



**Bray to City Centre
Core Bus Corridor
Scheme**

June 2023

**Preferred
Route
Option
Report**

**BUS
CONNECTS**

SUSTAINABLE TRANSPORT FOR A BETTER CITY.

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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 Core Bus Corridor (CBC) Infrastructure Works.

Quiet Street Treatment – Where CBC roadway widths cannot facilitate cyclists without significant impact on bus priority, alternative cycle routes are explored for short distances away from the CBC 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.

Executive Summary

Introduction

The purpose of this report is to present an overview of the Preferred Route Option (PRO) for the Bray to City Centre Core Bus Corridor (CBC) as well as describing the options assessed, and changes made to the Proposed Scheme since the the first Non-Statutory Public Consultation in 2019.

The aim of delivering the Bray to City Centre CBC 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.

Scheme Overview & Assessment Process

The Bray to City Centre CBC commences at the junction of Leeson Street Lower and St. Stephen's Green. The corridor runs along Leeson Street Lower and Upper, and Sussex Road. The CBC continues along Morehampton Road and Donnybrook Road, through Donnybrook Village and on to the Stillorgan Road, serving the UCD Interchange via the Stillorgan Road Overbridge.

The CBC continues on the Stillorgan Road, which carries on to the Bray Road to Loughlinstown Roundabout, passing Mount Merrion, Stillorgan, Foxrock, Cornelscourt, Cabinteely and Loughlinstown. From Loughlinstown Roundabout, adjacent to St. Columcille's Hospital, the CBC runs along the Dublin Road to St. Anne's Church and then continues south through Shankill village. The CBC runs through Wilford Junction and along the Dublin Road until it terminates on Castle Street in Bray, to the north side of the River Dargle crossing.

Where substantial revisions have been made to the design since the publication of the Emerging Preferred Route (EPR) Option in February 2019, options have been assessed using a Multi-Criteria Assessment (MCA) to determine the preferred option. 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 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:

- The starting point of the Proposed Scheme has been changed to Leeson Street Lower Junction on St. Stephen's Green, as it is considered that sufficient bus infrastructure and cycle segregation currently exists beyond this point;
- The end point for the Proposed Scheme has been changed from the southern to the northern side of the Fran O'Toole Bridge where it will tie into a proposed Bray Bridge Improvement Scheme;
- The extent of the Brookvale Road and Eglinton Road has not been included as part of the Proposed Scheme as it was deemed that the existing infrastructure suffice.
- The lane configuration proposed in the previous report for the corridor at Anglesea Road Junction was revisited, to improve the allocation of traffic capacity for inbound and outbound traffic. The revised lane configuration between Eglinton Road and Anglesea Road Junction has two outbound general traffic lanes and one inbound general traffic lane. This additional outbound general traffic lane will create additional stacking space for outbound and left-turning traffic between Eglinton Road and Anglesea Road. The inbound straight ahead and left-turn lane to Beaver Row from the Stillorgan Road were combined to reduce land impacts on the Church of Sacred Heart in Donnybrook;
- From Eglinton Terrace to Belmont Avenue, the southbound bus lane is maintained through the midway bend. Signal Controlled Priority has been introduced at Eglinton Terrace in the northbound direction to provide buses with a level of priority through this section. This follows the review of additional topographical surveys which provided a better indication of space constraints, and consideration of Signal Controlled Priority along narrow sections of road to improve cyclist safety;
- Following review of topography information, the lane configuration was investigated further at Leeson Street Lower to consider reducing the impact on heritage kerbing and existing footpath widths on this busy pedestrian street and improved safety for cyclists. A bus gate and local access only provision has been introduced at this location, with inbound general traffic taking a local diversion via Hatch Street Lower and Earlsfort Terrace. This diversion requires the introduction of two-way general traffic on Earlsfort Terrace between the Hatch Street Lower Junction and St. Stephen's Green. This requires upgrade of the Leeson Street Upper / St Stephen's Green / Earlsfort Terrace junction and the tie-in to the existing road layout in that area;
- Relocation of bus stops on Leeson Street Lower. Removal of inbound bus stop at the Donnybrook Bus Depot;
- Further design development to avoid and minimise impact to the Cellars, Coal Holes and Private Landings along Lesson Street Lower, Lesson Street Upper, Morehampton Road and through Donnybrook village;
- UCD Interchange proposals have been incorporated and further developed in co-ordination with the UCD Masterplan, following initial design development by UCD. Following further traffic modelling and assessment of bus delays and pedestrian safety, the two uncontrolled pedestrian crossings within the main plaza interchange are updated to provide for raised signalised toucan crossings
- The design has been further developed to co-ordinate with the proposed Dodder Greenway scheme interface at Eglinton Road. Toucan Crossing has been provided at the tie-in with the Dodder Greenway and cycle tracks along the Eglinton Road to facilitate continued cyclist movement;
- The design has been further developed to co-ordinate with the proposed Fitzwilliam Cycle scheme at Fitzwilliam Place and the urban realm regeneration scheme at the Kiosk corner;
- The Proposed Scheme design has been co-ordinated with the proposed Belfield / Blackrock to City Centre CBC at the Nutley Lane Junction. The co-ordinated design will have a two-way cycle track at Nutley lane along with two-way cycle track crossing at the N11 Southern arm. In an independent scenario, the Proposed scheme will tie-in to the existing infrastructure at the Nutley Lane junction with one-way cycle track in both direction along the Nutley Lane;
- The design at the RTE junction has been further refined to tie-in to existing infrastructure within the RTE grounds;

- The proposed coach stop at the Talbot Hotel was moved further south to remove the impact to the Talbot Hotel forecourt following consultation;
- Following additional modelling and assessment of the Lower Kilmacud Road Junction on the Stillorgan Road, the slip road to The Hill has been closed off for vehicular traffic to maintain continuous segregated cycling facility along this location for safety of the cyclists;
- At St. Brigid's Church Road, Stillorgan, the segregated cycle track provision along the N11 was revisited and it is proposed to divert the northbound cycle track along St. Brigid's Church Road, to improve cycle track safety;
- At Galloping Green, the segregated cycle track provision along the N11 was revisited and it is proposed to divert the southbound cycle track along Belmont Terrace, to improve cycle track safety and allowing for the relocation of a bus stop, and retention of as much side road parking as possible;
- The design has been further developed to co-ordinate with the UCD Nova Development, the future Brewery Road Safety Improvement Scheme, Stillorgan Movement Plan and the Cherrywood SDZ Development;
- At Patrician Villas / St Laurence Park, the widening of the pedestrian subway and the footpath connection along the N11 was value engineered from the EPR option and it is now proposed to lengthen the subway on one side (east) and new footpaths and cycle tracks will run parallel to the N11 mainline in both directions;
- A two-way cycle track connection along the N11 Merrion Grove Junction to the Colaiste Eoin school has been introduced to integrate with the school, providing a more direct connection and safety to the school-going cyclists in the northbound direction and improved southbound connectivity to the N11;
- The proposed location of the pedestrian link to South Park residential has been changed from the EPR option and moved closer to the junction with Old Bray Road, to improve pedestrian movement line and access to the bus stop;
- The footpath proposed along the N11 between Cornelscourt to Kilbogget Junction as part of the ERP option has been removed from the Proposed Scheme, as it was considered a non-desired pedestrian link based on the pedestrian movement along this stretch and is aligned with the local development plans. Alternative walking routes exist on adjacent quieter roads;
- The design has been developed further to retain the service road as existing two-way between Old Cherrywood Road Junction and Loughlinstown Roundabout, from the one-way northbound in the EPR design. The service road north of the Cherrywood Road is retained as existing shared street;
- Following local community feedback from the previous public consultation, additional options for bus priority and cycle provision were assessed between Loughlinstown Roundabout and Stonebridge Road. The proposed cycle route now requires cyclists to share bus lanes between Loughlinstown Roundabout and Stonebridge Road. This provides the most direct route for cyclists along the existing Dublin Road, while minimising impact on adjacent properties and mature planted areas;
- Continuous bus lanes are provided in both directions between Loughlinstown Roundabout and St. Anne's Church, with Signal Controlled Priority proposed between the St. Anne's Church Junction and Rathmichael Woods in the northbound direction;
- Following local community feedback from the previous public consultation, additional options for bus priority and cycle provision were assessed between Cricken Lane and Stonebridge Road:
 - Two-way cycle track has been added to link Corbawn Lane to the two schools along Stonebridge Road;
 - No dedicated bus lanes or segregated cycle routes are provided through the Shankill village centre. Bus priority is achieved through Signal Control Priority. This proposal will maintain existing footways and the current village environment;
 - The layout of the proposed Dublin Road/ Shanganagh Road/ Corbawn Lane Junction was reviewed and revised through a number of iterations to take on board public concerns around traffic movement. The junction is proposed as signalised as part of the Proposed Scheme;

- The closure of the Corbawn Lane has been revised to provide an exit only to Shanganagh Road. A dedicated right turn is proposed from Shanganagh Road to Beechfield Manor;
- Signal priority measures which commenced in the adjacent section through Shankill village are extended for southbound buses as far as the Shanganagh Castle grounds (after Cricken Lane) to reduce impact on properties;
- The proposal to introduce a lower speed limit 30km/h through the Shankill village helping to reduce speed of through traffic and improve safety (from St Anne Church to Olcovar Junction);
- South of Shankill village the northbound bus lane is removed for a short section and Signal Control Priority introduced from Cherrington Drive/Quinn's Road to Olcovar Junction, to reduce impact on properties, trees with provision for right-turn lane at Olcovar and inclusion of a new signalised junction at the Olcovar housing development;
- At Shanganagh Park and Shanganagh Cemetery, both northbound and southbound cycle track have been routed through the park and along the cemetery boundary, which allows protection of the roadside trees in front of Shanganagh Cemetery in addition to reduced impact on properties and the play area at the Park. The Proposed Scheme has been co-ordinated and integrates with the Shanganagh Park Master Plan;
- Road alignment has been developed to maintain the roadside tree canopy along the road, in particular between Shankill Main Street to Wilford Junction, where cycle tracks and/or footpaths have been brought behind the roadside treeline where suitable;
- The design has been co-ordinated with proposed entrances for recently approved housing developments at Shanganagh Castle and Woodbrook Strategic Housing Development. These developments have been considered when assessing the most appropriate local alignment, bus priority and bus stops while taking into consideration retention of significant mature trees;
- Signal Controlled Priority is provided for northbound buses from Wilford Roundabout for a short section closer to Woodbrook College to enable a reduction in impact on properties and significant mature trees immediately north of the junction by locally shortening the bus lane extents here;
- From the Dublin Road / Stonebridge Road Junction to the Loughlinstown Roundabout in Shankill, the necessary widening is entirely to the west of the carriageway to minimize impact to properties and trees;
- From Dublin Road/ Wilford Roundabout to the Dublin Road/ Woodbrook College in Shankill, the necessary widening is entirely to the east of the carriageway to minimise impact to properties;
- The road alignment at the Upper Dargle Road junction in Bray has been further developed to avoid impact to the tree under preservation. A two-way cycle track connection was provided from the junction to tie-in to the existing two-way cycle track;
- The design has been further developed between Ravensdale Park and Dwyer Park, at the end of the Proposed Scheme, to provide for continuous cycle lane and bus lane while minimising the impact to properties and the heritage wall on the east side at Belton Terrace;
- Along the Castlestree Shopping Centre side, the Proposed Scheme provides for continuous bus lane, cycle track and footpath with the northbound bus lane commencing further north of the Bray Bridge to reduce impact to the Shopping Centre car park entrance from the Lower Dargle Road and cycle track reduced to minimum at this constraint point. The entrance to the shopping centre from the Lower Dargle Road is proposed as one-way entry only. The pedestrian crossing has been moved closer to the shopping centre entrance and the bus stop to facilitate the pedestrian desire line;

- Rebuilding of the Woodbrook Side Lodge residential property at a new location east of its current location at the Southern end of the Woodbrook estate, following its demolition to accommodate the road widening in North Bray is included as part of the Proposed Scheme;
- The design at the end of the Proposed Scheme tie-in with the Fran O'Toole Bridge Improvement Scheme proposals designed by others has been co-ordinated. It is proposed to provide a southbound bus lane and two general traffic lanes on the immediate approach to the Fran O'Toole Bridge and southbound cycle track tie-in to the Bray Bridge Improvement Scheme proposals for cantilever cycle bridge and northbound cycle track will run through the bridge cross-section;
- 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;
- 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 drawings are located in **Appendix A** of this report.

1. Introduction and Background

1.1 Introduction

This report presents the Preferred Route Option (PRO) for the Bray to City Centre CBC Scheme (hereinafter called the **Proposed Scheme**).

The Proposed Scheme has an overall length of approximately 18.5km. In addition, the section of Stonebridge Road included in the design measures approximately 200m.

The Proposed Scheme is routed along R138 and commences at the junction of Leeson Street Lower and Earlsfort Terrace on St. Stephen's Green. It runs along Leeson Street Lower and Upper, and Sussex Road. It continues along Morehampton Road and Donnybrook Road, through Donnybrook Village and on to the Stillorgan Road, serving the UCD Interchange via the Stillorgan Road Overbridge at Belfield.

The Proposed Scheme then continues on the Stillorgan Road (N11), which carries on to the Bray Road to Loughlinstown Roundabout. From Loughlinstown Roundabout it runs along the Dublin Road (R837) to St. Anne's Church and then continues south through Shankill village along the R119. It then passes through Wilford Junction and along the Dublin Road until it terminates on Castle Street in Bray, on the north side of the River Dargle crossing.

The Proposed Scheme will significantly enhance travel by public transport by providing continuous bus priority as well as improved pedestrian and cycling infrastructure to/from the City Centre and Bray. Currently, this key access corridor is characterised by traffic congestion and discontinuous, inadequate bus and cycling infrastructure, meaning that for considerable lengths 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**.

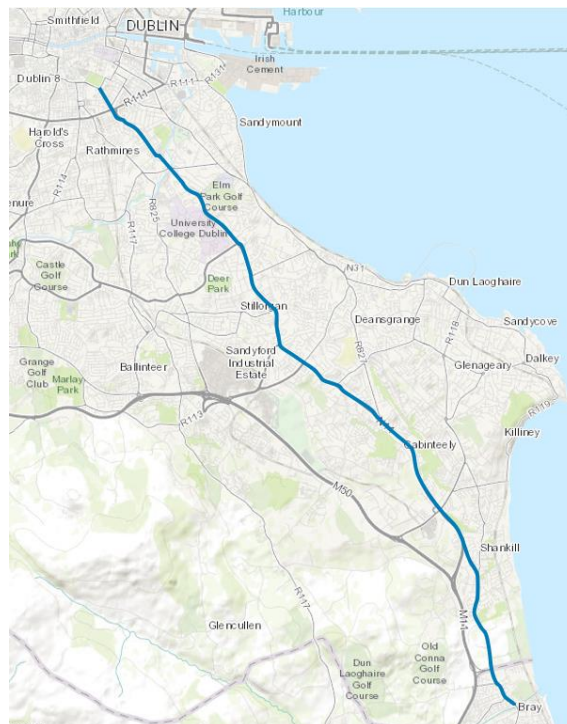


Figure 1.1: Bray to City Centre Core Bus Corridor Scheme

1.2 The Core Bus Corridor Infrastructure Works

The Proposed Scheme is one of 12 stand-alone CBC schemes to be delivered under the BusConnects Dublin – Core Bus Corridors Infrastructure Works (hereinafter 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 2022 – 2042 (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 (GDA) 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 200km 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 CBC Scheme;
- The Swords to City Centre CBC Scheme;
- The Ballymun / Finglas to City Centre CBC Scheme;
- The Blanchardstown to City Centre CBC Scheme;
- The Lucan to City Centre CBC Scheme;
- The Liffey Valley to City Centre CBC Scheme;
- The Tallaght / Clondalkin to City Centre CBC Scheme;
- The Kimmage to City Centre CBC Scheme;
- The Templeogue / Rathfarnham to City Centre CBC Scheme;
- **The Bray to City Centre CBC Scheme;**
- The Belfield / Blackrock to City Centre CBC Scheme; and
- The Ringsend to City Centre CBC Scheme.

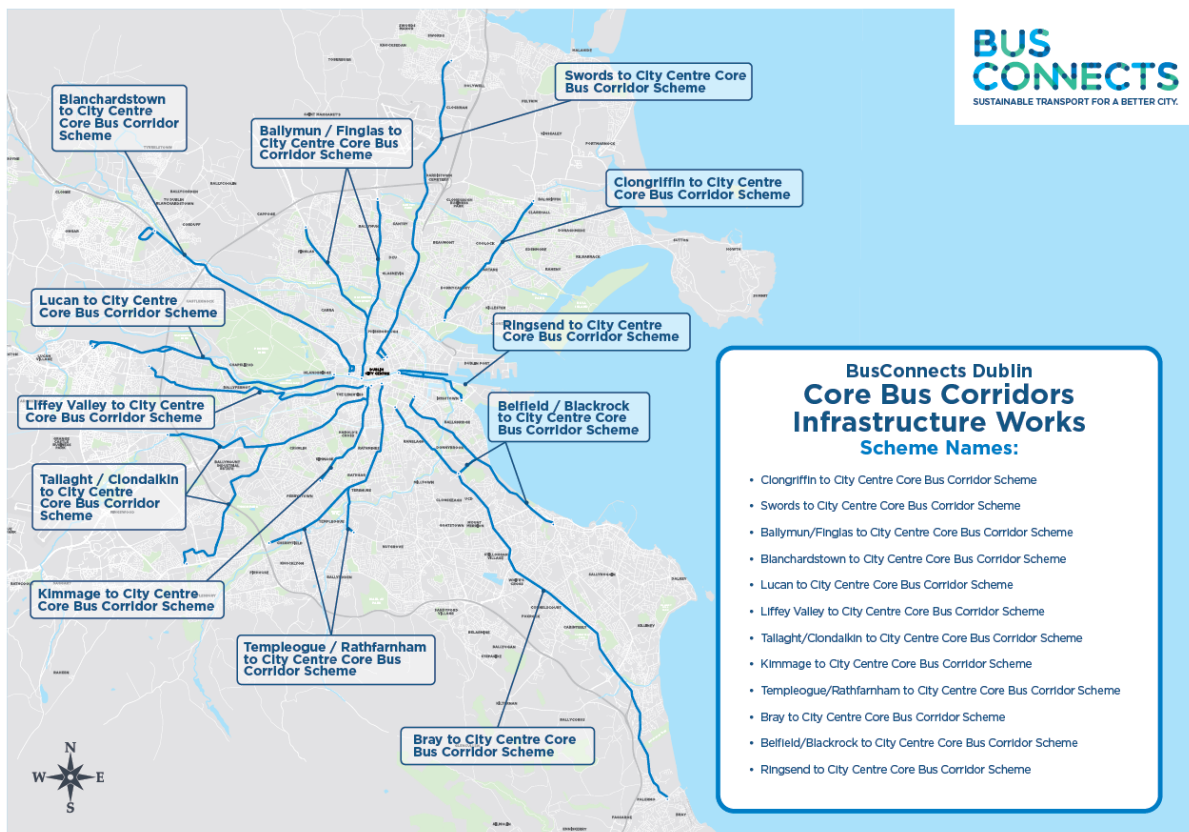


Figure 1.2: CBC Infrastructure Works

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 'Bray to City Centre Core Bus Corridor' was identified in this document as forming part of the radial Core Bus Network.

As part of this process, the 'Bray to UCD Core Bus Corridor Feasibility and Options Report', and the 'UCD to City Centre Core Bus Corridor Route Options Assessment Study Report' were published, which identified feasible options along each corridor, assessed these options and arrived at an EPR Option. These two EPR Options were then combined into a single EPR Option running from Bray to the City Centre. 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 above referenced Feasibility & Options Report.

These Feasibility and Options Assessment reports referenced above, along with their associated appendices as published, are included in **Appendix L and Appendix M**.

The Study Area Analysis and MCA for the previously proposed feasible route options are 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 and tree 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 Reports;
- 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 outlines the general background information to the CBC Infrastructure Works. It also outlines the policy context in which the CBC was developed and presents the concept of the CBC network as outlined in the Transport Strategy for the Greater Dublin Area 2016-2035 (NTA 2016) and the CBC Infrastructure Works.
- **Chapter 3: Background and 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 scheme for other road users.
- **Chapter 5: Review of Previous Route Selection Report** – This chapter is a summary of the options assessment that was previously carried out in each section of the 'Bray to UCD Feasibility and Options Report and UCD to City Centre Route Options Assessment Study Report'. An assessment has been made 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 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 options 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 (the 'GDA 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 GDA.

There are a number of primary (Routes 12, 12A, S01, S03, S04, S05), secondary (Routes C7, S01a, S02, 13E/N5, S04, S06, 13C, 13G), Inter Urban (Route D4) and Greenway (Dodder Greenway) cycle routes identified either running along or crossing the CBC.

During the earlier assessment process which identified the 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 Shankhill from Loughlinstown Roundabout to Corbawn Roundabout is identified as Secondary Route in the 2022 Greater Dublin Area Cycle Network. These routes were identified as Primary Secondary Routes in the 2013 GDA Cycle Network Plan;

- Dublin Road in Bray from Wilford Roundabout to junction with Lower Dargle Road is identified as Primary Route in the 2022 Greater Dublin Area Cycle Network. These routes were identified as Primary/ Secondary Routes in the 2013 GDA Cycle Network Plan;
- Upper Dargle Road in Bray is identified as a Secondary Route in the 2022 Greater Dublin Area Cycle Network. This route was identified as a Primary/ Secondary Route in the 2013 GDA Cycle Network Plan;
- Old Cannought Avenue Road in Bray is identified as a Secondary Route in the 2022 Greater Dublin Area Cycle Network. This route was identified as a Primary/ Secondary Route in the 2013 GDA Cycle Network Plan;
- Additional link from the Loughlinstown to Deansgrange Greenway have been added to the Primary Route along Dublin Road in Shankill, with connections at Shaganagh Park and Cemetery. These connections were not identified in the 2013 GDA Cycle Network Plan.
- Additional link from the River Dargle Greenway have been added to the Primary Route along Dublin Road in Bray, with connections at Lower Dargle Road. These connections were not identified in the 2013 GDA Cycle Network Plan.

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 Council 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**.

<i>Relevant Transport Policies</i>	
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.
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.

<i>Relevant Transport Policies</i>	
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.
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.

Table 2.1: DCC Development Plan Relevant Transport Policies

2.3.2 Dun Laoghaire Rathdown County Council Development Plan 2022 – 2028

The Dún Laoghaire-Rathdown County Development Plan (2022-2028) guides the future growth and development of the functional area of DLRCC. The Dún Laoghaire-Rathdown County Development Plan was adopted and came into effect in April 2022. A SEA, AA and Strategic Flood Risk Assessment (SFRA) were carried out as part of the DLRCDP.

At the time of writing, the Minister of State at the Department of the Housing, Local Government and Heritage, consequent to a recommendation made by the Office of the Planning Regulator under section 31AM(8) of the Planning and Development Act 2000 (as amended), had notified DLRCC of the intention to issue a Direction to the DLRCDP (DLRCC 2022).

In accordance with Section 31(4) of the Planning and Development Act 2000, those parts of the DLRCP (DLRCC 2022) referred to in the notice shall be taken to have not come into effect, namely:

- *"The O/O zone objective including the symbol, boundary of objective as set out on Land Use Zoning Maps 3, 4, 7 and 10.*
- *The text "No increase in the number of buildings permissible" as set out on Land Use Zoning Maps 1-14.*
- *The policy section on 'Notable Character Area Exclusions' under section 4.3.1.1 of Chapter 4 (pg. 84) of the Written Statement.*
- *Section 12.3.7.8 'O/O Zone' of Chapter 12 (pg. 246-248) of the Written Statement.*
- *The second paragraph of Section 12.3.3 'Quantitative Standards for All Residential Development' of Chapter 12 (pg. 236) of the Written Statement, which states: "That the requirement for certain percentages of 3-bed units in National Transport Authority Templeogue /Rathfarnham to City Centre Core Bus Corridor Scheme Preferred Route Option Report Page 25 apartments shall apply to Build To Rent developments to accord with mix on page 237."*

The above parts of the Dún Laoghaire-Rathdown County Development Plan have not come into effect and are due to be deleted from the adopted County Development Plan. It is noted that, at the time of writing, the DLRCC website states that 'The adopted development plan documents and maps are currently being amended in order to apply the requirements of the Ministerial Direction.'

The vision of the Dún Laoghaire-Rathdown County Development Plan is to 'embrace inclusiveness, champion quality of life through healthy placemaking, grow and attract a diverse innovative economy and deliver this in a manner that enhances the environment for future generations'. The Dún Laoghaire-Rathdown County Development Plan places sustainable transport and mobility as a core principle in the future development of the county.

The Dún Laoghaire-Rathdown County Development Plan states:

'The National Transport Authority's (NTA) 'Transport Strategy for the Greater Dublin Area 2016-2035' provides a framework for the planning and delivery of transport infrastructure and services in the Greater Dublin Area over the medium to long term. The Planning Authority must ensure that the County Development Plan is consistent with the Transport Strategy of the NTA. The Dublin Transport Authority Act 2008 (as amended) provides that the NTA's Transport Strategy, must be reviewed every six years. While the Draft 'Greater Dublin Area Transport Strategy 2022 - 2042' has been published, the 2016 - 2035 strategy is still in place until the Draft is finalised.'

The Dún Laoghaire-Rathdown County Development Plan recognises that increasing capacity on public transport including bus corridors is a means to promoting modal change and active travel.

It is noted that under the heading 'Promoting Active Travel: Cycling and Walking' that:

'The Core Corridors of the BusConnects programme will provide high quality facilities, segregated from the bus lanes and general traffic lanes as far as is practicable. This will enhance safety for cyclists and provide a network of key cycling routes.'

Within the transport and mobility objectives of the DLRCDP, bus improvements are identified as projects to be supported. The key policies are set out in **Table 2.2**.

Relevant Transport Policies	
Policy Objective T1: Integration of Land Use and Transport Policies	It is a Policy Objective to actively support sustainable modes of transport and ensure that land use and zoning are aligned with the provision and development of high-quality public transport systems. (Consistent with NSO 1, NPO 26 of the NPF, 64, RPO 4.40, 5.3, 8.1 and Guiding Principles on Integration of Land Use and Transport of the RSES)

<p>Policy Objective T3: Delivery of Enabling Transport Infrastructure</p>	<p>It is a Policy Objective to support the delivery of enabling transport infrastructure so as to allow development take place in accordance with the Core Strategy of this Plan and the settlement strategy of the RSES. (Consistent with RPO 4.40, 10.2, 10.3, 10.11, 10.16 of the RSES)'</p>
<p>Policy Objective T4: Development of Sustainable Travel and Transport</p>	<p>It is a Policy Objective to promote, facilitate and cooperate with other transport agencies in securing the implementation of the transport strategy for the County and the wider Metropolitan Area as set out in Department of Transport's 'Smarter Travel A Sustainable Transport Future 2009 –2020', and subsequent updates and the NTA's 'Transport Strategy for the Greater Dublin Area 2016-2035' and subsequent updates, the RSES and the MASP. (Consistent with NPOs 26, 64 of the NPF and RPOs 5.2, 5.3, 8.4, 8.7, 8.8 and 8.9 of the RSES)'</p>
<p>Policy Objective T5: Public Transport Improvements</p>	<p>It is a Policy Objective to expand attractive public transport alternatives to car transport as set out in 'Smarter Travel, A Sustainable Transport Future' and subsequent updates; the NTA's 'Transport Strategy for the Greater Dublin Area 2016-2035' and the NTAs 'Integrated Implementation Plan 2019-2024' and subsequent updates by optimising existing or proposed transport corridors, interchanges, developing new park and rides, taxi ranks and cycling network facilities at appropriate locations. (Consistent with NPO64 of the NPF, RPO 4.40, 5.2, 8.3 and 8.8 of the RSES)'</p>
<p>Policy Objective T6: Quality Bus Network/Bus Connects</p>	<p>It is a Policy Objective to co-operate with the NTA and other relevant agencies to facilitate the implementation of the bus network measures as set out in the NTA's 'Greater Dublin Area Transport 2016-2035' and 'Integrated Implementation Plan 2019-2024' and the BusConnects Programme, and to extend the bus network to other areas where appropriate subject to design, environmental assessment, public consultation, approval, finance and resources. (Consistent with RPO 8.9 of the RSES)'</p>
<p>Policy Objective T11: Walking and Cycling</p>	<p>It is a Policy Objective to secure the development of a high quality, fully connected and inclusive walking and cycling network across the County and the integration of walking, cycling and physical activity with placemaking including public realm permeability improvements. (Consistent with NPO 27 and 64 of the NPF and RPO 5.2 of the RSES)'</p>
<p>Policy Objective T12: Footways and Pedestrian Routes</p>	<p>It is a Policy Objective to maintain and expand the footway and pedestrian route network to provide for accessible, safe pedestrian routes within the County in accordance with best accessibility practice. (Consistent with NPO 27 and 64 of the NPF and RPO 5.3 of the RSES)'</p>
<p>Policy Objective T13: County Cycle Network</p>	<p>It is a Policy Objective to secure improvements to the County Cycle Network in accordance with the Dún Laoghaire Rathdown Cycle Network Review whilst supporting the NTA on the development and implementation of the Greater Dublin Area Cycle Network Plan 2013 and subsequent revisions, subject to environmental assessment and route feasibility. (Consistent with RPO 5.2, 5.3 of the RSES)'</p>
<p>Policy Objective T23: Roads and Streets</p>	<p>It is a Policy Objective, in conjunction and co-operation with other transport bodies and authorities such as the TII and the NTA, to secure improvements to the County road network – including improved pedestrian and cycle facilities, subject to the outcome of environmental assessment (SEA, EIA and AA), flood risk assessment and the planning process (RPO 8.10, RPO 8.16)'</p>

Table 2.2: DLRCC Development Plan Relevant Policies

2.3.3 Wicklow County Development Plan 2022 – 2028

The Wicklow County Development Plan (WCDP) (Wicklow County Council (WCC) 2022) sets out a strategic spatial planning framework for guiding the physical, economic and social development of the County for the period between 2022 and 2028. It includes a set of development objectives and standards for land that is to be developed and for what purposes, as well as informing decision making on public service provision.

The vision set out in the WCDP (WCC 2022) as:

‘To guide and facilitate the sustainable growth of the County in a manner which supports a deep respect for its unique natural heritage, capitalises on the potential of our towns and villages to deliver compact growth, facilitates healthy placemaking, supports the creation of self-sustaining settlements and rural areas that are attractive places to live in, work in and visit, provides for new job opportunities, embraces climate action and enables the transition to a low carbon, climate resilient and environmentally sustainable economy, improves sustainable mobility and conserves our heritage’

The key transport goals which influence the transport objectives of the WCDP.

- ‘Facilitating modal shift to more sustainable transport options by:
 - Support of investment programmes and any associated infrastructure development that deliver improvements to public transport infrastructure and services, in particular the upgrading of the Dublin – Rosslare train line, improved DART Services, bringing the Luas or other mass transit to Bray and Fassaroe and the development of improved bus services in all parts of the County;
 - Promoting development of ‘Park and Ride’ facilities, particularly for access to public transport but also to encourage carpooling and discourage single occupancy vehicles;
 - Delivering improvements to the pedestrian environment and promoting walking as a mode of transport through the provision of new, and improvement of existing, walking facilities throughout the County;
 - Delivering improvements to cycling facilities and promoting cycling as a mode of transport through the provision of new, and improvement of existing, cycling facilities throughout the County;
 - Working with the NTA on the implementation of local projects which support pedestrian and cyclist permeability, safety and access to schools and public transport;
- Facilitating the improvement of the existing road network, to enhance safety for all users, and to remove bottlenecks and hazards; and
- Ensuring that vehicular and pedestrian environments can be used by all people, regardless of their age, size, disability or ability.’

The key relevant transport policies are set out in **Table 2.3**.

	Relevant Transport Policies
CPO 12.2 Sustainable Planning and Investment in transport infrastructure	Through sustainable planning and investment in transport infrastructure, including roads and public transport systems, to reduce journey times, length, congestion and to increase the attractiveness of public transport.
CPO 12.9 Climate resilient transport infrastructure	To seek to ensure all new or upgraded transport infrastructure is climate resilient.

	Relevant Transport Policies
CPO 12.11 Improved Pedestrian and Cycling infrastructure	To improve existing or provide new pedestrian and cycling infrastructure of the highest standards on existing public roads, as funding and site constraints allow.
CPO 12.12 New or improved roads to include pedestrian and cycling infrastructure	To require all new or improved roads to include pedestrian facilities, cycle lanes / tracks (unless the scale / design of the road does not warrant such infrastructure having regard to the guidance set out in the National Cycle Manual and DMURS) and public lighting as deemed appropriate by the Local Authority.
CPO 12.13 Facilitate pedestrian and cycling linkages through developments	To facilitate the development of pedestrian and cycle linkages through and between new and existing developments to improve permeability and provide shorter, more direct routes to schools, public transport, local services and amenities while ensuring that personal safety, particularly at night time, is of the utmost priority.
CPO 12.14 Facilitate implementation of local projects which support pedestrian and cycling	To facilitate the implementation of local projects which support pedestrian and cyclist permeability, safety and access to schools and public transport.
CPO 12.15 Support interurban, strategic pedestrian and cycling route	To support the improvement / development of the inter-urban, strategic pedestrian and cycle route projects as may be identified in Wicklow County Council's Sustainable Transport Plan, as may be amended and updated during the life of the plan
CPO 12.16 Facilitate the development of cycle network as set out in GDA NCP	To facilitate and drive the significant improvement of the County's cycle network as set out in the National Cycle Plan, the NTA Greater Dublin Area Cycle Network Plan, and Wicklow County Council's Sustainable Transport Plan and strive to implement existing and prepare further, local cycle network plans.
CPO 12.20 Cooperate with NTA and relevant transport bodies for transport system	To cooperate with NTA and other relevant transport planning bodies in the delivery of a high quality, integrated and accessible transport system in County Wicklow.

Table 2.3: WCC Development Plan Relevant Transport Policies

2.3.4 Bray Municipal District Local Area Plan 2018 – 2024

WCC adopted the Bray Municipal District Local Area Plan (LAP) on 11 May 2018. The LAP notes that the strategy of this plan is to “...craft land use policies to produce settlements of such form and layout that facilitates and encourages sustainable forms of movement and transport, prioritising walking, cycling and public transport...”.

The LAP also recognises “...the progress made in the national public transport network over the past number of years, while acknowledging that deficiencies still exist within the Bray Municipal District and the wider County. The key to getting people out of their cars and into public transport is to have a reliable, convenient, frequent and fast service available, that brings people to the places they want to go, and in the case of the Bray MD this will primarily mean into (1) Bray town centre, to the transport hub at Bray train station and the main employment zones in Bray that are outside the town centre, such as along the Southern Cross Road and (2) Dublin, namely Dublin city centre, Sandyford and the M50 ring...”.

The Bray Municipal District LAP incorporates objectives to enhance movement across the region, and to deliver on the transportation needs of the Bray area, as per Policy PT1, PT2, PT6 and PT7 as follows:

Relevant Transport Policies	
PT1	To cooperate with NTA and other relevant transport planning bodies in the delivery of a high-quality, integrated transport system in the Bray MD area.
PT2	To support and facilitate the implementation of measures to improve overall accessibility, public transport and walking / cycling opportunities within the Municipal District and between the Municipal District and other centres of population and activity identified in the Bray and Environs Local Transport Study, currently being undertaken by the NTA, Wicklow County Council and TII.
PT6	To improve the capacity of the N11 / M11 in a manner capable of facilitating greater free flow of public transport and reducing congestion at junctions serving Bray.
PT7	To promote the delivery of improved and new bus services both in and out of the District but also within the District by: <ul style="list-style-type: none"> • facilitating the needs of existing or new bus providers with regard to bus stops and garaging facilities (although unnecessary duplication of bus stops on the same routes / roads will not be permitted); • facilitating the provision of bus priority where a requirement for such is identified by the NTA; • requiring the developers of large-scale new employment and residential developments in Bray that are distant (more than 2km) from train / LUAS stations to fund / provide feeder bus services until public bus services have been extended to that location.

Table 2.4: Bray Municipal District LAP Relevant Transport Policies

2.3.5 Stillorgan Local Area Plan 2018 – 2024

DLRCC adopted the Stillorgan Local Area Plan (LAP) on 10 September 2018. The Stillorgan LAP notes that the strategy of the plan is to “...enhance the sense of place and community within Stillorgan, improving its vitality and viability as a District Centre. The Plan strategy is to seek a transformative improvement in the quality of the public realm where priority movement for pedestrians, cyclists and public transport will be ensured and the creation of a high quality age friendly environment will be a prerequisite. The influence and impact of the private car on the environs of the District Centre will be moderated.”

In relation to public transport, the LAP notes that “The LAP Area is presently well-served by bus infrastructure with a significant number of Dublin Bus Routes providing access to both the City Centre and Dún Laoghaire Town Centre. The N11 QBC is the premier bus corridor in the Dublin Metropolitan Area with the 46A operating the highest frequency service on the overall Dublin Bus Network with 8-minute headways during daytime. This service offers a journey time from Stillorgan to Stephens Green of approximately 25 minutes.

The National Transport Authority (NTA) plans to redesign Dublin’s bus system with continuous bus corridors, a redesign of the network of buses, cashless fare payments and a redesign of the bus livery. This project, ‘BusConnects’, will have implications for the Stillorgan QBC, which has been designated for improvement.”

The Stillorgan Local Area Plan incorporates objectives to enhance movement across the region, and to deliver on the transportation needs of the Stillorgan area, as per Policy MV1, MV2, MV3, MV5, MV6 & MV7 as follows:

Movement and Public Transport Objectives	
MV1	Dún Laoghaire–Rathdown Council will co-operate and liaise with the NTA and TII in relation to securing appropriate improvements to the road network within the Plan Area in accordance with the Stillorgan Village Area Movement Framework Plan. These improvements will be brought to the Dundrum Area Committee for consultation.
MV2	It is an objective of the Council to promote sustainable transport forms such as walking, cycling and public transport as set out in the Government’s ‘Smarter Travel, A Sustainable Transport Future 2009 – 2020’.
MV3	It is an objective of the Council to provide for high-quality pedestrian and cycle network within the LAP Area with high levels of permeability, passive surveillance and supervision where feasible and to ensure that this network will provide attractive legible and direct links to the District Centre, Bus Stops, Stillorgan Luas Stop and the wider area outside the Plan Boundary.
MV5	It is an objective of the Council to ensure that all proposals for new roads, streets and residential layouts comply with the ‘Design Manual for Urban Roads and Streets’ (DMURS, 2013) which focuses on the needs of pedestrians, cyclists and public transport users.
MV6	It is an objective of the Council to ensure that all new cycling infrastructure be provided in accordance with the standards set out in the ‘National Cycle Manual’ (2012) published by the NTA, where practicable, recognising the challenges in retrofitting infrastructure within the existing road network.
MV7	It is an objective of the Plan that the Planning Authority will encourage the NTA, as the responsible statutory body, to increase the frequency of bus services on the Old Dublin Road, serving the Stillorgan Shopping Centre in order to cater for those with mobility issues and senior citizens living in the wider Kilmacud / Stillorgan area.

Table 2.5: Stillorgan LAP Relevant Transport Policies

2.4 The Aim and Objectives of Delivering the Bray to City Centre Core Bus Corridor Scheme

The aim of delivering the Bray to City Centre CBC 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 Bray to City Centre CBC Feasibility and Options Reports 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 Bray to UCD Feasibility and Options Report, and the UCD to City Centre Route Options Assessment Study Report were 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 Proposed Scheme.

