria Analysis.	Fail

0002_045	Gardiners Hill Avenue / Stream Hill from Gardiners Hill to Old Youghal Road.	Single one-way carriageway with no footway and on street parking. The cross section varies from 3 - 5m. Not an existing bus route. Identified as "feeder" route in Cork Cycle Network Plan 2015.	Limited opportunity to provide bus priority due to scope of the works, the constrained space and existing building line. As alternative routes are available this section will not be carried forward to the Stage 2 Multi Criteria Analysis.	Fail
0002_046	Ballyhooly Road between Glen Avenue and Glen Park	Single two-way carriageway with residential properties and footways on both sides of the road. Cross section of 10-12m. Existing bus route. (207,248) Identified as a future Primary Cycling Route CCN-U18 in Cork Cycle Network Plan 2015.	As bus priority, segregated cycling facilities and general traffic could be accommodated by extending the alignment into third party land this section will be carried forward to the Stage 2 Multi Criteria Analysis.	Pass
0002_047	Old Youghal Road between Ballyhooly Road and Gordons Hill	Single two way carriageway with footways on both sides of the road and bounded by residential properties. The cross section varies 8-13m with through traffic often required to yield resulting in shuttle runs due to on street parking. Existing bus route. (208, 209) Identified as Primary Cycle Route CCN-U21 in Cork Cycle Network Plan 2015.	Limited opportunity to provide bus priority due to the constrained space and existing building line. However as this is an existing bus route it will be taken to Stage 2 Multi Criteria Analysis.	Pass
0002_048	Gordon's Hill between Old Youghal Road and Ballyhooly Road.	Single two way carriageway with some informal on street parking. There is a steep slope with narrow footway on the east side. Cross section ~10m. Not an existing bus route. Not Identified as a future cycling route in the Cork Cycle Network Plan 2015.	Provision of bus priority, segregated cycling facilities and general traffic is not viable due to the gradient, the scale of works and impact to adjacent houses. As alternative routes are available this section will not be carried forward to the Stage 2 Multi Criteria Analysis.	Fail
0002_049	Ballyhooly Road from entrance to Glen Park to North Ring Road.	Single two-way carriageway with additional outbound bus lanes and cycle lane (with light segregation at North Ring Road junction) and a inbound mandatory cycle lane. Cross Section 11-13m Existing bus route. (207) Identified as a future Primary Cycling Route CCN-U18 in Cork Cycle Network Plan 2015.	As bus priority, segregated cycling facilities and general traffic could be accommodated by extending the alignment into third party land, realigning footways and reallocating existing general traffic lanes this section it will be carried forward to the Stage 2 Multi Criteria Analysis.	Pass
0002_050	Not Used			
0002_051	St Josephs Drive / Ashburton Hill from Murmont Lawn to Gardiners Hill.	Single two way carriageway with one narrow footway on both sides of the road and steep gradient. Cross section approx. 8m. Not an existing bus route. Identified as a future Secondary Route CCN-U36 in Cork Cycle Network Plan 2015.	Provision of bus priority, segregated cycling facilities and general traffic is not viable due to the scale of works and impact to adjacent houses. As alternative routes are available this section will not be carried forward to the Stage 2 Multi Criteria Analysis.	Fail

0002_052	Murmont Lawn between Old Youghal Road and St Josephs Drive.	Single two way carriageway with footways on both sides of the road, bounded by residential properties and greenspace. Steep gradient throughout with on street parking at sections and off road private off street parking throughout. Most properties are set back from the footway but there are a number at the back of the footway. Cross section approx. 9-11m. Existing bus route. (209) Identified as "feeder" route and partially CCN-U36 in Cork Cycle Network Plan 2015.	There is limited opportunity to gain additional width due to building lines. As this is an existing bus route and it will be taken to Stage 2 Multi Criteria Analysis.	Pass
0002_053	Old Youghal Road between Gordon's Hill and Murmont Lawn	Single two way carriageway with footways on both sides of the road, bounded by residential properties and a church. The existing cross section varies from approx. 10-12m. Existing bus route (208, 209) Identified as a future Primary Cycling Route CCN-U21 in Cork Cycle Network Plan 2015.	Limited opportunity to provide bus priority due to the constrained space and existing building line. However as this is an existing bus route it will be taken to Stage 2 Multi Criteria Analysis.	Pass
0002_054	Old Youghal Road from Murmont Lawn to Iona Park.	Single two-way carriageway with on street parking and an inbound bus lane. The cross section varies from approx. 15-19m. Existing bus route. (208) Identified as primary route CCN-U21 in Cork Cycle Network Plan 2015.	As bus priority, segregated cycling facilities and general traffic could be accommodated by extending the alignment into third party land and reallocating existing general traffic lanes this section it will be carried forward to the Stage 2 Multi Criteria Analysis.	Pass
0002_055	Cahergal Lawn from Gordon's Hill to the east end of Cahergal Lawn (cul de sac).	Single two-way carriageway with on street and off street parking. Currently a residential cul-de-sac. This link has pinch points where the cross section varies from 10-12m with Not an existing bus route. Not Identified as a future cycling route in the Cork Cycle Network Plan 2015.	Limited scope to tie into Old Youghal Rd due to the current building line and the level difference to south and the adjacent link (0002_066). As this is not currently a through route and an alternative route is available this section will not be carried forward to the Stage 2 Multi Criteria Analysis.	Fail
0002_056	Access road to Mayfield Community School	Private access road. Single two-way carriageway with parking.	Limited scope to tie into Cahergal Lawn due to the level difference (0002_055). As this is not currently a through route and an alternative route is available this section will not be carried forward to the Stage 2 Multi Criteria Analysis.	Fail
0002_057	Mount Brosna from Old Youghal Road (cul de sac).	Single two-way residential cul-de-sac with footway on one side of the road and on street parking. Not an existing bus route. Not Identified as a future cycling route in the Cork Cycle Network Plan 2015.	As this is not currently a through route or an existing bus route and alternative routes are available this section will not be carried forward to the Stage 2 Multi Criteria Analysis.	Fail

