National Transport Authority

BUSCONNECTS INFRASTRUCTURE CORK

Hollyhill/Apple to City Centre via Shandon Area (CBC5) Draft Emerging Preferred Options Report

BCICA-WSP-PDV_EI-05_XX_00-SD-ZZ-0005
JUNE 2022

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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 CBC5 Hollyhill / Apple via Shandon area 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 Apple Distribution International, including the districts of Shandon, Shanakiel, Churchfield, Sunday's Well, Fair Hill, Gurranabraher, Knocknaheeny and Hollyhill. The extent of the study area is presented in Figure (i) below.

Figure i - Study Area Map

The proposed Cork City Centre to Hollyhill (Apple) via Shandon Core Bus Corridor (CBC5) will serve a transport corridor with several key destinations along, or close to, the route. These include;

- Neptune Stadium;
- The Butter Museum;
- St Mary's Health Campus;
- Gerry O'Sullivan Park;
- City North College of Further Education;
- Hollymount Industrial Estate and Apple International Distribution; 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 Hollyhill, via Shandon, 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.

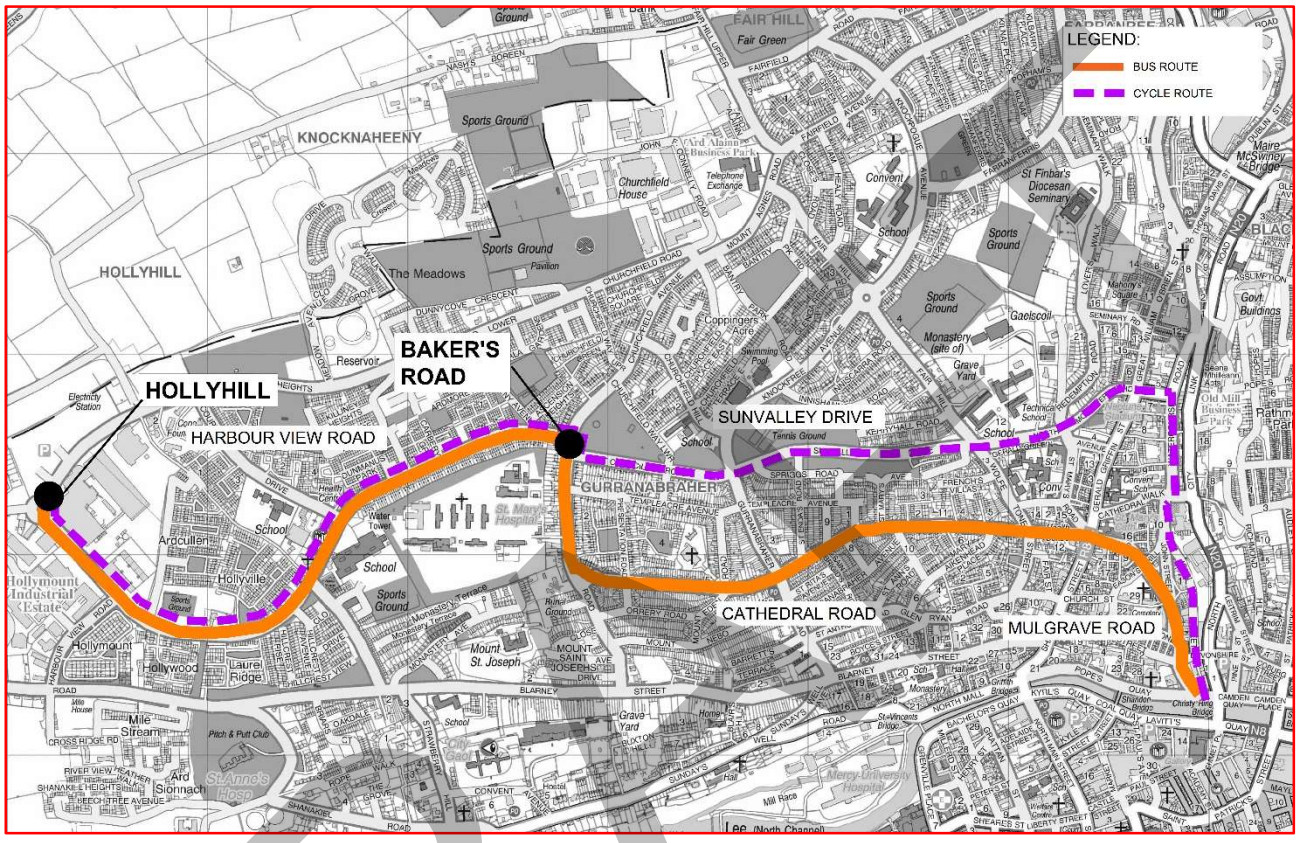
  In accordance with the Department of Transport "Guidelines on a Common Appraisal Framework for Transport Projects", the multi-criteria analysis considered Economy; Integration; Accessibility and Social Inclusion; Safety and Environment. The 'Physical Activity criterion has not been assessed as a standalone 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 – Hollyhill/Apple to City Centre via Shandon 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 Shandon and finishes at Apple Distribution International (Hollyhill).

SECTION 1: CITY CENTRE TO BAKER'S ROAD

Length of Section: 2.2km

Indicative Cost Estimate (used for comparative purposes): € 10.0M

Along the Emerging Preferred Route, there is currently no existing bus lanes and limited existing cycle lanes provided within Study Area Section No.1. 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 Camden Quay, Mulgrave Road, John Redmond Street, Upper John Street and Roman Street to St Mary and St Anne's Cathedral. The route then continues along Cathedral Street and Cathedral Road towards the Baker's Road Junction. The route continues north along Baker's Road to the Harbour View Road Junction.

The emerging preferred cycle route travels along Camden Quay, Knapp's Square, Lower John Street, Upper John Street and Watercourse Road to the O'Connell St Junction. The cycle route then turns into O'Connell St and continues along same, North Monastery Road,

Sunvalley Drive, St Colmcille's Road, Baker's Road, Harbour View Road and Tadhg Barry Road where it terminates at the Apple Campus on Tadhg Barry Road.

Inbound (towards the city) bus priority is proposed on Mulgrave Road through a short section of bus lane and by using a bus priority traffic signal allowing buses to go ahead of general traffic. This means that buses will get a 'head-start' over cars. Outbound (towards Hollyhill) buses share a general traffic lane through this section. The typical cross-sectional width along Mulgrave Road is approx. 13m, this provides room for a three-lane carriageway and adequate footways on both sides of the road.

The carriageway narrows further north along John Redmond Street and Upper John Street, with a typical cross-sectional width of approx. 10m. Both inbound and outbound buses share the carriageway with general traffic on John Redmond Street and Upper John Street. However, between the Roman Street/Upper John Street Junction and the Cathedral Road/Wolfe Tone Street Junction, bus gates (short sections of bus/cycle-only roadway) are proposed in both directions. Existing on-street parking will be retained along Roman Street and Cathedral Street where possible.

Along Cathedral Road between the Shandon Street Junction and the Wolfe Tone Street Junction, the highway boundary widens to approx. 18m. This provides adequate width for a bus lane in both directions, while also retaining existing on-street parking along the northern carriageway edge. Both existing signalised junctions will be upgraded to provide bus priority along this link, by using bus priority traffic signals, buses will be given a 'head start' over cars.

Proposed improvements to the Cathedral Road/St Mary's Road/ Gerald Griffin Street junction include the removal of the left turn slip from Cathedral Road to St Mary's Road, to facilitate easy pedestrian crossing. This results in the conversion of St Mary's Road to one-way southbound with on street parking retained. Unfortunately, two existing trees will need to be removed along the northern edge of Cathedral Road to facilitate widening of the carriageway. Two compensatory trees are proposed to be planted at the nearby Cathedral Road/ St Mary's Road/ Gerald Griffin Street Junction instead.

Further west, the typical Cathedral Road cross sectional width narrows to approx. 10-12m between the Wolfe Tone Street Junction and the Baker's Road Junction. As this section is very constrained, both the inbound and outbound buses will share general traffic lanes throughout. There are proposed bus gates (short sections of bus/cycle-only roadway) along most of this section of Cathedral Road so no through traffic will be allowed. These proposed bus gates will reduce traffic volumes on Cathedral Road, which will allow buses to move freely.

Along Cathedral Road (i.e., from Presentation Road to Mary Aikenhead Place) no physical works are proposed except for bus gates, bus stop upgrades and improved pedestrian facilities at junctions. In addition to an inbound short section of approach bus lane to the Cathedral Road/Gurranabraher Road Junction which also has signalised priority for buses. The proposed bus gate approach will maintain as much of the existing residential parking layout along Cathedral Road as possible, while also providing bus priority. No land take is required to facilitate these sustainable transport improvements.

From the Baker's Road/Cathedral Road junction to St Mary's Health Campus the cross section remains quite constrained and both inbound and outbound buses will share general traffic lanes. As much of the existing parking will be retained as possible outside the commercial premises in this section. North of the St Mary's Health Campus, the cross-sectional width

increases to approx. 16m, this provides sufficient room for both an inbound and outbound bus lane to the St Colmcille's Road Junction. Through this section of Baker's Road, all existing on-street parking will be removed.

In the short section of Baker's Road between the Harbour View Road Junction and the St Colmcille's Road Junction, the outbound bus lane will continue, however, inbound buses will share a general traffic lane. This will result in the removal of the existing on-street parking on the western side of Baker's Road. A new road boundary is also proposed which may result in a strip of land being acquired from the adjacent Gerry O'Sullivan Park. It is not anticipated that the trees located within Gerry O'Sullivan Park will be impacted here.

The existing cycle track on Camden Quay will be linked in with the works currently being implemented as part of the Knapp's Square and Lower John's Street Area Pedestrian and Cycle Measures. A proposed "quiet streets" cycle route via Knapp's Square, Lower John Street and Upper John Street is proposed. Along a portion of this route both inbound and outbound cyclists share the carriageway with local traffic. A contra-flow cycle track is proposed from the Cathedral Walk/Upper John Street Junction to Carroll's Hill steps. Existing on-street parking will be retained where possible.

The cycle route continues north via Watercourse Road, where the proposed bus gates (short sections of bus/cycle-only roadway) will allow for a "quiet streets" cycle route between Cathedral Walk and O'Connell Street. Existing on-street parking is retained along Watercourse Road where possible. From the O'Connell Street/Watercourse Road Junction, the cycle route heads west along O'Connell Street and North Monastery Road. The cross section widens along these links and the typical width is approx. 18m which provides ample width to accommodate both an inbound and outbound segregated cycle track while also retaining the existing on-street parking and general traffic lanes in both directions.

West of the O'Connell Street/North Monastery Road Junction, land acquisition is potentially required and the removal of an existing tree is proposed on the northern edge of North Monastery Road. Three compensatory trees are proposed to be planted in the greenspace southeast of the Fairhill/North Monastery Road Junction. At this junction kerb buildouts are proposed to narrow the carriageway and protect cyclist traversing the junction.

The cycle route continues west from North Monastery Road to Sunvalley Drive, both inbound and outbound cycle tracks are proposed in this section. The typical cross-sectional width is approx. 16m along Sunvalley Drive. Which contains, two uni-directional cycle tracks, two general traffic lanes, footways and on-street parking along northern carriageway edge. An existing raised central median will be removed to lessen land take through this section, however, a right turn pocket into Saint Enda's Road will be retained

Along Sunvalley Drive, east and west of the Saint Enda's Road Junction, new road boundaries are proposed on both the southern and northern sides of the carriageway to accommodate the proposed cycle facilities. It is also proposed that the right turn lane on Sunvalley Drive into Saint Enda's Road will be retained, while right turn movements onto Sprigg's Road will be banned.

The cross-sectional width narrows slightly, as the cycle route moves west onto St Colmcille's Road. The typical width is approx. 13.5m, therefore no on-street parking will be retained in this section. There is an existing inbound cycle track on St Colmcille's Road, this will be widened and an additional outbound cycle track will replace the current on street parking along the

southern edge. Compensatory parking is proposed on the northern side of the carriageway along Sunvalley Drive. New inbound and outbound cycle tracks will connect the short section of Baker's Road with the inbound and outbound cycle tracks on St Colmcille's Road and Harbour View Road.

Parallel toucan crossings are provided for cyclists and pedestrians at all the major signalised junctions along this route between O'Connell Street and Baker's Road. The mini roundabout at the intersection of Sunvalley Drive and St Colmcille's Road will also be replaced with a new signalised junction including parallel crossings. Only single lane approaches to these junctions will be provided to afford more space to the proposed active travel facilities.

SECTION 2: BAKER'S ROAD TO HOLLYHILL / APPLE

Length of Section: 1.7km

Indicative Cost Estimate (used for comparative purposes): €7.9M

Along the Emerging Preferred Route, there is currently no existing bus lanes and some existing cycle lanes provided within Study Area Section No. 2. Overall, the EPR for this section requires the introduction of new bus priority and active travel facilities along the majority of its length.

The emerging preferred bus route travels along Harbour View Road from the Baker's Road Junction to the Tadhg Barry Road/David McCarthy Road Junction, Hollyhill. The cycle route follows the proposed bus route within this study area (i.e. along Harbour View Road). Routing the bus along Harbour View Road has larger employment and residential catchments compared to alternate routes.

The typical cross section along Harbour View Road, west of the Baker's Road Junction is approx. 20m wide. By removing existing on street parking, both an inbound and an outbound bus lane can be provided. On the southern side of the carriageway from Knocknaheeny Avenue to east of the Courtown Drive Junction a new road boundary is proposed which will be setback from the existing road boundary to provide sufficient width to facilitate the proposed sustainable transport corridor. Sufficient space will remain to allow in-curtilage parking. This new road boundary will require land acquisition from approximately seventy private gardens. This widened corridor will also result in the loss of twenty-seven existing trees in this section of Harbour View Road. Thirty-two compensatory trees are proposed to be planted along this section as a result of the latter.

It should be noted that consultation is ongoing with Cork City Council Northwest Quarter Regeneration office to ensure their proposals for future housing on Harbour View Road are compatible with the requirements for the EPR.

It is proposed that the existing Courtown Drive Roundabout be converted into a signalised junction with improved bus priority, pedestrian and cycle facilities. West of the existing roundabout, the typical Harbour View Road cross sectional width reduces by approx. 1m but both the proposed inbound and outbound bus lane will continue along this section of the road. A proposed new boundary on the northern side of the road between Courtown Drive and Hollyhill Lane will result in the land acquisition of a strip of private land (i.e. car parking space) and the loss of one tree. A small green space with two existing trees will be replaced with some parking bays including disabled provision outside Knocknaheeny Learning Campus.

Road boundary changes on the southern side of the carriageway are also proposed further west along Harbour View Road, between the Hollyhill Lane Junction and the Hillcrest Avenue Junction and west of Hillcrest Avenue to the existing Hillcrest Estate Bus Stop. These changes may result in some land acquisition of green space/public land and the loss of six existing trees. Fourteen compensatory trees are proposed to be planted in greenspace between Hollyhill Lane and Hillcrest Avenue. An inbound and outbound bus lane will continue along this section of Harbour View Road as a result of the widened road corridor.

Boundary changes are also proposed on the northern side of the Harbour View Road carriageway between Hillcrest Avenue Junction and Ardcullen Junction. Five compensatory trees are also proposed to be planted behind the existing treeline on the green east of the Hollyville Junction. The proposed cross section through this section will be maintained at approx. 20m wide to ensure sufficient width for inbound and outbound bus lanes.

The existing left and right turn lanes on approach to the Harbour View Road/Tadhg Barry Road Junction will be removed to provide bus lane provision on approach to the junction. Two existing trees at the northwest quadrant of the junction will be removed and replaced with two compensatory trees to be planted west of the Ardcullen Junction.

Tadhg Barry Road has been realigned to avoid as many existing mature trees as possible, this has resulted in three sections of boundary change, with a slightly increased land take. The first boundary change continues west of the Harbour View Road/Tadhg Barry Road junction, on the southern side of the carriageway. The second and third changes are located on both sides of the carriageway, east of the Tadhg Barry Road/David McCarthy Road Junction. Despite the realignment, the proposed cross-sectional width of approx. 20m, including inbound and outbound bus lanes results in the loss of eight trees. The emerging preferred bus route terminates at the existing Hollyhill (Apple) Bus Stop at the Tadhg Barry Road/David McCarthy Road Junction.

The cycle route for study area section no. 2, follows the EPR for buses along Harbour View Road and Tadhg Barry Road. Segregated uni-directional cycle tracks are proposed from the Baker's Road Junction to their termination point at the Tadhg Barry Road/David McCarthy Road Junction.

There is an existing, unprotected inbound cycle lane between the Baker's Road Junction and Beara Drive Junction and an existing unprotected outbound cycle lane from east of Beara Drive to east of Carbery Grove. It is proposed that the existing cycle facilities are upgraded and extended along this section of Harbour View Road, providing 2m wide continuous cycle tracks in both direction between the Baker's Road Junction and the Courtown Drive Junction.

The cycle tracks within this section of Harbour View Road are either narrowed or shared at and with proposed bus stops platforms along the route. At the Knocknaheeny Avenue Junction, improved cycle facilities are proposed with parallel crossings and a new toucan crossing is proposed immediately east of Carbery Grove. All existing on street parking in this section of Harbour View Road will be removed to accommodate the dedicated bus and upgraded active travel facilities

The existing Courtown Drive Roundabout will be converted to a bus priority signalised junction with improved pedestrian and cycle facilities. West of the proposed Courtown Drive Junction, the proposed cycle tracks narrow to approx. 1.5m wide in both directions as far as the Hollyhill Lane Junction due to cross-sectional constraints. The majority of the existing on-street parking

will be removed to facilitate the cycle and bus improvements on this section of Harbour View Road.

Just west of Hollyhill Lane, protected cycle tracks have been recently installed as far as /David McCarthy Road . The typical cross section slightly widens along this section of Harbour View Road and it is proposed that the existing cycle tracks will be retained and widened to 2m in both directions. The cycle tracks have priority over side roads along the length of Harbour View Road and active travel improvements are also proposed at the Harbour View Road/Tadhg Barry Road Junction, providing parallel crossing facilities. There is no existing on-street parking along this stretch of Harbour View Road and there are no current or future proposals to change that arrangement.

The cycle facilities terminate at the Tadhg Barry Road/David McCarthy Road Junction, with the proposed cycle tracks tying in with the existing facilities west and north of the junction. Active travel improvements on the Tadhg Barry Road/David McCarthy Road Junction are also proposed, providing parallel crossing facilities for both pedestrians and cyclists.

SCHEME BENEFITS

The Emerging Preferred Route is approximately 3.9 km in total length from Cork City Centre to Hollyhill (Apple Distribution International). Along this EPR, there are currently no bus lanes or sections with bus priority and only limited cycle lanes.

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

This section of Northwest Cork City 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 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 €10.0M

Study Area Section (SAS) No. 2 €7.9M

Total of SAS No. 1 & SAS No. 2 €17.9M

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, it is anticipated that a high frequency of service will be justified along the full length of the route, as far as Apple Distribution International, which is noted as a significant standalone origin/destination trip generator and therefore the full route will be carried forward for Public Consultation.

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 as necessary.

1.2 PROJECT BRIEF

The National Transport Authority (NTA) 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.

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 CC 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 5 Hollyhill/Apple to City Centre via the Shandon Area route. This route is presented as STC D 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 structure of the route option assessment process and associated report are detailed below:

Chapter 1 – Introduction, background, aims and objectives.
Chapter 2 – The strategic policy context in relation to CBC 5 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 links 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

TRANSPORTATION PLANNING AND POLICY CONTEXT

2 TRANSPORTATION 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 scheme's 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 by 2027 and CMATS (this strategy) "envisages that the realigned bus network will carry around 45 million passengers per annum and 32,000 passengers during the AM morning peak".

CMATS outlines an indicative Core Radial Bus Network which would connect external corridors to Cork City Centre whilst pairing Cross-City travel demand to maximise the utilisation of the bus service. Apple 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." Knocknaheeny is identified as a key destination outside the City Centre.

The proposed increase in bus services and bus 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 202 Hollyhill – City Centre route is currently split in the inbound and outbound directions between the Baker's Road and Gurranabraher Road.

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 2020]

Proposed Cork City Development Plan 2022-2028 (PCCDP) states that the Cork 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 PCCDP describes the Northwest Suburbs as having "experienced significant changes in the last decade." Knocknaheeny and Hollyhill are listed as areas subject to regeneration and the Northwest Suburbs has been identified for significant public transport intervention as part of CMATS. The Apple Campus at Hollyhill is also identified as a radial bus service trip origin/destination in CMATS.

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 Cork City on the N20 corridor, Watercourse Road, North Ring Road and Assumption Road to connect to Blackpool and northwest to the Apple facility in Hollyhill are recommended in the CCNP.

Within the Hollyhill/Apple to City Centre via the Shandon Area (i.e. CBC5) corridor several routes are identified in the CCNP which are summarised in Table 2.1 below.

Table 2-1 – Route Descriptions (CCNP Section 07)

Route Code	Road Name	Section	Route Category
CCN-U1	Blarney St	Shandon St to Harbour View Rd	Primary
CCN-U2	Kilmore Heights, Tadhg Barry Rd, David McCarthy Rd	Hollyhill Lane to O'Neill Pk	Primary
CCN-U3	Hollyhill Lane and Ardcullen Grove	Blarney St to Kilmore Heights	Primary
CCN-U4	Harbour View Rd	Hollyhill Lane to Baker's Rd	Primary
CCN-U4A	Kilmore Heights / Knocknaheeny Ave	Kilmore Heights to Harbourview Rd	Secondary
CCN-U5	Cronins Field / Mount Agnes Rd / Upper Fairhill	Harbour View Rd to Fairfield Rd	Secondary
CCN-U6	Bakers Rd, St. Colmcilles Rd, Sunvalley Dr, North Monastery Rd	Harbour View Rd to Watercourse Rd	Primary
CCN-U6A	Watercourse Road and Cathedral Walk	North Monastery Road to N20	Secondary
CCN-U7	Knockfree Ave and Knockpogue Ave	St. Colmcilles Rd to Fairfield Rd	Primary
CCN-U8	Pope's Quay / Camden Quay	Griffith Bridge and Bridge Street	Primary
CCN-U9	Shandon St, Gerald Griffin St, Great William O'Brien St, Brocklesby St	North Monastery Rd to Commons Rd	Primary
CCN-U10	Cathedral Rd and Wolfe Tone St	Gerald Griffin St to North Monastery Rd	Primary

Route Code	Road Name	Section	Route Category
CCN-U11	Upper John St	Pope's Quay to Cathedral Walk	Secondary
CCN-U12	N20 North City Link Road	Pope's Quay to Assumption Rd and Commons Rd to junction with Lower Kileens Rd	Primary
CCN-U31	Cathedral Rd / Baker's Rd	Saint Colmcilles Rd to Wolfe Tone St and Baker's Rd to Harbour View Rd via St. Mary's Health Campus	Primary
CCN-U32	Shanakiel Rd / Blarney Rd	Strawberry Hill to Harbour View Rd via Mile Stream	Primary
CCN-U33	Sunday's Well Rd	North Mall to Strawberry Hill	Secondary
CCN-U42	Fair Hill	Sunvalley Dr to Mount Agnes Rd	Secondary

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

Table 2-2 – Cycle Network Categorisation (CCNP Table 5.1)

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 (i.e. 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 2020]. 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 Hollyhill / Apple to City Centre via the Shandon Area (i.e. CBC5) corridor several Strategic Routes, including their purpose and upgrade proposals are identified in the Walking Strategy which are summarised in Table 2.3 below.

Table 2-3 – Walking Network Improvements (CMATS Chapter 06 Walking)

Route	Purpose and Upgrade Proposal
Blarney Street	Upgrade the pedestrian infrastructure to provide safe walking facilities, in conjunction with vehicular speed reduction measures to support redevelopment of key sites at Shanakiel within walking distance of the city and the Apple plant
Fair Hill	Improvements to the crossing facilities on minor junctions.
Harbour View Road / Kilmore Road	Further upgrade of pedestrian environment including pedestrian crossings on desire lines, improved layout of development and removal of street clutter to support the on-going regeneration of Knocknaheeny and access to local employment and education sites including Apple and St Mary's Hospital
Strawberry Hill	Upgrade the pedestrian facility of Strawberry Hill, including opportunities to improve accessibility and safety, to strengthen the appeal of this link to Sunday's Well and the Mardyke

CMATS Chapter 06 Walking

2.4 PROPOSED SCHEMES

The following planned scheme is within the Study Area for the proposed Hollyhill / Apple to City Centre via Shandon Area Core Bus Corridor (CBC5) and has been considered as part of this Assessment:

- Knapp's Square and Lower John's Street Area Pedestrian and Cycle Measures.

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 CBC5. The study area was taken to include the area between Camden Place in Cork City and Apple Distribution International at Hollyhill.

The study area includes the districts of Churchfield, Fair Hill, Gurranabraher, Hollyhill, Knocknaheeny Shandon, Shanakiel and Sunday's Well.

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 use within the Shandon area consists of Inner City Residential and City Centre Commercial Core. To the west of Shandon, land is predominantly “Residential, Local Services and Institutional” with a Local Centre in Gurranabraher and Neighbourhood Centres in Hollyhill and Churchfield.

The Shandon Area includes individual buildings of high heritage value and has been classified by Cork City Council as an Architectural Conservation Area.

Notable areas of public open space include Gerry O’Sullivan Park, Churchfield Allotments, the Sam Allen Sports Centre, O’Neill Park, Knocknaheeny / Hollyhill Community Garden and St. Vincent’s GAA.

Notable centres for education include Blarney Street CBS, Sunday’s Well National School, North Presentation Primary School, St. Vincent’s Convent Primary and Secondary schools, the North Monastery Primary and Secondary schools, Terrance MacSwiney Community College and City North College of Further Education.

Notable areas for light industry and related use include the Hollyhill Industrial Estate and Churchfield Business Park.

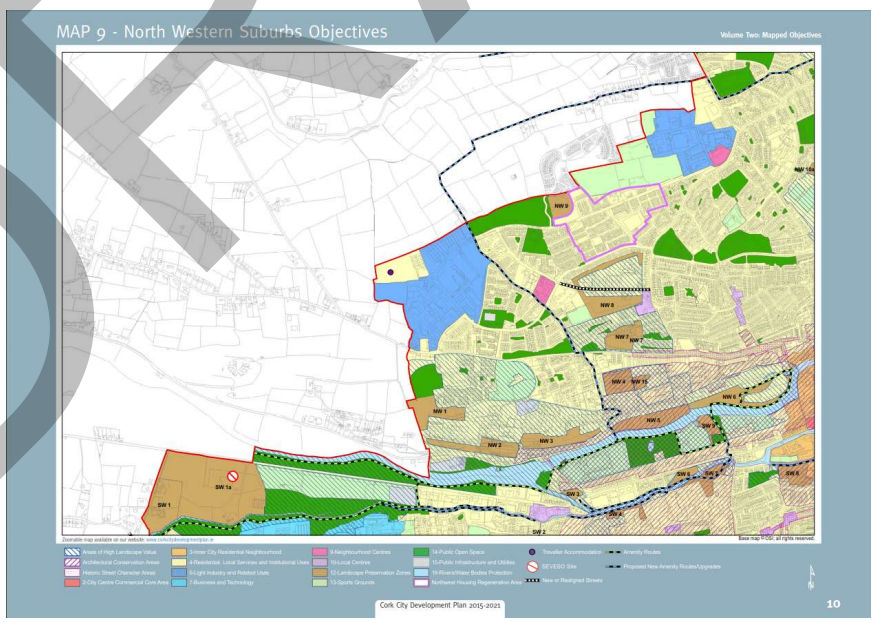
Notable trip generators include Apple Distribution International and St. Mary’s Health Campus.

