

Swords to City
Centre Core Bus
Corridor Scheme
March 2023

Preferred
Route
Option
Report

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SUSTAINABLE TRANSPORT FOR A BETTER CITY.

BusConnects Dublin Core Bus Corridor Infrastructure Works - Package B

Project No: 32110901
Document Title: Swords to City Centre Core Bus Corridor - Preferred Route Option Report
Document No.: BCIDB-JAC-GEO-ZZ-0002_XX_00-RP-CR-0001
Date: April 2023
Client Name: National Transport Authority
Client No: BCIDB
File Name: BCIDB-JAC-GEO_ZZ-0002_XX_00-RP-CR-0001

Jacobs Engineering Ireland Limited

Merrion House
Merrion Road
Dublin 4, D04 R2C5
Ireland
T +353 1 269 5666
F +353 1 269 5497
www.jacobs.com

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Glossary of Technical Terms

Bus Gate – A Bus Gate is a sign-posted short length of stand-alone bus lane. This short length of road is restricted exclusively to buses, taxis and cyclists plus emergency vehicles. It facilitates bus priority by removing general through traffic along the overall road where the bus gate is located. General traffic will be directed by signage to divert away to other roads before they arrive at the Bus Gate.

Carbon - The term Carbon is used to refer to carbon emissions or Green House Gas emissions interchangeably

Cycle Lane – A cycle lane is a lane on the carriageway that is reserved either exclusively or primarily for cycling and is separated from general traffic or bus lanes by road markings.

Cycle Track – A cycle track is a separate section of the road dedicated for cycling only. This space will generally be isolated from other vehicular traffic by a physical kerb.

Greenway – A greenway is a recreational corridor for non-motorised journeys, developed in an integrated manner which enhances both the environment and quality of life of the surrounding area. These routes should meet satisfactory standards of width, gradient and surface condition to ensure that they are both user-friendly and low-risk for users of all abilities.

Protected Junctions - Refers to junctions, which provide physical kerb buildouts to protect cyclists through the junction. Due to the inherently complex nature of mixed mode movements at junctions, the provision for cyclists at junctions is a critical factor in managing conflict and providing safe junctions for all road users. As such, this is the preferred layout, where practicable, for signalised junctions as part of the CBC Infrastructure Works.

Quiet Street Treatment – Where Core Bus Corridor (CBC) roadway widths cannot facilitate cyclists without significant impact on bus priority, alternative cycle routes are explored for short distances away from the CBC bus route. Such offline options may include directing cyclists along streets with minimal general traffic other than car users who live on the street. They are called Quiet Streets due to the low amount of general traffic and are deemed suitable for cyclists sharing the roadway with the general traffic without the need to construct segregated cycle tracks or painted cycle lanes. The Quiet Street Treatment will involve appropriate advisory signage for both the general road users and cyclists.

Signal Controlled Priority - Signal Control Priority uses traffic signals to enable buses to get priority ahead of other traffic on single lane road sections, but it is only effective for short distances. This typically arises where the bus lane cannot continue due to obstructions on the roadway. An example might be where a road has pinch-points where it narrows due to existing buildings or structures that cannot be demolished to widen the road to make space for a bus lane. It works through the use of traffic signal controls (typically at junctions) where the bus lane and general traffic lane must merge ahead and share the road space for a short distance until the bus lane recommences downstream. The general traffic will be stopped at the signal to allow the bus pass through the narrow section first and when the bus has passed, the general traffic will then be allowed through the lights

Virtual Bus Priority – This refers to cases where physical bus priority (i.e. bus lanes) is not provided, and instead, bus priority is provided within the general traffic lane through the use of signal-controlled bus priority or bus gates to control the movements of general traffic.

Executive Summary

Introduction

The purpose of this report is to present an overview of the Preferred Route Option (PRO) for the Swords to City Centre Core Bus Corridor (CBC) as well as describing the options assessed, and changes made to the Proposed Scheme since the first Non-Statutory Public Consultation in November 2018.

The aim of delivering the Swords to City Centre CBC is to provide enhanced walking, cycling and bus infrastructure on this key access corridor in the Dublin region, which will enable and deliver efficient, safe, and integrated sustainable transport movement along the corridor.

The objectives are to:

- 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 Dublin, 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.

Scheme Overview & Assessment Process

The Proposed Scheme commences on the R132 Swords Road at the Pinnock Hill junction and is routed via the R132 along Swords Road, Drumcondra Road Upper & Lower and Dorset Street to the junction with North Frederick Street. This Core Bus Corridor is then routed via North Frederick Street and Parnell Square East, where it will join the prevailing traffic management regime in the City Centre. Priority for buses is provided along the entire route, consisting primarily of dedicated bus lanes in both directions.

Where substantial revisions have been made to the design since the publication of the Emerging Preferred Route (EPR) Option in November 2018, options have been assessed using a Multi-Criteria Analysis (MCA) to determine the PRO. The methodology used is consistent with that carried out during the initial route optioneering work which informed the EPR Option.

This additional assessment does not supersede work done during earlier stages but rather complements it and is a direct response to issues raised by the public during the non-statutory public consultation process and further design development. This assessment has also been carried out in the context of more detailed information now available, including topographical survey.

The following list highlights the main scheme changes between the published EPR Option and the PRO:

- Signal Controlled Priority will be provided inbound between Northwood Avenue and the mid-block pedestrian crossing near the Morton Stadium entrance to avoid impact to properties and to Santry Demesne. Buses are given priority over general traffic exiting the junctions until the bus lane resumes at the midpoint pedestrian crossing.

- The introduction of a two-way proposal for general traffic in Santry Village. One of the principal issues reviewed was the proposed one-way system for general traffic in Santry village. It became apparent that the one-way proposal for general traffic might affect the existing access/egress arrangements for residents along the Lorcan and Shanrath Roads and impact on commercial deliveries and local business.
- Re-routing the cyclists through Lorcan Road and Shanrath Road so that two-way general traffic can be maintained, and a continuous bus lane can be provided in both directions to achieve bus priority between the Omni Shopping Centre and Shantalla Road;
- At the River Tolka bridge, an independent structure, separate from the existing bridge, has been introduced;
- Gardiner Street and Mountjoy Square no longer formed part of the Swords to City Centre CBC;
- The junction layouts were modified over the course of the design process to provide more protection for cyclists along the length of the route, including the addition of separately signalised stages for cyclists at large junctions such as Collins Avenue and Griffith Avenue;
- The layout of all bus stops along the route have been enhanced to the latest design guidance;
- Some bus stop locations have been optimised to allow better connectivity for bus passengers; and
- Cycle facilities have been updated to the latest design guidance.

The Preferred Route Option drawings are located in **Appendix A** of this report.

1. Introduction and Background

1.1 Introduction

This report presents the PRO of the Swords to City CBC Scheme (herein after called the Proposed Scheme).

The Proposed Scheme has an overall length of approximately 12km and commences on the R132 Swords Road at the Pinnock Hill junction and is routed via the R132 along Swords Road, Drumcondra Road Upper & Lower and Dorset Street to the junction with North Frederick Street. The Proposed Scheme then is routed via North Frederick Street and Parnell Square East, where it will join the prevailing traffic management regime in the City Centre.

The Proposed Scheme will significantly enhance travel by public transport by providing continuous bus priority as well as improved pedestrian and cycling infrastructure. Currently these key access corridors are characterised by traffic congestion and discontinuous inadequate bus and cycling infrastructure, meaning that for most of the journey, buses and cyclists are competing for space with the general traffic, impacting on the attractiveness of these sustainable modes. The objectives of the Proposed Scheme include provision of necessary bus, cycle, and walking infrastructure enhancements that will facilitate modal shift from car dependency, contributing to an efficient, low carbon and climate resilient City. Refer to **Figure 1.1**.

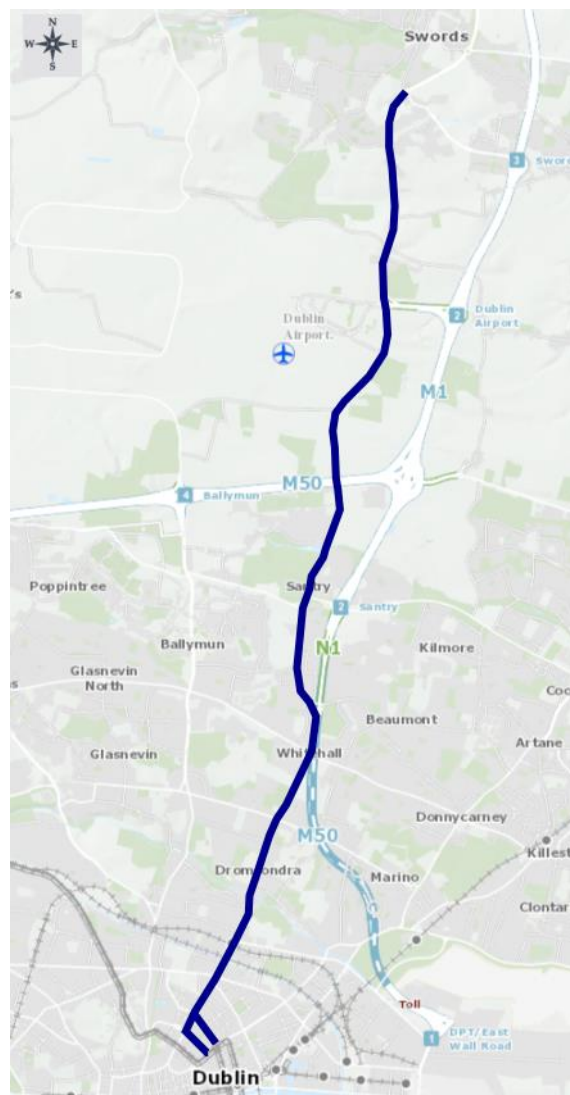


Figure 1.1: Swords to City Centre Core Bus Corridor Scheme

1.2 The Core Bus Corridor Infrastructure Works

The Proposed Scheme is one of 12 stand-alone core bus corridor schemes to be delivered under the BusConnects Dublin - Core Bus Corridors Infrastructure Works (herein after called the CBC Infrastructure Works). The CBC Infrastructure Works, once completed, will deliver the radial core corridors identified in the Transport Strategy for the Greater Dublin Area 2016 – 2035 (herein after called the GDA Transport Strategy) Core Bus Network which is discussed below.

The BusConnects Dublin Programme is the National Transport Authority's (NTA) programme to greatly improve bus services in the Greater Dublin Area and the CBC Infrastructure Works is one element of that Programme, itself containing 12 stand-alone CBC schemes. It is a key part of the Government's policies to improve public transport and address climate change in Dublin and other cities.

The NTA established a dedicated BusConnects Infrastructure team to advance the planning and construction of the CBC Infrastructure Works. It comprises an in-house team including technical and communications resources and external service providers procured from time-to-time to assist the internal team in the planning and design of the 12 CBC Schemes.

The CBC Infrastructure Works will deliver a major component of the overall Core Bus Network as identified in the GDA Transport Strategy, encompassing the delivery of approximately 230km of dedicated bus lanes and 200kms of cycle tracks along 12 stand-alone CBC Schemes.

The 12 stand-alone CBC Schemes to be delivered under the CBC Infrastructure Works are (see **Figure 1.2**):

- The Clongriffin to City Centre Core Bus Corridor Scheme;
- **The Swords to City Centre Core Bus Corridor Scheme;**
- The Ballymun / Finglas to City Centre Core Bus Corridor Scheme;
- The Blanchardstown to City Centre Core Bus Corridor Scheme;
- The Lucan to City Centre Core Bus Corridor Scheme;
- The Liffey Valley to City Centre Core Bus Corridor Scheme;
- The Tallaght / Clondalkin to City Centre Core Bus Corridor Scheme;
- The Kimmage to City Centre Core Bus Corridor Scheme;
- The Templeogue / Rathfarnham to City Centre Core Bus Corridor Scheme;
- The Bray to City Centre Core Bus Corridor Scheme;
- The Belfield / Blackrock to City Centre Core Bus Corridor Scheme; and
- The Ringsend to City Centre Core Bus Corridor Scheme.

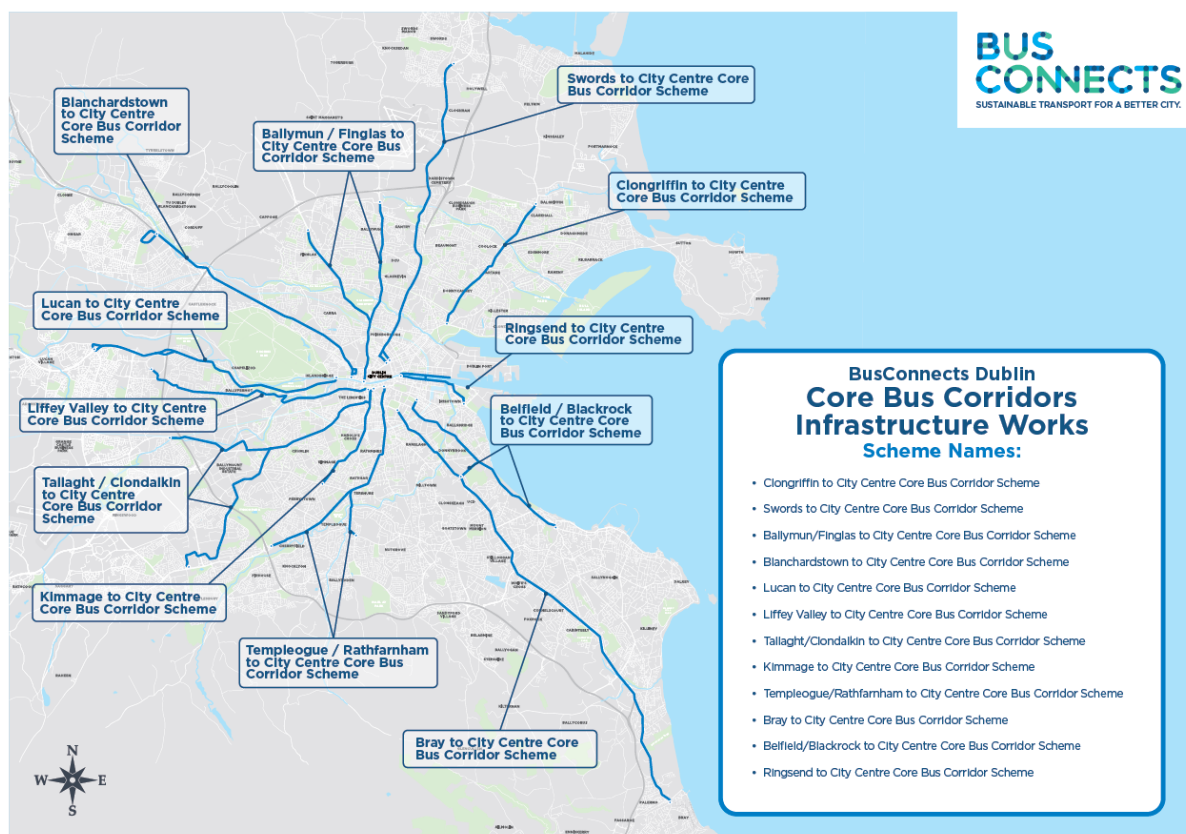


Figure 1.2: Core Bus Corridor Infrastructure Works

1.3 Approach for this Report

In June 2018, the NTA published the 'Core Bus Corridors Project Report'. The report was a discussion document outlining proposals for the delivery of a CBC network across Dublin. The 'Swords to City Centre Core Bus Corridor' is identified in this document as forming part of the radial Core Bus Network.

As part of this process, the 'Swords Core Bus Corridor Feasibility and Options Assessment' report was published, which identified feasible options along the corridor, assessed these options and arrived at an EPR Option for the CBC. Submissions were invited from the public to provide comment on the EPR Option proposals and to inform subsequent design stages.

This 'Preferred Route Option Report' has been prepared for the Proposed Scheme, which will build on the assessment carried out in the Swords Core Bus Corridor Feasibility and Options Assessment Report.

The Swords Core Bus Corridor Feasibility and Options Assessment report referenced above, along with the associated appendices as published, are included in **Appendix G** of this report.

The Study Area Analysis and MCA for the previously proposed feasible route options is considered to still be valid unless otherwise detailed and updated in this PRO Report. Any additional design work or optioneering has been assessed against the previously identified EPR Option and Draft PRO in order to determine the PRO. Additional design development has been detailed in this report, and the resulting PRO referenced in this report has been based on:

- Updated topographical survey information;
- Output from engagement and consultation activities on the EPR Option and Draft PRO proposals;
- Clarifications to the previous assessment in the EPR Feasibility Study and Options Assessment Report;

- Further design development and options assessment; and
- Change in the extent of the Proposed Scheme.

1.4 Report Structure

This report is structured as follows:

- **Chapter 2:** Planning and Policy Context – This chapter summarises a review of transport and planning policy which is relevant to the route selection process for the Proposed Scheme.
- **Chapter 3:** Background and Non-Statutory Public Consultation – This chapter outlines the summary of the non-statutory public consultation process.
- **Chapter 4:** Study Area – In this chapter, the study area for the CBC is detailed. The integration of the Proposed Scheme with existing and planned transport networks is considered, along with considerations of the Proposed Scheme for other road users.
- **Chapter 5:** Review of the 'Swords to City Centre Core Bus Corridor Feasibility and Options Assessment Report'. This chapter is a summary of the options assessment that was previously carried out in each section of the 'Swords Core Bus Corridor Feasibility and Options Assessment Report'. An assessment has been carried out on the validity of the previous options assessment in the context of additional information collected, including through more detailed survey work undertaken and feedback from the non-statutory public consultation process. Issues arising and key changes resulting from the design development are detailed.
- **Chapter 6:** Options Assessment – This chapter subsequently updates the previous options assessment work undertaken in light of the additional considerations set out in Chapter 5.
- **Chapter 7:** Preferred Route Option – This chapter gives the overall conclusions of the option assessment process and describes the PRO proposal.

2. Planning and Policy Context

2.1 Transport Strategy for the Greater Dublin Area, 2022-2042

2.1.1 Introduction

The Transport Strategy for the Greater Dublin Area 2022-2042 (Transport Strategy) replaces the prior transport strategy for the period 2016 to 2035. That prior transport strategy set out to contribute to the economic, social, and cultural progress of the Greater Dublin Area (GDA) by providing for the efficient, effective, and sustainable movement of people and goods. In other words, it was about making the Dublin region a better place for people who live and work there, and for those who visit.

Under the Dublin Transport Authority Act 2008, the National Transport Authority (NTA) must review its transport strategy every 6 years. Arising from the review of the 2016 plan, an updated strategy has been developed which sets out the framework for investment in transport infrastructure and services over the next two decades to 2042.

Since the prior transport strategy was approved by government in 2016, the NTA, along with the Councils, other transport delivery agencies and transport operators, have worked to build and develop that strategy's projects and proposals.

With respect to BusConnects Dublin, work was commenced, and is ongoing on the largest ever investment programme on the bus network to deliver high levels of bus priority on all the main corridors to not only support and significantly improve the operation of bus services now and into the future but is proofed for resilience to enable the operation for more frequent services as required. The Proposed Scheme is a fundamental element of this ongoing work.

The challenges outlined in the GDA Transport Strategy 2016 - 2035 and identified need for BusConnects Dublin as determined in the preparation of that prior strategy remain, and the evidence from the detailed corridor studies undertaken in the preparation of the prior strategy is still valid and robust. The GDA Transport Strategy, which was published by the NTA in 2023, provides a statutory planning basis and framework for the planning and delivery of transport infrastructure and services in the GDA.

The overall aim of the GDA Transport Strategy 2016 – 2035 was stated as being “To provide a sustainable, accessible and effective transport system for the Greater Dublin Area which meets the region’s climate change requirements, serves the needs of urban and rural communities, and supports economic growth”.

The new GDA Transport Strategy 2022 -2042 similarly states that subject to obtaining statutory planning approvals, it is the intention of the NTA to implement the 12 Core Bus Corridors as set out in the BusConnects Dublin programme. They will facilitate faster and more reliable bus journeys on the busiest bus corridors in the Dublin region, making the overall bus system more convenient and useful for more people.

2.1.2 The Core Bus Network as identified in the GDA Transport Strategy

The delivery of an efficient reliable bus service was an essential component of the GDA Transport Strategy 2016-2035 as it will provide a viable and readily accessible alternative to private general traffic that is causing congestion problems in the GDA. As Dublin is a low density city there are few areas with the size and concentration of population for rail based public transport. This means that for most corridors in Dublin, bus travel represents the optimum form of public transport. Dublin City Bus Services carried 153 million passengers in 2019. In percentage terms, the bus system accounts for over 65% of public transport passenger journeys in the GDA; the Luas carries 20%, and DART and commuter rail services deliver the remaining 15%.

In terms of geographical reach and coverage, bus operations extend across every corridor in the Dublin region. Luas operates two fixed lines - Red and Green and heavy rail operates four railway services – Kildare, Maynooth, Northern and South-eastern lines. While the GDA Transport Strategy 2016-2035 identified key rail-based enhancements it is underpinned by the bus-based city-wide public transport system. The GDA Transport Strategy

identified a number of Core Bus Corridors, representing the most important bus routes within the GDA, generally characterised by high passenger volumes, frequent services and significant trip attractors along the routes.

The Core Bus Corridors form part of an overall integrated transport system planned for the GDA. Alternatives were considered by the NTA at both a corridor and overall network level. Over the last 3 years, and with the input of the public at several stages of non-statutory public consultations, the NTA has sought to bring forward the development of the key radial corridors. In doing so, the NTA has refined and altered the proposals across these corridors and have endeavoured to design a new bus system that is both efficient and effective, while being cognisant of the needs of local communities.

The identified core bus network comprised radial bus corridors, orbital bus corridors and regional bus corridors. These corridors are generally characterised by discontinuity, whereby the corridors currently have dedicated bus lanes along only less than one third of their lengths which means that for most of the journey, buses and cyclists are competing for space with general traffic and are negatively affected by the increasing levels of congestion. This results in delayed buses and unreliable journey times for passengers.