0002_058	North Ring Road from Ballyhooly Road to Old Youghal Road	Urban ring road with sections of dual two-way carriageway with no central reservation, wide single carriageway with overtaking lanes and ghost island junctions. Bounded by greenspace and some commercial uses. Cross section 12-15m. Existing bus route. (201) Identified as a future Primary Cycling Route CCN-U23 in Cork Cycle Network Plan 2015.	As bus priority, segregated cycling facilities and general traffic could be accommodated by extending the alignment into third party land this section it will be carried forward to the Stage 2 Multi Criteria Analysis. This would require tree removal throughout the route.	Pass
0002_059	Middle Glanmire Road from Leycester's Lane to Tracton Avenue.	Single two-way carriageway with narrow footway on one side of the carriageway. Shuttling in operation along some sections. Bounded by third party land and residential gardens. The cross section varies significantly across this length from approx. 5-17m. Not an existing bus route Identified as primary route CCN-U22 in Cork Cycle Network Plan 2015.	Provision of bus priority, segregated cycling facilities and general traffic is not viable due to the scale of works and impact to adjacent houses and retaining structures. As alternative routes are available this section will not be carried forward to the Stage 2 Multi Criteria Analysis.	Fail
0002_060	Murmont Avenue/Murmont Road from Murmont Lawn to Iona Road	Single two-way carriageway bounded by residential properties, greenspace and sports grounds. Cross section approx. 7-12m. Existing bus route. (209) Identified as secondary route CCN-U36 in Cork Cycle Network Plan 2015.	As this is an existing bus route and general traffic, bus priority or segregated cycling facilities could be accommodated by extending the alignment into third party land this section it will be carried forward to the Stage 2 Multi Criteria Analysis. This would require tree removal throughout the route.	Pass
0002_061	Murmont Circle just off Murmont Avenue.	Single two-way residential crescent. Cross section approx. 10-11m. Not an existing bus route. Not identified in Cork Cycle Network Plan 2015.	Provision of bus priority, segregated cycling facilities and general traffic is not viable due to the scale of works and impact to adjacent houses and retaining structures. As alternative routes are available this section will not be carried forward to the Stage 2 Multi Criteria Analysis.	Fail
0002_062	Murmont Park from Old Youghal Road to Murmont Road/ Avenue.	Single two-way carriageway with footways on both sides except alongside the greenspace. Not an existing bus route. Not identified in Cork Cycle Network Plan 2015.	Potential to gain additional width from greenspace or from private gardens. However, steep gradient may make this route less accessible. Therefore, it will not be taken to stage 2.	Fail
0002_063	Tracton Avenue (Private Road)from Middle Glanmire Road to Iona Road	Private access road adjacent to Scoil Bernadette with perpendicular parking for some of the section and discontinuous footways. Pinch point where the building line to building line is approx. 14m. Not an existing bus route. Not identified in Cork Cycle Network Plan 2015.	As this is not currently a public road or a through route and alternative routes are available this section will not be carried forward to the Stage 2 Multi Criteria Analysis.	Fail

0002_064	Iona Road from Murmont Road to Colmcille Avenue	Single two-way carriageway bounded by residential properties, greenspace and sports grounds. Cross section approx. 10-11m. Existing bus route. (209) Identified as secondary route CCN-U36 in Cork Cycle Network Plan 2015.	As this is an existing bus route and general traffic, bus priority and/or segregated cycling facilities could be accommodated by extending the alignment into third party land this section it will be carried forward to the Stage 2 Multi Criteria Analysis. This would require tree removal throughout the route.	Fail
0002_065	Murmont Crescent from Murmont Park to Colmcille Avenue/ Iona Park.	Single two-way carriageway on residential street with on street parking. Cross section 9-12m. Not an existing bus route. Not identified in Cork Cycle Network Plan 2015.	Provision of bus priority, segregated cycling facilities and general traffic is not viable due to the scale of works and impact to adjacent houses and retaining structures. As alternative routes are available this section will not be carried forward to the Stage 2 Multi Criteria Analysis.	Fail
0002_066	Not used			
0002_066	Murmont Road between Iona Road.	Single two-way carriageway bounded by residential properties. Existing bus route (209) Not identified in Cork Cycle Network Plan 2015.	As this is an existing bus route and general traffic, bus priority and/or segregated cycling facilities could be accommodated by extending the alignment into third party land this section it will be carried forward to the Stage 2 Multi Criteria Analysis.	Pass
0002_067	Existing footway from Mount Brosna to Glenamoy Lawn.	Existing footways (approx. cross section 3m). Not identified in Cork Cycle Network Plan 2015.	Provision of bus priority and segregated cycling facilities is not viable due to the scale of works and impact to adjacent houses and retaining structures. As alternative routes are available this section will not be carried forward to the Stage 2 Multi Criteria Analysis.	Fail
0002_068	Middle Glanmire Road from Tracton Avenue to Colmcille Avenue	Single two-way carriageway bounded by residential properties, greenspace, agricultural land. Cross section approx. 12-14m. Not an existing bus route. Identified as primary cycle route CCN-U22 in Cork Cycle Network Plan 2015.	As bus priority, segregated cycling facilities and general traffic could be accommodated by extending the alignment into third party land this section it will be carried forward to the Stage 2 Multi Criteria Analysis.	Pass
0002_069	Inis Eoghin from Middle Glanmire Road to Sli Gartan	Single two-way carriageway with on street and off street parking. Bounded by residential properties and greenspace. Not an existing through route for general traffic. Cross section approx. 12-14m. Not an existing bus route. Not identified in Cork Cycle Network Plan 2015.	As this is not currently a through route or an existing bus route and alternative routes are available this section will not be carried forward to the Stage 2 Multi Criteria Analysis.	Fail
0002_070	Tracton Avenue from Middle Glanmire Road (cul-de-sac)	Single two-way carriageway with on street parking and footways on both sides. Bounded by residential properties and greenspace. Not currently a through route for vehicular traffic. Not an existing bus route. Not identified in Cork Cycle Network Plan 2015.	As this is not currently a through route or an existing bus route and alternative routes are available this section will not be carried forward to the Stage 2 Multi Criteria Analysis.	Fail