Notable trip attractors include Shandon Bells and Tower, the Cathedral of St. Mary and Anne, the Firkin Crane and the Butter Museum.

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



CCDP 2015-2021 Map 9

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 Criteria 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 Hollyhill, via the Shandon Area 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 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 protect in place predominately. Drainage works (removal of and installation of new drainage systems). New or upgraded bus stops where necessary, including provision of Real Time Passenger Information (RTPI) and bus shelters. Earthworks (embankment treatments, retaining walls, slopes regrading, etc). Pavement (milling / reinstatement or overlay). Kerbs footways and paved areas (removal and new). Road markings (non-destructive removal of existing road markings, new road markings). Signage (removal / relocation / replacement of existing and/or installation of new). Road lighting (replacement, cabling, ducting). Landscaping works (top soiling, fence, trees relocation, hedges, road margins re-grading etc). 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.

Delays where no bus priority is provided. Buses are delayed when they are required to share congested lanes with general traffic. The length of delays is based on distance where there is no priority and the level of congestion expected.

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)

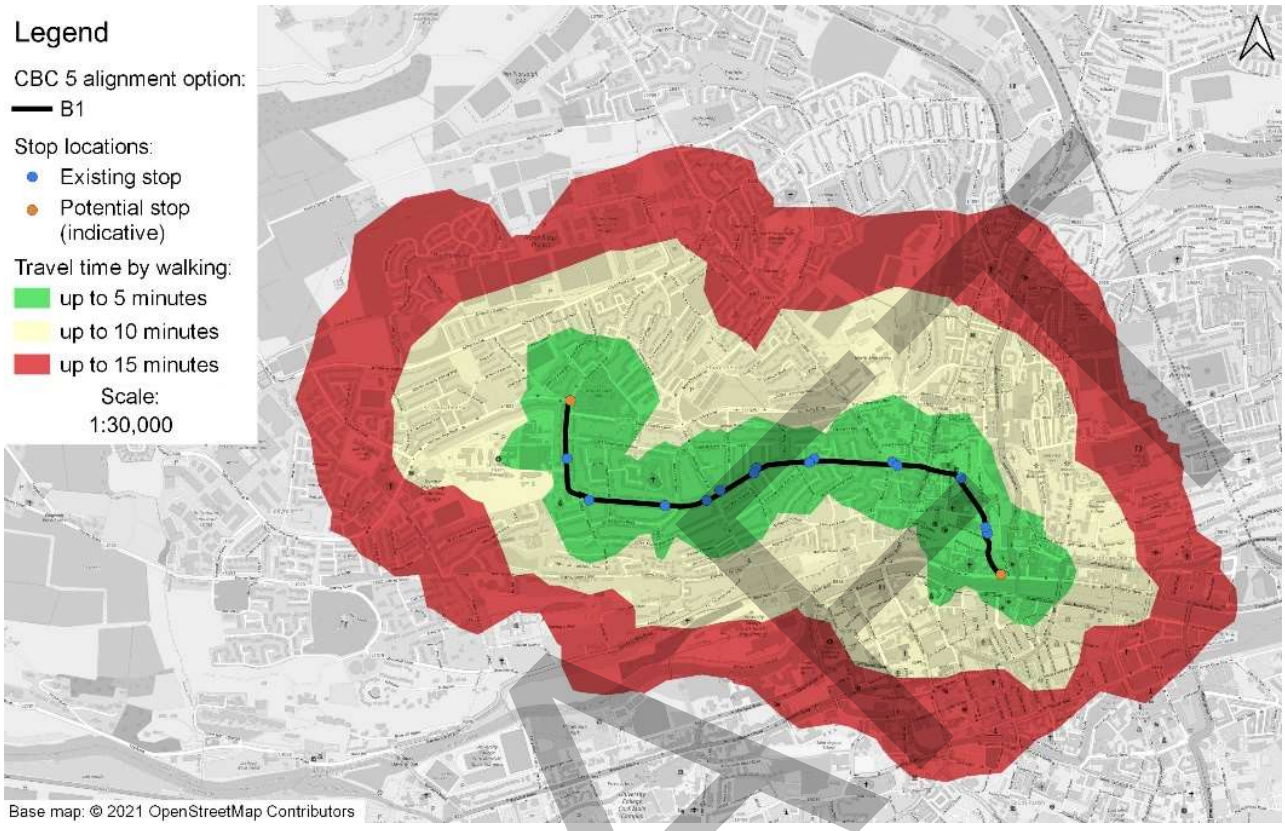
Land Use Integration (2.a)

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 15 min 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 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 with wakling isochrones at 5 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)

Road Safety

Under this criterion, the number of junctions along each scheme, as an approximate measure for the potential for collisions, are compared. In addition, the number of turning movements are compared, as these can also potentially lead to lower safety conditions along the scheme. 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 industrial sites. 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 route 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.

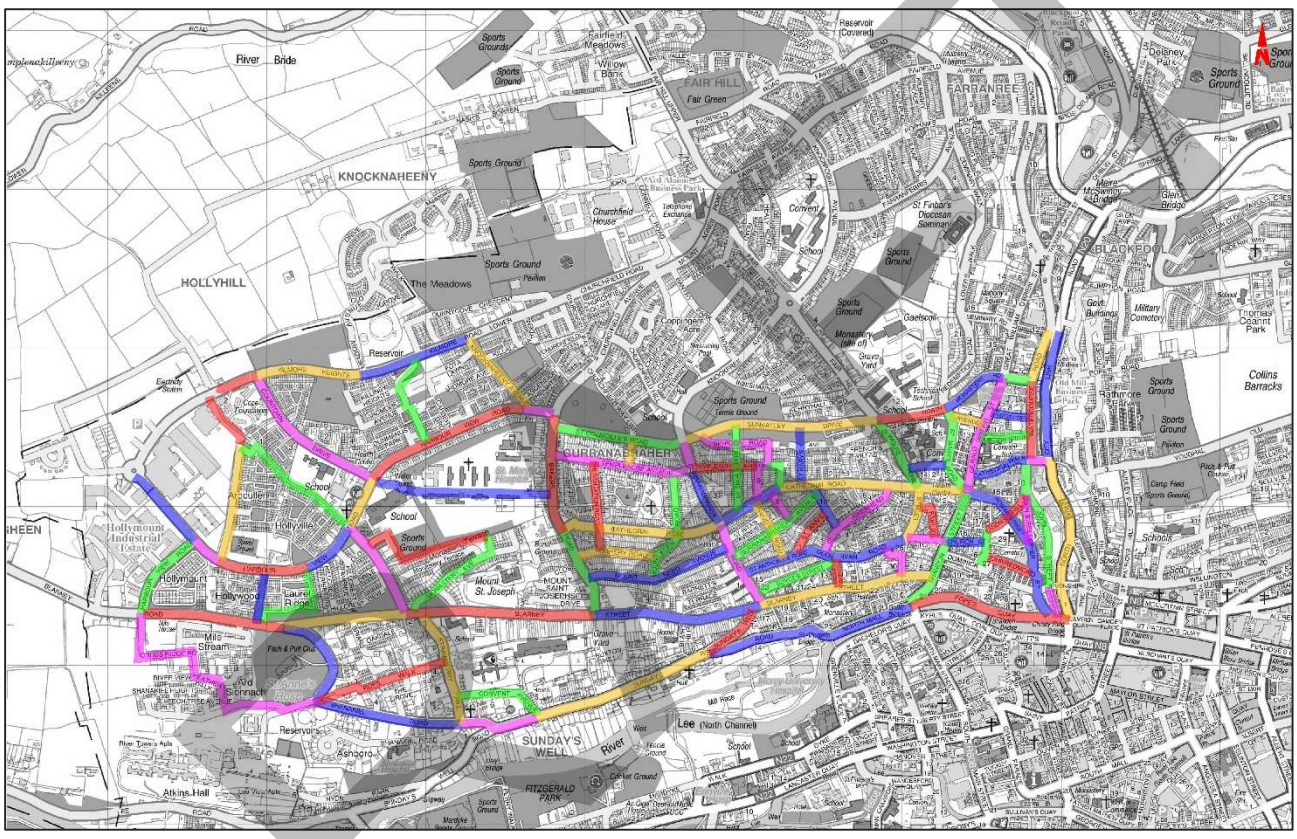
The outcome and findings of the multi-criteria analysis are then finally considered in a holistic manner to derive a preferred end-to-end route for the proposed end-to-end CBC scheme.

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. The this a total of 96 no. links make up the initial "Spider's Web", as shown in Figure 5.1 below. Pleases refer to Appendix A for a larger image and description of all links.

Figure 5-1 - Initial Spider's Web



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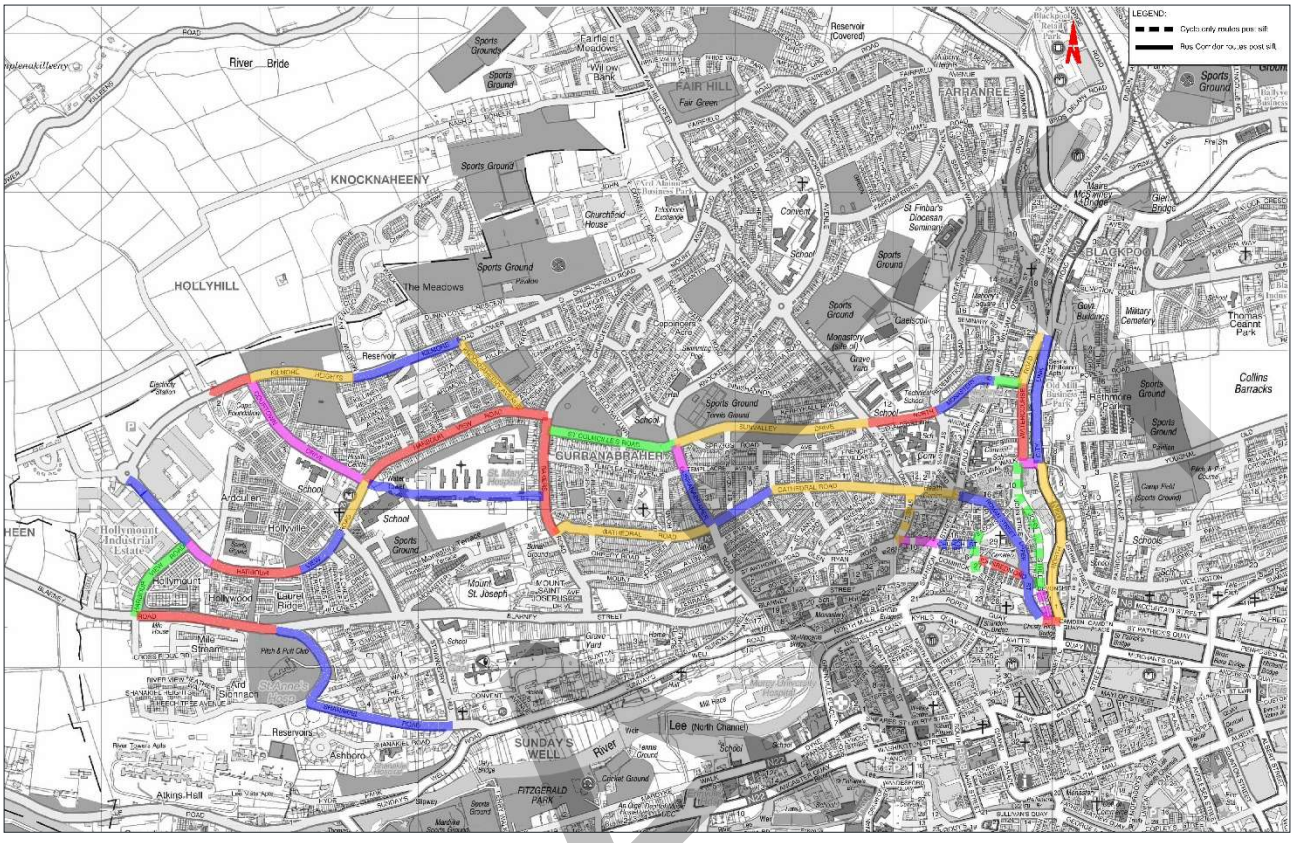
Using the assessment methodology outline in Paragraph 4.2 of this Report a total of 53 no. links were identified as being unsuitable in achieving the scheme objectives. A further 7 no. links (0005_085, 0005_100, 0005_105, 0005_107, 0005_110, 0005_111, 0005_114) were identified as unsuitable as through bus routes but were retained as potential cycle routes for Stage 2.

Figure 5.2 below shows the 42 no. links which passed the initial sift including 33 no. through bus route and 7 no. potential cycle routes.

Figure 5-2 - Routes Passing Initial Sift



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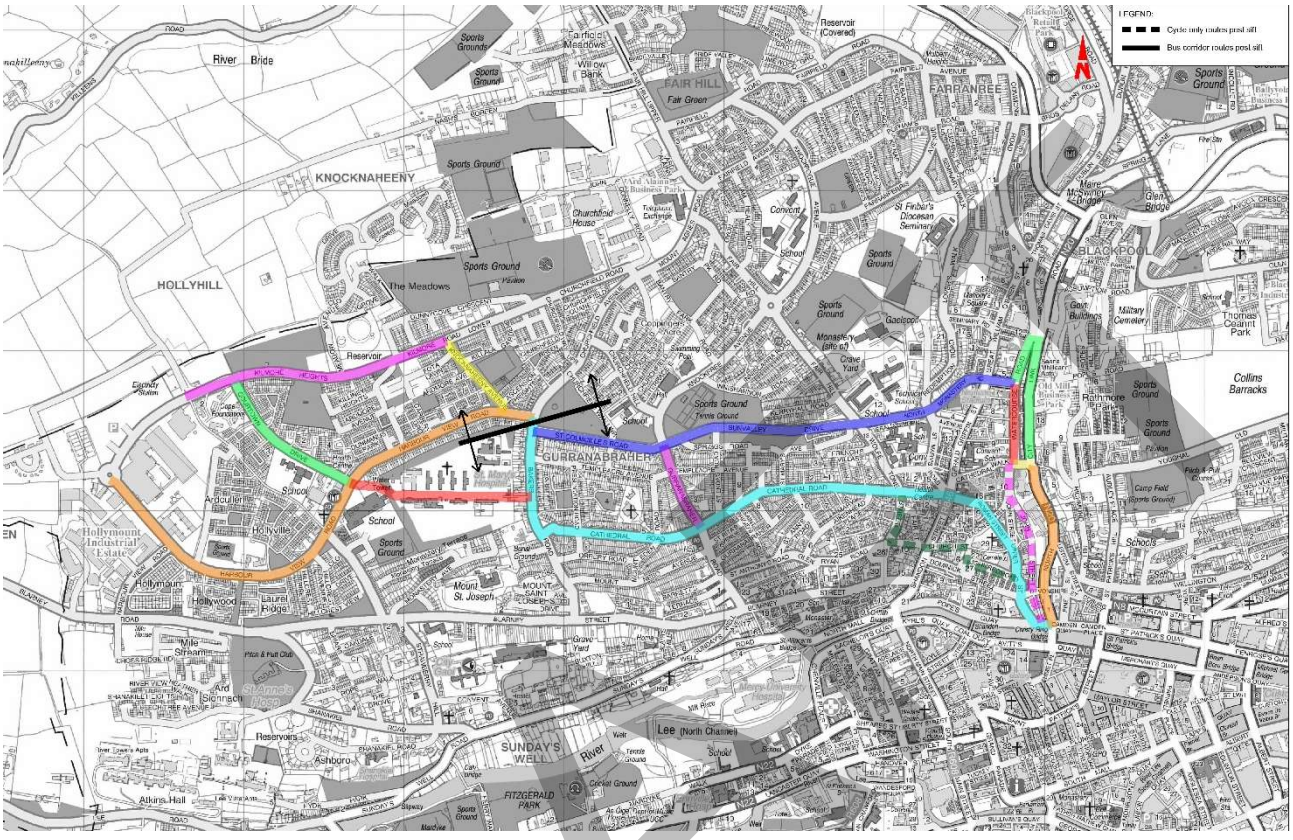
Three no. links (i.e. 0005_006, 0005_009 and 0005_020) are disconnected and could not form part of a City Centre to Hollyhill CBC route and therefore have been removed at this stage.

Following the Stage 1 sift and the subsequent removal of disconnected links a total of 30 no. links were identified as suitable to achieve the scheme objectives. These viable links are shown in Figure 5.3 and will be brought forward for Stage 2 Multi Criteria Analysis, as discussed in 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 the Baker's Road/ Harbour View Road Junction as being the optimum location to split the Study Area for the Stage 2 MCA. The latter 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.

6

STAGE 2: MULTI CRITERIA ANALYSIS

6 STAGE 2: MULTI CRITERIA ANALYSIS

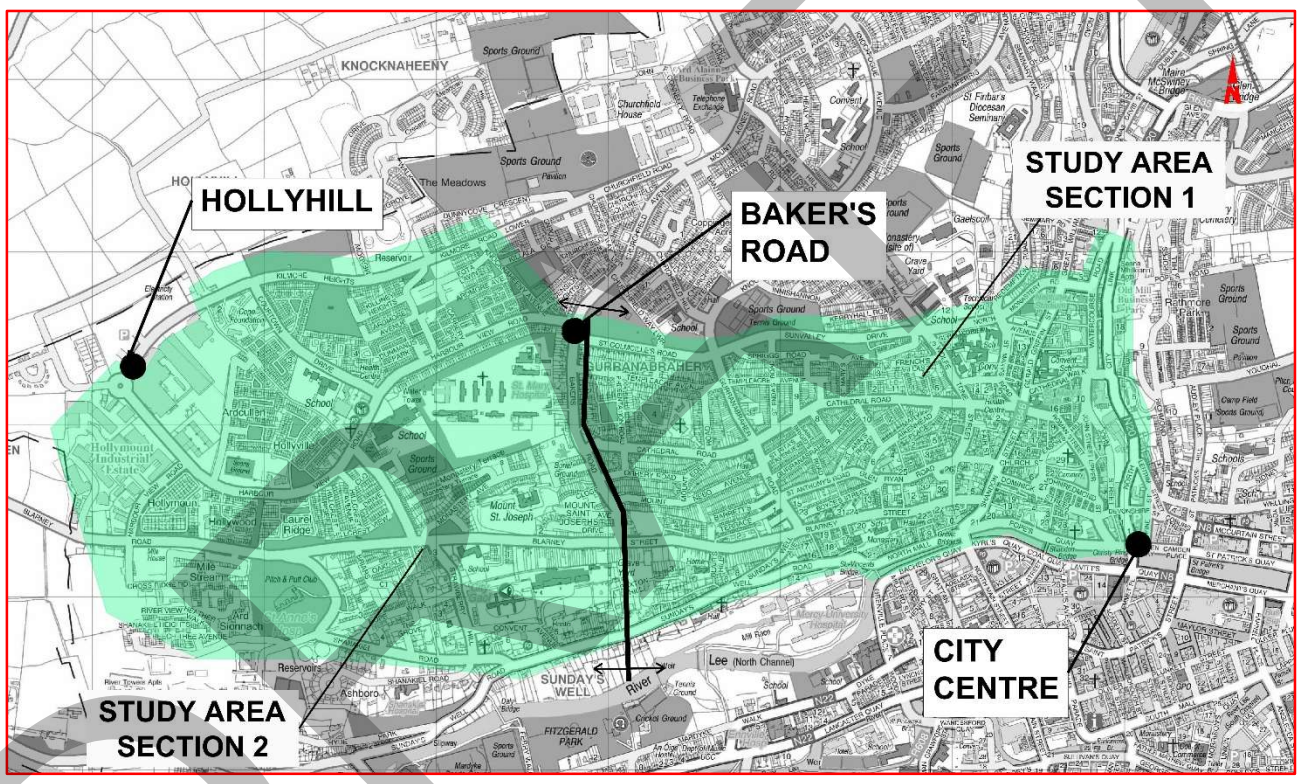
6.1 STUDY AREA SECTIONS

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 Baker's Road (Chapter 6.2); and
- Study Area Section (SAS) No. 2 – Baker's Road to Hollyhill (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 BAKER'S ROAD OPTIONS ASSESSMENT

Study Area Section (SAS) 1, which is presented in Figure 6-2, consists of all the identified suitable links between Cork City Centre and Baker's Road, 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 Mulgrave Road, John Redmond Street, Upper John Street, Roman Street, Cathedral Street, Cathedral Road and Baker's Road; and
  - A cycle route via Knapp's Square, Lower John Street and Upper John Street, Watercourse Road and O'Connell Street, North Monastery Road, Sunvalley Drive, St Colmcille's Road and Baker's Road.

- Option A2, comprising of;
  - A bus route via Mulgrave Road, John Redmond Street, Upper John Street, Roman Street, Cathedral Street, Cathedral Road, Gurranebraher Road, St. Colmcille's Road and Baker's Road; and
  - Option A1 cycle route.

- Option A3, comprising of;
  - A bus route via the N20 North City Link Road, Watercourse Road, O'Connell Street, North Monastery Road, Sunvalley Drive, St. Colmcille's Road and Baker's Road; and
  - A cycle route via the N20 North City Link Road, Watercourse Road, O'Connell Street, North Monastery Road, Sunvalley Drive, St. Colmcille's Road and Baker's Road.

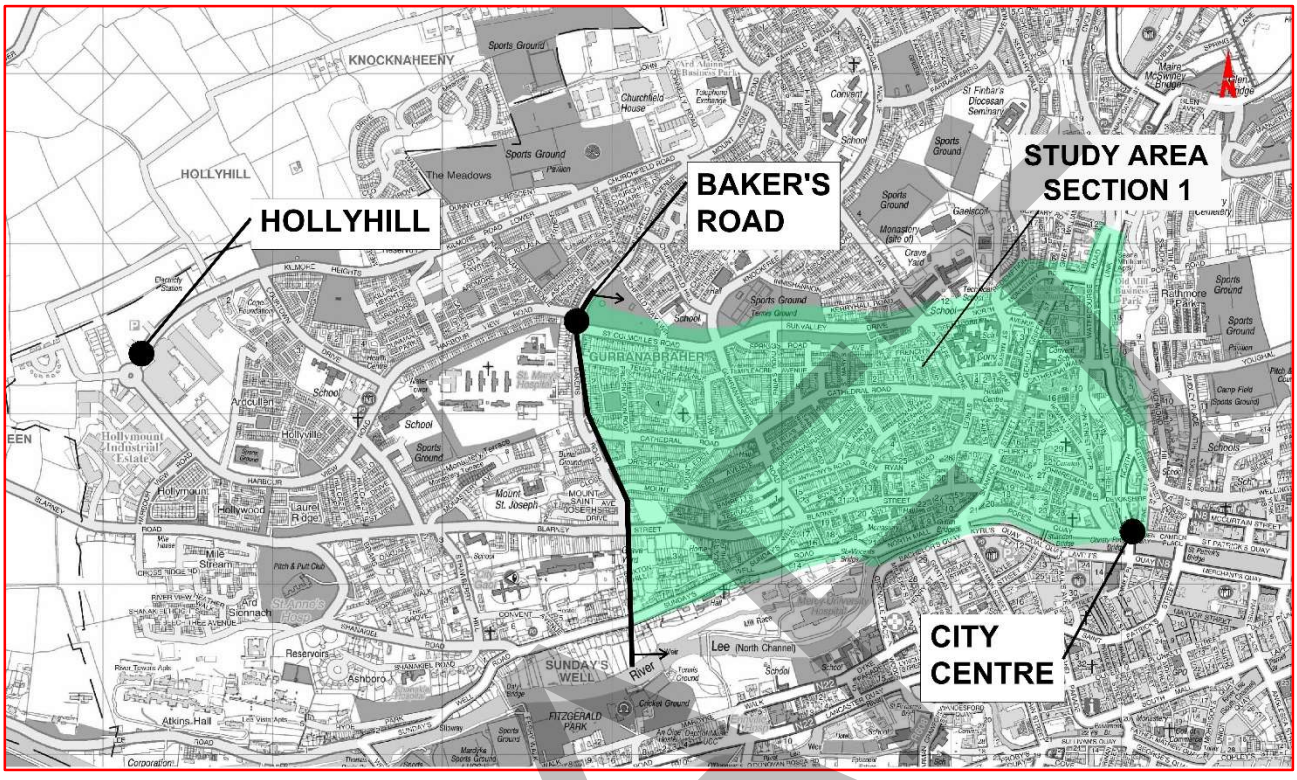
- Option A4, comprising of;
  - Option A1 bus route; and
  - A cycle route via Camden Quay, Mulgrave Road, John Redmond Street, Exchange Street, Church Street, Wolfe Tone Street, Cattle Market Avenue, Cathedral Road and Baker's Road.

- Option A5, comprising of;
  - A bus route via the N20 North City Link Road, Cathedral Walk, Watercourse Road, O'Connell Street, North Monastery Road, Sunvalley Drive, St. Colmcille's Road and Baker's Road; and
  - A cycle route via Camden Quay, Mulgrave Road, John Redmond Street, Upper John Street, Roman Street, Cathedral Street, Cathedral Road and Baker's Road.

- Option A6, comprising of;
  - Option A1 bus route, except with increased bus lane provision along Cathedral Road; and
  - Option A1 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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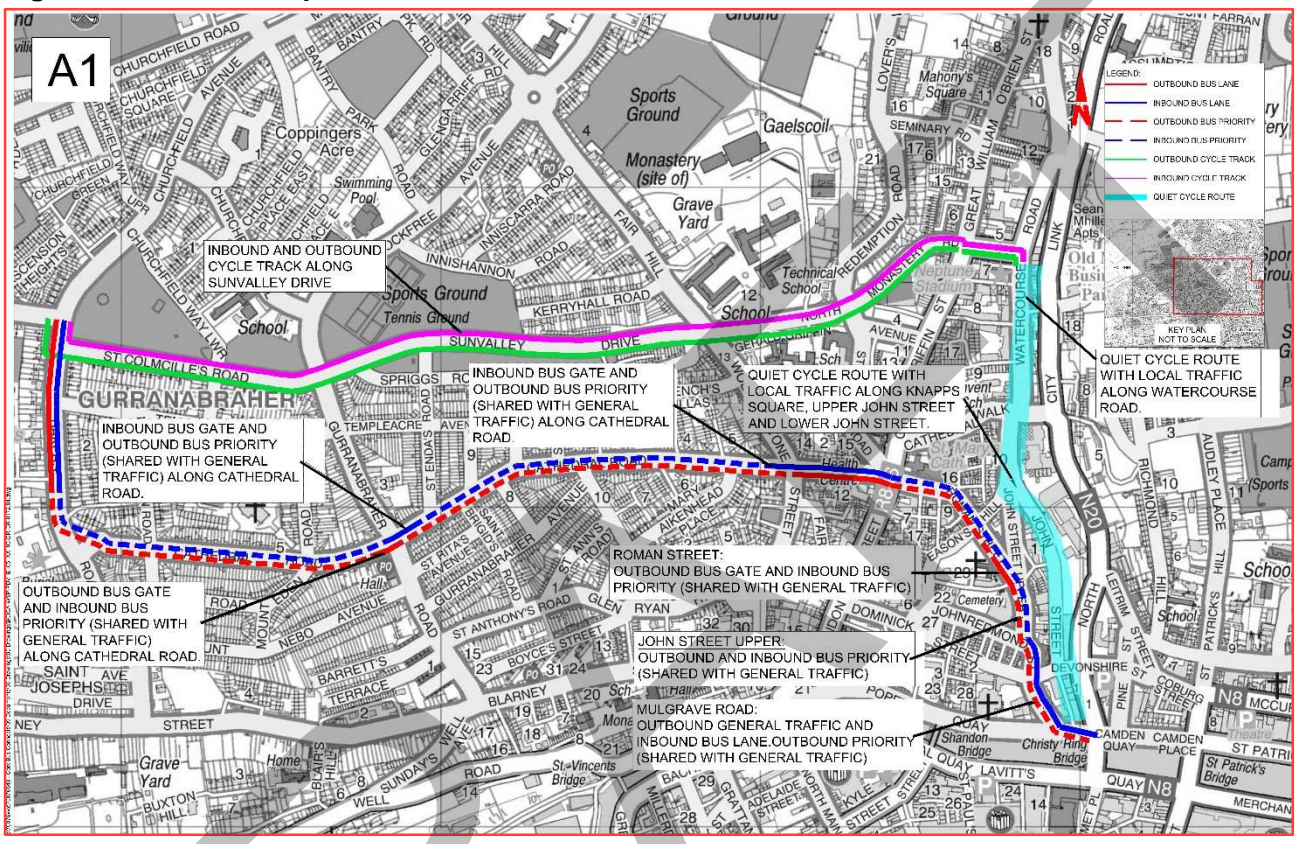
SAS 1 - OPTION A1

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

- A shared bus/general traffic lane along Camden Quay, Mulgrave Road, John Redmond Street, Upper John Street;
- A bus gate (short sections of bus/cycle-only roadway) on Roman Street at the Upper John Street Junction;
- A shared bus/general traffic lane along Cathedral Street;
- A dedicated bus lane and general traffic lane along Cathedral Road between the Shandon Street Junction and the Wolfe Tone Street Junction;
- A shared bus/general traffic lane along Cathedral Road to the Gurranabraher Road Junction;
- A bus gate (short sections of bus/cycle-only roadway) on Cathedral Road west of Gurranabraher Road Junction;
- A shared bus/general traffic lane along Cathedral Road and Baker's Road to St Mary's Health Campus; and
- A dedicated bus and general traffic lane along Baker's Road to the Harbour View Road Junction.

