Templeogue / Rathfarnham to City Centre Core Bus Corridor Scheme

February 2023

Preferred Route Option Report

BUS CONNECTS

SUSTAINABLE TRANSPORT FOR A BETTER CITY.

Contents

Appendices

Appendix A

General Arrangement Drawings

Appendix B

Public Consultation Submission Reports - 1st Non-Statutory Public Consultation

Appendix B1

Tallaght to Terenure Core Bus Corridor – 1st Non-Statutory Public Consultation Submission Report

Appendix B2

Rathfarnham to City Centre Core Bus Corridor – 1st Non-Statutory Public Consultation Submission Report

Appendix C

Public Consultation Submission Reports – 2nd and 3rd Non-Statutory Public Consultation

Appendix C1

Tallaght to Terenure Core Bus Corridor – 2nd and 3rd Non-Statutory Public Consultation Submission Report

Appendix C2

Rathfarnham to City Centre Core Bus Corridor – 2nd and 3rd Non-Statutory Public Consultation Submission Report

Appendix D

Templeogue to Terenure Section Study Area - Section 1 Route Option Assessment MCA Tables

Appendix E

Rathfarnham to City Centre Study Area Section - Section 1a Grange Road to Terenure Cross Route Options Assessment MCA Tables

Appendix F

Rathfarnham to City Centre Study Area Section - Section 1b Willbrook Road to Rathdown Park Route Options Assessment MCA Tables

Appendix G

Rathfarnham to City Centre Study Area Section - Section 2 Terenure Cross to Grand Canal Route Options Assessment MCA Tables

Appendix H

Rathfarnham to City Centre Study Area Section - Section 3 Grand Canal to Christchurch Place Route Options Assessment MCA Tables

Appendix I

Route Selection Reports

Appendix I1

Tallaght to Terenure Core Bus Corridor Feasibility Study and Options Assessment Report

Appendix I2

Rathfarnham to City Centre Core Bus Corridor CBC Feasibility Study and Options Assessment Report

Appendix J

Emerging Preferred Route – 1st Non-Statutory Public Consultation – Brochures

Appendix J1

Tallaght to Terenure Core Bus Corridor - 1st Non-Statutory Public Consultation - Brochure

Appendix J2

Rathfarnham to City Centre Core Bus Corridor - 1st Non-Statutory Public Consultation - Brochure

Appendix K

Preferred Route – 2nd Non-Statutory Public Consultation – Brochures

Appendix K1

Tallaght to Terenure Core Bus Corridor - 2nd Non-Statutory Public Consultation - Brochure

Appendix K2

Rathfarnham to City Centre Core Bus Corridor - 2nd Non-Statutory Public Consultation - Brochure

Appendix L

Preferred Route – 3rd Non-Statutory Public Consultation – Brochures

Appendix L1

Tallaght to Terenure Core Bus Corridor - 3rd Non-Statutory Public Consultation - Brochure

Appendix L2

Rathfarnham to City Centre Core Bus Corridor - 3rd Non-Statutory Public Consultation - Brochure

Glossary of Technical Terms

Signal-Controlled Priority – Signal-Controlled Priority (SCP) 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.

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.

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.

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

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 bus route. Such offline options may include directing cyclists along streets with minimal general traffic other than car users who live on the street. They are called Quiet Streets due to the low amount of general traffic and are deemed suitable for cyclists sharing the roadway with the general traffic without the need to construct segregated cycle tracks or painted cycle lanes. The Quiet Street Treatment would involve appropriate advisory signage for both the general road users and cyclists.

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 for signalised junctions as part of the CBC Infrastructure Works where practicable.

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.

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

Executive Summary

Introduction

The purpose of this report is to present an overview of the Preferred Route Option (PRO) for the 'Templeogue/Rathfarnham to City Centre' Core Bus Corridor (CBC) Scheme as well as describing the options assessed, and changes made to the scheme since the first non-statutory public consultation in January 2019.

The aim of delivering the Templeogue/Rathfarnham 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 Proposed Scheme consists of two sections, namely:

- The Templeogue to Terenure section (previously Tallaght to Terenure Core Bus Corridor); and
- The Rathfarnham to City Centre section (previously Rathfarnham to City Centre Core Bus Corridor).

The Templeogue to Terenure section of the Proposed Scheme commences on the R137 Tallaght Road, east of the M50 junction 11 interchange.

From here, the CBC scheme is routed via the R137 along Tallaght Road and Templeogue Road, through Templeogue Village, to Terenure Cross, where it joins the Rathfarnham to City Centre section of the Proposed Scheme.

The Rathfarnham to City Centre section of the Proposed Scheme commences on the R821 Grange Road at the junction with Nutgrove Avenue, and is routed along the R821 Grange Road, the R115 Rathfarnham Road, the R114 Rathfarnham Road, Terenure Road East, Rathgar Road, Rathmines Road Lower, Richmond Street South, Camden Street Upper and Lower and Wexford Street as far as the junction with the R110 at Kevin Street Lower and Cuffe Street where priority bus lanes end. From Cuffe Street to Dame Street along Redmond's Hill, Aungier Street, and South Great George's Street the route will involve a traffic lane and a cycle track in both directions where it will join the prevailing traffic management regime in the city centre.

Where substantial revisions have been made to the design since the publication of the Emerging Preferred Route (EPR) Option in January 2019, options have been assessed using a Multi-Criteria Analysis (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 builds on it and is a direct response to issues raised by the public during the non-statutory public consultation process and further design development. This assessment has also been carried out in the context of more detailed information now available, including topographical survey.

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

- It is proposed to convert Wellington Lane Roundabout to a signalised junction with kerb protection for cyclists;
- No physical interventions are now proposed within Templeogue Village. Signal-controlled priority to be provided both east and west of Templeogue Village to manage bus priority through the village. BusConnects scheme proposals are intended to tie into the permitted South Dublin County Council Part VIII Templeogue Village Project at Templeogue Tennis Club and at Hollingsworth Cycles;
- It is proposed to amend the layout of the Templeogue Road / Cypress Grove Road junction in order to improve alignment for inbound buses and reduce the impact on trees and minimise land acquisition from adjacent properties;
- Quiet street treatment to Rathdown Crescent and Rathdown Park is proposed to provide for inbound cyclists on The Templeogue to Terenure section to join The Rathfarnham to City Centre section;
- Removal of land-take at inbound bus gate on Templeogue Road at Olney Grove and at properties just north of the Springfield Avenue junction;

- The previous proposal to provide an alternative cycle facility connecting to Brookvale Downs from Rathfarnham Road is no longer proposed as it was considered it would not provide a direct cycle route that meets the objectives of the scheme. The current proposal for Rathfarnham Road between Castleside Drive and Rathdown Park includes for segregated cycle tracks on Rathfarnham Road, with the exception of a 270m long section of inbound cycle track, with bus priority provided through a combination of signal-controlled priority and partial bus lanes;
- Signal-controlled priority proposed between Rathdown Park and Bushy Park Road, reducing land-take along this section;
- Signal-controlled priority proposed through Terenure Cross to minimise impacts on parking and loading, which will also allow urban realm improvements;
- Alternative cycle facilities are proposed on Terenure Road North and Harold's Cross Road connecting to the Kimmage to City Centre CBC at Harold's Cross. This provides an alternative north-south route for cyclists who do not wish to stay on the CBC, in particular along Terenure Road East where it is not practically feasible to provide segregated cycle facilities.
- Additional alternative cycle facilities proposed on Bushy Park Road, Wasdale Park, Wasdale Grove, Victoria Road, Zion Road and Orwell Road. No cycle facilities proposed on Terenure Road East, and 1.5m cycle tracks proposed on Rathgar Road. This will reduce the impact on trees and properties on Terenure Road East whilst maintaining a high level of service for cyclists travelling to and from the city centre;
- Signal-controlled priority proposed through Rathgar Village to minimise impacts on parking and loading, which will also allow urban realm improvements;
- One-way inbound general traffic regime proposed on Rathgar Road, removing the need for land-take on this section;
- Two general traffic lanes, and 2m cycle track in each direction proposed between Castlewood Avenue and Grove Road with a Bus Gate provided between Richmond Hill and Lissenfield in order to ensure priority for buses. This will allow for wider footpaths and urban realm improvements through the village; and
- One-way general traffic regime and 1.5m cycle track in each direction proposed on Camden Street between Charlotte Way and Cuffe Street. This will enhance the cycle facilities along this section of the scheme while maintaining commercial loading and parking where practicable.