0002_071	Colmcille Avenue from Murmont Crescent to Middle Glanmire Road.	Single two-way carriageway with on street parking bays in sections. Large green space to the North East. Cross section 11-15m. Existing bus route. (208, 209) Identified as primary and secondary routes CCN-U37 and CCN-U22.	As this is an existing bus route and general traffic, bus priority and/or segregated cycling facilities could be accommodated by extending the alignment into third party land this section it will be carried forward to the Stage 2 Multi Criteria Analysis.	Pass
0002_072	Murmont Road between Iona Road.	Single two-way carriageway bounded by residential properties. Existing bus route (209) Not identified in Cork Cycle Network Plan 2015.	As this is an existing bus route and general traffic, bus priority and/or segregated cycling facilities could be accommodated by extending the alignment into third party land this section it will be carried forward to the Stage 2 Multi Criteria Analysis.	Pass
0002_073	Kerry Road From Colmcille Avenue to Sli Gartan	Single two-way carriageway with formal on street parking on the east side of the carriageway. Cross-section approx 15m. Not an existing bus route. Not identified in Cork Cycle Network Plan 2015.	As this is not currently a through route or an existing bus route and alternative routes are available this section will not be carried forward to the Stage 2 Multi Criteria Analysis.	Fail
0002_074	Inis Colm Road from Old Youghal Road to Murmont Crescent.	Single two-way carriageway with on street parking on the west side. Cross section approx. 13-15m. Existing bus route. (208) Identified as secondary cycle route CCN-U37 in Cork Cycle Network Plan 2015.	As this is an existing bus route and general traffic, bus priority and/or segregated cycling facilities could be accommodated by extending the alignment into third party land this section it will be carried forward to the Stage 2 Multi Criteria Analysis.	Pass
0002_075	Old Youghal Road from Iona Park to Silversprings Road	Single two-way carriageway with additional west bound bus lane in sections. Footways on both sides with on street parking. The cross section varies from approx. 10-21m. Existing bus route. (208) Identified as primary route CCN-U21 in Cork Cycle Network Plan 2015.	As this is an existing bus route and general traffic, bus priority and/or segregated cycling facilities could be accommodated by extending the alignment into third party land this section it will be carried forward to the Stage 2 Multi Criteria Analysis.	Pass
0002_076	Glenamoy Lawn (cul de sac)	Single two way residential street. No through route for vehicles. Pedestrian access via steps to Glencree Crescent .Steep gradient (approx 10%) Cross section varies from approx. 15-23m with grass verges to the back of footway. Not an existing bus route. Not identified in Cork Cycle Network Plan 2015.	As this is not currently a through route or an existing bus route and alternative routes are available this section will not be carried forward to the Stage 2 Multi Criteria Analysis.	Pass*

0002_077	Glencree Crescent from North Ring Road to Glenamoy Lawn	Single two way residential street. No through route for vehicles. Pedestrian access via steps to Glenamoy Ave (approx. 10% gradient). Cross section varies from approx. 15-18m with large grass verges between footway and carriageway. Not an existing bus route. Not identified in Cork Cycle Network Plan 2015.	As this is not currently a through route or an existing bus route and alternative routes are available this section will not be carried forward to the Stage 2 Multi Criteria Analysis.	Fail
0002_078	Colmcille Avenue from Middle Glanmire Road to North Ring Road.	Single two-way carriageway with additional turning lane at North Ring Road. Cross section approx. >18m. Existing bus route. (208, 209) Identified as primary route CCN-U22 in Cork Cycle Network Plan 2015.	As bus priority, segregated cycling facilities and general traffic could be accommodated by realigning footways ad reassigning general traffic lanes this section it will be carried forward to the Stage 2 Multi Criteria Analysis.	Pass
0002_079	Sli Gartan from Colmcille Avenue to Kerry Road.	Single two-way carriageway bounded by residential properties and Colmcille Park. Cross section approx. 10-11m. Existing bus route. (209) Not identified in Cork Cycle Network Plan 2015.	As this is an existing bus route and general traffic, bus priority and/or segregated cycling facilities could be accommodated by extending the alignment into third party land this section it will be carried forward to the Stage 2 Multi Criteria Analysis.	Pass
0002_080	Potential new link from the R635 North Ring Road to Glenamoy Lawn.	Existing footways / path (approx. cross section 2m). Not identified in Cork Cycle Network Plan 2015.	Limited scope to create a new bus link due to the existing gradient/cross slope and level differences. As this is not currently a through route and an alternative route is available this section will not be carried forward to the Stage 2 Multi Criteria Analysis.	Pass*
0002_081	Cahergal Lawn from Gordon's Hill to the Cahergal Avenue	Single two-way carriageway with on street and off street parking. Currently a residential cul-de-sac. This link has pinch points where the cross section varies from 10-12m with Not an existing bus route. Not Identified as a future cycling route in the Cork Cycle Network Plan 2015.	Limited opportunity to provide bus priority due to the constrained space and existing building line. As alternative routes are available this section will not be carried forward to the Stage 2 Multi Criteria Analysis.	Fail
0002_082	New link from Cahergal Avenue to Oakpark continuing to Ballyhooly Road	Single two-way carriageway within a cul-de-sac. Not an existing through route. Cross-section approx 10m. Not an existing bus route. Not identified in Cork Cycle Network Plan 2015.	Limited opportunity to provide bus priority due to scope of the works, the constrained space, level differences and existing building line. However, this could be used as a cycle provision so will be carried forward to Stage 2 Multi Criteria Analysis.	Pass*
0002_083	Existing footway from Old Youghal road to Cahergal Lawn	Existing footways / path (approx. cross section 2m). Not identified in Cork Cycle Network Plan 2015.	Limited scope to create a new bus link due to the existing gradient/cross slope and level differences. As this is not currently a through route and an alternative route is available this section will not be carried forward to the Stage 2 Multi Criteria Analysis as a bus route however will be progressed as a potential cycle link.	Pass*