3.2 First Non-Statutory Public Consultation – Emerging Preferred Route

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

There were 1,225 submissions received relating to the Bray to City Centre CBC Scheme. These submissions ranged from individual submissions by residents, commuters and local representatives, to detailed proposals from public bodies, specialists, various associations and private sector businesses. These submissions comprised emails (1,148), letters (41) and meeting notes recorded by the NTA (36).

A brief summary of the feedback received on the Proposed Scheme during the Non-Statutory Public Consultation is presented in this section of the report.

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

- Proposals at Shankill village, specifically road widening, tree loss, lack of provision for cyclists and impacts on the village centre;
- Access and parking, particularly removal of access to Corbawn Lane from Dublin Road, access to the supermarket through Beechfield Manor and parking in Shankill village centre, St Anne Church and Donnybrook village including Church of the Sacred Heart ;
- Anticipated increase in traffic volumes;
- Impact on local businesses, specifically in Donnybrook, Bray and Shankill due to impact on parking and pedestrian access;
- Community, and the perceived impact that wider roads would have on community cohesion;
- Safety and speed, particularly the perception that bus lanes would mean faster general traffic and less safety for pedestrians;
- Land acquisition and accommodation works with general issues around the impact on property frontage and front gardens and loss of parking;
- Construction stage issues and impacts on residents and businesses in particular Donnybrook and Shankill;
- Bus stops and bus service, including in particular the removal of certain bus stops and rationalisation;
- Landscaping, specifically the loss of trees along the roadside;
- Air pollution, perceived to increase on assumption that more traffic would use roads if bus lanes added;
- Cyclists, and specifically safety along busy roads and at junctions;
- Noise and vibration, particularly if bus lanes are being brought closer to properties in particular on narrow sections through Lesson Street, Donnybrook and Shankill;
- Unsuitable design solutions; and
- Heritage and conservation, specifically the impact on adjacent old boundary walls.

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 the Draft Preferred Route Option

Following the first 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:

- 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 **Chapter 6** of this report. 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:

- The starting point of the Proposed Scheme was changed to Leeson Street Lower Junction on St. Stephen's Green, as it is considered that sufficient bus infrastructure and cycle segregation currently exists beyond this point;
- A fully segregated cycle track was proposed on the northbound approach to St. Stephen's Green Junction along Leeson Street Lower to improve cycling facility. However, this would have an impact on the existing heritage kerb and footpath and the design was further developed and discussed in Chapter 5 and Chapter 6;
- Continuous bus priority and segregated cycle track were provided in each direction along Morehamptom Road and Donnybrook Road through Donnybrook Village. This was facilitated through bus lanes and Signal Controlled Priority. From Mulberry Lane to Rampart Lane the northbound bus lane is removed to allow for two reduced width segregated cycle tracks, while the southbound bus lane has been retained along this narrow section.;
- Lane cross sections either side of the Anglesea Road junction on the Stillorgan Road and Donnybrook Road were assessed to provide the optimum lane configuration. The revised lane configuration between Eglinton Road and Anglesea Road Junction has two outbound general traffic lanes and one inbound general traffic lane. The northbound straight ahead and left-turn lane to Beaver Row from the Stillorgan Road were combined to reduce land impacts on the Church of Sacred Heart in Donnybrook;
- UCD Interchange proposals were incorporated in co-ordination with UCD Masterplan, following initial design development by UCD;
- Removal of the proposed footpath along the N11 between Cornelscourt and Kilbogget junction as it was considered a non-desired pedestrian link, with alternative walking routes available on adjacent quieter roads;
- In order to reduce the impacts on the properties on the Dublin Road between Loughlinstown Roundabout and Stonebridge Road, additional options for bus priority and cycle provision were assessed and the proposed cycle route required cyclists to share bus lanes between Loughlinstown Roundabout and Stonebridge Road;
- A two-way cycle track was added to link Corbawn Lane to the two schools on the Stonebridge Road;
- The closure to the Corbawn Lane was revised to provide exit only onto Shanganagh Road. A dedicated right turn was proposed from Shanganagh Road onto Beechfield Manor;
- The introduction of the Signal Controlled Priority with a reduced speed limit providing improved safety removed the need for the bus lane through the Shankill Main Street, therefore reducing the impact on properties, parking and trees between the junction of Dublin Road and Shanganagh Road and the Quinn's Road Junction;

- The southbound bus lane from Quinn's Road Junction to after Crinken Lane Junction was removed and Signal Controlled Priority was proposed to reduce impact on properties and trees;
- Revisions of the layout past Shanganagh Park and Shanghanagh Cemetery with southbound cycle track running through the Shanghanagh Park and behind the roadside treeline along the Cemetery with northbound cycle track running along the main Dublin road. This was further developed into two-way cycle track for the Preferred Option and discussed in section 3.4; Between Quinn's Road and Wilford Junction it was proposed to relocate sections of footpath and cycle tracks behind the existing roadside treeline and therefore retain treeline vista;
- The end point for the Emerging Preferred Route was at the south side of Fran O'Toole Bridge on Bray Main Street. In developing the Preferred Route Option, this end point was changed to the northern side of the bridge where it has been designed to tie into the proposed Bray Bridge Improvement Scheme.

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

In March 2020 the Draft PRO was published with the second round of Non-Statutory Public Consultation running from 4th March 2020 through to 17th April 2020. The Information Brochure published as part of this consultation is included in **Appendix O** of this report.

While this Non-Statutory Public Consultation 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 forty (40) submissions received relating to the Proposed Scheme (compared to 1225 submissions following the First 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, meetings with resident associations and one-to-one meetings were held as part of the process. Refer to **Appendix C** of this report for the Public Consultation Submission Report – 2nd and 3rd Non-Statutory Public Consultation.

A brief summary of the feedback received on the Proposed Scheme during this second round of Non-Statutory Public Consultation is presented below; in general, the comments were similar to those received in the first round of Non-Statutory Public Consultation:

- Effects on community and landscape;
- Increased traffic impact;
- Recommendations for cycle design;
- Coach stops in Shankhill and related congestion;
- Proposal around junction with Corbawn Lane and parking in Shakhill;
- Removal of segregated cycle infrastructure through Shankill; and
- Recommendations for junction operations based on local knowledge.

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; and
- Issues raised during meetings with community forum, resident groups and one-on-one meetings with directly impacted landowners.

As part of this review, 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 **Chapter 6** of this report. The key route developments between the second round of Non-Statutory Public Consultation and the third round of Non-Statutory Public Consultation are summarised below:

- Cross sections along Leeson Street Lower were assessed to minimise impact on the heritage kerbs and to provide improved safety for cyclists, which led to the inclusion of a bus gate and associated general traffic diversion along Hatch Street. Traffic between Hatch Street / Pembroke Street Upper and St. Stephen's Green is now proposed to be restricted to buses and local access only through provision of Bus Gate. Local vehicular access will be maintained to Leeson Street Lower from Hatch Street / Pembroke Street Upper Junction. Inbound general traffic is proposed to be diverted along Hatch Street Lower and Earlsfort Terrace; this diversion requires the introduction of two-way general traffic on Earlsfort Terrace between the Hatch Street Lower Junction and St. Stephen's Green. This reduces the impact on heritage kerbing and the existing footpath widths on this busy pedestrian street;
- Relocation of bus stops on Leeson Street Lower. Removal of inbound bus stop at the Donnybrook Bus Depot;
- Further design development of the proposed UCD Bus Interchange Facility;
- A short section of northbound cycle track along the N11 was proposed to be diverted locally along St. Brigid's Church Road to improve cycle track safety. Additional traffic calming measures are proposed on St. Brigid's Church Road to accommodate this;
- It was proposed to close the junction of the Hill Road and the N11 Stillorgan Road to maintain continuous segregated cycling facility along this location for safety of the cyclists;
- At Galloping Green, the southbound segregated cycle track along the N11 was diverted along Belmont Terrace, to improve cycle track safety and allowing for the relocation of a bus stop, and retention of as much side road parking as possible;
- At Merrion Grove / The Rise Junction along N11, a two-way cycle track provision was made to the Colaiste Eoin school for the safety of the school-going cyclists and providing more direct route for northbound cyclists;
- The island bus stop at South Hill Church was revised to shared landing bus stop to reduce impact to the Church following feedback from public consultation;
- At Patrician Villas / St Laurance Park, the design was updated to lengthen the pedestrian subway on the east side and add new footpaths and cycle track will run parallel to the N11 mainline in both directions;
- Change of the pedestrian link to South Park to move it closer to the junction with Old Bray Road to improve pedestrian movement and access to the bus stop;
- The service road was retained as two-way between Old Cherrywood Road Junction and Loughlinstown Roundabout, following change from a one-way road under the EPR option. The design was further developed after the 3rd Non- Statutory Public Consultation;
- South of the Shankill Main Street, the design was revised to move the northbound Signal Control Priority from Quinn's Road Junction to a new location between Cherrington Drive and Castle Farm. The design was further developed for provision of right turning lane to Olcovar development and signalisation of Olcovar junction;
- The proposal to introduce a lower speed limit 30km/h through the village (from Olcovar junction to St Anne's Church) helping to reduce speed of through traffic and improve safety;
- As Shanganagh Park and Shanghanagh Cemetery, the design was further developed to move both northbound and southbound cycle track into the Shanghanagh park and along the Shanghanagh Cemetery boundary along with the southbound footpath, which allowed protection of the roadside trees in front of

Shanganagh Park and Shanghanagh Cemetery in addition to reduced impact on the Shanghanagh Park play area. The design was integrated with the Shanghanagh Park Masterplan;

- The route alignment was further developed taking into consideration other third-party developments, refined bus stops and bus priority provisions for the section of the route that runs from Shankill village and Wilford Junction;
- Inclusion of new junctions at proposed and approved housing development sites south of Shankill at Shanghanagh Castle and Woodbrook Strategic Housing Development;
- Signal Controlled Bus Priority was applied for northbound buses from Wilford Roundabout to closer to Woodbrook College to enable a reduction in impact on properties and significant mature trees immediately north of the junction by locally shortening the bus lane extents here;
- The design was also further developed between Ravenswell Road and Dwyer Park to provide for continuous cycle lanes and bus lanes while minimising the impact on properties and the heritage wall at Belton Terrace;
- The road alignment at the Upper Dargle Road junction in Bray was further reviewed and updated to avoid impact to the Pine tree under preservation (Tree Protection Order). A two-way cycle track connection was provided from the junction to tie-in to the existing two-way cycle track through the grounds;
- On Castle Street in Bray pedestrian crossing locations have been revised to better serve the main desire lines and pedestrian access points; and
- The design at the end of the Proposed Scheme tie-in with the Fran O'Toole Bridge Improvement Scheme proposals designed by others was co-ordinated. It is proposed to provide a southbound bus lane only and two general traffic lanes on the immediate Castle Street approach to the Fran O'Toole Bridge and southbound cycle track tie-in to the Bray Bridge Improvement Scheme proposals of cantilever cycle bridge and northbound cycle track will run through the bridge cross-section.

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 CBC Infrastructure Works took place from 4 November 2020 until 16 December 2020 on the updated Draft PRO. The Information Brochure published as part of this consultation is included in **Appendix P** 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 16 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 reports were made available on the BusConnects website (<https://busconnects.ie>) to view and download as part of the third Non-Statutory Public Consultation. In addition, landowner meetings were held over the phone and/or online, and minutes were recorded as part of the consultation process.

There were 582 submissions received as part of the Bray to City Centre CBC third Non-Statutory Public Consultation and 134 general submissions. These submissions ranged from individual submissions by residents, commuters and local representatives, to proposals from various associations and private sector businesses.

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

- Concerns of designs being unsuitable in particular proposals around the junction with Corbawn Lane and removal of the roundabouts which are used by locals to undertake U-turns at either end of the village;
- Future traffic volumes;
- Access and parking restrictions;
- Landscaping and tree impact;
- Community impacts;
- The wider bus network;
- General safety and speed concerns;
- Heritage and conservation;
- Cycle safety and cycle infrastructure provision; and
- Air pollution.

The issues raised during the third Non-Statutory Public Consultation have been considered in the further development of the PRO. Further detail on these issues can be found in the Public Consultation Submissions Report – 2nd and 3rd Non-Statutory Public Consultation in **Appendix C**.

4. The Study Area

4.1 Introduction

In the previously completed Options and Feasibility Reports, the study area was taken to consider roads within 500m of the existing bus corridor. The study areas remains the same as outlined in the Bray to UCD Feasibility and Options Report and the UCD to City Centre Route Options Assessment Study Report (hereinafter collectively called the Feasibility and Options Reports) and is shown in **Figure 4.1** and **Figure 4.2**. The study areas for the two separate studies have a common overlapping merge point between Belfield and Foster's Avenue along the R138 Stillorgan Road, which allowed the two study areas to be combined into a single study area. This has required the reassessment of certain elements within the MCAs to ensure a consistent and accurate analysis of the elements within the new overall study area.

The study area from the UCD to City Centre Route Options Assessment Study Report is shown in **Figure 4.1**. This study area has been renumbered for this combined assessment as follows:

- Section 1: St. Stephen's Green to UCD (St. Stephen's Green / Leeson Street Lower to Foster's Avenue)

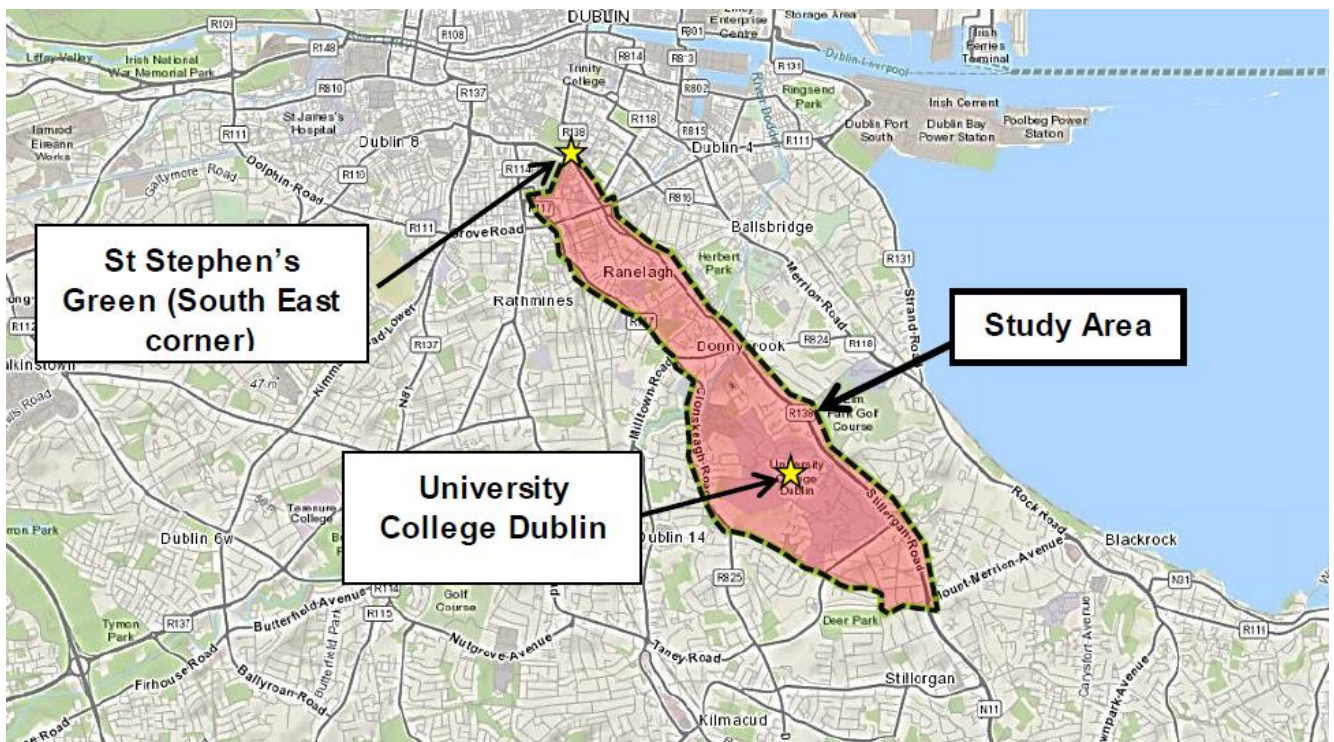


Figure 4.1: UCD to City Centre Route Options Assessment Study Report Study Area

The study area from the Bray to UCD Feasibility and Options Report is shown in **Figure 4.2**.

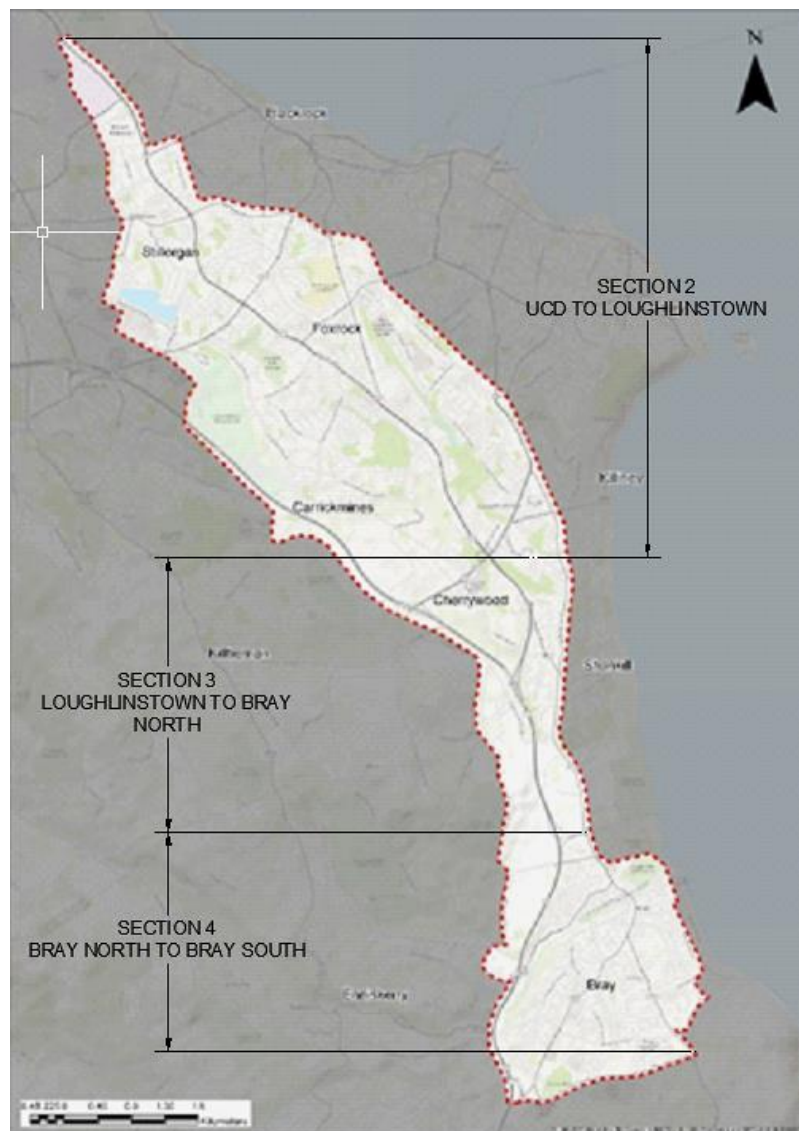


Figure 4.2: Bray to UCD Feasibility and Options Report Study Area

This study area was split into three sections, as shown in **Figure 4.2**. They have been renumbered for this combined assessment as follows:

- Section 2: UCD to Loughlinstown (Foster's Avenue to Wyattville Road);
- Section 3: Loughlinstown to Bray North (Wyattville Road to Wilford Roundabout); and
- Section 4: Bray North to Bray South (Wilford Roundabout to Southern Cross Road).

The combined study area remains the same as the two individual study areas from the previous route options reports.

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 four sections as per the Feasibility and Options Reports.

4.2.1 Section 1

Section 1 consists of the R138 from the Leeson Street Lower / St. Stephen's Green Junction, as far as Foster's Avenue. The Section 1 study area start point has been chosen as the junction of Leeson Street Lower with St. Stephen's Green and Earlsfort Terrace. It was not considered necessary to extend the study area beyond this point due to the extent and quality of current transport infrastructure from this point northwards, and to avoid any interactions with other scheme study areas.

This inner extent of the study area section was determined for the following reasons:

- It facilitates connectivity to and from the key trip attractor of the Grafton area commercial and business district on a major commuter route.
- It ties into the existing city centre bus network on St. Stephen's Green which provides for a clear start/end to the study area where the high standard of bus infrastructure continues into the city centre.
- It allows for general traffic management in the area to enhance sustainable transport provision, such as the management of town-bound general traffic via a revised access point along Earlsfort Terrace which allows for more space on Leeson Street Lower for pedestrians, bus lanes and cycle tracks.
- It aligns with the Dublin City Development Plan objectives to promote modal change and active travel, by allowing for increased capacity and reliability along the CBC as far as the city centre, which also aligns with the NTA Transport Strategy for the GDA 2016 – 2035. The Dublin City Development Plan outlines the key city centre areas which the Proposed Scheme will act as a gateway to at the Leeson Street Lower Junction with St. Stephen's Green, where the Proposed Scheme is proposed to start from:

"A number of key transport proposals have also recently been set out in the draft 'Dublin City Centre Transport Study', which has been jointly prepared by the National Transport Authority and Dublin City Council. Bus, rail, BRT, cycle and pedestrian network proposals are all included, along with specific measures central to achieving these, which focus on key city centre areas such as College Green, Westmoreland Street, D'Olier Street, Suffolk Street, St Stephen's Green North, the Quays, and interchange locations."

- It provides a dedicated sustainable transport linkage to the proposed MetroLink station at St. Stephen's Green, and the LUAS stop on the other side of St. Stephen's Green.
- It provides a dedicated cycle link to the edge of the South Core City Centre (GDA Cycle Network Plan, Proposed Cycle Network Area), providing segregated or enhanced cycle facilities to this point where the city centre facilities start. In doing so it addresses the current pinch points on the cycle network along Leeson Street, ensuring these can be upgraded.

4.2.2 Section 2

Section 2 extends from UCD to Loughlinstown. This extends as far east as Deansgrange and Glenageary, and as far west as Sandyford, Carrickmines and Cherrywood. This area covers a broad range of residential, educational, industrial and commercial trip attractors along a busy commuter route. It also includes the primary routes 12, 12A and S05 from the GDA Cycle Network.

4.2.3 Section 3

Section 3 extends from Loughlinstown to Bray North. This extends as far west as Ferndale Road. It takes in the wider Shankill area, with all the associated residential, educational and commercial trip attractors. It also includes the primary route 12A from the GDA Cycle Network.

4.2.4 Section 4

The study area for Section 4 covers Bray North to Bray South. The Section 4 study area end point extends as far as the urban area of Bray bounded by the N11 to the west and the Southern Cross Road to the south. The Proposed Scheme infrastructure provision terminates at the River Dargle to the north of Bray Town, at the Castle Street / Lower Dargle Road Junction adjacent to the Fran O'Toole Bridge, where the Proposed Scheme will tie into the proposed Bray Bridge Improvement Scheme.

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 Proposed Scheme within the defined study area. These are considered within the Proposed Scheme assessment process and include the following:

- Availability of space between building lines;
- Public parks;
- Trees and other natural and ecological features including rivers and streams;
- Existing and committed future development along the route;
- Architectural, archaeological and heritage sites and features;
- Bridges;
- Donnybrook Stadium;
- University College Dublin;
- Morehampton Road Wildlife Sanctuary;
- Shanganagh Cemetery;
- Existing urban and sub-urban roads and street networks; and
- M11 and M50 motorways.

4.4 Integration with Existing and Proposed Public Transport Network

One of the key objectives of the Proposed Scheme 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 EPR Option was developed to provide improved existing or new interchange opportunities with other transport services, including:

- Potential for interchange with other CBC schemes:
 - Potential for interchange with Belfield / Blackrock to City Centre CBC Scheme
- Potential for interchange with the Greater Dublin Area (GDA) Cycle Network Plan;
- Potential for interchange with the existing bus network and the proposed BusConnects Network Redesign including orbital, radial and local services:
 - Existing bus routes – 2, 7b, 7d, 11, 17, 25x, 27x, 32x, 37, 39, 39a, 41x, 45a, 45b, 46a, 46e, 47, 51x, 63, 63a, 66x, 67x, 75, 75a, 77x, 84, 84a, 84x, 111, 116, 118, 133, 133x, 145, 155, 164, 175, 180, 181, 185, 533, 700, 702, 740, 740-A, 824, 845, 904, 910, UCD06, X2;
 - Revised Dublin Bus Network Redesign routes – , E1, E2, B1, B2, S2, S4, S6, S8, L13, L25, L26, L27, L22, L11, L15, L14, P13, P16, P11, P12, X1, X2; and
 - Potential for interchange with UCD Bus Interchange Facility;
- Metropolitan Light Rail – LUAS, DART, Metro:

- Potential for interchange with the Dublin MetroLink, DART;
- Metropolitan Heavy Rail:
 - N/A.

Figure 4.3 and **Figure 4.4** below show Dublin Bus Existing Services and an extract from BusConnects Network Redesign maps which shows the different interfaces along the corridor between Bray to City Centre which is primarily along the proposed E Spine.

4.4.1 Existing Bus Services

The Bray to City Centre corridor carries over 3,900 passengers in the peak periods (2017 Quality Bus Corridor Monitoring Report, NTA). The primary bus routes along the Bray to City Centre corridor are indicated in **Figure 4.3** which highlights potential for interchange with the existing public transport services and are listed below:

- Route 7b – Beechfield Manor to Mountjoy Square;
- Route 7d – Castle Street to Mountjoy Square;
- Route 11 – Blackthorn Road – Saint Pappin's Road;
- Route 17 – Blackrock to Rialto;
- Route 25x – Dodsboro Road to University College Dublin;
- Route 27x – Templeview Avenue to University College Dublin;
- Route 32x – Swords Road to University College Dublin;
- Route 37 – Wilton Terrace to Blanchardstown Centre;
- Route 39 – Ongar Road to Burlington Road;
- Route 39a – Ongar Road to University College Dublin;
- Route 41x – Knocksedan to University College Dublin;
- Route 45a – Kilmacanogue to Dún Laoghaire;
- Route 45b – Kilmacanogue to Dún Laoghaire;
- Route 46a – Phoenix Park to Dún Laoghaire;
- Route 46e – Blackrock to Mountjoy Square;
- Route 47 – Belarmine Plaza to Poolbeg Street;
- Route 51x – Dunawley Avenue to University College Dublin;
- Route 63 – Kiltarnan Village to Dún Laoghaire;
- Route 63a – Kiltarnan Village to Dún Laoghaire;
- Route 66x – Straffan Road to University College Dublin;

- Route 67x – Salesian College to University College Dublin;
- Route 75 – The Square Tallaght to Dún Laoghaire;
- Route 75a – The Square Tallaght to Dún Laoghaire;
- Route 77x – Bianconi Avenue to Dún Laoghaire;
- Route 84 – Temple Road to Newcastle Road;
- Route 84a – Temple Road to Newcastle Road;
- Route 84x – Trinity College to Newcastle Road;
- Route 111 – Brides Glen to Dún Laoghaire;
- Route 116 – Parnell Square North to Ballyboden Church;
- Route 118 – Eden Quay to Enniskerry Road;
- Route 133 – Connolly Station to Main Street;
- Route 133x – Dublin Airport to Wicklow Gaol;
- Route 145 – Heuston Train Station to Kilmacanogue;
- Route 155 – IKEA Ballymun to Bray Station;
- Route 164 – Merlyn Park to University College Dublin;
- Route 175 – Citywest to University College Dublin;
- Route 180 – The Diamond to University College Dublin;
- Route 181 – Glendalough to Dawson Street;
- Route 185 – Enniskerry to Bray Station;
- Route 533 – Skerries to University College Dublin;
- Route 700 – Dublin Airport to Dublin City Centre;
- Route 702 – Dublin Airport to Charlesland Road;
- Route 740 – Dublin Airport to Redmond Square;
- Route 740-A – Dublin Airport to Gorey Main Street;
- Route 824 – Mountmellick to University College Dublin;
- Route 845 – Birr Square to Saint Stephen's Green House;
- Route 904 – Marshes Shopping Centre to University College Dublin;
- Route 910 – Grange Rath to University College Dublin;

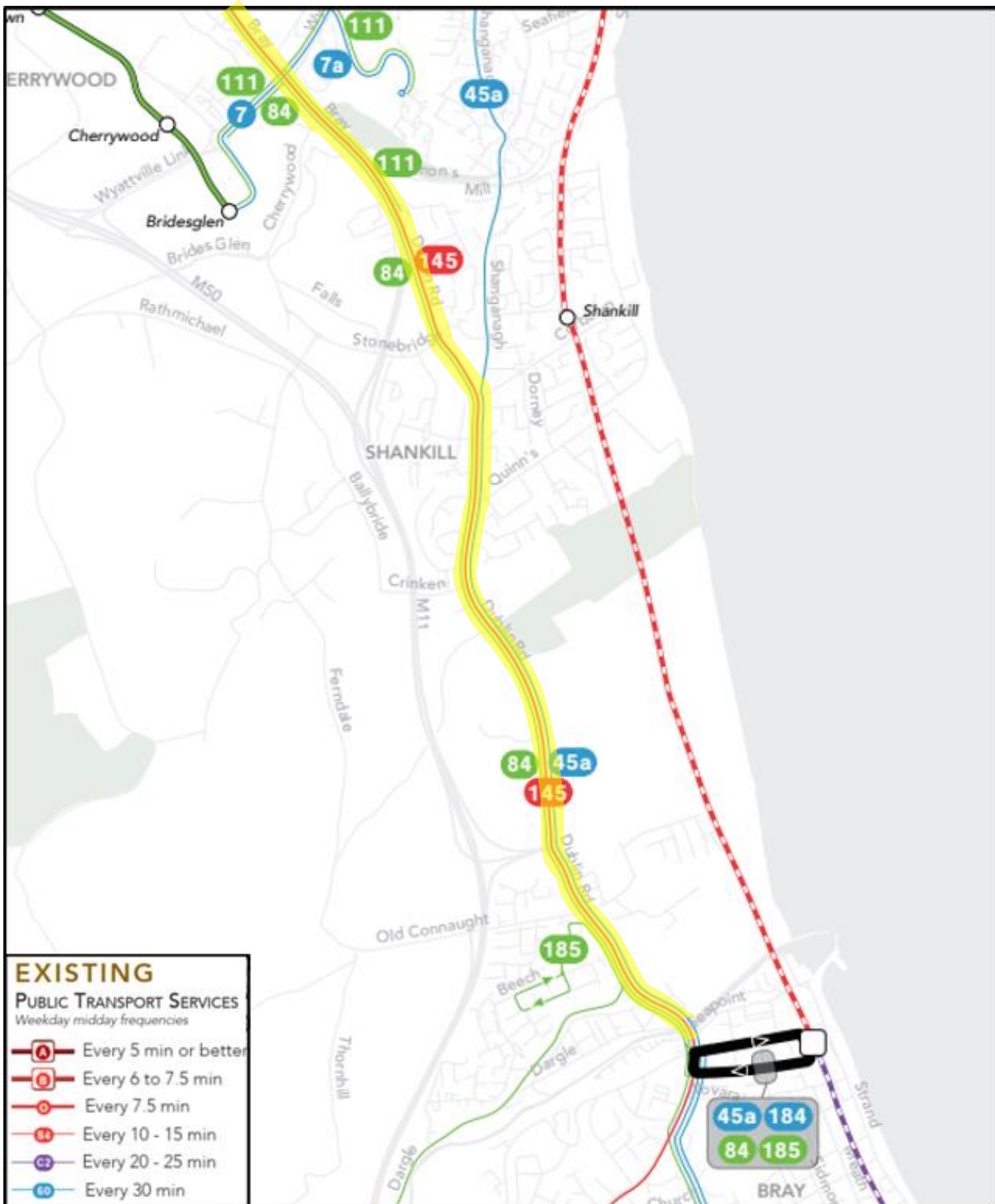


Figure 4.3: Extract from Dublin Bus Existing Services

(Bray to City Centre CBC highlighted in yellow line)

4.4.2 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 4.4** extracted from the Dublin Area Revised Bus Network Maps, highlights the potential for interchange with other proposed bus routes along the Bray to City Centre CBC.

Figure 4.4 shows the final output from this study and illustrates that the E Spine (E1, E2) runs from the City Centre to the South, serving areas along the main Bray 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

- B1 Ongar – City Centre – UCD; and
- B2 Ongar North – Clonsilla – City Centre - UCD.

B Spine route potential for interchange with the Proposed Scheme at Nutley Lane and UCD Interchange.

Orbital Routes

- S2 Heuston – Kimmage – Ballsbridge – Poolbeg;
- S4 Liffey Valley – Ballyfermot – Crumlin – Milltown – UCD;
- S6 Tallaght – Dundrum – UCD – Blackrock; and
- S8 Tallaght – Sandyford – Dún Laoghaire.

Orbital Route potential for interchange with the Proposed Scheme – S2 at Appian Way / Waterloo Road, S4 and S6 at UCD Interchange, S8 at Newtownpark Avenue / Leopardstown Road.

Radial Routes

- 60 Red Cow – Cherry Orchard – Decies Rd. – Spencer Dock;
- 73 Marino – City Centre – Walkinstown; and
- 80 Liffey Valley – City Centre – Ballinteer.

Local Routes

- L13 Kilternan – Stillorgan Village – UCD – Ringsend;
- L25 Dundrum – Dún Laoghaire;
- L26 Kilternan – Cabinteely – Deansgrange – Blackrock;
- L27 Ballyogan – Cabinteely – NRH – Dún Laoghaire;
- L22 Brides Glen – Sally Glen Road – Dún Laoghaire;
- L11 Kilmacanogue – Bray – Dún Laoghaire;

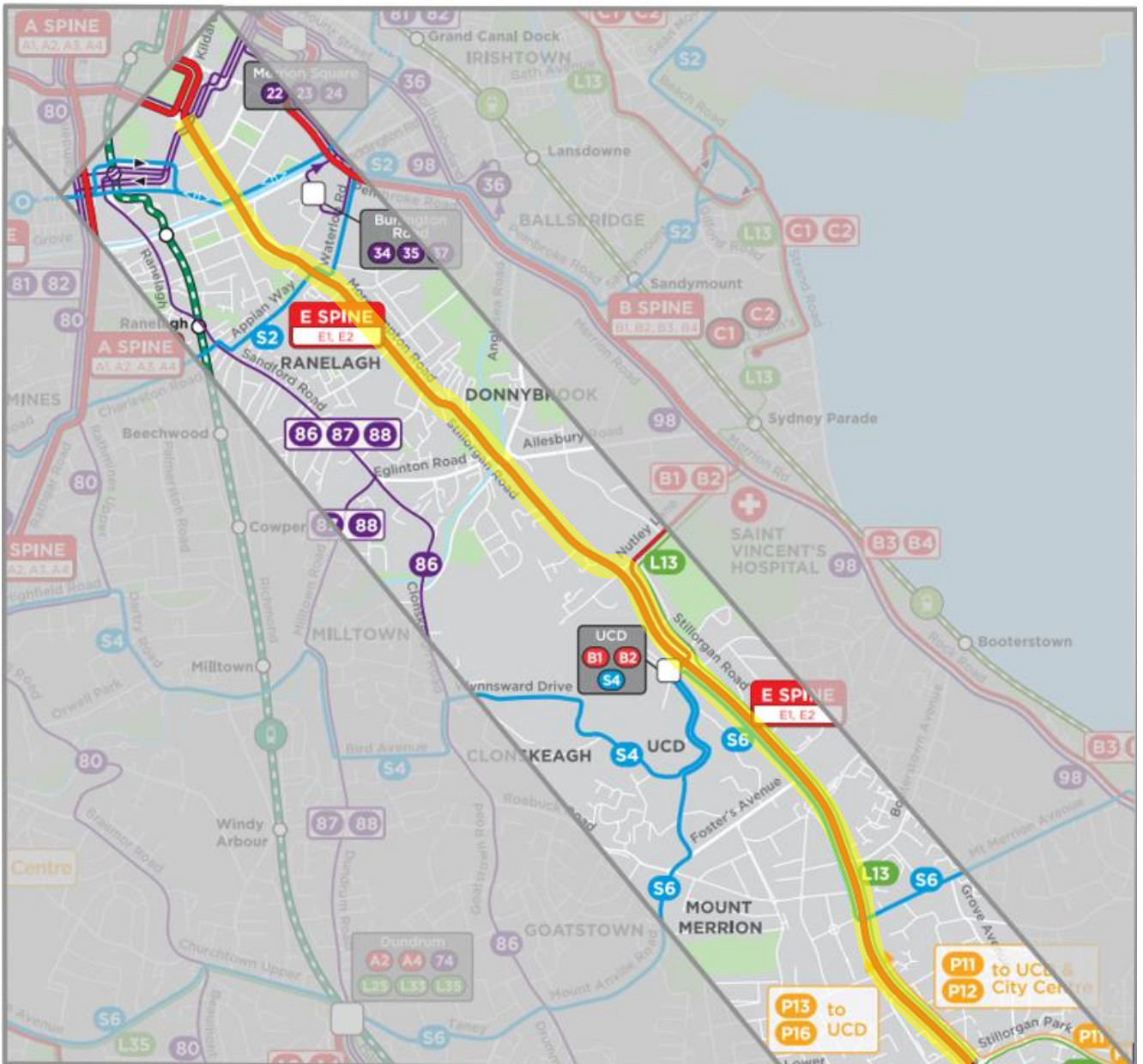
- L15 Shop River – Enniskerry – Bray; and
- L14 Southern Cross Road – Bray Station – Palermo.