The GDA Transport Strategy 2016-2035 stated that it was intended to provide continuous bus priority, as far as is practicable, along the core bus routes, with the objective of supporting a more efficient and reliable bus service with lower journey times, increasing the attractiveness of public transport in these areas and facilitating a shift to more sustainable modes of transport. As mentioned previously, the new GDA Transport Strategy 2022 -2042 similarly states that subject to obtaining statutory planning approvals, it is the intention of the NTA to implement the 12 Core Bus Corridors as set out in the BusConnects Dublin programme. They will facilitate faster and more reliable bus journeys on the busiest bus corridors in the Dublin region, making the overall bus system more convenient and useful for more people.

2.2 Greater Dublin Area Cycle Network Plan

The Greater Dublin Area Cycle Network Plan was adopted by the NTA in early 2014 following a period of consultation with the public and various stakeholders. This plan forms the strategy for the implementation of a high quality, integrated cycle network for the Greater Dublin Area.

There are a number of primary (Routes 2A, 3, N01) and secondary (Routes N05, 2B, N03, N02, 3C, C8) cycle routes identified along the CBC.

During the earlier assessment process which identified the CBC EPR Option, the provision of these cycle routes was considered at all stages.

Therefore, as part of the options assessment process, any upgrading of infrastructure to provide bus priority also needs to consider and provide for the required cycling infrastructure, where practicable, to the appropriate level and quality of service (as defined by the NTA National Cycle Manual) required for primary and secondary cycle routes.

It is noted that in preparing the GDA Transport Strategy (2022 - 2042) the NTA also carried out a review of the GDA Cycle Network Plan. This review culminated in the preparation of the 2022 Greater Dublin Area Cycle Network which was published alongside the GDA Transport Strategy (2022 - 2042). With respect to the Proposed Scheme, the 2022 Greater Dublin Area Cycle Network is broadly aligned with the 2013 GDA Cycle Network Plan.

Notable differences between the 2022 Greater Dublin Area Cycle Network and the 2013 GDA Cycle Network Plan include:

- Dublin Road in Swords is identified as a Primary Orbital Route in the 2022 Greater Dublin Area Cycle Network. It was identified as part of an urban/town network in the GDACNP 2013;
- Old Airport Road is identified as a Secondary Route in the 2022 Greater Dublin Area Cycle Network. It was undesignated in the GDACNP 2013;

- Lorcan Road, Lorcan Drive and Shanrath Road in Santry are identified as Secondary Route in the 2022 Greater Dublin Area Cycle Network. They were undesignated in the GDACNP 2013;
- Drumcondra Road Lower and Dorset Street between Clonliffe Road and North Frederick Street are identified as a Secondary Route in the 2022 Greater Dublin Area Cycle Network. They were identified as a Primary Route in the GDACNP 2013;
- Frederick Street North is identified as a Primary Orbital Route in the 2022 Greater Dublin Area Cycle Network. It was identified as a Primary Route in the GDACNP 2013.

As such, and in order to ensure consistency with previous work in determining the EPR, the assessments carried out within this report reference the 2013 GDA Cycle Network Plan.

2.3 Development Plan, Local Area Plans and Strategic Development Zones

2.3.1 Dublin City Development Plan 2022 – 2028

The Dublin City Development Plan (2022 – 2028) was adopted on the 2nd of November 2022 and came into effect on the 14th of December. It guides how the city will develop to meet the needs of its residents, visitors and workers. A SEA, AA and SFRA were produced as part of the Dublin City Development Plan.

The vision of the Dublin City Development Plan is to champion compact city living, distinct character, a vibrant culture, and a diverse, smart, green, innovation-based economy. DCC aims to establish the city as one of Europe’s most sustainable, dynamic, and resourceful city regions. The Dublin City Council Development Plan places sustainable transport as a core principle in the future development of the city:

‘Within the next 10 years, Dublin will have an established international reputation as one of Europe’s most sustainable, dynamic and resourceful city regions. Dublin, through the shared vision of its citizens and civic leaders, will be a beautiful, compact city, with a distinct character, a vibrant culture and a diverse, smart, green, innovation-based economy. It will be a socially inclusive city of urban neighbourhoods with excellent community and civic infrastructure based on the principles of the 15 minute city, all connected by an exemplary public transport, cycling and walking system and interwoven with a high quality bio-diverse, green space network. In short, the vision is for a capital city where people will seek to live, work, experience, invest and socialise, as a matter of choice.’

In ‘Translating the Core Strategy into Development Plan Policies and Objectives’, the core strategy has the following supports:

‘The Core Strategy will promote development and appropriate intensification along the routes of the three key public transport projects to be developed over the development plan period comprising Bus Connects (2021 – 2023)’

The Dublin City Development Plan recognises that increasing capacity on public transport including bus corridors is a means to promoting modal change and active travel.

Within the transport objectives of the Dublin City Development Plan, bus improvements are identified as projects to be supported. The key policies are set out in Table 2.1.

Table 2.1: DC Development Plan Relevant Transport Policies

Relevant Transport Policies	
SC1 Consolidation of the Inner City	To consolidate and enhance the inner city, promote compact growth and maximise opportunities provided by existing and proposed public transport by linking the critical mass of existing and emerging communities such as Docklands, Heuston Quarter, Grangegorman, Stoneybatter, Smithfield, the Liberties, the North East Inner City and the south and north Georgian cores with each other, and to other regeneration areas.

<i>Relevant Transport Policies</i>	
SC8 Development of the Inner Suburbs	To support the development of the inner suburbs and outer city in accordance with the strategic development areas and corridors set out under the Dublin Metropolitan Area Strategic Plan and fully maximise opportunities for intensification of infill, brownfield and underutilised land where it aligns with existing and pipeline public transport services and enhanced walking and cycling infrastructure
QHSN11 15-Minute City	To promote the realisation of the 15-minute city which provides for livable, sustainable urban neighbourhoods and villages throughout the city that deliver healthy placemaking, high quality housing and well designed, intergenerational and accessible, safe and inclusive public spaces served by local services, amenities, sports facilities and sustainable modes of public and accessible transport where feasible.
CEE12 Transition to a Low Carbon, Climate Resilient City Economy	To support the transition to a low carbon, climate resilient city economy, as part of, and in tandem with, increased climate action mitigation and adaptation measures.
SMT1 Modal Shift and Compact Growth	To continue to promote modal shift from private car use towards increased use of more sustainable forms of transport such as active mobility and public transport, and to work with the National Transport Authority (NTA), Transport Infrastructure Ireland (TII) and other transport agencies in progressing an integrated set of transport objectives to achieve compact growth.
SMT2 Decarbonising Transport	To support the decarbonising of motorised transport and facilitate the rollout of alternative low emission fuel infrastructure, prioritising electric vehicle (EV) infrastructure.
SMT3 Integrated Transport Network	To support and promote the sustainability principles set out in National and Regional documents to ensure the creation of an integrated transport network that services the needs of communities and businesses of Dublin City and the region.
SMT4 Integration of Public Transport Services and Development	To support and encourage intensification and mixed-use development along public transport corridors and to ensure the integration of high quality permeability links and public realm in tandem with the delivery of public transport services, to create attractive, liveable and high quality urban places.
SMT8 Public Realm Enhancements	To support public realm enhancements that contribute to place making and livability and which prioritise pedestrians in accordance with Dublin City Council's Public Realm Strategy ('Your City – Your Space'), the Public Realm Masterplan for the City Core (The Heart of the City), the Grafton Street Quarter Public Realm Plan and forthcoming public realm plans such as those for the Parnell Square Cultural Quarter Development and the City Markets Area.
SMT02 Improving the Pedestrian Network	To improve the pedestrian network and prioritise the introduction of tactile paving, ramps and kerb dishing at appropriate locations, including pedestrian crossings, taxi ranks, bus stops and rail platforms in order to optimise accessibility for all users.
SMT12 Pedestrians and Public Realm	To enhance the attractiveness and livability of the city through the continued reallocation of space to pedestrians and public realm to provide a safe and comfortable street environment for pedestrians of all ages and abilities.

<i>Relevant Transport Policies</i>	
SMT14 City Centre Road Space	To manage city centre road-space to best address the needs of pedestrians and cyclists, public transport, shared modes and the private car, in particular, where there are intersections between DART, Luas and Metrolink and with the existing and proposed bus network.
SMT16 Walking, Cycling and Active Travel	To prioritise the development of safe and connected walking and cycling facilities and prioritise a shift to active travel for people of all ages and abilities, in line with the city's mode share targets.
SMT18 The Pedestrian Environment	To continue to maintain and improve the pedestrian environment and strengthen permeability by promoting the development of a network of pedestrian routes including laneway connections which link residential areas with recreational, educational and employment destinations to create a pedestrian environment that is safe, accessible to all in accordance with best accessibility practice.
SMT19 Integration of Active Travel with Public Transport	To work with the relevant transport providers, agencies and stakeholders to facilitate the integration of active travel (walking/cycling etc.) with public transport, ensuring ease of access for all.
SMT22 Key Sustainable Transport Projects	To support the expeditious delivery of key sustainable transport projects so as to provide an integrated public transport network with efficient interchange between transport modes, serving the existing and future needs of the city and region and to support the integration of existing public transport infrastructure with other transport modes. In particular the following projects subject to environmental requirements and appropriate planning consents being obtained: (inter alia): <ul style="list-style-type: none"> • BusConnects Core Bus Corridor projects.

2.3.2 Fingal County Development Plan 2023-2029

The Fingal Development Plan 2023 – 2029 (hereafter referred to as the FDP 2023-2029) (FCC, 2023) was adopted on the 22nd February 2023 and came into effect on the 5th April 2023 with the exception of three sections which are subject to a Draft Ministerial Direction (hereafter referred to as the Draft Direction) by the Minister of State for Local Government and Planning. The sections are as follows;

1. 1. Land zoned General Employment in the adopted Plan to the east of M2 at Junction 2 at St Margaret's.
2. Land unzoned from Food Park in the adopted Plan south of Coolquay village.
3. Land unzoned from Rural Business in the adopted Plan to the south of Coolquay village.
4. Land zoned General Employment in the adopted Plan to the south east of Junction 5 on the M1 at Courtlough which was zoned Rural in the Fingal County Development Plan 2017-2023.
2. Reinstate the Greenbelt zoning objective for lands PA SH 12.4 Newtown i.e. the subject lands revert to Greenbelt.
3. Delete the additional text published in November 2022, Proposed Material Alterations, as Proposed Amendment, PA CH 8.1 and modified by Agenda Item FDP84/23, in relation to Noise Standards.

At the time of writing, the above parts of the FDP 2023-2029 have not come into effect and the draft direction is on public display from the 18th of April until 2nd May, 2023. The Draft Ministerial Direction has no impact on the Proposed Scheme. The Chief Executive will issue a Report on the submissions and recommendations received during this period to give effect to the Draft Direction.

The vision of the FDP 2023-2029 (FCC 2023) is *'to embrace healthy placemaking and economic prosperity through building cohesive and sustainable communities, where our cultural, natural and built environment is protected.* A SEA, AA, NIS and SFRA were prepared as part of the FDP. The plan highlights the need to shift towards sustainable transport modes. It aims to facilitate this through designing the county's built environment to prioritise more sustainable travel options and promote the most carbon efficient modes.

A key transport objective of the plan is to:

'to strengthen the integration of land-use and transport planning with a priority focus on increased provision of walking, cycling and public transport infrastructure. This Plan promotes an integrated and sustainable transport network that is inclusive and accessible for all.'

The key transport policies and objectives of particular relevance to the Proposed Scheme are set out in Table 2.2.

Table 2.2: FDP 2023-2029 Key Transport Policies and Objectives

<i>Relevant Transport Policies and Objectives</i>	
CMP1 - Decarbonisation of Motorised Transport	Support the decarbonisation of motorised transport and facilitate modal shift to walking, cycling and public transport and taking account of National and Regional policy and guidance, while supporting an efficient and effective transport system.
CMO1 – Transition to Sustainable Modes	Work with the NTA, TII and other transport agencies in facilitating the integrated set of transport objectives for the County as set out in this Plan, in line with National and Regional policy including the NTA's GDA Transport Strategy and any subsequent plan to encourage modal shift towards more sustainable modes of transport and patterns of commuting to reduce reliance on the private car.
CMO2 – Modal Shift	Work with the NTA to develop mode share targets for the County to achieve and monitor a transition to more sustainable modes including walking, cycling and public transport, during the lifetime of this Plan. This includes providing targeted infrastructure in the most appropriate locations and prioritising development at the most accessible locations in order to achieve the appropriate levels of integration and sustainable transport provision.
CMP3 – Integrated Land-Use and Transport Approach	Provide for an integrated approach to land-use and transportation aimed at minimising the demand for travel and prioritising sustainable modes of transport including walking, cycling and public transport.
CMP6 – Integrated Transport Network	Support and facilitate sustainable mobility objectives set out in the NPF, RSES, Smarter Travel and the NTA's GDA Transport Strategy and any subsequent plan to ensure the creation of a high-quality and integrated transport network to serves the needs of the County and the wider region.

<i>Relevant Transport Policies and Objectives</i>	
CMP7 – Pedestrian and Cycling Network	Secure the development of a high-quality, connected and inclusive pedestrian and cycling network and provision of supporting facilities / infrastructure across the County, including the upgrade of the existing network and support the integration of walking, cycling and physical activity with placemaking including public realm improvements, in collaboration with the NTA, other relevant stakeholders, local communities and adjoining Local Authorities in the context of the impact of development schemes with cross boundary impacts and opportunities where appropriate. Routes within the network shall have regard to NTA and TII national standards and policies
CMP9 – Prioritisation of Pedestrians and Cyclists	Support the prioritisation of pedestrians and cyclists and the provision of improved public realm to make walking and cycling safer, healthier, quicker, more direct and more attractive.
CMP10 – Bicycle Infrastructure	Improve bicycle priority measures and cycle parking infrastructure throughout the County in accordance with best accessibility practice.
CMO6 – Improvements to the Pedestrian and Cyclist Environment	Maintain and improve the pedestrian and cyclist environment and promote the development of a network of pedestrian/cycle routes which link residential areas with schools, employment, recreational destinations and public transport stops to create a pedestrian/cyclist environment that is safe, accessible to all in accordance with best accessibility practice.
CMO7 – Integration of Active Travel with Public Transport	Work with the relevant transport providers, agencies and stakeholders to facilitate the integration of active travel (walking/cycling etc.) with public transport, ensuring ease of access for all.
CMO10 – Bicycle Parking	Provide publicly accessible high-quality cycle parking spaces, both standard bicycle spaces and nonstandard for adapted and cargo bikes, in town and village centres and key destinations and near the entrance to all publicly accessible buildings as required.
CMP12 – Public Realm	Support and facilitate the provision of high-quality and attractive public realm that is accessible for all with a focus on improving connectivity and permeability in accordance with best practice public realm and guidance documents.
CMO17 – Existing Street Space and Active Travel	Review the potential for reassignment of existing street space for active travel modes within village and town centres across the County where appropriate during the lifetime of this Plan.
CMP13 – Accessible Pedestrian and Cyclist Environment	Promote and facilitate a network of pedestrian and cycle routes and public realm that is universally accessible for all ages and abilities in accordance with best accessibility practice.
CMP16 – Personal and Shared Mobility Modes	Facilitate and support the use of personal mobility modes through the provision of adaptive infrastructure in line with relevant legislation and the expansion of shared mobility schemes throughout the County.

<i>Relevant Transport Policies and Objectives</i>	
CMO19 – Optimising Accessibility for All	Support and facilitate improvements to the pedestrian and cycle network and public realm that prioritise the removal of barriers to active movement, to improve connectivity and permeability and optimise accessibility for all users
CMP18 – Public Transport	Support the provision of a high-quality public transportation system that is accessible to all to serve the needs of the County and to enable a significant shift from car-based travel to public transport
CMO23 – Enabling Public Transport Projects	Support the delivery of key sustainable transport projects including MetroLink, BusConnects, DART+ and LUAS expansion programme so as to provide an integrated public transport network with efficient interchange between transport modes to serve needs of the County and the mid-east region in collaboration with the NTA, TII and Irish Rail and other relevant stakeholders.
CMO24 – NTA Strategy	Support NTA and other stakeholders in implementing the NTA Strategy including MetroLink, BusConnects, DART +, LUAS and the GDA Cycle Network.
CMO27 – Public Transport Routes	Work with the NTA and other relevant national transport agencies to establish future public transport routes that will support the County’s medium to long term development, including orbital routes to provide connectivity between key urban centres and outer suburban areas.
CMO28 – Bus Connectivity	Work with relevant national transport agencies to create bus connectivity between Dublin 15, including the Blanchardstown Centre and Dublin Airport/Swords.
CMO29 – Integration of Public Transport Services and Development	Work with the NTA, TII and other relevant national transport agencies to optimise accessibility to public transport, increase catchment and maximise permeability through the creation of highquality walking and cycling routes linking to public transport stops.
CMO30 – Cycling and Walking Links	Avail of the opportunities provided by any public transport infrastructure works to improve and provide new cycling and walking links, including crossings of motorways and major roads which currently represent major permeability barriers to active travel especially in South Fingal.
CMP27 – Dublin Airport, Transportation, Surface Access and Freight	Support the continued protection of the core transport function of Dublin Airport including measures to enhance surface access, public transport connections and strategic freight movements.
CMP34 – Road and Street Design	Ensure that roads and streets within the County are designed to balance the needs of all road users, including children and other vulnerable road users and promote road safety, place-making and sustainable movement, providing a street environment that prioritises active travel and public transport whilst ensuring the needs of commercial servicing is accommodated.
CMO45 – Design Manual for Urban Roads and Streets	Design new streets and roads within urban areas in accordance with the principles, approaches and standards contained within DMURS. <ul style="list-style-type: none"> • Junctions will be designed with corner radii that reduce pedestrian crossing distances to the minimum allowable by DMURS wherever possible. • The narrowest carriageway widths allowable by DMURS will be the default standard in Fingal wherever possible.

2.3.3 Dublin Airport Local Area Plan 2020

Fingal County Council adopted the Dublin Airport Local Area Plan (LAP) on the 9th of December 2019.

The Local Area Plan sets out a number of key strategic objectives to give effect to the strategic vision and aims of the LAP in guiding the future development and growth of Dublin Airport. The following key objective supports the proposed development:

- *Provide for the necessary airside and landside infrastructure to facilitate the projected increase in passengers over the life of the LAP whilst safeguarding for longer term growth.*

A climate action objective that supports the proposed development is to *facilitate improved public transport links to and from the Airport and require that all traffic generating applications at the Airport demonstrate measures to maximise non-motorised and public transport use while minimising the use of the private car.*

An economic objective that supports the proposed development is *in order to protect the core aviation function of Dublin Airport, no further non-air transport related office development shall be permitted at the HT zoned lands within the Airport until such time as required roads infrastructure is in place and public and sustainable transport such as the Swords CBC and Metrolink are operational.*

External road network access objectives that support the proposed development are as follows:

- *Facilitate the delivery of the R132 Swords Road Core Bus Corridor and to seek its prioritisation as a scheme of strategic national importance in enabling sustainable growth of Dublin Airport in the short-term; and*
- *To ensure proposals for road network improvements in the vicinity of Dublin Airport have regard to the effective operation of future bus services generally and on the Swords Road Core Bus Corridor in particular.*

Public transport and sustainable transport objectives that support the proposed scheme are:

- *Provide for cycle paths separated from traffic along the R132 between Pinnock Hill Roundabout and the boundary with Dublin City Council as part of the Swords Core Bus Corridor. Cycle paths shall comply with the National Cycle Manual and shall be designed in accordance with best practice;*
- *Encourage and facilitate the provision of an integrated public transport network to serve Dublin Airport; and*
- *Prioritise public transport and taxis on the external and internal road network.*

2.3.4 Fosterstown Local Area Plan (extended 2015)

This Local Area Plan (LAP) was adopted by the elected members of Fingal County Council on the 13th of September 2010 and subsequently extended in 2015 up to the 31st of December 2017.

This LAP sets out the development strategy for the proper planning and sustainable development of these residentially zoned lands which are strategically located at the southern 'Gateway' to Swords, along the proposed Metro North route and north of Dublin Airport.

The Local Area Plan sets out a number of objectives, two of which support the proposed development:

- *to provide for permeability for vehicles, pedestrians and cyclists within the subject lands and to ensure that good connections are provided to link the LAP lands with surrounding development; and*
- *to provide for direct pedestrian and cyclist routes throughout the LAP lands linking in with existing and potential future pedestrian and cyclist routes outside of the LAP lands. This will facilitate direct and easy access between existing residential areas outside the subject lands at Boroimhe; Forrest road; River Valley*

and Rathingle and the Fosterstown Metro stop as well as facilitating direct access to the metro for future residents within the LAP lands.

2.3.5 Dardistown Local Area Plan (extended 2017)

This Local Area Plan (LAP) was adopted by the elected members of Fingal County Council in 2013 and subsequently extended in 2017 up to the 12th of November 2022.

The overarching vision of the LAP is:

To provide for a strategic employment node, comprising inter alia, office, research and development and high technology manufacturing, maximising opportunities presented by the lands strategic location well served by air, existing and planned high capacity public transport and the national road network, and all within a high quality sustainable environment.

The key principles and objectives of particular relevance to the Proposed Scheme are set out in **Table 2.3**.

Table 2.3: Dardistown LAP Principles and Objectives

<i>Relevant Principles and Objectives</i>	
CPO6	To encourage and facilitate the provision of an integrated public transport network to serve Dublin Airport.
CPO7	To protect and enhance the transportation capacity required to provide for the shared access needs of the airport.
CPO11	Provide for full integration of the LAP lands with existing and planned QBCs, the proposed internal high capacity bus corridor, and future Dardistown Metro Stop at an integrated public transport interchange at Dardistown, thereby reducing car dependency and supporting sustainable modes of transport/smarter travel.
SDO15	All development proposals shall demonstrate that access and connectivity to the Airport shall be maintained.

2.4 The Aim and Objectives of delivering the Swords to City Centre Core Bus Corridor Scheme

The aim of delivering the Proposed Scheme is to provide enhanced walking, cycling and bus infrastructure on this key access corridor in the Dublin region, which will enable and deliver efficient, safe, and integrated sustainable transport movement along the corridor.

The objectives are to:

- 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 Dublin, 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.

3. Background and Public Consultation

3.1 Swords Core Bus Corridor Feasibility and Options Assessment Report and Emerging Preferred Route

In early 2016, the NTA initiated plans to develop the network of CBCs identified in the GDA Transport Strategy. As part of this body of work, the 'Swords Core Bus Corridor Feasibility and Options Assessment Report' (February 2018) (herein after called the Feasibility and Options Assessment Report), was prepared which identified feasible options along the corridor, assessed these options and arrived at an EPR Option. These proposals formed the basis for the first Non-Statutory Public Consultation on the CBC.