0002_084	Cahergal Lawn from existing footway to Cahergal Avenue.	Single two-way carriageway with on street and off street parking. Currently a residential cul-de-sac. Not an existing bus route. Not Identified as a future cycling route in the Cork Cycle Network Plan 2015.	As this is not currently a through route or an existing bus route and alternative routes are available this section will not be carried forward to the Stage 2 Multi Criteria Analysis as a bus route however will be porgressed as a potenital cycle link.	Pass*
0002_085	Not used	-	-	-
0002_086	Not used	-	-	-
0002_087	Kerry Road from Colmcille Avenue to Old Youghal Road.	Single two-way carriageway with on street parking. The cross section varies from approx. 11-17m. Existing bus route. (209) Not identified in Cork Cycle Network Plan 2015.	As this is an existing bus route and general traffic, bus priority and/or segregated cycling facilities could be accommodated by extending the alignment into third party land this section it will be carried forward to the Stage 2 Multi Criteria Analysis.	Pass
0002_088	Not used	-	-	-
0002_089	Not used	-	-	-
0002_090	Not used	-	-	-
0002_091	Not used	-	-	-
0002_092	Not used	-	-	-
0002_093	New Road/Kelleher's Buildings between Old Youghal Road and Gardiners Hill	Single two-way carriageway bounded by residential properties. The cross section is approx. 9-11m. Not an existing bus route. Not Identified as a future cycling route in the Cork Cycle Network Plan 2015.	Limited opportunity to provide bus priority due to the constrained space and existing building line. As alternative routes are available this section will not be carried forward to the Stage 2 Multi Criteria Analysis.	Fail
0002_094	St Patrick's Hill between MacCurtain Street and St Patrick's Place/Hardwick Street/ Wellington Road	Single lane one-way (southbound) carriageway bounded by buildings on both sides of the road. There is a steep slope approx 13% gradient with a cross section of 6-14m. As part of the MacCurtain Street Public Transport Improvement Scheme, where construction is due to commence in the Autumn of 2021 it is proposed to reverse this section from southbound to northbound traffic flow and to relocate the existing on-street parking from the western side of the street to the eastern side. Not an existing bus route. Not Identified as a future cycling route in the Cork Cycle Network Plan 2015.	Limited opportunity to gain additional width due to the existing building line and presence of retaining structures to the back of footway. As there are no other alternatives to the existing bus route through this section this link will be taken to Stage 2 Multi Criteria Analysis.	Pass
0002_095	Old Youghal road from tinkers Cross to the end of the row of properties.	Single two-way carriageway bounded with residential properties on one side of the footway and greenspace to the other. Footways on both sides of the carriageway. The cross section varies from approx. 9.5-10.5m.Not an existing through route for vehicular traffic.	As general traffic, bus priority and/or segregated cycling facilities could be accommodated by extending the alignment into third party land this section it will be carried forward to the Stage 2 Multi Criteria Analysis.	Pass

0002_096	Silverheights Road / lotamore Drive from Lower Mayfield Road to Old Youghal road	Single two-way carriageway bounded by residential properties on both sides of the carriageway. Footways on both sides of the carriageway. The cross section varies from approx. 9.5-10.5m.Not an existing through route for vehicular traffic.	Limited opportunity to provide bus priority due to scope of the works, the constrained space, level differences and existing building line. However, this could be used as a quiet streets cycle provision so will be carried forward to Stage 2 Multi Criteria Analysis.	Pass*

Appendix B

SAS1 (CITY CENTRE TO DILLONS CROSS)

CBC 2 – TABLE 1: SAS1 (CITY CENTRE TO DILLON'S CROSS) MULTI CRITERIA ANALYSIS

		Option A1	Option A2	Option A3	Option A4	Option A5
Economy	1a.Capital Cost					
	1b. Average Journey-time					
	1c. Journey-time reliability and Consistency					
Integration	2a.Land Use Integration					
	2b.Residential Population and Employment Catchments					
	2c.Transport Network Integration					
	2d. Cyclists Integration					
	2e Pedestrian Integration					
Accessibility and Social Inclusion	3a.Key Trip Attractors (Education/ Health/ Commercial)					
	3b.Deprived Geographic Areas					
Safety	4. Road User Safety					
Environment	5a.Archaeology and Cultural heritage					
	5b.Biodiversity					
	5c.Soils and Geology					
	5d.Water Resources					
	5e. Landscape and Visual					
	5f.Noise, Vibration & Air					
	5g. Land Use and the Built Environment					

	Analysis Sub-Criteria	Route Option A1	Route Option A2	Route Option A3	Route Option A4	Route Option A5
Economy	1a.Capital Costs	€9,180,000	€2,520,000	€7,150,000	€3,500,000	€7,150,000
	1a.Rank					
	1b.Average Journey Time (min)	7.3	5.2	6.3	5.7	6.0
	1b.Rank					
	1c. Journey Time Reliability and Consistency	Bus Lane 48% Junction of ST Patricks Hill and wellington will have a negative impact on the journey time reliability	Bus Lane 45% Bus Gate has been added on Summerhill to provide additional reliability over vehicular traffic	Bus Lane 28% Junction of ST Patricks Hill and wellington will have a negative impact on the journey time reliability	Bus Lane 26% Signalised controlled priority on outbound and inbound lanes along Summerhill North	Bus Lane 11% Junction of ST Patricks Hill and wellington will have a negative impact on the journey time reliability
	1c.Rank					
Integration	2a.Land Use Integration	No difference	No difference	No difference	No difference	No difference
	2a.Rank					

	Analysis Sub-Criteria	Route Option A1	Route Option A2	Route Option A3	Route Option A4	Route Option A5
	2b.Residential Population and Employment Catchments	***Residential Population Catchments*** • 5 minute walk catchment of approximately 4,209 • 10 minute walk catchment of approximately 10,925 • 15 minute walk catchment of approximately 23,007 ***Employment Catchment*** • 15 minute walk catchment of approximately 23,260	***Residential Population Catchments*** • 5 minute walk catchment of approximately 3,630 • 10 minute walk catchment of approximately 11,206 • 15 minute walk catchment of approximately 23,079 ***Employment Catchment*** • 15 minute walk catchment of approximately 24,091.	***Residential Population Catchments*** • 5 minute walk catchment of approximately 4,023 • 10 minute walk catchment of approximately 11,395 • 15 minute walk catchment of approximately 23,057 ***Employment Catchment*** • 15 minute walk catchment of approximately 23,274	***Residential Population Catchments*** • 5 minute walk catchment of approximately 3,630 • 10 minute walk catchment of approximately 11,206 • 15 minute walk catchment of approximately 23,079 ***Employment Catchment*** • 15 minute walk catchment of approximately 24,091.	***Residential Population Catchments*** • 5 minute walk catchment of approximately 4,023 • 10 minute walk catchment of approximately 11,395 • 15 minute walk catchment of approximately 23,057 ***Employment Catchment*** • 15 minute walk catchment of approximately 23,274.
	2b.Rank					