1 Introduction and Background

1.1 Introduction

This report presents the preferred route option for the Templeogue/Rathfarnham to City Centre Core Bus Corridor (CBC) Scheme (herein after called the **Proposed Scheme**).

The Proposed Scheme consists of two sections namely:

- The Templeogue to Terenure section (previously Tallaght to Terenure Core Bus Corridor); and
- The Rathfarnham to City Centre section (previously Rathfarnham to City Centre Core Bus Corridor).

During the non-statutory public consultations and the route selection process up to the choice of the Preferred Route Option (PRO) these two sections had been considered separately. The principle reasons for combining the Templeogue to Terenure and the Rathfarnham to City Centre sections into the Proposed Scheme include: their geographical association, functional interdependence and the fact that the Templeogue to Terenure section joins the Rathfarnham to City Centre section at Terenure Place and shares the remaining section of the route from that junction to the City Centre.

The Proposed Scheme measures approximately 9.7km from end to end. The Templeogue to Terenure section of the Proposed Scheme is approximately 3.7km while the Rathfarnham to City Centre section of the Proposed Scheme is approximately 6.2km.

The Templeogue to Terenure section of the Proposed Scheme commences on the R137 Tallaght Road, east of the M50 junction 11 interchange. From here, the CBC is routed via the R137 along Tallaght Road and Templeogue Road, through Templeogue Village, to Terenure Cross, where it joins the Rathfarnham to City Centre section of the Proposed Scheme.

The Rathfarnham to City Centre section of the Proposed Scheme commences on the R821 Grange Road at the junction with Nutgrove Avenue, and is routed along the R821 Grange Road, the R115 Rathfarnham Road, the R114 Rathfarnham Road, Terenure Road East, Rathgar Road, Rathmines Road Lower, Richmond Street South, Camden Street Upper and Lower and Wexford Street as far as the junction with the R110 at Kevin Street Lower and Cuffe Street where priority bus lanes end. From Cuffe Street to Dame Street along Redmond's Hill, Aungier Street, and South Great George's Street the route will involve a traffic lane and a cycle track in both directions where it will join the prevailing traffic management regime in the city centre.

The Proposed Scheme will significantly enhance travel by public transport by providing continuous bus priority as well as improved pedestrian and cycling infrastructure from both the R137 Tallaght Road, east of the M50 junction 11 interchange to the City Centre and the R821 Grange Road at the junction with Nutgrove Avenue through to the City Centre.

Currently these key access corridors are characterised by traffic congestion and discontinuous inadequate bus, and cycling infrastructure meaning that for most of the journey, buses and cyclists are competing for space with the general traffic impacting on the attractiveness of these sustainable modes.

The objectives of the Proposed Scheme include provision of necessary bus, cycle, and walking infrastructure enhancements that will facilitate modal shift from car dependency contributing to an efficient, low carbon and climate resilient City. The extents of the Proposed Scheme are presented in **Figure 1.1.**

Figure 1.1: Templeogue/Rathfarnham to City Centre Core Bus Corridor Scheme

1.2 The Core Bus Corridor Infrastructure Works

The Proposed Scheme is one of 12 stand-alone core bus corridor schemes to be delivered under the BusConnects Dublin - Core Bus Corridors Infrastructure Works (herein after called the CBC Infrastructure Works). The CBC Infrastructure Works, once completed, will deliver the radial core corridors identified in the Greater Dublin Area Transport Strategy 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's) 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 polices 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 inhouse 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 Proposed Schemes.

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

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

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

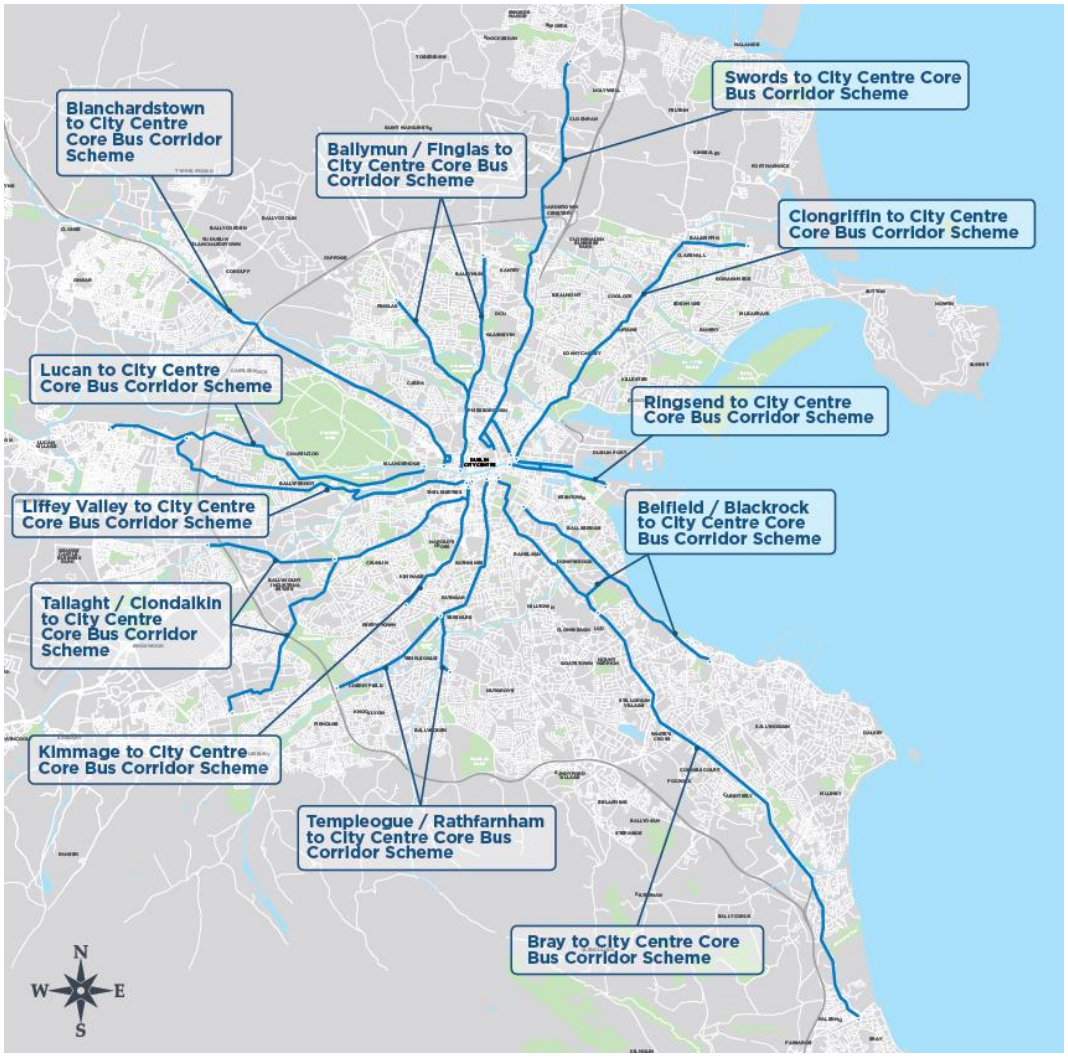

Figure 1.2: CBC Infrastructure Works

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 'Tallaght to Terenure Core Bus Corridor' and 'Rathfarnham to City Centre Core Bus Corridor' are identified in this document as forming part of the radial Core Bus Network.

As part of this process the 'Tallaght to Terenure Core Bus Corridor Feasibility Study and Options Assessment Report' and the 'Rathfarnham to City Centre Core Bus Corridor CBC Feasibility Study and Options Assessment Report' were published, which identified feasible options along each corridor, assessed these options and arrived at an Emerging Preferred Route (EPR) Option for each CBC. Submissions were invited from the public to provide comment on the EPR Option proposals and to inform subsequent design stages.

This 'Preferred Route Option Report' has been prepared for the Proposed Scheme, which will build on the assessment carried out in the Feasibility Reports.

These reports, along with their associated appendices as published, are included in Appendix 1.

The Study Area Analysis and Multi-Criteria Analysis (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 survey information;
- Output from engagement and consultation activities on the EPR Option and draft PRO proposals;
- Clarifications to the previous assessment in the Tallaght to Terenure Core Bus Corridor Feasibility Study and Options Assessment Report' and the 'Rathfarnham to City Centre Core Bus Corridor CBC Feasibility Study and Options Assessment Report';
- Further design development and options assessment; and
- Changes in the extent of the scheme.