Inbound Bus Route

- A shared bus/general traffic lane on Baker's Road between Harbour View Road and St Colmcille's Road;
- A dedicated bus lane and general traffic lane on Baker's Road to St Mary's Health Campus;
- A shared bus/general traffic lane from St Mary's Health Campus on Baker's Road and along Cathedral Road to west of Gurranabraher Road Junction;
- A dedicated bus lane and general traffic lane on approach to the Gurranabraher Road Junction;
- A bus gate (short sections of bus/cycle-only roadway) on Cathedral Road east of the Gurranabraher Road Junction;
- A shared bus/general traffic lane on Cathedral Road to west of the Wolfe Tone Street Junction;
- A bus gate (short sections of bus/cycle-only roadway) on Cathedral Road west of the Wolfe Tone Street Junction;
- A dedicated bus lane and general traffic lane on Cathedral Road between the Wolfe Tone Street Junction and the Shandon Street Junction;
- A shared bus/general traffic lane along Cathedral Street, Roman Street and Upper John Street; and
- A dedicated bus lane and general traffic lane along John Redmond Street, Mulgrave Road and Camden Quay to N20 Junction.

Cycle Routes

- Provision of a "quiet streets" cycle route shared with local traffic via Knapp's Square, Lower John Street and Upper John Street and Watercourse Road; and
- Provision of both inbound and outbound cycle tracks on O'Connell Street, North Monastery Road, Sunvalley Drive, St Colmcille's Road and Baker's Road to the Harbour View Road Junction.

Route Constraints

The route as a whole is constrained resulting in the separation of the proposed bus and cycle routes. Within the bus route, there are constraints due to lack of sufficient cross-sectional width throughout. As such, there is an inability to provide dedicated bus lanes for the full extent of the route, meaning that both the inbound and outbound bus route is shared with general traffic on some roads/streets, as described above. Along Cathedral Road, it is especially constrained between Presentation Road and Mary Aikenhead Place, where are there are no proposed works except bus gates, improved bus stops and pedestrian facilities. The proposed bus gate approach will maintain as much of the existing residential parking layout along Cathedral Road as possible, while also providing bus priority.

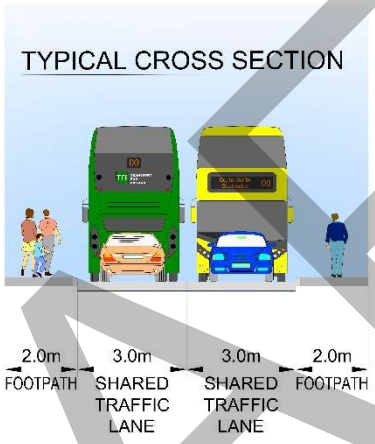
The bus gate on Roman Street would create a 260m diversion via Upper John Street, Cathedral Walk and Gerald Griffin Street. The outbound bus gate at the Cathedral Road / Gurranabraher Road junction would create a 350m diversion for general traffic via Gurranabraher Road, Mount Nebo Avenue and Mount Eden Road. The inbound bus gate at the Cathedral Road / Gurranabraher Road junction would create a 380m via Gurranabraher Road, Templeacre Avenue and St Enda's Road.
Cycle network integration is also adversely affected by steep gradients for cyclists to negotiate throughout the study area section negatively impacting journey time and significantly increasing the 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 route and cycle route 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 throughout the construction of the scheme.

Bus Stops

Existing bus stops and shelters will be refurbished as part of the BusConnects Cork programme. There are seventeen existing individual bus stops along the proposed bus route and it is estimated that eighteen bus stops will be required on the route (i.e. nine in each direction) assuming a bus stop spacing of approx. 250m. Consequently, only one new bus stop will be required. Figure 6-4 shows a sample cross-section for Option A1.

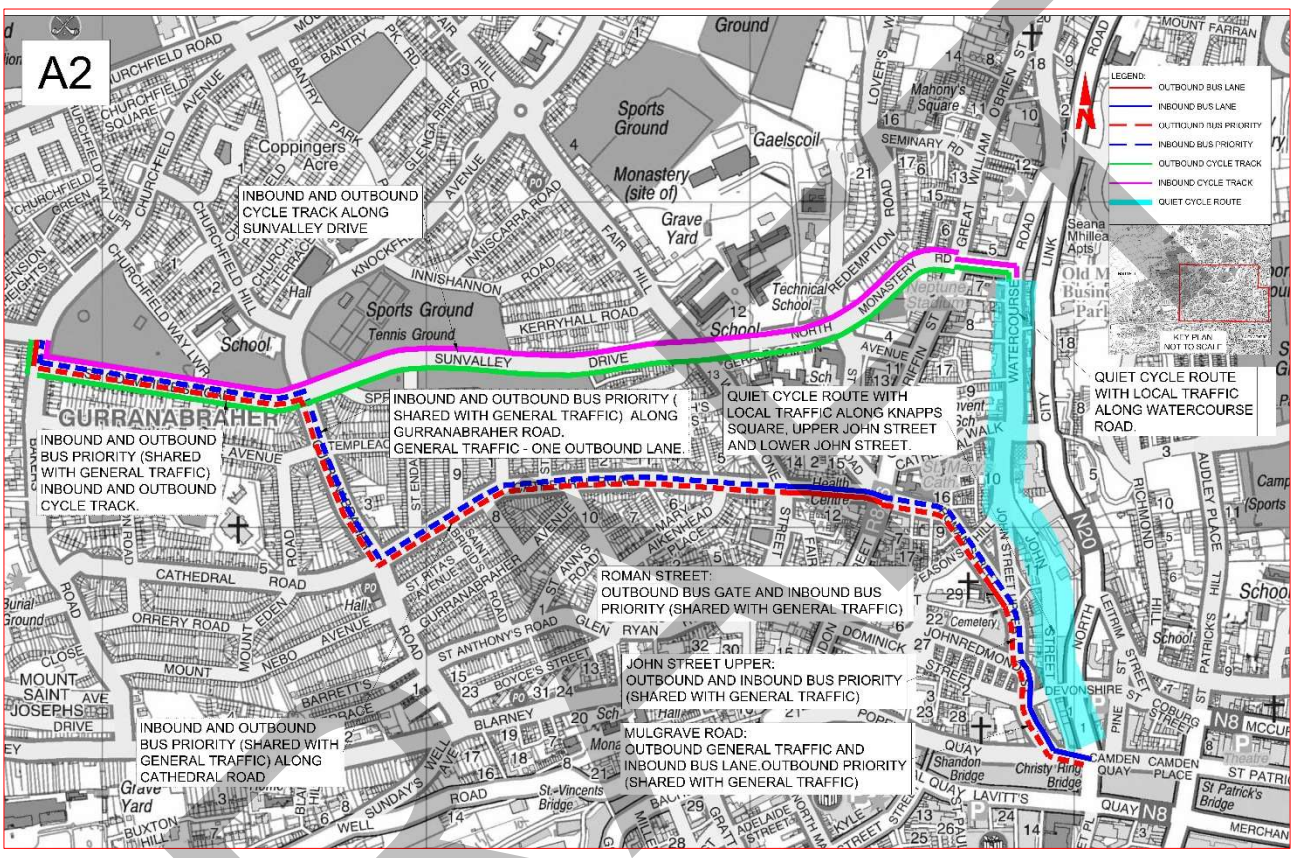
Figure 6-4 - Option A1 Typical Cross Section on Cathedral Road



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

- A shared bus/general traffic lane along Camden Quay, Mulgrave Road, John Redmond Street, Upper John Street;
- A bus gate (short sections of bus/cycle-only roadway) on Roman Street at the Upper John Street Junction; and
- A shared bus/general traffic lane along Cathedral Street, Cathedral Road, Gurranabraher Road, St Colmcille's Road and Baker's Road to the Harbour View Road Junction.

Inbound Bus Route

- A dedicated bus lane and general traffic lane on Baker's Road to the St Colmcille Road Junction;
- A shared bus/general traffic lane on St Colmcille Road, Gurranabraher Road and Cathedral Road to junction with Wolfe Tone Street;
- A dedicated bus lane and general traffic lane along Cathedral Road to Shandon Street Junction;

- A shared bus/general traffic lane along Cathedral Street, Roman Street and Upper John Street; and
- A dedicated bus lane along John Redmond Street, Mulgrave Road and Camden Quay to junction with N20.

Cycle Routes

- Provision of a "quiet streets" cycle route via Knapp's Square, Lower John Street, Upper John Street and Watercourse Road; and
- Provision of inbound and outbound cycle tracks on O'Connell Street, North Monastery Road, Sunvalley Drive, St Colmcille's Road and Baker's Road to the Harbour View Road Junction.

Route Constraints

The route as a whole is constrained resulting in the separation of the proposed bus and cycle routes for the majority of their length. Within the bus route, there are constraints due to lack of sufficient cross-section width throughout. As such, there is an inability to provide dedicated bus lanes for the full extent of the route, meaning that both the inbound and outbound bus route is shared with general traffic on some roads/streets, as described above. Therefore, journey time may be increased when general traffic volumes are high on the route.

The bus gate on Roman Street would create a 260m diversion via Upper John Street, Cathedral Walk and Gerald Griffin Street.

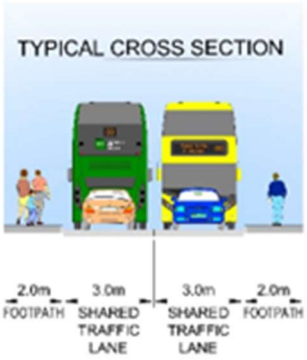
Cycle network integration is also adversely affected by steep gradients for cyclists to negotiate throughout the study area section negatively impacting journey time and significantly increasing the amount of physical activity.

There are a significant number of designated National Inventory of Architectural Heritage (NIAH) sites and protected structures along both the bus route and cycle route 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 throughout the construction of the scheme.

Bus Stops

Existing bus stops and shelters will be refurbished as part of the BusConnects Cork programme. There are twelve existing individual bus stops along this route and it is estimated that sixteen stops will be required on the route (i.e. eight in each direction) assuming a bus stop spacing of approx. 250m. Consequently, only four new bus stops will be required. Figure 6-6 shows a sample cross-section for Option A2.

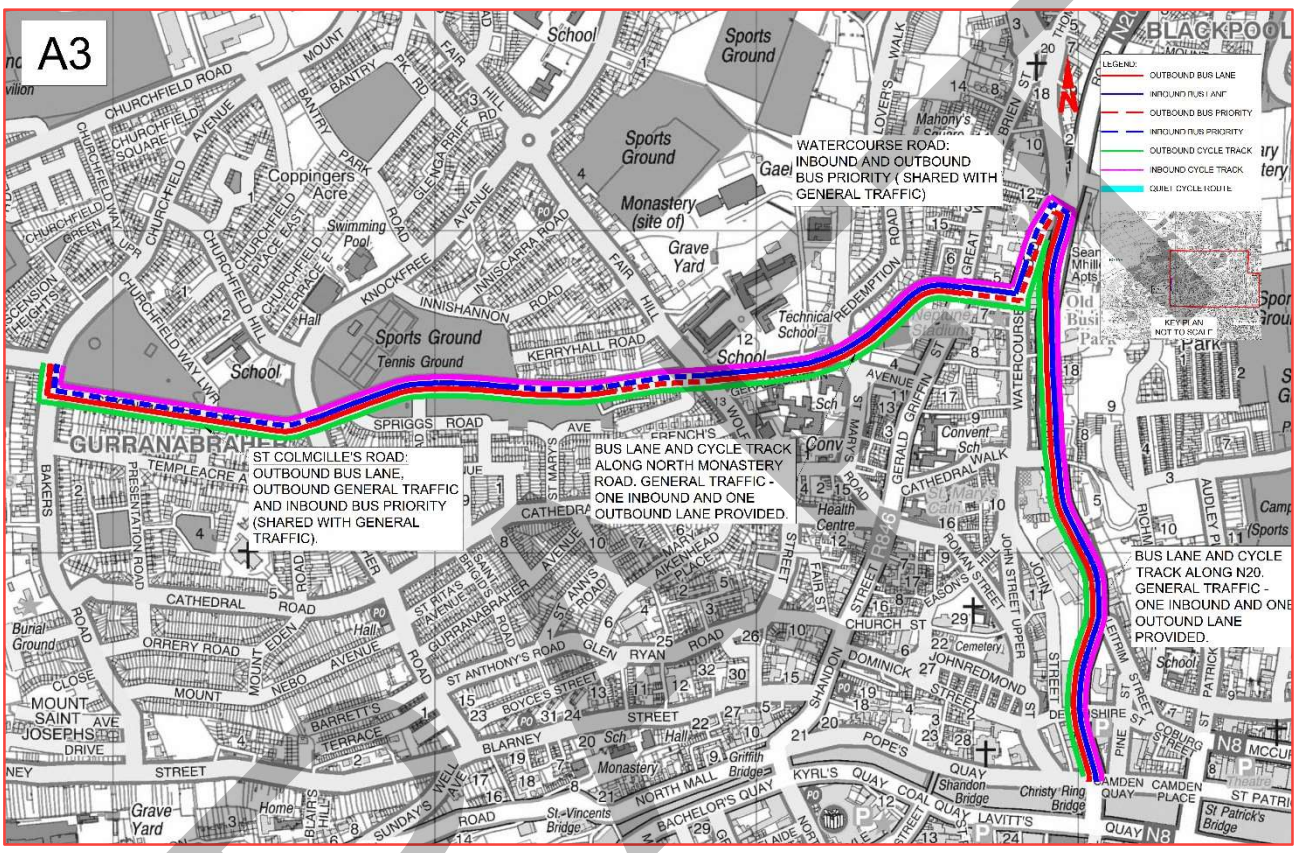
Figure 6-6 – Option A2 Typical Cross Section on Gurranabraher Road



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 paragraph.

Figure 6-7 - SAS 1 - Option A3 Outline



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Outbound Bus Route

- A dedicated bus lane and general traffic lane along the N20;
- A shared bus/general traffic lane along Watercourse Road and O'Connell Street;
- A dedicated bus lane and general traffic lane along North Monastery Road;
- A shared bus/general traffic lane along Sunvalley Drive as far as the eastern pathway to St Mary's Avenue; and
- A dedicated bus lane and general traffic lane along the remainder of Sunvalley Drive, St Colmcille's Road and Baker's Road to the Harbour View Road Junction.

Inbound Bus Route

- A shared bus/general traffic lane on Baker's Road and St Colmcille's Road;
- A dedicated bus lane and general traffic lane on Sunvalley Drive to the western extent of existing Kerryhall Road Residential Estate;

- A shared bus/general traffic lane along the remainder of Sunvalley Drive to the Wolfe Tone Street Junction;
- A dedicated bus lane and general traffic lane along North Monastery Road, O'Connell Street and Watercourse Road to O'Reilly's Service Station;
- A shared bus/general traffic lane along the remainder of Watercourse Road to the N20 Junction; and
- A dedicated bus lane and general traffic lane along the N20 to Camden Quay.

Cycle Route

- Provision of both inbound and outbound cycle tracks along the full SAS 1 route, via the N20, Watercourse Road, O'Connell Street, North Monastery Road, Sunvalley Drive, St Colmcille's Road and Baker's Road.

Route Constraints

The route is relatively unconstrained along the majority of its length, especially along the N20, as such an optimal 20m active travel corridor with both inbound and outbound bus and cycle lanes can be provided. However, there are constraints due to lack of sufficient cross-sectional width at a few locations along the route. As such, there is an inability to provide dedicated bus lanes for the full extent of the route, meaning that both the inbound and outbound bus route is shared with general traffic on some roads/streets, as described above. Therefore, journey time may be increased when general traffic volumes are high on the route.

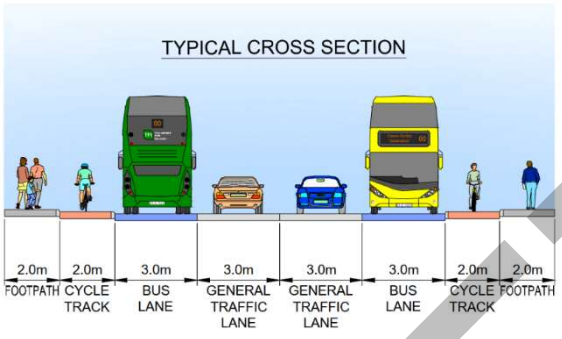
Cycle network integration is also adversely affected by steep gradients for cyclists to negotiate throughout the study area section, it is also the longest cycle route option, therefore, negatively impacting journey time. Existing on street parking along St Colmcille's Road is to be removed but existing parking in curtilage will be retained.

There are a significant number of designated National Inventory of Architectural Heritage (NIAH) sites and protected structures along both the bus route and cycle route 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 throughout the construction of the scheme.

Bus Stops

Existing bus stops and shelters will be refurbished as part of the BusConnects Cork programme. There are two existing individual bus stops along this route and it is estimated that twenty-two bus stops will be required on the route (i.e. 11 in each direction) assuming a bus stop spacing of approx. 250m. Consequently, only twenty new bus stops will be required. Figure 6-8 shows a sample cross-section for Option A3.

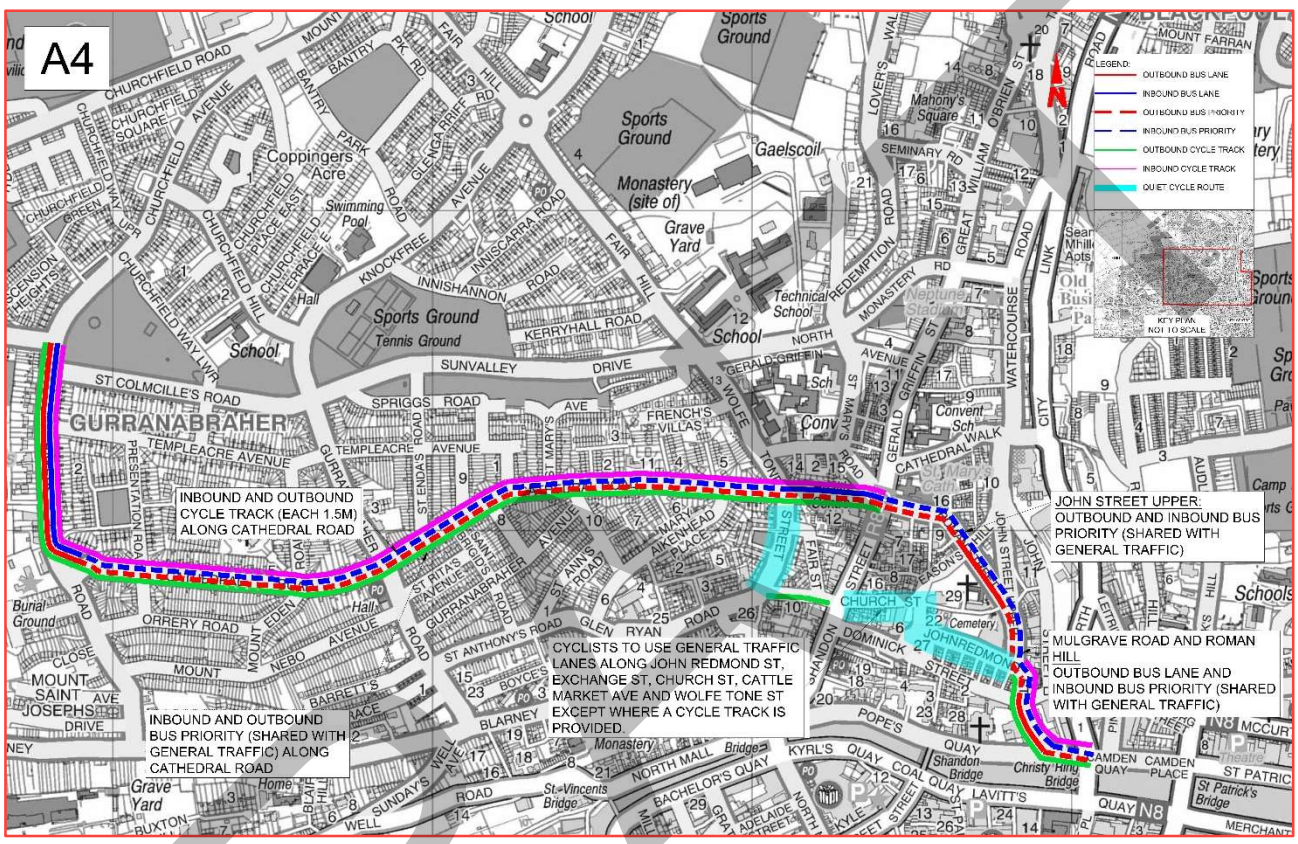
Figure 6-8 – Option A3 Typical Cross Section on the N20



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

- A dedicated bus lane along Camden Quay and Mulgrave Road;
- A shared bus/general traffic lane along John Redmond Street;
- A dedicated bus lane along Upper John Street and Roman Street;
- Shared bus / general traffic lane along Cathedral Street and Cathedral Road; and
- Dedicated bus and general traffic lanes along Baker's Road to the Harbour View Road Junction.

Inbound Bus Route

- A dedicated bus lane and general traffic lane on Baker's Road;
- A shared bus/general traffic lane on Cathedral Road to the Wolfe Tone Street Junction;
- A dedicated bus lane and general traffic lane along Cathedral Road to the Shandon Street Junction; and
- A shared bus/general traffic lane on Cathedral Street, Roman Street, Upper John Street, John Redmond Street, Mulgrave Road and Camden Quay to junction with N20.

Cycle Route

- Provision of 1.5m wide inbound and outbound cycle tracks along Camden Quay, Mulgrave Road, John Redmond Street to Upper John Street Junction;
- Provision of a “quiet cycle rote” shared with local traffic via John Redmond Street, Exchange Street, Church Street and Wolfe Tone Street, linking in with a short section of segregated, outbound cycle track on Cattle Market Avenue; and
- Provision of 1.5m wide inbound and outbound cycle tracks along Cathedral Road and Baker’s Road to the Harbour View Road Junction.

Route Constraints

The route as a whole is constrained resulting in the separation of the proposed bus and cycle routes through a portion of the study area. Within the bus route, there are constraints due to a lack of sufficient cross-sectional width throughout. As such, there is an inability to provide dedicated bus lanes along the majority of the route, meaning that both the inbound and outbound bus route is shared with general traffic on some roads/streets, as described above. Therefore, journey time may be increased when general traffic volumes are high on the route.

All on street parking will be removed to provide sufficient width for the proposed active travel corridor, this will be most significant along Roman Street, Cathedral Road and Baker’s Road. However, as much in curtilage parking will be retained as possible along Cathedral Road.

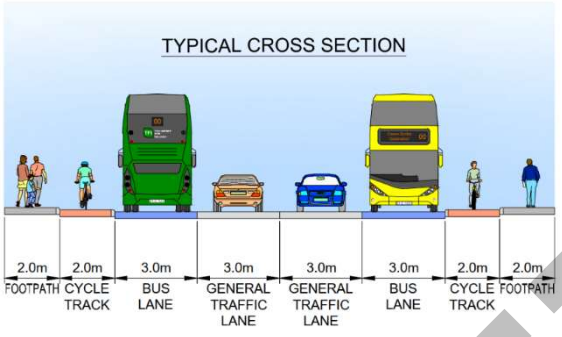
Cycle network integration is also adversely affected by steep gradients for cyclists to negotiate throughout the study area section negatively impacting journey time and significantly increasing the amount of physical activity.

There are a significant number of designated National Inventory of Architectural Heritage (NIAH) sites and protected structures along both the bus route and cycle route 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 throughout the construction of the scheme.

Bus Stops

Existing bus stops and shelters will be refurbished as part of the BusConnects Cork programme. There are seventeen existing individual bus stops along this route and it is estimated that eighteen bus stops will be required on the route (i.e. nine in each direction) assuming a bus stop spacing of approx. 250m. Consequently, only one new bus stop will be required. Figure 6-10 shows a sample cross-section for Option A4.