3.2 First Non-Statutory Public Consultation – Emerging Preferred Route Option

The first non-statutory public consultation on the BusConnects CBCs took place on a phased basis. The first phase of consultation occurred from the 14th of November 2018 to the 29th of March 2019. The second phase ran from the 23rd of January 2019 to the 30th of April 2019 and the final phase ran from the 26th of February 2019 until the 31st of May 2019. The Swords to City Centre Core Bus Corridor EPR Option formed part of the first phase of consultation, which closed on the 29th of March 2019. The Information Brochure published as part of this consultation is included in **Appendix I** of this report.

There were 767 submissions received relating to the Swords to City Centre Core Bus Corridor. These submissions ranged from individual submissions by residents, commuters and local representatives, to detailed proposals from public bodies, various associations and private sector businesses.

A brief summary of the feedback received on the Proposed Scheme during the public consultation is presented in this section of the report.

While a variety of matters were raised in the submissions, the key issues emerging from the consultation were as follows:

- The proposed one-way system in Santry;
- Access and Parking;
- Anticipated increase in traffic volumes;
- Impact on Local Business;
- Community;
- Safety and Speed;
- Land Acquisition and Accommodation Works;
- Construction Stage Issues;
- Bus Stops and Bus Service/ Network;
- Landscaping;
- Air Pollution;
- Cyclists and Cycling Provision;
- Noise and Vibration;
- Unsuitable Design Solutions; and
- Heritage and Conservation.

Further detail on these issues can be found in the Public Consultation Submission Report – 1st Non-Statutory Public Consultation contained in **Appendix B** of this report.

3.3 Development of Draft Preferred Route Option

Following the first non-statutory public consultation, a review was undertaken of the scheme proposals along the Proposed Scheme based on the following new information which was available for consideration:

- Detailed topographical survey along the route corridor;
- Submissions received during the first non-statutory public consultation ; and
- Issues raised during meetings with community forum, resident groups and one-on-one meetings with directly impacted landowners.

As part of this review, several new design options were developed for consideration in specific areas where issues were identified. These new design options were subject to further options assessment as detailed in **Section 6** of this report, to identify the Draft PRO. The key route developments between the first round of non-statutory public consultation and the second round of non-statutory public consultation are summarised below:

- Widening of the Swords Road between the Omni Shopping Centre and Shantalla Road to maintain two-way general traffic along with continuous bus lanes in both directions to achieve bus priority;
- The alternative cycle route will now be facilitated between Omni Park Shopping Centre and the Shantallah Road junction, with a Quiet Street Treatment implemented on Lorcan Road and Shanrath Road;
- Urban Realm improvements are proposed for Santry Village; and
- Gardiner Street and Mountjoy Square no longer form part of the Swords to City Centre CBC.

The selected Draft PRO identified formed the basis for the second non-statutory public consultation in March/April 2020.

3.4 Second Non-Statutory Public Consultation – Draft Preferred Route Option

The Draft PRO was published in March 2020, with the second round of non-statutory public consultation running from the 4th March 2020 through to the 17th April 2020. A public consultation open day was held on the 11th March 2020 in the Bonnington Hotel. The Information Brochure published as part of this consultation is included in **Appendix J** of this report.

While the public consultation open day was completed, due to Covid-19 restrictions being imposed by Government in mid-March the planned Public Information Events were impacted. Consequently, there were just 31 submissions received relating to the Swords to City Centre CBC. These submissions ranged from individual submissions by residents, commuters and local representatives, to detailed proposals from various associations and private sector businesses.

A brief summary of the feedback received on the Swords to City Centre CBC during this second round of non-statutory public consultation are presented below. In general the comments were similar to those received in the first round of non-statutory public consultation :

- Cyclists and Cycleway Provision;
- Pedestrians and Pedestrian Provision;
- Bus Stops/Bus Service;
- Landscaping;
- Access and Parking;

- Land Acquisition and Accommodation Works;
- Heritage and Conservation;
- Safety and Speed; and
- Urban Realm.

The issues raised during the second non-statutory public consultation were considered in the further development of the Draft PRO. Refer to **Appendix C** of this report for the Public Consultation Submission Report – 2nd and 3rd non-statutory public consultation for further detail.

3.5 Development of the Updated Draft Preferred Route Option

Following the second non-statutory public consultation, a review was undertaken of the scheme proposals along the route based on the following new information which was available for consideration:

- Updated topographical survey along the route corridor;
- Submissions received during the second non-statutory public consultation;
- Issues raised during meetings with the community forum and one-on-one meetings with directly impacted landowners.

As part of this review, options were reviewed further, and new options were developed for consideration in specific areas where issues were identified. The updated Draft PRO that was subsequently identified formed the basis for the third non-statutory public consultation in November/December 2020.

3.6 Third Non-Statutory Public Consultation – Updated Draft Preferred Route Option

The third round of non-statutory public consultation for the Swords to City Centre CBC took place from 4th November 2020 until 16th December 2020 on the updated Draft PRO. The Information Brochure published as part of this consultation is included in **Appendix K** of this report.

With the continuing effect of the Covid-19 pandemic and associated Government restrictions, the third non-statutory public consultation was held largely virtually. Virtual consultation rooms for each CBC were developed and the Information Brochure was published.

Along with offering a call back facility, the virtual consultation rooms provided a description of each Preferred Route from start to finish with supporting maps, and included information of all revisions made, if any, since the previous rounds of non-statutory public consultation as well as other supporting documents.

The consultation period remained open until 16th December 2020 and submissions could be made by email, through the virtual consultation room or by post. All relevant information including the updated Information Brochures and the EPR non-statutory public consultation report were made available on the BusConnects website (<https://busconnects.ie>) to view and download. In addition, landowner meetings were held over the phone and/or online, and minutes were recorded as part of the consultation process.

There were 65 submissions received as part of the Swords to City Centre CBC third non-statutory public consultation. These submissions ranged from individual submissions by residents, commuters and local representatives, to detailed proposals from various associations and private sector businesses. A community forum and one-to-one meetings were also held online as part of the process. While a variety of matters were raised in the submissions, the key issues emerging from the consultation were as follows:

- Cyclists and Cycleway Provision;
- Bus Stops and Bus Services;

- Pedestrians and Pedestrian Provision;
- Quiet Street System;
- Anticipated Increase in Traffic Volumes;
- Design Recommendation;
- Access / Parking;
- Land Acquisition / Accommodation Works;
- Urban Realm/Landscaping; and
- Noise / Vibration / Air Quality.

The issues raised during the third Non-Statutory Public Consultation have been considered in the further development of the PRO. Refer to **Appendix C** of this report for the Public Consultation Submission Report – 2nd and 3rd Non-Statutory Public Consultation for further detail.

4. Study Area

4.1 Introduction

The Study Area remains the same as outlined in the Feasibility and Options Assessment Report and is shown below in **Figure 4.1**. Due to the size of the study area and vast quantity of information that would need to be reviewed, the area was divided into three sections as shown below in **Figure 4.1**.

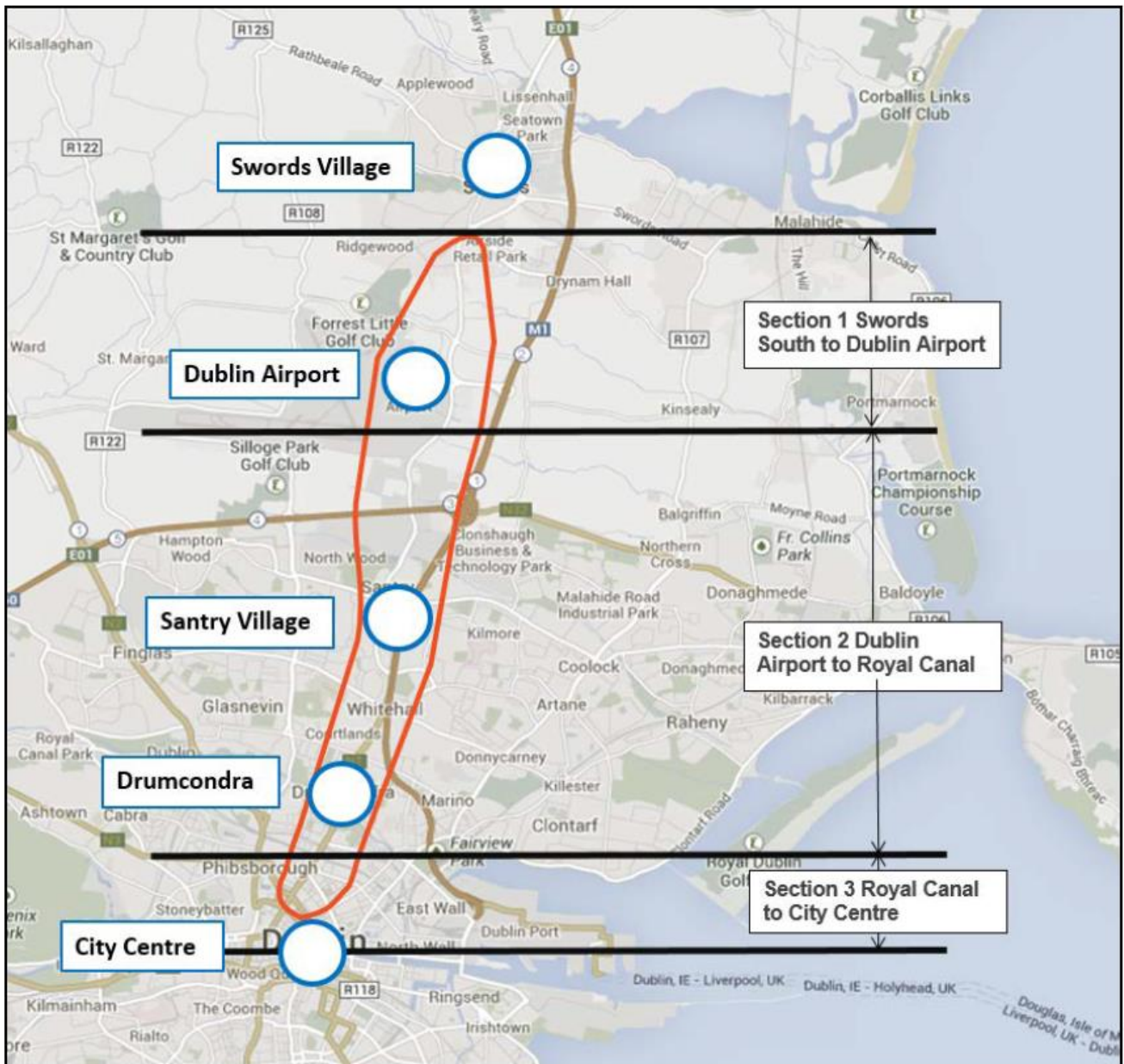


Figure 4.1: 2018 Study Area with Sections

4.2 Study Area Sections

In order to simplify the assessment process and allow it to be presented in a clear manner, the study area is divided into three sections, as per the Feasibility and Options Assessment Report.

4.2.1 Section 1 Swords South to Dublin Airport

At the northern end, the Study Area begins south of Swords at Pinnock Hill Roundabout. The route in Swords, north of Pinnock Hill, will be developed separately by Fingal County Council as part of local connectivity project. The R132 the land uses are a mix of greenbelt and general enterprise/employment. There is retail/commercial land-use at Airside Retail Park. The area between Airside and Dublin Airport is generally greenbelt with some residential areas.

The R132 is generally a dual two-lane carriageway for large lengths of the corridor. Generally, footpaths are provided on one or both sides of the R132 in this study area section although, there are sections where there are no footpaths on either side.

Section 1 of the Proposed Scheme contains trip attractors and generators such as Airside Retail Park, Dublin Airport.

4.2.2 Section 2 Dublin Airport to Royal Canal

The land uses along Section 2 of the study area vary significantly between Dublin Airport and the Royal Canal. From the airport, moving south, the land-use along the western side of the corridor is predominantly mixed-use general enterprise/employment. There are also areas of recreational / open space between Coolock Lane and Northwood Avenue and south of the airport car park. Along the eastern side of the corridor, the land-use is mainly residential between Coolock Lane and Northwood Avenue. From the Old Airport Road to Northwood Avenue, the land-use is generally enterprise/employment.

The R132 is generally 4 lanes wide, with two lanes (typically comprising a bus lane and general traffic lane) in both directions as far as Morton Stadium where the roadway narrows to a single lane in each direction. Santry Demesne pNHA is located adjacent to Morton Stadium with the R132 forming the eastern boundary of this site. The primary importance of the Santry Demesne pNHA (as described in the NPWS site synopsis) is that it contains a legally protected plant species, Hairy St. John's Wort (*Hypericum hirsutum*), which was recorded at the site in 1991. The site synopsis states that the woodland is of general ecological interest as it occurs in an area where little has survived of the original vegetation. The section of the R132, from Morton Stadium as far as Coolock Lane, is 3 lanes wide (2 lanes southbound, 1 lane northbound).

Through Santry village the land-use is a mix of residential, commercial and neighbourhood retail outlets. The western side of the R132 is predominantly residential from the centre of Santry village, where there are some retail outlets and the Omni Shopping Centre present, to Griffith Avenue. Directly north of Griffith Avenue on the western side of the road is Plunket College and its grounds. On the eastern side of the road from Collins Avenue to Griffith Avenue there is a mix of residential, medical (Highfield Private Hospital) and recreational land uses.

Through the centre of Santry village, there are generally three lanes (2 southbound, 1 northbound) apart from a number of short, more restricted sections where there are only 2 lanes (one in each direction). From the Santry 'slip road' to Griffith Avenue the road is generally 4 lanes wide, with two lanes in both directions (one bus lane and one general traffic lane) except where traffic merges from the slip road with traffic from the N50 as far as Collins Avenue where it widens to 5 lanes (3 lanes southbound).

From Griffith Avenue, the predominant land-use on both sides of the R132 corridor (from Whitworth Road to Griffith Avenue) is residential, with mixed use facilities (retail and commercial) present near the junctions with Clonliffe Road and Botanic Avenue. St. Patricks College is located along the western side of this section, north of Botanic Avenue. This section of the R132 is generally 4 lanes wide, with two lanes in both directions (one bus lane, one general traffic lane). Exceptions to this include between Whitworth Road and St. Alphonsus' Avenue where there are 3 lanes southbound and 2 lanes northbound.

Section 2 of the Proposed Scheme contains a number of trip attractors and generators including Industrial Estates such as Airport Business Park and Airways Industrial Estate, Santry Demesne, Morton Stadium, Omni Shopping Centre, Highfield Healthcare Centre and Plunket College.

4.2.3 Section 3 Royal Canal to City Centre

Section 3 extends from the Royal Canal into Parnell Square in the city centre. The route south of Parnell Square will be developed in tandem with wider traffic management measures within the core city centre area. Following the publication of the Emerging Preferred Route a Dublin Bus Network Study identified the need for a two-way bus layout on Gardiner Street and Mountjoy Square, this was subsequently removed from the scope of the Swords to City Centre Core Bus Corridor.

Existing land-use varies considerably and includes pockets of residential, together with retail, office and other commercial and educational / institutional uses.

Section 3 of the Proposed Scheme contains a number of trip attractors and generators including Rotunda Hospital,

4.3 Physical Constraints and Opportunities

There are a number of potential constraints and opportunities, both natural (i.e. existing natural environment) and physical (the built environment), which could constrain route options for the Swords to City Centre CBC scheme within the defined study area including:

- Availability of land in urban and suburban areas;
- Public parks including Santry Park, Ellenfield Park and Our Lady's Park;
- Significant tree lines;
- Existing and committed future development along the scheme;
- Existing monuments and protected structures such as the Thatched Cottage and its curtilage;
- Existing bridges at identified natural constraints (e.g. including Kilronan Bridge, Tolerbunny Bridge, Turnapin Bridge, Santry Bridge, Frank Flood Bridge over the River Tolka, Drumcondra Rail Bridge and Binn's Bridge over the Royal Canal);
- Santry Demesne proposed Natural Heritage Area and Santry Demesne boundary wall;
- Need to maintain traffic flow in key areas;
- The opportunity for the provision of enhanced public realm within various areas such as Santry Village;
- The opportunity to enhance connectivity to and from educational centres such as DCU St. Patrick's Campus and Plunket College;
- The opportunity to enhance connectivity to and from healthcare facilities such as Highfield Healthcare and the Rotunda Hospital; and
- The opportunity for integration with the proposed Griffith Avenue protected cycle lane scheme;
- The opportunity for improved interchange opportunities with transport services such as Luas Green Line services and the proposed MetroLink Station at Fosterstown.

4.4 Integration Public Transport Network

4.4.1 Introduction

One of the key objectives of the CBC Infrastructure Works is to enhance interchange between the various modes of public transport operating in the city and wider metropolitan area, both now and in the future. The Preferred Route was therefore developed to provide improved existing or new interchange opportunities with other transport services, including:

- Luas Green Line Services in the City Centre;

- Proposed Metrolink Station at Fosterstown;
- Long Distance and Inter-City Coach Services at Dublin Airport;
- Sligo/Maynooth Line Heavy Rail Services at Drumcondra Station;
- Wider Proposed BusConnects Network in the City Centre; and
- Suburban Interchange between Orbital and Radial Routes.

Figure 4.2 and **Figure 4.3** below show Dublin Bus Existing Services and an extract from BusConnects Network Redesign maps which shows the different interfaces along the Swords to City Centre corridor which is primarily along the proposed A Spine.

4.4.2 Existing Bus Services

The Swords Corridor carries over 6,700 passengers in the peak periods (2017 Quality Bus Corridor Monitoring Report, NTA). The primary bus routes along the CBC are indicated in **Figure 4.2** and listed below:

- Route 1 – Shanard Avenue to Shaw Street;
- Route 11 – Blackthorn Road to Saint Pappin's Road;
- Route 13 – Grange to Old Airport Road;
- Route 16, 16c, 16d – Kingston Estate to Dublin Airport;
- Route 27b – Harristown to Eden Quay;
- Route 33 – Balbriggan to Lower Abbey Street;
- Route 33e – Mourne View to Lower Abbey Street;
- Route 40 – Liffey Valley Shopping Centre to Charlestown Shopping Centre;
- Route 40b – Toberburr to Parnell Street;
- Route 40d – Tyrrelstown to Parnell Street;
- Route 41 – Swords Manor to Lower Abbey Street;
- Route 41b – Rolestown to Lower Abbey Street;
- Route 41c – Swords Manor to Lower Abbey Street;
- Route 41d – Swords Business Park to Lower Abbey Street;
- Route 41x – Knocksedan to UCD Belfield;
- Route 44 – Enniskerry to DCU;
- Route 101 – Dublin to Drogheda;
- Route 102 – Dublin Airport to Sutton Station;
- Route 122 – Ashington Park to Errigal Road;
- Route 180 – Clones to UCD;
- Route 197 – Swords to Ashbourne;
- Route 500-X – Abbeyvale Brackenstown Road – Dublin, Marlborough Street;
- Route 501, 501-X, Route 505-X, 506-X – Swords to City Centre;
- Route H1 – Baldoye Village to National Lottery Head Quarters;
- Route 740, 740-A – Wexford to Dublin Airport; and
- Route 842 – Ballymahon to Merrion Square.



Figure 4.2: Dublin Bus Existing Services

4.4.3 Dublin Area Revised Bus Network

BusConnects Dublin will introduce a redesigned, higher capacity bus network which is more coherently planned and more understandable, delivering a better overall bus system for Dublin and the surrounding areas. **Figure 4.3** indicates the final output from this study and illustrates that the A-Spine (A1, A2, A3, A4) runs from the City Centre to the North, serving areas along the Swords Corridor.

The following is a list of the different Spines & Branches, Orbital Routes, Radial Routes and Local Routes that interact with the Proposed Scheme

- Spines & Branches
 - A-SPINE Swords Road – City Centre – Terenure;
 - A1 Beaumont - City Centre - Knocklyon;
 - A2 Airport - City Centre - Ballinteer - Dundrum;
 - A3 DCU - City Centre - Tallaght;
 - A4 Swords - City Centre – Dundrum;
 - F-SPINE Finglas - City Centre – Kimmage;
 - F1 Charlestown - Finglas Bypass - City Centre – Tallaght;
 - F2 Charlestown - Finglas NW - City Centre – Templeogue; and
 - F3 Charlestown - Finglas SW - City Centre – Greenhills.

- Orbital Routes
 - N2 Heuston - Broombridge - Clontarf Rail Station;
 - N4 Blanch. SC - Finglas - DCU - Collins Ave - Docklands;
 - N6 Finglas - Santry - Coolock - Donaghmede;
 - N8 Blanch SC - Dublin Airport – Clongriffin; and
 - O Inner Orbital (North and South Circular).

- Radial Routes
 - 19 Airport - Balbutcher Lane - Wadelai - Parnell Square;
 - 22 Glen Ellan Rd - River Valley - City Centre;
 - 24 Airport - Charlestown - Ballygall Rd - Merrion Square; and
 - 82 Killinarden - Crumlin – Ringsend.

- Local Routes
 - L80 Clongriffin - Beaumont Hospital – DCU;
 - L81 Sutton -Portmarnock - Malahide - Swords - Airport;
 - L82 Swords - Clonshaugh - Beaumont Hospital;
 - L83 Portrane - Donabate - Swords – Airport;
 - L85 Balbriggan - Skerries - Rush/Lusk - Swords – Airport; and
 - X79 Glen Ellan Rd - River Valley - City Centre – UCD.