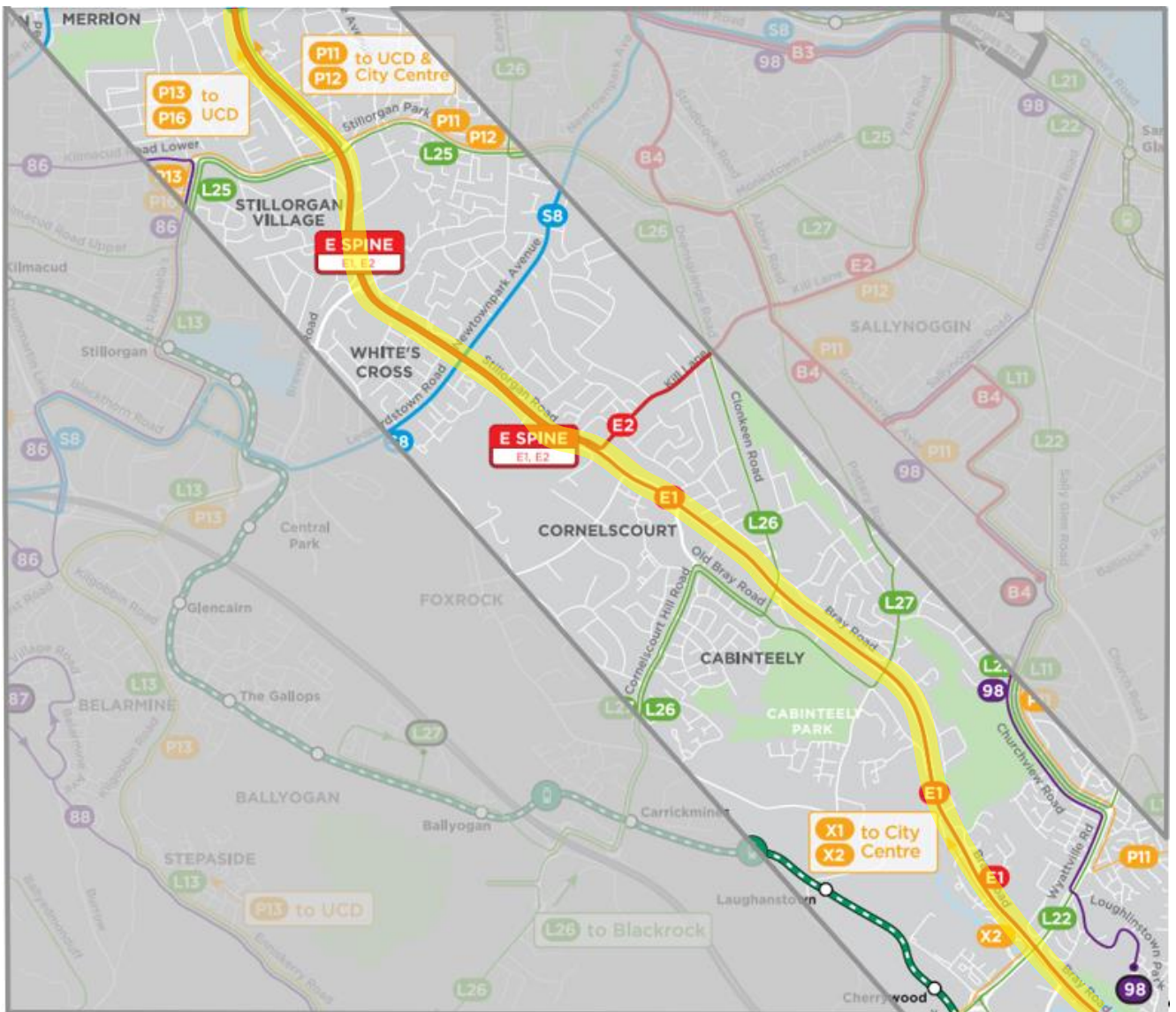
Local route potential for interchange with the Proposed Scheme - L13 between Nutley Lane and Stillorgan, L25 at Lower Kilmacud Road, L26 at Clonkeen Road, L27 at Johnstown Road, L22 at Wyattville Road, L11 between St. Anne's and Castle Street, L14 at St. Peter's Road, and the L15 at Upper Dargle Road

Peak Only / Express Routes

- P13 Kiltarnan – Stepside – UCD;
- P16 Whitechurch – UCD;
- P11 Shankill – Ballybrack – City Centre;
- P12 Dalkey – City Centre;
- X1 Kilcoole – Southern Cross – City Centre; and
- X2 Newcastle – Kilcoole – Southern Cross – City Centre.

Peak route potential for interchange with the Proposed Scheme - P11, P12, P13, P16 at Lower Kilmacud Road (inbound), X2 at Wyattville Road (inbound), X1 at Loughlinstown (inbound)





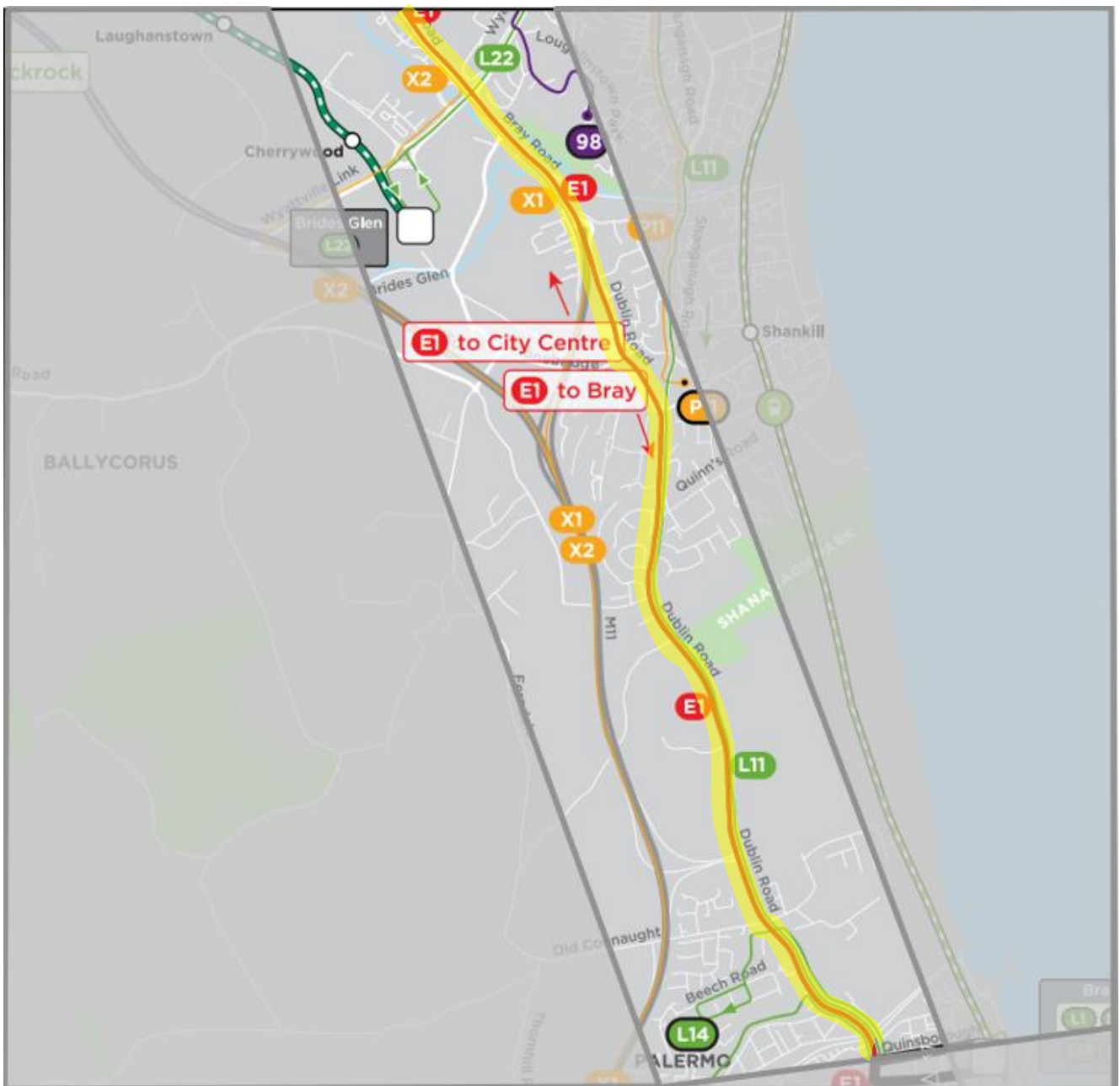


Figure 4.4: Extracts from the Dublin Area Revised Bus Network Maps – South East Quadrant

4.4.3 Metropolitan Light Rail – LUAS, MetroLink, DART

The Transport Strategy for the Greater Dublin Area 2016 – 2035 proposes a LUAS Green line extension from Cherrywood to Bray that will cross the Proposed Scheme at some point between Shankill and Bray, which is yet to be finalised. The current Green Line LUAS serves St. Stephen's Green.

The Transport Strategy for the Greater Dublin Area 2016 – 2035 also outlines the proposed MetroLink scheme which has a station planned at St. Stephen's Green which will be within walking distance of the Proposed Scheme.

The Transport Strategy for the Greater Dublin Area 2016 – 2035 highlights that the DART south-eastern line, which currently has stops at Shankill and Bray, close to the Proposed Scheme, has a proposed new DART station

to be located by the proposed Woodbrook development between Shankill and Bray, which will also be close to and within interactive distances with the Proposed Scheme.

4.4.4 Park and Ride

The Transport Strategy for the Greater Dublin Area 2016 – 2035 also outlines that a strategic Park and Ride facility may be implemented near Woodbrook development between Shankill and Bray which could serve both the DART and LUAS and would be located close to the Proposed Scheme. P&R also proposed at R761 Southern Cross at Bray.

4.5 Compatibility with Other Road Users

A key objective of the Proposed Scheme is to improve pedestrian and cyclist facilities along the route. In general, segregated facilities, where practical, will be proposed for these modes.

During the course of the analysis carried out to identify the Proposed Scheme, the provision of these cycle routes was considered at all stages. Where it is considered impractical to construct pedestrian or cycle facilities along a particular section of the Proposed Scheme, such facilities will need to be provided along a suitable alternative route.

The GDA Cycle Network Plan 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 4.5 is an extract from GDA Cycle Network Plan and shows the different interfaces along the corridor between Bray to City Centre. Stub cycle tracks have been provided at the majority of interfaces that adjoin the Proposed Scheme.

Specifically, Primary Cycle Routes 12 and 12A and B1 from the GDA Cycle Network Plan run along or are intercepted by the Bray to City Centre CBC, with their provision considered at all stages of the options assessment process.

The interaction of the Bray to City Centre CBC with other schemes progressing through the planning and design process has also been considered, specifically the ongoing development of the Dodder Greenway Scheme and the Fitzwilliam Cycle Route.

The Primary Routes potential for interchange with the Proposed Scheme:

- S01 intersect with the Proposed Scheme at Wilton Terrace;
- S03 intersect with the Proposed Scheme at Eglington Road / Brookvale Road;
- S04 intersect with the Proposed Scheme at Foster's Avenue;
- S05 intersect with the Proposed Scheme at Lower Kilmacud Road; and
- B01a intersect with the Proposed Scheme at Corke Abbey Avenue.

The Secondary Routes potential for interchange with the Proposed Scheme:

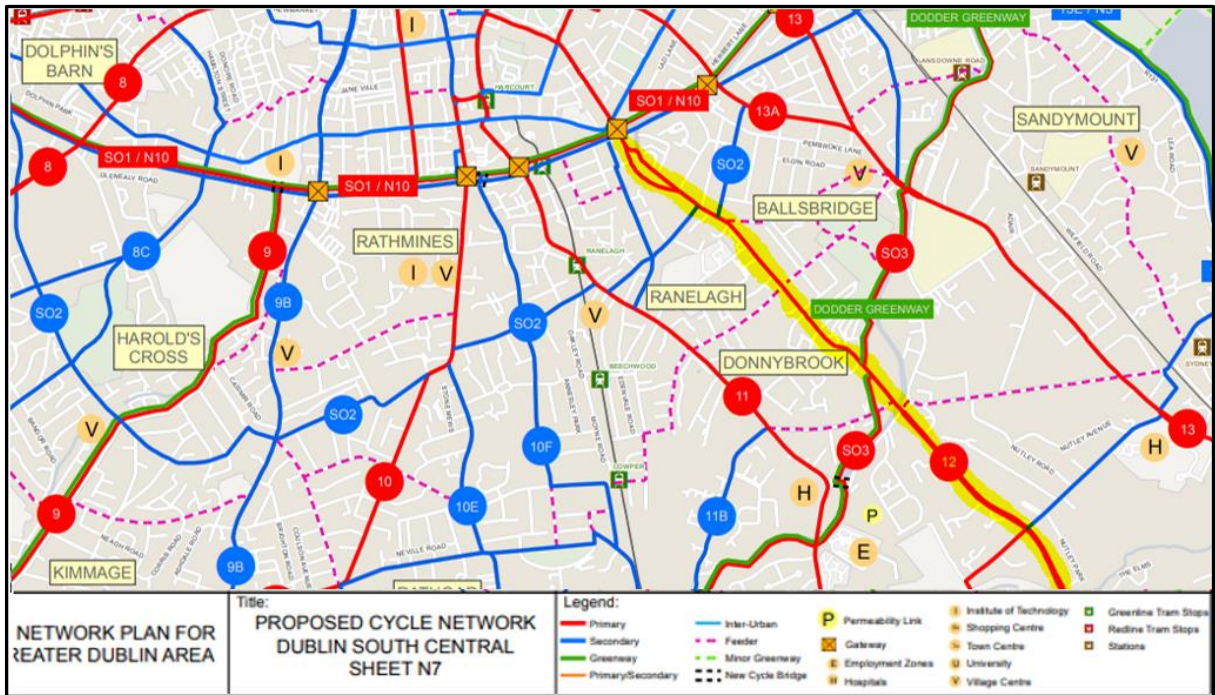
- C5 intersect with the Proposed Scheme at St Stephen's Green Junction;
- C7 intersect with the Proposed Scheme at Fitzwilliam Place;
- S01a intersect with the Proposed Scheme at Mespil Road;
- S02 intersect with the Proposed Scheme at Waterloo Road;
- 13E intersect with the Proposed Scheme at Nutley Lane / Booterstown Avenue;
- 13 intersect with the Proposed Scheme at Farmleigh Avenue;
- S04 intersect with the Proposed Scheme at Mount Merrion Avenue;
- S06 intersect with the Proposed Scheme at Kill Lane;
- 13C intersect with the Proposed Scheme at Clonkeen Road;
- 13H intersect with the Proposed Scheme at Johnstown Road; and
- 13G intersect with the Proposed Scheme at Wyattville Road / Rathmichael Manor.

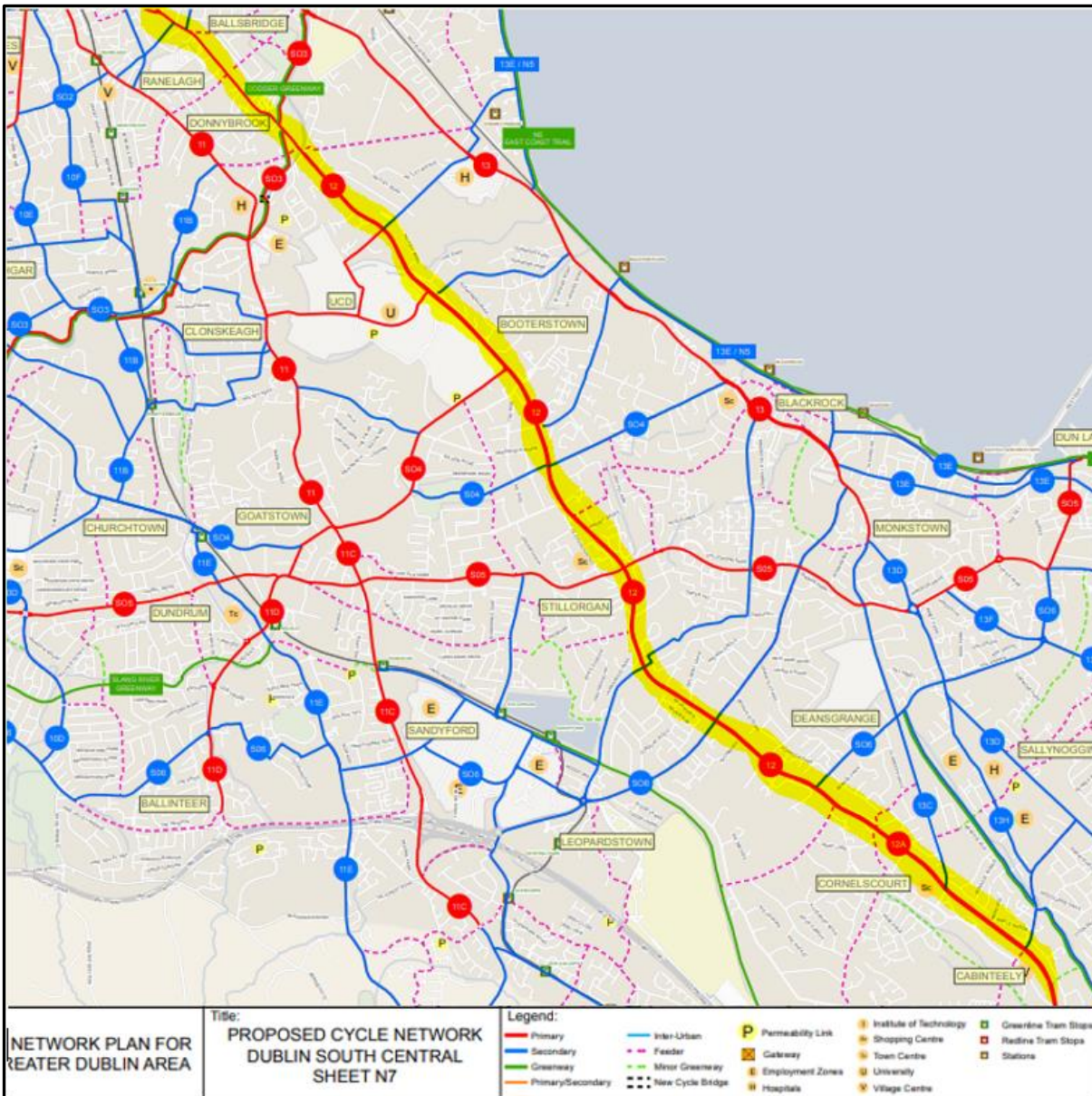
The Inter Urban Routes potential for interchange with the Proposed Scheme:

- D4 intersect with the Proposed Scheme at Stonebridge Road Junction.

Greenways potential for interchange with the Proposed Scheme:

- Royal Canal Cycleway intersect with the Proposed Scheme at Wilton Terrace;
- Dodder Greenway intersect with the Proposed Scheme at Eglington Road / Brookvale Road;
- Shrewsbury Lawn to Kilbogget Park Greenway intersect with the Proposed Scheme at Shrewsbury Lawn;
- Loughlinstown to Deansgrange Greenway intersect with the Proposed Scheme at Loughlinstown Park / Bray Road; and
- River Dargle Greenway intersect with the Proposed Scheme at Lower Dargle Road.





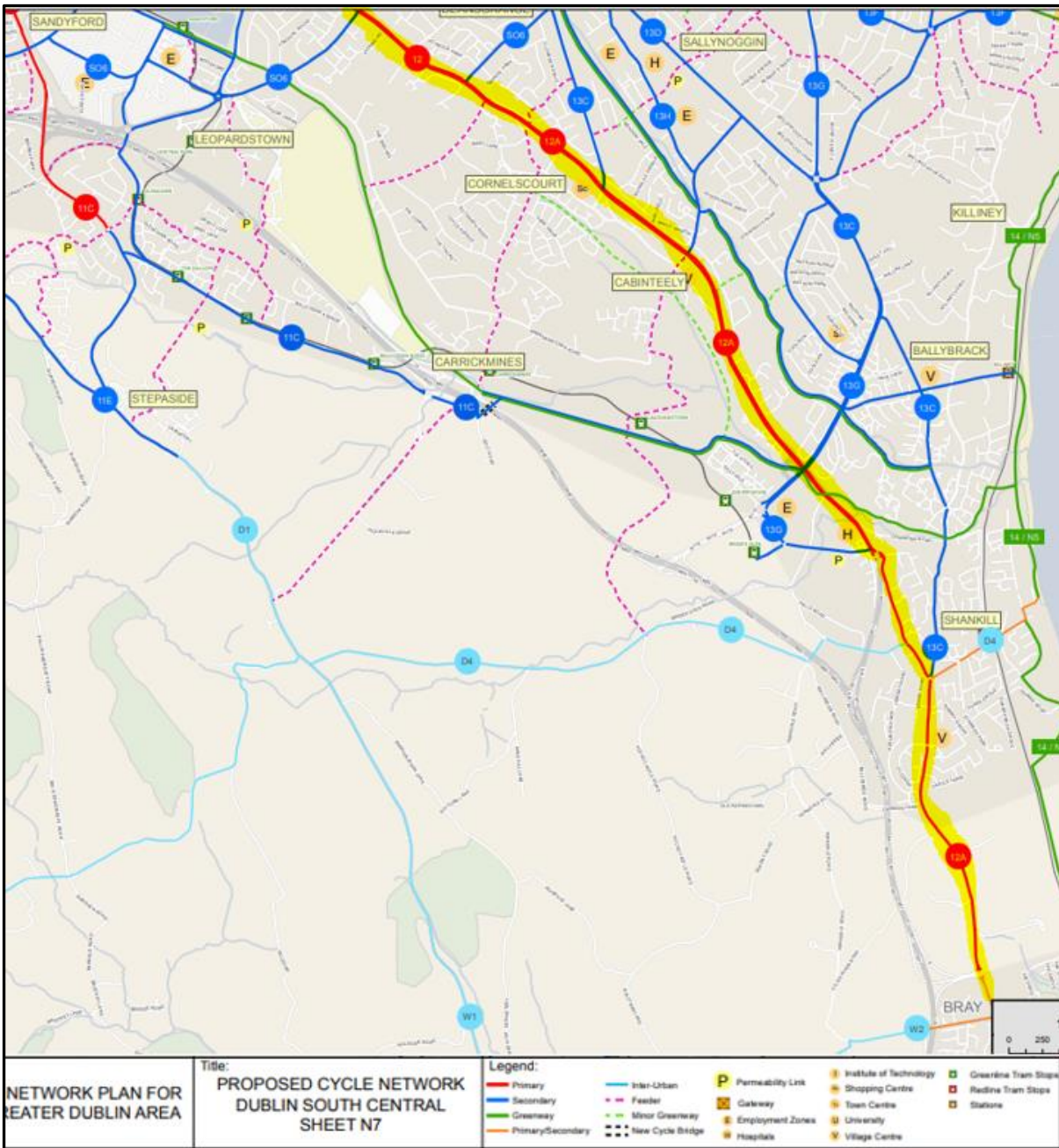


Figure 4.5 – Extract from GDA Cycle Network Plan Maps

(Bray to City Centre highlighted in yellow line)

5. Review of the Previous Feasibility and Options Reports

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 Options and Feasibility Reports 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 in the Options and Feasibility Report. The development of the EPR Option during the Options and Feasibility stage 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 an 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 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.

Post-sift EPR route options from the Feasibility and Options Reports are shown in **Figure 5.1** to **Figure 5.2**.



Figure 5.1: Previous UCD to City Centre Route Options Assessment Study Report Viable Route Options for Section 1

From the previous Route Options Assessment Study Report for the City Centre to UCD scheme, the sifting process for the Section 1 study area resulted in one feasible route, namely Leeson Street (Upper & Lower), Morehampton Road, Donnybrook Road, and the R138 Stillorgan Road. This route is shown in **Figure 5.1**. This ties in with the E Spine corridor from the BusConnects Network Redesign proposals.

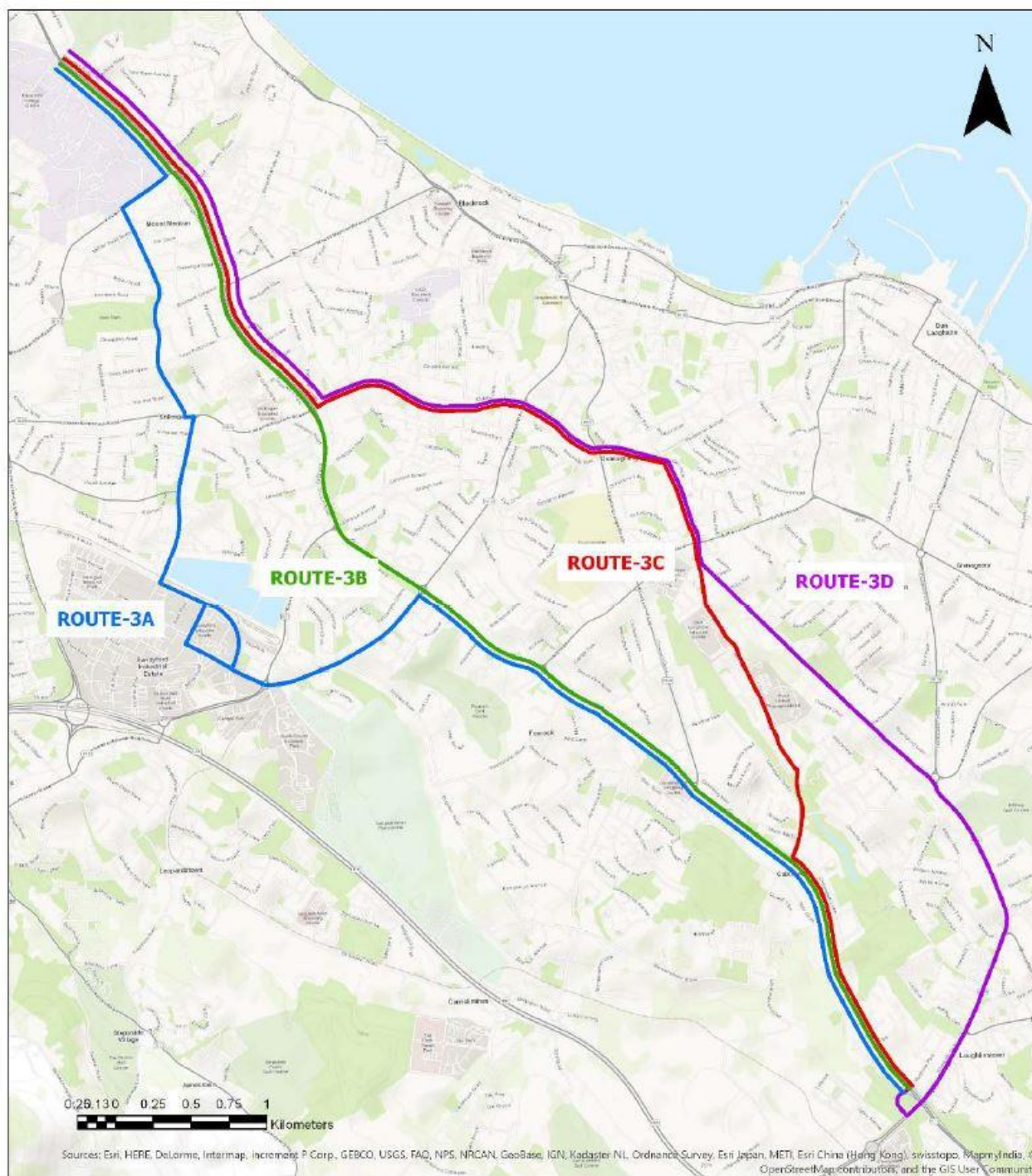


Figure 5.2: Previous Bray to UCD Feasibility and Options Report Route Viable Options for Section 2

From the previous Feasibility and Options Report for the Bray to UCD scheme, the sifting process for the Section 2 study area resulted in four feasible routes, shown in Figure 5.2. Route Option 3B was proposed as the EPR for this section. This ties in with the E Spine corridor from the BusConnects Network Redesign proposals.

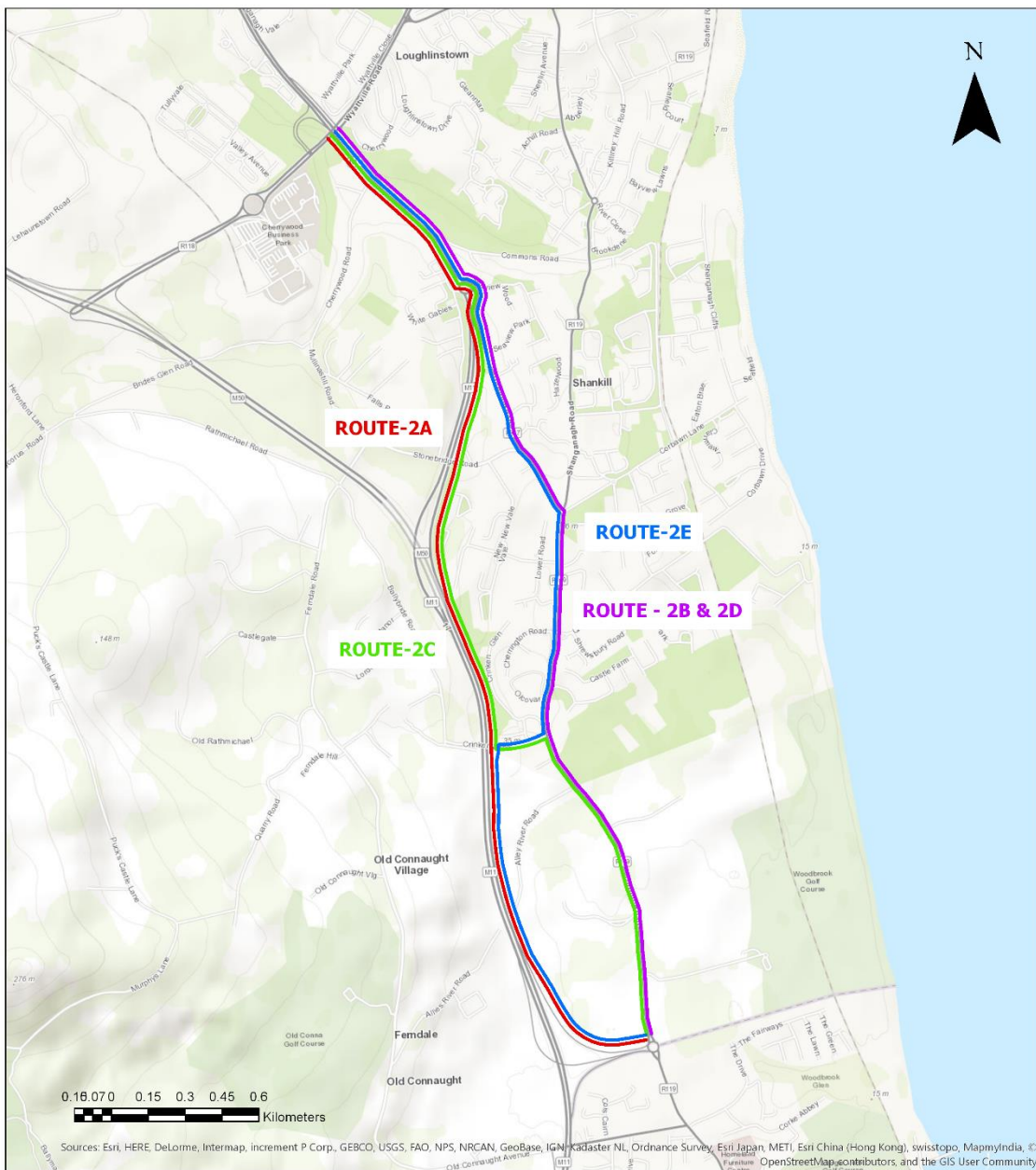


Figure 5.3: Previous Bray to UCD Feasibility and Options Report Route Viable Options for Section 3

From the previous Feasibility and Options Report for the Bray to UCD scheme, the sifting process for the Section 3 study area resulted in five feasible routes, shown in Figure 5.3. Route Option 2B was proposed as the EPR for this section. This ties in with the E Spine corridor from the BusConnects Network Redesign proposals.

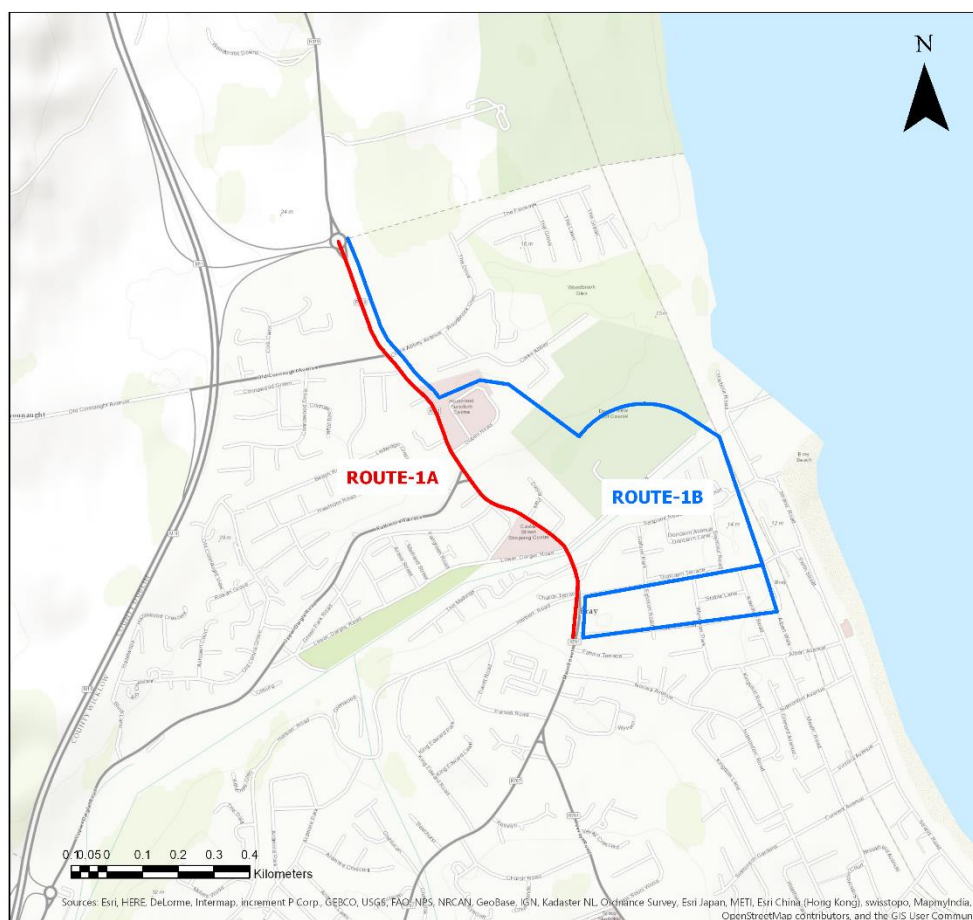


Figure 5.4: Previous Bray to UCD Feasibility and Options Report Viable Route Options for Section 4

From the previous Feasibility and Options Report for the Bray to UCD scheme, the sifting process for the Section 4 study area resulted in two feasible routes, shown in **Figure 5.4**. Route Option 1A was proposed as the EPR for this section. This ties in with the E Spine corridor from the BusConnects Network Redesign proposals.

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 an MCA. The 'Common Appraisal Framework for Transport Projects and Programmes' published by the Department of Transport, Tourism and Sport (DTTAS), March 2016, requires schemes to undergo an 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'.

Assessment Criteria	Assessment Sub-Criteria
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 and 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 and Vibration
	5.h Land Use Character

Table 5.1: MCA Assessment Criteria

Colour	Description
Dark Green	Significant advantages over other options
Light Green	Some advantages over other options
Yellow	Neutral compared to other options
Orange	Some disadvantages compared to other options

Colour	Description
	Significant disadvantages compared to other options

Table 5.2: Route Options Colour-Coded Ranking Scale

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 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.

The methodology above has been applied to the study areas. The summary of outcomes are shown in **Table 5.3: Summary of Outcomes from Previous Feasibility Reports.**

Study Area	Stage 1: No. of Route Options Considered at Sifting Stage	Stage 1: No. of Feasible Route Options	Stage 2: No. of End to End Route Options	Stage 2: Emerging Preferred Route	Number of Sub-sections Assessed
Section 1 (City Centre to UCD)	57	34	1	LV02	5
Section 2 (UCD to Loughlinstown)	50	29	4	3B	-
Section 3 (Loughlinstown to Bray North)	18	10	5	2B	5
Section 4 (Bray North to Bray South)	18	4	2	1A	-

Table 5.3: Summary of Outcomes from Previous Feasibility Reports

5.3 Emerging Preferred Route Option Summary

5.3.1 Emerging Preferred Route Option

5.3.2 Study Area Section 1 – St. Stephen’s Green to UCD

The EPR Option previously identified along this section of the Proposed Scheme corridor is presented in **Figure 5.5**.

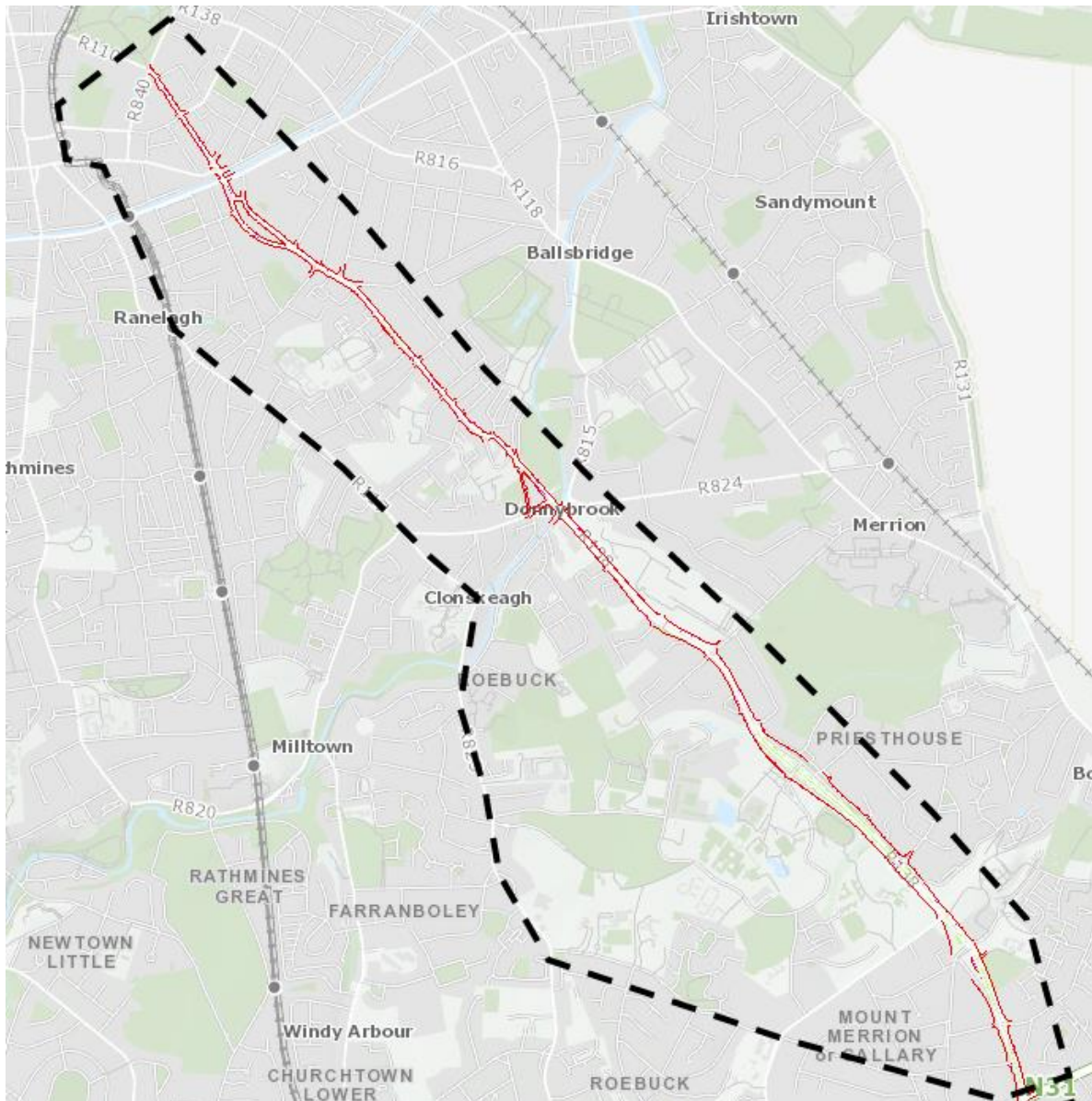


Figure 5.5: EPR: Section 1

The EPR Option for the study area Section 1 is as outlined in the previous Feasibility and Options Report with the exception of the starting point for the proposed scheme. The starting point for Section 1 has been changed to the Leeson Street Lower Junction with St. Stephen's Green, as presented in **Figure 5.5**, as it is considered that sufficient bus infrastructure and cycle segregation currently exists beyond this point.

Based on the public consultation submissions received and assessment of topographical survey subsequently undertaken along this route section, **three areas** were identified as requiring further review and these are discussed in **section 5.3.6**. The design has been further developed at the UCD Bus Interchange.

5.3.3 Study Area Section 2 – UCD to Loughlinstown

The EPR Option previously identified along this section of the Proposed Scheme corridor is presented in **Figure 5.6**. The EPR is materially unchanged from that outlined in the Feasibility and Options Report. Based on the public consultation submissions received, and assessment of topographical survey subsequently undertaken along this route section, the design was further developed in three key areas. This is summarised in **section 5.3.7**.



Figure 5.6: EPR: Section 2

5.3.4 Study Area Section 3 – Loughlinstown to Bray North

The EPR Option previously identified along this section of the Proposed Scheme corridor is presented in **Figure 5.7**.