1.4 Report Structure

This report combines the option assessment studies carried out for both the Tallaght to Terenure CBC (herein referred to as the **Templeogue to Terenure section**) and the Rathfarnham to City Centre CBC (herein referred to as the **Rathfarnham to City Centre section**). The structure for the remainder of this report is set out as follows:

- Chapter 2: Planning and Policy Context – This chapter summarises a review of transport and planning policy which is relevant to the route selection process for the Proposed Scheme.
- Chapter 3: Templeogue to Terenure Section
    - Chapter 3.1: Background and Public Consultation – This chapter outlines the summary of the non-statutory public consultation process.
    - Chapter 3.2: The Study Area – In this chapter, the study area for the Templeogue to Terenure section is detailed. The integration of the scheme with existing and planned transport networks is considered, along with considerations of the scheme for other road users.
    - Chapter 3.3: Review of the Tallaght to Terenure Core Bus Corridor Feasibility Study and Options Assessment Report – This chapter is a summary of the options assessment that was previously carried out in each section of the 'Tallaght to Terenure Core Bus Corridor Feasibility Study and Options Assessment 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 the main changes resulting from the design development are detailed.

- Chapter 3.4: Option Assessment – This chapter subsequently updates the previous options assessment work undertaken in light of the additional considerations set out in Chapter 3.3.
- Chapter 3.5: Preferred Route Option – This chapter gives the overall conclusions of the options assessment process and describes the PRO proposal.

- Chapter 4: Rathfarnham to City Centre Section
  - Chapter 4.1: Background and Public Consultation – This chapter outlines the summary of the non-statutory public consultation process.
  - Chapter 4.2: The Study Area – In this chapter, the study area for the Rathfarnham to City Centre section is detailed. The integration of the scheme with existing and planned transport networks is considered, along with considerations of the scheme for other road users.
  - Chapter 4.3: Review of the Rathfarnham to City Centre Core Bus Corridor CBC Feasibility Study and Options Assessment Report – This chapter is a summary of the options assessment that was previously carried out in each section of the 'Rathfarnham to City Centre Core Bus Corridor CBC Feasibility Study and Options Assessment 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 the main changes resulting from the design development are detailed.
  - Chapter 4.4: Option Assessment – This chapter subsequently updates the previous options assessment work undertaken in light of the additional considerations set out in Chapter 4.3.
  - Chapter 4.5: 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 formed the strategy for the implementation of a high quality, integrated cycle network for the GDA.

There are a number of primary (Route 9A, Route 10) and secondary (Routes 9B, S04 and 10) cycle routes identified along the Proposed Scheme.

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 2014 GDA Cycle Network Plan include:

- Camden Street Lower, Wexford Street, Redmond's Hill, Aungier Street and South Great Georges Street are identified as Primary Routes in the 2022 Greater Dublin Area Cycle Network. These routes were identified as Secondary Routes in the 2013 GDA Cycle Network Plan;
- Templeogue Road from Cypress Grove Road to Terenure Cross is identified as a Primary Route in the 2022 Greater Dublin Area Cycle Network. This route was identified as a Secondary Route in the 2013 GDA Cycle Network Plan;
- Terenure Road North and Harold's Cross Road are identified as Primary Routes in the 2022 Greater Dublin Area Cycle Network. These routes were identified as Secondary Routes in the 2013 GDA Cycle Network Plan;
- Feeder routes have been identified along Rathdown Park, Bushy Park Road, Wasdale Park, Wasdale Grove, Victoria Road and Zion Road in the 2022 Greater Dublin Area Cycle Network. These Routes 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

Dublin City Council Development Plan (2022 – 2028)

The Dublin City Council 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 Council Development Plan.

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

Table 2.1: DCC Development Plan Relevant Transport Policies

Relevant Transport Policies	
SC1 Consolidation of the Inner City	To consolidate and enhance the inner city, promote compact growth and maximise opportunities provided by existing and proposed public transport by linking the critical mass of existing and emerging communities such as Docklands, Heuston Quarter, Grangegorman, Stoneybatter, Smithfield, the Liberties, the North East Inner City and the south and north Georgian cores with each other, and to other regeneration areas.
SC8 Development of the Inner Suburbs	To support the development of the inner suburbs and outer city in accordance with the strategic development areas and corridors set out under the Dublin Metropolitan Area Strategic Plan and fully maximise opportunities for intensification of infill, brownfield and underutilised land where it aligns with existing and pipeline public transport services and enhanced walking and cycling infrastructure
QHSN11 15-Minute City	To promote the realisation of the 15-minute city which provides for livable, sustainable urban neighbourhoods and villages throughout the city that deliver healthy placemaking, high quality housing and well designed, intergenerational and accessible, safe and inclusive public spaces served by local services, amenities, sports facilities and sustainable modes of public and accessible transport where feasible.
CEE12 Transition to a Low Carbon, Climate Resilient City Economy	To support the transition to a low carbon, climate resilient city economy, as part of, and in tandem with, increased climate action mitigation and adaptation measures.
SMT1 Modal Shift and Compact Growth	To continue to promote modal shift from private car use towards increased use of more sustainable forms of transport such as active mobility and public transport, and to work with the National Transport Authority (NTA), Transport Infrastructure Ireland (TII) and other transport agencies in progressing an integrated set of transport objectives to achieve compact growth.
SMT2 Decarbonising Transport	To support the decarbonising of motorised transport and facilitate the rollout of alternative low emission fuel infrastructure, prioritising electric vehicle (EV) infrastructure.
SMT3 Integrated Transport Network	To support and promote the sustainability principles set out in National and Regional documents to ensure the creation of an integrated transport network that services the needs of communities and businesses of Dublin City and the region.
SMT4 Integration of Public Transport Services and Development	To support and encourage intensification and mixed-use development along public transport corridors and to ensure the integration of high quality permeability links and public realm in tandem with the delivery of public transport services, to create attractive, liveable and high quality urban places.
SMT8 Public Realm Enhancements	To support public realm enhancements that contribute to place making and livability and which prioritise pedestrians in accordance with Dublin City Council's Public Realm Strategy ('Your City – Your Space'), the Public Realm Masterplan for the City Core (The Heart of the City), the Grafton Street Quarter Public Realm Plan and forthcoming public realm plans such as those for the Parnell Square Cultural Quarter Development and the City Markets Area.
SMT02 Improving the Pedestrian Network	To improve the pedestrian network and prioritise the introduction of tactile paving, ramps and kerb dishing at appropriate locations, including

Relevant Transport Policies	
	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	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): • BusConnects Core Bus Corridor projects.

South Dublin County Council Development Plan (2022 – 2028)

The South Dublin County Council Development Plan (2022-2028) sets the strategy for the proper planning and sustainable development of South Dublin County. A SEA, AA, FRA and NIS were produced as part of the plan. The development plan came into effect on the 3rd August 2022 with the exception of two sections which are subject to a Ministerial Direction by the Minister of State at the Department of Housing, Local Government and Heritage, the sections are as follows:

- *'Part (2) a. Omit the Enterprise and Employment zoning and the specific local objective which requires site-specific flood alleviation measures introduced as Material Amendments 2.20 and 9.4 from the lands to the 2 north and east of the existing Greenogue Business Park and retain the Rural RU zoning objective.'*
- *'Part (2) b. Amend the land use zoning objectives in tables 13.4, 13.8 and 13.10 to reinstate data centre use class as an 'open for consideration' use class in the REGEN, Enterprise & Employment (EE) and Major Retail Centre (MRC) zoning objectives.'*

At the time of writing, the above parts of the Plan have not come into effect. Observations in respect of the Draft Ministerial Direction were made to the council for a period of 2 weeks from 10th August 2022 to 23rd August 2022. The Chief Executive issued a Report on 19th September 2022 on the submissions and recommendations received during this period to give effect to the draft direction submitted to the OPR, the Minister and Elected Members. The final ministers direction was issued on the 18th of November 2022 to remove the above parts of the plan.

The plan includes '*a vision for the County's growing communities, places, housing, jobs, sustainable transport and the delivery of services in a manner which promotes climate action and efficient patterns of land use, paying particular attention to the physical, cultural, environmental and social identities that define areas within the County and support their ongoing evolution and integration with each other'.* The transport element of the strategy sets out that it seeks to:

'rebalance transport and mobility within the County by promoting ease of movement by sustainable modes (including walking, cycling and public transport). This will provide for the freeing up of road space for essential functions such as, public transport and emergency vehicles. It will also allow for commercial transport which is essential to economic growth.