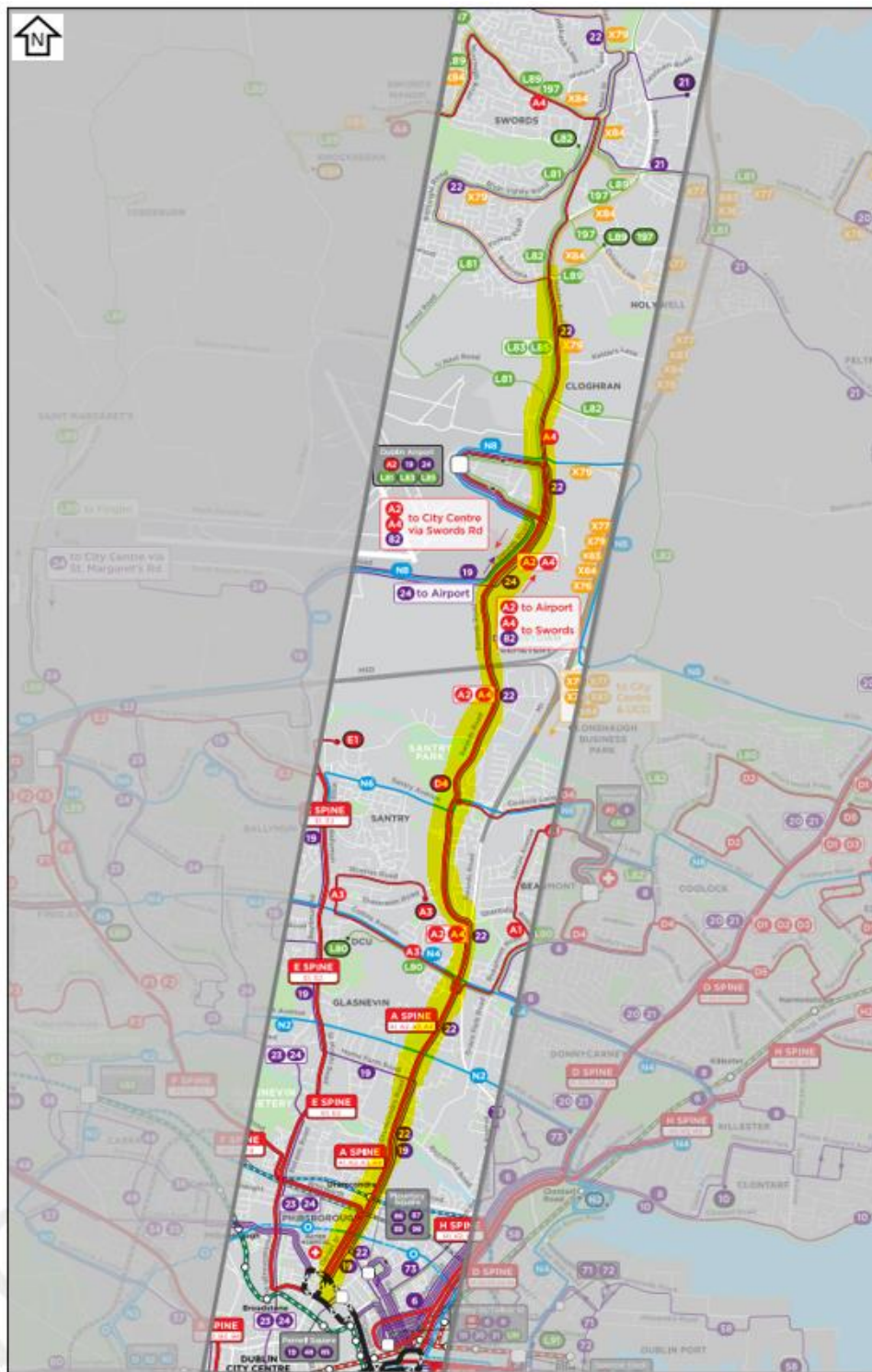


Figure 4.3: Revised Bus Network – North East Quadrant

4.5 Compatibility with Other Road Users

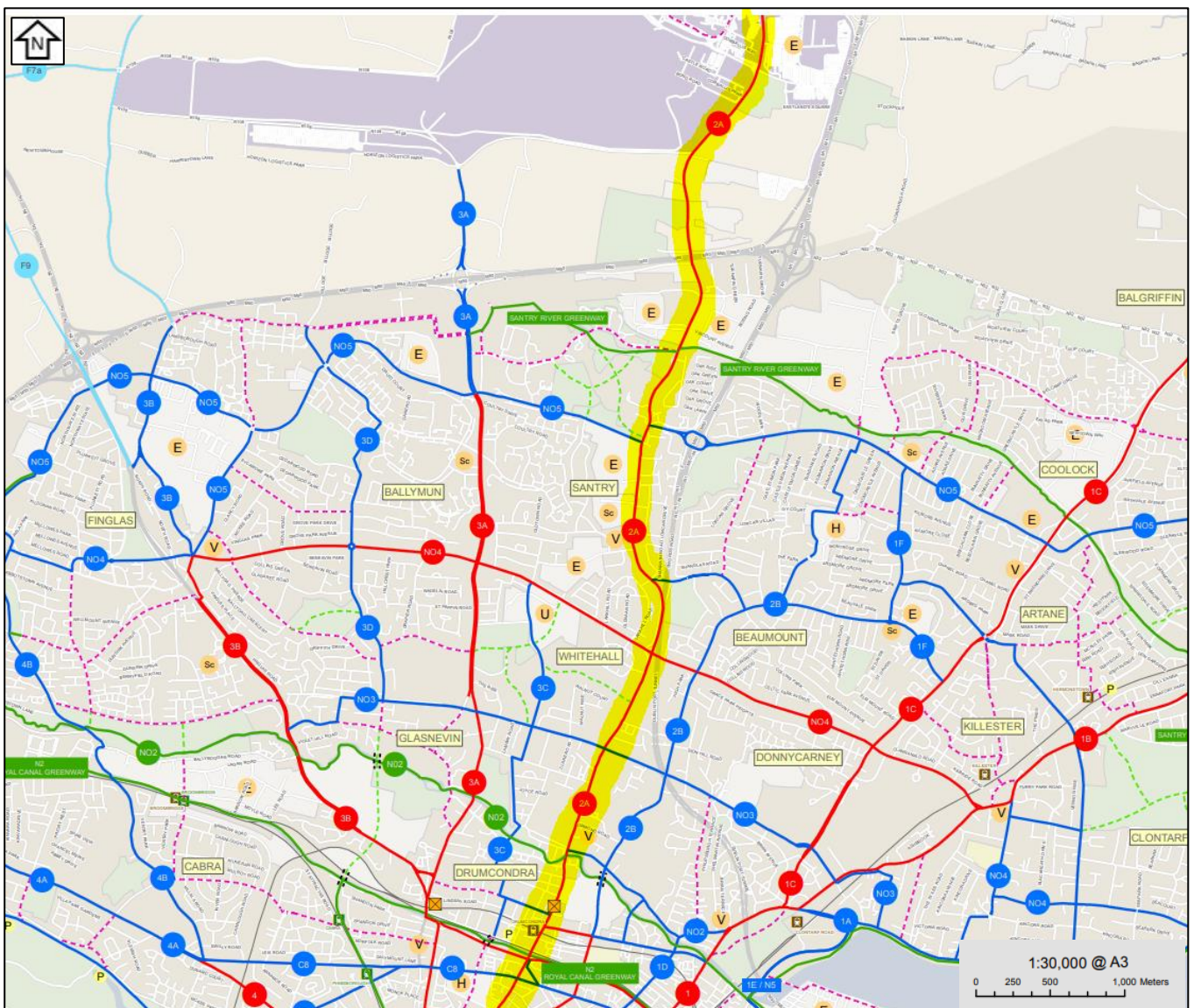
A key objective of the Proposed Scheme is to improve pedestrian and cyclist facilities along the route. For cyclists, segregated facilities should be provided where practicable to do so.

The GDA Cycle Network Plan 2013 proposes a network of cycle links throughout the GDA, categorised as follows:

- **Primary Routes:** Main cycle arteries that cross the urban area and carry most cycle traffic;
- **Secondary Routes:** Link between principal cycle routes and local zones;

- **Feeder Routes:** Cycle routes within local zones and/or connections from zones to the network levels above;
- **Inter Urban Routes:** Links the towns and city across rural areas and includes the elements of the National Cycle Network within the GDA; and
- **Green Route Network:** Cycle routes developed predominately for tourist, recreational and leisure purposes but may also carry elements of the utility cycle route network above. Many National Cycle Routes will be of this type.

Figure 4.4 below is an extract from GDA Cycle Network Plan and shows the different interfaces along the corridor between Swords to City Centre. Stub cycle tracks have been provided at all interfaces that adjoin the Proposed Scheme.



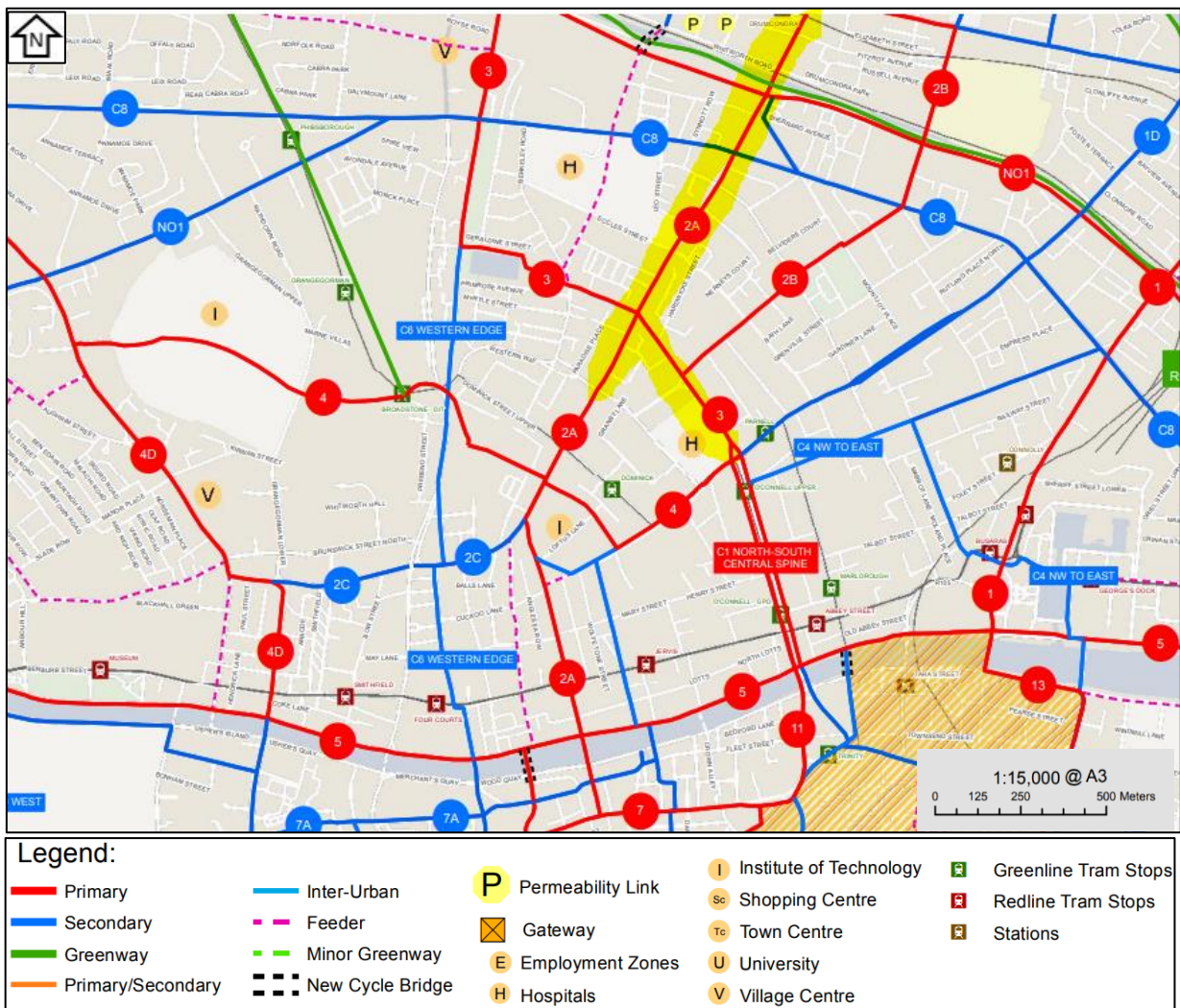


Figure 4.4: Extract from GDA Cycle Network Plan Maps

The Primary Route 2A follows the Swords Road along the Proposed Scheme.

- The Primary Routes;
 - NO4 intersect with the Proposed Scheme at Collins Avenue Junction;
 - 2B intersect with the Proposed Scheme at Clonliffe Road Junction and Shantalla Road Junction; and
 - 3 intersect with the Proposed Scheme at Blessington Street and Frederick Street North Junction.
- The Secondary Routes;
 - NO5 intersect with the Proposed Scheme at Coolock Lane Junction and Santry Avenue Junction;
 - NO3 intersect with the Proposed Scheme at Griffith Avenue Junction;
 - NO2 intersect with the Proposed Scheme at Richmond Road Junction;
 - 3C intersect with the Proposed Scheme at Iona Road Junction; and
 - C8 intersect with the Proposed Scheme at North Circular Road Junction and Belvedere Road Junction.
- The Santry Greenway crosses the Proposed Scheme at Northwood Avenue Junction.
- The Tolka Greenway crosses the Proposed Scheme at Frank Flood Bridge.

5. Review of the Previous Feasibility and Options Assessment Report

5.1 Introduction

Following a comprehensive review of the potential route options within the study area, a two stage assessment process was used to narrow down the number of routes available to one optimal route per study area. These routes then converged to form the overall EPR Option which was presented at the EPR Non-Statutory Public Consultation for information and feedback.

As part of the EPR Non-Statutory Public Consultation process the preparation of the Feasibility and Options Assessment Report served to give the public a greater insight into how the process took place in addition to providing transparency into the process of elimination used to determine the optimal route, given the information available and best engineering judgement.

From a review of submissions received as part of the EPR Non-Statutory Public Consultation process, as well as a review of the topographical survey carried out since the publication of the EPR Option, a number of issues have been identified which may be overcome through the implementation of alternative design solutions. These issues are described in the following sections

5.2 Assessment Methodology

5.2.1 Methodology

5.2.1.1 Methodology Introduction

The first step in the assessment process was to review the EPR Feasibility and Options Assessment Report. The development of the EPR Option was carried out in two stages. The first stage was a high-level route options assessment or 'sifting' process which appraised several potentially viable route options in terms of their ability to achieve the project objectives. The second stage of the option assessment is a comparison of each viable scheme option for each of the study area sections using a MCA to determine the EPR Option.

This additional assessment does not supersede work undertaken during earlier stages.

5.2.1.2 Stage 1 – Route Options Assessment – Sifting Stage

A 'spider's web' of route options was produced that accommodated the objectives of the scheme for each study area as shown in **Figure 5.1** to **Figure 5.3**.

As part of the sifting stage each of the route options were assessed using a high level qualitative method, based on professional judgement and general appreciation for existing constraints and conditions within the study area that could be ascertained from available surveys and site visits.

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

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

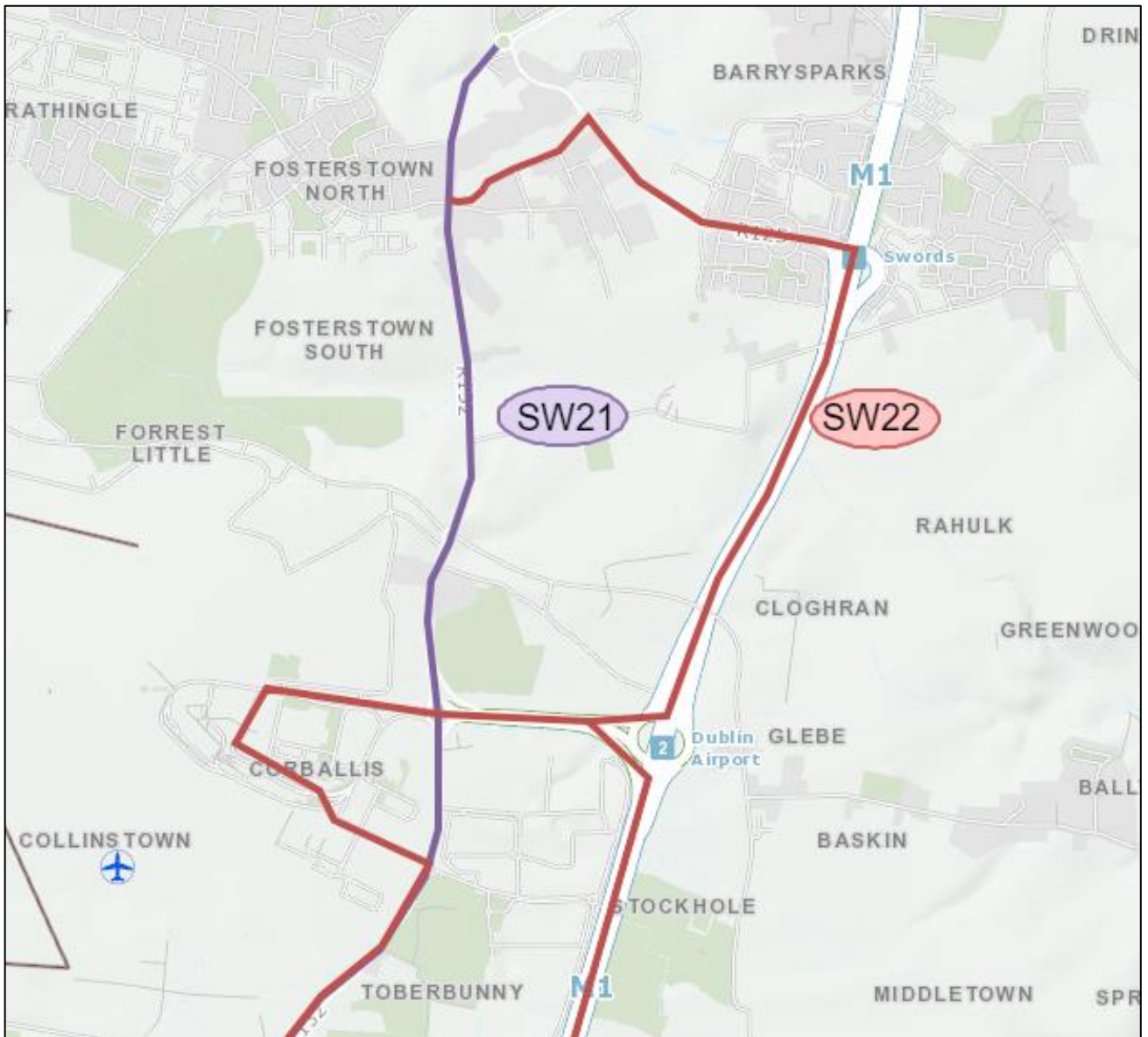


Figure 5.1: Spider's Web of Route Options for Section 1

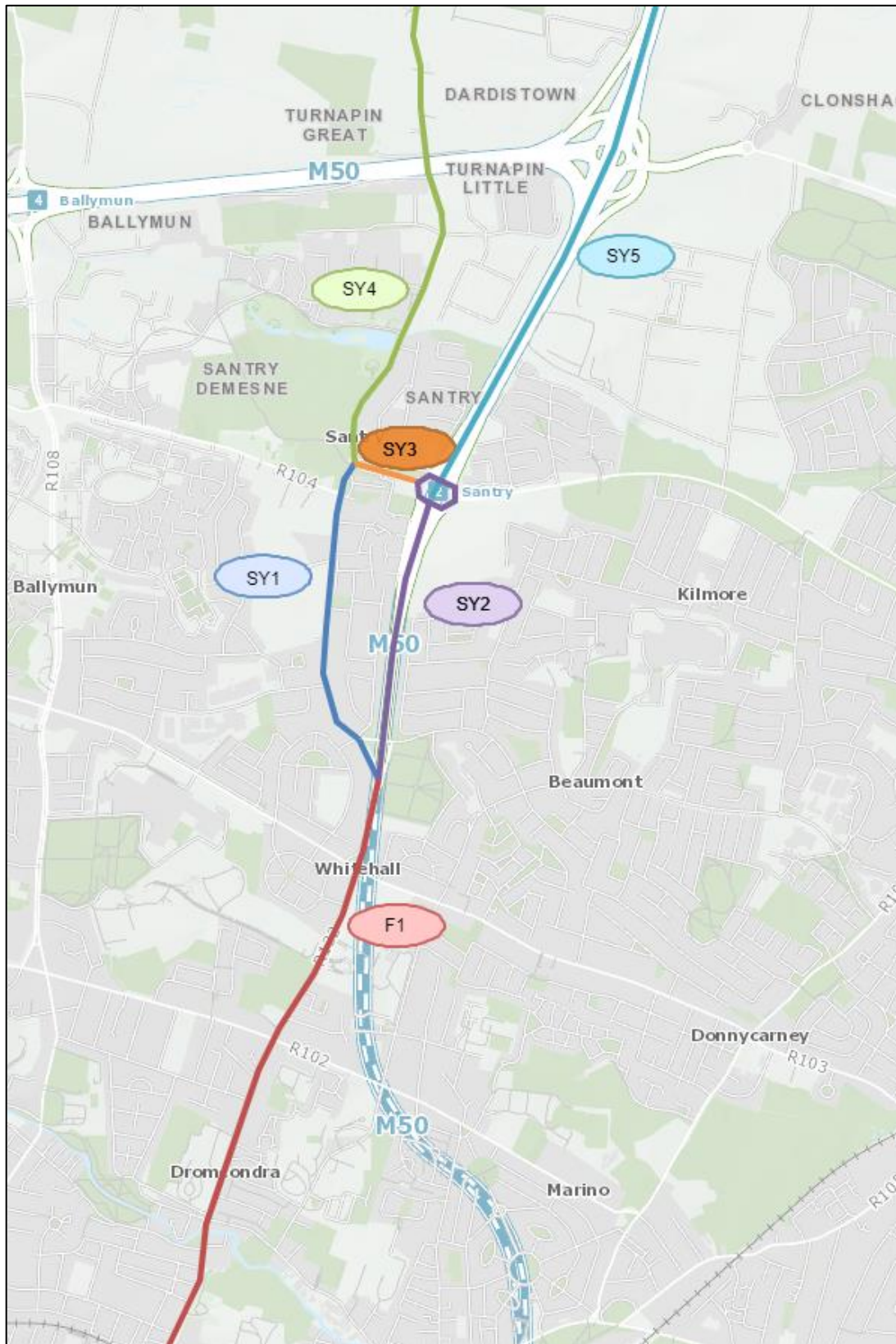


Figure 5.2: Spider's Web of Route Options for Section 2

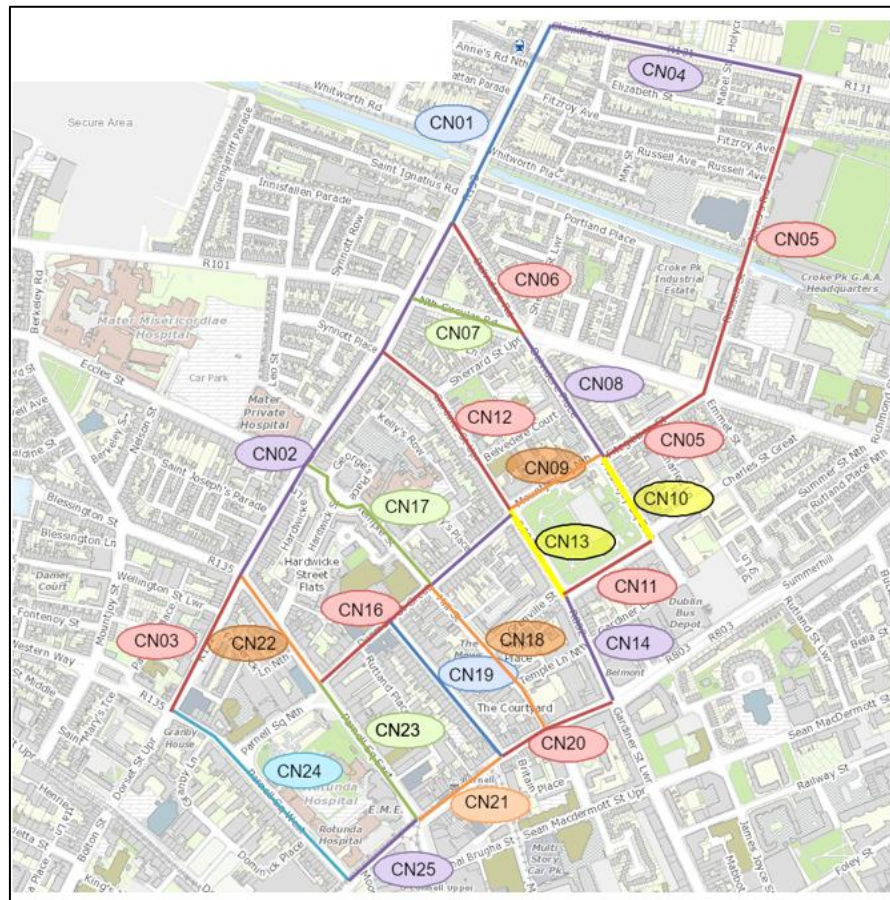


Figure 5.3: Spider's Web of Route Options for Section 3

5.2.1.3 Stage 2 – Route Options Assessment – Detailed Assessment

Following completion of Stage 1, the remaining potentially viable options were progressed to Stage 2 of the assessment process. This process involved a more detailed qualitative and quantitative assessment using criteria established to compare the route options.