	Analysis Sub-Criteria	Route Option A1	Route Option A2	Route Option A3	Route Option A4	Route Option A5
	2c.Transport Network Integration	Cycle track terminates close to public bike share docking station on Lower Glanmire Road. Bus route partially on existing 209 route on Old Youghal Road. One-way restrictions for general traffic on Wellington Road	Cycle track terminates close to public bike share docking station on Lower Glanmire Road. Bus route follows the 207, 208, 209 routes. Through traffic removed on Summerhill North. One-way restrictions for general traffic on Ballyhooly Road.	Cycle track terminates close to public bike share docking station on Lower Glanmire Road. Bus route partially follows the 207, 208, 209 routes One-way restrictions for general traffic on Ballyhooly Road.	Cycle track terminates close to public bike share docking station on Lower Glanmire Road. Bus route follows the 207, 208, 209 routes. Limited impact on general traffic.	Cycle track terminates close to public bike share docking station on Lower Glanmire Road Bus route partially follows the 207, 208, 209 routes Limited impact on general traffic.
	2c.Rank					

	Analysis Sub-Criteria	Route Option A1	Route Option A2	Route Option A3	Route Option A4	Route Option A5
	2d.Cyclist Integration	Primary Route CCN-U18 and CCN U19 Cycle track is 1.5m both directions on Summerhill North No inbound cycle track on Ballyhooley Road	Primary Route CCN-U18 and CCN U19 Same as Option 1 expect buses are routed along the same route. No inbound cycle track on Ballyhooley Road	Primary Route CCN-U18 and CCN U19 Same as Option 1 & 2 expect buses are not on Summerhill. No inbound cycle track on Ballyhooley Road	Secondary Route CCN-U34. Cycle route remains separated from buses. Inbound and outbound cycle tracks along York Street and Wellington Road. Cycle route ties into Gardiner's Hill under a 'Quiet Streets' approach.	Primary Route CCN-U19 Cycle route remains separated from buses. Cycle route ties into Gardiner's Hill under a 'Quiet Streets' approach.
	2d.Rank					
	2e.Pedestrian Integration	No appreciable differences				
	2e.Rank					
Accessibility and Social Inclusion	3a.Key Trip Attractors	Collins Barracks Museum Cork Prison. Numerous Primary, Secondary School & Third level education.	MacCurtain Street (Commercial) Numerous Primary and Secondary School	Numerous Primary, Secondary School & Third level education.	MacCurtain Street (Commercial) Numerous Primary and Secondary School	Numerous Primary, Secondary School & Third level education.
	Rank					

	Analysis Sub-Criteria	Route Option A1	Route Option A2	Route Option A3	Route Option A4	Route Option A5
	3b.Deprived Geographic Areas	Mainly affluent, some disadvantaged areas.	Mainly affluent	Mainly affluent	Mainly affluent	Mainly affluent
	Rank					
Safety	4.Road Safety	No. of Junctions: 6 5 turning movements required inbound (2 Right Turn /3 Left Turn) 5 turning movements required outbound (3 Right Turn /2 Left Turn)	No. of Junctions: 5 2 turning movements required inbound (1 Right Turn /1 Left Turn) 2 turning movements required outbound (1 Right Turn /1 Left Turn)	No. of Junctions: 6 2 turning movements required inbound (1 Right Turn /1 Left Turn) 2 turning movements required outbound (1 Right Turn /1 Left Turn)	No. of Junctions: 5 2 turning movements required inbound (1 Right Turn /1 Left Turn) 2 turning movements required outbound (1 Right Turn /1 Left Turn)	No. of Junctions: 6 2 turning movements required inbound (1 Right Turn /1 Left Turn) 2 turning movements required outbound (1 Right Turn /1 Left Turn)
	Rank					

	Analysis Sub-Criteria	Route Option A1	Route Option A2	Route Option A3	Route Option A4	Route Option A5
Environment	5a.Archaeological, Architectural and Cultural Heritage	The route option is adjacent to numerous protected structures and is located within the Coburg Street and Wellington Road/St. Lukes Architectural Conservation Areas (ACA). There are also 19th century cobbles / paving, and railings, gates, and walls along Wellington Road that are recorded in the NIAH, and may encroach upon the available cross-section.	The route option is adjacent to numerous protected structures but avoids the main thoroughfare through the Wellington Road/St Luke's ACA. There are also fewer buildings and structures recorded in the NIAH.	The route option is adjacent to numerous protected structures and is located within the Coburg Street and Wellington Road/St. Lukes Architectural Conservation Areas (ACA). There are also 19th century cobbles / paving, and railings, gates, and walls along Wellington Road that are recorded in the NIAH, and may encroach upon the available cross-section.	The route option is adjacent to numerous protected structures and is located within the Coburg Street and Wellington Road/St. Lukes Architectural Conservation Areas (ACA). There are 19th century cobbles / railings, gates, and walls along Wellington Road that are recorded in the NIAH, and may encroach upon the available cross-section.	The route option is adjacent to numerous protected structures and is located within the Coburg Street and Wellington Road/St. Lukes Architectural Conservation Areas (ACA). There are also 19th century cobbles / paving, and railings, gates, and walls along Wellington Road that are recorded in the NIAH, and may encroach upon the available cross-section.
	Rank					
	5b.Biodiversity	Limited land take and located in an urban setting. Significant impacts to biodiversity unlikely.	Limited land take and located in an urban setting. Significant impacts to biodiversity unlikely.	Limited land take and located in an urban setting. Significant impacts to biodiversity unlikely.	Limited land take and located in an urban setting. Significant impacts to biodiversity unlikely.	Limited land take and located in an urban setting. Significant impacts to biodiversity unlikely.
	Rank					
	5c.Soils and Geology	No appreciable impacts	No appreciable impacts	No appreciable impacts	No appreciable impacts	No appreciable impacts

	Analysis Sub-Criteria	Route Option A1	Route Option A2	Route Option A3	Route Option A4	Route Option A5
	Rank					
	5d.Water Resources	Potential Risk of Fluvial and Tidal flooding from River Lee. Widening required on bend slightly increasing surface-water runoff / flood risk from increased impermeable surface.	Potential Risk of Fluvial and Tidal flooding from River Lee. Potential carriageway widening slightly increasing surface-water runoff / flood risk from increased impermeable surface.	Potential Risk of Fluvial and Tidal flooding from River Lee. Potential carriageway widening slightly increasing surface-water runoff / flood risk from increased impermeable surface.	Potential Risk of Fluvial and Tidal flooding from River Lee. Potential carriageway widening slightly increasing surface-water runoff / flood risk from increased impermeable surface.	Potential Risk of Fluvial and Tidal flooding from River Lee. Potential carriageway widening slightly increasing surface-water runoff / flood risk from increased impermeable surface.
	Rank					
	5e. Landscape and Visual	Adverse impacts associated with the removal of walls and encroachment into front gardens at Military Road.	Option will involve the removal of walls and encroachment on Ballyhooly road	Option will involve the removal of walls and encroachment on Ballyhooly road	Option will involve the removal of walls and encroachment into front gardens at Wellington Road	Option will involve the removal of walls and encroachment on Ballyhooly road
	Rank					