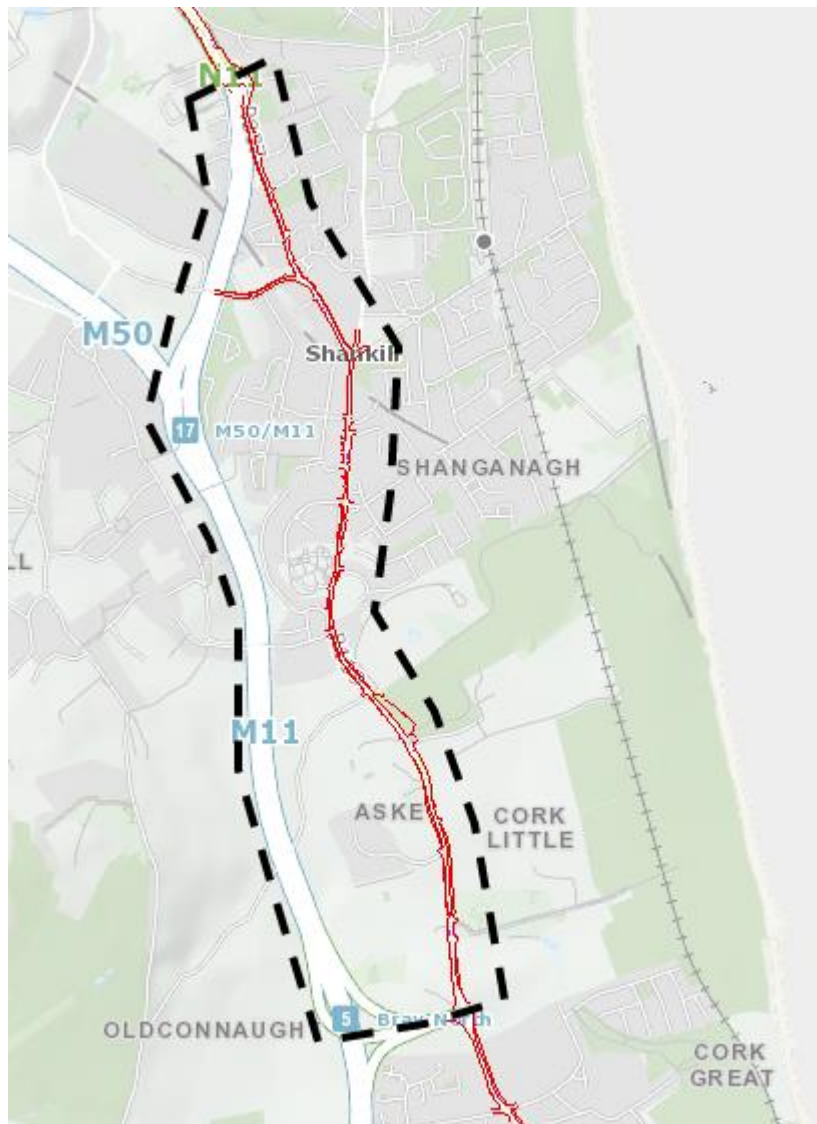


Figure 5.7: EPR: Section 3

Based on the public consultation submissions received, and assessment of topographical survey subsequently undertaken along this route section, **three areas** were identified as requiring further review regarding cycling options and Dublin Road/ Shanganagh Road/ Corbawn Lane Junction and these are discussed in **section 5.3.6**. The design has been further developed in other areas in this section as discussed in **section 5.3.7**.

5.3.5 Study Area Section 4 – Bray North to Bray South

The EPR Option previously identified along this section of the Proposed Scheme corridor is presented in **Figure 5.8**.

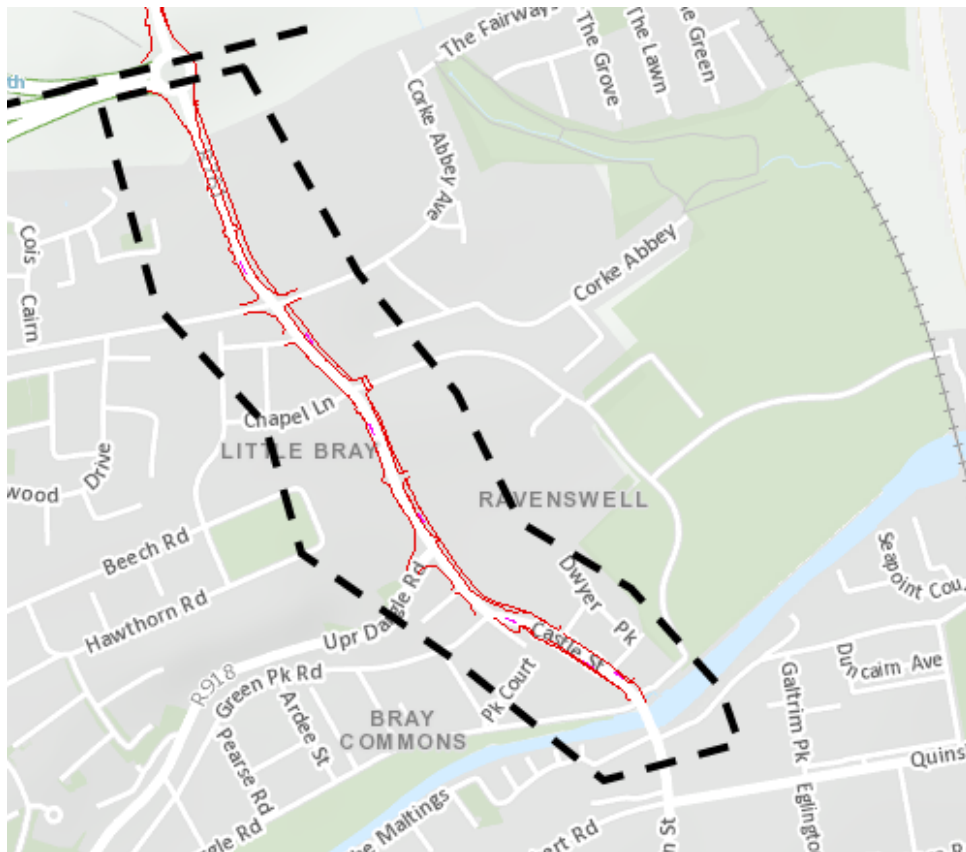


Figure 5.8: EPR: Section 4

As outlined in Section 4.2, the study area for Section 4 originally, and still, extends from Bray North to Bray South. It is noted that the termination point for the Proposed Scheme has been changed to finish at the northern approach to the Fran O'Toole Bridge, where it will tie into the proposed Wicklow County Council's Bray Bridge Improvement Scheme. Based on the public consultation submissions received, and assessment of topographical survey subsequently undertaken along this route section, design has been further assessed and alternatives considered at **one area** as discussed in **section 5.3.6**. The design was further developed at the Castle Street and this has been discussed in **section 5.3.7**.

5.3.6 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:

- The lane configuration proposed in the previous report for the corridor at Anglesea Road Junction was revisited, to improve the allocation of traffic capacity for inbound and outbound traffic. This is presented in **Section 6.2**.
- At the tight bend between Eglinton Terrace to Belmont Avenue, the lane configuration proposed in the previous report was revisited following completion of additional topographical surveys, to improve cycling facility while achieving bus priority. This is presented in **Section 6.2**.
- The Feasibility and Options Report previously prepared did not assess options along Lower Leeson Street, stopping at the Upper Leeson Street Junction with Grand Parade, due to the lack of route options between this point and the end of the proposed scheme. As part of the design development, Leeson Street Lower has been reconsidered and an alternative option has been assessed here, to provide segregated cycle tracks and bus lanes within the available carriageway cross-section, without adversely

affecting footpath widths and heritage kerbs. This section will be referred to as Section 1.1F. This is presented in **Section 6.2**.

- Following feedback from Non-Statutory Public Consultation, additional options for cycle provision were assessed between Crinken Lane and Stonebridge Road. This is presented in **Section 6.4.3**.
- Following feedback from Non-Statutory Public Consultation, and review of additional topographical and tree survey information, additional options for carriageway cross-sections for buses and cyclists were assessed from Crinken Lane to St. Anne's Roundabout. This is presented in **Section 6.4.4**.
- Alternative options have been evaluated for the Dublin Road/ Shanganagh Road/ Corbawn Lane Roundabout. This is presented in section **6.4.5.3**.
- Alternative options have been evaluated between Wilford Junction to Old Connaught Avenue to examine whether there were any viable alternative options which would avoid the impact to the Protected structure the start of Bray. This is presented in section **6.5.3**.

5.3.7 Key Design Development

Additional design development has been undertaken along this section of the route, which is not considered to include material changes requiring updated MCAs. These are presented in Section 6.2, 6.3 and 6.4.

- The UCD Interchange proposal originally included in the EPR has been developed further in co-ordination with the UCD Masterplan, following initial design development by UCD. This is presented in **Section 6.2.5**.
- At Galloping Green, the segregated cycle track provision along the N11 was revisited and it has been proposed to divert the southbound cycle track along Belmont Terrace, to improve cycle track safety.
- At St. Brigid's Church Road, Stillorgan, the segregated cycle track provision along the N11 was revisited and it is proposed to divert the northbound cycle track along St. Brigid's Church Road, to improve cycle track safety. This is presented in **Section 6.3.2**.
- At The Hill, Stillorgan Junction was revisited and it is proposed to close the northbound slip road and vehicle access to The Hill from N11, to improve cycle track safety. This is presented in **Section 6.3.4**.
- Additional design development has been undertaken along the Shankill section and this is mostly notable at Sections 3.2B (Wilford Roundabout to Crinken Lane), and 3.2E (St. Anne's Roundabout to Loughlinstown Roundabout). This is presented in **Section 6.4.2 and 6.4.5**.
- After a review was undertaken of the proposed design along Castlestree between Ravensdale Park and Dwyer Park, the design has been developed further between Ravensdale Park and Dwyer Park to provide for continuous cycle lane and bus lane while minimising impact to the Castlestree Shopping Centre car park and heritage wall. This is presented in **Section 6.5.2**.

5.4 Summary

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

- Section 1 – Further detailed option assessment has been carried out at Section 1.1A (Stillorgan Road / UCD to Anglesea Bridge), Section 1.1C (Eglinton Terrace to Belmont Avenue), and Section 1.1F (Leeson Street Lower). The start of the Proposed Scheme has been adjusted to the Leeson Street Lower Junction with St. Stephen's Green.
- Section 2 – The EPR is materially unchanged from that outlined in the Feasibility and Options Report. Three small sections have been reassessed (Section 2.1A, 2.1B, 2.1C) and the results are considered in this report.

- Section 3 – Further detailed option assessment has been carried out at Section 3.2C (Cycling Provision from Crinken Lane to Loughlinstown Roundabout), and Section 3.2D (Crinken Lane to St. Anne’s Roundabout). Two subsections have been reassessed for further design development (Section 3.2B and 3.2E) and the results are considered in this report. Alternative options have been assessed at the Dublin Road/ Shanganagh Road/ Corbawn Lane Junction and discussed in this report.
- Section 4 – The EPR is materially unchanged from that outlined in the Feasibility and Options Report. Alternative options have been assessed between Wilford Junction to Old Connaught Avenue to examine whether there were any viable alternative options which would avoid the impact to the Protected structure. The design has been further developed at the Castle Street between Ravensdale Park and Dwyer Park and the results are considered in this report. The end of the Proposed Scheme has been adjusted to the northern approach to the Fran O’Toole Bridge. These are discussed and results presented in this report.

These design changes do not impact on the route selection; however, they have been outlined in more detail in **Chapter 6** as they are key changes to the EPR design. For the remaining corridor the EPR Option is considered the optimum routing and should be taken forward as the PRO.

5.5 Carbon Considerations for the Route Options

In the case of the Proposed Scheme, carbon arises 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, all route options considered in the development of the PRO supports enhanced bus capacity and public transport potential in line with the objectives, which would contribute to reductions in user carbon and contribute towards 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 proposal have resulted in minor changes in the construction carbon generated by the Proposed Scheme such as altering of junction layouts and cycle tracks/footpath widths. Additionally, significant design iterations were undertaken to mitigate against traffic re-distribution impacts and consequent impacts on greenhouse gas (GHG) emissions.

6. Option Assessment

6.1 Introduction

This chapter reassesses the EPR sections identified in the Route Options Assessment Study Report and the Feasibility and Options Report, taking into account updated survey information, further design development and the output from engagement and consultation activities that have taken place since the EPR was last published.

6.2 Section 1 – St. Stephen’s Green to UCD

6.2.1 Introduction

The Study Area Analysis and MCA for the previously proposed feasible route options for Section 1 outlined in the Route Options Assessment Study Report have been evaluated by the design team and are considered still to be valid.

As discussed in **Section 5.3.2**, the start point for the Proposed Scheme has been changed from Nassau Street to the St. Stephen’s Green / Earlsfort Terrace / Leeson Street Lower Junction.

Changes along the route in relation to cross-sections and lane provisions have been recorded at Sections 1.1A (Stillorgan Road / UCD to Anglesea Bridge, specifically the link passing Donnybrook Church), 1.1C (Eglinton Terrace to Belmont Avenue, specifically the bend past Pembroke Cottages), and 1.1F in relation to the available cross-section for improved segregated cycle tracks and footway widths on Leeson Street Lower.

6.2.2 Section 1A – Stillorgan Road / UCD to Anglesea Bridge

6.2.2.1 Introduction

Following the MCA for the EPR in the Route Options Assessment Study Report, Option 1A2 was considered the most desirable option to take forward. However, following further design development, it was considered that two outbound lanes were appropriate immediately past the Anglesea Road / Stillorgan Road Junction. This decision to take Option 1A1 forward was reflected in the EPR drawings published in May 2019.

During the development of the PRO, further traffic modelling was carried out on the Anglesea Road / Stillorgan Road Junction, a better understanding of the traffic throughput requirements was developed, and the lane configuration was investigated further. As such, 1A1 from the EPR was reassessed against a new option, 1A3, which provided a revised cross-section and lane configuration past Donnybrook Church.

6.2.2.2 Options Considered

This section travels along the Donnybrook Road and the Stillorgan Road. The two options considered (1A2 and 1A3) follow the same route as 1A1 as detailed in the previous Feasibility and Options Report.

- *Emerging Preferred Route Option 1A2*: This section’s EPR Option was to provide a single general traffic lane and bus lane in each direction along Donnybrook Road, through the junction with Eglinton Road and over Anglesea Bridge to the junction with Anglesea Road and Beaver Row. Immediately south of the junction, the cross-section was proposed to widen into two general traffic lanes with a separate bus lane on Stillorgan Road, in both the northbound and southbound direction.
- *Route Option 1A3*: Similar to Option 1A1, Option 1A3 provides a single southbound (outbound) general traffic lane and bus lane from Donnybrook Road to the junction with Eglinton Road. However, between Eglinton Road and Anglesea Road Junction, Option 1A3 has two outbound general traffic lanes and one inbound general traffic lane. It also has a single combined inbound straight ahead and left-turn general traffic lane, with the remaining inbound general traffic space reallocated to bus and cycle traffic.

6.2.2.3 Emerging Preferred Route Option 1A2

This section's EPR Option was to provide a single general traffic lane and bus lane in each direction along Donnybrook Road, through the junction with Eglinton Road and over Anglesea Bridge to the junction with Anglesea Road and Beaver Row. Immediately south of the junction, the cross-section was proposed to widen into two general traffic lanes with a separate bus lane on Stillorgan Road, in both the northbound and southbound direction. This configuration would then carry on through the Nutley Lane Junction as far as Belfield.

The existing northbound dedicated right-turn general traffic lane was proposed to be retained on the approach to Anglesea Road Junction, opposite the church.

Segregated cycle tracks were proposed in each direction on either side of the junctions within this option. A narrow strip of land take was proposed over a length of the eastern boundary to accommodate this option, including at the Church of the Sacred Heart. The cross-section proposed in this option immediately south of Anglesea Bridge, including dedicated right-turn northbound lane, is shown in **Figure 6.1**.

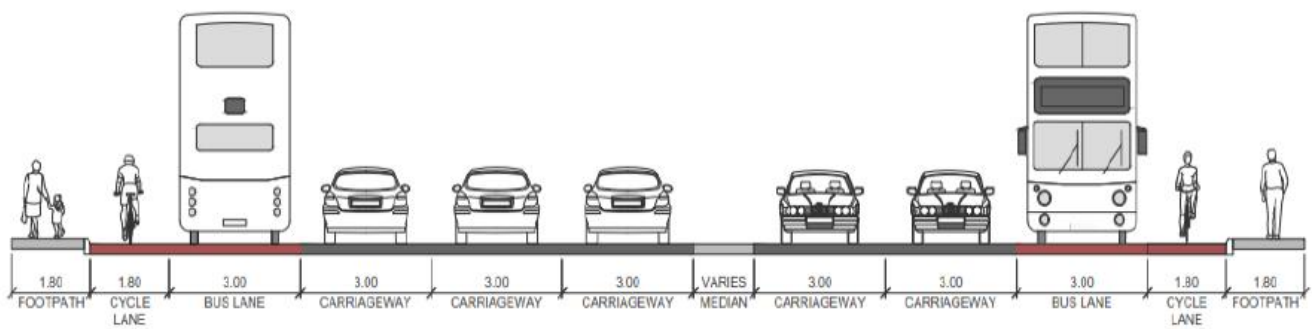


Figure 6.1: EPR Cross-Section Immediately South of Anglesea Bridge (Looking North / Inbound)

6.2.2.4 Route Option 1A3

Similar to the above option, Option 1A3 provides a single southbound (outbound) general traffic lane and bus lane from Donnybrook Road to the junction with Eglinton Road. However, between Eglinton Road and Anglesea Road Junction, Option 1A3 has two outbound general traffic lanes and one inbound general traffic lane. It also has a single combined inbound straight ahead and left-turn general traffic lane, with the remaining inbound general traffic space reallocated to bus and cycle traffic. Bus lanes and cycle tracks continue in each direction along this section. This additional outbound general traffic lane will create additional stacking space for outbound and left-turning traffic between Eglinton Road and Anglesea Road in Section 1B compared to Option 1A1. The two general traffic outbound lanes and bus lane continue south of the Anglesea Road Junction.

South of the junction, there are also two inbound general traffic lanes and bus lane, with one inbound lane becoming a dedicated right-turn lane to Anglesea Road. The one inbound general traffic lane continues between Beaver Row and Eglinton Road, as outlined above. The cross-section outlined in **Figure 6.2** continues on the Stillorgan Road through the Nutley Lane Junction as far as Belfield.

There is no requirement for land take immediately south of the Anglesea Road Junction at the church as part of this option. **Figure 6.2** illustrates the indicative scheme design for Option 1A3 south of the Anglesea Road Junction.

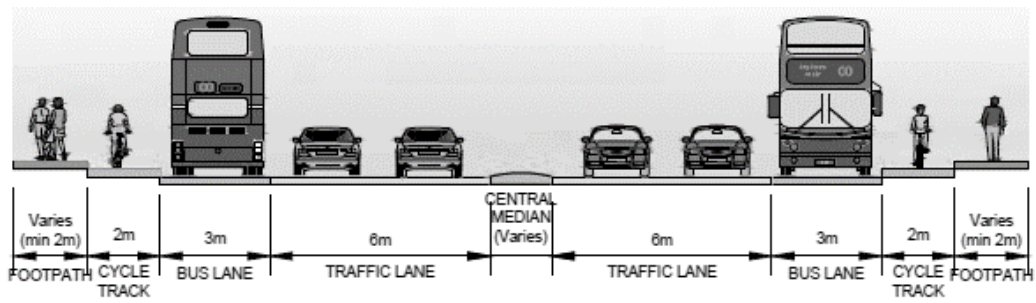


Figure 6.2: Indicative Cross-Section for Option 1A3 Outside Donnybrook Church of the Sacred Heart

6.2.2.5 Option Assessment

The MCA tables are included in **Appendix D**. A summary of the MCA for Section 1A is provided in **Table 6.1**.

MCA Criteria	Assessment Sub-Criteria	Option 1A2	Option 1A3
Economy	1a Capital Cost	Yellow	Yellow
	1b Transport Reliability and Quality of Service	Yellow	Yellow
Integration	2a Land Use Integration	Yellow	Yellow
	2b Residential Population and Employment Catchments	Yellow	Yellow
	2c Transport Network Integration	Orange	Green
	2d Cycle Network Integration	Orange	Green
	2e Traffic Network Integration	Orange	Green
Accessibility and Social Inclusion	3a Key Trip Attractors	Yellow	Yellow
	3b Deprived Geographic Areas	Yellow	Yellow
Safety	4a Road Safety	Orange	Green
Environment	5a Archaeological and Cultural Heritage	Yellow	Yellow
	5b Architectural Heritage	Yellow	Yellow
	5c Flora and Fauna	Yellow	Yellow
	5d Soils and Geology	Yellow	Yellow
	5e Hydrology	Yellow	Yellow
	5f Landscape and Visual	Yellow	Yellow
	5g Air Quality	Yellow	Yellow

MCA Criteria	Assessment Sub-Criteria	Option 1A2	Option 1A3
	5h Noise and Vibration		
	5i Land Use Character		

Table 6.1: MCA at Section 1A

In terms of Economy, Option 1A2 would require the existing southbound highway extents at Donnybrook Church to be widened. It is assumed the options are the same for the remainder of the route in terms of capital cost. Option 1A3 would require less reconfiguration in this respect overall, though the overall cost difference is not significant. Quality of Service is considered the same for both options.

In terms of integration, provision of coach laybys in Option 1A3 will reduce the potential for delays caused by loading coaches. The incorporation of island and shared landing zone bus stops will also reduce delays to cyclists at bus stops. The addition of an extra outbound lane will provide additional storage in this very short section leading to Section 1A and cycle facilities in general have been improved, particularly at junctions. Option 1A3 performs better than Option 1A2 in terms of overall traffic operation and integration.

Both options perform the same in terms of Accessibility and Social Inclusion.

Option 1A3 performs better than Option 1A2 in terms of Road Safety as a result of the inclusion of island and shared landing zone bus stops, and the revised junction design at Nutley Lane, which incorporates segregated cycle turning provisions.

Both options perform the same in terms of Environment.

A summary of the assessment and relative ranking of route options against the five main assessment criteria is presented in **Table 6.2**.

MCA criteria	Option 1A1	Option 1A3
Economy		
Integration		
Accessibility and Social Inclusion		
Safety		
Environment		

Table 6.2: Section 1A Summary

Based on the assessment undertaken, Option 1A3 appears to offer more benefits than Option 1A2. Option 1A3 is the PRO for the Anglesea Road to Belfield section for the following reasons:

- It provides coach laybys and island / shared landing zone bus stops, ensuring reliability of journey times for buses and less delays for cyclists;
- It provides better management of general traffic through the Anglesea Road Junction for southbound traffic; and

- It performs well under the Integration and Road Safety criteria, and provides a safer Nutley Lane Junction due to the enhanced cycle design.

6.2.3 Section 1C – Eglinton Terrace to Belmont Avenue

6.2.3.1 Introduction

Following the Multi-Criteria Analysis for the EPR in the Route Options Assessment Study Report, Option 1C1 was considered the most desirable option due to the economic cost comparison and the reduced land use integration and visual impacts.

However, following review of additional topographical surveys and consideration of the option to assess Signal Controlled Bus Priority along narrow sections of road to improve cyclist safety, the lane configuration was investigated further. As such, 1C1 from the EPR was reassessed against four new options, 1C3, 1C4, 1C5 and 1C6.

6.2.3.2 Options Considered

This section travels along the Donnybrook Road.

The five options considered (1C1, 1C3, 1C4, 1C5 and 1C6) follow the same route as 1C1 as detailed in the previous Feasibility and Options Report.

- *Emerging Preferred Route Option 1C1*: This option would provide adequate bus and cycle facilities in both direction albeit within a reduced carriageway design width;
- *Route Option 1C3*: This option would see northbound bus lane with southbound queue relocation with Signal Control Priority at Belmont Avenue;
- *Route Option 1C4*: This option will see queue relocation on both northbound and southbound;
- *Route Option 1C5*: This option would see southbound bus lane with northbound merge of bus lane;
- *Route Option 1C6*: This option will see southbound bus lane with northbound queue relocation. A Signal Controlled Bus Priority junction at Eglinton Terrace in the northbound direction would provide bus priority through this section.

6.2.3.3 Emerging Preferred Route Option 1C1

To preserve the existing village streetscape, Option 1C1 would provide adequate bus and cycle facilities albeit within a reduced carriageway design width.

This option would avoid the demolition of existing buildings and footpaths along with the ancillary works associated with demolition (i.e. the relocation of services) by providing one traffic lane and one shared bus and cycle lane on both the inbound and outbound carriageways, as shown in **Figure 6.3**. The lanes would not have any additional curve widening on the tight bend midway along the section.

There are no parking spaces identified in this section which would be affected by the proposed works.

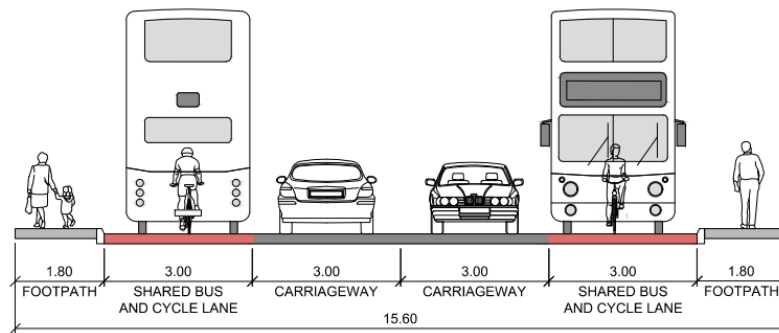


Figure 6.3: EPR Option 1C1 Cross-Section at Eglinton Terrace

6.2.3.4 Route Option 1C3 – Northbound Bus Lane with Southbound Queue Relocation

A number of new options were generated for this section as swept path analysis confirmed that providing the cross-section for Option 1C1 was not achievable due to the horizontal alignment constraints and 3m lane widths. All new developed options allow for vehicle movements through this section without encroaching on adjacent lanes.

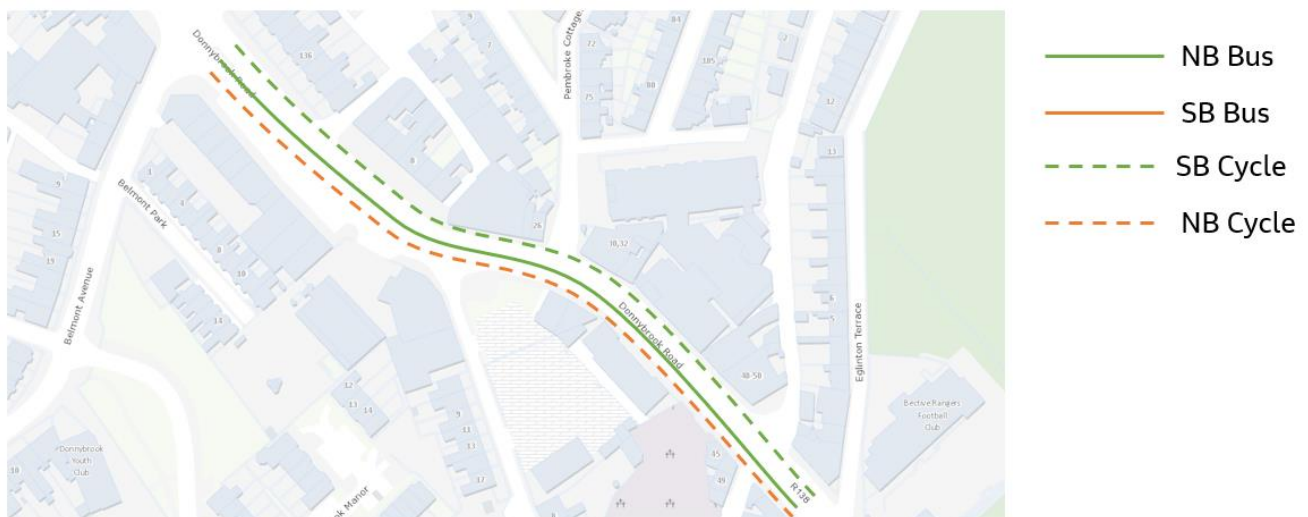


Figure 6.4: Option 1C3

This option, detailed in **Figure 6.4**, would see a northbound bus lane for the entire section with no junction in place at Eglinton Terrace – only a pedestrian crossing. For southbound buses, a Signal Controlled Bus Priority junction would be in place at Belmont Avenue which would stop general traffic and allow buses to proceed through this section, as the overall cross-section width only allows for one outbound lane. Northbound and southbound cycle lanes would be included in this proposal but may be reduced to 1.8m at pinch points.

6.2.3.5 Route Option 1C4 – Queue Relocation Each Side

This option, illustrated in **Figure 6.5**, would see no dedicated northbound or southbound bus lanes through the section. Buses would receive Signal Controlled Bus Priority from junctions either side of the section, at Belmont Avenue (southbound) and Eglinton Terrace (northbound). The full 2m cycle provision could be carried through this section under this scenario.



Figure 6.5: Option 1C4

6.2.3.6 Route Option 1C5 – Southbound Bus Lane with Northbound Merge of Bus Lane

This option, illustrated in Figure 6.6, would see continuous dedicated bus lane in the southbound direction, whereas the northbound bus lane would merge with the northbound general traffic to pass through the pinch point. This would require buses and general traffic to merge together before progressing through the narrow section before the bus lane would restart after passing The Crescent.

A segregated northbound cycle track would only be possible after The Crescent, while no segregated southbound cycle track would be possible, requiring southbound cyclists to share the bus lane.



Figure 6.6: Option 1C5

6.2.3.7 Route Option 1C6 – Southbound Bus Lane with Northbound Queue Relocation

This option, illustrated in Figure 6.7, would see a continuation of southbound bus lane through the midway bend, with a single general traffic lane only in the northbound direction between Eglinton Terrace and The Crescent. A Signal Controlled Bus Priority junction at Eglinton Terrace in the northbound direction would provide bus priority

through this section. Northbound and southbound segregated cycle tracks would be provided along the entire section.



Figure 6.7: Option 1C6

6.2.3.8 Option Assessment

The MCA tables are included in **Appendix E**. A summary of the MCA for Section 1C is provided in **Table 6.3**.

MCA Criteria	Assessment Sub-Criteria	Option 1C1	Option 1C3	Option 1C4	Option 1C5	Option 1C6
Economy	1a Capital Cost	Green	Orange	Green	Orange	Orange
	1b Transport Reliability and Quality	Orange	Green	Green	Orange	Green
Integration	2a Land Use Integration	Yellow	Yellow	Yellow	Yellow	Yellow
	2b Residential Population and Employment Catchments	Yellow	Yellow	Yellow	Yellow	Yellow
	2c Transport Network Integration	Yellow	Yellow	Yellow	Yellow	Yellow
	2d Cycle Network Integration	Orange	Green	Green	Orange	Green
	2e Traffic Network Integration	Green	Green	Red	Orange	Green
Accessibility and Social Inclusion	3a Key Trip Attractors	Yellow	Yellow	Yellow	Yellow	Yellow
	3b Deprived Geographic Areas	Yellow	Yellow	Yellow	Yellow	Yellow

MCA Criteria	Assessment Sub-Criteria	Option 1C1	Option 1C3	Option 1C4	Option 1C5	Option 1C6
Safety	4a Road Safety	Orange	Green	Green	Orange	Green
Environment	5a Archaeological and Cultural Heritage	Yellow	Yellow	Yellow	Yellow	Yellow
	5b Architectural Heritage	Yellow	Yellow	Yellow	Yellow	Yellow
	5c Flora and Fauna	Yellow	Yellow	Yellow	Yellow	Yellow
	5d Soils and Geology	Yellow	Yellow	Yellow	Yellow	Yellow
	5e Hydrology	Yellow	Yellow	Yellow	Yellow	Yellow
	5f Landscape and Visual	Yellow	Yellow	Yellow	Yellow	Yellow
	5g Air Quality	Yellow	Yellow	Yellow	Yellow	Yellow
	5h Noise and Vibration	Yellow	Yellow	Yellow	Yellow	Yellow
	5i Land Use Character	Yellow	Yellow	Yellow	Yellow	Yellow

Table 6.3: MCA at Section 1C

In terms of Economy, Options 1C3, 1C4 and 1C6 perform better due to the journey time reliability for bus services with Signal Controlled Bus Priority providing buses with more priority over general traffic than the other options.

In terms of Integration, Options 1C3, 1C4 and 1C6 perform better for cycling integration due to the provision of segregated cycle tracks, where the other options require cyclists to share road space with buses and/or general traffic. Option 1C1 performs best for Traffic Network Integration as the proposals have the least impact on general traffic. Option 1C4 has the most impact on general traffic as both directions are subject to Signal Controlled Bus Priority for buses.

All options perform the same in terms of Accessibility and Social Inclusion.

Options 1C3, 1C4 and 1C6 perform best in terms of road safety due to the segregated cycle track provisions.

All options perform the same in terms of Environment.

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

MCA Criteria	Option 1C1	Option 1C3	Option 1C4	Option 1C5	Option 1C6
Economy	Orange	Green	Green	Orange	Green
Integration	Green	Green	Orange	Orange	Green
Accessibility and Social Inclusion	Yellow	Yellow	Yellow	Yellow	Yellow
Safety	Orange	Green	Green	Orange	Green

MCA Criteria	Option 1C1	Option 1C3	Option 1C4	Option 1C5	Option 1C6
Environment					

Table 6.4: Section 1C Summary

Based on the assessment undertaken, the two highest-scoring options were 1C3 and 1C6. Both of these had a full bus lane in one direction and a queue location (Signal Controlled Bus Priority) facility in the other direction, with 1C3 having a continuous northbound bus lane and 1C6 having a continuous southbound bus lane. Due to the alignment and land available, an overall greater length of bus lane can be achieved in option 1C6. The northbound bus lane can restart sooner than the southbound bus lane could, if it operated under a Signal Controlled Bus Priority facility.

Option 1C6 is the PRO for the Eglinton Terrace to Belmont Avenue section for the following reasons:

- It provides more dedicated bus lane provision (either with bus lanes or Signal Controlled Bus Priority) than the other options;
- It provides more or the same amount of segregated cycle tracks than the other options; and
- It provides more or the same amount of journey time reliability than the other options.

Therefore, Option 1C6 is the PRO.

6.2.4 Section 1F – Leeson Street Lower

6.2.4.1 Introduction

The previous Route Options Assessment Study Report and associated MCAs did not investigate options for this length of the route, taking Leeson Street Lower as the only viable route option over this length. The Route Options Assessment Study Report stated:

“Only a single reasonably direct route can be established between the Grand Canal and St. Stephen’s Green, i.e. along Leeson Street Lower. After examining the local road network and taking cognisance of proposals to implement bus corridors along Dun Laoghaire and Rathfarnham that originate from Stephen’s Green (i.e. via Leeson Street Lower), it was decided not to include Leeson Street Lower in the route options development for the UCD to City Centre corridor.”

However, the lane configuration was investigated further as part of the PRO development based on topographical survey information, to consider reducing the impact on the heritage kerbs at the narrow approach to St. Stephen’s Green and maintaining the existing footpath widths on this busy pedestrian street while also improving cycle track segregation and providing dedicated bus lanes. As such, 1F1 from the EPR was reassessed against one new option, 1F2.

6.2.4.2 Options Considered

This section travels along Leeson Street Lower.

The new option considered, 1F2, follows the same route as 1F1 as detailed in the previous Feasibility and Options Report for the bus lanes and cycle tracks, but includes a revised cross-section based on a general inbound traffic diversion along Hatch Street Lower and Earlsfort Terrace.

- *EPR Option 1F1* – This option provides two northbound traffic lanes, one being a dedicated bus lane and the other a general traffic lane. A single southbound bus lane was provided. Segregated cycle tracks were

provided in both directions which are constructed over the existing footpath reducing the available footpath widths;

- *Route Option 1F2* - This option places a bus gate to the north of the Leeson Lane Junction on Leeson Street Lower and limits general traffic between the Hatch Street Lower / Pembroke Street Upper Junction and Leeson Lane to local access only along this section of road. Segregated cycle tracks are provided in both direction without impacting the existing footpaths.

6.2.4.3 EPR Option 1F1

The proposed alignment layout for Leeson Street Lower provided two northbound traffic lanes, one being a dedicated bus lane and the other a general traffic lane. A single southbound bus lane was provided. Segregated cycle tracks were provided in both directions. Due to the existing kerb to kerb widths, the proposed segregated cycle tracks were proposed to be constructed into the existing footpaths, reducing the available footpath widths. An extract from this proposed EPR design is shown in **Figure 6.8**.



Figure 6.8: Option 1F1

6.2.4.4 Route Option 1F2

An additional design was considered between St. Stephen’s Green and the Hatch Street Lower / Pembroke Street Upper Junction that would provide continuous segregated cycle tracks and bus lanes in both directions, while also maintaining the heritage granite kerbs and retaining the existing footpath widths, considering the heavy pedestrian usage of this section of road. To achieve the necessary widths between the existing kerbs for bus and cycle tracks, it was necessary to assess if the general inbound traffic lane could be diverted to St. Stephen’s Green on another route.

This option places a bus gate to the north of the Leeson Lane Junction on Leeson Street Lower and limits general traffic between the Hatch Street Lower / Pembroke Street Upper Junction and Leeson Lane to local access only along this section of road. General northbound traffic is diverted on to Hatch Street Lower, and then on to Earlsfort Terrace, where it travels east to the Earlsfort Terrace / St. Stephen's Green Junction. This requires the introduction of two-way general traffic on Earlsfort Terrace eastwards from the Hatch Street Lower Junction.

This is illustrated in **Figure 6.9**.



Figure 6.9: Option 1F2

6.2.4.5 Option Assessment

The MCA tables are included in **Appendix F**. A summary of the MCA for Section 1F is provided in **Table 6.5**

MCA Criteria	Assessment Sub-Criteria	Option 1F1	Option 1F2
Economy	1a Capital Cost	Green	Orange
	1b Transport Reliability and Quality of Service	Orange	Green
Integration	2a Land Use Integration	Yellow	Yellow
	2b Residential Population and Employment Catchments	Yellow	Yellow
	2c Transport Network Integration	Yellow	Yellow

MCA Criteria	Assessment Sub-Criteria	Option 1F1	Option 1F2
	2d Cycle Network Integration	Yellow	Yellow
	2e Traffic Network Integration	Green	Orange
Accessibility and Social Inclusion	3a Key Trip Attractors	Yellow	Yellow
	3b Deprived Geographic Areas	Yellow	Yellow
Safety	4a Road Safety	Orange	Green
Environment	5a Archaeological and Cultural Heritage	Yellow	Yellow
	5b Architectural Heritage	Orange	Green
	5c Flora and Fauna	Yellow	Yellow
	5d Soils and Geology	Yellow	Yellow
	5e Hydrology	Yellow	Yellow
	5f Landscape and Visual	Orange	Green
	5g Air Quality	Orange	Green
	5h Noise and Vibration	Yellow	Yellow
	5i Land Use Character	Yellow	Yellow

Table 6.5: MCA at Sub-Section 1F

In terms of Economy, the capital cost of Option 1F1 would be slightly lower than 1F2 due to the need to only provide minor works to one junction. Option 1F2 requires minor works to two junctions, which would cost slightly more than the one junction and kerb realignment for Option 1F1. For Journey Time Reliability, Option 1F2 performs better than 1F1 as northbound general traffic is removed from the Leeson Street Lower approach to the junction with St. Stephen’s Green.

In terms of Integration, both options perform the same for public transport and cycling as there is no change to the bus or cycle routes. Option 1F1 performs slightly better than 1F2 for general traffic integration due to the slightly shorter distance that general traffic would have to travel from Hatch Street Lower to St. Stephen’s Green.

Both options perform the same in terms of Accessibility and Social Inclusion.