The indicative scheme for each route option was then progressed to a MCA. The 'Common Appraisal Framework for Transport Projects and Programmes' published by the Department of Transport, Tourism and Sport (DTTAS), March 2016, required schemes to undergo a MCA under the following criteria;

- Economy;
- Integration;
- Accessibility and Social Inclusion;
- Safety;
- Environment; and
- Physical Activity.

Physical Activity was scoped out of the MCA at this stage. As all route options carried forward promote physical activity equally, physical activity is not considered to be a key differentiator between route options.

Table 5.1 presents a summary of the Proposed Scheme assessment criteria and sub criteria used as part of the Stage 2 detailed route options assessment process, with options compared and ranked against each other based as per Table 5.2. Options were compared based on a five-point scale, ranging from having significant advantages

to having significant disadvantages over other route options. **Table 5.2** shows the colour coding of the five-point scale, with advantageous routes graded “dark green” and disadvantageous routes graded “red”.

Table 5.1: MCA Assessment Criteria

<i>Assessment Criteria</i>	<i>Assessment Sub-Criteria</i>
1. Economy	1.a Capital Cost
	1.b Transport Reliability and Quality of Service
2. Integration	2.a Land Use Integration
	2.b Residential, Employment and Educational Catchments
	2.c Transport Network Integration
	2.d Cycling Integration
3. Accessibility & Social Inclusion	3.a Key Trip Attractors
	3.b Deprived Geographic Areas
4. Safety	4.a Road Safety
5. Environment	5.a Archaeology, Architectural and Cultural Heritage
	5.b Flora and Fauna
	5.c Soils and Geology
	5.d Hydrology
	5.e Landscape and Visual
	5.f Air Quality
	5.g Noise & Vibration
	5.h Land Use Character

Table 5.2: Route Options Colour-Coded Ranking Scale

<i>Colour</i>	<i>Description</i>
	Significant advantages over other options
	Some advantages over other options.
	Neutral compared to other options.
	Some disadvantages to other options
	Significant disadvantages to other options.

Where the design has undergone a change in respect of infrastructure provision or route choice, this has been recorded and explained. An MCA has been undertaken which assessed the newly developed and designed solutions against the EPR in the Feasibility and Options Assessment Report.

Where the design has undergone more general updates and enhancements, as expected during design development, these have not been subject to a new MCA.

5.3 Emerging Preferred Route Option Summary

5.3.1 Emerging Preferred Route Option

5.3.1.1 Study Area Section 1 - Swords South to Dublin Airport

The Emerging Preferred Route identified in the Feasibility and Options Assessment Report along this section of the CBC corridor is presented in **Figure 5.4**. This section of the Emerging Preferred Route Option provides for bus priority with dedicated bus lanes and cycling provision with segregated cycle tracks.

It is considered that the options assessment presented in the Feasibility and Options Assessment Report has appropriately assessed route options and that the selected corridor offers the most benefits for pedestrians, cyclists, and buses.

The proposed section of the route from Swords South to Dublin Airport meets the Proposed Scheme objectives and is the PRO for this corridor.

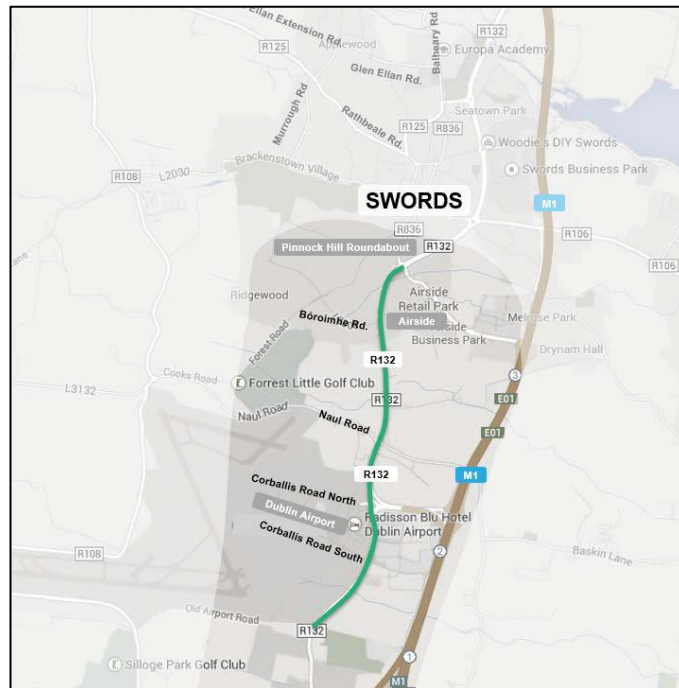


Figure 5.4: Emerging Preferred Route: Section 1

5.3.1.2 Study Area Section 2 - Dublin Airport to Royal Canal

The Emerging Preferred Route identified in the Feasibility and Options Assessment Report along this section of the CBC corridor is presented in **Figure 5.5**. The route commences at the junction of the Old Airport Road and Swords Road. It travels through Santry Village to Collins Avenue and continues along Drumcondra Road Upper to the Royal Canal.

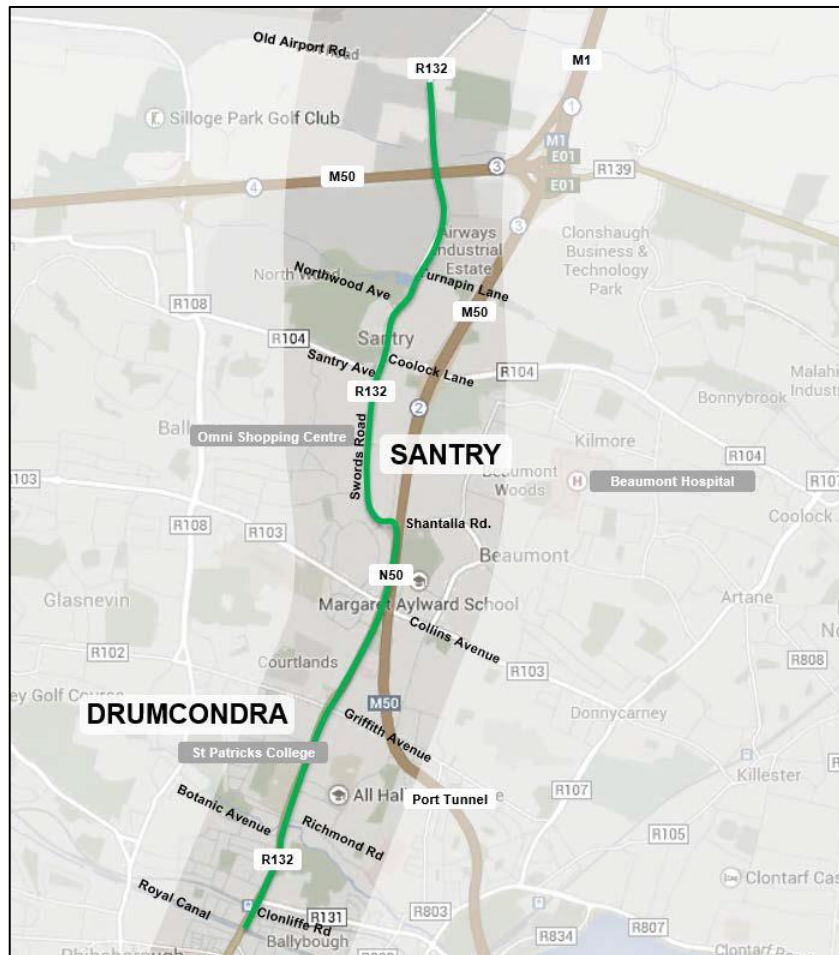


Figure 5.5: Emerging Preferred Route: Section 2

5.3.1.2.1 Santry Demesne

The Feasibility and Options Assessment Report envisaged that widening would be required between Northwood Avenue and Coolock Lane, resulting in encroachment into the Santry Demesne pNHA.

During further design development, the impact on the Santry Demesne wall generally between Morton Stadium and Coolock Lane was reviewed.

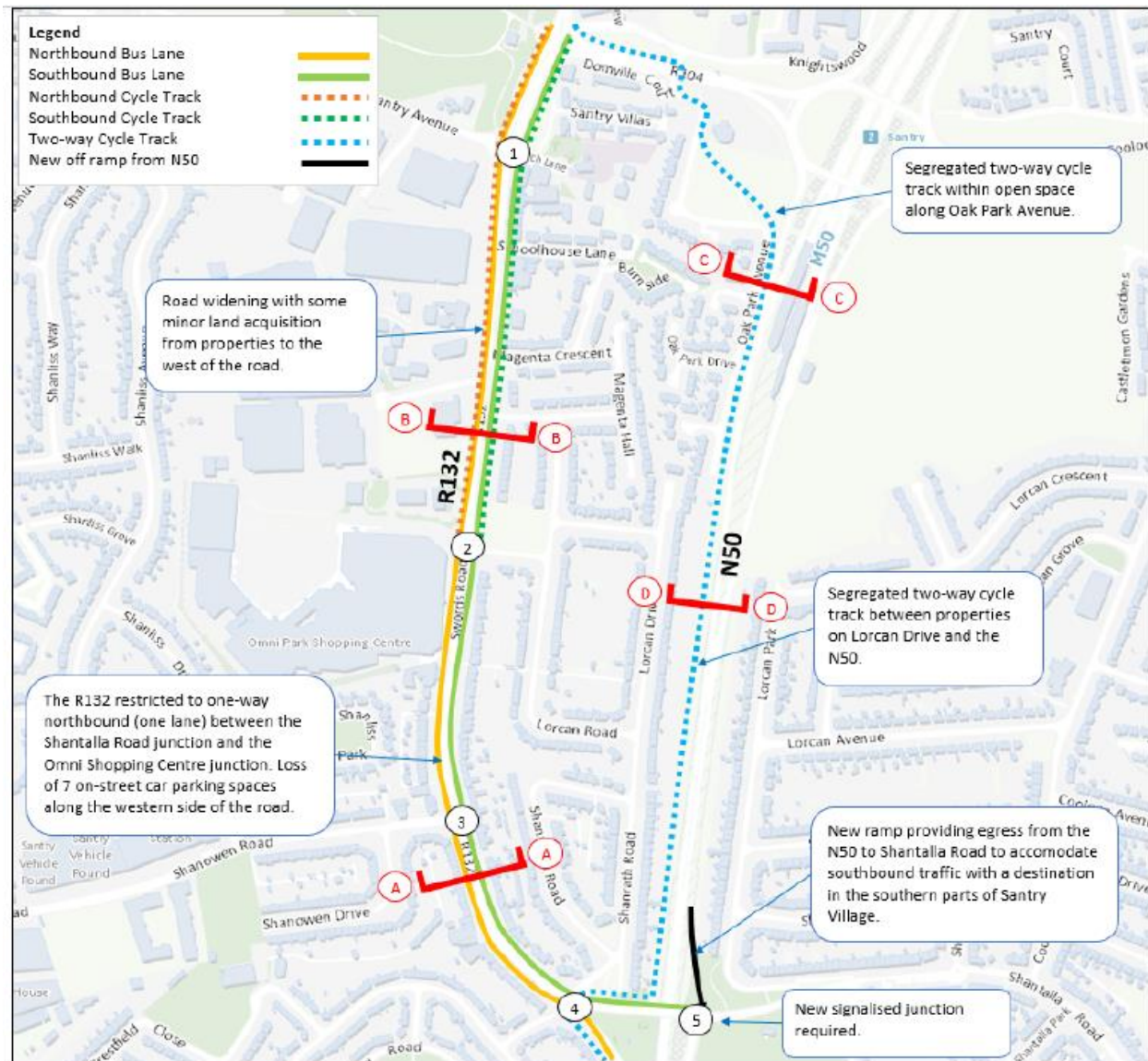
Based on the non-statutory public consultation submissions received and assessment of topographical survey subsequently undertaken along this route section, impacts on Santry Demesne / Morton Stadium were identified as requiring further review, as summarised in **Section 5.3.2**.

5.3.1.2.2 Santry Village

The Emerging Preferred Route through Santry village is detailed in **Figure 5.6** below.

The Emerging Preferred Route removed southbound traffic between the Omni Shopping Centre and Shantalla Road, in order to accommodate dedicated bus lanes in each direction.

A new slip road linking the N50 and Shantalla Road would provide for southbound traffic movements and a dedicated two-way cycle track would be implemented parallel to the N50.



Further design development and assessment work has been carried out on this section of the Proposed Scheme. Consultation feedback from statutory consultees and landowners, as well as feedback received from members of the public following the first non-statutory public consultations held from the 14th of November 2018 to the 29th of March 2019, has also formed part of the review of this route option during the design process.

One of the principal issues reviewed was the proposed one-way system for general traffic in Santry village. It became apparent that the one-way proposal for general traffic might affect the existing access/egress arrangements for residents along the Lorcan and Shanrath Roads and impact on commercial deliveries and local business. This required further review, as summarised in Section 5.3.2.

5.3.1.2.3 River Tolka Bridge

The Emerging Preferred Route that was published as part of the first non-statutory public consultation identified a requirement to widen the existing bridge over the River Tolka to accommodate the proposed road layout.

Based on assessment of services records subsequently undertaken along this route section, the River Tolka bridge was identified as requiring further review, as summarised in **Section 5.3.2**.

5.3.1.3 Study Area Section 3 - Royal Canal to City Centre

The Emerging Preferred Route identified in the Feasibility and Options Assessment Report along this section of the CBC corridor is presented in **Figure 5.5**. It commences at the Royal Canal and proceeds along Dorset Street as far as Parnell Square. This section of the Emerging Preferred Route Option provides for bus priority with dedicated bus lanes and cycling provision with segregated cycle tracks.

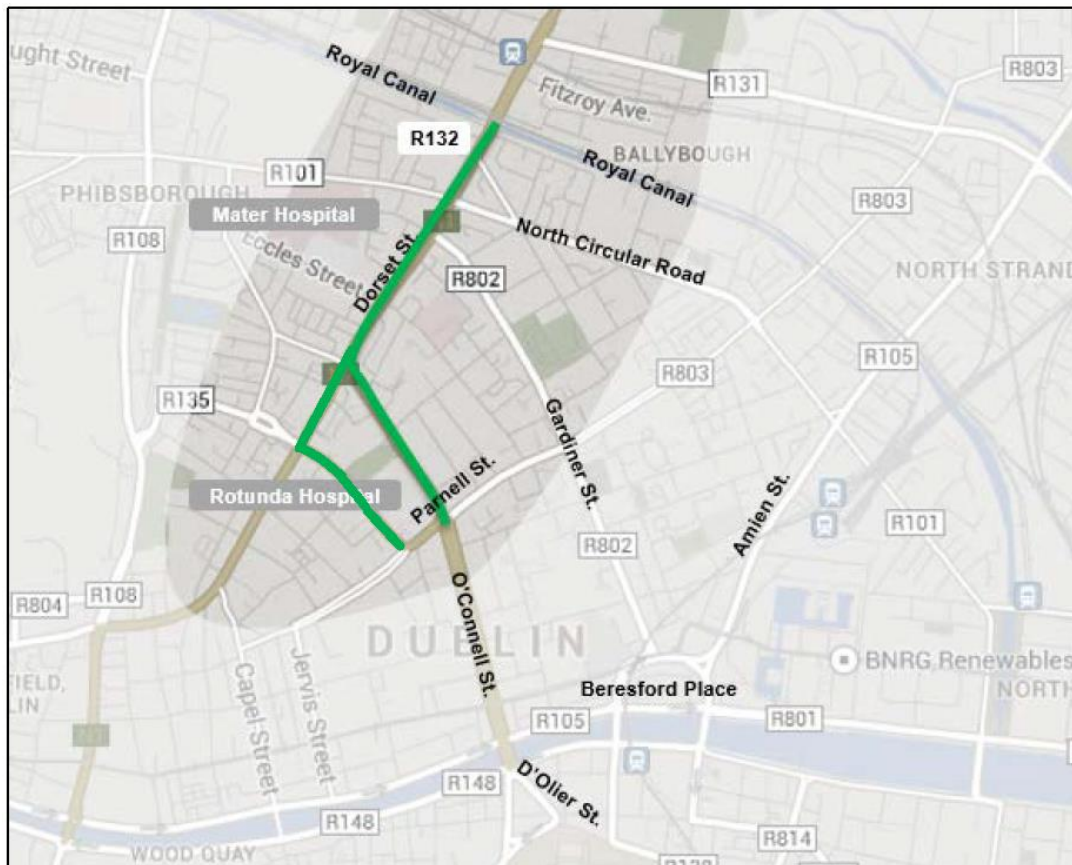


Figure 5.7: Emerging Preferred Route: Section 3

5.3.1.3.1 Existing Central Reserve at Dorset Street Lower

Based on the non-statutory public consultation submissions received and assessment of topographical survey subsequently undertaken along this route section, impacts on the central reserve along Drumcondra Road Lower and Dorset Street Lower between Clonliffe Road and Eccles Street/Hardwicke Place were identified as requiring further review, as summarised in **Section 5.3.2**.

5.3.1.3.2 Gardiner Street Bus Lanes

The Emerging Preferred Route that was published as part of the first non-statutory public consultation identified continuous bus lanes in each direction along the full length of Gardiner Street. Based on the non-statutory public consultation submissions received Gardiner Street was identified as requiring further review, as summarised in **Section 5.3.2**

5.3.2 Areas Identified for Re-Examination

Following the non-statutory public consultation feedback and design updates the following areas were identified for re-examination as part of this report:

- A review was undertaken of the proposed design along Santry Demesne. Consideration was given to signalled controlled bus priority in an effort to reduce impacts on Santry Demesne and properties. This is presented in **Section 6.2.1**.
- A review was undertaken of the proposed design along Santry Village. Consideration was given to a two-way option which maintained two-way traffic and bus lanes in each direction throughout Santry from Shantalla Road to Coolock Lane. Consideration was also given to a further cycle route option to redirect cyclists through Lorcan Road and Shanrath Road where a quiet street environment could be implemented. This is presented in **Section 6.2.2**.
- A review was undertaken of the proposed design at the River Tolka bridge. Consideration was given to an independent structure, separate from the existing bridge. This is presented in **Section 6.2.3**.
- A review was undertaken of the proposed design along Dorset Street Lower. Consideration was given to the removal of the tree-lined central reserve to facilitate footpath widening and urban enhancement. This is presented in **Section 6.3.1**.
- A review was undertaken of the proposed design at Gardiner Street Upper. Consideration was given to the introduction of a two-way bus layout along the full extent of Gardiner Street (Upper, Middle and Lower) and a left turn ban from Dorset Street Lower and implementation. This is presented in **Section 6.3.2**.

5.4 Summary

A summary of the Emerging Preferred Route review areas discussed in this chapter and taken forward for detailed options assessment is presented below:

- Section 1 – No change from the Emerging Preferred Route.
- Section 2 - Alternative options at Santry Demesne, Santry Village and the River Tolka Bridge.
- Section 3 – Alternative options at Dorset Street Lower and Gardiner Street.

5.5 Carbon Considerations for the Preferred Route Option

Carbon for the Proposed Scheme will arise from the three potential sources, namely User Carbon, Capital Carbon and Operational Carbon. These sources are further discussed as follows:

- The majority is the road User Carbon from cars, light and heavy goods vehicles and buses, whilst the majority of the fleet is combustion engine based in the short term.
- The Climate Action Plan 2023 outlines a range of targets for the electrification of private and public service vehicles in the medium term;
- In comparison, road construction Capital Carbon has been assessed as having a smaller footprint. On the basis that the Proposed Scheme is designed and executed appropriately, it will facilitate and enable a long-term user carbon reduction.
- The Operational Carbon once construction is complete includes the carbon associated with the operations of the Proposed Scheme, such as maintenance.