	Analysis Sub-Criteria	Route Option A1	Route Option A2	Route Option A3	Route Option A4	Route Option A5
	5f.Noise, Vibration and Air	Possible impacts due to increased trafficking of road networks and increased proximity of vehicles to houses and gardens if bus lanes installed. Bus lane reduces through traffic on Wellington Road but increases vehicular traffic on Ballyhooly Road	Possible impacts due to increased trafficking of road networks and increased proximity of vehicles to houses and gardens if bus lanes installed. Increased cars on adjacent roads as through traffic removed from Summerhill North and Ballyhooly Road.	Possible impacts due to increased trafficking of road networks and increased proximity of vehicles to houses and gardens if bus lanes installed. Increased cars on adjacent roads as through traffic removed from Ballyhooly Road	Vehicular lanes do not move closer to existing property so no Possible impacts due to increased trafficking of road networks and increased proximity of vehicles to houses and gardens if bus lanes installed. Quiet streets treatment in Gardiners Hill results in improvement for pedestrians and cyclists.	Possible impacts due to increased trafficking of road networks and increased proximity of vehicles to houses and gardens if bus lanes installed. Increased cars on Summerhill North Increased bus and cars on Wellington Road. Quiet streets treatment in Gardiners Hill results in improvement for pedestrians and cyclists
	Rank					
	5g. Land Use and the Built Environment	There would be some loss of car parking spaces and some parking spaces would be provided..	There would be some loss of car parking spaces and some parking spaces would be provided.	There would be some loss of car parking spaces and some parking spaces would be provided.	There would be some loss of car parking spaces and some parking spaces would be provided.	There would be some loss of car parking spaces and some parking spaces would be provided.
	Rank					

Appendix C

SAS2 (DILLONS CROSS TO OLD YOUGHAL ROAD, EAST OF TINKERS CROSS)

CBC 2 – TABLE 2: SAS 2 (OLD YOUGHAL ROAD TO EAST OF TINKERS CROSS) MULTI CRITERIA ANALYSIS

		Option B1	Option B2	Option B3	Option B4	Option B5	Option B6	Option B7
Economy	1a.Capital Cost							
	1b. Average Journey-time							
	1c. Journey-time reliability and Consistency							
Integration	2a.Land Use Integration							
	2b.Residential Population and Employment Catchments							
	2c.Transport Network Integration							
	2d. Cyclists Integration							
	2e Pedestrian Integration							
Accessibility and Social Inclusion	3a.Key Trip Attractors (Education/ Health/ Commercial)							
	3b.Deprived Geographic Areas							
Safety	4. Road User Safety							
Environment	5a.Archaeology and Cultural heritage							
	5b.Biodiversity							
	5c.Soils and Geology							
	5d.Water Resources							
	5e. Landscape and Visual							
	5f.Noise, Vibration & Air							
	5g. Land Use and the Built Environment							

	Analysis Sub-Criteria	Route Option B1	Route Option B2	Route Option B3	Route Option B4	Route Option B5	Route Option B6	Route Option B7
Economy	1a.Capital Costs	€18,030,000	€16,310,000	€19,140,000	€22,530,000	€19,730,000	€19,500,000	€21,890,000
	1a.Rank							
	1b.Average Journey Time (min)	10.1	12.6	10.1	16.9	7.8	7.8	8.4
	1b.Rank							
	1c. Journey Time Reliability and Consistency	100% Bus priority due to inclusion of Bus lane east of Tinkers Cross & Bus Priority (bus gate) for the route between Dillon's Cross and Tinker's Cross	Bus Lane 59% Less Bus Priority (bus gate) compared to B1 & B3	100% Bus priority due to inclusion of Bus lane east of Tinkers Cross & Bus Priority (Bus Gate) for the route between Dillon's Cross and Tinker's Cross	Bus Lane 28%	Bus Lane 81%	Bus Lane 81%	Bus Lane 87%
	1c.Rank							
Integration	2a.Land Use Integration	No difference	No difference	No difference	No difference	No difference	No difference	No difference
	2a.Rank							

	Analysis Sub-Criteria	Route Option B1	Route Option B2	Route Option B3	Route Option B4	Route Option B5	Route Option B6	Route Option B7
	2b.Residential Population and Employment Catchments	***Residential Population Catchments*** • 5 minute walk catchment of approximately 2,416 • 10 minute walk catchment of approximately 6,729 • 15 minute walk catchment of approximately 11,518 ***Employment Catchment*** • 15 minute walk catchment of approximately 3,162.	***Residential Population Catchments*** • 5 minute walk catchment of approximately 2,877 • 10 minute walk catchment of approximately 7,599 • 15 minute walk catchment of approximately 12,891 ***Employment Catchment*** • 15 minute walk catchment of approximately 3,708.	***Residential Population Catchments*** • 5 minute walk catchment of approximately 2,416 • 10 minute walk catchment of approximately 6,729 • 15 minute walk catchment of approximately 11,518 ***Employment Catchment*** • 15 minute walk catchment of approximately 3,162.	***Residential Population Catchments*** • 5 minute walk catchment of approximately 2,879 • 10 minute walk catchment of approximately 6,822 • 15 minute walk catchment of approximately 11,578 ***Employment Catchment*** • 15 minute walk catchment of approximately 3,213	***Residential Population Catchments*** • 5 minute walk catchment of approximately 2,006 • 10 minute walk catchment of approximately 6,127 • 15 minute walk catchment of approximately 12,114 ***Employment Catchment*** • 15 minute walk catchment of approximately 3,136.	***Residential Population Catchments*** • 5 minute walk catchment of approximately 2,006 • 10 minute walk catchment of approximately 6,127 • 15 minute walk catchment of approximately 12,114 ***Employment Catchment*** • 15 minute walk catchment of approximately 3,136.	***Residential Population Catchments*** • 5 minute walk catchment of approximately 2,416 • 10 minute walk catchment of approximately 6,729 • 15 minute walk catchment of approximately 11,518 ***Employment Catchment*** • 15 minute walk catchment of approximately 3,162.
	2b.Rank							