In doing so, the Council will continue to provide for all elements of the transportation network that are within its remit and will engage with external agencies including the National Transport Authority (NTA) and Transport Infrastructure Ireland (TII) to assist the delivery of sustainable transport projects that are provided at a regional or national level'.

In addition to the above, it is clear that SDCC has recognised the importance of BusConnects to improving transport and movement within SDCC, as outlined under the heading 'Travel Mode Share':

'Transition to public transport will be aided by improvements in the pipeline including the roll-out of BusConnects which will include proposals for six new dedicated bus routes through the County. BusConnects will provide a redesigned more efficient bus network with high frequency spines, new orbital routes and increased bus services.'

Furthermore, the South Dublin County Council Development Plan identifies BusConnects as a strategic project 'that will have the potential over the coming years to have a transformative impact on travel by shifting the dominance of car-based transport towards public transport'.

The key policies are set out in **Table 2.2**.

Table 2.2: SDCC Development Plan Relevant Transport Policies

Relevant Transport Policies	
Policy SM1: Overarching – **Transport** and Movement	'Promote ease of movement within, and access to South Dublin County, by integrating sustainable land-use planning with a high-quality sustainable transport and movement network for people and goods'.
SM1 Objectiv**e** 1	'To achieve and monitor a transition to more sustainable travel modes including walking, cycling and public transport over the lifetime of the County Development Plan, in line with the County mode share targets of 15% Walk; 10% Cycle; 20% Bus; 5% Rail; and 50% Private (Car/Van/HGV/Motorcycle)'.
SM1 Objective 2	To ensure consistency with the NTA's Transport Strategy for the Greater Dublin Area (2016-2035) and any superseding document, as required by RPO 8.4 of the RSES.
SM1 Objective 3	To support the delivery of key sustainable transport projects including DART and Luas expansion programmes, BusConnects and the Greater Dublin Metropolitan Cycle Network in accordance with RPO 5.2 of the RSES/MASP.
SM1 Objective 4	To ensure that future development is planned and designed in a manner that facilitates sustainable travel patterns, with a particular focus on increasing the share of active modes (walking and cycling) and public transport use and creating a safe and attractive street environment for pedestrians and cyclists, in accordance with RPO 5.3 of the RSES/MASP.
SM1 Objective 5	To ensure that future development is planned and designed in a manner that maximises the efficiency and protects the strategic capacity of the metropolitan area transport network, both existing and planned, and to protect and maintain regional accessibility, in accordance with RPO 8.3 of the RSES.
SM1 Objective 6	To safeguard the County's strategic road network and to improve the local road and street network in a manner that will better utilise existing road space and encourage a transition towards more sustainable modes of transport.
SM1 Objective 7	To engage with relevant agencies including the National Transport Authority (NTA) and Transport Infrastructure Ireland (TII) in relation to strategic and local transportation issues including delivery of transport projects and to encourage consultation with local communities.
Policy SM2: Walking and Cycling	Re-balance movement priorities towards sustainable modes of travel by prioritising the development of walking and cycling facilities and encouraging a shift to active travel for people of all ages and abilities, in line with the County targets.
Policy SM3: Public Transport – General	Promote a significant shift from car-based travel to public transport in line with County targets and facilitate the sustainable development of the County by supporting and guiding national agencies in delivering major improvements to the public transport network.
SM3 Objective 2	To facilitate and secure the implementation of major public transport projects as identified within the NTA Transport Strategy for the Greater Dublin Area (2016-2035), or any superseding document, including BusConnects, the DART expansion programme along the Kildare route, the opening of the new rail station at Kishogue and the Luas to Lucan.

Relevant Transport Policies	
Policy SM3: Public Transport – Bus **SM3** Objective 11	To facilitate the delivery of the BusConnects Core Bus Corridors and seek additional bus corridor and orbital routes to serve the County by securing and maintaining any required route reservations and to ensure the BusConnects Corridors do not adversely affect the village life and livelihoods of any of our County Villages.
SM3 Objective 12	To work with the NTA to secure the expansion of the bus network to serve new development and regeneration areas within the South Dublin County area including Tallaght, Naas Road, Adamstown, Clonburris, Fortunestown, Ballycullen and Newcastle.

It further comments under the heading 'Transport Interchanges' that:

'Multi-modal transport interchanges increase the efficiency and flow of public transport services. A public square and transport interchange is proposed for Tallaght Town Centre, that would provide a first-class interchange between the Luas, BusConnects, taxi, cycling and walking'.

The SDCCDP 2022-2028 sets out an extensive number of other policies and objectives relevant to the Proposed Scheme.

Dún 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 0/0 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 '0/0 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*

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 2.3**.

Table 2.3: DLRCC Development Plan Relevant Transport Policies

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)'
Policy Objective T3: Delivery of Enabling Transport Infrastructure	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)'
Policy Objective T4: Development of Sustainable Travel and Transport	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)'
Policy Objective T5: Public Transport Improvements	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)'
Policy Objective T6: Quality Bus Network/Bus Connects	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)'
Policy Objective T11: Walking and Cycling	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)'
Policy Objective T12: Footways and Pedestrian Routes	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)'
Policy Objective T13: County Cycle Network	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)'

Relevant Transport Policies	
Policy Objective T23: Roads and Streets	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)'

2.4 The Aim and Objectives of delivering the Templeogue / Rathfarnham to City Centre Core Bus Corridor Scheme

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

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 Templeogue to Terenure Section

3.1 Background and Non-Statutory Public Consultation for the Templeogue to Terenure Section

3.1.1 Templeogue to Terenure Core Bus Corridor Feasibility Study and Options Assessment Report and Emerging Preferred Route

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

3.1.2 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 the 14th of November 2018 to the 29th of March 2019. The second phase ran from the 23rd of January 2019 to the 30th of April 2019 and the final phase ran from the 26th of February 2019 until the 31st of May 2019. The Templeogue to Terenure section EPR Option formed part of the second phase of consultation, which closed on the 30th of April 2019. The Information Brochure published as part of this consultation is included in Appendix J1.

There were **387** submissions received relating to the Templeogue to Terenure section. These submissions ranged from individual submissions by residents, commuters and local representatives, to detailed proposals from public bodies, various associations and private sector businesses.

A brief summary of the feedback received on the Templeogue to Terenure section during the public consultation is presented in this section of the report.

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

1. Traffic Issues Associated with Proposed Traffic Management Measures;

- 1a Traffic Congestion / Increase in Traffic Volumes as a Result of Rerouted Traffic; and
- 1b Safety.

2. Loss of Access to Local Amenities;

3. Loss of Parking;
4. Alternative Solutions;
5. Impact on Road Users who 'Have to Drive';
6. Removal of Bus Stop;
7. Rationalisation of Bus Services;
8. Removal of Trees;
9. Inadequacies in Consultation Process;
10. Cyclist Safety / Inadequate Provision for Cyclists;
11. Proposed land Acquisition; and
12. Devaluation of Property.

Further detail on these issues can be found in the Public Consultation Submissions Report – 1st Non-Statutory Public Consultation in Appendix B1.

3.1.3 Development of Draft Preferred Route Option

Following the first non-statutory public consultation, a review was undertaken of the scheme proposals along the Templeogue to Terenure section 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-to-one meetings with directly impacted landowners.

As part of this review, several new options were developed for consideration in specific areas where issues were identified. These new options were subject to further options assessment (as detailed in Chapter 3.4 of this report) to identify the draft PRO. The selected draft PRO that was subsequently identified formed the basis for the second non-statutory public consultation in March/April 2020.

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

The draft PRO was published in March 2020 and a second round of non-statutory public consultation commenced on the 4th of March 2020 and ran until the 17th of April 2020. The Information Brochure published as part of this consultation is included in Appendix K1.

Due to COVID-19 restrictions being imposed by Government in mid-March 2020, the planned Public Information Events were impacted. Consequently, there were **27** submissions received relating to the Templeogue to Terenure section (compared to 387 submissions following the first non-statutory public consultation).

These submissions ranged from individual submissions by residents, commuters and local representatives, to detailed proposals from various associations and private sector businesses.

A number of community forums, meetings with resident associations and one-to-one meetings were also held as part of the process prior to COVID-19 restrictions being imposed.