The Proposed Scheme will start with an increase in carbon (Capital Carbon) from the construction activities: a necessary investment to achieve the long-term decarbonisation outcomes by facilitating the following Proposed Scheme 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; and
- Support the delivery of an efficient, low carbon and climate resilient public transport service, which supports the achievement of Ireland's emission reduction targets.

Following publication of the 'Climate Action Plan 2023' by the Department of the Environment, Climate and Communication, consideration was given to the inclusion of a new criterion assessing the construction capital carbon of route options. As noted above, the capital carbon elements of the Proposed Scheme will be less than that of the user carbon footprint and as such it was not considered to be a reasonable differentiator for the purposes of route options assessment. Although carbon was not directly assessed for the route options, each route option was assessed using a range of environmental factors including Noise and Air Quality which reflect similar contributory elements (i.e. construction and operational stage impacts) to that for carbon emissions.

Furthermore, the development of the Preferred Route Option supports enhanced bus capacity and public transport potential in line with the objectives of the Proposed Scheme, which would contribute to reductions in user carbon and contribute towards the 130% increase in trips by public transport by 2030 outlined as a target in the Climate Action Plan 2023.

In developing the PRO, consideration was given to the carbon generated by the Proposed Scheme during construction and operation. Many of the changes made to the Proposed Scheme design since the EPR Option proposal have resulted in minor changes in the construction carbon generated by the Proposed Scheme, such as reducing lane widths to 3m, the altering of junction layouts, cycle tracks and footpaths. Additionally, significant design iterations were undertaken to mitigate against traffic re-distribution impacts and consequent impacts on greenhouse gas emissions.

6. Option Assessment

6.1 Section 1 - Swords South to Dublin Airport

As discussed in **Section 5.3** of this PRO Report, the CBC Preferred Route Option for study area Section 1 is as outlined in the Feasibility and Options Assessment Report. The Study Area Analysis and Multi-Criteria Analysis for the previously proposed feasible route options for Section 1 outlined in the Feasibility and Options Assessment Report have been evaluated by the design team and are considered still to be valid.

The proposed road layout between the Pinnock Hill and airside junctions has been reduced in width and much of the existing layout is proposed to be retained.

6.2 Section 2 - Dublin Airport to Royal Canal

6.2.1 Options considered at Santry Demesne

The cross section in the Emerging Preferred Route which was published for the first Non-Statutory Public Consultation incorporated footpaths, cycle lanes, bus lanes and traffic lanes in each direction between Northwood Avenue and Coolock Lane. As the cross section of the R132 from Morton Stadium as far as Coolock Lane is at most 3 lanes wide at present (2 lanes southbound, 1 lane northbound), encroachment into Santry Demesne and private properties on the opposite side of the road was required, along with removal of much of the historic Santry Demesne boundary wall as far as the Coolock Lane junction.

Following development of a traffic local area model it was ascertained that, given the distance (approximately 600m) between the Northwood Avenue and Coolock Lane junctions, queueing traffic in each direction on the approaches to those junctions was unlikely to extend as far as the proposed midpoint pedestrian crossing at the main entrance to Morton Stadium. Accordingly, it was concluded that the bus lane from each junction to this midpoint pedestrian crossing could be omitted, to be replaced by signal-controlled bus priority, whereby buses are given priority over general traffic exiting the junctions until the bus lane commences at the midpoint pedestrian crossing. The updated Draft Preferred Route Option, which was published for the third Non-Statutory Public Consultation, incorporated this arrangement.

In an effort to reduce (and in the case of the Santry Demesne pNHA completely avoid) impacts on the Santry Demesne boundary wall, the width of the southbound cycle track was reduced to 1.5m locally at Morton Stadium and a 2m wide northbound cycle track was alternatively proposed behind the Santry Demesne wall through Santry Park and Morton Stadium.

Consultation feedback from statutory consultees, landowners and members of the public following the third Non-Statutory Public Consultation highlighted safety, security and environmental issues that would arise out of positioning the northbound cycle track within Santry Park and Morton Stadium. Consequently, the cycle tracks in each direction are maintained online in the Preferred Route Option, but they are reduced to 1.5m in width (appropriate for single file cycling under the National Cycle Manual) over a distance of approximately 300m.

The Stage 2 Route Options Assessment – Multi-Criteria Analysis table for the three options is included in **Appendix D**.

The relative ranking of the three options is summarised in **Table 6.1**.

Table 6.1: Santry Demesne Summary MCA

Assessment Criteria	EPR Layout	Updated Draft PRO Layout	PRO Layout
Land Encroachment (Private)	Yellow	Green	Green
Land Encroachment (Public)	Yellow	Yellow	Green
Constructability	Yellow	Yellow	Green
Ecological Impact	Yellow	Yellow	Green
Landscape and Streetscape	Yellow	Yellow	Green
User Safety	Green	Yellow	Green
Architectural and Cultural Heritage	Yellow	Yellow	Green

Based on the assessment undertaken, the PRO layout offers more benefits over the EPR and Draft PRO layouts.

- No land take is required from public or private lands;
- The Santry Demesne pNHA is unaffected. No trees in Santry Park or Morton Stadium are impacted;
- The operations of Morton Stadium are not impacted;
- The two cycle tracks (northbound and southbound) remain online;
- There is no need to remove any of the Santry Demesne boundary wall.

6.2.2 Options considered through Santry Village

The Feasibility and Options Assessment Report found that the most appropriate route was along the route of SY1, through Santry Village. In that report a number of alternative options were developed and SY1C was considered the most desirable option following a Multi-Criteria Analysis. SY1C comprised of a one-way system for general traffic northbound between Shantalla Road and Omni Shopping Centre, bus lanes in each direction and an off-road cycle track. Southbound traffic would travel along the N50(Santry Bypass) and re-join Shantalla Road via a new slip road.

As well as Option SY1C, the Feasibility and Options Assessment Report considered a two-way option, Option SY1B, which maintained two-way traffic and bus lanes in each direction throughout Santry from Shantalla Road to Coolock Lane.

6.2.2.1 Cycle Route Options at Santry Village

Both of the Options described above diverted commuting cyclists away from Santry Village via a parallel, two-way cycle track which would be provided along Coolock Lane, Oak Park Avenue and the N50 as shown in **Figure 6.1**.

The feedback from the first non-statutory public consultation considered it an unattractive route for cyclists as there is little to no passive surveillance. Security and safety concerns were raised regarding the opening onto the N50 from Oak Park Avenue and also the vertical height differences, which would result in steep gradients for cyclists.

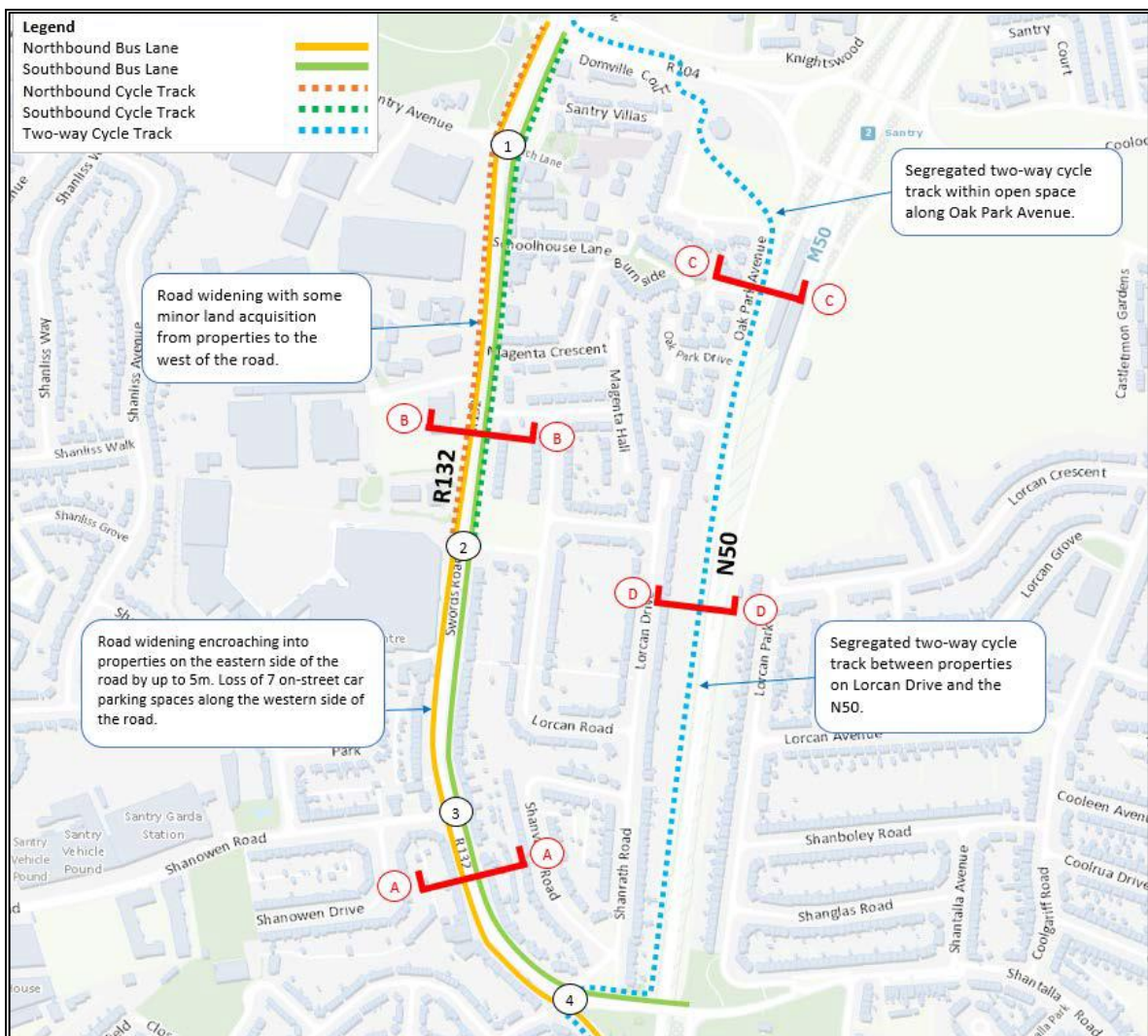


Figure 6.1: Cycle Route Option 1 – Two Way Cycle Track Away from Santry Village

A further cycle route option, Option 2, was developed to redirect cyclists through Lorcan Road and Shanrath Road where a quiet street environment could be implemented. This alternative cycle route commences at the junction with Omni Park Shopping Centre and connects with the Swords Road at the junction with Shantalla Road as shown in **Figure 6.2** below.

The Stage 2 Route Options Assessment – Multi-Criteria Analysis summary table for the Cycle Route Options is included in **Appendix E**.

The relative ranking of two options against the scheme assessment sub-criteria is summarised in **Table 6.2**.

Table 6.2: Cycle Routes Summary MCA

Assessment Criteria	Cycle Route Option 1	Cycle Route Option 2
Capital Cost		
Road safety		
Coherence		
Directness		
Attractiveness		
Comfort		
Environmental		

Based on the assessment undertaken, Cycle Route Option 2 offers more benefits over Option 1.

- The length of new cycle track required is a roughly half that required for Option 1;
- It more closely aligns with the route of Primary Route 2A from the GDA Cycle Network;
- It is a less significant diversion from the main street and is more likely to be used by cyclist compared to Option 1; and
- Fewer trees are required to be removed.

Routing the cyclists through Lorcan Road and Shanrath Road is a change from the Emerging Preferred Route.

6.2.2.2 Route Options at Santry Village

Further design development and assessment work was carried out on the Route Options through Santry Village. Consultation feedback from statutory consultees and landowners, as well as feedback received from members of the public following the first non-statutory public consultations held from the 14th of November 2018 to the 29th of March 2019, have also formed part of the review of this Section during the design process.

The two options described in the Feasibility and Options Assessment Report, SY1B and SY1C, are reproduced in **Figure 6.2** to **Figure 6.6**, but with Cycle Route Option 2 instead of Cycle Route Option 1.

Route Option SY1B - Two-Way Option

Figure 6.2 illustrates the indicative scheme design Route Option SY1B.

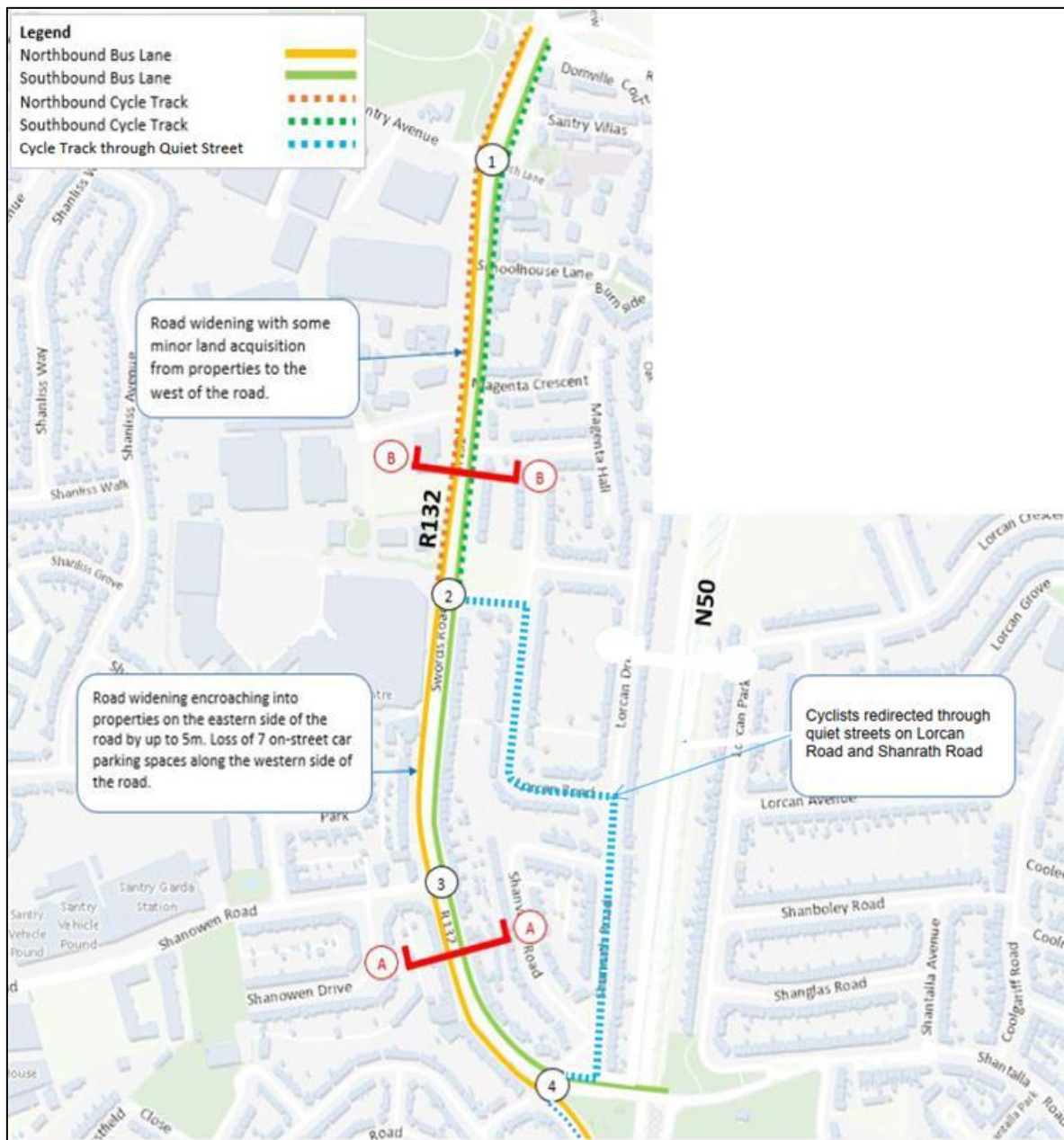


Figure 6.2: Route Option SY1B

Between Santry Avenue and the Omni Shopping Centre, some road widening would be required to incorporate the proposed cross-section, facilitating bus lanes and cycle lanes in each direction. This is mostly achievable within the road reserve, but some land take is required from adjoining lands which is primarily open space and commercial in nature. A cross-section of Swords Road between Santry Avenue and the Omni Shopping Centre for this scheme option is presented in Figure 6.3.

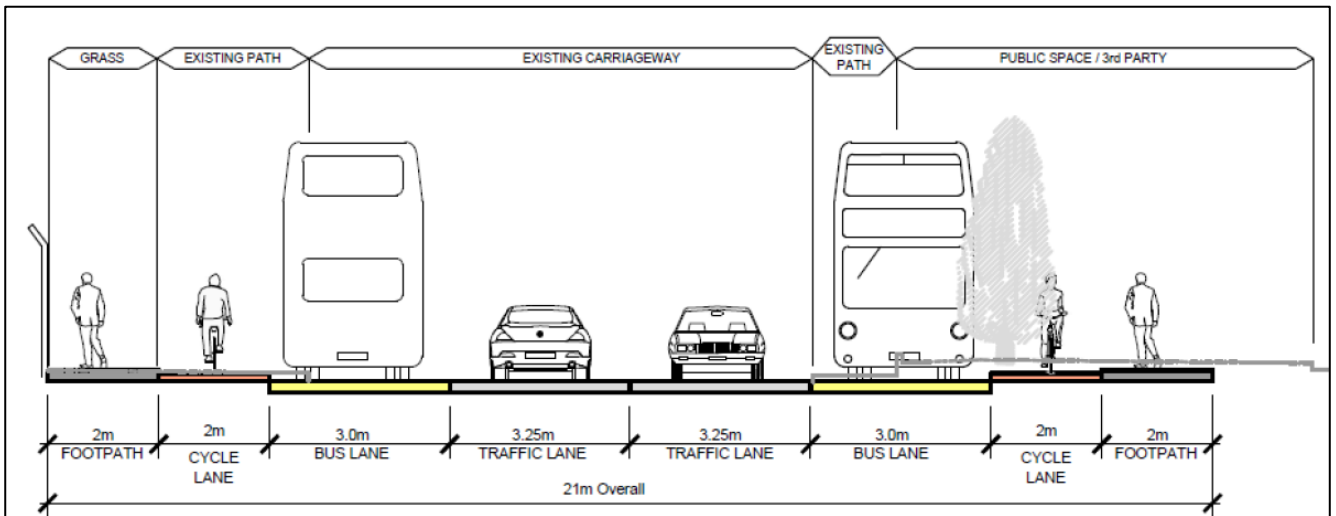


Figure 6.3: SY1B Cross-Section B-B Swords Road between Santry Avenue and the Omni Shopping Centre

On the Swords Road south of the Omni Park entrance, road widening would be required to facilitate a bus lane and traffic lane in each direction. This would require land acquisition from adjacent properties by up to approximately 5m. There would be a loss of seven on-street parking spaces to facilitate this option.

As no dedicated cycle facilities are provided with this option, any cyclists originating in the local area and wishing to travel south (or vice versa) would share with the bus lane. A cross-section on Swords Road for this scheme option is illustrated in Figure 6.4.

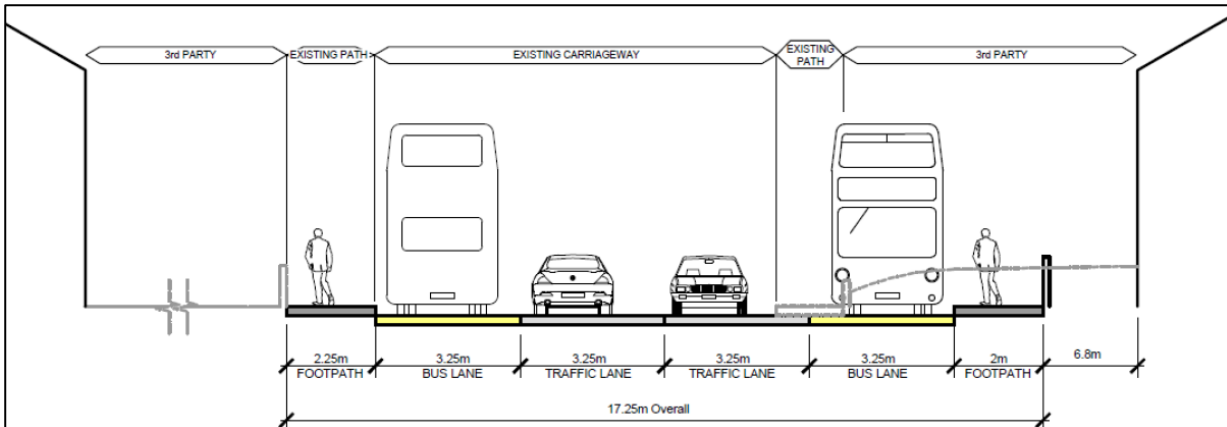


Figure 6.4: SY1B Cross-Section A-A Swords Road south of Omni Shopping Centre

Route Option SY1C - One-Way Option (Emerging Preferred Route)

Figure 6.5 illustrates the indicative scheme design for Route Option SY1C, which was the Emerging Preferred Route Option.