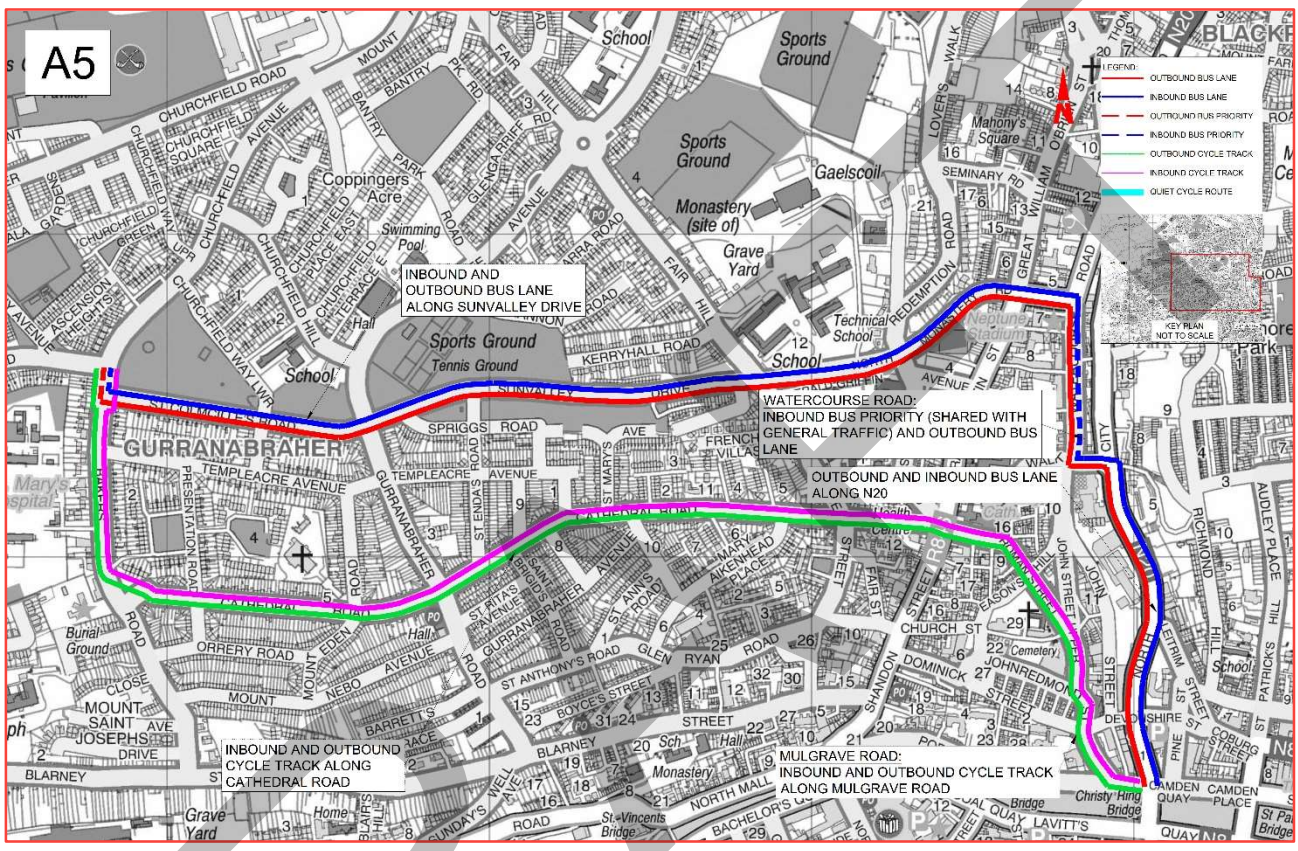
Figure 6-10 – Option A4 Typical Cross Section on Baker's Road



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 paragraph.

Figure 6-11 - SAS 1 - Option A5 Outline



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Outbound Bus Route

- A dedicated bus lane and general traffic lane along the N20;
- A dedicated bus lane along Cathedral Walk and Watercourse Road;
- A dedicated bus lane and general traffic lane along O'Connell Street, North Monastery Road, Sunvalley Drive and St Colmcille's Road; and
- A shared bus/general traffic lane on the short section of Baker's Road to the Harbour View Road Junction.

Inbound Bus Route

- A shared bus/general traffic lane on Baker's Road;
- A dedicated bus lane and general traffic lane on St Colmcille's Road, Sunvalley Drive, North Monastery Road, O'Connell Street and Watercourse Road to Bleasbys Street;
- A shared bus/general traffic lane along the remainder of Watercourse Road to the Cathedral Walk Junction;
- A dedicated bus lane on Cathedral Walk; and

- A dedicated bus lane and general traffic lane on the N20 to Camden Quay.

Cycle Route

- Provision of both inbound and outbound cycle tracks along Camden Quay, Mulgrave Road, John Redmond Street, Upper John Street, Roman Street, Cathedral Street, Cathedral Road and Baker's Road.

Route Constraints

The route as a whole is constrained resulting in the separation of the proposed bus and cycle routes. Within the bus route, there are constraints along Watercourse Road due to lack of sufficient cross-section width throughout. As such, there is an inability to provide dedicated bus lanes for the full extent of the route, meaning that both the inbound and outbound bus route is shared with general traffic on some roads/streets, as described above. Therefore, journey time may be increased when general traffic volumes are high on the route.

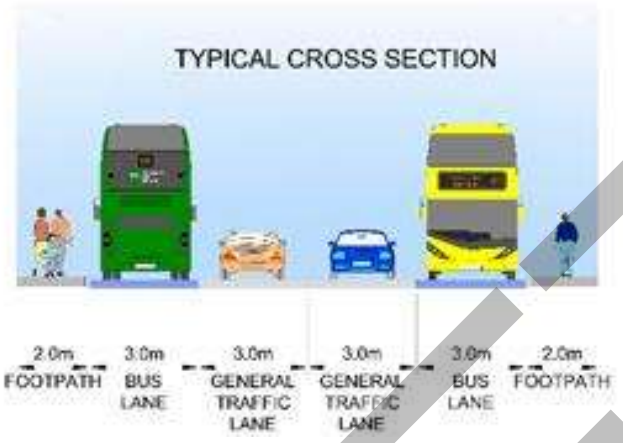
Cycle network integration is also adversely affected by steep gradients for cyclists to negotiate throughout the study area section negatively impacting journey time and significantly increasing the amount of physical activity. All on street parking along Cathedral Road will be removed to provide inbound and outbound cycle tracks, however, in curtilage parking will be retained.

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 throughout the construction of the scheme.

Bus Stops

Existing bus stops and shelters will be refurbished as part of the BusConnects Cork programme. There are two existing individual bus stops along this route and it is estimated that twenty bus stops will be required on the route (i.e. 10 in each direction) assuming a bus stop spacing of approx. 250m. Consequently, only eighteen new bus stop will be required. Figure 6-12 shows a sample cross-section for Option A5.

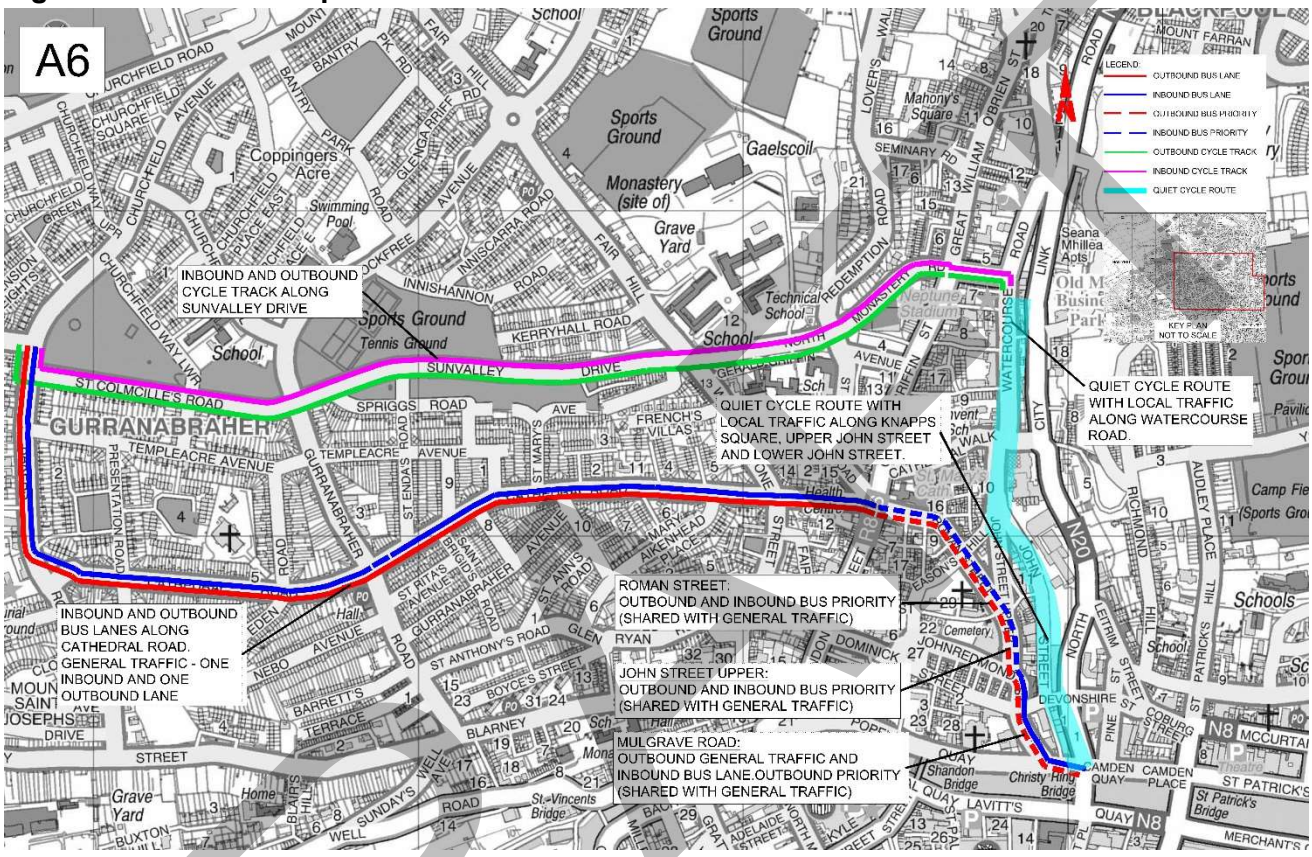
Figure 6-12 - Option A5 Typical Cross Section on Sunvalley Drive



SAS 1 - OPTION A6

An outline of Option A6 is shown in Figure 6-13 below and is then described in greater detail in the subsequent paragraph.

Figure 6-13 - SAS 1 - Option A6 Outline



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Outbound Bus Route

- A shared bus/general traffic lane along Camden Quay, Mulgrave Road, John Redmond Street, Upper John Street, Roman Street and Cathedral Street;
- A dedicated bus lane and general traffic lane along Cathedral Road and Baker's Road;

Inbound Bus Route

- A dedicated bus lane and general traffic lane along Baker's Road and Cathedral Road;
- A shared bus/general traffic lane along Cathedral Street, Roman Street and Upper John Street; and
- A dedicated bus lane and general traffic lane along John Redmond Street, Mulgrave Road and Camden Quay to N20 Junction.

Cycle Routes

- Provision of a “quiet streets” cycle route shared with local traffic via Knapp’s Square, Lower John Street and Upper John Street and Watercourse Road; and
- Provision of both inbound and outbound cycle tracks on O’Connell Street, North Monastery Road, Sunvalley Drive, St Colmcille’s Road and Baker’s Road to the Harbour View Road Junction.

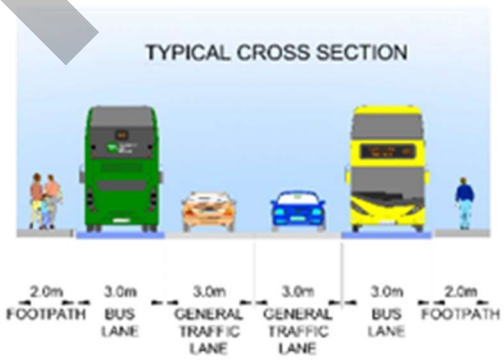
Route Constraints

The route as a whole is constrained resulting in the separation of the proposed bus and cycle routes. Within the bus route, there are constraints due to lack of sufficient cross-sectional width throughout. As such, there is an inability to provide dedicated bus lanes for the full extent of the route, meaning that both the inbound and outbound bus route is shared with general traffic on some roads/streets, as described above. The route is especially constrained along Cathedral Road and to provide separate two-way bus and general traffic lanes, considerable land acquisition from private properties would be required and almost all on street parking would be removed in this section.
The bus gate on Roman Street would create a 260m diversion via Upper John Street, Cathedral Walk and Gerald Griffin Street.
Cycle network integration is also adversely affected by steep gradients for cyclists to negotiate throughout the study area section negatively impacting journey time and significantly increasing the 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 route and cycle route 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 throughout the construction of the scheme.

Bus Stops

Existing bus stops and shelters will be refurbished as part of the BusConnects Cork programme. There are seventeen existing individual bus stops along the proposed bus route and it is estimated that eighteen bus stops will be required on the route (i.e. nine in each direction) assuming a bus stop spacing of approx. 250m. Consequently, only one new bus stop will be required. Figure 6-14 shows a sample cross-section for Option A6.

Figure 6-14 – Option A6 Typical Cross Section on Cathedral Road



SAS 2 STAGE 2 OPTION MULTI CRITERIA ANALYSIS SUMMARY

The Study Area Section (SAS) 1 City Centre to Baker's Road 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 6-1 below.

Table 6-1 - Study Area Section 2 MCA Sub-Criteria Summary

	Option A1	Option A2	Option A3	Option A4	Option A5	Option A6
1a.Capital Cost						
1b. Average Journey-time						
1c. Journey-time reliability and Consistency						
2a.Land Use Integration						
2b.Residential Population and Employment Catchments						
2c.Transport Network Integration						
2d. Cyclists Integration						
2e Pedestrian Integration						
3a.Key Trip Attractors (Education/ Health/ Commercial)						
3b.Deprived Geographic Areas						
4. Road User Safety						
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						

In terms of Economy, the differentiator between routes is that A4 is the cheapest followed by A1 and A2. cheapest in terms of capital cost. Options A5 and A6 are the most expensive. In terms of Average Journey Time A3 and A5 ranks lower as they are longer routes

Journey time reliability, Options A2 and A4 has the lowest level of bus priority and likely to incur the largest potential delays.

Integration

In terms of Integration, A5 has the lowest Residential Population and Employment Catchment. In terms of Transport Network Integration, Options A3 and A5 have the biggest impact on the N20

Accessibility and Social Inclusion

In terms of Accessibility and Social Inclusion, Options A3 and A5 serve a greater number of key trip attractors whereas A1, A2. A4 and A6 serves a marginally more deprived area

Safety

Under Safety, Option A3 and A5 rank slightly lower as they have more turning movements

Environment

In terms of environment, Options A3, A4 and A6 ranks lower under Land Use and the Built Environment due to potential land acquisition and removal of parking.

In terms of Noise, Vibration and Air A1 and A2 scores highest as the bus gates on Cathedral Road will reduce traffic along this section. Option A6 requires possible land acquisition along Cathedral Road and will likely move traffic closer to the receptors.

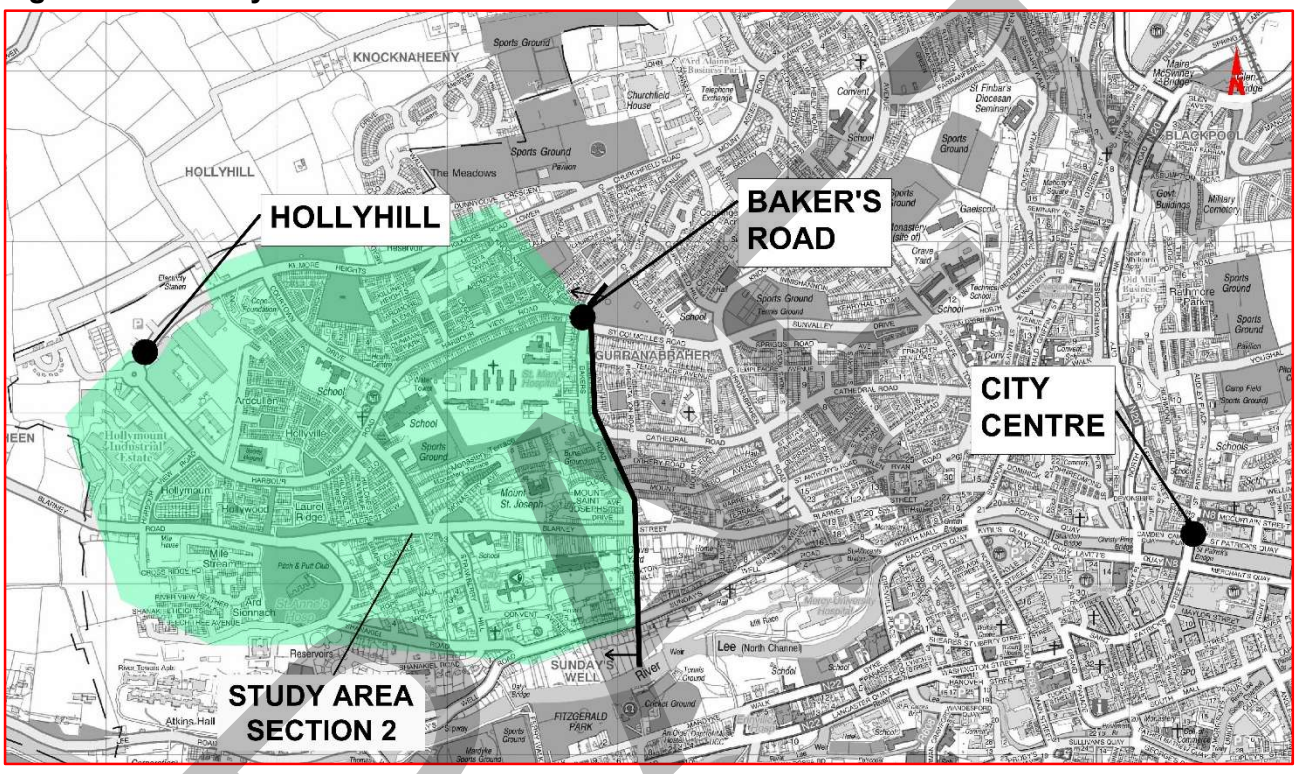
In terms of Landscape and Visual, Option A1 has the least impact on Cathedral Road, whereas Option A6 has the most.

Based on the above MCA, SAS 1- Option A1 is the best performing route from city centre to Baker's Road as it offers a good level of bus priority, with reduced traffic impact when compared to other options and has a low capital cost.

6.3 SECTION 2: BAKER'S ROAD TO HOLLYHILL/APPLE

Study Area Section No. 2 (SAS 2) , which is presented in Figure 6-15. consists of all the identified suitable links between Baker's Road and Hollyhill/Apple, 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:

Figure 6-15 - Study Area Section 2



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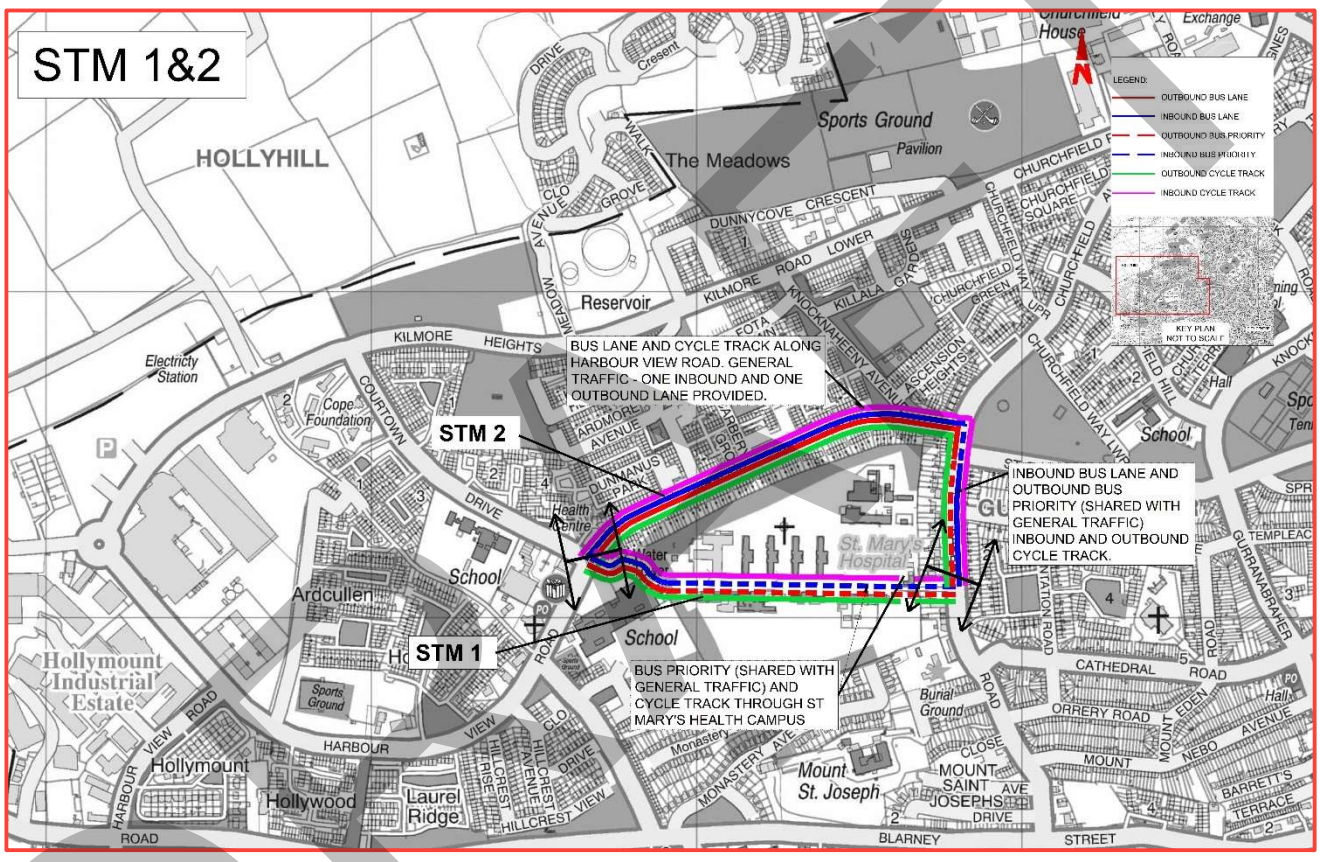
SAS 2 - INITIAL MCA ASSESSMENT

To assess the full route options within SAS 2 an initial multi-criteria analysis assessment was carried out on two competing routes (i.e. St. Mary's Health Campus (STM 1) and Baker's Road- Harbour View Road Loop (STM 2)) at the start of the Study Area Section, to assist and streamline the overall MCA assessment of SAS 2. The following paragraphs summarise the initial SAS 2 MCA. The competing routes are shown Figure 6-16. These options commence on Baker's Road and terminate at the junction of Harbour View Road and Courtown Drive.

Figure 6-16 - STM 1 & 2



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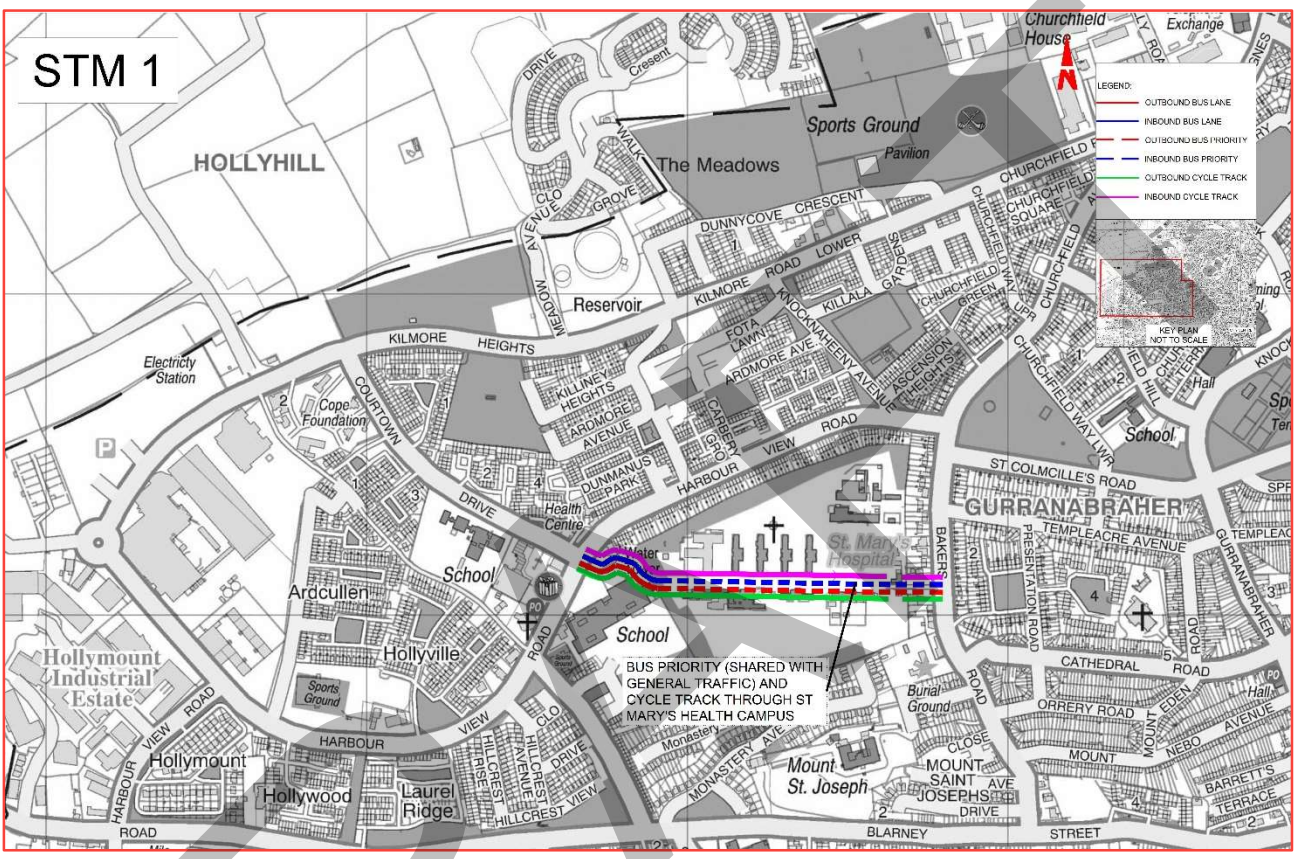
SAS 2 - Option STM 1

An outline of Option STM 1 is shown in Figure 6-17 below and is then described in greater detail in the subsequent text.

Figure 6-17 - SAS 2 - Option STM 1 Outline



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Bus Route

- A shared inbound and outbound bus/general traffic lane through the St Mary's Health Campus; and
- Creation of a new active travel link road onto Harbour View Road, including dedicated inbound and outbound bus lanes, general traffic will continue along Harbour View Road.

Cycle Route

- Provision of both inbound and outbound cycle tracks along full length of section, through St Mary's Campus, along new link road to/from Harbour View Road.

Route Constraints

Within the bus route, there are constraints through St Mary's Campus due to a lack of sufficient cross-sectional width, due to existing mature trees and buildings. As such, there is an inability to provide a dedicated inbound and outbound bus lanes along this portion of the route and buses will share the respective lane with general hospital traffic, as described above. Therefore, journey time may be increased when general traffic volumes are high on the route. A new link road is required to connect

the Health Campus Main Access Road with Harbour View Road, this will result in the acquisition of land and will add a significant cost to the route option. Existing mature trees and vegetation would also be removed as a result of the new link road.

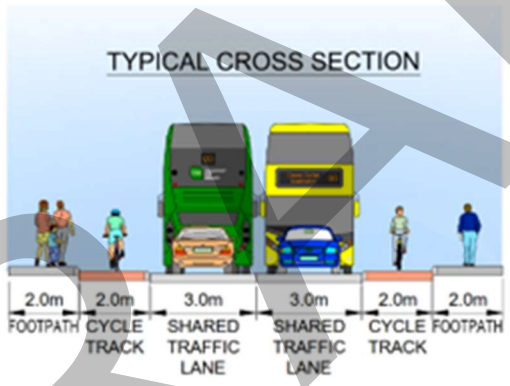
This route particularly favours the employment catchment of the hospital campus but has low residential catchment area.

There are eight designated National Inventory of Architectural Heritage (NIAH) sites along the bus and cycle route 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 throughout the construction of the scheme.

Bus Stops

Existing bus stops and shelters will be refurbished as part of the BusConnects Cork programme. There are no existing individual bus stops along this route and it is estimated that four bus stops would be required on the route (i.e. two in each direction) assuming a bus stop spacing of approx. 250m. Consequently, four new bus stops will be required. Figure 6-18 shows a sample cross-section for Option STM1.