A brief summary of the feedback received on the Templeogue to Terenure section during the second 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:

1. Traffic Issues Associated with Proposed Traffic Management Measures;
2. Pedestrian Safety;
3. Cyclist Safety;
4. Supportive of Scheme;
5. Loss of Access to Local Amenities;
6. Inadequacies in Consultation Process;
7. Proposed Land Acquisition;
8. Increased Air and Noise Pollution;
9. Removal of Bus Stop;
10. Need for Scheme;
11. Removal of Trees; and
12. Alternative Solutions.

The issues raised during the second non-statutory public consultation were considered in the further development of the draft PRO. Further detail on these issues can be found in the Public Consultation Submissions Report – 2nd and 3rd Non-Statutory Public Consultation in Appendix C1.

Subsequently, it was determined by NTA that a third non-statutory public consultation would be conducted prior to finalising the PRO.

3.1.5 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, options were reviewed further, and new options were developed for consideration in specific areas where issues were identified. These new options were subject to further options assessment (as detailed in Chapter 3.4 of this report) to identify the updated draft PRO.

The updated draft PRO that was subsequently identified formed the basis for the third non-statutory public consultation in November / December 2020.

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

The third round of non-statutory public consultation for the Templeogue to Terenure section took place from the 4th of November 2020 until the 16th of December 2020 on the updated draft PRO. The Information Brochure published as part of this consultation is included in Appendix L1.

With the continuing effect of the COVID-19 pandemic and associated Government restrictions, the third non-statutory public consultation was held virtually. Virtual consultation rooms for each CBC were developed and published. Along with offering a call back facility, these 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 the 16th of December 2020 and submissions could be made by email, through the virtual consultation rooms or by post. All relevant information including the updated Information brochures and the EPR public consultation reports were made available on the BusConnects website (https://busconnects.ie) to view and download. In addition, a community forum and landowner meetings were held over the phone and/or online, and minutes were recorded as part of the consultation process.

A total of **594** submissions were received relating to the Templeogue to Terenure section as part of the third consultation. These submissions ranged from individual submissions by residents, commuters and local representatives, to detailed proposals from various associations and private sector businesses.

A brief summary of the feedback received on the Templeogue to Terenure section during the third 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:

1. Traffic Issues Associated with Proposed Traffic Management Measures;
2. Pedestrian Safety;
3. Cyclist Safety;
4. Supportive of Scheme;

5. Loss of Access to Local Amenities;
6. Inadequacies in Consultation Process;
7. Proposed Land Acquisition;
8. Increased Air and Noise Pollution;
9. Removal of Bus Stop;
10. Need for Scheme;
11. Removal of Trees; and
12. Alternative Solutions.

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 C1.

3.2 The Study Area for the Templeogue to Terenure Section

3.2.1 Introduction

The overall study area for this assessment is the same as that identified in the 'Tallaght to Terenure Core Bus Corridor Feasibility Study and Options Assessment Report', see **Figure 3.1**.

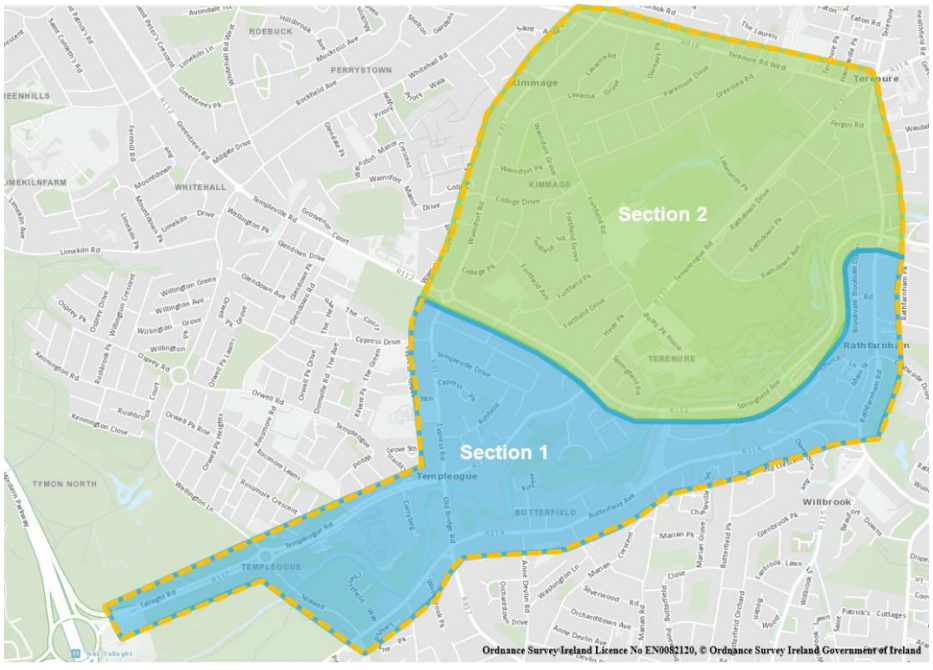

Figure 3.1: Study Area and Section Breakdown

(Reproduced from Tallaght to Terenure Core Bus Corridor Feasibility Study and Options Assessment Report and updated)

Arising from the transport policy context, the study area extends beyond the immediate alignment of existing bus corridors ensuring all practical opportunities to deliver the necessary service requirements are fully explored and any supplementary traffic measures as required can be identified. The study area also considers the presence of other existing/proposed corridors which will increase the opportunities to transfer between modes and services.

3.2.2 Study Area Sections

3.2.2.1 Section 1

Section 1 consists of the R137 Templeogue Road between the N81/M50 interchange and the Springfield Ave/Templeville Road corridor. This section of the study area includes Templeogue Village.

This section of the scheme also includes sections of Cypress Grove Road and Butterfield Avenue, and is bounded to the east by Rathfarnham Road.

The outer extent of the Templeogue to Terenure section was determined for the following reasons:

- It facilitates connectivity to and from key trip attractors such as Templeogue Village, Spawell and the residential areas of Templeogue;
- It provides cycling connectivity to Wellington Road (GDA Cycle network plan secondary route) and the Dodder Greenway at Spawell.
- The suburb of Tallaght contains significant trip attractors and generators, however is well connected to the city centre by the existing LUAS red line as well as the proposed Greenhills to City Centre CBC. Therefore, the R137 east of the M50 represents a natural starting point at the western extent of the Templeogue to Terenure section.

3.2.2.2 Section 2

Section 2 consists of the R137 Templeogue Road between the Springfield Ave/Templeville Road corridor and Terenure Road West. This section of the study area also includes sections of Butterfield Avenue, Wainsfort Road, Springfield Avenue and Rathfarnham Road.

The Templeogue to Terenure section ends at Terenure Cross where it links to the Rathfarnham to City Centre Section. This has dictated the inner extent of the Templeogue to Terenure section.

3.2.3 Physical Constraints and Opportunities

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

- Street trees and other natural features along the route;

- The existing urban and sub-urban roads and street network;
- Bridges at identified natural constraints (e.g. across the River Dodder);
- Availability of land in urban and suburban areas;
- Templeogue Village;
- The available width along Templeogue Road between Cypress Grove Road and Templeogue Village;
- The available width along Templeogue Road between Fortfield Road and Terenure Road West; and
- The built form in close proximity to the carriageway on Terenure Road West at Terenure Cross.

There are also a number of potential opportunities, which could potentially enhance the proposed CBC scheme within the defined study area including:

- The natural amenity of the River Dodder, and the opportunity for integration with the Dodder Greenway.
- The opportunity for the provision of enhanced public realm within the various villages and urban centres within the study area including Templeogue and Terenure.

3.2.4 Integration with Existing and Proposed Public Transport Network

One of the key objectives of the proposed CBC 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. Route options within the study area have therefore been developed with this in mind and, in so far as practicable, seek to provide for improved existing or new interchange opportunities with other transport services including:

- Potential for interchange with existing 54a bus route at the R137 Tallaght Road;
- Potential for interchange with existing 65b, 49 and 15 bus routes at the R137 Templeogue Road; and
- Potential for interchange with existing 15a, 17 and 16 bus routes at Terenure Cross.
- **Figure 3.2** highlights the potential for interchange with existing public transport services along the Templeogue to Terenure section.