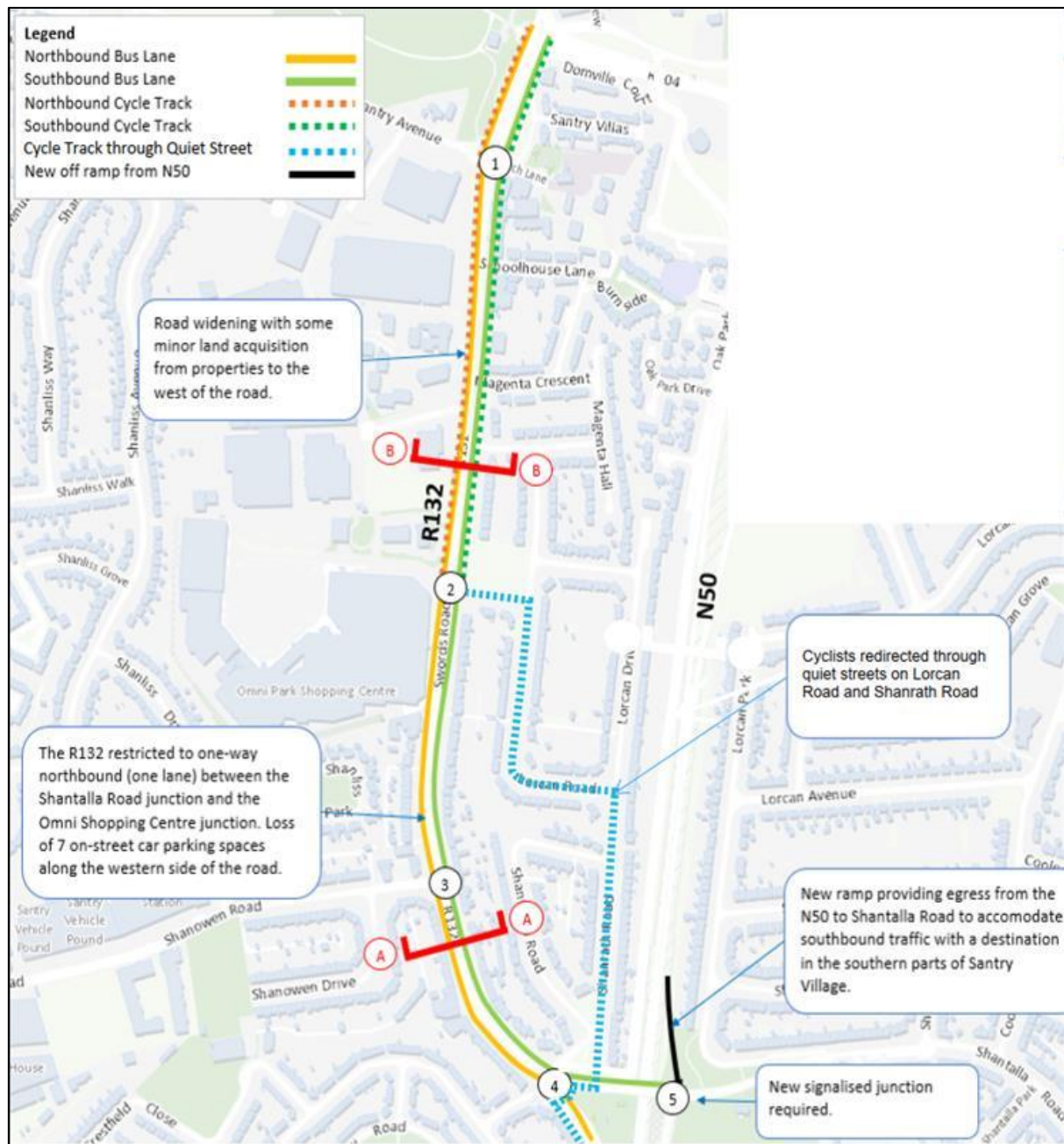


Figure 6.5: Route Option SY1C

This option is similar to option SY1B from Coolock Lane to Omni Shopping Centre.

This option removes southbound traffic between Omni Shopping Centre and Shantalla Road to minimise land acquisition on Swords Road for this section of the scheme. A bus lane would be provided in each direction but only one traffic lane (northbound) would be maintained for general traffic.

Combined with the proposal to redirect cyclists through Lorcan Road and Shanrath Road this option would negate the need for any land acquisition along this section of the scheme.

To allow access from the north to properties in the south of Santry Village, this option would require the construction of a new southbound slip road off the N50 at Shantalla Road. The new slip road would join the Shantalla Road via a new signalised junction.

A cross-section on Swords Road for this scheme option is illustrated in **Figure 6.6**.

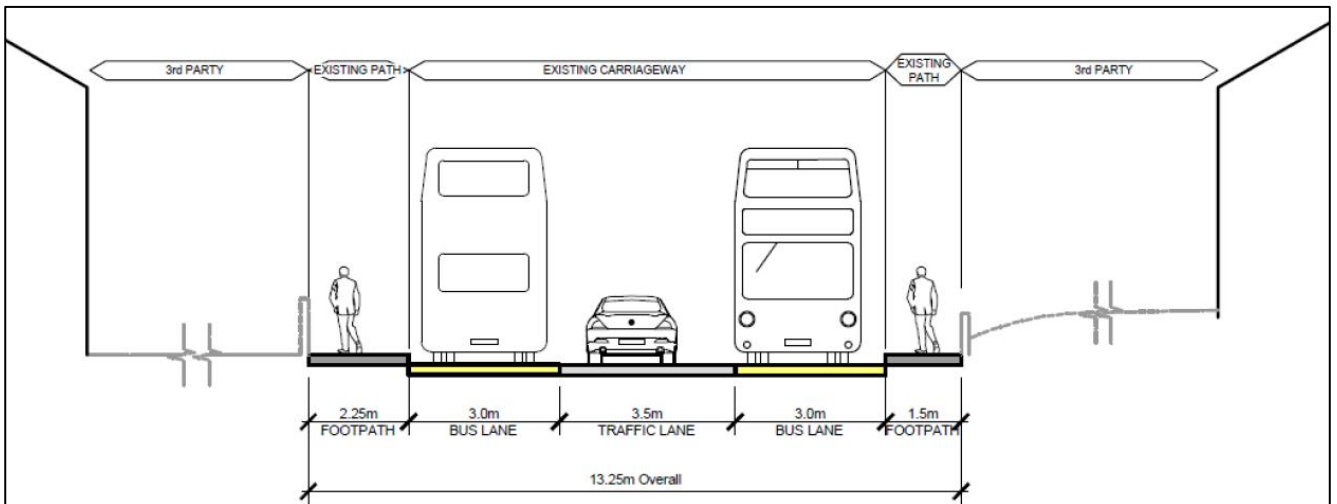


Figure 6.6: SY1C Cross-Section A-A Swords Road south of Omni Shopping Centre

The proposed traffic management changes would have a direct impact on traffic routes to, from and through the southern part of Santry Village.

The Stage 2 Route Options Assessment – Multi-Criteria Analysis table for this section is included in **Appendix A**.

The relative ranking of the route options for each assessment sub-criteria is shown in **Table 6.3**: below.

Table 6.3: Santry Village Route Options Assessment Summary (Sub-Criteria)

Assessment Criteria	Assessment Sub-Criteria	SY1B (two-way option)	SY1C (one-way option)
Economy	Capital Cost	Orange	Green
	Transport Reliability and Quality of Service	Green	Orange
Integration	Land Use Integration	Green	Orange
	Residential, Employment and Educational Catchments	Yellow	Yellow
	Transport Network Integration	Green	Orange
	Cycling Integration	Yellow	Yellow
Accessibility & Social Inclusion	Key Trip Attractors	Green	Orange
	Deprived Geographic Areas	Yellow	Yellow
Safety	Road Safety	Yellow	Yellow
Environment	Archaeology, Architectural and Cultural Heritage	Yellow	Yellow
	Flora and Fauna	Yellow	Yellow
	Soils and Geology	Yellow	Yellow
	Hydrology	Yellow	Yellow
	Landscape and Visual	Orange	Green
	Air Quality	Yellow	Yellow
	Noise & Vibration	Yellow	Yellow
	Land Use Character	Orange	Green

A summary of the assessment and relative ranking of route options against the five main assessment criteria is presented in Table 6.4 below.

Table 6.4: Santry Village Final Summary of MCA

Assessment Criteria	Option 1 (SY1B)	Option 2 (SY1C)
Economy	Yellow	Yellow
Integration	Green	Orange
Accessibility and Social Inclusion	Green	Orange
Safety	Yellow	Yellow
Environment	Orange	Green

Signal-controlled bus priority (similar to that adopted at Santry Demesne, see Section 6.2.1) was also considered as an option through Santry Village, in order to reduce the impact on land take. For signal-controlled bus priority to operate successfully, queue lengths from the next junction cannot be allowed to develop on the shared bus/traffic lane portion, as this would result in delays to the bus service. Junction modelling of this option through Santry Village showed extensive queuing at the Lorcan Road/Omni Park Shopping Centre, Shanowen Road and Shanrath Road junctions, which are in close proximity to each other (300m between the Lorcan Road/Omni Park and Shanowen Road junctions and 250m between the Shanowen Road and Shanrath Road junctions). On this basis, signal-controlled bus priority was discounted as a feasible option through Santry Village.

6.2.2.3 Conclusion and Preferred Option

Based on the following key findings from the Multi-Criteria Assessment undertaken for this section of the study area, Route Option SY1B is the Preferred Route Option for the following reasons:

- It performs more favourably under the Integration criterion because this option requires no changes to the current traffic management regime in Santry. SY1C would require detours and increased journey times for traffic travelling to and from the north with an origin or destination in the southern parts of Santry and people travelling south from the southern parts of Santry;
- It performs more favourably under the Accessibility and Social Inclusion criterion because under Option SY1C, journey times of the regular trips made by local residents living between the Omni Park Shopping Centre and Shantalla Road/Swords Road Roundabout would be increased.

6.2.3 Options considered at the Tolka River bridge

The existing road layout on the Tolka River bridge consists of two traffic lanes each way, widening out to include a separate right turn lane at the approaches to Richmond Road and Botanic Avenue.

The Emerging Preferred Route which was issued as part of the first non-statutory public consultation required widening of the bridge to the west in cantilevered structure to accommodate the CBC Infrastructure Works as shown in **Figure 6.7**. The widening would require removal and reconstruction of the masonry parapet in order to locate the outbound bus lane in the existing footpath on the west side.

During further design development the records of the existing services that are in the footpaths and attached to the west side of the structure were assessed. It was concluded that the existing services could not be adequately accommodated in a cantilevered structure, therefore an independent structure, separate from the existing bridge was presented in the Updated Draft Preferred Route Option, as illustrated in **Figure 6.8**. This option has been incorporated into the Preferred Route.

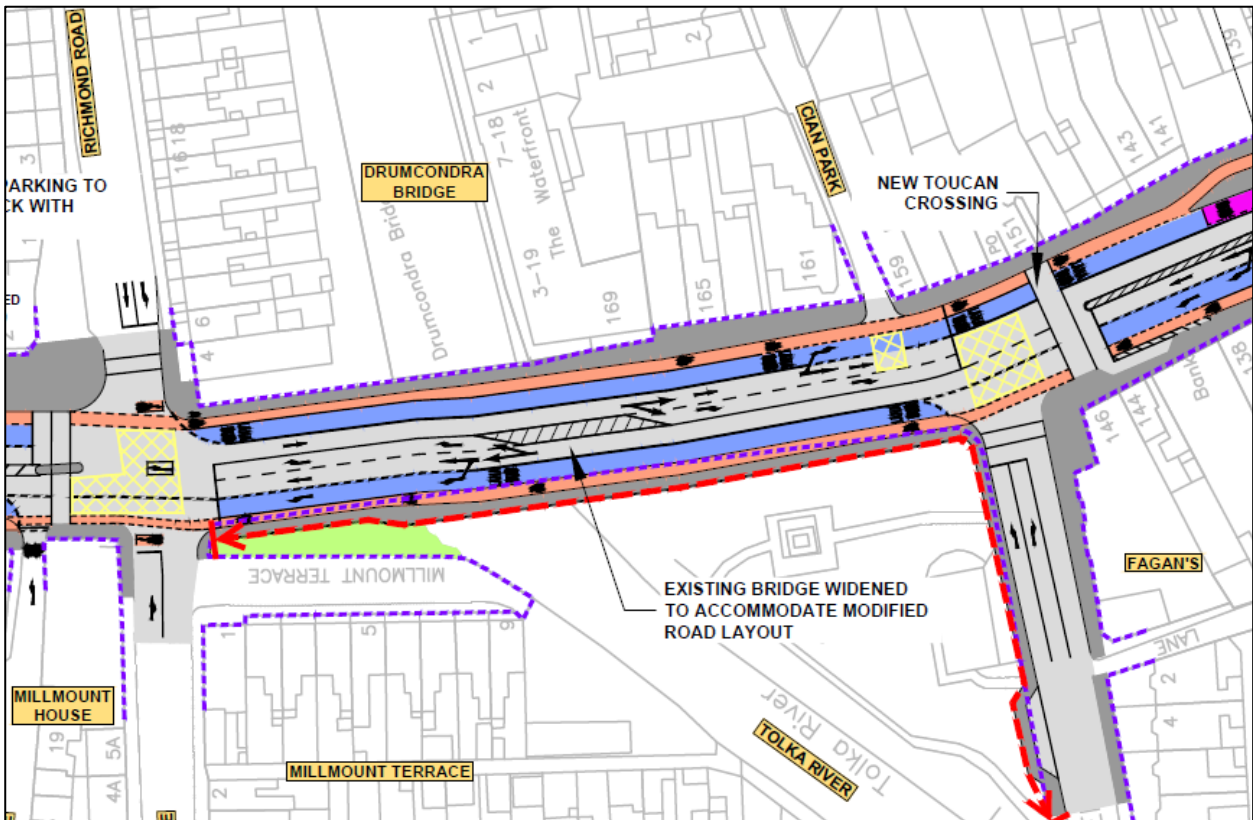


Figure 6.7: Emerging Preferred Route layout - Tolka River bridge

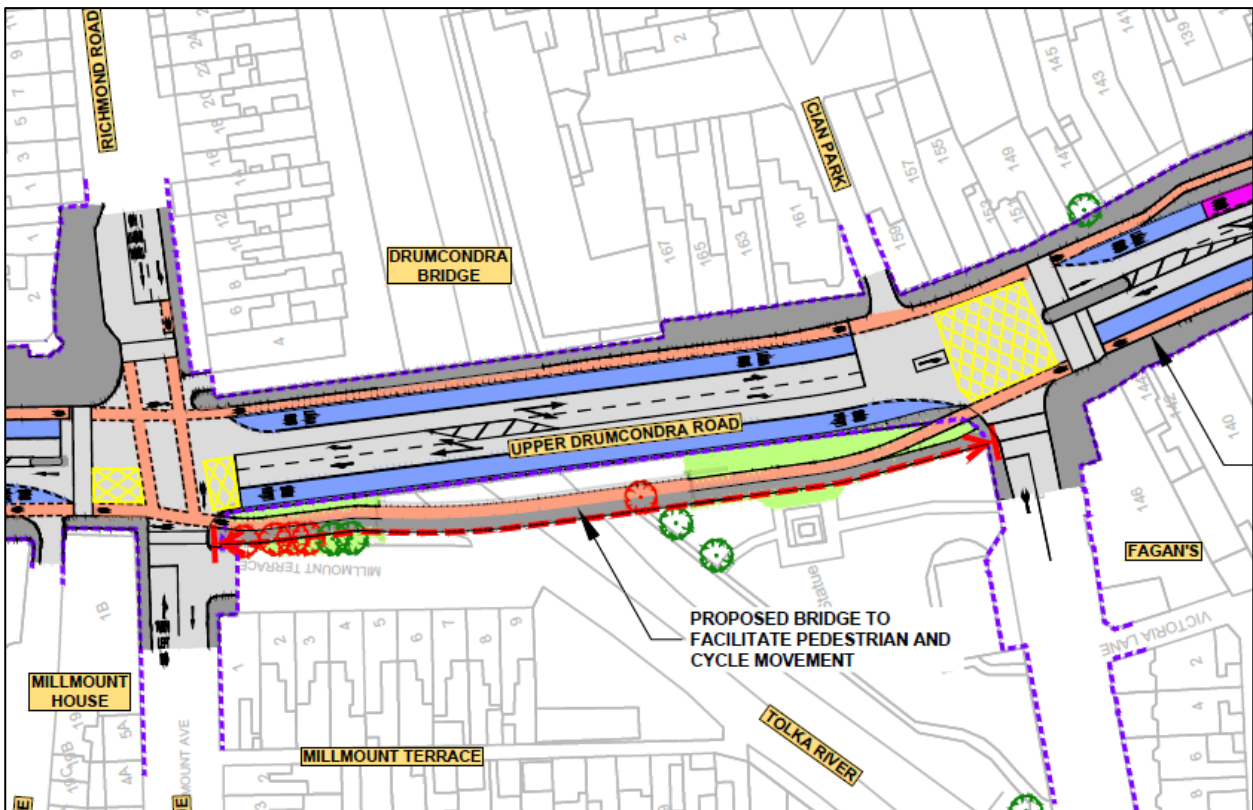


Figure 6.8: Updated Draft Preferred Route layout - Tolka River bridge

6.3 Section 3 Royal Canal to City Centre

6.3.1 Options considered at Dorset Street Lower

There are presently two general traffic lanes in each direction along Drumcondra Road Lower and Dorset Street Lower between Clonliffe Road and Eccles Street/Hardwicke Place. A two metre wide, tree-lined central reserve separates inbound and outbound traffic between St Anne's Road and Eccles Street/Hardwicke Place.

Under the Emerging Preferred Route presented in the first non-statutory public consultation, continuous bus lanes and cycle lane/tracks were to be accommodated in each direction by the removal of one inbound and one outbound general traffic lane.

The EPR layout required removal of the tree-lined central reserve between Whitworth Road/Whitworth Place and Belvedere Road/Innisfallen Parade as shown in Figure 6.9. This was necessary to introduce bus and cycle provision in each direction, while accommodating the volume of left turn movements onto Whitworth Road and Belvedere Road.

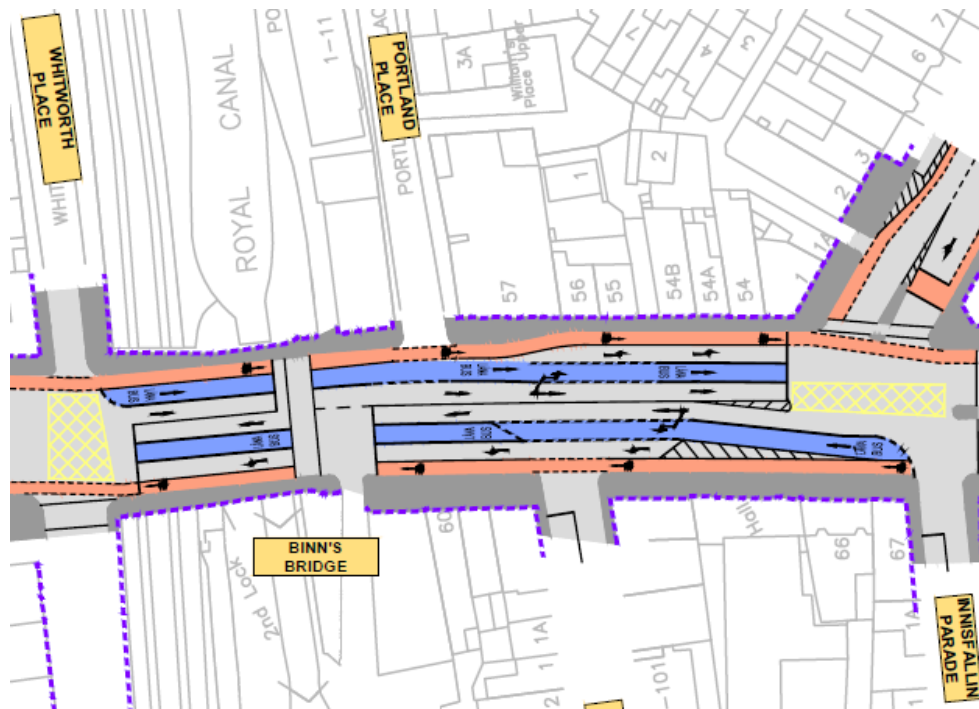


Figure 6.9 - Whitworth Road/Whitworth Place to Belvedere Road/Innisfallen Parade

The central reserve was also proposed to be removed between Gardiner Street Upper/Synott Place and Hardwicke Place/Eccles Street, as shown in Figure 6.10.

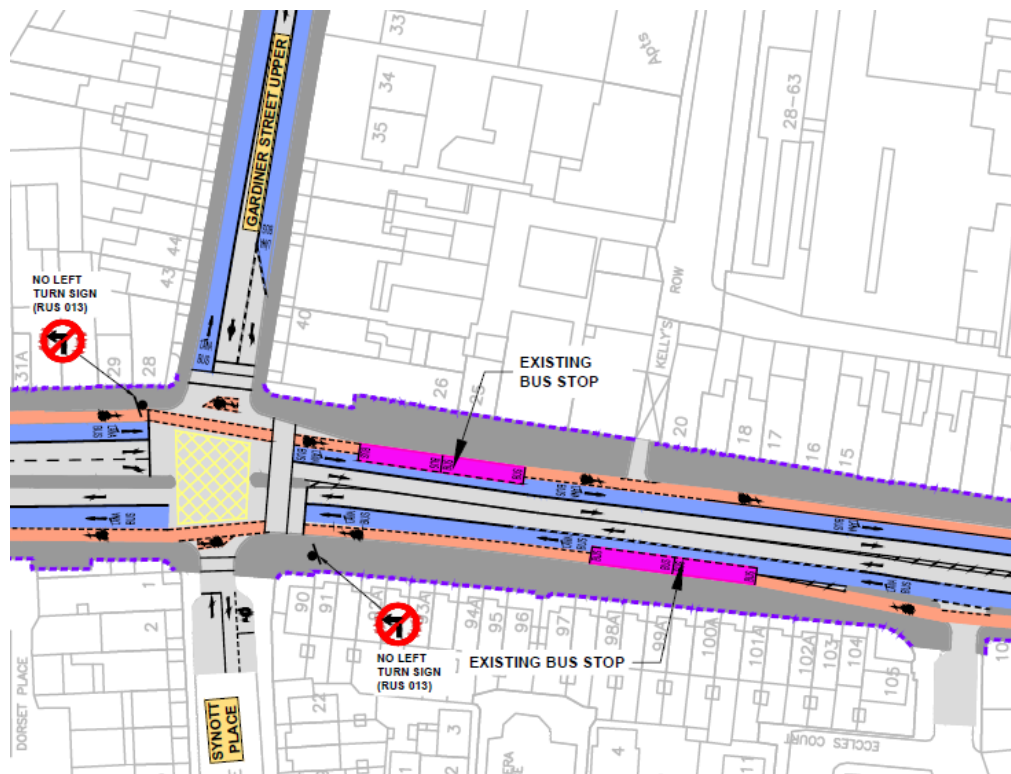


Figure 6.10 - Gardiner Street Upper/Synott Place to Hardwicke Place/Eccles Street

Elsewhere, the remaining sections of tree-lined central reserve were maintained as part of the Emerging Preferred Route layout.

Following receipt of submissions from the first non-statutory public consultation and assessment of full topographical survey information, an option to remove the central reserve in order to widen the footpaths on either side was considered. Under this option (Option B), trees and additional parking / urban realm would be provided either side of the carriageway.