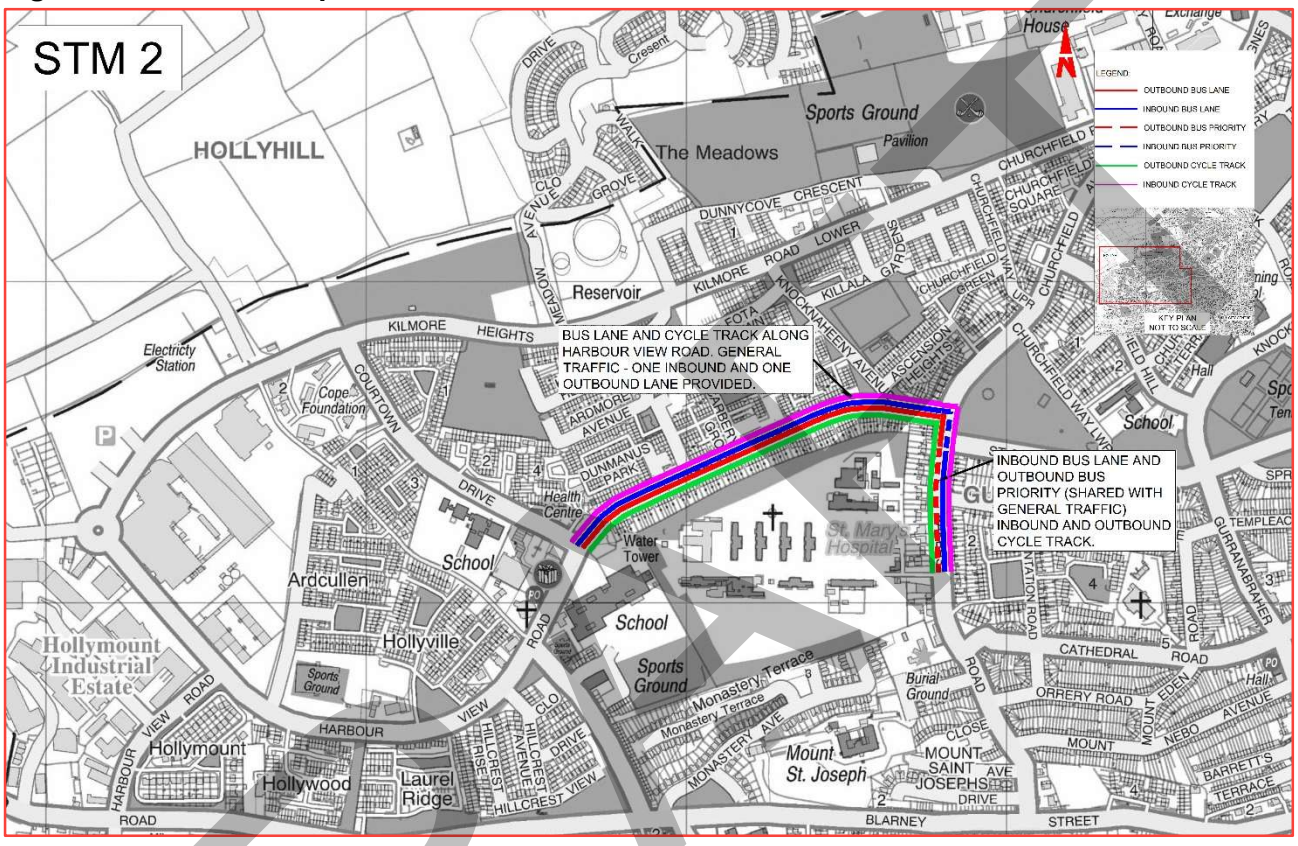
Figure 6-18 – Option STM1 Typical Cross Section through St Mary's Health Campus



SAS 2 - OPTION STM 2

An outline of Option STM 2 is shown in Figure 6-19 below and is then described in greater detail in the subsequent text.

Figure 6-19 - SAS 2 - Option STM 2 Outline



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Bus Route

- An alternating inbound and outbound shared bus / general traffic lane along a portion of Baker's Road;
- An alternating inbound and outbound dedicated bus lane and general traffic lane along a portion of Baker's Road;
- A dedicated inbound and outbound bus and general traffic lane along Harbour View Road to the Courtown Drive Junction.

Cycle Route

- Provision of both inbound and outbound cycle tracks along Baker's Road from the St. Mary's Health Campus Access to the Harbour View Road Junction and along Harbour View Road to the Courtown Drive Junction.

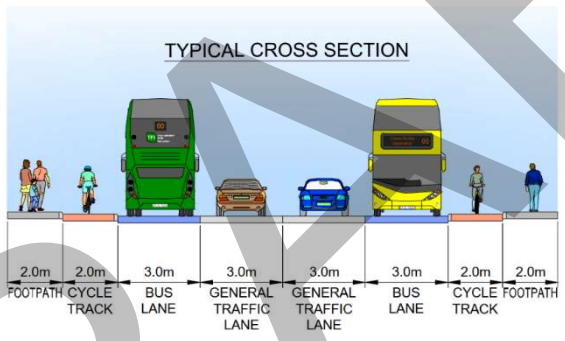
Route Constraints

The route in SAS 2 is relatively unconstrained, resulting in the creation of a combined bus and cycle corridor along the route. However, there are several sections where constraints in the existing cross-sectional width of Harbour View Road will require strips of land acquisition from domestic properties to achieve the full width of the proposed corridor. Baker's Road is also constrained resulting in sections of shared bus provision, the road also narrows to the north and some land acquisition from Gerry O'Sullivan Park is required.

Bus Stops

Existing bus stops and shelters will be refurbished as part of the BusConnects Cork programme. There are eight existing individual bus stops along this route and it is estimated that eight bus stops would be required on the route (i.e. four in each direction) assuming a bus stop spacing of approx. 250m. Consequently, no further new bus stops will be required but the locations of the existing bus stops are subject to change. Figure 6-20 shows a sample cross-section for Option STM2.

Figure 6-20 – Option STM2 Typical Cross Section on Habour View Road



SAS 2 STAGE 2 INITIAL OPTION MULTI CRITERIA ANALYSIS SUMMARY

The Study Area Section (SAS) 2 Baker's Road to Hollyhill / Apple Initial 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 – SAS 2 – INITIAL MCA

		Option STM1	Option STM2
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 the two routes is that STM 2 is cheapest in terms of capital cost. In terms of Average Journey-Time, both options are similar (as STM1 has an assumed 20kph speed limit within the Health Campus)

In terms of Journey time reliability, STM1 incurs the largest potential delays as it has less bus priority.

Integration

In terms of Integration, the main differentiator between routes is that STM2 has the largest Residential Population and Employment Catchment.

Accessibility and Social Inclusion

In terms of Accessibility and Social Inclusion, STM2 serves a greater number of key trip attractors.

Safety

Under Safety, STM1 and STM2 score the same as STM1 has more turning movements than STM2 and STM2 has more junctions than STM1

Environment

In terms of environment, STM1 ranks lower under Archaeological, Architectural and Cultural Heritage as the Health Campus is confined by protected structures on both sides

Based on the above MCA, SAS 2- Option STM2 is the best performing route from Baker's Road to Courtown Drive and will form part of the complete SAS2 Baker's Road to Hollyhill/Apple MCA

SAS 2

As STM2 was identified by the initial MCA as the preferred route option between Baker's Road and Harbour View Road/Courtown Drive, all full route options listed below partially comprise of this sub-option (i.e. along Harbour View Road, from the junction with Baker's Road). The links along STM1 have been scoped out at this stage and the remaining suitable links have been consolidated to form different viable public transport and active travel route options which are summarised as follows:

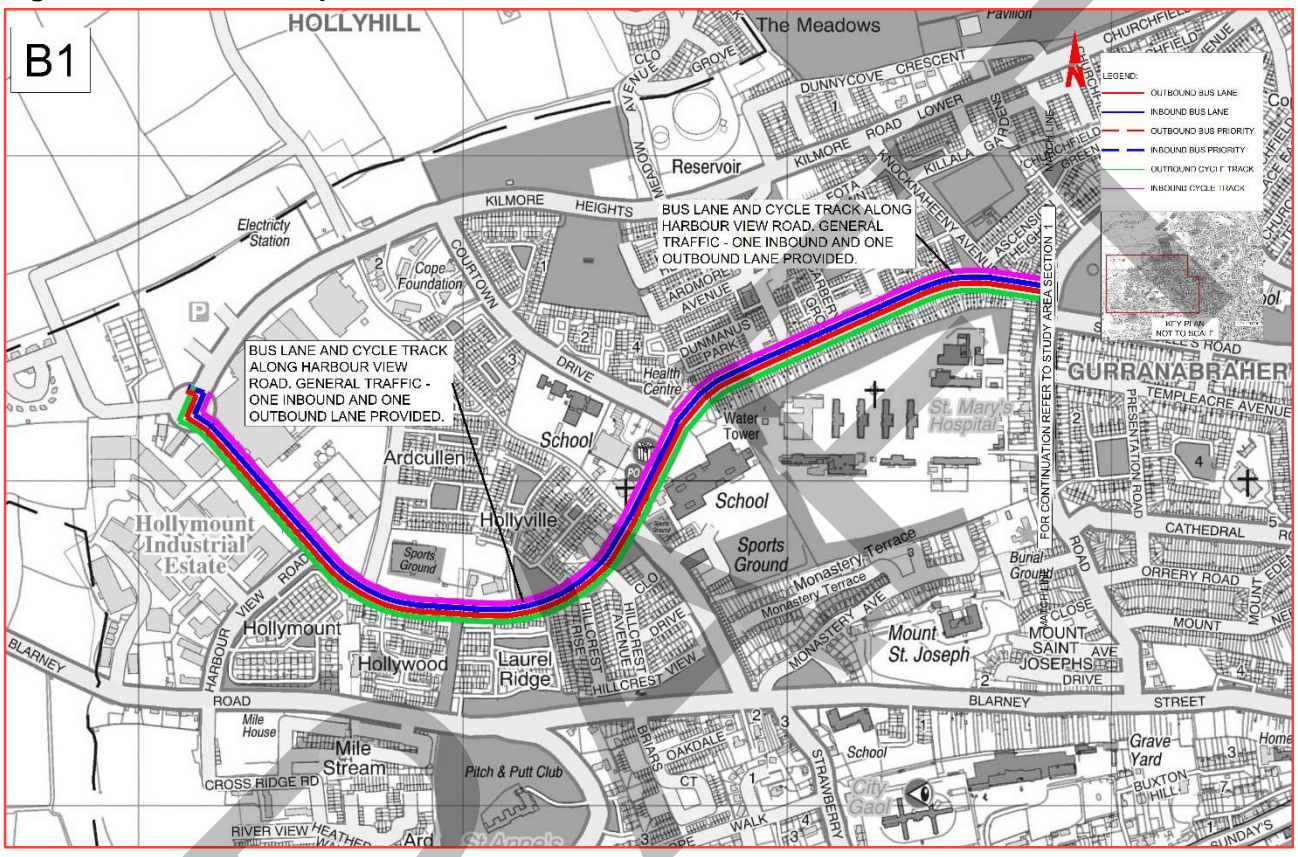
- Option B1, comprising of;
  - A bus and a cycle route via Harbour View Road and Tadhg Barry Road;
- Option B2 comprising of;
  - A bus and a cycle route via Harbour View Road, Courtown Drive, Kilmore Heights to/from the David McCarthy Road Junction; and
- Option B3, comprising of;
  - A bus and a cycle route via Harbour View Road, Knocknaheeny Avenue, Kilmore Road Lower, Kilmore Heights to/from the David McCarthy Road Junction; and

An overview of each of the aforementioned route options (i.e. B1 to B3) assessed within SAS 2 are further described in the subsequent pages.

SAS 2 - OPTION B1

An outline of Option B1 is shown in Figure 6-21 below and is then described in greater detail in the subsequent text.

Figure 6-21 - SAS 2 - Option B1 Outline



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Bus Route

- Both an inbound and outbound dedicated bus lane and general traffic lane along Harbour View Road and Tadhg Barry Road to/from the David McCarthy Road Junction.

Cycle Route

- Provision of both inbound and outbound cycle tracks along full length of Harbour View Road and Tadhg Barry Road to/from the David McCarthy Road Junction.

Route Constraints

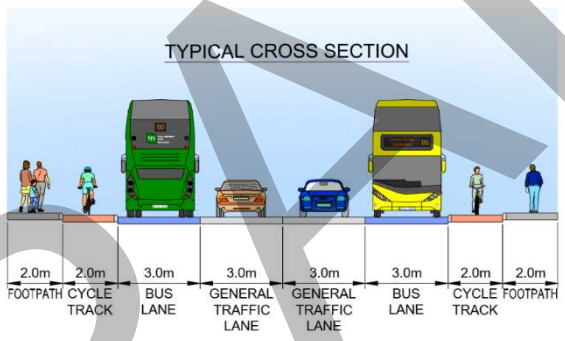
The route in SAS 2 is relatively unconstrained, resulting in the creation of a combined bus and cycle corridor along the route. There are several sections where constraints in the existing cross-sectional width of Harbour View Road's will require strips of land take acquisition and removal of some existing trees and almost all the existing on street parking.

On the northern side of Harbour View Road between Knocknaheeny Avenue and Carberry Grove, Cork City Council is currently developing the Northwest Regeneration Quarter which involves a phased redevelopment of existing social housing and associated access roads.
There is one designated National Inventory of Architectural Heritage (NIAH) along the route 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 throughout the construction of the scheme.

Bus Stops

Existing bus stops and shelters will be refurbished as part of the BusConnects Cork programme. There are thirteen existing individual bus stops along this route and it is estimated that thirteen bus stops would be required on the route (i.e. six in each direction, with one terminus bus stop at Apple Distribution International) assuming a bus stop spacing of approx. 250m. Consequently, no further new bus stops will be required but the locations of the existing bus stops are subject to change. Figure 6-22 shows a sample cross-section for Option B1.

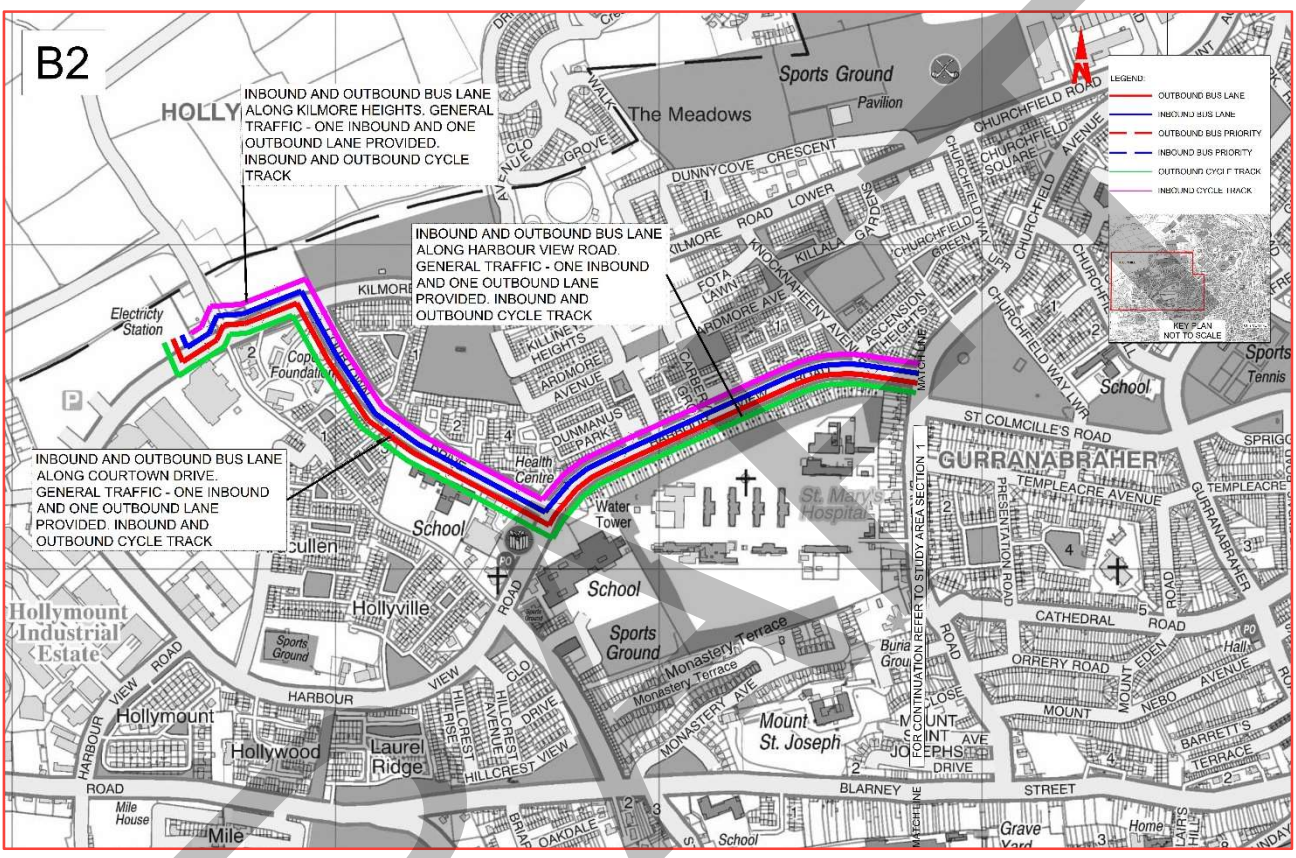
Figure 6-22 – Option B1 Typical Cross Section on Habour View Road



SAS 2 - OPTION B2

An outline of Option B2 is shown in Figure 6-23 below and is then described in greater detail in the subsequent text.

Figure 6-23 - SAS 2 - Option B2 Outline



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Bus Route

- Both an inbound and outbound dedicated bus lane and general traffic lane along Harbour View Road, Courtown Drive, Kilmore Heights to/from the David McCarthy Road Junction.

Cycle Route

- Provision of both inbound and outbound cycle tracks along full length of Harbour View Road, Courtown Drive, Kilmore Heights to/from the David McCarthy Road Junction.

Route Constraints

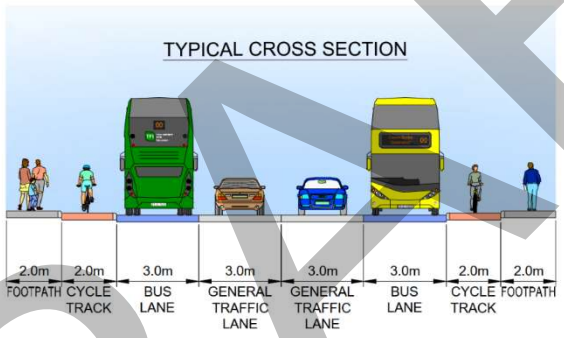
The route is relatively unconstrained along the majority of its length facilitating a combined bus and cycle corridor. However, some land acquisition resulting in the removal of some existing trees and on street parking may be required to accommodate the full width of the proposed corridor.

On the northern side of Harbour View Road between Knocknaheeny Avenue and Carberry Grove, Cork City Council is currently developing the Northwest Regeneration Quarter which involves a phased redevelopment of existing social housing and associated access roads.
Cycle network integration is also adversely impacted by steep gradients (e.g. particularly along Courtown Drive) for cyclists to negotiate, negatively impacting journey time and significantly increasing the amount of physical activity.

Bus Stops

Existing bus stops and shelters will be refurbished as part of the BusConnects Cork programme. There are nine existing individual bus stops along this route and it is estimated that eleven bus stops will be required on the route (i.e. five in each direction, with terminus bus stop at Apple Distribution International) assuming a bus stop spacing of approx. 250m. Consequently, only two new bus stops will be required. Figure 6-24 shows a sample cross-section for Option B2.

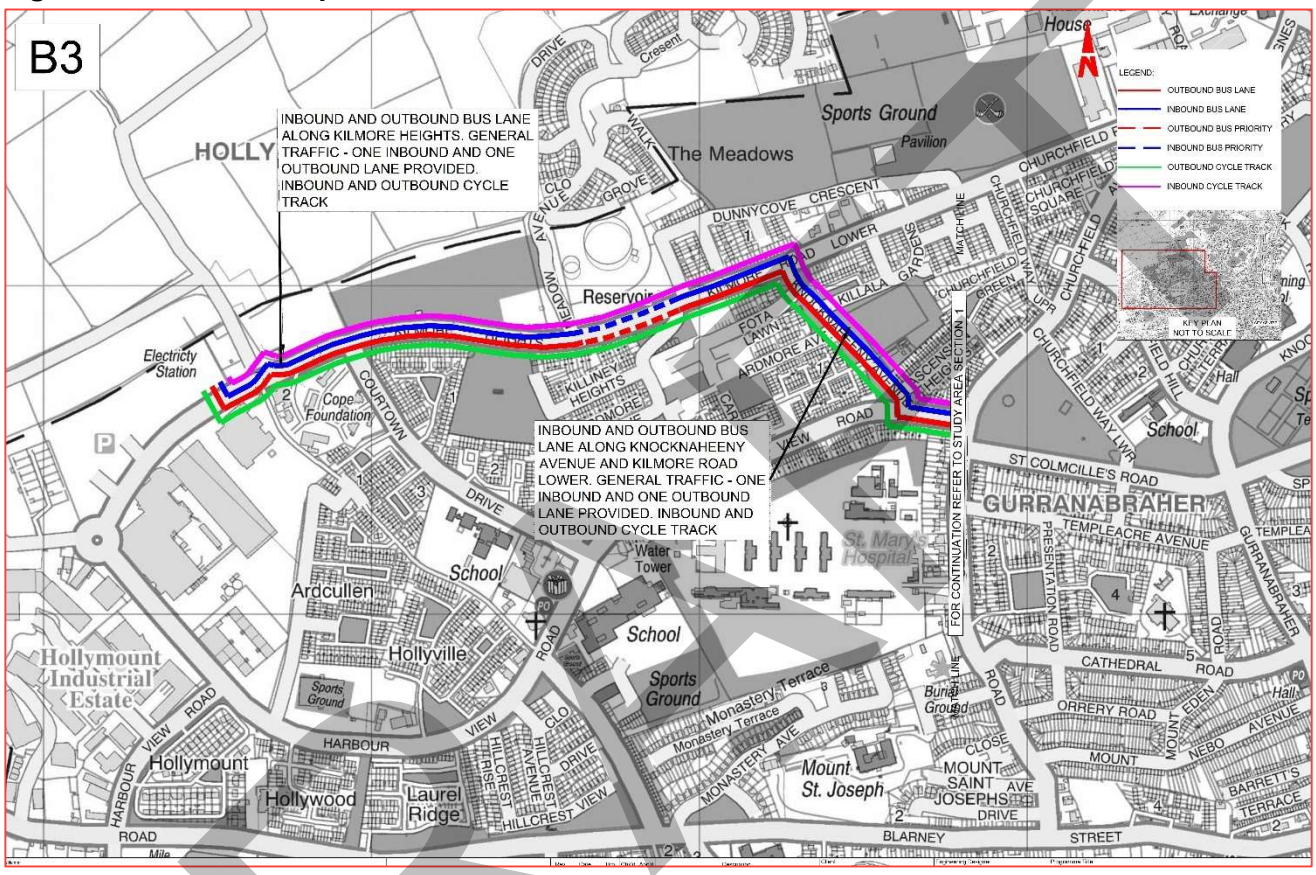
Figure 6-24 – Option B2 Typical Cross Section Courtown Drive



SAS 2 - OPTION B3

An outline of Option B3 is shown in Figure 6-25 below and is then described in greater detail in the subsequent text.

Figure 6-25 - SAS 2 - Option B3 Outline



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Bus Route

- Both an inbound and outbound dedicated bus lane and general traffic lane along Harbour View Road, Knocknaheeny Avenue, Kilmore Road Lower, Kilmore Heights to/from the David McCarthy Road Junction; and
- Short section of shared bus / general traffic lane along Kilmore Road Lower.

Cycle Route

- Provision of both inbound and outbound cycle tracks along full length along Harbour View Road, Knocknaheeny Avenue, Kilmore Road Lower, Kilmore Heights to/from the David McCarthy Road Junction; and
- Short section of shared bus / general traffic lane along Kilmore Road Lower.

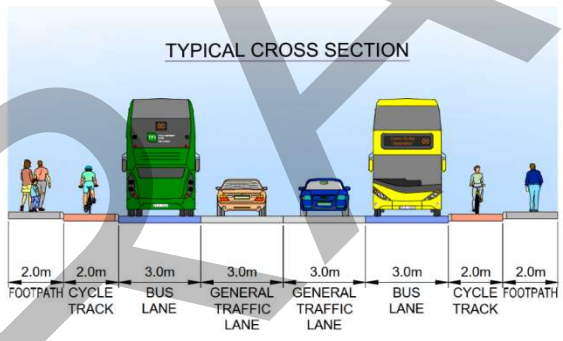
Route Constraints

The route is relatively unconstrained along the majority of its length facilitating a combined bus and cycle corridor. However, some land acquisition may be required to accommodate the full width of the corridor. The existing tree lined central reserve will also be removed along Kilmore Heights, as well as the majority of on street parking, however, in curtilage parking will be retained.
On the northern side of Harbour View Road between Knocknaheeny Avenue and Carberry Grove, Cork City Council is currently developing the Northwest Regeneration Quarter which involves a phased redevelopment of existing social housing and associated access roads. This will likely result in the realignment of Knocknaheeny Avenue.
Cycle network integration is also adversely impacted by steep gradients (e.g. particularly along Kilmore Road Lower) for cyclists to negotiate, negatively impacting journey time and significantly increasing the amount of physical activity.

Bus Stops

Existing bus stops and shelters will be refurbished as part of the BusConnects Cork programme. There are eight existing individual bus stops along this route and it is estimated that eleven bus stops would be required on the route (i.e. five in each direction, with terminus bus stop at Apple Distribution International) assuming a bus stop spacing of approx. 250m. Consequently, only three new bus stops will be required. Figure 6-26shows a sample cross-section for Option B3.

Figure 6-26 – Option B3 Typical Cross Section Kilmore Road Lower



SAS 2 STAGE 2 OPTION MULTI CRITERIA ANALYSIS SUMMARY

The Study Area Section (SAS) 2 Baker's Road to Hollyhill / Apple 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 6-3 below.

Table 6-3 – Study Area Section 2 MCA Sub-Criteria Summary

		Option B1	Option B2	Option B3
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			

In terms of Economy, the differentiator between routes is that B1 is the most expensive in terms of capital cost, as it is slightly longer than the other options. In terms of Journey time reliability, Options B1 and B2 score highest as they have more bus lane than B3.