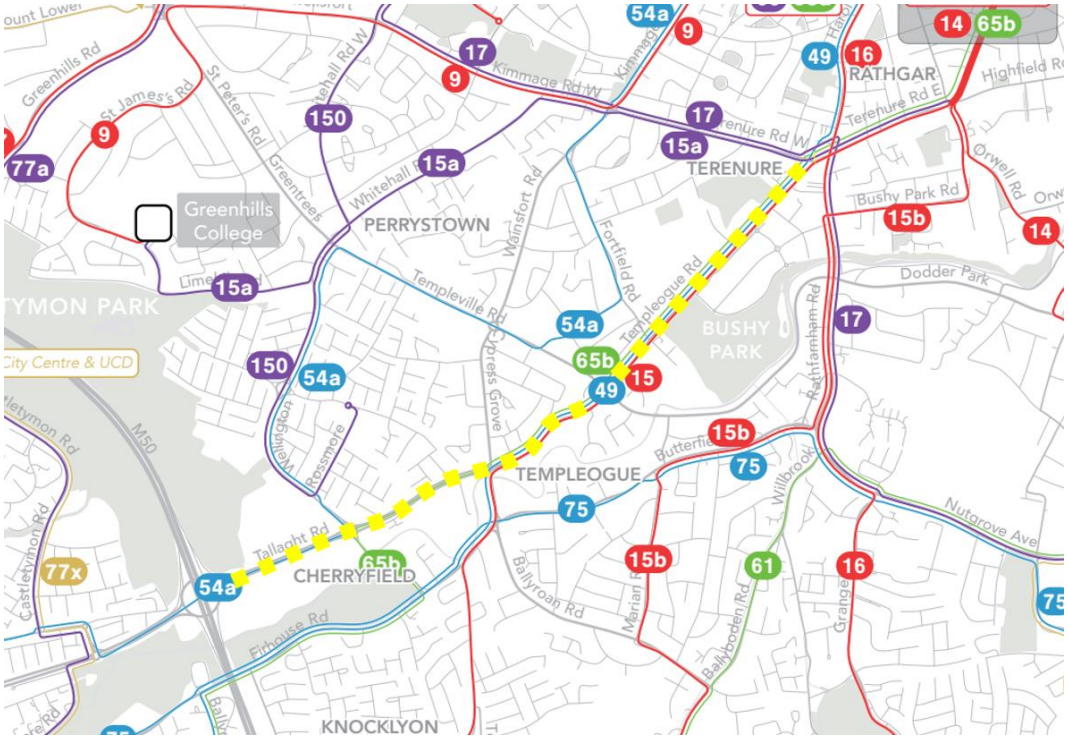

Figure 3.2: Existing Public Transport Services

(the Templeogue to Terenure section highlighted in yellow)

The route options also seek to provide for interchange opportunities with new transport services proposed within the New Dublin Area Bus Network, including:

- Potential for interchange with the proposed 82 and F2 routes from the New Dublin Area Bus Network at Wellington Lane;
- Potential for interchange with the proposed F1 route from New Dublin Area Bus Network at Cypress Grove Road;
- Potential for interchange with the proposed S4, 74 and 85 routes from the New Dublin Area Bus Network at Terenure Road West.
- **Figure 3.3**, extracted from the New Dublin Area Bus Network maps, highlights the potential for interchange with other proposed bus routes along the Templeogue to Terenure section.

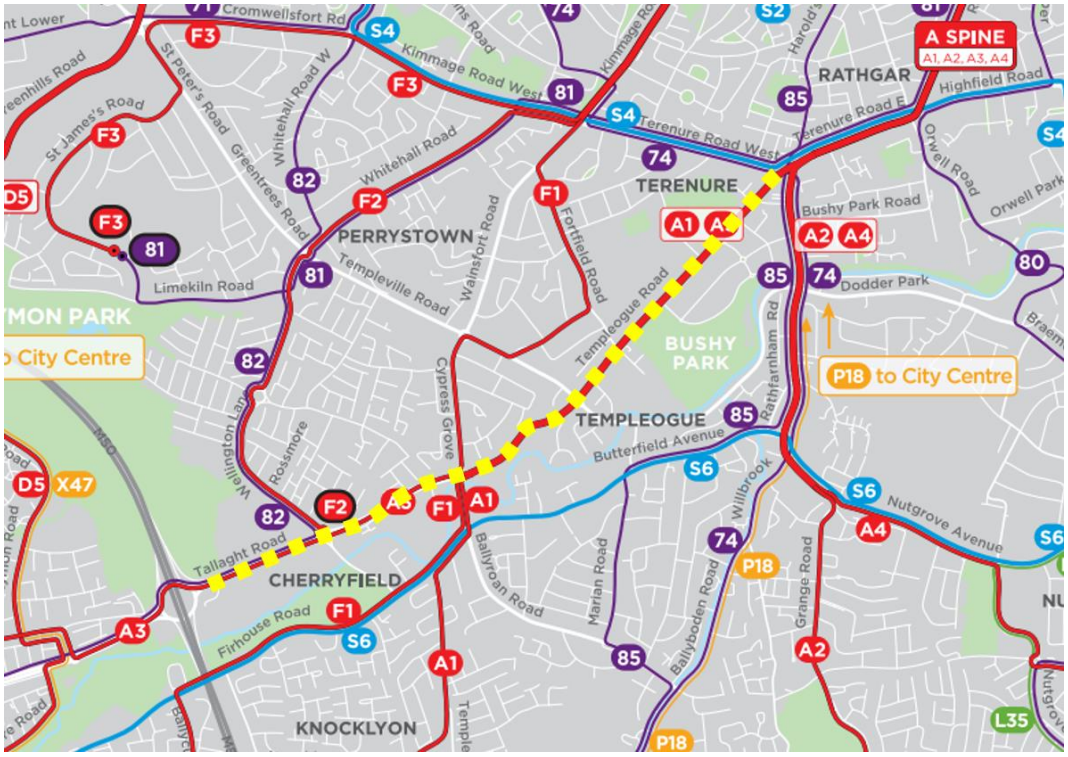

Figure 3.3: Extract from New Dublin Area Bus Network Maps

(the Templeogue to Terenure section highlighted in yellow)

3.2.5 Compatibility with Other Road Users

A key objective of the proposed CBC scheme is to improve pedestrian and cyclist facilities along the route. For cyclists, segregated facilities should be provided where practical to do so.

Figure 3.4, extracted from the GDA Cycle Network plan, highlights the Templeogue to Terenure section in the context of the planned cycle network. 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.
- **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.

Specifically, Primary Cycle Route 9A and Secondary Route 9B from the GDA Cycle Network Plan run along or are intercepted by the Templeogue to Terenure section, with their provision considered at all stages of the options assessment process.

The interaction of the Templeogue to Terenure section with other schemes has also been considered, specifically the Wellington Lane Cycle Scheme and the Dodder Greenway.