	Analysis Sub-Criteria	Route Option B1	Route Option B2	Route Option B3	Route Option B4	Route Option B5	Route Option B6	Route Option B7
	2c.Transport Network Integration	Bus route follows the existing route 208 for the majority of the route and partially follows the 209. Impact on general traffic as Bus and local traffic are running together at locations. Bus Gates along Old Youghal Road	Bus route partially follows the existing route and the 208 and 209. Impact on general traffic as Bus and General traffic are running together at locations Bus Gates along Old Youghal Road .	Bus route partially follows the existing route and the 208 and 209. Impact on general traffic as Bus and General traffic are running together at locations Bus Gates along Old Youghal Road	Bus route partially follows the existing route and the 209. Impact on general traffic as Bus and General traffic are running together at locations Bus Gate along Old Youghal Road	Bus route partially follows the 207 & 209 routes and follows the 201 route for entire length of the North Ring Road. Minimal impact on general traffic as the road maintains separated bus and traffic lanes for the majority.	Bus route partially follows the 207 & 209 routes and follows the 201 route for entire length of the North Ring Road Minimal impact on general traffic as the road maintains separated bus and traffic lanes for the majority.	Bus route partially follows the existing route and the 208 and 209. Impact on general traffic as Bus and General traffic are running together at locations
	2c.Rank							

	Analysis Sub-Criteria	Route Option B1	Route Option B2	Route Option B3	Route Option B4	Route Option B5	Route Option B6	Route Option B7
	2d.Cyclist Integration	Primary Route CCN-U21& secondary route CCN-U41 Cycle route commences on Gardiner's Hill under a 'Quiet Streets' approach. Segregated cycle track for remainder except section along Glenamoy Lawn	Primary Route CCN-U21, U 25 & secondary route CCN-U37, U41 Cycle route commences on Gardiner's Hill under a 'Quiet Streets' approach. Segregated cycle track for remainder except section through Lotabeg	Primary Route CCN-U21, U 25 & secondary route CCN-U37, U41 Cycle route commences on Gardiner's Hill under a 'Quiet Streets' approach. Segregated cycle track for remainder except section through Lotabeg	Primary Route CCN-U21 & secondary route CCN-U41 Cycle route commences on Gardiner's Hill under a 'Quiet Streets' approach. Segregated cycle track for remainder except section along Glenamoy Lawn	Primary Route CCN-U21, U 25 & secondary route CCN-U37, U41 Cycle route commences on Gardiner's Hill under a 'Quiet Streets' approach. Segregated cycle track for remainder except section through Lotabeg	Primary Route CCN-U18,U21 U 25 & secondary route CCN- U41 Cycle route commences on Gardiner's Hill under a 'Quiet Streets' approach. Cycle connection between Old Youghal Road and Cahergal Lawn would require cyclist to dismount and use existing steps	Primary Route CCN-U21, U 25 & secondary route CCN-U37, U41 Cycle route commences on Gardiner's Hill under a 'Quiet Streets' approach. Segregated cycle track for remainder except section through Lotabeg
	2d.Rank							
	2e.Pedestrian Integration	No appreciable differences						
	2e.Rank							

	Analysis Sub-Criteria	Route Option B1	Route Option B2	Route Option B3	Route Option B4	Route Option B5	Route Option B6	Route Option B7
Accessibility and Social Inclusion	3a.Key Trip Attractors	St Patricks National School. Gaelscoil an Ghoirt Álainn Mayfield Community School Mayfield Sports Complex Mayfield Branch Library Mayfield GAA Club Scoil Mhuire Agus Eoin St Killians Special School Mayfield Integrated Community Project	St Patricks National School. Gaelscoil an Ghoirt Álainn Mayfield Community School Mayfield Sports Complex Brian Dillon GAA Grounds Inis Eoghin Park	St Patricks National School. Gaelscoil an Ghoirt Álainn Mayfield Community School Mayfield Sports Complex Mayfield Branch Library Mayfield GAA Club Scoil Mhuire Agus Eoin St Killians Special School Mayfield Integrated Community Project	St Patricks National School. Gaelscoil an Ghoirt Álainn Mayfield Community School Mayfield Sports Complex St Killians Special School Mayfield Integrated Community Project Brian Dillon GAA Grounds Tank Field & Inis Eoghin Park	Cara Junior School St Patricks National School. Nth Ring road Sports Grounds	Cara Junior School St Patricks National School. Nth Ring road Sports Grounds	St Patricks National School. Gaelscoil an Ghoirt Álainn Mayfield Community School Mayfield Sports Complex Mayfield Branch Library Mayfield GAA Club Scoil Mhuire Agus Eoin St Killians Special School Mayfield Integrated Community Project
	Rank							

	Analysis Sub-Criteria	Route Option B1	Route Option B2	Route Option B3	Route Option B4	Route Option B5	Route Option B6	Route Option B7
	3b.Deprived Geographic Areas	Bus serves disadvantaged areas and marginally above and marginally below average areas along Old Youghal Road and marginally above average areas east of Tinkers Cross	Bus serve: disadvantaged areas along Old Youghal Road and North Ring Road. Marginally above average areas east of Tinkers Cross Marginally below average and affluent areas on Colmcille Avenue.	Bus serves disadvantaged areas and marginally above and marginally below average areas along Old Youghal Road and marginally above average areas east of Tinkers Cross	Bus serves disadvantaged areas at the eastern and western sides of Old Youghal Road, marginally below average areas between Christophers Drive and Kerry Road and Marginally above average areas east of Tinkers Cross	Bus serves disadvantaged areas along Ballyhooly New Road and North Ring Road and marginally above average areas east of Tinkers Cross. Majority of route has no residential dwellings or properties along the Northern Side	Bus serves disadvantaged areas along Ballyhooly New Road and North Ring Road and marginally above average areas east of Tinkers Cross. Majority of Route has no residential dwellings or properties along the Northern Side	Bus serves disadvantaged areas and marginally above and marginally below average areas along Old Youghal Road and marginally above average areas east of Tinkers Cross
	Rank							