Option 1F2 performs better than Option 1F1 in terms of Road Safety as a result of the additional space for cyclists and pedestrians along Leeson Street Lower towards the busy St. Stephen’s Green Junction.

Option 1F2 performs better in terms of Environment, specifically on Architectural Heritage, Landscape and Visual and Air Quality. It allows for the retention of all heritage granite kerbs, maintaining the visual character of the city centre Georgian streetscape. For Air Quality, Leeson Street Lower between Hatch Street Lower and St. Stephen’s Green is a busier route for pedestrians than Hatch Street Lower and Earlsfort Terrace. Relocating the general traffic

will reduce traffic and improve air quality for pedestrians and cyclists, particularly for the two schools on this section of road.

A summary of the assessment and relative ranking of route options against the five main assessment criteria is presented in **Table 6.6**

MCA Criteria	Option 1F1	Option 1F2
Economy	Yellow	Yellow
Integration	Green	Orange
Accessibility and Social Inclusion	Yellow	Yellow
Safety	Orange	Green
Environment	Orange	Green

Table 6.6: Section 1F Summary

Based on the assessment undertaken, Option 1F2 appears to offer more benefits than Option 1F1. It performs well under the Road Safety and Environment criteria. Option 1F2 is the PRO for the Leeson Street Lower section for the following reasons:

- It provides more Journey Time Reliability at the Leeson Street Lower / St. Stephen’s Green Junction;
- It provides a safer environment with more space for pedestrian and cyclists, particularly outside the two schools on this section of road; and
- It allows for the retention of heritage granite kerbs on Leeson Street Lower.

6.2.5 Design Development at UCD Interchange

6.2.5.1 Introduction

The proposed UCD Interchange will be a new bus interchange facility along the CBC for coach and local bus services, at the gateway to the UCD campus adjacent to the Stillorgan Road flyover bridge. The UCD Interchange design originally included in the EPR has been developed further in co-ordination with the UCD Future Campus Masterplan.

6.2.5.2 Design Development

The UCD Interchange design was first considered in the separate Bus Interchange and Terminus in UCD Campus Route Options Assessment Report, included in **Appendix L**. These early feasibility proposals explored the provision of interchange bus stops at the UCD / Stillorgan Road flyover and further layover capacity at the existing UCD interchange terminus within the campus. The proposals within the EPR, shown in **Figure 6.10**, were mainly limited to interchange bus stops at the on slip and off slip roads at the Stillorgan Road flyover bridge.

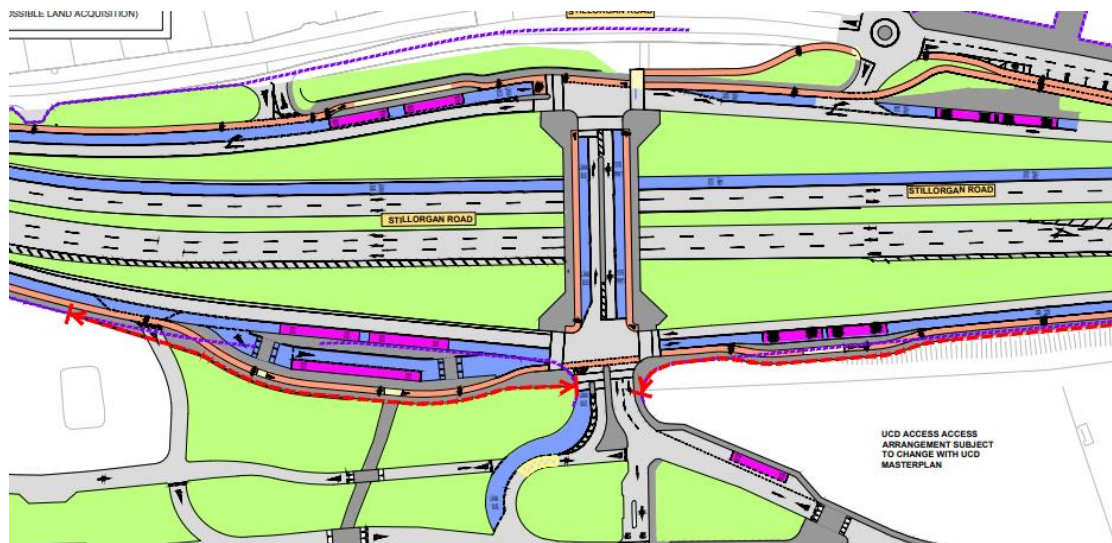


Figure 6.10: EPR Interchange Facility at UCD

Following further development of the network service plan, it became apparent that additional bus interchange capacity would be required for local and express/coach services at UCD. With a large proportion of bus services accessing the campus via the Stillorgan Road, the interchange facilities would need to be located as close to the Stillorgan Road as possible to facilitate efficient turnaround at peak hours, while also serving the UCD main entrance here.

Detailed liaison with UCD has taken place to develop an interchange facility that serves the CBC requirements while also supporting UCD's sustainable transport objectives and tying in with the UCD Future Campus Masterplan. A consolidated interchange facility will serve the evolving campus well. The proposed bus interchange is located adjacent to UCD's proposed Arrival Plaza at the Stillorgan Road entrance, which will act as a gateway for pedestrian and cyclist access to the campus. The interchange proposals will enhance pedestrian and cyclist friendly access, as well as bus access, from the interchange facility and from the Stillorgan Road to the campus. Following further review of traffic model and impact on bus delays and pedestrian safety, the two uncontrolled pedestrian crossings at the main plaza were updated to provide for raised signalised toucan crossings.

The proposed bus interchange adjacent to the Stillorgan Road flyover and proposed UCD Future Campus Arrival Plaza will provide a high-quality, accessible and attractive public transport interchange on the CBC adjacent to the UCD main entrance.

6.2.6 Other Design Development

The existing combined coach and local stop near the Morehampton Hotel has been retained as combined stop with island bus stop arrangement due to various constraints including the preserving the trees and the road geometry.

The design has been further developed to co-ordinate with the proposed Dodder Greenway scheme interface at Eglinton Road. Toucan Crossing has been provided at the tie-in with the Dodder Greenway which tie-in with the cycle tracks along the Eglinton Road to facilitate continued cyclists movement.

The design has been further developed to co-ordinate with the proposed Fitzwilliam Cycle scheme at Fitzwilliam Place and the urban realm regeneration at the Kiosk corner.

The design has been co-ordinated with the proposed Belfield / Blackrock to City Centre CBC at the Nutley Lane Junction. The co-ordinated design will have a two-way cycle track at Nutley lane along with two-way cycle track crossing at the N11 Southern arm. In an independent scenario, the Proposed scheme will tie-in to the existing infrastructure at the Nutley Lane junction with one-way cycle track in both direction along the Nutley Lane.

The design at the RTE junction has been further refined to tie-in to existing infrastructure within the RTE grounds.

The extent of the Brookvale Road and Eglington Road has not been included as part of the Proposed Scheme as it was deemed that the existing infrastructure suffice.

Relocation of bus stops on Leeson Street Lower. Removal of inbound bus stop at the Donnybrook Bus Depot.

Further design development undertaken to minimise impact to the Cellars, Coal Holes and Private Landings along Lesson Street Lower, Lesson Street Upper, Morehampton Road and through Donnybrook village.

6.3 Section 2 – UCD to Loughlinstown

6.3.1 Introduction

The Study Area Analysis and Multi-Criteria Analysis for the previously proposed feasible route options for Section 2 outlined in the Feasibility and Options Report have been evaluated by the design team and are considered still to be valid.

Key changes along the route in relation to cross-sections and lane provisions have been recorded at Subsection 2.1A (cycle facilities at Galloping Green), Subsection 2.1B (cycle facilities at St. Brigid's Church Road) and Subsection 2.1C (The Hill slip road from the N11).

No material changes have been recorded along the remainder of this section, but changes resulting from general design development are also discussed below.

6.3.2 Section 2.1A – Cycle Facilities at Galloping Green

6.3.2.1 Introduction

The existing provision over this length in the southbound direction is a cycle track that runs alongside the N11. It is separated from the adjacent Belmont Terrace by a narrow verge with a level difference between Belmont Terrace and the N11, with the cycle track at a slightly higher level than the adjacent side road. The cycle track is approximately 1.5m wide. Traffic entering and exiting Belmont Terrace crosses the straight-ahead N11 cycle track.

6.3.2.2 Development of Design

The design for this section has been reviewed following the previous EPR Option with a view to providing a safer layout for cyclists while also allowing for the relocation of a bus stop, and retention of as much side-road parking as possible.

The EPR design, shown in **Figure 6.11**, proposed a widened continuation of the current cycle track along its present alignment, adjacent to the N11, but with a new bus stop also located in the verge, which the cycle track was to pass behind.

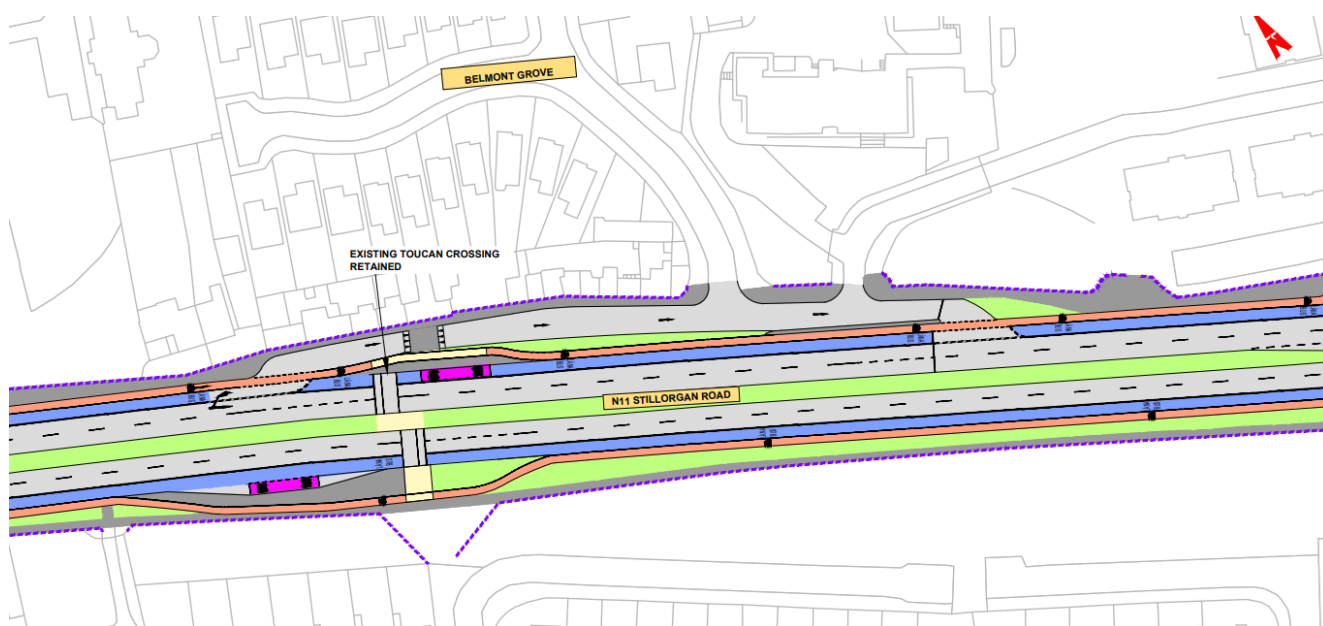


Figure 6.11: EPR Cycle Track Layout at Galloping Green

Following a detailed topographical survey of the location, it was found that the proposed cycle track alignment along the verge was not the optimal layout based on the level difference between the N11 and Belmont Terrace. The optimisation of bus stop locations also had led to the relocation of the bus stop approximately 150m to the north. Had the cycle track continued on its current alignment, but widened to 2m, it would also have required encroachment into the verge and potentially impacted on the parking spaces currently used on Belmont Terrace. Cars entering and exiting Belmont Terrace would also cross the straight-ahead N11 cycle track in two places, thus increasing potential conflict with the cyclists.

To provide for a standard 2m cycle track and remove the impact on adjacent parking while also improving the safety of the cycle track, the cycle track has been redirected onto Belmont Terrace to run alongside the current footpath. It passes the junction with Belmont Green and the adjacent private hospital, and then rejoins the N11 past the Belmont Terrace Junction.

This layout has a number of benefits. Firstly, it removes the two points where cyclists have to cross the running carriageway from the N11 in to and out of Belmont Terrace, and specifically the northern junction which is not signal controlled. Secondly, the relocated bus stop reduces the impact on parking along Belmont Terrace. This option also provides a continuous green verge between Belmont Terrace and the N11.

6.3.3 Section 2.1B – Cycle Facilities at St. Brigid’s Church Road

6.3.3.1 Introduction

The existing provision over this length in the northbound direction is an unprotected cycle lane that runs alongside the N11. There is a retaining wall that separates St. Brigid’s Drive and St. Brigid’s Church Road from the N11. As the cycle lane passes this retaining wall it narrows to approximately 1m in width, with the bus lane running directly next to it.

6.3.3.2 Development of Design

The previous EPR design for this section has been reviewed with a view to providing a safer layout for northbound cyclists while also reducing the impact on adjacent utilities and infrastructure.

The EPR design, shown in **Figure 6.12**, proposed a continuation of the existing cycle lane, upgraded to a 2m cycle track, along its present alignment on the N11.

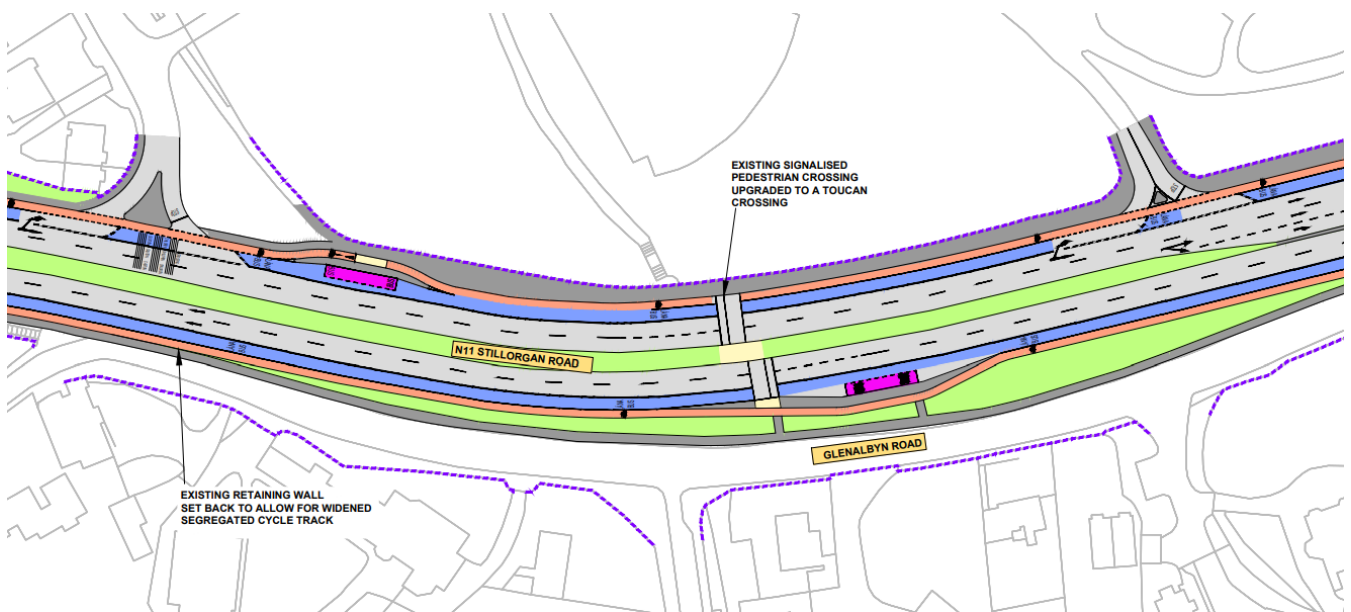


Figure 6.12: EPR Cycle Track Layout at St. Brigid's Church Road

Following a detailed topographical survey of the location, it was found that the proposed cycle track alignment would require either a relocation of the existing retaining wall, with associated narrowing of the side road footpaths, or a reduction of the N11 central median to create sufficient space for the new cycle track, bus lane, and two general traffic lanes. Assessment of the utilities in the central median showed specific underground cables that are not movable. The option to move the retaining wall was no longer considered to be preferred, due to the impact identified.

An alternative arrangement was developed which brought the cycle track behind the proposed island bus stop and along St. Brigid's Church Road, to bypass the N11 pinch point alongside the retaining wall. Retention of the existing trees in the verge required the removal of the eastern St. Brigid's Church Road footpath here, between St. Brigid's Drive and Merville Road. The pedestrian provision along St. Brigid's Church Road was reconfigured as a result, with improvements made to the western footpath and parking bays, as well as the addition of raised pedestrian crossings to redirect pedestrians to the western footpath.

This layout has a number of benefits. Firstly, it removes the need for large-scale structural or utility-based interventions around the central median on the N11 or the retaining wall in the verge. Secondly, it provides a safer route for cyclists. Thirdly, the traffic-calming measures will benefit the school and church users on St. Brigid's Church Road.

6.3.4 Section 2.1C – The Hill / N11 Junction

6.3.4.1 Introduction

The existing layout at this location is an uncontrolled left-turn slip from the N11 to The Hill, which cuts across the mainline cycle lane. The Hill operates as a one-way northbound road for a short section after this slip road, after which it turns into a two-way road serving a number of properties and a Garda Observation Point.

6.3.4.2 Development of Design

The design for this section has been reviewed following the previous EPR with a view to providing a safer layout for cyclists while also reducing speeds of vehicles along The Hill.

The EPR design, shown in **Figure 6.13**, maintained the current layout of a left-turn slip, albeit with a reduced entry radius, with traffic crossing the bus lane and cycle lane to access The Hill from the N11.

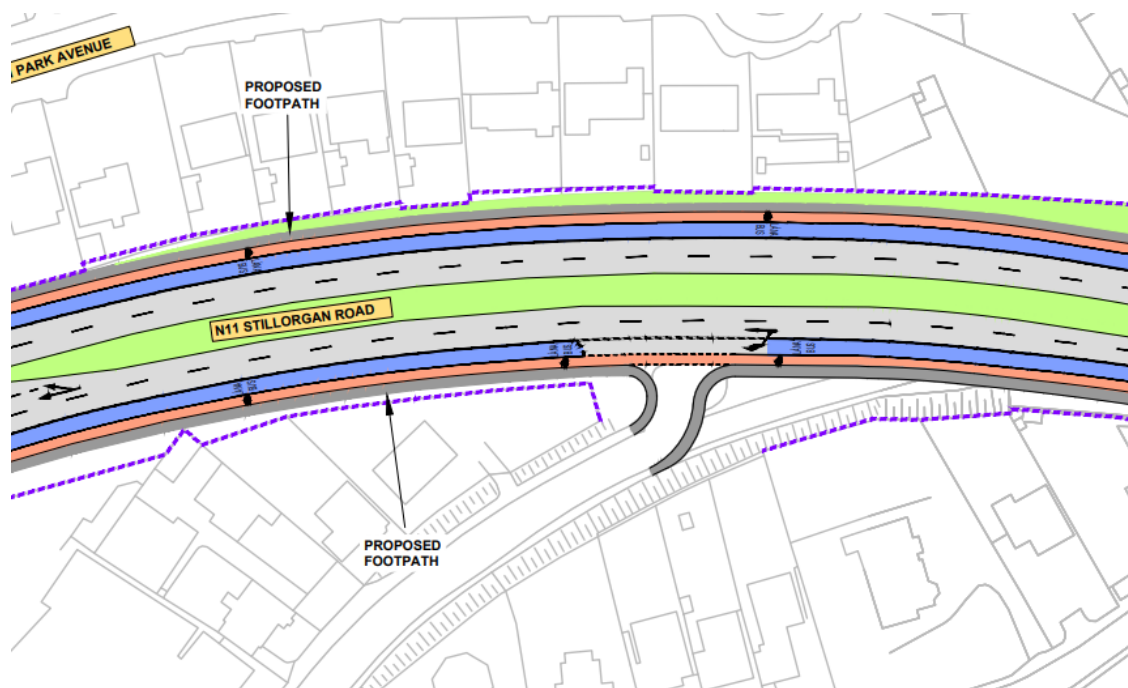


Figure 6.13: EPR Layout at The Hill

Following a review of the proposals at the location and an assessment of the traffic figures, it was considered appropriate to provide a safer layout for cyclists by closing the off slip from the N11 and providing a continuous segregated cycle track.

The junction capacity assessment at Lower Kilmacud Road Junction has shown that the reallocation of traffic that used The Hill slip road can be accommodated at the Lower Kilmacud Road Junction, as the closest junction.

This layout has a number of benefits. Firstly, it creates a safer layout for cyclists without vehicles crossing the cycle track at speed, as is currently the case. It also reallocates traffic accessing the Lower Kilmacud Road to the main junction on the N11, which will improve the efficiency of the Old Dublin Road / The Hill / Lower Kilmacud Road Junction operation. Lastly, it removes the risk of vehicles accidentally entering the N11 in the wrong direction.

6.3.5 Other Design Development

The design has been further developed to co-ordinate with the UCD Nova Development, the future Brewery Road Safety Improvement scheme, and the Cherrywood SDZ Development. The design has been further developed to co-ordinate with the Stillorgan Movement Plan in particular the location of the bus stops and toucan crossings.

At Patrician Villas / St Laurence Park, the widening of the pedestrian subway and the footpath connection along the N11 was value engineered from the EPR option and it is now proposed to lengthen the subway on one side (east) and new footpaths and cycle tracks will run parallel to the N11 mainline in both directions.

A two-way cycle track connection along the N11 Merrion Grove Junction to the Colaiste Eoin school has been introduced to integrate with the school, providing a more direct connection to the northbound school going cyclists and overall safety for the cyclists. Various options were evaluated for the 2-way cycle track connection within the School premises and the Proposed Scheme includes two-way cycle track that tie-in to the existing cycling arrangement within the School premises.

The proposed coach stop at the Talbot Hotel has been moved further south to remove the impact to the Talbot Hotel forecourt further to public consultation feedback.

The island bus stop at South Hill Church was revised to Shared landing bus stop to reduce impact to the Church following feedback from public consultation.

The proposed location of the pedestrian link to South Park has been changed from the EPR option and now moved closer to the junction with Old Bray Road, to improve pedestrian movement line and access to the bus stop.

The proposed footpath along the N11 between Cornelscourt to Kilboget Junction as part of the EPR option has been removed from the PRO, as it was considered a non-desired pedestrian link based on the pedestrian movement along this stretch and aligned with the local development plans. Alternative walking routes exist on adjacent quieter roads.

At the N11 Farmleigh Junction Northbound (parallel to Glenalbyn Road), the cycle track width has been reduced at the pinch point near the bus stop running along the low wall, due to existing constraints for road geometry, wall and utilities.

The design has been developed further to retain the service road as two-way between Old Cherrywood Road Junction and Loughlinstown Roundabout, from the one-way northbound in the EPR option.

6.4 Section 3 – Loughlinstown to Bray North

6.4.1 Introduction

The Study Area Analysis and Multi-Criteria Analysis for the previously proposed feasible route options for Section 3 outlined in the Feasibility and Options Report have been evaluated by the design team and are considered still to be valid.

Material changes along the route in relation to cross-sections and lane provisions have been recorded at Subsection 3.2C (cycle facilities between Crinken Lane and Loughlinstown Roundabout), and Subsection 3.2D (Crinken Lane to St. Anne's Roundabout).

No material changes have been recorded at Subsection 3.2B (Wilford Roundabout to Crinken Lane) or Subsection 3.2E (St. Anne's Roundabout to Loughlinstown Roundabout), but changes resulting from general design development are also discussed below.

6.4.2 Section 3.2B – Wilford Roundabout to Crinken Lane

6.4.2.1 Introduction

The existing provision over this length comprises a two-lane carriageway with advisory cycle lanes from Wilford Roundabout as far as Shanganagh Cemetery. From here, the cross-section switches to two traffic lanes, a northbound bus lane and a southbound advisory cycle lane until alongside Shanganagh Park. It then transitions back to two lanes with advisory cycle lanes from Shanganagh Park to Crinken Lane, as shown in **Figure 6.14**.

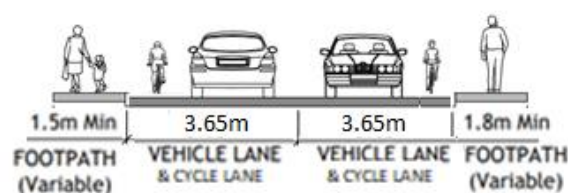


Figure 6.14: Indicative Existing Cross-Section for Subsection 3.2B

6.4.2.2 Development of Design

The design for this section has been reviewed following the previous EPR with a view to minimising the impacts while maintaining the necessary level of bus priority and cycle segregation.

The EPR design proposed a full suite of two segregated cycle tracks, two bus lanes and two general traffic lanes, as illustrated in **Figure 6.15**.

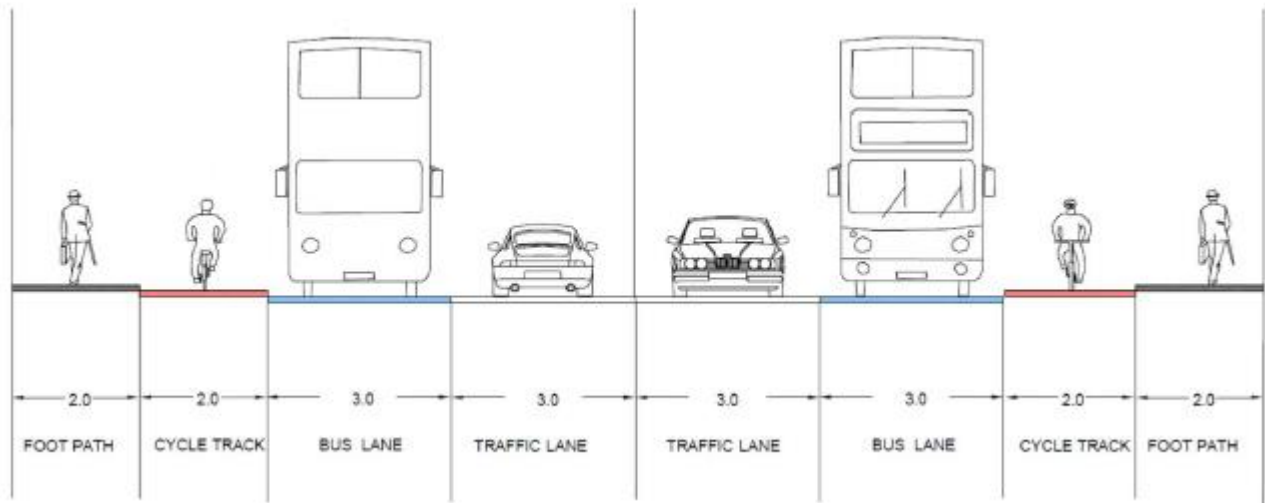


Figure 6.15: Proposed EPR Subsection 3.2B Indicative Cross-Section

The design for this section was developed further as part of the PRO development following completion of additional topographical and tree surveys, which allowed for a more detailed analysis of the impacts the proposed EPR would have. The assessment also took into account the responses from the Non-Statutory Public Consultations which outlined that heritage wall and roadside tree loss along this section would impact on the visual identity and feel for this length of road.

Signal Controlled Bus Priority was applied for northbound buses from Wilford Roundabout to enable a reduction in impact on properties and significant mature trees immediately north of the junction by locally shortening the bus lane extents here until the Woodbrook college. In this section widening has been provided in the east side to minimise impact to the properties. Signal priority measures which commenced in the adjacent section through Shankill village were extended for southbound buses as far as the Shanganagh Castle grounds to reduce impact on properties.

Cycle tracks and/or footpaths have been brought behind the roadside treeline where suitable, to maintain the roadside tree canopy along the road. At these locations, the intention is to remove the ground-level shrubbery and crown the trees to ensure there is visibility from the road to the newly relocated footpaths and cycle tracks. To optimise the protection of the roadside trees in front of Shanganagh Cemetery, a section of the northbound cycle track has been relocated to the eastern side of the route to create a two-way cycle track from St. James Church, behind the roadside trees at Shanganagh Cemetery, and across Shanganagh Park. The northbound cycle track crosses back to the west side of the road before Allies River Road.

The design has been co-ordinated with proposed entrances for recently approved housing developments at Shanganagh Castle and Woodbrook. These developments have been considered when assessing the most appropriate local alignment, in addition to newly available survey information. In particular, tree survey information has been carefully considered when refining the alignment, to prioritise retention of significant mature trees.

Liaison has taken place with DLRC to ensure that the design takes into consideration the emerging Shanganagh Park and Cemetery Masterplan interactions with the Proposed Scheme.

The above design development has enabled a reduction in impact on adjacent heritage walls, properties and trees that was evident as a result of the updated topographical survey and tree survey in the area, while maintaining the proposed bus priority infrastructure.

6.4.3 Section 3.2C – Cycle Provision between Crinken Lane and Loughlinstown Roundabout

6.4.3.1 Introduction

Cycling provision between Loughlinstown Roundabout and Crinken Lane was assessed in the Feasibility and Options Report in two sections – from Loughlinstown Roundabout to the Dublin Road / Shanganagh Road Junction, and from the Dublin Road / Shanganagh Road Junction to Crinken Lane.

In this previous report, from Loughlinstown Roundabout to Dublin Road / Shanganagh Road Junction, two options for cycling provision were assessed. From the Dublin Road / Shanganagh Road Junction southwards to Crinken Lane, four options were assessed.

Following the Multi-Criteria Analysis for the EPR in the Feasibility and Options Report, Option 1, illustrated in **Figure 6.16**, was considered the most desirable cycling option between Loughlinstown Roundabout to Dublin Road / Shanganagh Road Junction due to its directness.

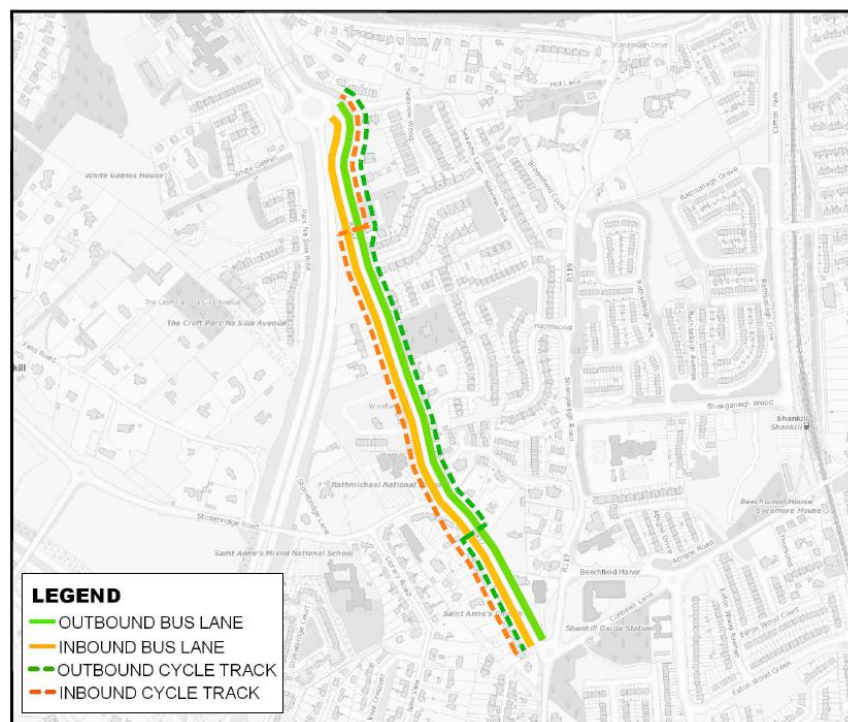


Figure 6.16: EPR Cycle Route Option 1 from St. Anne's Church to Loughlinstown Roundabout

Option 1, illustrated in **Figure 6.17**, was considered the most desirable cycling option between the Dublin Road / Shanganagh Road Junction and Crinken Lane as it had less impact along the main road in terms of cycle provision, and a safer route by removing cyclists from the main road.

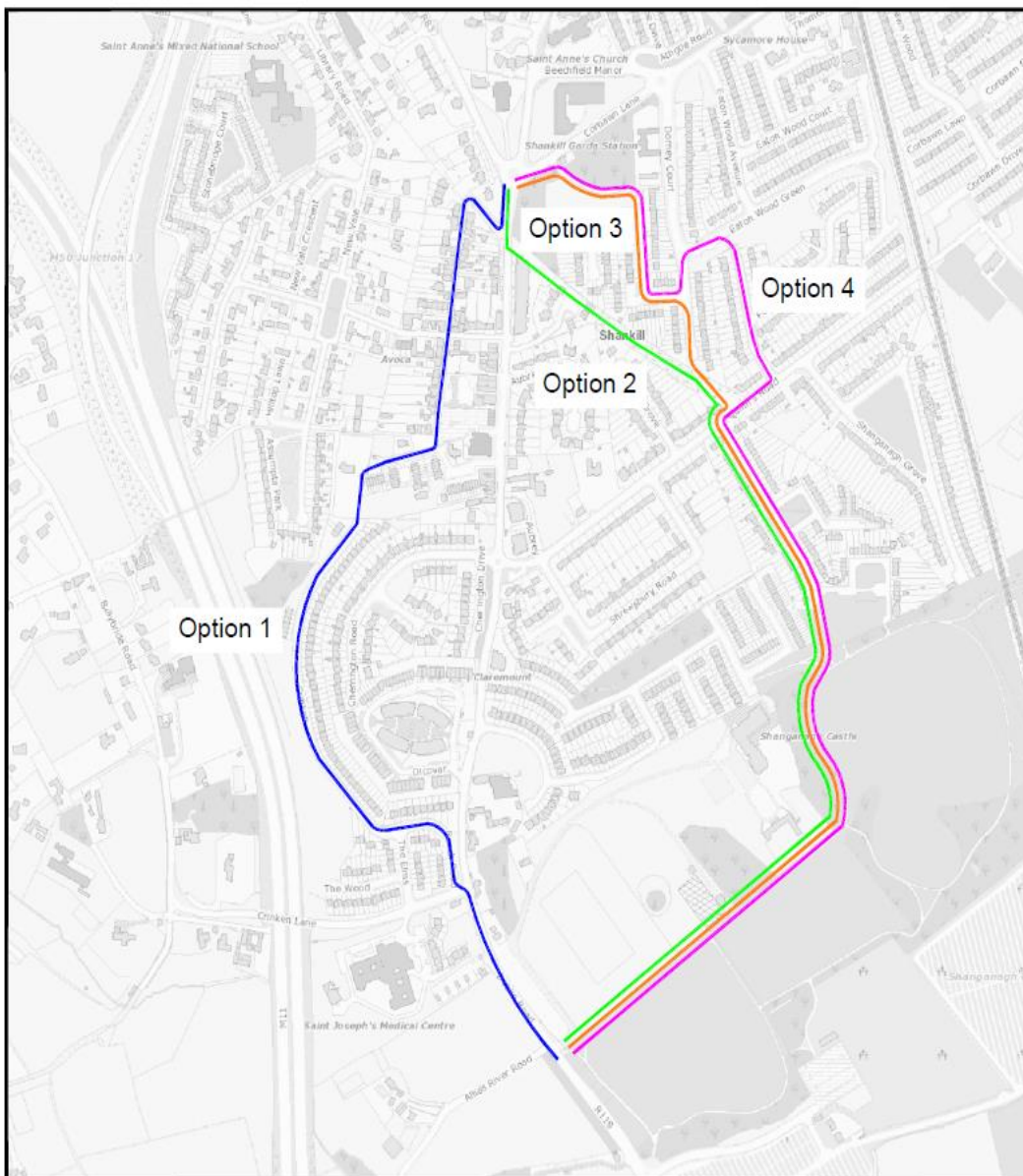


Figure 6.17: EPR Cycle Route Options from Crinken Lane to St. Anne's Roundabout

As part of the Non-Statutory Public Consultation process, a large number of submissions from residents of the Shankill area highlighted concerns around the proposed cycle solution. These concerns included the limited infrastructure through the village which responders thought would still be used by cycling commuters, the narrowness of Lower Road and the impact it was thought to have on residents, the level difference between Lower Road and Dublin Road which would require a cycle track ramp, and the new cycle traffic this proposal would bring to Mountainview and Stonebridge Close.

Community forums in the area raised concerns regarding the impact that the proposed cycle provisions had on adjacent properties between St. Anne's Church and Loughlinstown Roundabout, as they increased the required cross-section by 4m. These forums also highlighted that, at present, some considered it unsafe for children to cycle to the schools located on Stonebridge Road due to current road widths and traffic levels.

As a result of the above, the cycling provision was investigated further.

It was decided that a more appropriate break point between the two sections was Stonebridge Road instead of Shanganagh Road. This is shown in **Figure 6.18**.

Option 1 between Loughlinstown Roundabout and the Dublin Road / Shanganagh Road Junction was reassessed against two new options, 3.2C1 and 3.2C2, between Loughlinstown Roundabout and Stonebridge Road. This is referred to as Cycling Subsection 1.

Option 1 between Dublin Road / Shanganagh Road Junction and Crinken Lane was reassessed against five new options, 3.2C3, 3.2C4, 3.2C5, 3.2C6 and 3.2C7. This is referred to as Cycling Subsection 2.

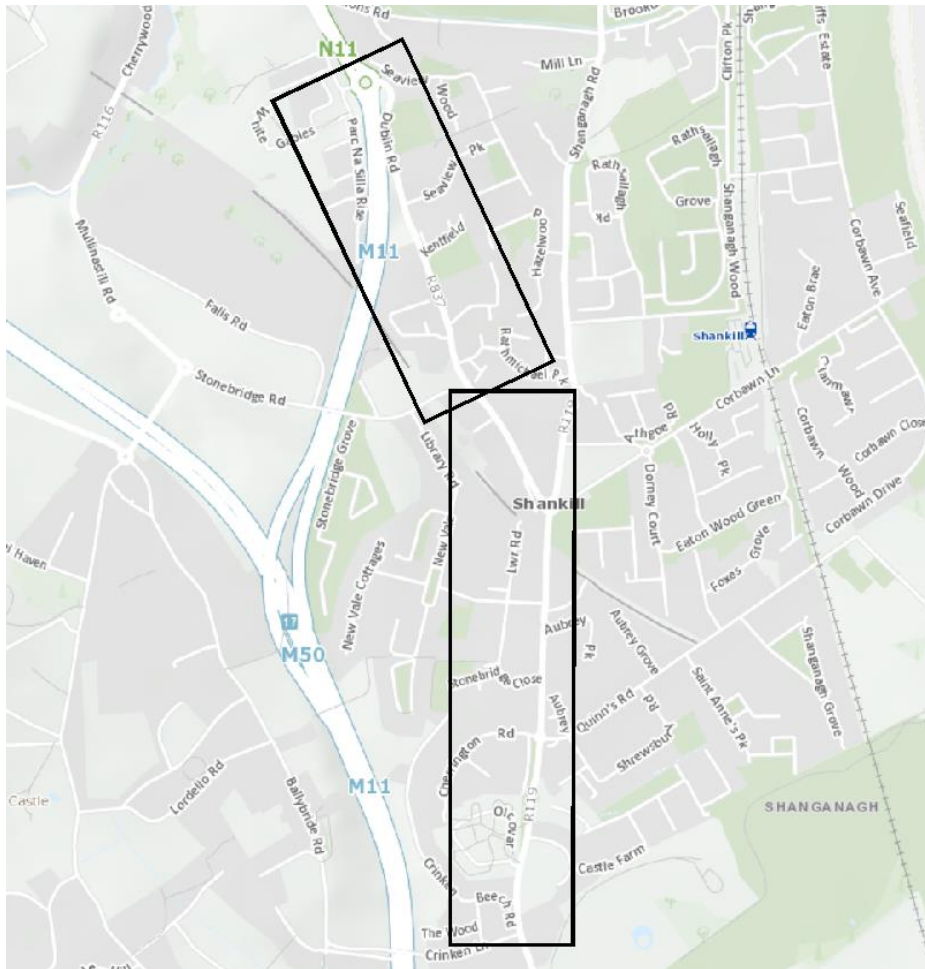


Figure 6.18: Subsections 1 and 2 for Cycling Provision Assessment between Loughlinstown Roundabout and Crinken Lane

6.4.3.2 Options Considered

This section travels along the Dublin Road, but also takes adjacent roads into account for the considered options. These other roads are the M11, Stonebridge Lane and Stonebridge Road for Cycling Subsection 1 (Options 3.2C1 and 3.2C2), and Library Road, New Vale, Assumpta Park, Stonebridge Close, Lower Road, Mountainview, and the Elms for Cycling Subsection 2 (Options 3.2C3, 3.2C4, 3.2C5, 3.2C6 and 3.2C7).