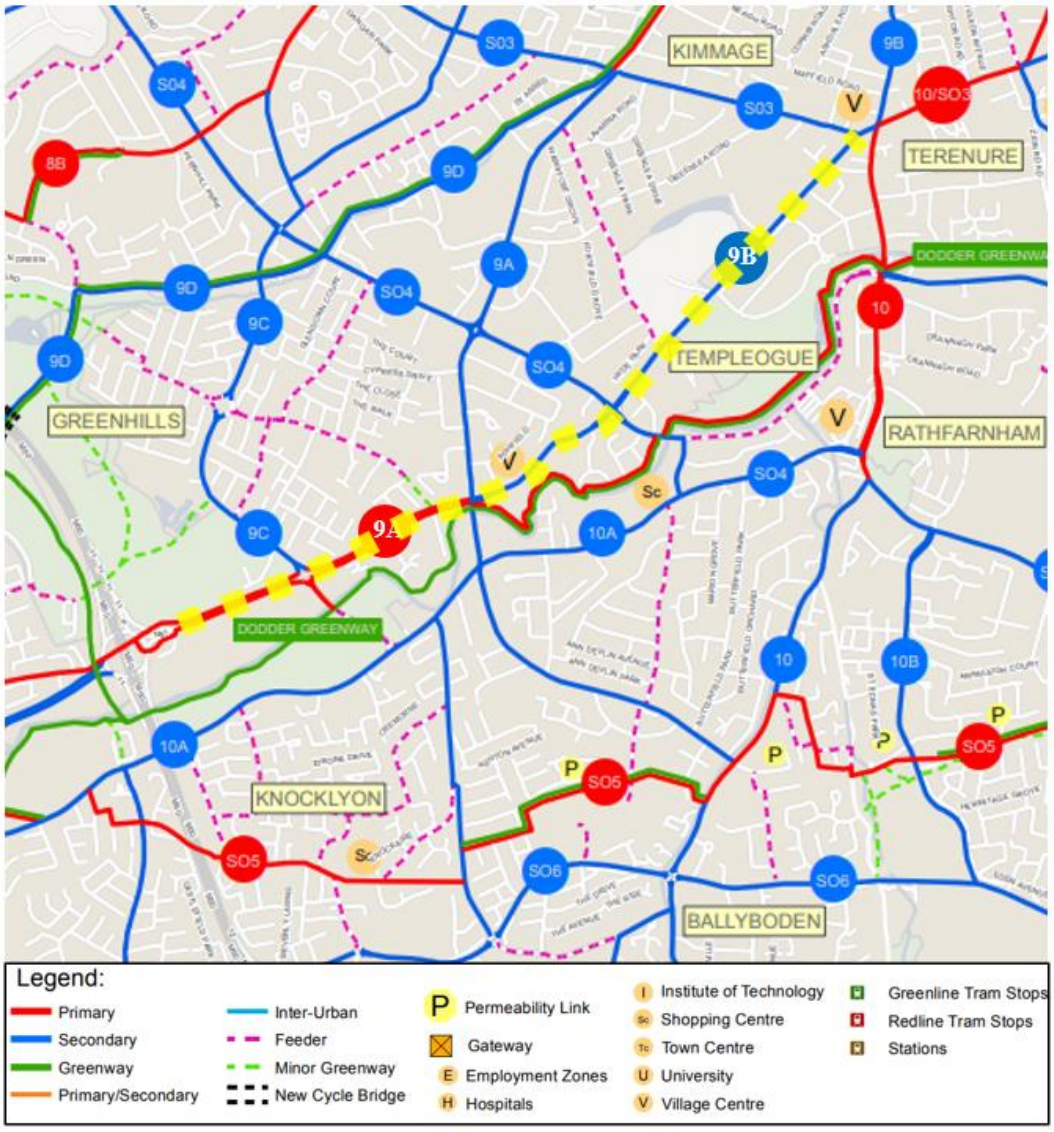

Figure 3.4: **Extract from GDA Cycle Network Plan**

(the Templeogue to Terenure section highlighted in yellow)

3.3 Review of the Tallaght to Terenure Core Bus Corridor Feasibility Study and Options Assessment Report

3.3.1 Introduction

From a review of submissions received as part of the public consultation process, as well as a review of the topographical survey carried out since the EPR Option's publication, a number of issues were identified which had the potential to be overcome through the implementation of alternative design solutions. These issues are described in the following sections.

3.3.2 Assessment Methodology

3.3.2.1 Route Option Assessment Methodology

The first step in the assessment process was to review the 'Tallaght to Terenure Core Bus Corridor Feasibility Study and Options Assessment Report'.

The 'Tallaght to Terenure Core Bus Corridor Feasibility Study and Options Assessment Report' utilised a two-stage assessment process to determine the EPR Option, comprising:

- An initial 'Stage 1' high-level route options assessment or 'sifting' process which appraised routes in terms of ability to achieve scheme objectives and whether they could be practically delivered; and
- Routes which passed this initial stage were taken forward to a more detailed Stage 2 assessment.

At the start of the Stage 1 assessment, an initial 'spider's web' of potential route options that could accommodate a CBC was identified for each study area section. **Figure 3.5** is an extract from the 'Tallaght to Terenure Core Bus Corridor Feasibility Study and Options Assessment Report', illustrating the 'spider's web' of potential routes considered in the Stage 1 assessment.

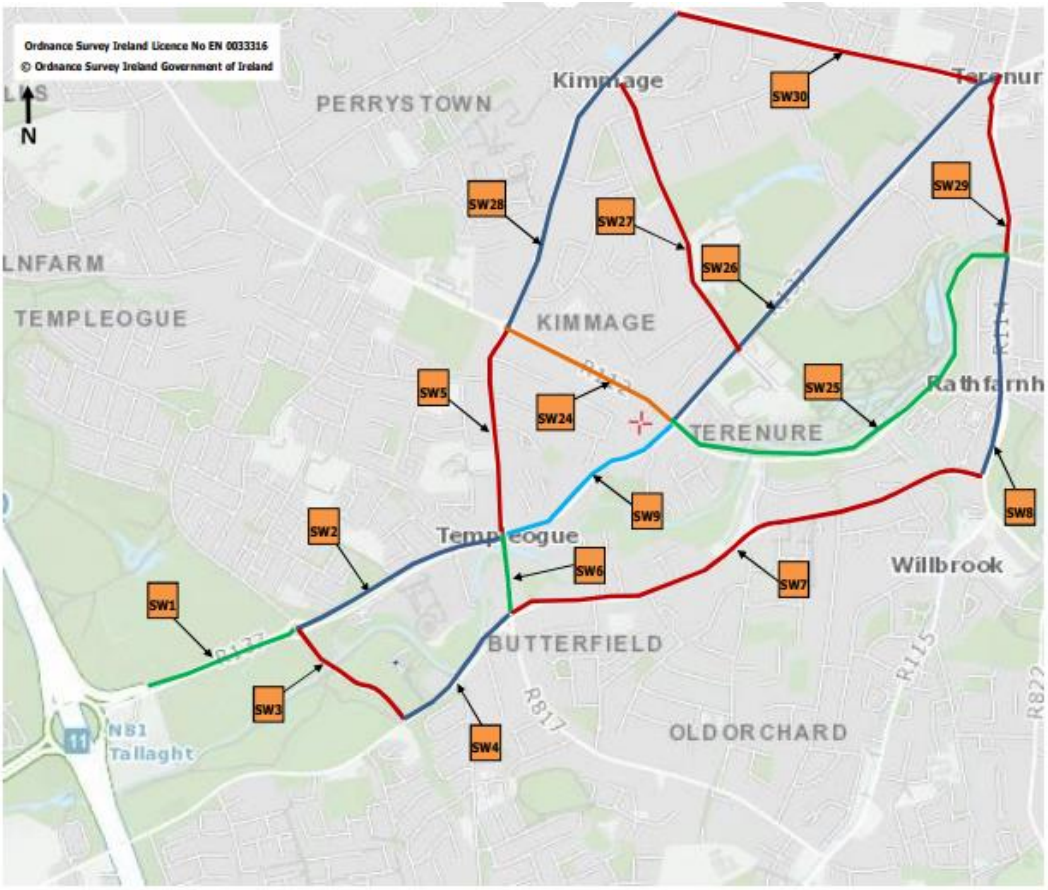

Figure 3.5: Spider's Web of Route Options extracted from the 'Tallaght to Terenure Core Bus Corridor Feasibility Study and Options Assessment Report'

The following extract from the 'Tallaght to Terenure Core Bus Corridor Feasibility Study and Options Assessment Report' report describes the two-stage process used to determine the EPR Option:

"*At the start of the Stage 1 assessment, an initial 'spiders web' of potential route options that could accommodate a CBC was identified for each study area section… This was narrowed down using a high level qualitative method based on professional judgement and a general appreciation for existing physical conditions/constraints within the study area. This exercise examined and assessed technically feasible route options, based upon the distinct project specific objectives. In addition to being assessed on their individual merits, routes were also assessed relative to each other enabling some routes to be ruled out if more suitable alternatives existed.*

This stage 1 assessment focused on engineering constraints together with a desktop study, identifying high-level environmental constraints and an analysis of population catchments.

The Stage 2 assessment comprised a more detailed qualitative and quantitative assessment, using criteria established to compare route options. The first step in the Stage 2 assessment was to combine shorter route options which passed the Stage 1 assessment, to form longer end-to-end routes within each study area section.

Following this, an initial indicative scheme for each route option was determined based on the specific constraints along the route [e.g. bus lane in each direction with cycle lanes (where appropriate), bus lane in each direction, bus lane in one direction only etc.]. In particular constrained locations, a number of variant scheme options were considered and assessed as necessary.

The indicative scheme for each route option was then progressed to a 'Multi-Criteria Analysis (MCA) which evaluated the route options under the following main assessment criteria:

- *Economy;*
- *Integration;*
- *Accessibility and Social Inclusion;*
- *Safety; and*
- *Environment."*

A number of locations along the EPR Option were identified where there was potential to revisit scheme proposals to address issues raised in the public consultation or identified through a review of additional information. For each area identified, additional options were developed and, if considered feasible, would be assessed through an MCA in a similar manner to Stage 2 of the EPR Option assessment process.

In addition to the new options considered, any alternative options previously considered within the 'Tallaght to Terenure Core Bus Corridor Feasibility Study and Options Assessment Report' were considered to determine whether they could potentially address the issues being encountered now. No options were brought forward in this regard. All new options were assessed against the EPR Option, in some cases refined to reflect issues identified upon review of the topographical survey and subsequent design refinement.