Integration

In terms of Integration, the main differentiator between routes is that Option B3 may not align with the North West Quarter Regeneration Masterplan. Option B1 has the highest Residential Population and Employment Catchment

Accessibility and Social Inclusion

In terms of Accessibility and Social Inclusion, Options B1 has the greater number of key trip attractors

Safety

Under Safety, Option B1 ranks slightly higher than the rest as it is more direct and has less turning movements

Environment

In terms of environment, Options A3 scores marginally better under Landscape and Visual as it requires encroachment into fewer gardens than B1 and B2

Based on the above MCA, SAS 2- Option B1 is the best performing route from Dillon's Cross to Hollyhill/Apple as it offers a good level of bus priority, the largest Residential Population and Employment Catchment and Key Trip Attractors

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

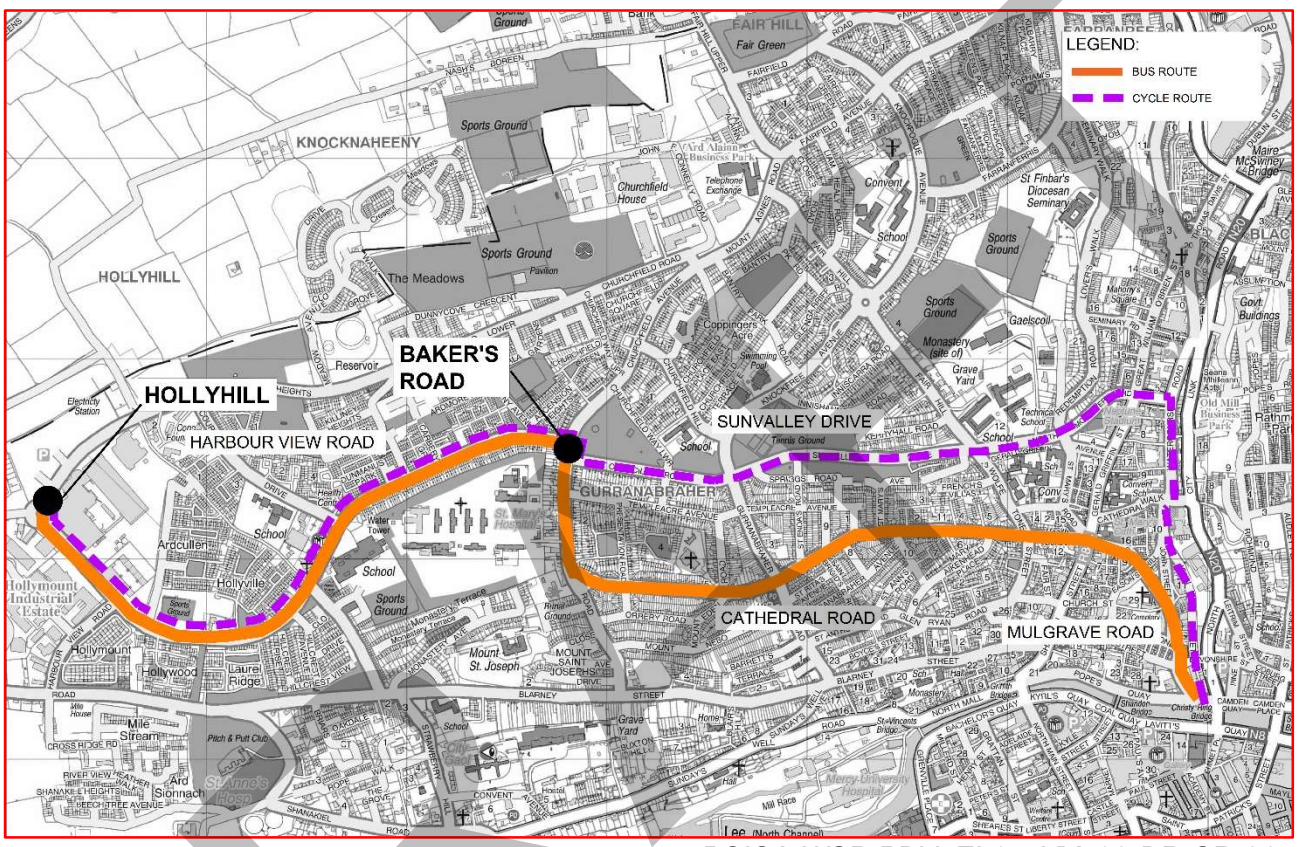
Chapter 5 of this Report presented the Stage 1 Sifting Process which helped inform the Study area Section split, designing of options and subsequent multi criteria analysis. This MCA is covered in Chapter 6 and recommends:

- Option A1 is the preferred option for Study Area Section No. 1 - Cork City Centre to Baker's Road, comprising of;
  - A bus route via Camden Quay, Mulgrave Road, John Redmond Street, Upper John Street, Roman Street, Cathedral Street, Cathedral Road and Baker's Road; and
  - A cycle route via Camden Quay, Knapp's Square, Lower John Street, Upper John Street, Watercourse Road, O'Connell Street, North Monastery Road, Sunvalley Drive, St Colmcille's Road and Baker's Road.
- Option B1 is the preferred option for Study Area Section No. 2 - Baker's Road to Hollyhill Industrial Estate, comprising of;
  - A bus route along Harbour View Road and Tadhg Barry Road; and
  - A cycle route along Harbour View Road and Tadhg Barry 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 Baker's Road and finishes at Hollyhill.

Figure 7-1 - Emerging Preferred Route



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SECTION 1: CITY CENTRE TO BAKER'S ROAD

Length of Section: 2.2km

Indicative Cost Estimate (used for comparative purposes): € 10.0M

Along the Emerging Preferred Route, there is currently no existing bus lanes and limited existing cycle lanes provided within Study Area Section No.1. 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 Camden Quay, Mulgrave Road, John Redmond Street, Upper John Street and Roman Street to St Mary and St Anne's Cathedral. The route then continues along Cathedral Street and Cathedral Road towards the Baker's Road Junction. The route continues north along Baker's Road to the Harbour View Road Junction.

The emerging preferred cycle route travels along Camden Quay, Knapp's Square, Lower John Street, Upper John Street and Watercourse Road to the O'Connell St Junction. The cycle route then turns into O'Connell St and continues along same, North Monastery Road, Sunvalley Drive, St Colmcille's

Road, Baker's Road, Harbour View Road and Tadhg Barry Road where it terminates at the Apple Campus on Tadhg Barry Road.

Inbound (towards the city) bus priority is proposed on Mulgrave Road through a short section of bus lane and by using a bus priority traffic signal allowing buses to go ahead of general traffic. This means that buses will get a 'head-start' over cars. Outbound (towards the Hollyhill) buses share a general traffic lane through this section. The typical cross-sectional width along Mulgrave Road is approx. 13m, this provides room for a three-lane carriageway and adequate footways on both sides of the road.

The carriageway narrows further north along John Redmond Street and Upper John Street, with a typical cross-sectional width of approx. 10m. Both inbound and outbound buses share the carriageway with general traffic on John Redmond Street and Upper John Street. However, between the Roman Street/Upper John Street Junction and the Cathedral Road/Wolfe Tone Street Junction, bus gates (short sections of bus/cycle-only roadway) are proposed in both directions. Existing on-street parking will be retained along Roman Street and Cathedral Street where possible.

Along Cathedral Road between the Shandon Street Junction and the Wolfe Tone Street Junction, the highway boundary widens to approx. 18m. This provides adequate width for a bus lane in both directions, while also retaining existing on-street parking along the northern carriageway edge. Both existing signalised junctions will be upgraded to provide bus priority along this link, by using bus priority traffic signals, buses will be given a 'head start' over cars.

Proposed improvements to the Cathedral Road/St Mary's Road/ Gerald Griffin Street junction include the removal of the left turn slip from Cathedral Road to St Mary's Road, to facilitate easy pedestrian crossing. This results in the conversion of St Mary's Road to one-way southbound with on street parking retained. Unfortunately, two existing trees will need to be removed along the northern edge of Cathedral Road to facilitate widening of the carriageway. Two compensatory trees are proposed to be planted at the nearby Cathedral Road/ St Mary's Road/ Gerald Griffin Street Junction instead.

Further west, the typical Cathedral Road cross sectional width narrows to approx. 10-12m between the Wolfe Tone Street Junction and the Baker's Road Junction. As this section is very constrained, both the inbound and outbound buses will share general traffic lanes throughout. There are proposed bus gates (short sections of bus/cycle-only roadway) along most of this section of Cathedral Road so no through traffic will be allowed. These proposed bus gates will reduce traffic volumes on Cathedral Road, which will allow buses to move freely.

Along Cathedral Road (i.e., from Presentation Road to Mary Aikenhead Place) no physical works are proposed except for bus gates, bus stop upgrades and improved pedestrian facilities at junctions. In addition to an inbound short section of approach bus lane to the Cathedral Road/Gurranabraher Road Junction which also has signalised priority for buses. The proposed bus gate approach will maintain as much of the existing residential parking layout along Cathedral Road as possible, while also providing bus priority. No land take is required to facilitate these sustainable transport improvements.

From the Baker's Road/Cathedral Road junction to St Mary's Health Campus the cross section remains quite constrained and both inbound and outbound buses will share general traffic lanes. As much of the existing parking will be retained as possible outside the commercial premises in this section. North of the St Mary's Health Campus, the cross-sectional width increases to approx. 16m,

this provides sufficient room for both an inbound and outbound bus lane to the St Colmcille's Road Junction. Through this section of Baker's Road, all existing on-street parking will be removed.

In the short section of Baker's Road between the Harbour View Road Junction and the St Colmcille's Road Junction, the outbound bus lane will continue, however, inbound buses will share a general traffic lane. This will result in the removal of the existing on-street parking on the western side of Baker's Road. A new road boundary is also proposed which may result in a strip of land being acquired from the adjacent Gerry O'Sullivan Park. It is not anticipated that the trees located within Gerry O'Sullivan Park will be impacted here.

The existing cycle track on Camden Quay will be linked in with the works currently being implemented as part of the Knapp's Square and Lower John's Street Area Pedestrian and Cycle Measures. A proposed "quiet streets" cycle route via Knapp's Square, Lower John Street and Upper John Street is proposed. Along a portion of this route both inbound and outbound cyclists share the carriageway with local traffic. A contra-flow cycle track is proposed from the Cathedral Walk/Upper John Street Junction to Carroll's Hill steps. Existing on-street parking will be retained where possible.

The cycle route continues north via Watercourse Road, where the proposed bus gates (short sections of bus/cycle-only roadway) will allow for a "quiet streets" cycle route between Cathedral Walk and O'Connell Street. Existing on-street parking is retained along Watercourse Road where possible. From the O'Connell Street/Watercourse Road Junction, the cycle route heads west along O'Connell Street and North Monastery Road. The cross section widens along these links and the typical width is approx. 18m which provides ample width to accommodate both an inbound and outbound segregated cycle track while also retaining the existing on-street parking and general traffic lanes in both directions.

West of the O'Connell Street/North Monastery Road Junction, land acquisition is potentially required and the removal of an existing tree is proposed on the northern edge of North Monastery Road. Three compensatory trees are proposed to be planted in the greenspace southeast of the Fairhill/North Monastery Road Junction. At this junction kerb buildouts are proposed to narrow the carriageway and protect cyclist traversing the junction.

The cycle route continues west from North Monastery Road to Sunvalley Drive, both inbound and outbound cycle tracks are proposed in this section. The typical cross-sectional width is approx. 16m along Sunvalley Drive. Which contains, two uni-directional cycle tracks, two general traffic lanes, footways and on-street parking along northern carriageway edge. An existing raised central median will be removed to lessen land take through this section, however, a right turn pocket into Saint Enda's Road will be retained

Along Sunvalley Drive, east and west of the Saint Enda's Road Junction, new road boundaries are proposed on both the southern and northern sides of the carriageway to accommodate the proposed cycle facilities. It is also proposed that the right turn lane on Sunvalley Drive into Saint Enda's Road will be retained, while right turn movements onto Sprigg's Road will be banned.

The cross-sectional width narrows slightly, as the cycle route moves west onto St Colmcille's Road. The typical width is approx. 13.5m, therefore no on-street parking will be retained in this section. There is an existing inbound cycle track on St Colmcille's Road, this will be widened and an additional outbound cycle track will replace the current on street parking along the southern edge. Compensatory parking is proposed on the northern side of the carriageway along Sunvalley Drive. New inbound and

outbound cycle tracks will connect the short section of Baker's Road with the inbound and outbound cycle tracks on St Colmcille's Road and Harbour View Road.

Parallel toucan crossings are provided for cyclists and pedestrians at all the major signalised junctions along this route between O'Connell Street and Baker's Road. The mini roundabout at the intersection of Sunvalley Drive and St Colmcille's Road will also be replaced with a new signalised junction including parallel crossings. Only single lane approaches to these junctions will be provided to afford more space to the proposed active travel facilities.

SECTION 2: BAKER'S ROAD TO HOLLYHILL / APPLE

Length of Section: 1.7km

Indicative Cost Estimate (used for comparative purposes): €7.9M

Along the Emerging Preferred Route, there is currently no existing bus lanes and some existing cycle lanes provided within Study Area Section No. 2. Overall, the EPR for this section requires the introduction of new bus priority and active travel facilities along the majority of its length.

The emerging preferred bus route travels along Harbour View Road from the Baker's Road Junction to the Tadhg Barry Road/David McCarthy Road Junction, Hollyhill. The cycle route follows the proposed bus route within this study area (i.e. along Harbour View Road). Routing the bus along Harbour View Road has larger employment and residential catchments compared to alternate routes.

The typical cross section along Harbour View Road, west of the Baker's Road Junction is approx. 20m wide. By removing existing on street parking, both an inbound and an outbound bus lane can be provided. On the southern side of the carriageway from Knocknaheeny Avenue to east of the Courtown Drive Junction a new road boundary is proposed which will be setback from the existing road boundary to provide sufficient width to facilitate the proposed sustainable transport corridor. Sufficient space will remain to allow in-curtilage parking. This new road boundary will require land acquisition from approximately seventy private gardens. This widened corridor will also result in the loss of twenty-seven existing trees in this section of Harbour View Road. Thirty-two compensatory trees are proposed to be planted along this section as a result of the latter.

It should be noted that consultation is ongoing with Cork City Council Northwest Quarter Regeneration office to ensure their proposals for future housing on Harbour View Road are compatible with the requirements for the EPR.

It is proposed that the existing Courtown Drive Roundabout be converted into a signalised junction with improved bus priority, pedestrian and cycle facilities. West of the existing roundabout, the typical Harbour View Road cross sectional width reduces by approx. 1m but both the proposed inbound and outbound bus lane will continue along this section of the road. A proposed new boundary on the northern side of the road between Courtown Drive and Hollyhill Lane will result in the land acquisition of a strip of private land (i.e. car parking space) and the loss of one tree. A small green space with two existing trees will be replaced with some parking bays including disabled provision outside Knocknaheeny Learning Campus.

Road boundary changes on the southern side of the carriageway are also proposed further west along Harbour View Road, between the Hollyhill Lane Junction and the Hillcrest Avenue Junction and west of Hillcrest Avenue to the existing Hillcrest Estate Bus Stop. These changes may result in some land

acquisition of green space/public land and the loss of six existing trees. Fourteen compensatory trees are proposed to be planted in greenspace between Hollyhill Lane and Hillcrest Avenue. An inbound and outbound bus lane will continue along this section of Harbour View Road as a result of the widened road corridor.

Boundary changes are also proposed on the northern side of the Harbour View Road carriageway between Hillcrest Avenue Junction and Ardcullen Junction. Five compensatory trees are also proposed to be planted behind the existing treeline on the green east of the Hollyville Junction. The proposed cross section through this section will be maintained at approx. 20m wide to ensure sufficient width for inbound and outbound bus lanes.

The existing left and right turn lanes on approach to the Harbour View Road/Tadhg Barry Road Junction will be removed to provide bus lane provision on approach to the junction. Two existing trees at the northwest quadrant of the junction will be removed and replaced with two compensatory trees to be planted west of the Ardcullen Junction.

Tadhg Barry Road has been realigned to avoid as many existing mature trees as possible, this has resulted in three sections of boundary change, with a slightly increased land take. The first boundary change continues west of the Harbour View Road/Tadhg Barry Road junction, on the southern side of the carriageway. The second and third changes are located on both sides of the carriageway, east of the Tadhg Barry Road/David McCarthy Road Junction. Despite the realignment, the proposed cross-sectional width of approx. 20m, including inbound and outbound bus lanes results in the loss of eight trees. The emerging preferred bus route terminates at the existing Hollyhill (Apple) Bus Stop at the Tadhg Barry Road/David McCarthy Road Junction.

The cycle route for study area section no. 2, follows the EPR for buses along Harbour View Road and Tadhg Barry Road. Segregated uni-directional cycle tracks are proposed from the Baker's Road Junction to their termination point at the Tadhg Barry Road/David McCarthy Road Junction.

There is an existing, unprotected inbound cycle lane between the Baker's Road Junction and Beara Drive Junction and an existing unprotected outbound cycle lane from east of Beara Drive to east of Carbery Grove. It is proposed that the existing cycle facilities are upgraded and extended along this section of Harbour View Road, providing 2m wide continuous cycle tracks in both direction between the Baker's Road Junction and the Courtown Drive Junction.

The cycle tracks within this section of Harbour View Road are either narrowed or shared at and with proposed bus stops platforms along the route. At the Knocknaheeny Avenue Junction, improved cycle facilities are proposed with parallel crossings and a new toucan crossing is proposed immediately east of Carbery Grove. All existing on street parking in this section of Harbour View Road will be removed to accommodate the dedicated bus and upgraded active travel facilities

The existing Courtown Drive Roundabout will be converted to a bus priority signalised junction with improved pedestrian and cycle facilities. West of the proposed Courtown Drive Junction, the proposed cycle tracks narrow to approx. 1.5m wide in both directions as far as the Hollyhill Lane Junction due to cross-sectional constraints. The majority of the existing on-street parking will be removed to facilitate the cycle and bus improvements on this section of Harbour View Road.

Just west of Hollyhill Lane, protected cycle tracks have been recently installed as far as /David McCarthy Road . The typical cross section slightly widens along this section of Harbour View Road

and it is proposed that the existing cycle tracks will be retained and widened to 2m in both directions. The cycle tracks have priority over side roads along the length of Harbour View Road and active travel improvements are also proposed at the Harbour View Road/Tadhg Barry Road Junction, providing parallel crossing facilities. There is no existing on-street parking along this stretch of Harbour View Road and there are no current or future proposals to change that arrangement.

The cycle facilities terminate at the Tadhg Barry Road/David McCarthy Road Junction, with the proposed cycle tracks tying in with the existing facilities west and north of the junction. Active travel improvements on the Tadhg Barry Road/David McCarthy Road Junction are also proposed, providing parallel crossing facilities for both pedestrians and cyclists.

SCHEME BENEFITS

The Emerging Preferred Route is approximately 3.9 km in total length from Cork City Centre to Hollyhill (Apple Distribution International). Along this EPR, there are currently no bus lanes or sections with bus priority and only limited cycle lanes.

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

This section of Northwest Cork City 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 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 €10.0M

Study Area Section (SAS) No. 2 €7.9M

TOTAL OF SAS NO. 1 & SAS NO. 2 €17.9M

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, it is anticipated that a high frequency of service will be justified along the full length of the route, as far as Apple Distribution International, which is noted as a significant standalone origin/destination trip generator and therefore the full route will be carried forward for Public Consultation.

Appendix A

STAGE 1 ROUTE OPTIONS ASSESSMENT

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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 5 - POTENTIAL ROUTE OPTIONS

Date	Scale	Drawn	Checked	Approved
18/02/2022	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-05_XX_00-DR-ZZ-0001.07	1 of 1	S0	L02

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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 5 - ROUTES PASSING THE INITAL STAGE 1 SIFT

Date	Scale	Drawn	Checked	Approved
18/02/2022	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-05_XX_00-DR-ZZ-0028.03	1 of 1	S0	L02

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LEGEND:

Cycle only routes post sift

Bus corridor routes post sift

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 5 - ROUTE OPTIONS FOR STAGE 2 MULTI CRITERIA ANALYSIS

Date	Scale	Drawn	Checked	Approved
18/02/2022	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-05_XX_00-DR-ZZ-0030.07	1 of 1	S0	L01

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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
0005_001	Number Not Used	-	-	-
0005_002	Number Not Used	-	-	-
0005_003	Number Not Used	-	-	-
0005_004	Harbour View Road from Entrance to Apple to junction with Hollymount (via Harbour View Road)	Single two-way carriageway with 2 general traffic lanes, cycle lanes, footways and existing bus facilities (bus stops only) of approx. 17m in cross section (from back of footway to back of footway). Existing bus Route. (201, 202) Identified in the Cork Cycle Network Plan 2015 as a future Primary Cycle Route (CCN-U31).	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
0005_005	Harbour View Road from junction with Hollymount (via Harbour View Road) to junction with Ardcullen	Single two-way carriageway with the development of a right turn lane for northbound road users south of the junction with Hollymount. The existing arrangement currently includes advisory cycle lanes and footways within an approx. cross section of 16-19.5m from back of footway to back of footway. Existing bus Route. (201, 202) Identified in the Cork Cycle Network Plan 2015 as a future Primary Cycle Route (CCN-U31).	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
0005_006	Harbour View Road to junction with Hollymount (via Harbour View Road)	Single two-way carriageway with 2 general traffic lanes, approx. 10-15m including footways. Existing Bus Route. (201) Identified in the Cork Cycle Network Plan 2015 as a future Primary Cycle Route (CCN-U32).	As bus priority, segregated cycling facilities and general traffic could be accommodated by extending the alignment into third party land and utilising Hollymount this section it will be carried forward to the Stage 2 Multi Criteria Analysis.	Pass
0005_007	Ardcullen from junction with Harbour View road to terminus within estate.	Single two-way carriageway with 2 general traffic lanes, approx. 10m including the footway. 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
0005_008	Cross Ridge Road, Heather Walk and Beechtree Ave link from junction with Harbour View road to junction with Shanakiel Road	Single two-way carriageway with a section of this route blocked by bollards. The existing arrangement currently includes footways within an approx. cross section of 10.5-13.5m from back of footway to back of footway. Not current a vehicular through route. Not an existing bus route. Identified in the Cork Cycle Network Plan 2015 as a future Primary Cycle Route (CCN-U32).	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

Line Code_ID Code	Location (From - To)	Description	Comment	Pass / Fail
0005_009	Blarney Road from the junction with Harbour View Road to the pedestrian access to Hollywood Estate	Single two-way carriageway with the development of a right turn lane for northbound road users south of the junction with Harbour View Road. The existing arrangement currently includes narrow footways within an approx. cross section of 9-10m from back of footway to back of footway. Existing Bus Route. (201) Identified in the Cork Cycle Network Plan 2015 as a future Primary Cycle Route (CCN-U1).	Bus priority and segregated cycling facilities could only be achieved by removing general traffic. However, as this section is an existing bus route and identified as a Proposed Primary Cycle Route it will be carried forward to the Stage 2 Multi Criteria Analysis.	Pass
0005_010	Private road between Apple and the Cope Foundation via a new carriageway	Single two-way private carriageway without footways approximately 6m in cross section. Not currently a through route. Not an existing bus route. Identified as a primary route in Cork Cycle Network Plan 2015 (CCN-U3).	As this is not currently a public 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
0005_011	New carriageway between Harbour View Road and Ardcullen Grove	Single two-way carriageway with approx. 9m cross section where there are existing footways. Residential estate with on-street residential parking which is not currently a through route. A link could be created by upgrading the footway between Ardcullen and Harbour View Road to a bus/cycle/footway arrangement. 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
0005_012	Kilmore Heights from junction with access to Apple to junction with Courtown Drive	Single two-way carriageway with 2 general traffic lanes, cycle lanes and footways of approx. 15-16m in cross section (from back of footway to back of footway). Not an existing bus route. Identified in the Cork Cycle Network Plan 2015 as a future Secondary Cycle Route (CCN-U4A).	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
0005_013	Harbour View Road from junction with Ardcullen to eastern footway entrance to Laurel Ridge	Single two-way carriageway with 2 general traffic lanes, advisory cycle lanes, footways and existing bus facilities (bus stops only) of approx. 17m in cross section (from back of footway to back of footway). Existing bus Route. (201, 202, 202a, 742) Identified in the Cork Cycle Network Plan 2015 as a future Primary Cycle Route (CCN-U3).	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
0005_014	New link between the Laurel Ridge and Hollywood estate from the Harbour View Road to Blarney Road	Greenspace from Harbour View Road to Blarney Rd. Not currently a through route for vehicular traffic. 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 and alternative routes are available this section will not be carried forward to the Stage 2 Multi Criteria Analysis.	Fail

Line Code_ID Code	Location (From - To)	Description	Comment	Pass / Fail
0005_015	Harbour View Road from junction Baker's Road to mini roundabout junction with Courtown Road.	Single two-way carriageway with 2 general traffic lanes, approx. 17m including footways. Existing bus route. Gentle to Moderate slopes Max 5% Existing bus Route. (201, 202,202a, 742) Identified in the Cork Cycle Network Plan 2015 as a future Primary Cycle Route (CCN-U3).	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
0005_016	Harbour View Road junction with Lauren ridge along Harbour View Road to junction with Hollyhill Lane	Single two-way carriageway with 2 general traffic lanes, approx. 17m including footways. Existing bus Route. (201, 202,202a, 742) Identified in the Cork Cycle Network Plan 2015 as a future Primary Cycle Route (CCN-U3).	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
0005_017	Lauren Ridge from junction with Blarney Road to junction with Harbour View Road	Two-way single carriageway with 2 general traffic lanes with approx. 10m cross section including footways. Residential area with on-street parking and properties on both sides of carriageway. 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 Assessment.	Fail
0005_018	Blarney Street from the pedestrian access to Hollywood Estate to junction with Hollyhill Lane	Single two-way carriageway with 2 general traffic lanes. The existing arrangement currently includes narrow footways within an approx. cross section of approx. 8-10m from back of footway to back of footway. A linear retaining structure is present at the back of the inbound verge, whilst adjacent to the outbound back of footway are private front gardens. On street parking is provided. Not an existing bus route. Identified in the Cork Cycle Network Plan 2015 as a future Primary Cycle Route (CCN-U1).	Bus priority and segregated cycling facilities could only be achieved by removing general traffic. However, as alternative routes are available this section will not be carried forward to the Stage 2 Multi Criteria Analysis.	Fail
0005_019	Rope Walk from Strawberry Hill to Shanakiel Road	Single two-way carriageway with approx. 4-6m cross section including footways. 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 and alternative routes are available this section will not be carried forward to the Stage 2 Multi Criteria Analysis.	Fail
0005_020	Shanakiel Road from junction with Blarney Road to junction with Strawberry Hill	Single two-way carriageway with 2 general traffic lanes, footways and existing bus facilities (bus stops only) of approx. 7.5-10m in cross section (from back of footway to back of footway). Existing bus Route. (202) Partially Identified in the Cork Cycle Network Plan 2015 as a future Primary Cycle Route (CCN-U32).	Provision of bus priority, segregated cycling facilities and general traffic is not viable due to the scale of works and impact to adjacent houses. However, as this section is an existing bus route and identified as a Proposed Primary Cycle Route it will be carried forward to the Stage 2 Multi Criteria Analysis.	Pass