Route Option 3.2C1: This option will have cycle track through the M11

Route Option 3.2C2 (Dublin Road Cycle Route): This option would require cyclists to share bus lanes or general traffic lanes along this length between Loughlinstown Roundabout and Stonebridge Road.

6.4.3.3 Cycling Subsection 1, 3.2C1 M11 Cycle Track

Option 3.2C1 (M11 Cycle Track) would require clearance and construction along the grassed verge of the M11, including construction of additional vehicle restraints, and retaining walls and earthworks to provide sufficient width for the cycle track through the verge slope at narrower locations and along the necessary ramp. It would also require the removal of additional screening trees along this link. The track would be required to ramp back up to Stonebridge Road over a considerable length as a result of the level differences. Additional lighting would also be required to improve security for cyclists. This is shown in **Figure 6.19**.



Figure 6.19: Option 3.2C1 M11 Cycle Track Loughlinstown to Stonebridge Road

6.4.3.4 Cycling Subsection 1, Option 3.2C2 (Dublin Road Cycle Route)

This option would not provide segregated cycle tracks between Loughlinstown Roundabout and Stonebridge Road and would require cyclists to share bus lanes or general traffic lanes along this length. It would, however, provide a more direct route for cyclists along the existing road and would tie in with the GDA Cycle Network Primary Route that runs on the Dublin Road. The route for this cycle option is shown in **Figure 6.20**.



Figure 6.20: Option 3.2C2 Dublin Road Cycle Route

6.4.3.5 Options Assessment – Subsection 1

The MCA tables are included in **Appendix G**. A summary of the MCA for Cycling Subsection 1 is provided in **Table 6.7**.

MCA Criteria	Assessment Sub-Criteria	EPR Option (1)	Option 3.2C1 (M11 Cycle Track)	Option 3.2C2 (Dublin Road Cycling Route)
Economy	1a Capital Cost	Yellow	Yellow	Green
	1b Transport Reliability and Quality	Green	Green	Yellow
Integration	2a Land Use integration	Green	Yellow	Green

MCA Criteria	Assessment Sub-Criteria	EPR Option (1)	Option 3.2C1 (M11 Cycle Track)	Option 3.2C2 (Dublin Road Cycling Route)
	2b Residential Population and Employment Catchments	Green	Orange	Green
	2c Transport Network Integration	Green	Orange	Green
	2d Cycle Network Integration	Green	Green	Orange
	2e Traffic Network Integration	Yellow	Yellow	Yellow
Accessibility and Social Inclusion	3a Key Trip Attractors	Green	Orange	Green
	3b Deprived Geographical Areas	Yellow	Yellow	Yellow
Safety	4a Road Safety	Green	Green	Orange
Environment	5a Archaeology, and Cultural Heritage	Orange	Green	Green
	5b Architectural Heritage	Orange	Green	Green
	5c Flora and Fauna	Orange	Orange	Green
	5d Soils and Geology	Green	Orange	Green
	5e Hydrology	Yellow	Yellow	Yellow
	5f Landscape and Visual	Orange	Orange	Green
	5g Air Quality	Yellow	Yellow	Yellow
	5h Noise and Vibration	Yellow	Yellow	Yellow
	5i Land Use Character	Orange	Green	Green

Table 6.7: Cycling Subsection 1 MCA between Loughlinstown Roundabout and Stonebridge Road

In terms of Economy, Option 3.2C2 performs best as it requires no additional construction. EPR Option 1 and 3.2C1 perform best in terms of Journey Time Reliability as the cyclists would not interfere with bus travel times.

In terms of Integration, EPR Option 1 and 3.2C2 perform best as they serve the main population, transport and commercial elements in the locality, while Option 3.2C1 is located away from these. This is the same reason these two options perform best in terms of Accessibility and Social Inclusion.

In terms of Safety, EPR Option 1 and Option 3.2C1 perform best as they provide segregated cycle facilities.

In terms of Environment, Option 3.2C2 performs best as it has the least impact on the existing environment, with Option 3.2C1 next and EPR Option 1 performing worst by comparison.

A summary of the assessment and relative ranking of route options against the five main assessment criteria is presented in **Table 6.8**.

MCA Criteria	EPR Option 1	Option 3.2C1	Option 3.2C2
Economy	Yellow	Yellow	Yellow
Integration	Green	Orange	Green
Accessibility and Social Inclusion	Green	Orange	Green
Safety	Green	Green	Orange
Environment	Orange	Yellow	Green

Table 6.8: Cycling Subsection 1 MCA Summary

From this assessment, the option taken forward was new Option 3.2C2 – Dublin Road Cycling Route for the Cycling subsection 1. Although this option does not provide segregated cycle infrastructure along this section, it is considered the most appropriate solution to bring forward over this section taking into account the impact of cycle infrastructure on adjacent properties and planted areas, the associated requirement for specific structural earthwork solutions along the M11, and input from the local community.

Route Option 3.2C3: This option is continuation of the M11 cycle track option and cycle tracks will continue along Stonebridge Grove;

Route Option 3.2C4: This option would bring advisory cycle lanes and quiet street treatment along Stonebridge Road to Library Road where they would continue along Library Road and New Vale, along the laneway by Assumpta Park and up to Lower Road;

Route Option 3.2C5: This option is the same as Option 3.2C4 as far as the laneway at Assumpta Park. The cycle lane would take a right turn along the lane to the rear of the houses on Assumpta Park to eventually pass through onto Mountainview. It would then carry on to The Elms and Crinken Lane, and on to the Dublin Road;

Route Option 3.2C6: This option is a continuation of Option 3.2C2 – Dublin Road Cycle Route. This would not provide any segregated cycle infrastructure along this link;

Route Option 3.2C7: This option provides for a short section of segregated two-way cycle track that would link the junction at Corbawn Lane to Stonebridge Road.

6.4.3.6 Cycling Subsection 2, Option 3.2C3, Cycle Provision between Stonebridge Road and Crinken Lane

Option 3.2C3 is a continuation of the M11 cycle track option. After ramping up to Stonebridge Road from the M11 verge, this would continue along Stonebridge Grove with a dedicated two-way cycle track before passing through onto the M11 verge. It would continue along the verge until before the Lordello Road Bridge where it would pass back though the treeline, under the bridge and onto the green space leading to Mountainview. It would then carry on through Mountainview and The Elms and on to Crinken Lane to eventually rejoin the Dublin Road. This is shown in **Figure 6.21**.

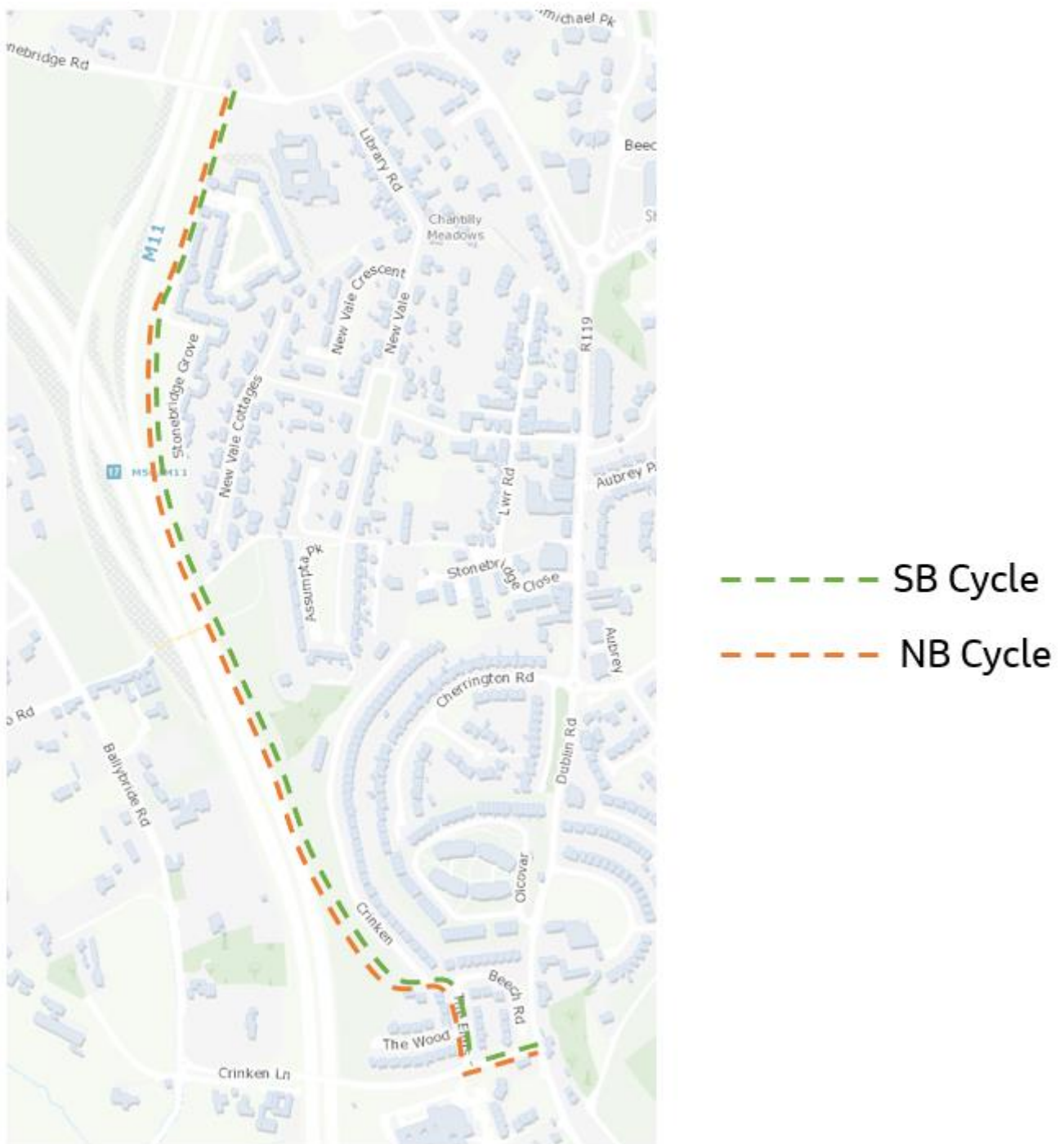


Figure 6.21: Option 3.2C3 M11 Cycle Track Stonebridge Road to Crinken Lane

6.4.3.7 Cycling Subsection 2, Option 3.2C4, Library Road to Stonebridge Close

Option 3.2C4 would bring advisory cycle lanes and quiet street treatment along Stonebridge Road to Library Road, where they would continue along Library Road and New Vale, along the laneway by Assumpta Park and up to Lower Road. Towards the top of Lower Road, the cycle lanes would pass through an existing wall on to Stonebridge Close and out on to the Dublin Road. At this point, the cyclists would share the single traffic lane with other vehicles and buses until Crinken Lane where space permits the widening to include segregated cycle tracks. This is shown in Figure 6.22.

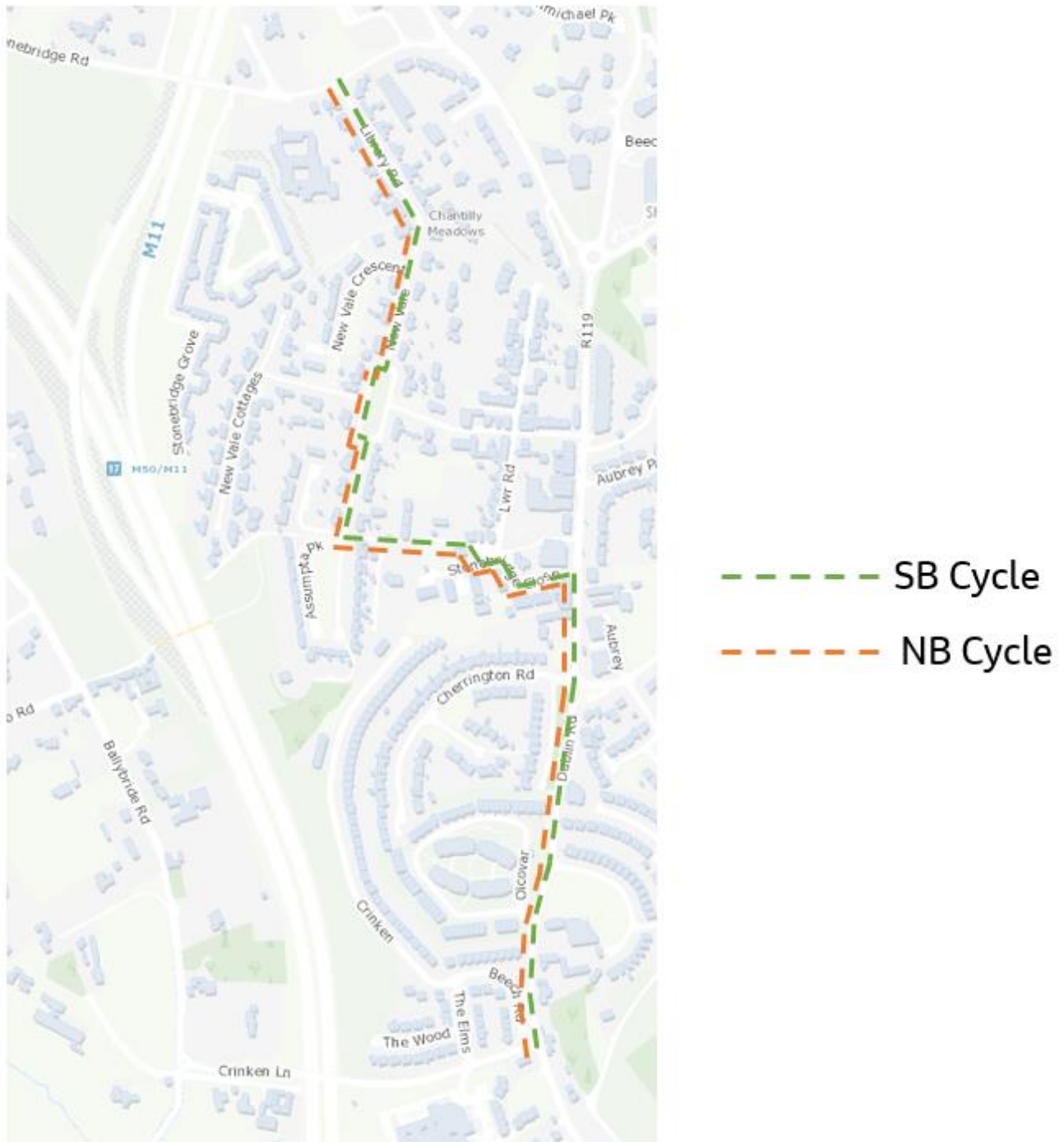


Figure 6.22: Option 3.2C4 Cycle Track Stonebridge Road to Crinken Lane via Assumpta Park and Stonebridge Close

6.4.3.8 Cycling Subsection 2, Option 3.2C5, Library Road / Assumpta Park / Mountainview

Option 3.2C5 is the same as Option 3.2C4 as far as the laneway at Assumpta Park. The cycle lane would take a right turn along the lane to the rear of the houses on Assumpta Park to eventually pass through onto Mountainview. It would then carry on to The Elms and Crinken Lane, and on to the Dublin Road. This is shown in Figure 6.23.

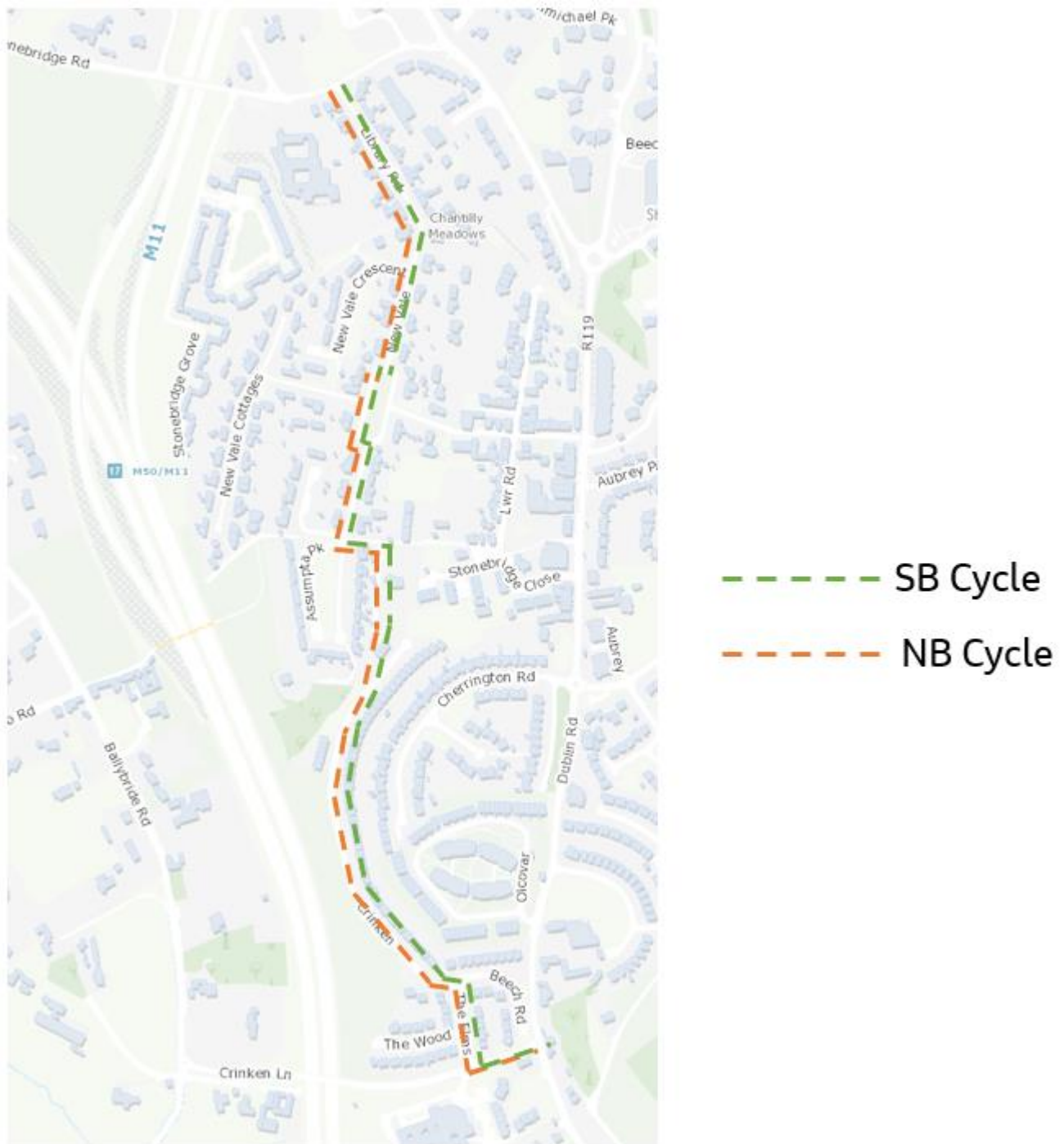


Figure 6.23: Option 3.2C5 Cycle Track Stonebridge Road to Crinken Lane via Assumpta Park and Mountainview

6.4.3.9 Cycling Subsection 2, Option 3.2C6, Dublin Road Cycle Route

Option 3.2C6 is a continuation of Option 3.2C2 – Dublin Road Cycle Route. This would not provide any segregated cycle infrastructure along this link. Cyclists would share bus lanes with buses where available, and general carriageways with general traffic at other locations. A speed limit of 30kph would be in place between Stonebridge Road and the Signal Controlled Bus Priority south of Shankill village. This is shown in Figure 6.24.

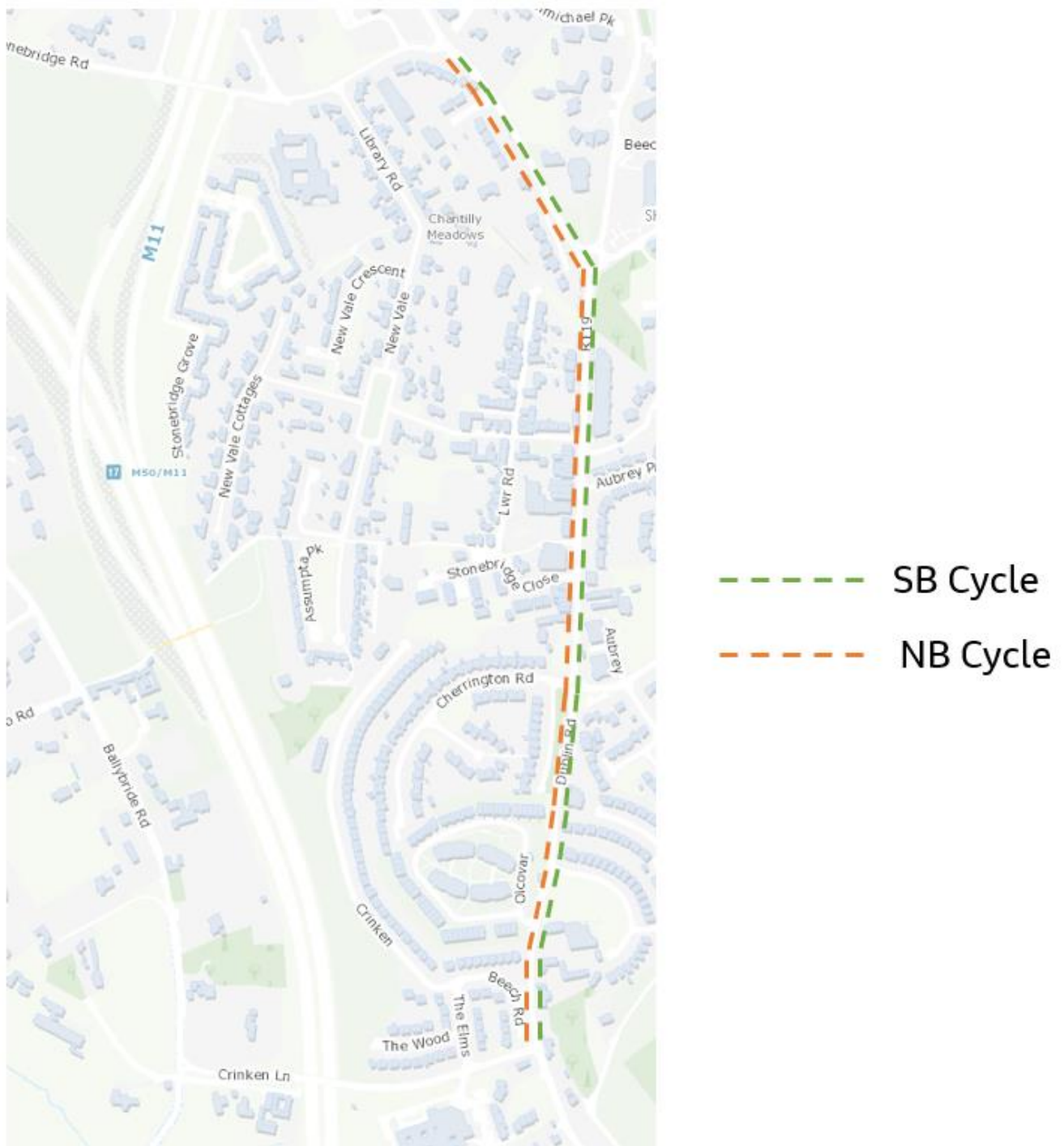


Figure 6.24: Option 3.2C6 Dublin Road Cycling Route

6.4.3.10 Cycling Subsection 2, Option 3.2C7, Corbawn Lane to Stonebridge Road

Option 3.2C7 provides for a short section of segregated cycle track that would link the junction at Dublin Road/ Shanganagh Road/ Corbawn Lane to Stonebridge Road. A two-way segregated cycle track would run past St. Anne's Church, requiring land to be taken from the frontage and car park of the church, and some additional land from the boundary of four properties between the church and Stonebridge Road.

A Toucan Crossing would be provided to bring cyclists across the road to a continuation of the two-way cycle track on the northern side of Stonebridge Road. This would carry on as far as Stonebridge Lane. This option would

provide cycle infrastructure along the GDA Cycle Network Plan Inter Urban Route D4 which runs along Stonebridge Road and Dublin Road as far as Corbawn Lane. It would also improve local cycle access to both schools on Stonebridge Road. In the future, this link could also be extended to tie in with the start of a dedicated cycle link to the Cherrywood LUAS stop across the M11 bridge along Stonebridge Road. The location of the proposed segregated cycle tracks associated with this option is shown in **Figure 6.25**.

Between Crinken Lane and the junction at St. Anne's Church, cyclists would share the carriageway with general traffic, or with buses where a bus lane is provided. A speed limit of 30kph would be in place between Stonebridge Road and the Signal Controlled Bus Priority south of Shankill village.

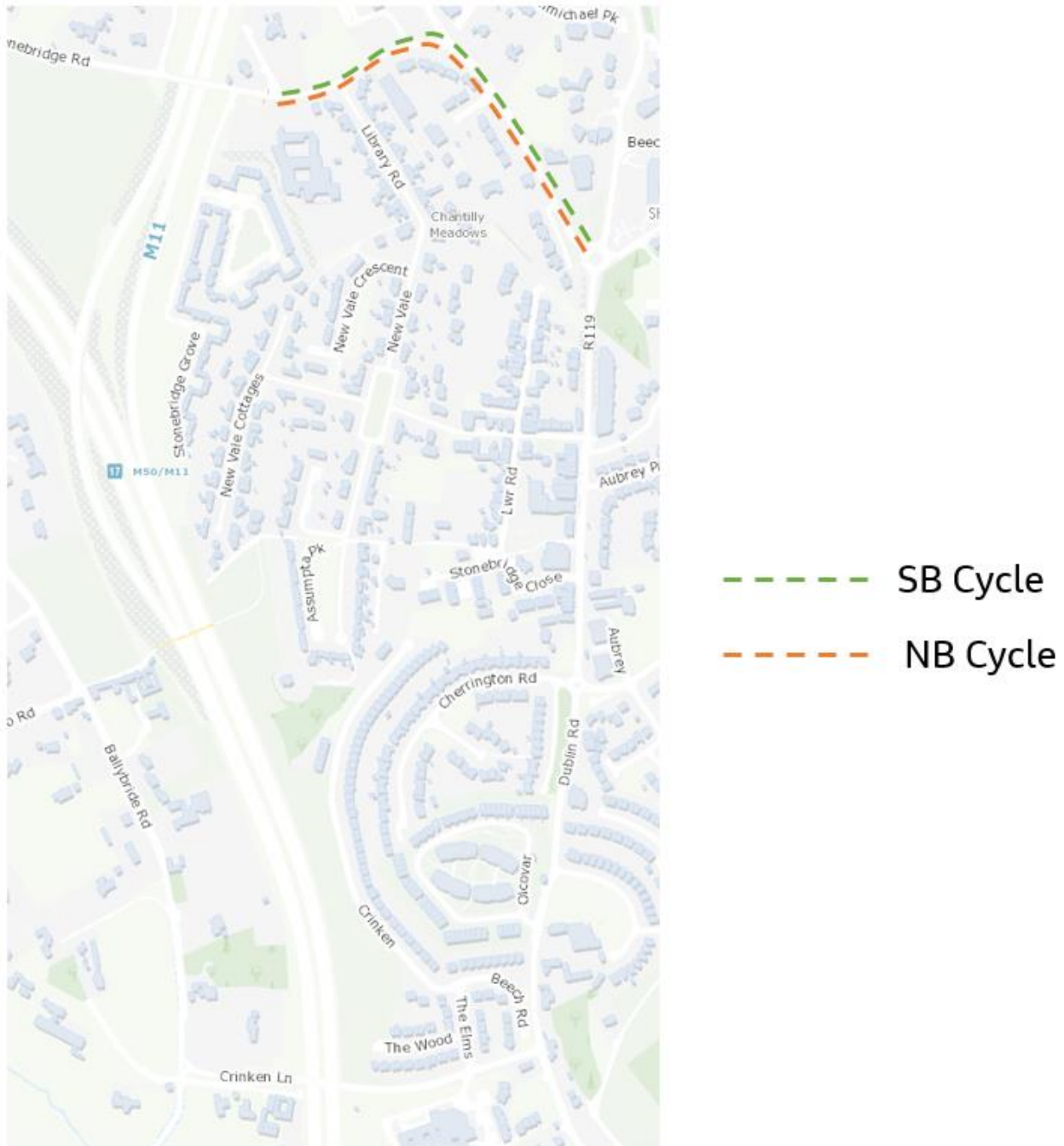


Figure 6.25: Option 3.2C7 Cycle Track Stonebridge Road to Junction at Corbawn Lane

6.4.3.11 Options Assessment – Subsection 2

The MCA tables are included in **Appendix H**. A summary of the MCA for Cycling Subsection 2 is provided in **Table 6.9**.

MCA Criteria	Assessment Sub-Criteria	EPR Option 1	Option 3.2C3 (M11 Cycle Track)	Option 3.2C4 (Library Road / Stonebridge Close)	Option 3.2C5 (Library Road / Assumpta Park)	Option 3.2C6 (Dublin Road Cycle Route)	Option 3.2C7 (Corbawn Lane to Stonebridge Road)
Economy	1a Capital Cost	Green	Orange	Orange	Orange	Green	Orange
	1b Transport Reliability and Quality	Green	Green	Orange	Green	Orange	Orange
Integration	2a Land Use integration	Green	Orange	Green	Green	Green	Green
	2b Residential Population and Employment Catchments	Green	Orange	Green	Green	Green	Green
	2c Transport Network Integration	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
	2d Cycle Network Integration	Orange	Green	Orange	Orange	Orange	Green
	2e Traffic Network Integration	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
Accessibility and Social Inclusion	3a Key Trip Attractors	Green	Orange	Green	Green	Green	Green
	3b Deprived Geographic Areas	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
Safety	4a Road Safety	Orange	Green	Orange	Green	Orange	Orange
Environment	5a Archaeology	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow

MCA Criteria	Assessment Sub-Criteria	EPR Option 1	Option 3.2C3 (M11 Cycle Track)	Option 3.2C4 (Library Road / Stonebridge Close)	Option 3.2C5 (Library Road / Assumpta Park)	Option 3.2C6 (Dublin Road Cycle Route)	Option 3.2C7 (Corbawn Lane to Stonebridge Road)
	and Cultural Heritage	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
	5b Architectural Heritage	Green	Green	Orange	Green	Green	Orange
	5c Flora and Fauna	Orange	Red	Green	Green	Green	Green
	5d Soils and Geology	Green	Orange	Green	Green	Green	Green
	5e Hydrology	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
	5f Landscape and Visual	Orange	Green	Orange	Orange	Green	Green
	5g Air Quality	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
	5h Noise and Vibration	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
	5i Land Use Character	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow

Table 6.9: MCA at Subsection 3.2C2 Cycle Provision between Crinken Lane and Stonebridge Road

In terms of Economy, Options 3.2C3 and 3.2C7 perform worst under Capital Cost as they require segregated cycle tracks to be constructed, while the majority of the rest of the options run on existing carriageways as quiet routes. Options 3.2C4 and 3.2C5 do require cycle track construction offline, as well as works to create a viable route for the cycle track. In terms of Journey Time Reliability, the options that share Dublin Road with bus lanes (3.2C4, 3.2C6 and 3.2C7) perform the worst as they may impact on bus time reliability.

In terms of Integration, the M1 Option (3.2C3) performs the worst as it does not provide any linkages for cyclists to Shankill. Option 3.2C7 appears to perform the best as it provides safe cycling links for local school access and maintains the GDA Cycle Network Plan (CNP) primary route on the Dublin Road, despite not providing cycle segregation for the entire length.

The M11 option (3.2C3) performs the worst in terms of Accessibility and Social Inclusion, as it does not pass the GDA CNP primary route through Shankill village.

The M11 option (3.2C3) and the Library Road / Assumpta Park option (3.2C5) perform best in terms of Road Safety due to the segregated cycle track provision and least length running without segregation on the Dublin Road, respectively.

The Dublin Road Cycle Route (3.2C6) performs best in terms of Environment, due to negligible impacts beyond the existing, with 3.2C5 and 3.2C7 performing well too. The M11 option (3.2C3) performs worst under this criterion due to the impact on trees and the overall construction effort required along the M11 verge.

A summary of the assessment and relative ranking of route options against the five main assessment criteria is presented in **Table 6.10**.

MCA Criteria	Option 1	Option 3.2C3	Option 3.2C4	Option 3.2C5	Option 3.2C6	Option 3.2C7
Economy	Green	Yellow	Orange	Yellow	Yellow	Orange
Integration	Yellow	Yellow	Yellow	Yellow	Yellow	Green
Accessibility and Social Inclusion	Green	Orange	Green	Green	Green	Green
Safety	Orange	Green	Orange	Green	Orange	Orange
Environment	Orange	Orange	Orange	Green	Green	Green

Table 6.10: Cycling Subsection 2 MCA Summary

From this assessment, the option taken forward was new Option 3.2C7 – Corbawn Lane to Stonebridge Road for the cycling subsection 2. Although this does not provide segregated cycle infrastructure along the entire length of this section, the impact of providing segregated cycling infrastructure on adjacent properties and planted areas was considerable. Following local community engagement, Option 3.2C7 was developed to provide safer cycling between residential areas and the two schools on Stonebridge Road. It also provides cycling infrastructure along a section of GDA CNP Inter Urban Route D4 and provides a cycle link from the western side of the M11 along Stonebridge Road across the main traffic route and towards Shankill DART station. The GDA CNP primary route through Shankill is still viable, and a speed limit of 30kph will be introduced from Stonebridge Road to the Signal Controlled Bus Priority proposed south of Shankill village.

A combination of Options 3.2C2 and 3.2C7 for the cycling subsection 1 and 2 is the PRO for the cycle route between Loughlinstown Roundabout and Crinken Lane for the following reasons:

- It provides for safe cycle provision along the GDA CNP Primary Route in this area;
- It minimises the impact on the environment; and
- It responds to the input from the local community.

The NTA are committed to considering wider Shankill cycling solutions as a scheme separately in the future in collaboration with DLRCC.

6.4.4 Section 3.2D – Crinken Lane to St. Anne’s Roundabout

6.4.4.1 Introduction

Following the MCA for the EPR in the Feasibility and Options Report, Option 2.2D was considered the most desirable option due to the journey time reliability and transport network integration it provided.

As part of the Non-Statutory Public Consultation, a large number of the responses from the Shankill area highlighted their concerns around the proposals. These concerns related to the impact that the proposals may have to the feel of the village centre, and the impact that the lane widening may have south of the village centre.

Following the Non-Statutory Public Consultation feedback, a new topographical survey and tree survey, and the option to assess Signal Controlled Bus Priority along sections of road, the lane configuration was investigated further. As such, 2.2D from the EPR was reassessed against three new options, 3.2D4, 3.2D5 and 3.2D6.

6.4.4.2 Options Considered

This section travels along the Dublin Road.

The four options considered (2.2D, 3.2D4, 3.2D5 and 3.2D6) follow the same route as 2.2D as detailed in the previous Feasibility and Options Report.

EPR Option 2.2D: This option will provide bus lane and cycle tracks both direction with land take;

Route Option 3.2D4: This option will provide cycle tracks and Bus Priority Signal through the village;

Route Option 3.2D5: This option will provide Northbound bus lane and Southbound Bus Priority Signal. Cycle tracks are not provided;

Route Option 3.2D6: This option will maintain current public realm and cross-section through the village. This option will have no cycle tracks through the village and bus priority is provided through Signal Control priority

6.4.4.3 EPR Option 2.2D

The previous EPR Option is shown in **Figure 6.26**.

This option would provide a northbound bus lane between Crinken Lane and Quinn's Road Junction, with a section of northbound bus lane through Shankill village between Stonebridge Close and Lower Road junctions, and a southbound bus lane between Lower Road and Crinken Lane junctions.

This option would result in land acquisition to facilitate road widening along the Dublin Road between Crinken Lane and Lower Road junctions, including portions of gardens and public open space. It would require the removal of mature trees, while residential off-street parking would not be affected.

Provision of northbound and southbound bus lanes through Shankill village would require removal of on-street parking, loss of street trees and a reconfiguration of the road and pedestrian space including narrowing of existing footpath widths. Enhanced priority could be provided for northbound buses through implementation of Signal Controlled Bus Priority south of Shankill village, on approach, and at Lower Road Junction.



Figure 6.26: Previous EPR Route for Subsection 2.2D

6.4.4.4 Route Option 3.2D4 – Cycle Lanes through Village

Two traffic lanes for buses and general traffic to share would be maintained through Shankill village with Signal Controlled Bus Priority in place either side of the village.

A northbound bus lane would run from Crinken Lane to a Signal Controlled Bus Priority junction located further north on approach to Shankill village, while the southbound bus lane would commence further south. In-line bus stops would artificially hold traffic back from passing buses at stops, reinforcing bus priority. Cycle lanes through Shankill village would provide segregated cycle facilities and remove potential bus/cycle interactions. However, these cycle lanes would only be provided between Stonebridge Close and Lower Road due to space constraints, and cyclists would be expected to share the carriageway with buses and general traffic either side of these extents. This is shown in Figure 6.27.



Figure 6.27: Option 3.2D4

6.4.4.5 Route Option 3.2D5 – Northbound Bus Lane through the Village

Two general traffic lanes would be maintained through Shankill village with a northbound bus lane provided from Stonebridge Close to Lower Road Junction, and Signal Controlled Bus Priority introduced either side of the village to provide initial bus priority through this section. This is shown in Figure 6.28. In-line bus stops would artificially hold traffic back from passing buses at stops, reinforcing bus priority.