	Analysis Sub-Criteria	Route Option B1	Route Option B2	Route Option B3	Route Option B4	Route Option B5	Route Option B6	Route Option B7
Safety	4.Road Safety	No. of Junctions: 3 3 turning movements required inbound (1 Right Turn / 2 Left Turn) 3 turning movements required Outbound (2 Right Turn /1 Left Turn)	No. of Junctions: 4 4 turning movements required inbound (1 Right Turn / 3 Left Turn) 4 turning movements required outbound (3 Right Turn /1 Left Turn)	No. of Junctions: 3 3 turning movements required inbound (1 Right Turn / 2 Left Turn) 3 turning movements required Outbound (2 Right Turn /1 Left Turn)	No. of Junctions: 5 10 turning movements required inbound (5 Right Turn / 5 Left Turn) 10 turning movements required Outbound (5 Right Turn /5 Left Turn)	No. of Junctions: 2 2 turning movements required inbound (1 Right Turn /1 Left Turn) 2 turning movements required outbound (1 Right Turn /1 Left Turn)	No. of Junctions: 2 2 turning movements required inbound (1 Right Turn /1 Left Turn) 2 turning movements required outbound (1 Right Turn /1 Left Turn)	No. of Junctions: 3 3 turning movements required inbound (1 Right Turn / 2 Left Turn) 3 turning movements required Outbound (2 Right Turn /1 Left Turn)
	Rank							
Environment	5a.Archaeological, Architectural and Cultural Heritage	No appreciable Differences	No appreciable Differences	No appreciable Differences	No appreciable Differences	No appreciable Differences	No appreciable Differences	No appreciable Differences
	Rank							

	Analysis Sub-Criteria	Route Option B1	Route Option B2	Route Option B3	Route Option B4	Route Option B5	Route Option B6	Route Option B7
	5b.Biodiversity	Land take at Glenamoy Park & east of Tinkers Cross Requires tree removal Major impact to biodiversity likely	Land take limited to east of Tinkers Cross. Requires tree removal Some Impact to biodiversity likely.	Land take limited to east of Tinkers Cross. Requires tree removal Some Impact to biodiversity likely.	Land take at Glenamoy Park & east of Tinkers Cross and Requires tree removal Major impact to biodiversity likely	Land take present along route entirety. Majority is of green space and requires tree removal. Significant impacts to biodiversity likely	Land take present along route entirety. Majority is of green space and requires tree removal. Significant impacts to biodiversity likely	Land take from gardens driveways and trees on Old Youghal Road Land take east of Tinkers Cross. Requires tree removal
	Rank							
	5c.Soils and Geology	No appreciable impacts	No appreciable impacts	No appreciable impacts	No appreciable impacts	No appreciable impacts	No appreciable impacts	No appreciable impacts
	Rank							
	5d.Water Resources	No Flood Risk Present	No Flood Risk Present	No Flood Risk Present	No Flood Risk Present	Increase in Impermeable area may have negative impact on runoff	Increase in Impermeable area may have negative impact on runoff	No Flood Risk Present
	Rank							

	Analysis Sub-Criteria	Route Option B1	Route Option B2	Route Option B3	Route Option B4	Route Option B5	Route Option B6	Route Option B7
	5e. Landscape and Visual	Option will result in the removal of walls, hedgerows and trees east of Tinkers Cross. Extensive works on Cut slopes to rear of Glenamoy Park with retaining structures required	Option will result in the removal of walls, hedgerows and trees east of Tinkers Cross.	Option will result in the removal of walls, hedgerows and trees east of Tinkers Cross. .	Option will result in the removal of walls, hedgerows and trees east of Tinkers Cross. Extensive works on Cut slopes to rear of Glenamoy Park with retaining structures required	Option will impact private gardens and lands along Ballyhooly Road and will result in the removal of walls, hedgerows and trees along the North Ring Road and east of Tinkers Cross. .	Option will impact private gardens and lands along Ballyhooly Road and will result in the removal of walls, hedgerows and trees along the North Ring Road and east of Tinkers Cross.	Option will result in the removal of walls, hedgerows and trees east of Tinkers Cross. Will result in the removal of gardens / driveways and trees on Old Youghal Road
	Rank							

	Analysis Sub-Criteria	Route Option B1	Route Option B2	Route Option B3	Route Option B4	Route Option B5	Route Option B6	Route Option B7
	5f.Noise, Vibration and Air	Possible impacts due to increased trafficking of road networks and increased proximity of vehicles to houses and gardens if bus lanes installed. Traffic will be redistributed to North Ring Road and reduce vehicular traffic on Old Youghal Road	Possible impacts due to increased trafficking of road networks and increased proximity of vehicles to houses and gardens if bus lanes installed. Traffic will be redistributed to North Ring Road and reduce vehicular traffic on Old Youghal Road	Possible impacts due to increased trafficking of road networks and increased proximity of vehicles to houses and gardens if bus lanes installed. Traffic will be redistributed to North Ring Road and reduce vehicular traffic on Old Youghal Road	Possible impacts due to increased trafficking of road networks and increased proximity of vehicles to houses and gardens if bus lanes installed.	Possible impacts due to increased trafficking of road networks and increased proximity of vehicles to houses and gardens if bus lanes installed. Majority of Route has no residential dwellings or properties along the Northern Side	Possible impacts due to increased trafficking of road networks and increased proximity of vehicles to houses and gardens if bus lanes installed. Majority of Route has no residential dwellings or properties along the Northern Side	Possible impacts due to increased trafficking of road networks and increased proximity of vehicles to houses and gardens if bus lanes installed.
	Rank							

	Analysis Sub-Criteria	Route Option B1	Route Option B2	Route Option B3	Route Option B4	Route Option B5	Route Option B6	Route Option B7
	5g. Land Use and the Built Environment	There would be impacts on existing on-street parking. Impacts to trees east of Tinkers Cross	There would be impacts on existing on-street parking. Impacts to trees east of Tinkers Cross	There would be impacts on existing on-street parking. Impacts to trees east of Tinkers Cross	There would be impacts on existing on-street parking. Impacts to trees east of Tinkers Cross	The loss of trees along the entire route would have an adverse impact on the character of the street.	The loss of trees along the entire route would have an adverse impact on the character of the street.	There would be impacts on existing on-street parking. The loss of trees and amendments to driveways and gardens along sections of the route would have an adverse impact on the character of the street.
	Rank							

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