Line Code_ID Code	Location (From - To)	Description	Comment	Pass / Fail
0005_021	Kilmore Heights from junction with Courtown Dr to Junction Meadow Avenue	Single two-way carriageway with a central reserve with trees. The existing arrangement currently includes footways within an approx. cross section of 16m from back of footway to back of footway. Existing bus route. (202) Identified in the Cork Cycle Network Plan 2015 as a future Secondary Cycle Route (CCN-U4A).	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
0005_022	Courtown Drive from junction with Kilmore Heights to junction with Harbour View Road	Single two-way carriageway with 2 general traffic lanes, approx. 13-17m including footways. Gentle to moderate slopes (approx. 5%) Existing bus Route. (202) Not identified as a future cycling route in the 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
0005_023	Harbour View Road from junction with Hollyhill Lane to Courtown Drive	Single two-way carriageway with 2 general traffic lanes, footways and existing bus facilities (bus stops only) of approx. 16m in cross section (from back of footway to back of footway). Existing bus Route. (201, 202, 742) Identified in the Cork Cycle Network Plan 2015 as a future Primary Cycle Route (CCN-U3).	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
0005_024	Baker's Road from junction with Harbour View Road to junction with Cathedral Road	Single two-way carriageway with 2 general traffic lanes, approx. 16m including footways. Existing Bus Route. (202,202a, 742) Identified in the Cork Cycle Network Plan 2015 as a future Primary Cycle Route (CCN-U3).	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
0005_025	Blarney Street from junction with Monastery Avenue to junction with Baker's Road.	Two-way single carriageway with 2 general traffic lanes with approx. 10-13m cross section including footways. Not an existing bus route. Identified in the Cork Cycle Network Plan 2015 as a future Primary Cycle Route (CCN-U1).	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 Assessment.	Fail
0005_026	Strawberry Hill from junction with Blarney Street to junction with Shanakiel Road	Single two-way carriageway with approx. 6-12m cross section including footways. Residential estate with informal on-street residential parking and a 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, steep gradients and impact to adjacent houses. As alternative routes are available this section will not be carried forward to the Stage 2 Assessment.	Fail

Line Code_ID Code	Location (From - To)	Description	Comment	Pass / Fail
0005_027	New route through Terrence MacSwiney Sports Centre between Monastery Terrace and Hollyhill Lane	Single two-way carriageway with an approx. 9-10m cross section including footways. Green Space from Hollyhill Heights to Monastery Terrace . Not currently a through route for vehicular traffic. 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 and alternative routes are available this section will not be carried forward to the Stage 2 Multi Criteria Analysis.	Fail
0005_028	Monastery Avenue from junction with Monastery Close to junction with Blarney Street	Single two-way carriageway with approx. 10m cross section including footways. Residential estate with on-street residential parking which is not currently a through route. 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 Assessment.	Fail
0005_029	Kilmore Road Lower from junction with Meadow Avenue to junction with Knocknaheeny Avenue	Single two-way carriageway with the development of a right turn lane for westbound road users south of the junction with Meadow Avenue. The existing arrangement currently includes footways within an approx. cross section of 14-16m from back of footway to back of footway. Existing bus Route. (202) Identified in the Cork Cycle Network Plan 2015 as a future Secondary Cycle Route (CCN-U4A).	As bus priority, segregated cycling facilities and general traffic could be accommodated by extending the alignment into third party land to the north this section it will be carried forward to the Stage 2 Multi Criteria Analysis.	Pass
0005_030	Carberry Grove junction with Harbour View Road along Carberry grove to junction with Kilmore Road lower	Single two-way carriageway in a residential area, the existing arrangement is approximately 9.5-10.5m from the back of footway to the back of footway. Not currently a through route for vehicular traffic. Not an existing bus route. Not identified as a Cycle 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
0005_031	New route through St. Mary's Health Campus (South) between Harbour View Road and Baker's Road	Single two-way carriageway with 2 general traffic lanes, approx. 6.5m cross section, with some of the route having the facility of a footway. Not currently a through route. Not an existing bus route. Identified in Cork Cycle Network Plan 2015 as a primary cycle route (CCN-U31)	As bus priority, segregated cycling facilities and general traffic could be accommodated by extending the width of the carriageway this will be carried forward to Stage 2 Multi Criteria Analysis. This is currently private land and would require acquisition.	Pass
0005_032	Number Not Used	-	-	-

Line Code_ID Code	Location (From - To)	Description	Comment	Pass / Fail
0005_033	Convent Avenue from junction with Strawberry Hill to junction with Sunday's Well Road	Two-way single carriageway with 2 general traffic lanes with approx. 10m cross section including footways however there are some sections where there is only footway on one side and no footways at the Western end. 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 Assessment.	Fail
0005_034	Knocknaheeny Avenue from junction with Kilmore Road Lower to junction with Harbour View Road	Single two-way carriageway with 2 general traffic lanes, advisory cycle lanes, footways and existing bus facilities (bus stops only) of approx. 20m in cross section (from back of footway to back of footway - some areas of perpendicular on street parking and verge between footway and carriageway). Existing bus Route. (202) Identified in the Cork Cycle Network Plan 2015 as a Primary Cycle Route (CCN-U3).	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
0005_035	Number Not Used	-	-	-
0005_036	Number Not Used	-	-	-
0005_037	Number Not Used	-	-	-
0005_038	Number Not Used	-	-	-

Line Code_ID Code	Location (From - To)	Description	Comment	Pass / Fail
0005_039	St Colmcille's Road from junction with Baker's Road to junction with Knockfree Avenue	Single two-way carriageway with 2 general traffic lanes, approx. 13m including footways. Advisory cycle lane in the inbound direction. Not an existing bus route. Identified in the Cork Cycle Network Plan 2015 as a Primary Cycle Route (CCN-U6).	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
0005_040	Templeacre Avenue from junction with Baker's Rd to junction with Gurranabraher Road	Single two-way carriageway in a residential area, the existing arrangement is approximately 9-10m from the back of footway to the back of footway. Not an existing bus route. Not identified as a Cycle Route 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 Assessment.	Fail
0005_041	Presentation Road junction with Templeacre Avenue to junction with Orrery road	Single two-way carriageway with approx. 9.5-11m cross section including footways. Residential estate with on-street residential parking. 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 Assessment.	Fail
0005_042	Cathedral Road from junction with Bakers Road to junction with Gurranabraher Road	Single two-way carriageway with 2 general traffic lanes, approx. 12m including footways. Slopes vary from moderate to steep (6% max) Existing bus routes. (202,202a, 742) Identified in the Cork Cycle Network Plan 2015 as a Primary Cycle Route (CCN-U31).	Provision of bus priority, segregated cycling facilities and general traffic is not viable due to the scale of works and extents of land take required. However, as this section is an existing bus route it will be carried forward to the Stage 2 Multi Criteria Analysis.	Pass
0005_043	St Colmcille's Road from junction with Churchfield Way Lower to junction with Templeacre Avenue	Single two-way carriageway with approx. 10m cross section including footways. Residential estate with on-street residential parking. 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 Assessment.	Fail
0005_044	Baker's Road junction with Cathedral road to junction with Blarney Street.	Single two-way carriageway to the north which narrows to a one-way carriageway to the south of the junction with Mount Nebo Avenue. Moderate-steep slopes (up to 12%). 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 Assessment.	Fail

Line Code_ID Code	Location (From - To)	Description	Comment	Pass / Fail
0005_045	Orrery Road from junction with Baker's road along Orrery road to junction with Mount Eden Road	Single two-way carriageway with approx. 10m cross section including footways. Residential estate with on-street residential parking. 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 Assessment.	Fail
0005_046	Mount Eden Rd from junction with Templeacre Avenue to junction with Cathedral Road	Single two-way carriageway with approx. 10m cross section including footways. Residential estate with on-street residential parking. 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 Assessment.	Fail
0005_047	Mount Nebo Avenue from junction with Bakers road to junction with Gurranabraher Road	Single two-way carriageway with approx. 10 m cross section including footways 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 Assessment.	Fail
0005_048	Blarney Street from junction with Baker's road to junction with Friars Avenue	Single two-way carriageway with 2 general traffic lanes, approx. 8-11.5m including footways. Not an existing bus route. Identified in the Cork Cycle Network Plan 2015 as a Primary Cycle Route (CCN-U1)	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 Assessment.	Fail
0005_049	Sunday's Well Road from the junction with Convent Avenue to junction with Sunday's Well Avenue	Single two-way carriageway with 2 general traffic lanes, approx. 7-10m including footways. Not an existing bus route Identified as a Cycle Route in Cork Cycle Network Plan 2015 as a Secondary Cycle Route (CCN-U33)	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 Assessment.	Fail
0005_050	Number Not Used	-	-	-

Line Code_ID Code	Location (From - To)	Description	Comment	Pass / Fail
0005_051	Number Not Used	-	-	-
0005_052	Number Not Used	-	-	-
0005_053	Gurranabraher Road from junction with Templeacre Avenue to junction with Cathedral Road	Two-way single carriageway with 2 general traffic lanes and one (outbound) footway. Cross Section approx. 12m from back of the footway to the building line. Slopes vary from moderate (up to approx. 6%) Existing bus route. (202) 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 extents of land take required. However, as this section is an existing bus route it will be carried forward to the Stage 2 Multi Criteria Analysis.	Pass
0005_054	Gurranabraher avenue from junction with St Colmcille Avenue to junction with Templeacre Avenue	Single two-way carriageway with 2 general traffic lanes, approx. 12m including footways. Existing bus route. (202) 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 extents of land take required. However, as this section is an existing bus route it will be carried forward to the Stage 2 Multi Criteria Analysis.	Pass
0005_055	Sundays Well Avenue between junction with Sundays Well road and Blarney Street	Single one-way carriageway with approx. 4.5-5.5 m cross section where there is one existing footway. Residential area with parallel on-street residential parking on a moderate 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 Assessment.	Fail
0005_056	Gurranabraher Road / Friar Ave from junction with Cathedral Road to junction with Blarney Street	Two-way single carriageway with 2 general traffic lanes narrowing to a one-way carriageway (Friar's Ave) with one general traffic lane. The Cross section varies from 5-11m from back of footway to back of footway. 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 Assessment.	Fail

Line Code_ID Code	Location (From - To)	Description	Comment	Pass / Fail
0005_057	North Mall from Pope's Quay to Sunday's Well Road	Two-way single carriageway with 2 general traffic lanes, approx. 11m from the quay wall to the building line. Cycling facilities are provided near the bridge at Pope's Quay. Not an existing bus route. Identified in Cork Cycle Network Plan 2015 as a Primary Cycle Route (CCN-U9)	Provision of bus priority, segregated cycling facilities and general traffic is not viable due to the scale of works and impact to adjacent buildings and structures (i.e. The river quay wall). However, as alternative routes are available this section will not be carried forward to the Stage 2 Assessment.	Fail
0005_058	Number Not Used	-	-	-
0005_059	Spriggs Road from junction with Sunvalley Drive to junction with Cathedral Road	Single two-way carriageway with a varying cross section of approx. 4-8m cross section. Footways do not extend the full length of this section on both sides of the carriageway. Not currently a through route for vehicular traffic. 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
0005_060	Templeacre Avenue from junction with Gurranabraher Road to junction with Saint Declan's Road	Single two-way carriageway with a varying cross section of approx. 6-9m cross section, including footways. Rows of residential terrace houses. 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 buildings as the private off-street parking or front garden would have to be utilised. As alternative routes are available this section will not be carried forward to the Stage 2 Assessment.	Fail
0005_061	Sunvalley Drive from roundabout with Knockfree Avenue to junction with Fairhill / Wolfe Tone St.	Single two-way carriageway with 2 general traffic lanes, approx. 18m including footways. Gradients vary from gentle to moderate slopes. (7.5% max) Not an existing bus route. Network Plan 2015 as a Primary Cycle Route. (CCN-U6)	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
0005_062	St Philomena's Road from junction with Cathedral Road to junction with Gurranabraher Avenue	Single two-way carriageway with 2 general traffic lanes. The existing arrangement currently includes narrow footways within a cross section of approx. 7m from back of footway to back of footway. There are large retaining walls at the edge of the carriageway on the southern Side whilst properties on the northern side are lower than the level of the carriageway. 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 Assessment.	Fail

Line Code_ID Code	Location (From - To)	Description	Comment	Pass / Fail
0005_063	St Brigid's Road from junction with Cathedral Road to junction with St Anthony's Road	Single two-way carriageway with 2 general traffic lanes. The existing arrangement currently includes narrow footways with a cross section of approx. 7m from back of footway to back of footway. There are large retaining walls at the edge of the carriageway on the southern Side whilst properties on the northern side are lower than the level of the carriageway. Gradients vary from moderate to steep slopes (Max 14%). 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 Assessment.	Fail
0005_064	Gurranabraher Avenue from junction with St Vincent's Street to junction with Gurranabraher Road	Single two-way carriageway with 2 general traffic lanes. The existing arrangement currently includes narrow footways with a cross section of approx. 6m from back of footway to back of footway. There are significant level differences between properties and the existing carriageway. Gradients vary from gentle to moderate slopes (5% Max). 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 Assessment.	Fail
0005_065	St Anne's Road from St Vincent Street to St Anthony's Road	Two-way single carriageway with 2 general traffic lanes, approx. 7m including footways. 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 buildings as the private off-street parking or front garden would have to be utilised. As alternative routes are available this section will not be carried forward to the Stage 2 Assessment.	Fail
0005_066	St Enda's road from junction with Sunvalley Drive to junction with Cathedral Road	Single two-way carriageway with 2 general traffic lanes with an approx. cross section of approx. 8-10m from back of footway to back of footway. There are significant level differences between properties and the existing carriageway. 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 Assessment.	Fail
0005_067	Number Not Used	-	-	-
0005_068	Cathedral Road from junction with Gurranabraher Road to junction with St Mary's Terrace	Single two-way carriageway with 2 general traffic lanes, approx. 12m including footways. Slopes vary from moderate to steep (Approx. 10%) Existing bus routes. (202, 202a) Identified in the Cork Cycle Network Plan 2015 as a Primary Cycle Route (CCN-U31)	Provision of bus priority, segregated cycling facilities and general traffic is not viable due to the scale of works and extents of land take required. However, as this section is an existing bus route it will be carried forward to the Stage 2 Multi Criteria Analysis.	Pass

Line Code_ID Code	Location (From - To)	Description	Comment	Pass / Fail
0005_069	Number Not Used	-	-	-
0005_070	Number Not Used	-	-	-
0005_071	Number Not Used	-	-	-
0005_072	Number Not Used	-	-	-
0005_073	Number Not Used	-	-	-
0005_074	Cathedral Walk from the junction with Gerald Griffin St to the junction with Watercourse Rd	One-way carriageway with 1 general traffic lanes, approx. 7m cross section including footways. Not an existing bus route. Not Identified as a Cycle Route 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 Assessment.	Fail

Line Code_ID Code	Location (From - To)	Description	Comment	Pass / Fail
0005_075	Blarney Street from junction with Gurranabraher Road to junction with Shandon Street	Single two-way carriageway with 2 general traffic lanes, approx.7-8m including footways Not an existing bus route Identified in the Cork Cycle Network Plan 2015 as a Secondary Cycle Route (CCN-U1)	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 Assessment.	Fail

Line Code_ID Code	Location (From - To)	Description	Comment	Pass / Fail
0005_076	Saint Mary's Terrace from junction with Templeacre Avenue to junction with Cathedral Road	Single two-way carriageway with 2 general traffic lanes, approx. 4m. There is no footway. 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 Assessment.	Fail
0005_077	Cathedral Road junction with Shandon Street to junction with Cathedral Street	Single two-way carriageway with 2 general traffic lanes, approx. 12m in cross section including footways. Existing Bus route. (202, 202a) Identified as a primary Cycle Route in Cork Cycle Network Plan 2015 (CCN-U31)	Provision of bus priority, segregated cycling facilities and general traffic is not viable due to the scale of works and extents of land take required. However, as this section is an existing bus route it will be carried forward to the Stage 2 Multi Criteria Analysis.	Pass
0005_078	St Mary's Avenue from junction off Cathedral Road	Single two-way carriageway with 2 general traffic lanes, footways of approx. 6.5m in cross section (from back of footway to back of footway). Not currently a through route for vehicles. Not an existing bus route. Not Identified as a Cycle 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
0005_079	St Vincent's Street from junction with Cathedral road to junction with St Theresa's Rd / Mary Aikenhead Pl	Two-way single carriageway with 2 general traffic lanes, approx. 6-7m including footways. Not currently a through route for vehicles. Gradients vary from moderate to steep. (Max 11%) Not an existing bus route. Not Identified as a Cycle 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
0005_080	Mary Aikenhead Pl from junction with Cathedral Road to junction with Glen Ryan Road	Two-way single carriageway with 2 general traffic lanes, between approximately 10-18m including footways. There are significant level differences between properties and the existing carriageway. Not an existing bus route. Not Identified as a Cycle Route 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 (retaining structures) and impact to adjacent houses. As alternative routes are available this section will not be carried forward to the Stage 2 Assessment.	Fail
0005_081	Upper Cattle Market Street from junction Blarney Street to junction with Boyce's Street	Two-way single carriageway with 2 general traffic lanes, approx. 11m including footways. Residential area with on-street residential parking and buildings at the back of the footway on both sides. Moderate to steep gradient (Max 11%) Not an existing bus route. Not Identified as a Cycle Route 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 Assessment.	Fail

Line Code_ID Code	Location (From - To)	Description	Comment	Pass / Fail
0005_082	Old Market Place from junction with Glen Ryan Rd to junction with Blarney St	Two-way single carriageway with 2 general traffic lanes, approx. 11-23m including footways. Residential area with on-street residential parking and properties on both sides of carriageway. Steep gradient to almost level (Max 11%) Not an existing bus route. Not Identified as a Cycle Route in Cork Cycle Network Plan 2015	Provision of bus priority, segregated cycling facilities and general traffic is not viable along the full length of this section due to the scale of works and existing building line at the northern end of the link. As alternative routes are available this section will not be carried forward to the Stage 2 Assessment.	Fail
0005_083	Shandon Street from junction with Cathedral Road to junction with Popes Quay	Two-way single carriageway with 2 general traffic lanes, approx. 13-16m including footways. Gradients are moderate (Max 7%) Not an existing bus route. Identified in the Cork Cycle Network Plan 2015 as a Primary Cycle Route (CCN-U9)	Provision of bus priority, segregated cycling facilities and general traffic is not viable due to the scale of works and impact to adjacent properties. As alternative routes are available this will not be carried forward to Stage 2 Multi Criteria Analysis.	Fail
0005_084	Wolfe Tone Street from junction with North Monastery Rd / Sunvalley Dr to junction with Cathedral Road	Two-way single carriageway with 2 general traffic lanes, approx. 8-12m including footways. Not an existing bus route Identified as a Cycle Route in Cork Cycle Network Plan 2015 as a Primary Cycle Route (CCN-U10)	Provision of bus priority, segregated cycling facilities and general traffic is not viable along the full length of this section due to the scale of works and existing building line at the northern end of the link. As alternative routes are available this section will not be carried forward to the Stage 2 Assessment.	Fail
0005_085	Cattle Market Ave from junction with Glen Ryan Ave / Wolfe Tone St to junction with Shandon St	Two-way single carriageway with 2 general traffic lanes, approx. 12m including footways. Not an existing bus route. Not Identified as a Cycle Route in Cork Cycle Network Plan 2015.	Provision of bus priority and/or segregated cycling facilities and general traffic is not viable due to the scale of works and impact to adjacent houses. As alternative cycling routes through this section are limited this route will be carried forward to the Stage 2 Multi Criteria Analysis as a alternative NMU route only.	Pass*
0005_086	Exchange Street/ O Connell Square from the junction with Church Street to the junction with Dominick Street.	Two-way pedestrianised street with 2 general traffic lanes within an approx. cross section of 5.8-11.1m including footways. Not an existing bus route. Not Identified as a Cycle Route in Cork Cycle Network Plan 2015.	Provision of bus priority and/or segregated cycling facilities and general traffic is not viable due to the scale of works and impact to adjacent houses. As alternative cycling routes through this section are limited this route will be carried forward to the Stage 2 Multi Criteria Analysis as a alternative NMU route only.	Pass*
0005_087	Saint Anthony's Road / Glen Ryan Road from junction with Gurranabraher Road to junction with Cattle Market Avenue	Single two-way carriageway with two general traffic lanes and footways for some of this section. The cross section varies significantly from approx. 4m at St. Anthony's Rd to approx. 7m at MacSwiney's Terrace and Glen Ryan Road 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 along the full length of this section due to the scale of works and existing building line. As alternative routes are available this section will not be carried forward to the Stage 2 Assessment.	Fail

Line Code_ID Code	Location (From - To)	Description	Comment	Pass / Fail
0005_088	Fair St from junction with Wolfe Tone St to junction with Cattle Market Ave	Two-way single carriageway with 2 general traffic lanes with approx. 10m cross section including footways. Residential area with on-street residential parking and properties on both sides of carriageway. Not an existing bus route. Not Identified as a Cycle Route 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 Assessment.	Fail
0005_089	Vincent's Avenue from junction with Wolfe Tone Street to junction with Saint Mary's Road	One-way single carriageway with one general traffic lane, the existing cross section varies from 4.5m from the back of footway to the boundary line on the opposite side of the carriageway. Not an existing through route for vehicular traffic. 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 Assessment.	Fail
0005_090	North Monastery Road from junction with Wolfe Tone Street to junction with St Mary's Rd / Redemption Rd	Single two-way carriageway with 2 general traffic lanes, approx. 15-18m including footways. Not an existing bus route. Identified in the Cork Cycle Network Plan 2015 as a Primary Cycle Route (CCN-U6)	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
0005_091	Number Not Used	-	-	-
0005_092	Gerald Griffin Avenue from junction with St Marys Rd to junction with Gerald Griffin St	Single one-way carriageway with one general traffic lane, the existing arrangement has an approx. cross section of 3-6m. Not currently a through route for vehicular traffic. (Leads to the Neptune Stadium carpark) 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
0005_093	Allinett's Lane from junction with Gerald Griffin Street to junction with Watercourse Road	Pedestrian lane way, the existing arrangement has an approx. cross section of 3-5m. Not currently a through route for vehicular traffic. 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
0005_094	Hillgrove Lane from Gerald Griffin Street to Watercourse Road	Pedestrian lane way, the existing arrangement has an approx. cross section of 3-5m. Not currently a through route for vehicular traffic. 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

Line Code_ID Code	Location (From - To)	Description	Comment	Pass / Fail
0005_095	North Monastery Road from junction with Redemption Road to junction with Gerald Griffin Street	Single two-way carriageway with 2 general traffic lanes, approx. 18m including footways. Not an existing bus route. Identified in the Cork Cycle Network Plan 2015 as a Primary Cycle Route (CCN-U6)	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
0005_096	St Marys Road from junction with North Monastery Road to Cathedral Road	Single two-way carriageway with two general traffic lanes and an existing cross section of approximately 9m. Not an existing bus route Not identified as a future cycling route in the Cork Cycle Network Plan 2015.	Bus priority would not be viable due to the scale of works and impact to adjacent buildings. This route is not considered appropriate for bus priority, segregated cycling facilities and general traffic and will not be carried forward to the Stage 2 Assessment	Fail
0005_097	Gerald Griffin Street from junction with North Monastery Road / O'Connell Street to junction with Cathedral Rd / Roman St	Single two-way carriageway with two general traffic lanes, approx. 11-16m including footways. Properties are typically located at the back of footway Not an existing bus route. Identified as a Cycle Route in Cork Cycle Network Plan 2015 as a Primary Cycle Route (CCN-U9)	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 Assessment.	Fail
0005_098	Cathedral Park from junction with Watercourse Rd to the junction with the N20	One-way 2-lane carriageway, approx. 7-11m cross section including footways. As part of the MacCurtain Street Public Transport Improvement Scheme it is proposed to convert this section from two eastbound traffic lanes to one east bound traffic lane and one westbound bus lane. A new signalised junction at the intersection of Watercourse Road, Cathedral Walk and Upper John Street and bus priority at the junction of Cathedral Walk and North Link Road (N20) will also be provided. Existing bus route. (203 + 215) Identified in the Cork Cycle Network Plan 2015 as a Secondary Cycle Route (CCN-U11)	A one-way bus priority lane could be achieved by reallocating a general traffic and amending the signals. Provision of 2-way bus priority, segregated cycling facilities and general traffic is not viable due to the scale of works and extents of land take required. However, as this section is an existing bus route it will be carried forward to the Stage 2 Multi Criteria Analysis.	Pass
0005_099	Eason's Hill from junction with Church Street to junction with Upper John Street	Single two-way carriageway with two general traffic lanes. The link north of Roman St is not currently a through route for vehicular traffic. 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
0005_100	John Redmond Street from junction with Exchange Street to junction with Roman Street	Single two-way carriageway to the east which changes to a pedestrianised zone with traffic bollards marking the footways in the vicinity of the Exchange St. The existing cross section varies from 10-12m. Not an existing bus route Not identified as a future cycling route in the Cork Cycle Network Plan 2015.	Provision of bus priority and/or segregated cycling facilities and general traffic is not viable due to the scale of works and impact to adjacent houses. As alternative cycling routes through this section are limited this route will be carried forward to the Stage 2 Multi Criteria Analysis as a alternative NMU route only.	Pass*

Line Code_ID Code	Location (From - To)	Description	Comment	Pass / Fail
0005_101	Mulgrave Street, John Redmond St, Upper John Street to Roman St. from junction with Shandon Street / Gerald Griffin St to junction with Pope's Quay	Single two-way carriageway with 2 general traffic lanes, approx. 10-11m including footways. As part of the MacCurtain Street Public Transport Improvement Scheme a new pedestrian gateway at the junction of Popes Quay and Mulgrave Road and new bus stops along Mulgrave Street are planned. Existing bus routes. (202, 202a) Identified in the Cork Cycle Network Plan 2015 as a Secondary Cycle Route (CCN-U11)	Provision of bus priority, segregated cycling facilities and general traffic is not viable due to the scale of works and extents of land take required. However, as this section is an existing bus route it will be carried forward to the Stage 2 Multi Criteria Analysis.	Pass
0005_102	O'Connell Street from junction with Monastery Road to Watercourse Road	Single two-way carriageway with four general traffic lanes. These are used for individual turning lanes at the signalised junctions. The existing cross section from back of footway to back of footway is approx. 16-17m. Not an existing bus route Identified in the Cork Cycle Network Plan 2015 as a Primary Cycle Route (CCN-U6)	As bus priority, segregated cycling facilities and general traffic could be accommodated by reallocating traffic lanes this section it will be carried forward to the Stage 2 Multi Criteria Analysis.	Pass
0005_103	Watercourse Road from junction with O'Connell Street to junction with Cathedral Walk	Single two-way carriageway with 2 general traffic lanes, approx. 9-15m including footways. Existing bus routes. (203 + 215) Identified in the Cork Cycle Network Plan 2015 as a Secondary Cycle Route (CCN-U6A)	Provision of bus priority, segregated cycling facilities and general traffic is not viable due to the scale of works and extents of land take required. However, as this section is an existing bus route it will be carried forward to the Stage 2 Multi Criteria Analysis.	Pass
0005_104	Pope's Quay / Farren's Quay from junction with Shandon Street to junction with Camden Quay	One-way single carriageway with up to 2 general traffic lanes, approx. 11-18m from the quay wall to the building line. Existing bus routes. (226, 600, 225, 214, 212, 205, 200, 241 + 214) Existing cycling facilities include mandatory 2-way cycle lanes and bike rectal facility(s) Identified in the Cork Cycle Network Plan 2015 as a Primary Cycle Route (CCN-U26)	As bus priority, segregated cycling facilities and general traffic could be accommodated by reallocating traffic lanes this section it will be carried forward to the Stage 2 Multi Criteria Analysis.	Pass
0005_105	Number Not Used	-	-	-
0005_106	Knapp's Square from junction with Devonshire Street to junction with Camden Quay.	One-way single carriageway with one general traffic lane and parallel on street parking. The existing cross section varies from 4-7m with limited scope to extend. Not an existing bus route. Not identified as a future cycling route in the Cork Cycle	Access via Camden Quay is not suitable for buses. Provision of segregated cycling facilities and 2-way general traffic is not viable due to the existing building line. As this route is being proposed as a "quiet streets" cycling route by	Pass*
0005_107	Lower John Street from its junction with Cathedral Street to its junction with Knapp's Square	One-way carriageway with on street parking. The existing cross section varies from 9m including footways. Existing outbound bus route. (203, 215) Identified in the Cork Cycle Network Plan 2015 as a Secondary Cycle Route (CCN-U11)	Provision of segregated cycling facilities and 2-way general traffic is not viable due to the existing building line. As this route is being proposed as a "quiet streets" cycling route by Cork City Council it will be carried forward to the Stage 2 Multi Criteria Analysis as a alternative NMU route only.	Pass*
0005_108	N20 North City Link from junction with Cathedral Park to junction with Camden Place/Camden Quay	National Primary Route. Two-way carriageway with 4 general traffic lanes, approx. 23m including footways. Existing bus routes. (203 + 215) Identified in the Cork Cycle Network Plan 2015 as a Primary Cycle Route (CCN-U12)	As bus priority, segregated cycling facilities and general traffic could be accommodated by reallocating traffic lanes this section it will be carried forward to the Stage 2 Multi Criteria Analysis.	Pass