Figure 6.28: Option 3.2D5

6.4.4.6 Route Option 3.2D6 – Maintain Current Public Realm through the Village

Two general traffic lanes would be maintained through Shankill village with Signal Controlled Bus Priority systems in place on the approach either side of the village. In the southbound direction, Signal Controlled Bus Priority would be provided at Dublin Road/ Shanganagh Road/ Corbawn Lane Junction. The northbound bus lane would continue from Crinken Lane to a Signal Controlled Bus Priority on approach to Shankill village, while the southbound bus lane would recommence at Shanganagh Castle. In-line bus stops would artificially hold traffic back from passing buses at stops, reinforcing bus priority. A 30kph speed restriction is proposed for the village section to enhance safety over this shared section which is urban in nature. This is shown in **Figure 6.29**

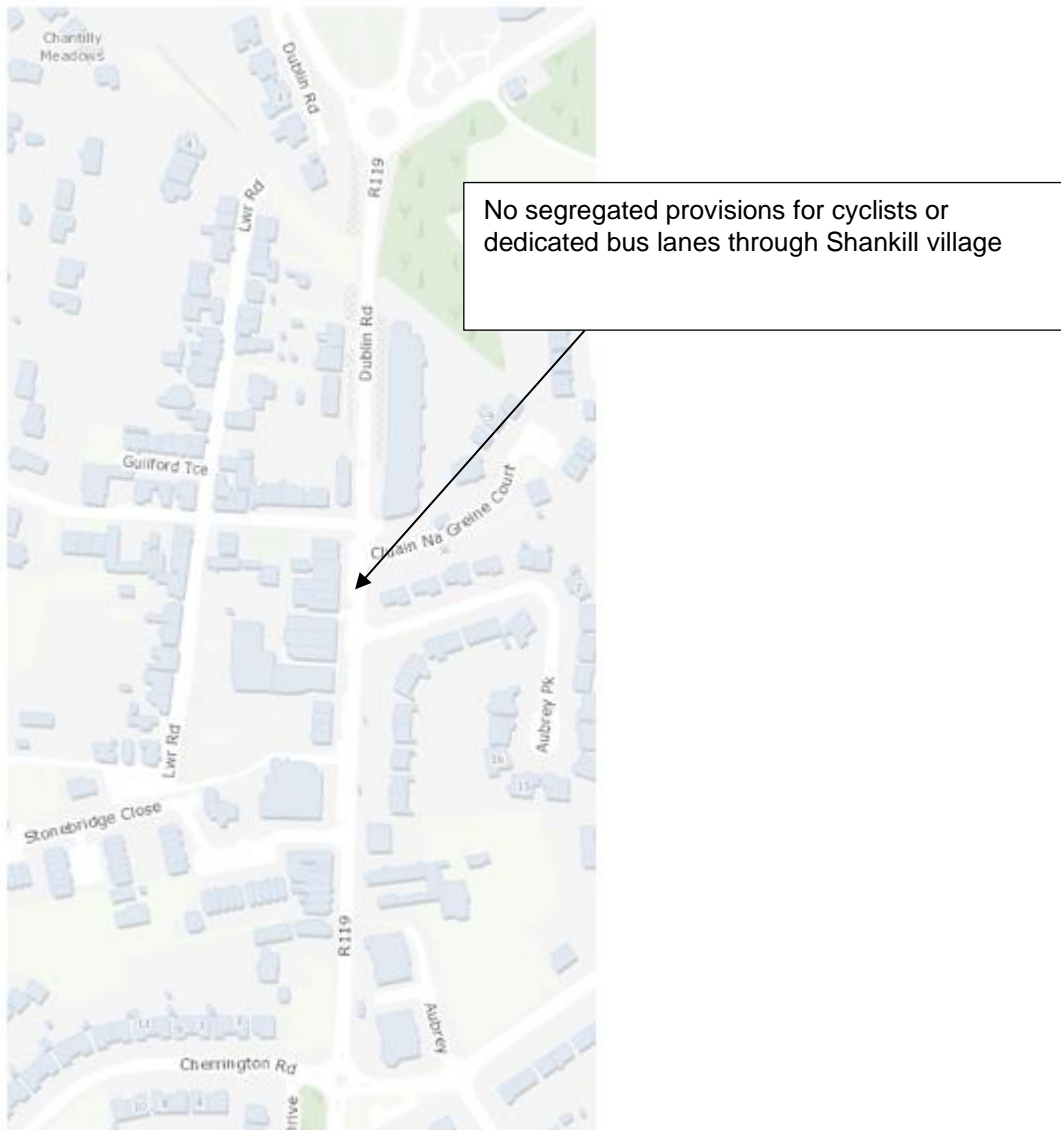


Figure 6.29: Option 3.2D6

6.4.4.7 Option Assessment

The MCA tables are included in **Appendix I**. A summary of the MCA for Section 3.2D is provided in **Table 6.11**.

MCA Criteria	Assessment Sub-Criteria	EPR Option 2.2D	Option 3.2D4	Option 3.2D5	Option 3.2D6
Economy	1a Capital Cost	Yellow	Yellow	Yellow	Green
	1b Transport Reliability and Quality	Green	Yellow	Green	Yellow
Integration	2a Land Use Integration	Yellow	Yellow	Yellow	Yellow

MCA Criteria	Assessment Sub-Criteria	EPR Option 2.2D	Option 3.2D4	Option 3.2D5	Option 3.2D6
	2b Residential Population and Employment Catchments	Yellow	Yellow	Yellow	Yellow
	2c Transport Network Integration	Yellow	Yellow	Yellow	Yellow
	2d Cycle Network Integration	Orange	Green	Green	Green
	2e Traffic Network Integration	Yellow	Yellow	Yellow	Yellow
Accessibility and Social Inclusion	3a Key Trip Attractors	Yellow	Yellow	Yellow	Yellow
	3b Deprived Geographic Areas	Yellow	Yellow	Yellow	Yellow
Safety	4a Road Safety	Orange	Green	Orange	Green
Environment	5a Archaeology and Cultural Heritage	Orange	Green	Green	Green
	5b Architectural Heritage	Orange	Green	Green	Green
	5c Flora & Fauna	Orange	Green	Green	Green
	5d Soils and Geology	Yellow	Yellow	Yellow	Yellow
	5e Hydrology	Yellow	Yellow	Yellow	Yellow
	5f Landscape and Visual	Red	Green	Orange	Green
	5g Air Quality	Yellow	Yellow	Yellow	Yellow
	5h Noise and Vibration	Orange	Green	Orange	Green
	5i Land Use Character	Orange	Orange	Orange	Green

Table 6.11: MCA at Section 3.2D

In terms of Economy, Option 3.2D4 performs worst while the remainder have positives and negatives associated with them. Option 3.2D6 is the best performing in terms of Capital Cost due to the minimisation of intervention.

In terms of Integration, Option 2.2D performs the worst, while the other options perform equally well in terms of Cycle Network Integration. All options perform similarly for the other Integration criteria.

All options perform the same in terms of Accessibility and Social Inclusion.

Options 3.2D4 and 3.2D6 perform best in terms of Road Safety due to the segregated cycle tracks (3.2D4) and reduced speeds through the village (3.2D6).

Option 3.2D6 performs best in terms of Environment, mainly due to the minimal impact on the visual identity of the village. Options 3.2D4 and 3.2D5 perform relatively well or neutrally under Environmental criteria. EPR Option 2.2D performs worst due to the overall impact through the village.

A summary of the assessment and relative ranking of route options against the five main assessment criteria is presented in **Table 6.12**.

MCA Criteria	EPR Option 2.2D	Option 3.2D4	Option 3.2D5	Option 3.2D6
Economy	Green	Orange	Green	Green
Integration	Orange	Green	Green	Green
Accessibility and Social Inclusion	Yellow	Yellow	Yellow	Yellow
Safety	Orange	Green	Orange	Green
Environment	Orange	Green	Yellow	Green

Table 6.12: Section 3.2D MCA Summary

Based on the assessment undertaken, Option 3.2D6 is the PRO for Section 3.2D. Although no dedicated bus lanes or segregated cycle routes are provided through the village centre, this option addresses strong community engagement around this issue. Compared to other options, Option 3.2D6 will provide wider footways, traffic speed restrictions, and maintain the current village environment. The GDA CNP primary route through Shankill is still viable, and a speed limit of 30kph will be introduced from Stonebridge Road to the Signal Controlled Bus Priority proposed south of Shankill village.

Option 3.2D6 is the PRO for the Crinken Lane to St. Anne’s Roundabout section for the following reasons:

- It minimises the impact to the visual identity of Shankill village and addresses community feedback; and
- It maintains existing footway widths through the village, with a reduced speed limit providing improved road safety.

The NTA are committed to considering wider Shankill cycling solutions as a scheme separately in the future in collaboration with DLRCC.

6.4.4.8 Other Design Development

Signal Control Priority measures which commenced in the adjacent section through Shankill village are extended for southbound buses as far as the Shanganagh Castle grounds (moved from Quinn’s Road Junction to after Crinken Lane Junction) to reduce impact on properties and trees.

South of the Shankill Main Street, the design was revised to move the northbound Signal Control Priority from Quinn’s Road/ Cherrington Drive Junction to a new location at Olcovar junction to reduce impact on properties and trees and provision for right-turning lane at the Olcovar and signalisation of the Olcovar junction.

6.4.5 Section 3.2E – St. Anne’s Church to Loughlinstown Roundabout

6.4.5.1 Introduction

The existing provision over this length comprises a general traffic lane in each direction with an advisory cycle lane in both directions. Around Seaview Gate, at the Easter Region Ambulance Service building, a northbound bus lane also develops on the approach to Loughlinstown Roundabout. At St. Rita’s, a Toucan Crossing allows cyclists to cross to the eastern side of the road to/from the northbound continuation of a two-way cycle track. After the Toucan Crossing the northbound bus lane becomes a second general traffic lane on approach to the roundabout. There is housing alongside both sides of the road, with minor junctions to housing estates and apartments as well. On the northbound approach to Loughlinstown Roundabout there is a bank of screening planting between the Dublin Road and the M11.

6.4.5.2 Development of Design

The design on this section has been reviewed following the EPR with a view to minimising the impacts while maintaining the necessary level of bus priority.

The EPR design proposed a full suite of two segregated cycle tracks, two bus lanes and two general traffic lanes, as illustrated in **Figure 6.30**, from St. Anne's Church Roundabout to Loughlinstown Roundabout.

At St. Anne's Church, and at Seaview Gate, Toucan Crossings were to be provided to cross cyclists to two-way cycle tracks coming off the N11, and on the approach to the previously proposed cycle lane diversion along Lower Road. This layout required widening on both sides of the carriageway for the majority of the length, and on one side of the carriageway for the remainder.

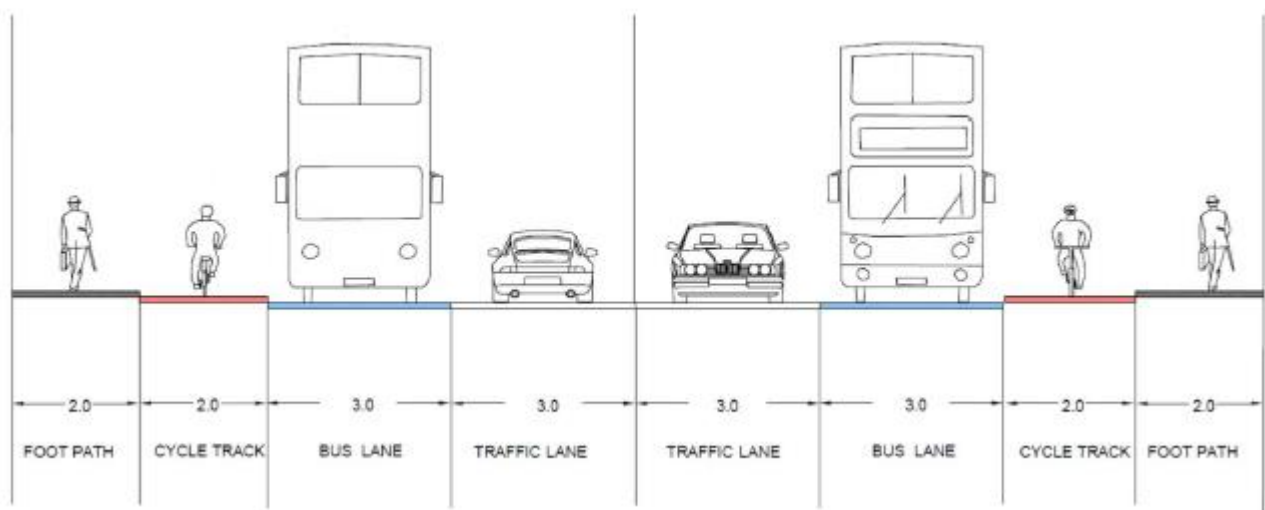


Figure 6.30: EPR Cross-Section on Dublin Road

Following the first Non-Statutory Public Consultation, taking comments from the public into account, the cycle tracks on this section were removed from the design due to the additional impact that the 4m of cross-section had on adjacent lands and properties. Cycle track options are discussed in more detail in Section 6.4.3 above.

Updated topographical and tree surveys were carried out which informed additional design development. Options were assessed for combinations of Signal Controlled Bus Priority taking adjacent properties and trees into account.

Continuous bus lanes are provided in both directions where possible between Loughlinstown Roundabout and St. Anne's Church, with Signal Controlled Bus Priority proposed between the Dublin Road / Shanganagh Road / Corbawn Lane Junction and Rathmichael Woods in the northbound direction.

A section of two-way cycle track is proposed between the new Dublin Road / Shanganagh Road / Corbawn Lane Junction and the Dublin Road / Stonebridge Road Junction, which continues on Stonebridge Road to serve the two schools located there. Cycle track options are discussed in more detail in Section 6.4.3 above.

The layout of the proposed the new Dublin Road / Shanganagh Road / Corbawn Lane Junction was reviewed and revised through a number of iterations to take on board public concerns around traffic movement. The junction is proposed to be signalised as part of the Proposed Scheme. Access from Corbawn Lane on to Shanganagh Road will become exit only. A dedicated right-turn lane is proposed from Shanganagh Road onto Beechfield Manor.

From the Dublin Road / Stonebridge Road Junction north to the Loughlinstown Roundabout, the necessary widening is entirely to the west of the carriageway to minimise impact to the properties and trees.

6.4.5.3 Alternative options at Dublin Road/ Shanganagh Road/ Corbawn Lane Junction

The layout of the proposed Dublin Road/ Shanganagh Road/ Corbawn Lane Junction was reviewed and revised through a number of iterations to optimise the operational performance of the junction against BusConnects objectives and to respond to feedback from local stakeholders. The junction is proposed to be signalised as part of the Proposed Scheme. Access from Corbawn Lane to Shanganagh Road will become exit only. A dedicated right-turn lane is proposed from Shanganagh Road onto Beechfield Manor. The PRO option is shown in **Figure 6.32**.

Further assessment was carried out to examine other viable alternative options at the Dublin Road/ Shanganagh Road/ Corbawn Lane Junction to mitigate the impact of the traffic restrictions to Corbawn Lane, while achieving the BusConnects objectives.. These are discussed below:

EPR Option: the ERP Option upgrades existing roundabout to full signalised junction and closure of Corbawn Lane, as shown in **Figure 6.31**.

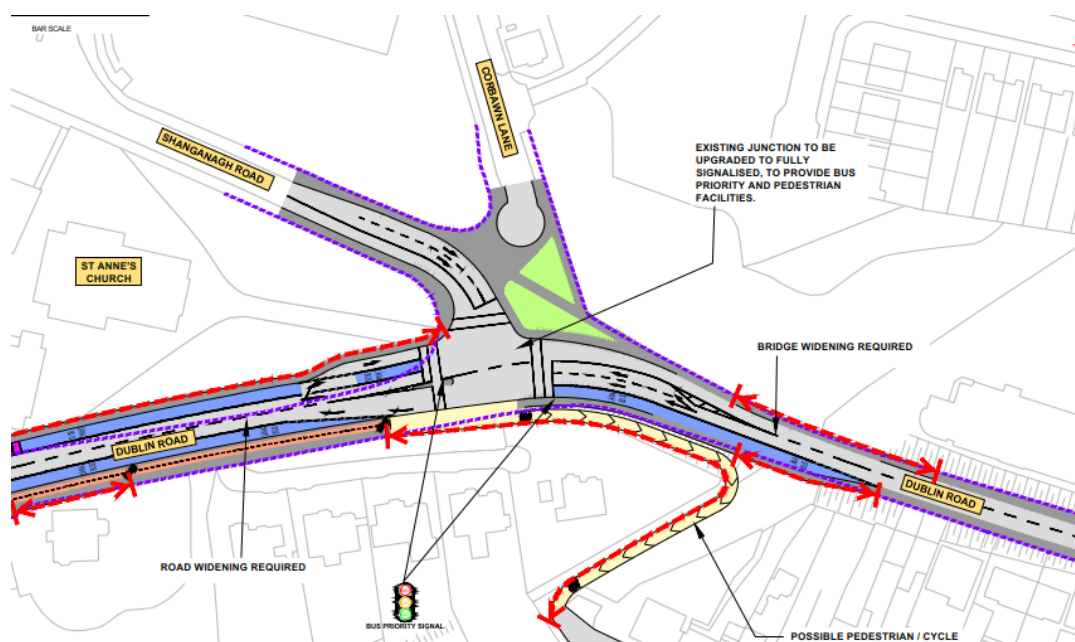


Figure 6.31: EPR Option at Dublin Road/ Shanganagh Road/ Corbawn Lane Junction

Option 1: A fully signalised junction with general traffic entry and exit to and from Corbawn Lane with the Dublin Road / Shanganagh Road junction;

Option 2: A fully signalised junction with some restrictions to general traffic entry and exit to and from Corbawn Lane with the Dublin Road / Shanganagh Road junction, with a northbound Dublin Road slip lane for buses and general traffic;

Option 3: A fully signalised junction with general traffic entry to Corbawn Lane from Shanganagh Road (no general traffic exit from Corbawn Lane to Shanganagh Road), with a northbound Dublin Road slip lane for buses and general traffic;

Option 4: A fully signalised junction with general traffic exit only from Corbawn Lane to Shanganagh Road (no general traffic entry from Shanganagh Road to Corbawn Lane). A dedicated right-turn lane is also proposed from Shanganagh Road onto Beechfield Manor;

Option 5: Roundabout as existing.

EPR Option; A fully signalised junction between Dublin Road and Shanganagh Road with the closure of the Corbawn Lane / Shanganagh Road junction. In this option, bus lanes are provided in both directions along Dublin Road north of Dublin Road / Shanganagh Road junction. A dedicated southbound general traffic left turn lane is provided from Dublin Road towards Shanganagh Road, which requires land-take from St Anne's Church grounds. South of Shanganagh Road, there is no bus lane in the southbound direction heading towards Shankill village, however bus priority is achieved with signal controlled priority allowing the buses to proceed in advance of general traffic, and a short section of bus lane is provided in the northbound direction. A straight ahead to Dublin Road and right turning traffic lanes are provided in the northbound direction towards Shanganagh Road. Improved pedestrian facilities with dedicated pedestrian crossings on the 3-arms of the junction. Provision of bus lanes and traffic lanes result in a wider footprint of the junction, impacting the existing heritage wall and the old railway bridge. A two-way cycle track has been provided along the Dublin Road north of the Shanganagh Road junction. A proposed cycle track ramp has been provided to connect to an alternative shared street facility along Lower Road.

The EPR Option would require a large intervention to provide sufficient junction capacity and widening to provide more lanes on the approaches to the junction and therefore would have significant negative impact in terms of capital cost and the integration of the junction to its local surroundings. This option does not provide for local trips to or from Corbawn Lane from Shanganagh Road / Dublin Road and will result in increased traffic queuing on the Shanganagh Road and Beechfield Manor. This option does not provide for overall junction functionality in all directions and did not receive a favourable response from the local residents of Shankill during the non-statutory consultation.

Option 1; A fully signalised junction, creating a 4-way cross-roads type layout with the northbound Dublin Road aligned with Shanganagh Road. This option provides for bus priority on Dublin Road, improved pedestrian crossing facilities and entry/exit to and from Corbawn Lane to the main junction. In this option a dedicated southbound bus lane is provided on Dublin Road on the approach to the junction. A similar northbound bus lane is provided on Dublin Road on the approach to the junction. A dedicated left turn lane is provided for the northbound general traffic to continue north on Dublin Road. South of the junction there is no bus lane in the southbound direction heading towards Shankill village, however bus priority is achieved with signal controlled priority allowing the buses to proceed in advance of general traffic. Northbound on Dublin Road a straight ahead to Shanganagh Road and left turn lane to Dublin Road is provided. Provision of bus lanes and general traffic lanes results in wider footprint of the junction, impacting the old railway bridge. A two-way cycle track has been provided along the Dublin Road north of the Shanganagh Road on the St Anne's Church side, which connects with the 2-way cycle track connection proposed at Corbawn lane.

This option does provided for overall junction movements in all directions. However, a fully signalised junction would require a large intervention to provide sufficient junction capacity and widening to provide more lanes on approaches to junction would have significant negative impact. Keeping the same road configuration on approach does not give enough capacity for the junction to operate efficiently. This option creates cyclists conflict movement at the junction. This option limits the urban realm opportunities due to the widening required to accommodate additional lanes. The shorter section of northbound bus lane does not provide significant benefits to bus movements, as buses may often be prevented from accessing the lane by general traffic queueing.

Option 2; A fully signalised junction, creating a 4-way cross-roads type layout with the northbound Dublin Road aligned with Shanganagh Road, plus a dedicated northbound left turn bus slip lane and general traffic slip lane to allow for greater vehicle movements through the junction. This option provides for bus priority on Dublin Road, improved pedestrian crossing facilities and entry/exit to and from Corbawn Lane to the main junction. However, vehicles exiting Corbawn Lane are restricted to only turning left and no right turn northbound on Dublin Road to Corbawn Lane is proposed to improve overall junction operation efficiency. In this option a dedicated southbound bus lane is provided on Dublin Road on the approach to the junction. A similar northbound bus lane is provided on Dublin Road on the approach to the junction. A dedicated left turn slip lane and general traffic slip lane is provided for the northbound vehicles to continue north on Dublin Road. South of the junction there is no bus lane in the southbound direction heading towards Shankill village, however bus priority is achieved with signal

controlled priority allowing the buses to proceed in advance of general traffic. Northbound on Dublin Road a straight ahead to Shanganagh Road is provided. Provision of bus lanes and general traffic lanes results in wider footprint of the junction, impacting the old railway bridge. Two-way cycle track has been provided along the Dublin Road north of the Shanganagh Road on the St Anne's Church side, which connects with cycle track tie-in connections proposed at the start of Corbawn lane.

This option allows for local trips but no access from Corbawn Lane to Dublin Road towards Loughlinstown Roundabout. This option does not allow right turn into Corbawn Lane from Shankill village. Junction modelling demonstrates that this option requires Corbawn Lane to be restricted to allow the junction to operate as efficiently as possible. A large intervention will be required to achieve required design standards for road safety and widening on approaches to junction would have a significant negative impact. Keeping the same road configuration on approach does not provide enough capacity for the junction to operate. This option creates cyclists conflict movement at the junction due to the northbound left turn slip lanes. This option does not provide for overall junction functionality in all directions.

Option 3; A fully signalised junction with the northbound Dublin Road aligned with Shanganagh Road, plus a dedicated northbound left turn bus slip lane and general traffic slip lane to allow for greater vehicle movements through the junction. This option provides for bus priority on Dublin Road, improved pedestrian crossing facilities, but only allows for entry to Corbawn Lane from Shanganagh Road to improve overall junction operation efficiency. In this option a dedicated southbound bus lane is provided on Dublin Road on the approach to the junction. A similar northbound bus lane is provided on Dublin Road on the approach to the junction. A dedicated left turn slip lane and general traffic slip lane is provided for the northbound vehicles to continue north on Dublin Road. South of the junction there is no bus lane in the southbound direction heading towards Shankill village, however bus priority is achieved with signal controlled priority allowing the buses to proceed in advance of general traffic. Northbound on Dublin Road a straight ahead to Shanganagh Road is provided. Provision of bus lanes and general traffic lanes results in wider footprint of the junction, impacting the old railway bridge. A two-way cycle track has been provided along the Dublin Road north of the Shanganagh Road on the St Anne's Church side, which connects with the 2-way cycle track connection proposed at Corbawn lane.

This option provides more capacity for traffic movements along Shanganagh Road and reduces the volume of traffic turning right into Beechfield Manor. However, it adds traffic exiting Beechfield Manor as a result of the one-way operation of Corbawn Lane. This option would require a large intervention to provide sufficient capacity and widening to provide more lanes on approaches to junction would have significant negative impact. This option is not considered resilient enough to accommodate the Dublin Road traffic flows (as the 'mainline' is now on Shanganagh Road) with less queueing space on Shanganagh Road and potential impact on Beechfield Manor junction. This option creates cyclists conflict movement at the junction and on Dublin Road due to the northbound left turn slip lanes.

Option 4/ PRO Option; A fully signalised junction with exit only from Corbawn Lane to Shanganagh Road and does not allow entry into Corbawn Lane. This option provides for bus priority on Dublin Road, improved pedestrian crossing facilities, but only allows for an exit from Corbawn Lane to Shanganagh Road to improve overall junction operation efficiency, plus a new dedicated right turn lane from Shanganagh Road to Beechfield Manor. In this option a dedicated southbound bus lane is provided on Dublin Road on the approach to the junction. South of the junction there is no bus lane in the southbound direction heading towards Shankill village, however bus priority is achieved with signal controlled priority allowing the buses to proceed in advance of general traffic. There is also no bus lane in the northbound direction either side of the junction on the Dublin Road and bus priority is achieved through signal controlled priority. The smaller footprint of the junction does not impact the wall and the old Railway bridge. A two-way cycle track has been provided along the Dublin Road north of the Shanganagh Road on the St Anne's Church side, which connects with the 2-way cycle track connection proposed at Corbawn lane.

This option provides more flexibility for local trips from Corbawn Lane but Beechfield Manor remains the primary route. A dedicated right-turn lane is proposed from Shanganagh Road onto Beechfield Manor to cater for the additional traffic routed through Beechfield Manor. Junction modelling of this option demonstrates sufficient

junction capacity and provides for sufficient junction resilience for traffic flows in all directions, in particular Dublin Road, and any flow fluctuations. Although the northbound bus lane is removed in this option compared to EPR Option, Option 1, 2 and 3; bus priority is achieved in both directions (northbound and southbound) through signal control priority, bus detection and overall improved junction functionality. This option provides better interface for cyclists and pedestrians at the junction, with improved cyclist transition on Corbwan Lane following public consultation feedback. Urban realm opportunities are enhanced for this option. This option also provides to serve for Garda emergency service from the Garda Station on Dorney Court.

Option 5 Roundabout; This option retains the existing roundabout and does not provide for bus lanes and cycle track connection, or signalised pedestrian crossing facilities. A roundabout of this size does not provide for bus priority and lacks the benefit of traffic signals which can adjust to heavier traffic flows at certain times of the day, generating better journey time reliability, co-ordination between junctions and safe infrastructure for pedestrian and cyclists and hence does not meet the BusConnects objectives. A signalised roundabout could not be accommodated within the footprint of the junction due to the small inscribed circle diameter (ICD) of the roundabout preventing the placement of traffic signals with sufficient visibility or stacking capacity within the roundabout. The signalised junction is more sustainable solution to serve the needs of all road users and has the ability to respond to evolving traffic issues without major interventions and better co-ordination between adjacent signalised junction.

Option 4 performs better than other options EPR Option, Option 1, 2, 3 and 5 due to good junction capacity, resilience, bus priority, footprint with least impact and improved cycle and pedestrian provision.

The MCA tables are included in **Appendix J**. A summary of the MCA for Dublin Road / Shanganagh Road / Corbawn Lane Junction is provided in **Table 6.13**.

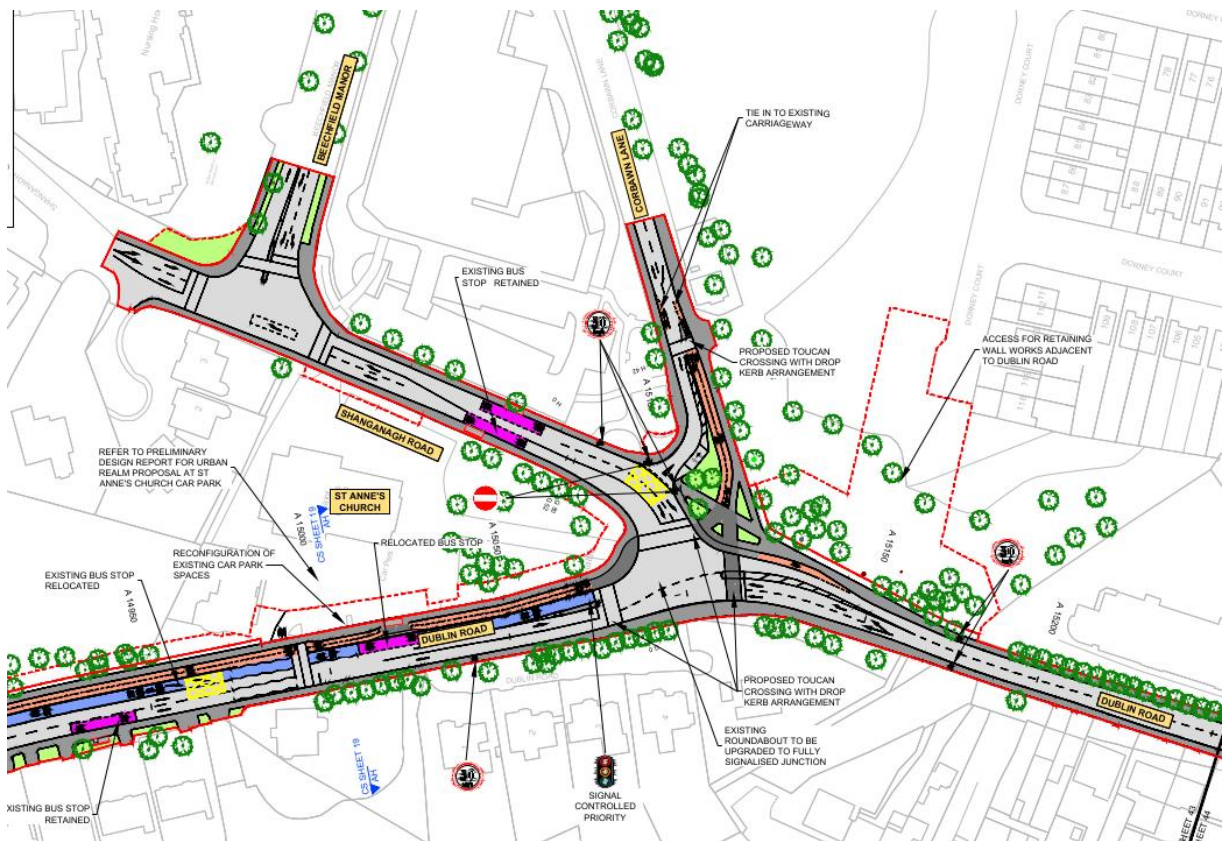


Figure 6.32: Preferred Route Option at Dublin Road/ Shanganagh Road/ Corbawn Lane Junction

MCA Criteria	Assessment Sub-Criteria	EPR Option	Option 1	Option 2	Option 3	Option 4	Option 5
Economy	1a Capital Cost	Red	Orange	Orange	Orange	Light Green	Green
	1b Transport Reliability and Quality	Light Green	Orange	Light Green	Light Green	Green	Red
Integration	2a Land Use Integration	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
	2b Residential Population and Employment Catchments	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
	2c Transport Network Integration	Green	Orange	Light Green	Light Green	Light Green	Red
	2d Cycle Network Integration	Green	Orange	Light Green	Light Green	Green	Red
	2e Traffic Network Integration	Red	Light Green	Orange	Orange	Orange	Green
Accessibility and Social Inclusion	3a Key Trip Attractors	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
	3b Deprived Geographic Areas	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
Safety	4a Road Safety	Light Green	Orange	Orange	Orange	Light Green	Orange
Environment	5a Archaeology and Cultural Heritage	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
	5b Architectural Heritage	Orange	Orange	Orange	Orange	Light Green	Light Green
	5c Flora & Fauna	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
	5d Soils and Geology	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
	5e Hydrology	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
	5f Landscape and Visual	Red	Orange	Orange	Orange	Light Green	Green
	5g Air Quality	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
	5h Noise and Vibration	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow

MCA Criteria	Assessment Sub-Criteria	EPR Option	Option 1	Option 2	Option 3	Option 4	Option 5
	5i Land Use Character						

Table 6.13: MCA at Dublin Road/ Shanganagh Road/ Corbawn Lane Junction

A summary of the assessment and relative ranking of junction options against the five main assessment criteria is presented in **Table 6.14**.

MCA Criteria	EPR Option	Option 1	Option 2	Option 3	Option 4	Option 5
Economy						
Integration						
Accessibility and Social Inclusion						
Safety						
Environment						

Table 6.14: Dublin Road/ Shanganagh Road/ Corbawn Lane Junction MCA Summary

Following the consideration of the above alternative options, the Option 4 is considered to offer more benefits in comparison to the other options. The Option 4 is therefore the PRO for this junction for the following reasons:

- It provides journey time reliability for buses;
- It provides for good overall junction capacity and resilience for flows fluctuations;
- It provides a junction footprint with minimum impact to land;
- It provides for improved infrastructure for pedestrians and cyclists;
- It performs well with respect to integration and road safety;

6.5 Section 4 – Bray North to Bray South

6.5.1 Introduction

The Study Area Analysis and Multi-Criteria Analysis for the previously proposed feasible route options for Section 4 outlined in the Feasibility and Options Report have been evaluated by the design team and are considered still to be valid.

As discussed in Section 5.3.9, the end point for the Proposed Scheme has been changed from the southern to the northern side of the Fran O’Toole Bridge where it will tie into a proposed Bray Bridge Improvement Scheme.

6.5.2 Development of Design at Castle Street

The EPR Option, shown in **Figure 6.33**, did not provide for continuous cycle track southbound between Ravensdale Park and Dwyer Park and had impact on the heritage wall.

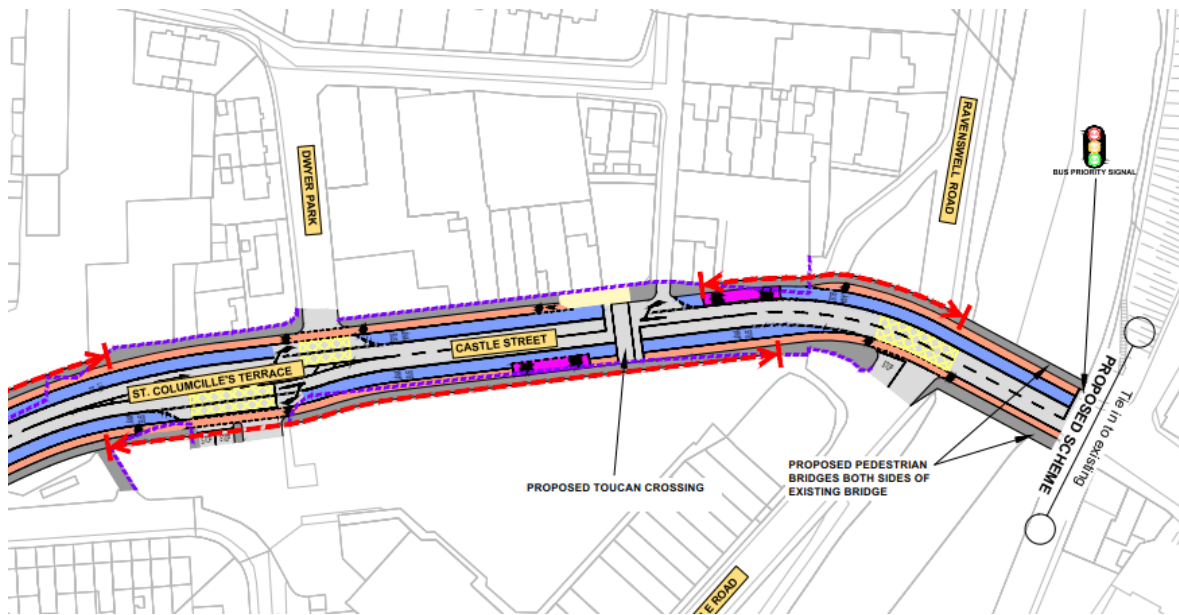


Figure 6.33: EPR Cross-Section along Castle Street, Bray

The design has been further developed between Ravensdale Park and Dwyer Park to provide for continuous cycle lane and bus lane in both direction while minimising the impact to properties and the heritage wall on the east side at Belton Terrace. Alternative options were evaluated which included no widening either side, which would mean compromise to the bus lane and cycle track.

Alternative options were evaluated to minimise impact to the Castlestree Shopping Centre Car park. The Proposed Scheme provides for continuous bus lane, cycle track and footpath in front of the Castlestree Shopping Centre with the bus lane commencing further north of the Bray Bridge to avoid impact to the Shopping Centre car park entrance from the Lower Dargle Road, the cycle track is reduced to minimum at this constraint point. The entrance to the shopping centre from the Lower Dargle Road is proposed as one-way entry only. The pedestrian crossing has been moved closer to the shopping centre entrance and the bus stop to facilitate the pedestrian desire line.

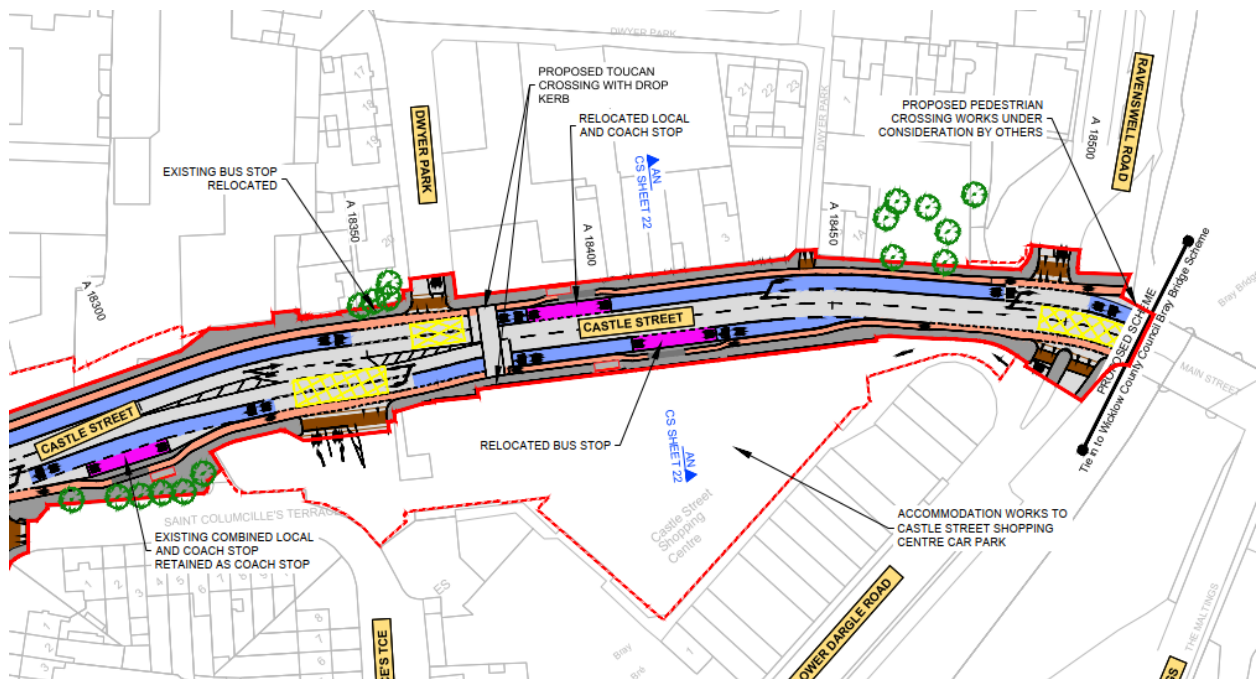


Figure 6.34: Proposed Scheme Cross-Section along Castle Street, Bray

The design at the end of the Proposed Scheme tie-in with the Fran O'Toole Bridge Improvement Scheme proposals designed by others has been co-ordinated. It is proposed to provide a southbound bus lane and two general traffic lanes on the immediate approach to the Fran O'Toole Bridge. The southbound cycle track tie-in to the Bray Bridge Improvement Scheme proposals of cantilever cycle bridge and northbound cycle track will run through the bridge cross-section.

The road alignment at the Upper Dargle Road junction in Bray was further reviewed and updated to avoid impact to the Pine tree under preservation (Tree Protection Order), the road geometry has been revised to provide minimum road width at the junction. A two-way cycle track connection was provided from the junction to tie-in to the existing two-way cycle track through the grounds. The Preferred Route Option is shown in **Figure 6.34**.