A Multi-Criteria Analysis for the two options is included in **Appendix D**. The relative ranking of the two options is summarised in **Table 6.5**.

Table 6.5: Drumcondra Road Lower and Dorset Street Lower MCA Summary

Assessment Criteria	Option A – Retain Central Reserve	Option B – Remove Central Reserve
Land Encroachment (Private)	Yellow	Yellow
Land Encroachment (Public)	Yellow	Yellow
Constructability	Green	Yellow
Ecological Impact	Yellow	Yellow
Landscape and Streetscape	Green	Yellow
User Safety	Green	Yellow
Architectural and Cultural Heritage	Yellow	Yellow

The topographical survey allowed more detailed design of the corridor to be undertaken for development of the Draft Preferred Route Option.

In line with the government's Climate Action Plan, reduction in the construction carbon footprint has been a key consideration in the layout development of the scheme. The removal of the existing tree lined central reserve along Dorset Street Lower (involving trees and paving that would otherwise be unaffected by the works) was considered unnecessarily disruptive and undesirable.

With the removal of one traffic lane in each direction between Clonliffe Road and Eccles Street, adequate space would be available to meet the BusConnects desirable minimum requirements for 3m wide bus lanes, minimum 2m wide footpaths and fully segregated, 2m wide cycle tracks, without the necessity to remove the tree-lined central reserve between Gardiner Street Upper/Synott Place and Hardwicke Place/Eccles Street, as shown in Figure 6.11.

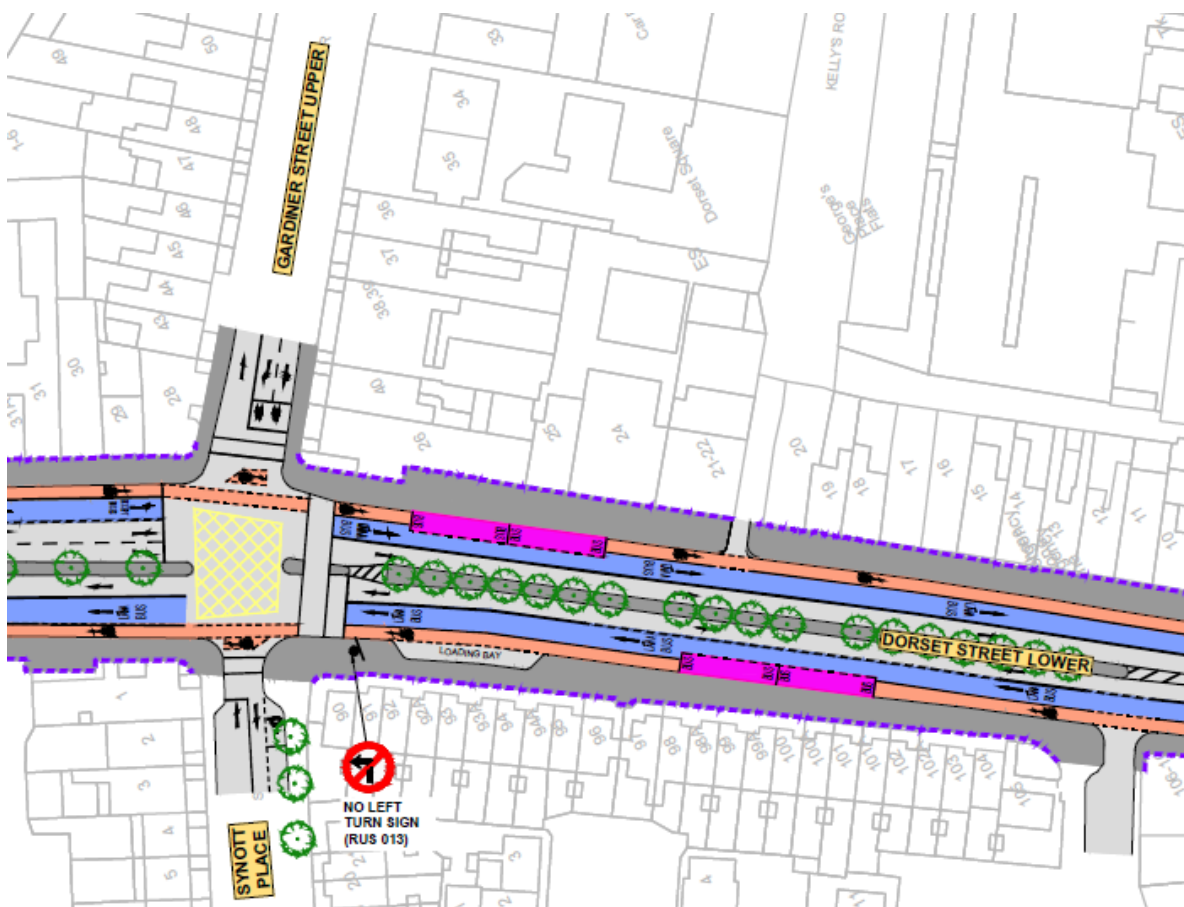


Figure 6.11 - Gardiner Street Upper/Synott Place to Hardwicke Place/Eccles Street

Replacement of trees from the central reserve with new trees in the footpaths is not straightforward. It was evident from the available utilities information that the footpaths on both sides of the carriageway are very significantly congested with services, particularly in comparison with the central reserves.

It was considered that removal of the central reserve and trees and the disruption of the existing footpaths and gullies that are generally in good condition would have a negative impact on the urban realm and carbon footprint of the project. The design strategy adopted was to retain the existing kerb lines and drainage regimes, where possible. This has been accomplished everywhere, apart from bus stop locations, where the footpaths will be widened out to accommodate Shared Landing Area bus stops. In this way the depth of excavation required, and the waste generated, is minimised. Most of the construction required will involve raising carriageway levels and installation of segregating kerbs or flexible bollards.

Under the Preferred Route Option, the central reserve is retained everywhere apart from the section between Whitworth Road/Whitworth Place and Belvedere Road/Innisfallen Parade.

6.3.2 Options considered Gardiner Street Upper

Under the Emerging Preferred Route Option, it was proposed to apply a left turn ban onto Gardiner Street Upper from Dorset Street Lower, rendering Gardiner Street Upper one-way to vehicular traffic between Dorset Street Lower and Mountjoy Square North. In addition, much of the existing on-street parking on Gardiner Street Upper and Lower was to be removed and the junction between Gardiner Place and Gardiner Street Upper was to be upgraded to a fully signalised junction with new pedestrian facilities. The Emerging Preferred Route Option required inbound traffic on Gardiner Street to divert to alternative routes, utilising Belvedere Road, Belvedere Place, Mountjoy Square North and Sherrard Street.

The purpose of this layout was to facilitate all of the A-Spine routes on Gardiner Street Upper, Middle and Lower by implementation of a two - way bus layout as far as Beresford Place under the 2018 Dublin Area Bus Network Redesign.

Under the Revised Bus Network published by the NTA in 2019, high frequency services (A-Spine) were removed from Gardiner Street and it was considered that introduction of two bus lanes over the full length of Gardiner Street was no longer necessary. Consequently Gardiner Street and Mountjoy Square do not form part of the Preferred Route Option.

7. Preferred Route Option

7.1 Introduction

This chapter of the report presents and describes the PRO identified for the Proposed Scheme. The PRO design drawings are included in **Appendix A** of this report.

7.2 Preferred Route Option Scheme Design Description

7.2.1 Scheme Design Description Overview

The Preferred Route Option is presented in **Figure 7.1** below:

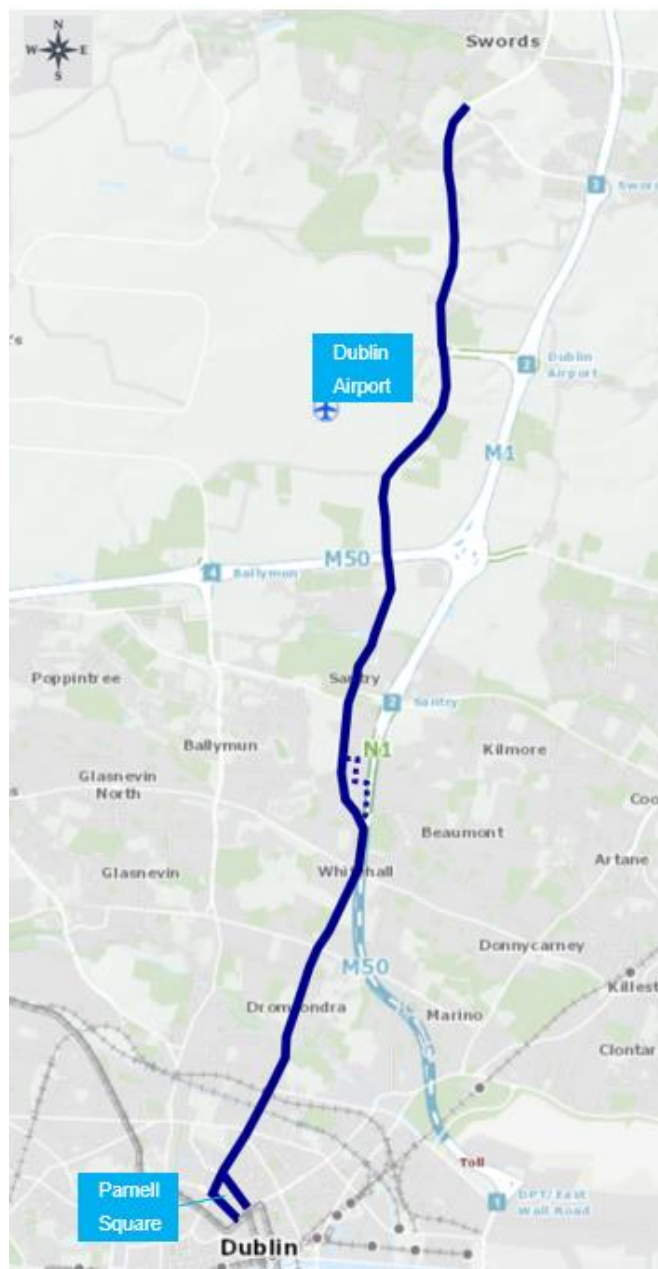


Figure 7.1: Preferred Route

The Preferred Route commences on the R132 Swords Road at the Pinnock Hill junction and is routed via the R132 along Swords Road, Drumcondra Road Upper & Lower and Dorset Street to the junction with North Frederick Street. The CBC is then routed via North Frederick Street and Parnell Square East, where it will join the prevailing traffic management regime in the City Centre. Priority for buses is provided along the entire route, consisting primarily of dedicated bus lanes in both directions. Signal Control Bus Priority is provided between Northwood Avenue and Coolock Lane to mitigate the impact on properties.

7.2.2 Section 1: Swords South to Dublin Airport

The Proposed Scheme commences south of Swords on the R132 Swords Road at Pinnock Hill. The existing roundabout at Pinnock Hill will be modified to a fully signalised junction with pedestrian and cyclist facilities. Between the Pinnock Hill and Airside junctions, the existing bus lanes will be maintained, the existing footpath will be upgraded, and segregated cycle lanes provided.

Between the Airside and Cloghran junctions, the existing bus lanes will be maintained, the existing footpaths will be upgraded and extended, and segregated cycle lanes provided. The existing Cloghran roundabout will be modified to a fully signalised junction with pedestrian and cyclist facilities.

South of the Cloghran junction, current provision for cars and buses northbound will remain and a new bus lane provided southbound. Segregated one-way cycle facilities are provided on both sides of the R132. Southbound cyclists cross the R132 at the Coachman's Inn to a two-way cycle track on the western side of the R132.

It is proposed to maintain the Airport Roundabout as a signalised junction with some amendments. To provide bus priority southbound through the Airport junction, it is proposed to provide a new signal-controlled priority on the northern approach to the roundabout. The cycle facilities through the Airport junction will be upgraded and cyclists will be accommodated in a two-way cycle track on the western side of the junction, crossing the airport access road via a signalised toucan crossing.

To provide this upgraded road infrastructure along this section, it will be necessary to take some land from adjacent private property. This will be particularly relevant at the following locations:

- Between the Pinnock Hill junction and Airside Retail Park;
- Around the Airside junction;
- Limited areas between Airside junction and Kettles Lane; and
- Between Stockhole Road and the Airport Roundabout.

7.2.3 Section 2: Dublin Airport to Royal Canal

South of the Airport Roundabout the existing northbound shared cycle lane and pedestrian lane is converted to a dedicated footpath and two-way cycle track as far as the South Corballis Road and from this point the cyclists will cross the R132 to return to the eastern side of the road.

Between Collinstown Cross Industrial Estate and Northwood Avenue, improved cycle facilities will be provided. New bus stop facilities will be provided outside Whitehall Colmcille GAA Club.

To facilitate these transport infrastructure improvements, some limited land take will be required at the following locations:

- West side of the Airport roundabout junction;
- Between Collinstown Cross Industrial Estate & Turnapin Lane;
- Airways Industrial Estate; and
- Furry Park Industrial Estate.

Signal Controlled Bus Priority will be provided between Northwood Avenue and Coolock Lane to avoid impact on properties and Santry Demesne. New bus stop facilities will be provided between Santry Close and Coolock Lane.

Between Coolock Lane and the entrance to Omni Park Shopping Centre, it is proposed to extend continuous bus lanes and cycle tracks in both directions. This will require some limited land take from adjacent properties on both sides of the existing road and the removal of existing on-street car parking.

To facilitate these transport infrastructure improvements, some land take will be required at the following locations:

- Some properties around the Coolock lane junction;
- Some properties between Schoolhouse Lane and Magenta Crescent; and
- Some land take on both sides of the road between Magenta Crescent and the Omni Park junction.

Between the Omni Park Shopping Centre entrance and the Shantalla Road junction it is proposed to maintain the two-way general traffic lanes and introduce continuous bus lanes in both directions. A segregated footpath will be maintained on either side. This will require some land take from adjacent properties on both sides of the existing road in Santry village and the removal of existing on-street car parking.

It is proposed to redirect cyclists through Lorcan Road and Shanrath Road as a quiet street. This cycle route commences at the junction with Omni Park Shopping Centre and connects with the Swords Road at the junction with Shantalla Road. A two-way cycle track is proposed to connect the quiet street from Shanrath Road through the Shanrath junction, connecting to the existing quiet street west of the off-slip.

A dedicated bus lane is proposed inbound along the Shantalla Road Bridge and a general traffic lane is maintained in both directions. The Shantalla Road junction will be upgraded to accommodate the bus lane and cycle and pedestrian movements.

To facilitate these transport infrastructure improvements, some limited land take will be required at the following locations:

- Properties on both sides of the Swords Road in Santry village between Omni Park Junction and Shantalla Road junction.

From Shantalla Road to the Botanic Avenue, a continuous bus lane will be provided in both directions. It is proposed to retain the existing bus lanes and provide a segregated cycle track and footpath between these Shantalla Road and Milmount Avenue in both directions. In Drumcondra, an independent pedestrian and cycle bridge over the River Tolka will be required to allow the proposed bus lanes to be accommodated over the existing bridge.

As part of the scheme, it is proposed to provide on-street parking at the following locations:

- 96 to 112 Upper Drumcondra Road, and;
- 4 to 12 Upper Drumcondra Road.

The following junctions will be upgraded with improved pedestrian, cycle and bus priority facilities:

- Collins Avenue;
- Griffith Avenue;
- Home Farm Road and
- Richmond Road.

It is proposed to upgrade the Collins Avenue junction to better facilitate bus priority and provide dedicated, segregated bus lanes to the stop lines with signal-controlled priority. The other key junctions will be upgraded to improve cyclist provision and bring bus lanes closer to the stop lines.

To facilitate bus lanes and cycle tracks in each direction it is necessary to remove one inbound and one outbound traffic lane between Clonliffe Road and Eccles Street.

7.2.4 Section 3: Royal Canal to City Centre

The landscaped central reserve will be removed between Portland Avenue and Belvedere Road to facilitate the required cross-section. South of Belvedere Road, the existing landscaped median will be maintained.

South of Eccles Street, some minor kerb realignments are proposed to provide bus, cycle and a single traffic lane in each direction. The painted central median will be removed to facilitate this.

As part of the scheme, it is proposed to provide on-street parking at the following locations:

- 45 to 55 and 14 to 20 Lower Drumcondra Road; and
- Between Clonliffe Road and Whitworth Road.

On this section of route, a few loading bays will be affected by the proposed works while most of the loading bays have been realigned and retained.

It is proposed to provide new turning restrictions at the following junctions:

- Left turn ban from Dorset Street to Synott Place; and
- Left turn ban from Dorset Street to Hardwicke Place.

On North Frederick Street, the existing bans on left turning traffic from Dorset Street Lower and straight through traffic from Blessington Street will be maintained. North Frederick Street is restricted to one southbound bus lane and one northbound traffic lane from the junction of Dorset Street with Gardiner Row.

South of Gardiner Row the existing southbound traffic lane and bus lane will be maintained. Two-way cycle facilities will be provided on the west side of Parnell Square East. On street parking will be removed. Improved bus stop facilities are proposed for this section of scheme. This section of the scheme ties into the existing street layout at Parnell Street.

Outbound buses will use Parnell Street, Parnell Square West and Granby Row to access Dorset Street Upper. A bus lane will be provided along these roads to facilitate outbound buses.

The following junctions will be upgraded with improved pedestrian, cycle and bus priority facilities:

- Botanic Avenue;
- Clonliffe Road;
- Whitworth Road;
- North Frederick Street;
- Gardiner Street Upper; and
- The junction of Parnell Square North and North Frederick Street.

7.3 Summary

7.3.1 Infrastructure Provision

The Preferred Route is approximately 12km long from end to end. The PRO scheme design drawings show the extent of the infrastructure proposed to deliver the Proposed Scheme. The bullet points below present the length of existing and proposed bus and cycle priority as a percentage of the overall route length.

- 67% Existing bus priority (outbound);
- 78% Existing bus priority (citybound);
- 100% Proposed bus priority (outbound);
- 100% Proposed bus priority (citybound);
- 69% Existing cycle priority (outbound) (34% cycle track, 35% advisory cycle lane);
- 49% Existing cycle priority (citybound) (23% cycle track, 26% advisory cycle lane);
- 100% Proposed cycle priority (outbound) (89% cycle track, 11% quiet street); and
- 100% Proposed cycle priority (citybound) (78% cycle track, 11% quiet street).

Virtual bus priority measures are proposed at the following locations:

- Signal controlled priority inbound between Northwood Avenue and the mid-block crossing near the Morton Stadium entrance;
- Signal controlled priority outbound between Coolock Lane Avenue and the mid-block crossing near the Morton Stadium entrance;
- Signal controlled priority inbound between Whitworth Place and Portland Place.

7.4 Main Scheme Changes

The following list highlights the main scheme changes between the published EPR Option and the PRO:

- A signalised junction is proposed at Kettles Lane in order to facilitate right turn movements at the junction;
- The introduction of a two-way proposal for general traffic in Santry Village. One of the principal issues reviewed was the proposed one-way system for general traffic in Santry village. It became apparent that the one-way proposal for general traffic might affect the existing access/egress arrangements for residents along the Lorcan and Shanrath Roads and impact on commercial deliveries and local business.
- Signal Controlled Priority will be provided inbound between Northwood Avenue and the mid-block pedestrian crossing near the Morton Stadium entrance to avoid impact to properties and to Santry Demesne. Buses are given priority over general traffic exiting the junctions until the bus lane resumes at the midpoint pedestrian crossing. A terminus is proposed for the D4 Route at the Coolock Lane junction with the R132;
- Cyclists through Santry village are proposed to be re-routed through Lorcan Road and Shanrath Road by means of quiet street treatment roadway widths through Santry Village cannot facilitate cyclists without having a significant impact on bus priority;
- A new segregated cycle track is proposed outbound between St Alphonsus Road Lower and Hollybank Road in order to avoid conflict with pedestrians;
- At the River Tolka bridge, an independent structure, separate from the existing bridge has been incorporated into the Preferred Route so that a bus and traffic lane can be provided in each direction along

the existing structure. A cantilevered structure was originally identified in the Emerging Preferred Route however the existing services could not be adequately accommodated, therefore an independent structure, separate from the existing bridge was presented in the updated draft Preferred Route;

- A two-way cycle track is proposed on the west side of Parnell Square East in order to avoid interface with pedestrians and buses at the bus stops along the east side of Parnell Square East;
- The junction layouts were modified over the course of the design process to provide more protection for cyclists along the length of the route, including the addition of separately signalised stages for cyclists at large junctions such as Collins Avenue and Griffith Avenue;
- Bus stop locations have been modified in this revised proposal, with some bus stops relocated or removed to achieve a better spacing between stops to ensure a more efficient bus network operation, while also ensuring that each stop is sited in the optimum location to serve surrounding neighbourhoods; and
- Cycle facilities have been updated to the latest design guidance.

7.5 Scheme Benefits

7.5.1 Bus Journey Times

Through the provision of increased bus priority infrastructure, the Proposed Scheme will improve both the overall journey times for buses along the route and their journey time reliability. This will help to realise the aims and objectives of the Proposed Scheme as set out in **Section 2.4** of this report.

The facilitation of bus priority along the Swords to City Centre CBC, through the delivery of dedicated bus lanes and signal-controlled priority is forecast to reduce bus journey times along the Swords to City Centre CBC. In addition to this, journey reliability is forecast to be improved, by largely removing interaction between bus traffic and general traffic.

7.5.2 Walking and Cycling

In addition to the improvements to bus journey times and journey time reliability, the Proposed Scheme would provide benefits for cyclists and pedestrians.

The provision of dedicated cycling infrastructure along the Proposed Scheme as well as on parallel routes in some cases, will improve the level of service provided for cyclists along the route, making cycling trips safer and more attractive.

The Proposed Scheme will deliver substantial elements of the GDA Cycle Network Plan as outlined in **Section 4.5**, as well as linking with other proposed cycling schemes including cycle routes 2A, 2B, NO4, 3, NO5, NO3, NO2, 3C, C8, The Santry Greenway and The Tolka Greenway contributing towards the development of a comprehensive cycling network for Dublin.

The Proposed Scheme would also provide improved facilities for pedestrians along the route. Improved crossing facilities would be provided both at junctions and in mid-block locations.

A number of public realm upgrades, including widened footpaths, high quality hard and soft landscaping and street furniture would be provided in areas of high activity to contribute towards a safer, more attractive environment for pedestrians