Line Code_ID Code	Location (From - To)	Description	Comment	Pass / Fail
0005_109	Shanakiel Road from junction with Strawberry Hill to the junction with Convent Avenue	One-way single carriageway with parallel on street parking on one side of the carriageway. Steep gradients. Moderate-steep gradient (up to approx. 12%) Not an existing bus route. Not identified as a future cycling route in the Cork Cycle Network Plan 2015.	One-way bus priority and general traffic could be accommodated by extending the alignment into third party land this section. However this route would not be suitable for the provision of cycling facilities due to the steepness of the slope. As alternative routes are available it will not be carried forward to the Stage 2 Multi Criteria Analysis.	Fail
0005_110	Church St from junction with Shandon St to junction with Eason's Hill	One-way single carriageway with 2 general traffic lanes, approx. 5-11m. Not an existing bus route. Not Identified as a Cycle Route 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 cycling routes through this section are limited this route will be carried forward to the Stage 2 Multi Criteria Analysis as a alternative NMU route only.	Pass*
0005_111	Wolfe Tone St from junction with Cattle Market Ave to junction with Cathedral Road	Single two-way carriageway with two general traffic lanes and footways. The cross section varies significantly from approx. 9-10m 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 scale of works and impact to adjacent houses. As alternative cycling routes through this section are limited this route will be carried forward to the Stage 2 Multi Criteria Analysis as a alternative NMU route only.	Pass*
0005_112	N20 North City Link from its junction with Assumption Road to the junction with Cathedral Walk	National primary Road. Urban dual carriageway with 2-way traffic and additional ghost island turning lanes. Cross section approx. 20-22m. Not an existing bus route. Identified as primary route CCN-U12 in the Cork Cycle Network Plan 2015.	As bus priority, segregated cycling facilities and general traffic could be accommodated within the existing boundary by reassigning traffic lanes this section it will be carried forward to the Stage 2 Multi Criteria Analysis.	Pass
0005_113	Watercourse Road from Madden's Buildings to junction with O'Connell St.	Single two-way carriageway with 2 general traffic lanes, approx. 14-17m including footways. Existing bus routes. (203 + 215) Identified in the Cork Cycle Network Plan 2015 as a Secondary Cycle Route (CCN-U6A)	Provision of bus priority, segregated cycling facilities and general traffic is not viable due to the scale of works and extents of land take required. However, as this section is an existing bus route it will be carried forward to the Stage 2 Multi Criteria Analysis.	Pass
0005_114	Number Not Used	-	-	-

Appendix B

SAS1 (CITY CENTRE TO BAKER'S ROAD)

CBC 5 – TABLE 1: SAS1 (CITY CENTRE TO BAKERS ROAD) MULTI CRITERIA ANALYSIS

	Option A1	Option A2	Option A3	Option A4	Option A5	Option A6
1a.Capital Cost						
1b. Average Journey-time						
1c. Journey-time reliability and Consistency						
2a.Land Use Integration						
2b.Residential Population and Employment Catchments						
2c.Transport Network Integration						
2d. Cyclists Integration						
2e Pedestrian Integration						
3a.Key Trip Attractors (Education/ Health/ Commercial)						
3b.Deprived Geographic Areas						
4. Road User Safety						
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	Route Option A6
Economy	1a.Capital Costs	€ 9,990,000	€ 9,260,000	€ 10,840,000	€ 7,200,000	€17,450,000	€17,410,000
	1a.Rank						
	1b.Average Journey Time	4.4	4.2	5.4	4.5	4.9	5.4
	1b.Rank						
	1c. Journey Time Reliability and Consistency	Bus Lane 20% Bus priority added for full duration of route	Bus Lane 11% Outbound Bus gate	Bus Lane 75%	Bus Lane 24% Outbound Bus gate	Bus Lane 95%	Bus Lane 76%
	1c.Rank						
Integration	2a.Land Use Integration	No difference	No difference	No difference	No difference	No difference	No difference
	2a.Rank						
	2b.Residential Population and Employment Catchments	**Residential Population Catchments** •5 minute walk catchment of approximately 7,601 •10 minute walk catchment of approximately 17,369 •15 minute walk catchment of approximately 26,686 **Employment Catchment** •15 minute walk catchment of approximately 23,397	**Residential Population Catchments** •5 minute walk catchment of approximately 7,295 •10 minute walk catchment of approximately 18,048 •15 minute walk catchment of approximately 26,654 **Employment Catchment** •15 minute walk catchment of approximately 23,275.	**Residential Population Catchments** •5 minute walk catchment of approximately 6,921 •10 minute walk catchment of approximately 19,030 •15 minute walk catchment of approximately 31,544 **Employment Catchment** •15 minute walk catchment of approximately 26,411..	**Residential Population Catchments** •5 minute walk catchment of approximately 7,601 •10 minute walk catchment of approximately 17,369 •15 minute walk catchment of approximately 26,686 **Employment Catchment** •15 minute walk catchment of approximately 23,297	**Residential Population Catchments** •5 minute walk catchment of approximately 6,198 •10 minute walk catchment of approximately 18,016 •15 minute walk catchment of approximately 29,387 **Employment Catchment** •15 minute walk catchment of approximately 25,185	**Residential Population Catchments** •5 minute walk catchment of approximately 7,601 •10 minute walk catchment of approximately 17,369 •15 minute walk catchment of approximately 26,686 **Employment Catchment** •15 minute walk catchment of approximately 23,397
	2b.Rank						

	Analysis Sub-Criteria	Route Option A1	Route Option A2	Route Option A3	Route Option A4	Route Option A5	Route Option A6
	2c.Transport Network Integration	Duplicates existing bus route 202 & 202a for entire section. Sunvalley Drive has capacity as a parallel road to carry additional vehicular traffic as replacement for Bus Gates on Cathedral.	Duplicates existing bus route 202 & 202a for a large part of the section. Sunvalley Drive has capacity as a parallel road to carry additional vehicular traffic as replacement for Bus Gates on Cathedral	Duplicates existing bus route 203 along Watercourse Road but has no existing bus route for majority of option. Reduces N20 to two lanes (approx. 900m) and includes one-way restrictions on Watercourse Road	Duplicates existing bus route 202 & 202a for entire section Some traffic restrictions on Mulgrave Road and Roman Street	Duplicate's part of the existing bus route 203 on the N20 and Watercourse Road but has no existing bus route for majority of option. Reduces N20 to two lanes (approx. 500m) and includes one-way restrictions on Watercourse Road	Duplicates existing bus route 202 & 202a for a large part of the section.
	2c.Rank						
	2d.Cyclist Integration	Follows Primary Route U6 & Secondary Route U6A & U11 Mixture of Cycle track and quiet Streets.	Follows Primary Route U6 & Secondary Route U6A & U11 Mixture of Cycle track and quiet Streets.	Follows Primary Route U6, U9 and CCN U12 & Secondary Route U6A Mixture of Cycle track and quiet Streets.	Follows Primary Route U31 & U6. For the majority of the route. Mixture of Cycle track and quiet Streets.	Follows Primary Route CCN-31 for majority of route Cycle route remains separated from buses for the entirety of the route. The Cycle route is segregated for the majority of the route.	Follows Primary Route U6 & Secondary Route U6A & U11 Mixture of Cycle track and quiet Streets.
	2d.Rank						review Drg
	2e.Pedestrian Integration	No appreciable difference	No appreciable difference	No appreciable difference	No appreciable difference	No appreciable difference	No appreciable difference
	2e.Rank						

	Analysis Sub-Criteria	Route Option A1	Route Option A2	Route Option A3	Route Option A4	Route Option A5	Route Option A6
Accessibility and Social Inclusion	3a.Key Trip Attractors	St. Mary's Health Campus Gerry O'Sullivan Park St. Vincent's Secondary School Sam Allen Football Pitches (cycle) Firkin Crane Butter Museum Cork Arts Theatre	Leisure World Churchfield Sam Allen Football Pitches Gerry O'Sullivan Park Primary & Secondary Schools Firkin Crane Butter Museum Cork Arts Theatre	Neptune Stadium Sam Allen Football Pitches Numerous Primary & Secondary Schools Cork Academy of Music Polska Szkola Cork Cork Arts Theatre Commercial uses on Watercourse Road	St. Mary's Health Campus Gerry O'Sullivan Park St. Vincent's Secondary School Firkin Crane Butter Museum Cork Arts Theatre Cork International Coral Festival	Neptune Stadium Sam Allen Football Pitches Numerous Primary & Secondary Schools Cork Academy of Music Polska Szkola Cork Cork Arts Theatre Commercial uses on Watercourse Road	St. Mary's Health Campus Gerry O'Sullivan Park St. Vincent's Secondary School Sam Allen Football Pitches (cycle) Firkin Crane Butter Museum Cork Arts Theatre
	Rank						
	3b.Deprived Geographic Areas	Ranges from disadvantaged with some very disadvantaged and Extremely Disadvantaged within St Mary's Campus. Mainly disadvantaged but there are some affluent areas at the Eastern End	Ranges from disadvantaged with some very disadvantaged alongside Gerry O'Sullivan Park. Mainly disadvantaged but there are some affluent areas at the Eastern End	Ranges from disadvantaged with some very disadvantaged alongside Gerry O'Sullivan Park. Mainly disadvantaged but are some very affluent areas at the Eastern End	Ranges from disadvantaged with some very disadvantaged and Extremely Disadvantaged within St Mary's Campus. Mainly disadvantaged but there are some affluent areas at the Eastern End .	Ranges from disadvantaged with some very disadvantaged alongside Gerry O'Sullivan Park. Mainly disadvantaged but there are some very affluent areas at the Eastern End Mainly disadvantaged	Ranges from disadvantaged with some very disadvantaged and Extremely Disadvantaged within St Mary's Campus. There are some affluent areas at the Eastern End Mainly disadvantaged.
	3b.Rank						

	Analysis Sub-Criteria	Route Option A1	Route Option A2	Route Option A3	Route Option A4	Route Option A5	Route Option A6
Safety	4.Road Safety	No. of Junctions: 28 There are no junctions where the Bus Route does not have priority	No. of Junctions: 25 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: 14 3 turning movements required inbound (2 Right Turn / 1 Left Turn) 3 turning movements required outbound (1 Right Turn / 2 Left Turn)	No. of Junctions: 28 There are no junctions where the Bus Route does not have priority	No. of Junctions: 17 3 turning movements required inbound (2 Right Turn / 1 Left Turn) 3 turning movements required outbound (1 Right Turn / 2 Left Turn)	No. of Junctions: 28 There are no junctions where the Bus Route does not have priority
	Rank						

	Analysis Sub-Criteria	Route Option A1	Route Option A2	Route Option A3	Route Option A4	Route Option A5	Route Option A6
Environment	5a.Archaeological, Architectural and Cultural Heritage	The route passes through the Shandon and Blackpool ACA's, with two RMP sites adjacent, one of which may have been demolished. The protected structure of St Mary's and St. Ann's Cathedral is also adjacent to route (PS024). Land is due to be acquired within the edge of the Blackpool ACA, and the park and allotment land to the west end of the route has potential for containing sub-surface archaeological features. This potential is deemed to be low.	The route passes through the Shandon and Blackpool ACA's, with two RMP sites adjacent, one of which may have been demolished. The protected structure of St Mary's and St. Ann's Cathedral is also adjacent to route (PS024). The park and allotment land to be acquired at the west end of the route has potential for containing sub-surface archaeological features. This potential is deemed to be low.	The route passes through a small section of the Blackpool ACA. The park and allotment land to be acquired at the west end of the route has potential for containing sub-surface archaeological features. This potential is deemed to be low.	The route passes through the Shandon and Blackpool ACA's, with two RMP sites adjacent, one of which may have been demolished. The protected structure of St Mary's and St. Ann's Cathedral is also adjacent to route (PS024).	The route passes through a small section of the Blackpool ACA and is adjacent to one site recorded in the NIAH. The park and allotment land to be acquired at the west end of the route has potential for containing sub-surface archaeological features. This potential is deemed to be low.	The route passes through the Shandon and Blackpool ACA's, with two RMP sites adjacent, one of which may have been demolished. The protected structure of St Mary's and St. Ann's Cathedral is also adjacent to route (PS024). Land is due to be acquired within the edge of the Blackpool ACA, and the park and allotment land to the west end of the route has potential for containing sub-surface archaeological features. This potential is deemed to be low.
	Rank						
	5b.Biodiversity	Minor land take unlikely to cause significant impacts to biodiversity.	Minor land take unlikely to cause significant impacts to biodiversity.	Minor land take unlikely to cause significant impacts to biodiversity.	Minor land take unlikely to cause significant impacts to biodiversity.	Minor land take unlikely to cause significant impacts to biodiversity.	Significant land take but unlikely to cause significant impacts to biodiversity.
	Rank						
	5c.Soils and Geology	No appreciable impacts	No appreciable impacts	No appreciable impacts	No appreciable impacts	No appreciable impacts	No appreciable impacts
	Rank						

	Analysis Sub-Criteria	Route Option A1	Route Option A2	Route Option A3	Route Option A4	Route Option A5	Route Option A6
	5d.Water Resources	Increased risk of surface run-off due to potential reduction in permeable area but due to urban setting of works is thought to be minimal. Some appreciable risk to cycle route based on past flood event on Watercourse road	Increased risk of surface run-off due to potential reduction in permeable area but due to urban setting of works is thought to be minimal. Some appreciable risk to cycle route based on past flood event on Watercourse road	Increased risk of surface run-off due to potential reduction in permeable area but due to urban setting of works is thought to be minimal . Some appreciable risk based on past flood event on NM20	Increased risk of surface run-off due to potential reduction in permeable area but due to urban setting of works is thought to be minimal	Increased risk of surface run-off due to potential reduction in permeable area but due to urban setting of works is thought to be minimal . Some appreciable risk based on past flood event on Watercourse road	Increased risk of surface run-off due to potential reduction in permeable area but due to urban setting of works is thought to be minimal. Some appreciable risk to cycle route based on past flood event on Watercourse road
	Rank						
	5e. Landscape and Visual	Adverse impacts resulting from encroachment into third party greenspace. Potential realignment of junction at Baker's Road to impact upon street scene.	Adverse impacts resulting from encroachment onto grass verges to accommodate widening. Potential tree removal also required.	Adverse impacts resulting from loss of green space and potential tree loss within Gerry O'Sullivan Park, encroachment into allotments at Churchfield.	Adverse impacts resulting from loss of street trees and encroachment into front gardens along Cathedral Street.	Adverse impacts associated with encroachment into Gerry O'Sullivan Park and allotments at Churchfield. Third party front gardens and walls also likely to be impacted along Cathedral Road to accommodate widening/restructuring of street scene.	Adverse impacts resulting from encroachment into grass verges. Third party front gardens and walls will be impacted along Cathedral Road to accommodate widening/restructuring of street scene Tree removal also required throughout the route
	Rank						

	Analysis Sub-Criteria	Route Option A1	Route Option A2	Route Option A3	Route Option A4	Route Option A5	Route Option A6
	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 gates at Cathedral Road reduce through traffic on Cathedral Road. Sunvalley Drive has capacity as a parallel road to carry additional vehicular traffic with low property frontage.	Possible impacts due to increased trafficking of road networks and increased proximity of vehicles to houses and gardens if bus lanes installed Bus gates at Cathedral Road reduce through traffic on Cathedral Road. Sunvalley Drive has capacity as a parallel road to carry additional vehicular traffic with low property	Possible impacts due to increased trafficking of road networks and increased proximity of vehicles to houses and gardens if bus lanes installed Inbound general traffic from North Monastery Road	Possible impacts due to increased trafficking of road networks and increased proximity of vehicles to houses and gardens if bus lanes installed Increased traffic at John Redmond Street/John Street Upper.	Possible impacts due to increased trafficking of road networks and increased proximity of vehicles to houses and gardens if bus lanes installed Increased general traffic at Watercourse Road due to diversion via Gerald Griffin Street and Bleasby's Street.	Major impacts due to increased trafficking of road networks and increased proximity of vehicles to houses and gardens due to 16m corridor installation to accomodate bus lanes
	Rank						
	5g. Land Use and the Built Environment	Minimal impact to parking	Parking spaces removed Parking spaces provided.	Parking spaces removed Parking spaces provided Park land (Gerry O'Sullivan Park) and allotment land (Churchfield Allotments) required	Parking spaces removed Parking spaces provided Impact on residential private parking	Parking spaces removed Parking spaces provided	Parking spaces removed Impact on residential private parking.
	Rank						

Appendix C

SAS2 (BAKER'S ROAD TO HOLLYHILL)

CBC 5 – TABLE 2: SAS2 (ST MARY'S HEALTH CAMPUS) MULTI CRITERIA ANALYSIS

		Option STM1	Option STM2
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 STM1	Route Option STM2
Economy	1a.Capital Costs	€6,520,000	€2,750,000
	1a.Rank		
	1b.Average Journey Time	1.7 (assumed speed limit 20KpH)	1.8
	1b.Rank		
	1c. Journey Time Reliability and Consistency	Bus Lane & Priority 23%	Bus Lane & Priority 85%
	1c.Rank		
Integration	2a.Land Use Integration	Does not integrate with future planned developments	Integrates with Northwest quarter
	2a.Rank		
	2b.Residential Population and Employment Catchments	**Residential Population Catchments** •5 minute walk catchment of approximately 1,005 •10 minute walk catchment of approximately 4,785 •15 minute walk catchment of approximately 11,292 **Employment Catchment** •15 minute walk catchment of approximately 3,577.	**Residential Population Catchments** •5 minute walk catchment of approximately 1,760 •10 minute walk catchment of approximately 5,551 •15 minute walk catchment of approximately 12,149 **Employment Catchment** •15 minute walk catchment of approximately 3,783.
	2b.Rank		

	Analysis Sub-Criteria	Route Option STM1	Route Option STM2
	2c.Transport Network Integration	Integrates with No existing bus route	Integrates with existing bus route 202 for parts of the section on Bakers Road and Harbour View Road Integrates with Existing Bus Route 201 on Harbour View Road
	2c.Rank		
	2d.Cyclist Integration	Follows Primary Cycle Route CCN-U31	Follows Primary Cycle Route CCN-U4
	2d.Rank		
	2e.Pedestrian Integration	No appreciable Difference	No appreciable Difference
	2e.Rank		
Accessibility and Social Inclusion	3a.Key Trip Attractors	St. Mary's Health Campus Numerous Education and training facilities	St. Mary's Health Campus Gerry O'Sullivan Park Sam Allen Football Pitches Cork Anti Poverty Resource Network Numerous Education and training facilities
	Rank		

	Analysis Sub-Criteria	Route Option STM1	Route Option STM2
	3b.Deprived Geographic Areas	Mainly disadvantaged and extremely Disadvantaged at St. Mary's Health Campus.	Mainly disadvantaged and extremely Disadvantaged at St. Mary's Health Campus.
	3b.Rank		
Safety	4.Road Safety	No. of Junctions: 2 2 turning movements required inbound (2 Right Turn) 2 turning movements required outbound (2 Left Turn)	No. of Junctions: 4 1 turning movement required inbound (1 Right Turn) 1 turning movement required outbound (/1 Left Turn)
	Rank		
Environment	5a.Archaeological, Architectural and Cultural Heritage	A realignment of the proposals at the western end will of the route may further encroach the protected water tower The Route passes through St Marys hospital and is confined by protected structures on both sides	No Recorded Monuments or sites of archaeological and cultural heritage merit were identified within the assessment area.
	Rank		
	5b.Biodiversity	Land take will impact verges and Mature trees along the route Re-planting is proposed	Land take which will impact trees along the route. Re-planting is proposed
	Rank		
	5c.Soils and Geology	No appreciable impacts	No appreciable impacts
	Rank		

	Analysis Sub-Criteria	Route Option STM1	Route Option STM2
	5d.Water Resources	Increased flood risk from surface run-off due to potential reduction in permeable area.	Increased flood risk from surface run-off due to potential reduction in permeable area.
	Rank		
	5e. Landscape and Visual	Minor impact resulting from realignment of current road proposals which may encroach further third-party greenspace at western end of route. Reduction and loss of verge, Mature Trees and greenspace and parking throughout route	Adverse impacts resulting from loss of street trees and encroachment into front gardens and parking along Harbour view road
	Rank		
	5f.Noise, Vibration and Air	Impacts due to increased trafficking of road networks (it is currently used for access only) and increased proximity of vehicles to hospital buildings. Currently no buses are within this area. No appreciable difference	Possible impacts due to increased trafficking of road networks. Increased proximity of vehicles to houses and gardens if bus lanes installed. No appreciable difference
	Rank		
	5g. Land Use and the Built Environment	Parking spaces removed	Parking spaces removed
	Rank		

CBC 5 – TABLE 3: SAS2 (BAKER'S ROAD TO HOLLYHILL / APPLE) MULTI CRITERIA ANALYSIS

		Option B1	Option B2	Option B3
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
Economy	1a.Capital Costs	€7,930,000	€5,070,000	€4,420,000
	Rank			
	1b.Average Journey Time	3.4	2.7	2.6
	Rank			
	1c.Journey Time Reliability and Consistency	100%	100%	83%
	Rank			
Integration	2a.Land Use Integration	No difference	No difference	No integration with Northwest quarter
	Rank			
	2b.Residential Population and Employment Catchments	**Residential Population Catchments** •5 minute walk catchment of approximately 1,944 •10 minute walk catchment of approximately 5,945 •15 minute walk catchment of approximately 11,856 **Employment Catchment** •15 minute walk catchment of approximately 4,056	**Residential Population Catchments** •5 minute walk catchment of approximately 1,487 •10 minute walk catchment of approximately 4,994 •15 minute walk catchment of approximately 11,655 **Employment Catchment** •15 minute walk catchment of approximately 3,884.	**Residential Population Catchments** •5 minute walk catchment of approximately 1,403 •10 minute walk catchment of approximately 4,599 •15 minute walk catchment of approximately 10,918 **Employment Catchment** •15 minute walk catchment of approximately 3,539
	Rank			

	Analysis Sub-Criteria	Route Option B1	Route Option B2	Route Option B3
	2c.Transport Network Integration	Bus route follows the 201, 202 & 202a routes for the majority of the route. Buses and cycles and vehicular traffic will remain in their own lanes for the majority of the route	Bus route follows the 201, 202 route. Buses and cycles and vehicular traffic will remain in their own lanes for the majority of the route	Bus route follows the 202 route. Buses and cycles and vehicular traffic will remain in their own lanes for some of the route.
	Rank			
	2d.Cyclist Integration	Route follows Primary Route CCN-U4 and CCN U2 Cycles and Buses are segregated for the entire route	Route follows Primary Route CCN-U4 and CCN U3 Cycles and Buses are segregated for the entire route	Route follows mainly Secondary route CCN-U4A and has some interface with Primary Route CCN-U4 and CCN U3 and Cycles and Buses are segregated for the majority of the route.
	Rank			
	2e.Pedestrian Integration	No appreciable differences	No appreciable differences	No appreciable differences
	Rank			

	Analysis Sub-Criteria	Route Option B1	Route Option B2	Route Option B3
Accessibility and Social Inclusion	3a.Key Trip Attractors	St Marys Health Campus Numerous Education and training facilities Hollymount Industrial Estate Hollyhill Industrial Estate Hollyhill Shopping Centre Apple. St Annes Pitch & Putt Club	St Marys Health Campus St Vincents GAA Club Apple. Numerous Education and training facilities Hollyhill Shopping Centre	St Marys Health Campus St Vincents GAA Club Apple.
	Rank			
	3b.Deprived Geographic Areas	Mainly disadvantaged and below average areas. with extremely disadvantaged along Harbour View road at St Marys Health Campus	Mainly disadvantaged and with extremely disadvantaged along Harbour View road at St Marys Health Campus	Mainly disadvantaged
	Rank			
Safety	4.Road Safety	No. of Junctions: 10 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: 10 4 turning movements required inbound (3 Right Turn / 1 Left Turn) 4 turning movements required outbound (1 Right Turn / 3 Left Turn)	No. of Junctions: 10 4 turning movements required inbound (3 Right Turn / 1 Left Turn) 4 turning movements required outbound (1 Right Turn / 3 Left Turn)
	Rank			

	Analysis Sub-Criteria	Route Option B1	Route Option B2	Route Option B3
Environment	5a.Archaeological, Architectural and Cultural Heritage	The route option is adjacent to protected St Marys on the Hill, Roman Catholic Church – Reg No.20861004	The route option is adjacent to numerous protected St Marys on the Hill, Roman Catholic Church – Reg No.20861004	No Recorded Monuments or sites of archaeological and cultural heritage merit were identified within the assessment area.
	Rank			
	5b.Biodiversity	Several areas of land take. None of these locations are likely to be of high value for biodiversity.	Several areas of land take. None of these locations are likely to be of high value for biodiversity	Several areas of land take. None of these locations are likely to be of high value for biodiversity
	Rank			
	5c.Soils and Geology	No appreciable impacts	No appreciable impacts	No appreciable impacts
	Rank			
	5d.Water Resources	Carriageway widening widening will potentially increase surface-water runoff / flood risk from increased impermeable surface.	Carriageway widening widening will potentially increase surface-water runoff / flood risk from increased impermeable surface	Carriageway widening widening will potentially increase surface-water runoff / flood risk from increased impermeable surface
	Rank			
	5e. Landscape and Visual	Option will involve the removal of walls and encroachment into front gardens at Harbour View Road with some removal of trees adjacent to the carriageway at the Apple Distribution International / Hollymount Industrial Estate.	Option will involve the removal of walls and encroachment into front gardens at Harbour View Road with the loss of grass verges acquisition of third party land to accommodate route widening along Courtown Drive.	Option will involve the removal of walls and encroachment into front gardens at Kilmore Heights and Knocknaheeny Ave with the loss of grass verges acquisition of third party land to accommodate route widening but is subject to consultation with Northwest Regeneration

	Analysis Sub-Criteria	Route Option B1	Route Option B2	Route Option B3
	Rank			
	5f. Noise, Vibration and Air	Possible impacts due to increased trafficking of road networks and increased proximity of vehicles to houses and gardens. Increased traffic on Harbour view road	Possible impacts due to increased trafficking of road networks and increased proximity of vehicles to houses and gardens. Increased traffic on Courtown Drive due to Two-way bus lane on Harbour view road	Possible impacts due to increased trafficking of road networks and increased proximity of vehicles to houses and gardens. Increases bus use closer to St. Mary's on the Hill Primary School.
	Rank			
	5g. Land Use and the Built Environment	There would be some land acquisition and loss of on road car parking spaces.	There would be some land acquisition and loss of on road car parking spaces.	There would be some land acquisition and loss of on road car parking spaces.
	Rank			

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