6.5.3 Alternatives Considered between Wilford Junction and Old Connaught Avenue

Rebuilding of the Woodbrook Side Lodge residential property at a new location east of its current location at the Southern end of the Woodbrook estate, following its demolition to accommodate the road widening in North Bray is included as part of the Proposed Scheme. The EPR Option has been taken forward as the Preferred Route option. The EPR at this location includes for dedicated bus lane in each direction, segregated cycle track and footpath in each direction, and this allows sustainable transport modes to achieve priority and safety. The EPR option requires the full widening to occur on the eastern side of the existing carriageway.

Given the impact to a Protected Structure at this location, further assessment was carried out to examine whether there were any viable alternative options which would avoid the impact to the Protected Structure. These are discussed below:

EPR Option; as described above;

Do Minimum: Existing cross-section with Signal Control Priority; Signal-controlled bus priority (whereby traffic signals are used to enable buses to get priority ahead of other traffic on single lane road sections) was considered between Wilford Junction and Old Connaught Avenue in order to reduce the impact on land take and avoid the demolition of Woodbrook Side Lodge residential property, plus other land take impacts to other properties along Dublin Road. For signal-controlled bus priority to operate successfully, queue lengths cannot be allowed to develop on the shared bus/traffic lane portion, as this will result in delays on the bus service. Due to the strategic importance of the Wilford junction, high traffic volumes are associated with the junction to gain access to and exit from the M11. Sufficient traffic signal green time for general traffic is required to avoid queues backing up on the M11, in addition, sufficient traffic signal green time for buses along the Proposed Scheme is required to provide bus priority and improve bus journey time. Junction modelling of this option showed queuing at all arms of the junction, resulting in delays to bus services and excessive queues on the M11 off-slip.

Alternative Option 1: Full BusConnects Cross-Section with Widening to the West; As per the EPR option, but with the widening to occur exclusively on the western side of the carriageway, instead of the eastern side. This option would avoid impact on the Protected Structure, however it would result in other environmental impacts including significant impacts as a result of land take on the Circle K petrol station which would likely impact the viability of the business, and on front gardens for more residential properties on the western side of the Dublin Road than would be impacted on the eastern side of the road, including the need to realign the boundary of Rathmore as a heritage feature;

Alternative Option 2: Full BusConnects Cross-Section with Balanced Widening on Both Sides; As per the EPR option, but with the widening to be shared across both sides of the carriageway. This option would still impact on the Woodbrook Side Lodge given its current proximity to the road, as well as on the Circle K petrol station, and on properties on both sides of the Dublin Road as a result of the land take required on both sides.

Alternative Option 3: Reduced Cross-Section (Shared Bus / Cycle Lane); A reduced cross section, whereby there would be a footpath, bus lane and general traffic lane in each direction, with the cyclists required to share the bus lane. This reduced cross-section would reduce the total extent of the land-take required, however would still require widening in order to accommodate the two new bus lanes. Under this alternative option, three sub-options were assessed:

- **Sub-Option 3a (Widening to the east):** Impact on the properties on the eastern side of the Dublin Road, including Woodbrook Side Lodge;
- **Sub-Option 3b (Widening to the west):** Avoids impact on the Woodbrook Side Lodge, however as with Alternative Option 1, would still result in land-take at the Circle K petrol station and the residential front gardens along the western side of the Dublin Road; and
- **Sub-Option 3c (Balanced widening on both sides):** As with Alternative Option 2, but with a reduced cross-section. Again, this option would impact on more properties than either Sub-Option 3a or 3b, while also still impacting on the Woodbrook Side Lodge and the Circle K petrol station.

The MCA tables are included in **Appendix K**. A summary of the MCA for this is provided in **Table 6.15**.

MCA Criteria	Assessment Sub-Criteria	EPR Option	Do Minimum	Option 1	Option 2	Option 3a	Option 3b	Option 3c
Economy	1a Capital Cost	Green	Red	Yellow	Red	Green	Yellow	Green
	1b Transport Reliability and Quality	Green	Red	Green	Green	Yellow	Yellow	Yellow
Integration	2a Land Use Integration	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
	2b Residential Population and Employment Catchments	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
	2c Transport Network Integration	Green	Red	Green	Green	Yellow	Yellow	Yellow
	2d Cycle Network Integration	Green	Yellow	Green	Green	Yellow	Yellow	Yellow
	2e Traffic Network Integration	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
Accessibility and Social Inclusion	3a Key Trip Attractors	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
	3b Deprived Geographic Areas	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
Safety	4a Road Safety	Green	Yellow	Green	Green	Yellow	Yellow	Yellow

MCA Criteria	Assessment Sub-Criteria	EPR Option	Do Minimum	Option 1	Option 2	Option 3a	Option 3b	Option 3c
Environment	5a Archaeology and Cultural Heritage	Yellow	Green	Light Green	Red	Yellow	Light Green	Yellow
	5b Architectural Heritage	Red	Green	Light Green	Red	Red	Light Green	Red
	5c Flora & Fauna	Light Green	Light Green	Light Green	Yellow	Light Green	Light Green	Yellow
	5d Soils and Geology	Light Green	Green	Red	Red	Light Green	Yellow	Light Green
	5e Hydrology	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
	5f Landscape and Visual	Light Green	Green	Yellow	Red	Light Green	Yellow	Yellow
	5g Air Quality	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
	5h Noise and Vibration	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
	5i Land Use Character	Yellow	Green	Yellow	Red	Light Green	Yellow	Yellow

Table 6.15: MCA at Section 6.5.3

In terms of impact on the Woodbrook Side Lodge, the only alternative options that would avoid impact are the Do Minimum Option, Alternative Option 1 and Alternative Option 3b. All other alternative options would still impact on the Woodbrook Side Lodge given its existing location in close proximity to the road.

The Do Minimum Option would result in additional queuing on all arms of the nearby Wilford junction and result in delays to bus services and lack of segregated cycling infrastructure. This route is identified as a Primary Cycle Route within the 2022 Greater Dublin Area Cycle Network Plan, therefore the lack of segregated cycling infrastructure does not meet the BusConnects objectives.

Alternative Option 1 would result in more environmental impacts including more land take impacts on commercial and residential property above that of the EPR Option, including potentially impacting on the viability of the Circle K petrol station business and impacting the curtilage of Rathmore which is a heritage. Alternative Option 3b would similarly impact on the same properties as Alternative Option 2, albeit with slightly reduced land take required.

Alternative Option 3 provides for journey time reliability for the buses, however these sub-options do not provide segregated cycling infrastructure in this section of the Proposed Scheme, which is identified as a Primary Cycle Route as outlined above. The cyclists would have to share the bus lane on a proposed Primary Cycle Route and therefore it will not meet the BusConnects objectives and would impact the safety of the cyclists in particular on the immediate approaches to a significant junction accessing the M11. The EPR Option performs better than Alternative Option 3 in terms of integration with the transport network and safety.

The Preferred Route Option is shown in **Figure 6.35**.

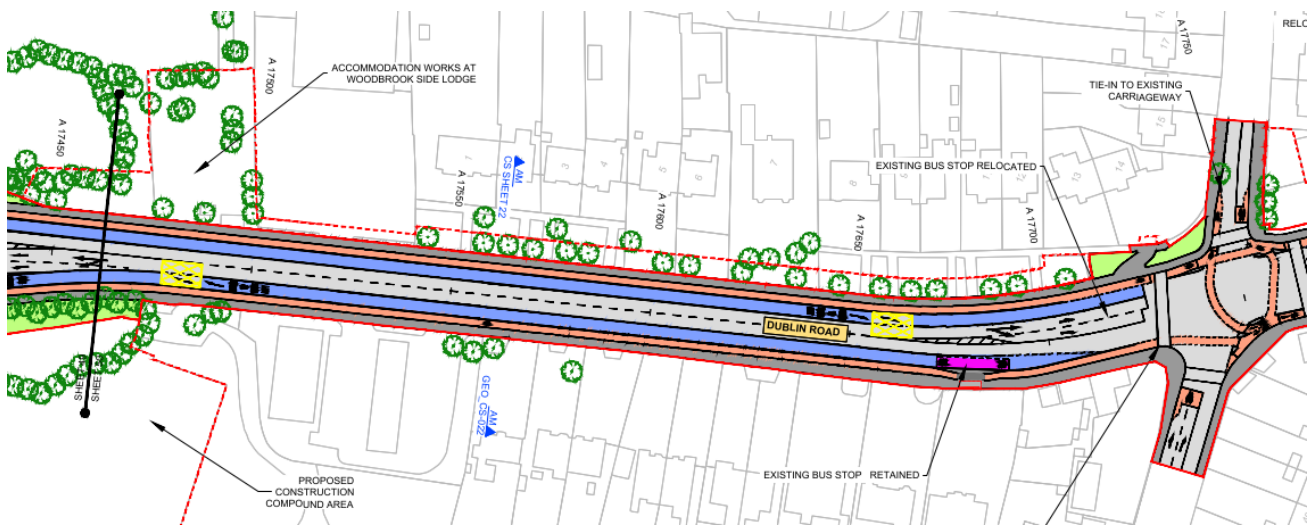


Figure 6.35: Proposed Scheme Cross-Section between Wilford and Old Connaught Avenue

A summary of the assessment and relative ranking of route options against the five main assessment criteria is presented in **Table 6.16**.

MCA Criteria	EPR Option	Do Minimum	Option 1	Option 2	Option 3a	Option 3b	Option 3c
Economy	Green	Red	Light Green	Orange	Light Green	Orange	Light Green
Integration	Green	Red	Light Green	Light Green	Orange	Orange	Orange
Accessibility and Social Inclusion	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
Safety	Light Green	Orange	Light Green	Light Green	Orange	Orange	Orange
Environment	Orange	Green	Orange	Red	Light Green	Orange	Orange

Table 6.16: Section 3.5.3 MCA Summary

Following the consideration of the above alternative options, the EPR option is considered to offer more benefits in comparison to the other options. The EPR Option is therefore the PRO for this section for the following reasons:

- It provides journey time reliability for buses and cyclists;
- It performs well with respect to integration and road safety;
- While it impacts on the Woodbrook Side Lodge (Protected Structure), it is considered to have less environmental impacts, particularly with regard to land take from other private properties and businesses.

7. Preferred Route Option

7.1 Introduction

This chapter of the report presents and describes the PRO identified and the PRO scheme design for the Proposed Scheme. The PRO concept scheme 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 between Leeson Street to Bray is 18.5km as shown in **Figure 7.1**. The Proposed Scheme is routed along R138 and commences at the junction of Leeson Street Lower and Earlsfort Terrace on St. Stephen's Green. It runs along Leeson Street Lower and Upper, and Sussex Road. It continues along Morehampton Road and Donnybrook Road, through Donnybrook Village and on to the Stillorgan Road, serving the UCD Interchange via the Stillorgan Road Overbridge at Belfield.

The Proposed Scheme then continues on the Stillorgan Road (N11), which carries on to the Bray Road to Loughlinstown Roundabout. From Loughlinstown Roundabout, it runs along the Dublin Road (R837) to St. Anne's Church and then continues south through Shankill village along the R119. It then passes through Wilford Junction and along the Dublin Road until it terminates on Castle Street in Bray, on the north side of the River Dargle crossing.

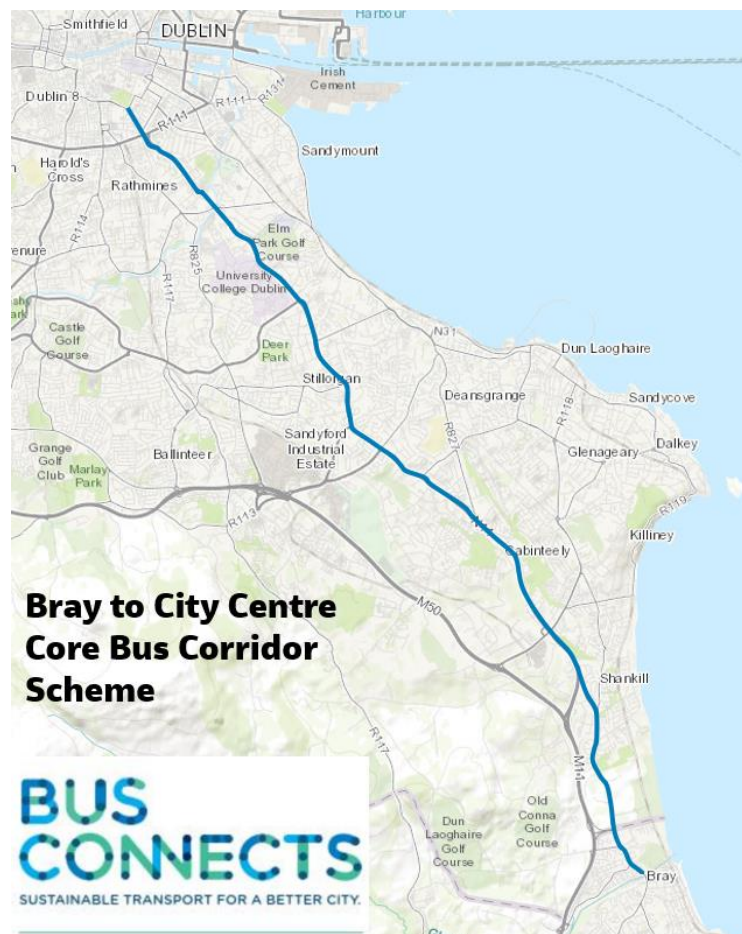


Figure 7.1: Bray to City Centre Core Bus Corridor Scheme

7.2.2 Section 1 – St. Stephen’s Green to UCD

The Preferred Route Option for the Proposed Scheme commences at the junction of Leeson Street Lower and St. Stephen’s Green. The corridor runs along Leeson Street Lower and Upper with continuous bus priority and segregated cycle tracks in each direction, including the one-way system on Sussex Road. Traffic between Hatch Street Lower / Pembroke Street Upper and St. Stephen’s Green is now proposed to be restricted to buses and local access only. Local vehicular access will be maintained to Leeson Street Lower from the Hatch Street Lower / Pembroke Street Upper Junction, but not allowed past the bus gate north of Leeson Lane on to St. Stephen’s Green. Inbound general traffic will be diverted along Hatch Street Lower and Earlsfort Terrace and there will be introduction of two-way general traffic on Earlsfort Terrace between the Hatch Street Lower Junction and St. Stephen’s Green. The existing left turning ban at the Earlsfort Terrace towards Stephen’s Green North has been removed to facilitate the general traffic movement.

The one-way system on Sussex Road and the adjacent section of Leeson St Upper have been retained, with a reduced number of general traffic lanes in each direction to allow for full bus and cycle lane provision and retain existing parking.

Continuous bus priority and segregated cycle tracks are proposed in each direction along Morehampton Road and Donnybrook Road through Donnybrook Village and the Stillorgan Road to UCD through a combination of bus lanes and Signal Controlled Bus Priority.

On sections of Morehampton Road the cycle tracks are brought behind the treeline where appropriate. The continuous bus priority and segregated cycle tracks will impact a number of on-street parking bays between Waterloo Road and Eglinton Road.

A ‘No Right Turn’ sign has been added from Morehampton Road onto Auburn Avenue to reduce crossing-point conflicts.

From Mulberry Lane to Eglinton Terrace, the northbound bus lane has been removed to allow for two segregated cycle tracks, while the southbound bus lane has been retained along this narrow section. Signal Controlled Bus Priority has been introduced at Eglinton Terrace in the northbound direction to provide buses with a level of priority through this section. From Eglinton Terrace southwards to Eglinton Road, two bus lanes and two segregated cycle tracks are provided in addition to a general traffic lane in each direction.

On Donnybrook Road between Eglinton Road and Anglesea Road in the southbound direction, there is a straight ahead and left-turn lane, a straight ahead general traffic lane, a bus lane, and a cycle track provided. The northbound approach on the Stillorgan Road towards Beaver Row has a cycle track, bus lane, a combined left and ahead general traffic lane, and a right-turn lane to Ailesbury Road. Between Beaver Row and Eglinton Road there is a cycle track, bus lane, and a combined left and ahead traffic lane. South of Anglesea Road, the existing carriageway layout of cycle track, bus lane and two general traffic lanes in each direction is maintained to the end of this section at UCD.

At the Belfield Interchange UCD Entrance, it is proposed to retain a bus lane on the southbound on-ramp, northbound off-ramp and on-ramp, and to provide a new bus lane on the southbound off-ramp and Stillorgan Road Overbridge, plus segregated cycle tracks on each of the junction arms and on the overbridge.

A new bus interchange will be provided at UCD close to the Belfield entrance off the Stillorgan Road, in co-ordination with the UCD Future Campus Masterplan.

Land take will be required at locations between Brookvale Road and Nutley Lane, and at UCD.

7.2.3 Section 2 – UCD to Loughlinstown

On the Stillorgan Road between Seafield Road and Foster’s Avenue it is intended to provide a bus lane, a one-way segregated cycle track, and two general traffic lanes in each direction. A short length of two-way segregated

cycleway will be provided on each side in this area due to the proximity to UCD. This will run from the Stillorgan Road Overbridge to Merrion Grove by the southbound carriageway, and from Foster's Avenue to the newly proposed cycle entrance into UCD (opposite Seafield Road) by the northbound carriageway.

Between Merrion Grove and Lower Kilmacud Road it is proposed to provide a bus lane and two general traffic lanes plus a segregated cycle track in each direction. A short new two-way cycle track connection is provided which will improve access from Coláiste Eoin / Coláiste Íosagáin to the N11 junction with Merrion Grove.

A new Toucan Crossing is proposed between Patrician Villas and St. Laurence Park, along with extension of the existing subway on the eastern side to accommodate a new dedicated footpath between Lower Kilmacud Road and the Old Dublin Road along the Stillorgan Road.

It is proposed to maintain one bus lane and two general traffic lanes in each direction from Lower Kilmacud Road to Loughlinstown Roundabout, including a section of new bus lane north of Loughlinstown Roundabout. Improved segregated cycle tracks and pedestrian footways will be provided along this section of the route where appropriate.

A short section of northbound cycle track north of Brewery Rd will be diverted locally along St. Brigid's Church Road to achieve improved cycle track widths and segregation. Additional traffic calming and footway improvement measures are proposed along the St. Brigid's Church Road to accommodate this. It is also proposed to close the junction of The Hill and N11 Stillorgan Road to maintain continuous segregated cycling facilities at this location. A short section of southbound cycle track will run along Belmont Terrace before rejoining the N11.

At the junction with Westminster Road, it is proposed to remove the existing U-turn filter lane to facilitate a new Toucan Crossing. A new pedestrian link is provided from the Stillorgan Road Junction with Old Bray Road to South Park.

Footpaths are not proposed between the Old Bray Road and Cornelscourt Shopping Centre pedestrian bridge, and between Clonkeen Road and Johnstown Road junctions and between Johnstown Road junction and the new junction at Druid's Glen Road, as alternative walking routes exist on adjacent quieter roads.

A new footpath is proposed on either side of the Stillorgan Road at the new junction on the N11 at Druid's Glen Road which tie-in with the existing footpath towards Wyattville Road. Improvements have been made to cycle track provisions at the Wyattville Road Junction. The existing adjacent northbound Bray Road slip towards Cherrywood Road will be retained in its current two-way layout.

At the Loughlinstown Roundabout it is proposed to signalise the existing roundabout on three arms and to provide a continuous bus lane southbound through the junction towards Shankill. The northbound bus lane through the roundabout is curtailed and bus priority is provided through signal control.

Land take will be required at UCD, at Merrion Grove, between The Rise and Roebuck Avenue opposite Coláiste Eoin / Coláiste Íosagáin, south of Brewery Road adjacent to the northbound carriageway, by Druid's Glen Road Junction, north of St. Laurence's College in front of Shanganagh Vale, at St. Laurence's College, and around Loughlinstown Roundabout.

7.2.4 Section 3 – Loughlinstown to Bray North

Between Loughlinstown Roundabout and St. Anne's Church, it is proposed to provide a bus lane and general traffic lane in both directions where possible. Where bus lanes are not continuous, Signal Controlled Bus Priority has been provided. Signal Controlled Bus Priority has been proposed between the St. Anne's Church/ Corbawn Junction and Rathmichael Woods in the northbound direction.

Segregated cycle tracks have been omitted between Loughlinstown Roundabout and Stonebridge Road along the Proposed Scheme. It is intended to provide a two-way cycle track from the Shanganagh Road Junction along the Dublin Road and Stonebridge Road as far as Stonebridge Lane to provide a cycle link to the two schools on Stonebridge Road.

The roundabout at Dublin Road and Shanganagh Road is proposed to be upgraded to a signalised junction with new pedestrian crossing facilities and Signal Controlled Bus Priority for buses. Access from Corbawn Lane on to Shanganagh Road will become exit only. A dedicated right-turn lane is proposed from Shanganagh Road onto Beechfield Manor. A dedicated left turn lane from Shanganagh Road into Beechfield Manor is also to be provided.

The design between the Shanganagh Road Junction and Crinken Lane proposes to retain the existing general traffic lanes with no bus or cycle lanes, apart from a section of the northbound carriageway where a bus lane is provided from Crinken Lane to a new junction at the entrance to Olcovar. Signal Controlled Bus Priority will be provided along this section where dedicated bus lanes are not provided. Quinn's Road Roundabout is to be upgraded to a signalised junction, and an upgraded signalised junction is proposed at the entrance to the Olcovar development. Shankhill village existing geometry and public realm is retained.

Where widening is required to accommodate the bus lane and improved footpaths, the intention is, where possible, to maintain the treeline along the Dublin Road. Sections of footpath and/or cycle track are proposed to be taken behind the roadside treeline in places to minimise the impact on mature trees, where appropriate. Improved lighting and crowning of trees will be provided to enhance visibility at these locations.

Between Crinken Lane and Wilford Junction it is proposed to provide northbound and southbound bus lanes, segregated cycle tracks and general traffic lanes, except Signal Controlled Bus Priority is provided for a short section for northbound buses from Wilford Roundabout to St. Brendan's College.

At Shanganagh Park and Shanganagh Cemetery, the northbound and southbound cycle tracks are proposed to be diverted into the park and behind green space and existing trees to the eastern side of the carriageway between two Toucan Crossings. The cycle track is proposed to run behind the roadside treeline at the cemetery to minimise tree impacts, requiring a set back to the existing cemetery boundary wall. New lighting and crowned trees will be provided to ensure through visibility. Playground areas at Shanganagh Park will be retained in their existing location as part of the Proposed Scheme. Their final future location will be determined as part of the development of the emerging Shanganagh Park and Cemetery Masterplan.

Two new residential developments have planning approval granted, Shanganagh Castle and Woodbrook Strategic Housing Development. The proposed signalised junctions for these developments and bus stops have incorporated within the Proposed Scheme.

Land take will be required on both sides of the road along this section of the route.

7.2.5 Section 4 – Bray North to Bray South

From the M11 junction (Wilford Roundabout) to the Dargle River Crossing, it is proposed to continue with a bus lane, general traffic lane and a segregated cycle track in each direction, with minimal use of Signal Controlled Bus Priority at certain junctions to provide continuous bus priority. It is proposed to replace the Wilford Roundabout with a new signalised junction. The junction with the new road at Chapel Lane has also been upgraded to a signalised junction, including improved cycle and pedestrian movements.

At the end of the Proposed Scheme at the tie-in to the Fran O'Toole Bridge, the northbound bus lane starts just after the Lower Dargle Road junction after the entrance to the Castlestree Shopping Centre. The entrance to the shopping centre from the Lower Dargle Road is proposed as one-way entry only. The tie-in at the Proposed Scheme termination consists of a southbound bus lane and two general traffic lanes and cycle track in both direction on the immediate approach to the Fran O'Toole Bridge, where the Proposed Scheme will end and coordinate with Bray Bridge Improvement Scheme proposals.

The works proposed as part of the Proposed Scheme, will impact the existing Woodbrook Side Lodge, which is a heritage structure located at the southern end of the Woodbrook Estate in Bray. It is proposed to rebuild the impacted Woodbrook Side Lodge residential property, at the southern end of the Woodbrook Estate in Bray. Land take will be required on both sides of the road along this section of the route.

7.3 Summary

7.3.1 Infrastructure Provision

The Preferred Route is approximately 18.5km long from end to end. The 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.

- 69% existing bus priority outbound (69% Physical)
- 68% existing bus priority inbound (68% Physical)
- 100% proposed bus priority outbound (92% Physical – 8% Virtual)
- 99.6% proposed bus priority inbound (87% Physical – 12.5% Virtual)
- 91% Existing cycle priority outbound (51% cycle track and 40% advisory cycle lane)
- 84% Existing cycle priority inbound (43% segregated and 41% advisory cycle lane)
- 91% Proposed cycle priority outbound (91% segregated)
- 91% Proposed cycle priority inbound (89% segregated and 2% Quiet Street)

Virtual bus priority measures are proposed at the following locations:

- Signal controlled priority on Leeson Street Lower from Hatch Street lower to St. Stephens Green (citybound)
- Bus gate on Leeson Street Lower allowing virtual priority between Hatch Street lower to St. Stephens Green (outbound)
- Signal controlled priority on Leeson Street Lower from Fitzwilliam Place to Mespil Road (outbound)
- Signal controlled priority on Leeson Street Lower from Grand Canal Place to Wilton Terrace (citybound)
- Signal controlled priority on Leeson Street Upper from Wellington Place Junction (citybound)
- Signal controlled priority on Morehampton Road from Victoria Avenue to Auburn Avenue (citybound)
- Signal controlled priority on Donnybrook Road from Eglinton Terrace to The Crescent (citybound)
- Signal controlled priority on Dublin Road from Shanganagh Road to Lower Road (outbound)
- Signal controlled priority on Dublin Road from Olcovar to Cherrington Road (citybound)
- Signal controlled priority on Dublin Road from N11 to St. Brendan's College (citybound)
- Signal controlled priority on Dublin Road from Old Connaught Avenue junction (citybound)

7.3.2 Main Scheme Changes

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

- The starting point of the Proposed Scheme has been changed to Leeson Street Lower Junction on St. Stephen's Green, as it is considered that sufficient bus infrastructure and cycle segregation currently exists beyond this point;
- The end point for the Proposed Scheme has been changed from the southern to the northern side of the Fran O'Toole Bridge where it will tie into a proposed Bray Bridge Improvement Scheme;
- The extent of the Brookvale Road and Eglinton Road has not been included as part of the Proposed Scheme as it was deemed that the existing infrastructure suffice.
- The lane configuration proposed in the previous report for the corridor at Anglesea Road Junction was revisited, to improve the allocation of traffic capacity for inbound and outbound traffic. The revised lane configuration between Eglinton Road and Anglesea Road Junction has two outbound general traffic lanes and one inbound general traffic lane. This additional outbound general traffic lane will create additional stacking space for outbound and left-turning traffic between Eglinton Road and Anglesea Road. The inbound straight ahead and left-turn lane to Beaver Row from the Stillorgan Road were combined to reduce land impacts on the Church of Sacred Heart in Donnybrook;
- From Eglinton Terrace to Belmont Avenue, the southbound bus lane is maintained through the midway bend. Signal Controlled Priority has been introduced at Eglinton Terrace in the northbound direction to provide buses with a level of priority through this section. This follows the review of additional topographical surveys which provided a better indication of space constraints, and consideration of Signal Controlled Priority along narrow sections of road to improve cyclist safety;
- Following review of topography information, the lane configuration was investigated further at Leeson Street Lower to consider reducing the impact on heritage kerbing and existing footpath widths on this busy pedestrian street and improved safety for cyclists. A bus gate and local access only provision has been introduced at this location, with inbound general traffic taking a local diversion via Hatch Street Lower and Earlsfort Terrace. This diversion requires the introduction of two-way general traffic on Earlsfort Terrace between the Hatch Street Lower Junction and St. Stephen's Green. This requires upgrade of the Leeson Street Upper / St Stephen's Green / Earlsfort Terrace junction and the tie-in to the existing road layout in that area;
- Relocation of bus stops on Leeson Street Lower. Removal of inbound bus stop at the Donnybrook Bus Depot;
- Further design development to avoid and minimise impact to the Cellars, Coal Holes and Private Landings along Lesson Street Lower, Lesson Street Upper, Morehampton Road and through Donnybrook village;
- UCD Interchange proposals have been incorporated and further developed in co-ordination with the UCD Masterplan, following initial design development by UCD. Following further traffic modelling and assessment of bus delays and pedestrian safety, the two uncontrolled pedestrian crossings within the main plaza interchange are updated to provide for raised signalised toucan crossings
- The design has been further developed to co-ordinate with the proposed Dodder Greenway scheme interface at Eglinton Road. Toucan Crossing has been provided at the tie-in with the Dodder Greenway and cycle tracks along the Eglinton Road to facilitate continued cyclist movement;
- The design has been further developed to co-ordinate with the proposed Fitzwilliam Cycle scheme at Fitzwilliam Place and the urban realm regeneration scheme at the Kiosk corner;
- The Proposed Scheme design has been co-ordinated with the proposed Belfield / Blackrock to City Centre CBC at the Nutley Lane Junction. The co-ordinated design will have a two-way cycle track at Nutley lane along with two-way cycle track crossing at the N11 Southern arm. In an independent scenario, the Proposed scheme will tie-in to the existing infrastructure at the Nutley Lane junction with one-way cycle track in both direction along the Nutley Lane;
- The design at the RTE junction has been further refined to tie-in to existing infrastructure within the RTE grounds;

- The proposed coach stop at the Talbot Hotel was moved further south to remove the impact to the Talbot Hotel forecourt following consultation;
- Following additional modelling and assessment of the Lower Kilmacud Road Junction on the Stillorgan Road, the slip road to The Hill has been closed off for vehicular traffic to maintain continuous segregated cycling facility along this location for safety of the cyclists;
- At St. Brigid's Church Road, Stillorgan, the segregated cycle track provision along the N11 was revisited and it is proposed to divert the northbound cycle track along St. Brigid's Church Road, to improve cycle track safety;
- At Galloping Green, the segregated cycle track provision along the N11 was revisited and it is proposed to divert the southbound cycle track along Belmont Terrace, to improve cycle track safety and allowing for the relocation of a bus stop, and retention of as much side road parking as possible;
- The design has been further developed to co-ordinate with the UCD Nova Development, the future Brewery Road Safety Improvement Scheme, Stillorgan Movement Plan and the Cherrywood SDZ Development;
- At Patrician Villas / St Laurence Park, the widening of the pedestrian subway and the footpath connection along the N11 was value engineered from the EPR option and it is now proposed to lengthen the subway on one side (east) and new footpaths and cycle tracks will run parallel to the N11 mainline in both directions;
- A two-way cycle track connection along the N11 Merrion Grove Junction to the Colaiste Eoin school has been introduced to integrate with the school, providing a more direct connection and safety to the school-going cyclists in the northbound direction and improved southbound connectivity to the N11;
- The proposed location of the pedestrian link to South Park residential has been changed from the EPR option and moved closer to the junction with Old Bray Road, to improve pedestrian movement line and access to the bus stop;
- The footpath proposed along the N11 between Cornelscourt to Kilbogget Junction as part of the ERP option has been removed from the Proposed Scheme, as it was considered a non-desired pedestrian link based on the pedestrian movement along this stretch and is aligned with the local development plans. Alternative walking routes exist on adjacent quieter roads;
- The design has been developed further to retain the service road as existing two-way between Old Cherrywood Road Junction and Loughlinstown Roundabout, from the one-way northbound in the EPR design. The service road north of the Cherrywood Road is retained as existing shared street;
- Following local community feedback from the previous public consultation, additional options for bus priority and cycle provision were assessed between Loughlinstown Roundabout and Stonebridge Road. The proposed cycle route now requires cyclists to share bus lanes between Loughlinstown Roundabout and Stonebridge Road. This provides the most direct route for cyclists along the existing Dublin Road, while minimising impact on adjacent properties and mature planted areas;
- Continuous bus lanes are provided in both directions between Loughlinstown Roundabout and St. Anne's Church, with Signal Controlled Priority proposed between the St. Anne's Church Junction and Rathmichael Woods in the northbound direction;
- Following local community feedback from the previous public consultation, additional options for bus priority and cycle provision were assessed between Cricken Lane and Stonebridge Road:
 - Two-way cycle track has been added to link Corbawn Lane to the two schools along Stonebridge Road;
 - No dedicated bus lanes or segregated cycle routes are provided through the Shankill village centre. Bus priority is achieved through Signal Control Priority. This proposal will maintain existing footways and the current village environment;

- The layout of the proposed Dublin Road/ Shanganagh Road/ Corbawn Lane Junction was reviewed and revised through a number of iterations to take on board public concerns around traffic movement. The junction is proposed as signalised as part of the Proposed Scheme;
- The closure of the Corbawn Lane has been revised to provide an exit only to Shanganagh Road. A dedicated right turn is proposed from Shanganagh Road to Beechfield Manor;
- Signal priority measures which commenced in the adjacent section through Shankill village are extended for southbound buses as far as the Shanganagh Castle grounds (after Cricken Lane) to reduce impact on properties;
- The proposal to introduce a lower speed limit 30km/h through the Shankill village helping to reduce speed of through traffic and improve safety (from St Anne Church to Olcovar Junction);
- South of Shankill village the northbound bus lane is removed for a short section and Signal Control Priority introduced from Cherrington Drive/Quinn's Road to Olcovar Junction, to reduce impact on properties, trees with provision for right-turn lane at Olcovar and inclusion of a new signalised junction at the Olcovar housing development;
- At Shanganagh Park and Shanganagh Cemetery, both northbound and southbound cycle track have been routed through the park and along the cemetery boundary, which allows protection of the roadside trees in front of Shanganagh Cemetery in addition to reduced impact on properties and the play area at the Park. The Proposed Scheme has been co-ordinated and integrates with the Shanganagh Park Master Plan;
- Road alignment has been developed to maintain the roadside tree canopy along the road, in particular between Shankill Main Street to Wilford Junction, where cycle tracks and/or footpaths have been brought behind the roadside treeline where suitable;
- The design has been co-ordinated with proposed entrances for recently approved housing developments at Shanganagh Castle and Woodbrook Strategic Housing Development. These developments have been considered when assessing the most appropriate local alignment, bus priority and bus stops while taking into consideration retention of significant mature trees;
- Signal Controlled Priority is provided for northbound buses from Wilford Roundabout for a short section closer to Woodbrook College to enable a reduction in impact on properties and significant mature trees immediately north of the junction by locally shortening the bus lane extents here;
- From the Dublin Road / Stonebridge Road Junction to the Loughlinstown Roundabout in Shankill, the necessary widening is entirely to the west of the carriageway to minimize impact to properties and trees;
- From Dublin Road/ Wilford Roundabout to the Dublin Road/ Woodbrook College in Shankill, the necessary widening is entirely to the east of the carriageway to minimise impact to properties;
- The road alignment at the Upper Dargle Road junction in Bray has been further developed to avoid impact to the tree under preservation. A two-way cycle track connection was provided from the junction to tie-in to the existing two-way cycle track;
- The design has been further developed between Ravensdale Park and Dwyer Park, at the end of the Proposed Scheme, to provide for continuous cycle lane and bus lane while minimising the impact to properties and the heritage wall on the east side at Belton Terrace;
- Along the Castlestree Shopping Centre side, the Proposed Scheme provides for continuous bus lane, cycle track and footpath with the northbound bus lane commencing further north of the Bray Bridge to reduce impact to the Shopping Centre car park entrance from the Lower Dargle Road and cycle track reduced to minimum at this constraint point. The entrance to the shopping centre from the Lower Dargle

Road is proposed as one-way entry only. The pedestrian crossing has been moved closer to the shopping centre entrance and the bus stop to facilitate the pedestrian desire line;

- Rebuilding of the Woodbrook Side Lodge residential property at a new location east of its current location at the Southern end of the Woodbrook estate, following its demolition to accommodate the road widening in North Bray is included as part of the Proposed Scheme;
- The design at the end of the Proposed Scheme tie-in with the Fran O'Toole Bridge Improvement Scheme proposals designed by others has been co-ordinated. It is proposed to provide a southbound bus lane and two general traffic lanes on the immediate approach to the Fran O'Toole Bridge and southbound cycle track tie-in to the Bray Bridge Improvement Scheme proposals for cantilever cycle bridge and northbound cycle track will run through the bridge cross-section;
- 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;
- 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.

7.4 Scheme Benefits

7.4.1 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 Bray to City Centre CBC, through the delivery of dedicated bus lanes and signal-controlled priority, is forecast to reduce bus journey times along the Bray 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.

7.4.2 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 12, 12A, B1, S01, S03, S04, S05, S06, C5, C7, D4 and Greenways (Dodder Greenway,) contributing towards the development of a comprehensive cycling network for Dublin.

A number of public realm upgrades, for example, Mulberry Lane, Nutley Lane, UCD Interchange, which will include widened footpaths, high-quality hard and soft landscaping and street furniture being provided, where practicable, in areas of high activity will contribute towards a safer, more attractive environment for pedestrians. The Proposed Scheme will also provide improved pedestrian crossing facilities along the route.

Appendices

Appendix A. Preferred Route Drawings

Appendix B. Public Consultation Submission Report – 1st Non-Statutory Public Consultation

The Bray to City Centre CBC – EPR Non-Statutory Public Consultation Report 2018/2019 is available from the NTA BusConnects Website, and can be accessed by clicking on the link below:

<https://busconnects.ie/wp-content/uploads/2022/02/13-bray-to-city-centre-report-on-cbc-public-consultation-2.pdf>

Appendix C. Public Consultation Submission Report – 2nd and 3rd Non-Statutory Public Consultation

Appendix D. MCA Table Section 1A UCD to Anglesea Bridge Options

Appendix E. MCA Table Section 1C Eglinton Terrace to Belmont Avenue Options

Appendix F. MCA Table Section 1F Leeson St Lower (St Stephen's Green) Options

Appendix G. MCA Table Section 3.2C1 Cycling Loughlinstown Roundabout to Stonebridge Road Options

Appendix H. MCA Table Section 3.2C2 Cycling Stonebridge Road to Cricken Lane Options

Appendix I. MCA Table Section 3.2D Crinken Lane to St. Anne's Roundabout Options

Appendix J. MCA Table Dublin Road/ Shanganagh Road/ Corbawn Lane Junction Options

Appendix K. MCA Table Wilford Roundabout to Old Connaught Avenue Junction Route Options

Appendix L. UCD to City Centre Core Bus Corridor Route Options Assessment Study Report

Link - <https://busconnects.ie/initiatives/core-bus-corridors/background-information/technical-documents/>

Appendix M. Bray to UCD Core Bus Corridor Feasibility and Options Report

Link - <https://busconnects.ie/initiatives/core-bus-corridors/background-information/technical-documents/>

Appendix N. Bray to City Centre Core Bus Corridor – Emerging Preferred Route Public Consultation February 2019

The Bray to City Centre CBC – EPR Non-Statutory Public Consultation February 2019 is available from the NTA BusConnects Website, and can be accessed by clicking on the link below:

<https://busconnects.ie/wp-content/uploads/2022/03/13-busconnects-cbc-bray-to-city-centre-200519-fa-web.pdf>

Appendix O. Bray to City Centre Core Bus Corridor – Preferred Route Public Consultation March 2020

The Bray to City Centre CBC – Preferred Route Non-Statutory Public Consultation March 2020 is available from the NTA BusConnects Website, and can be accessed by clicking on the link below:

<https://busconnects.ie/wp-content/uploads/2022/03/13-bray-to-city-centre-preferred-route-190220-fa-web.pdf>

Appendix P. Bray to City Centre Core Bus Corridor – Preferred Route Third Round of Public Consultation November 2020

The Bray to City Centre CBC –Preferred Route Third Round of Non-Statutory Public Consultation November 2020 is available from the NTA BusConnects Website, and can be accessed by clicking on the link below:

<https://busconnects.ie/wp-content/uploads/2022/02/13-bray-to-city-centre-preferred-route-301020-fa-web-1.pdf>



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