This additional assessment does not supersede work undertaken during earlier stages but complements it and responds to issues raised by the public during the non-statutory public consultation process or issues identified by additional information available to the Design Team.

The methodology for the assessment of new options explored at this stage is the same as outlined in the Tallaght to Terenure Core Bus Corridor Feasibility Study and Options Assessment Report. A summary of the main criteria and sub-criteria used in the options assessment process is presented in **Table 3.1**.

Table 3.1: Assessment Criteria

Assessment Criteria	Assessment Sub-Criteria
1. Economy	1.a. Capital Cost
	1.b. Transport Reliability and Quality (Journey Time)
2. Integration	2.a. Land Use Integration
	2.b. Residential Population and Employment Catchments
	2.c. Transport Network Integration
	2.d. Cycle Network Integration
	2.e. Traffic Network Integration
3. Accessibility & Social Inclusion	3.a. Key Trip Attractors (Education/Health/Commercial/Employment)
	3.b. Deprived Geographic Areas
4. Safety	4.a. Road Safety
	4.b. Pedestrian Safety
5. Environment	5.a. Archaeology and Cultural Heritage
	5.b. Architectural Heritage
	5.c. Flora & Fauna
	5.d. Soils, Geology and Hyrdology
	5.e. Landscape and Visual
	5.f. Air Quality
	5.g. Noise & Vibration
	5.h. Land Use Character

In keeping with the assessment undertaken in the 'Tallaght to Terenure Core Bus Corridor Feasibility Study and Options Assessment Report', Physical Activity has been scoped out of the MCA at this stage as all options are considered to promote physical activity equally and it is, therefore, not considered to be a key differentiator between options.

Again, in keeping with the assessment undertaken in the 'Tallaght to Terenure Core Bus Corridor Feasibility Study and Options Assessment Report', route options were compared based on a five-point scale, ranging from having significant advantages to having significant disadvantages over other route options. **Table 3.2** shows the colour coding of the five-point scale, with advantageous routes graded "dark green" and disadvantageous routes graded "red".

Table 3.2: Route Options Colour Coded Ranking Scale

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

Where the design has undergone a change in respect of infrastructure provision or route choice, this has been recorded and explained. An MCA has been undertaken which will assess the newly developed and designed solutions against the EPR Option from the 'Tallaght to Terenure Core Bus Corridor Feasibility Study and Options Assessment Report'.

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

3.3.3 Section 1: M50 Junction 11 to Springfield Avenue

3.3.3.1 Section 1 Emerging Preferred Route

The EPR previously identified along this section of the Templeogue to Terenure section is presented in **Figure 3.6.**

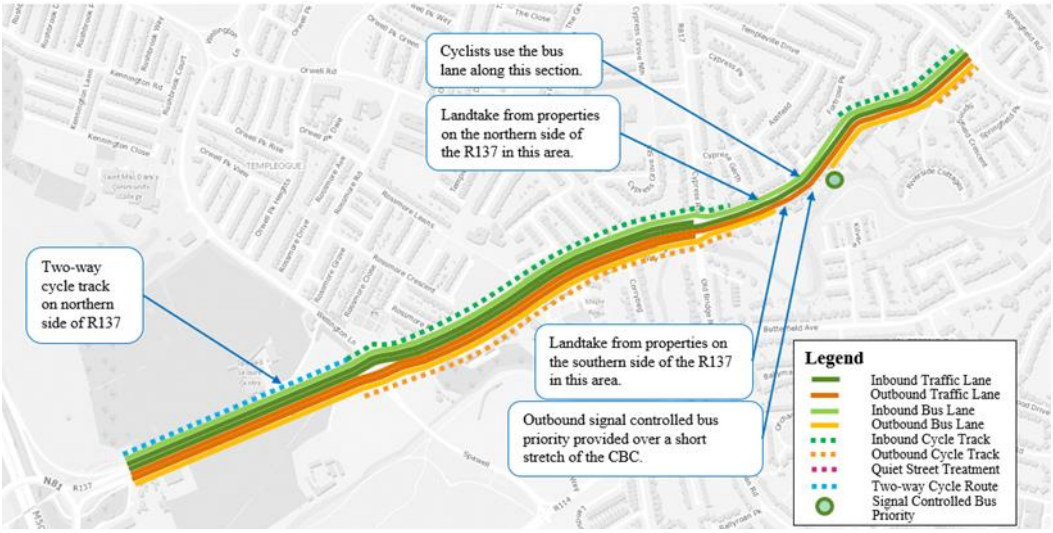

Figure 3.6: Section 1 EPR

The previous MCA undertaken determined that a route along the R137 Templeogue Road was the EPR Option.

Within the 'Tallaght to Terenure Core Bus Corridor Feasibility Study and Options Assessment Report', the EPR Option proposed full physical bus lane segregation throughout this section of the scheme. This proposal was revised slightly when the EPR Option drawings were published for public consultation after the identification of a constraint in the vicinity of the Ashfield development. This resulted in the removal of a short section of outbound bus lane in this location in the published EPR Option drawings.

Based on the public consultation submissions received and an assessment of topographical survey subsequently undertaken along this route section, two areas were identified as requiring further review. These are summarised in the following section. The EPR Option remains the preferred option for sections of the scheme not identified for further review.

3.3.3.2 Areas Identified for Re-examination

3.3.3.2.1 Templeogue Road northeast of the Cypress Grove Road Junction

The EPR Option proposal for Templeogue Road immediately northeast of the Cypress Grove Road junction would result in a poor road alignment for the inbound traffic lane and bus lane. In addition, the proposal required land acquisition and tree removal from six properties on the northern side of Templeogue Road. Feedback received from the public, as well as through public consultation events, highlighted the potential impact of this land acquisition and tree removal on these properties. As such, alternative options to deliver bus priority through this scheme section have been developed.

3.3.3.2.2 Templeogue Village

The EPR Option proposal within Templeogue Village required land acquisition within Templeogue Village as well as reducing the available public realm space and impacting on a number of parking spaces within the village. Feedback received from the public, as well as through public consultation events, highlighted the potential impact of the proposed scheme on local businesses as well as on the character of the village. As such, alternative options for bus priority through this scheme section were explored.

3.3.4 Section 2: Springfield Avenue to Terenure Road West

3.3.4.1 Section 2 Emerging Preferred Route

The EPR Option previously identified along this section of the Templeogue to Terenure section is presented in **Figure 3.7**.

Figure 3.7: Section 2 EPR
[© Ordnance Survey Ireland Government of Ireland. All rights reserved.
Licence Number 2021/OSi_NMA_180 National Transport Authority.]

The previous MCA undertaken determined that a route along the R137 Templeogue Road was the EPR Option.

It is considered that the options assessment presented in the 'Tallaght to Terenure Core Bus Corridor Feasibility Study and Options Assessment Report' has appropriately assessed route options and that the selected corridor and scheme best meets the objectives of the scheme in this area. No areas within this section of the scheme were therefore identified for re-examination and the EPR Option remains the preferred option. However, it is noted that refinement of the preferred option in this area has reduced the impact of the proposal on adjacent properties compared to the EPR.

3.3.5 Summary

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

- Alternative options for bus priority on Templeogue Road north-east of the Cypress Grove junction; and
- Alternative options for bus priority through Templeogue Village.

Detail of the options assessment completed is presented in Chapter 3.4.

3.3.6 Carbon Considerations for the Preferred Route Options

Carbon for the proposed scheme will arise from 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 support enhanced bus capacity and public transport potential in line with the objectives of the Proposed Scheme, which would contribute to reductions in user carbon and contribute towards the 130% increase in trips by public transport by 2030 outlined as a target in the Climate Action Plan 2023.

In developing the PRO for the Proposed Scheme, consideration has been given to the carbon generated by the Proposed Scheme during construction and operation. Many of the changes made to the design since the EPR Option proposal have resulted in minor changes in the construction capital carbon generated by the Proposed Scheme, such as altering junction layouts and cycle track / footpath widths. Additionally, significant design iterations have been undertaken to mitigate against traffic re-distribution impacts and consequent impacts on greenhouse gas emissions.

3.4 Options Assessment for the Templeogue to Terenure Section

3.4.1 Section 1 Option Assessment: M50 Junction 11 to Springfield Avenue

3.4.1.1 Introduction

Submissions received as part of the public consultation raised concerns about the impact of road widening through Templeogue Village to provide bus lanes and segregated cycle tracks. Similarly, concerns were raised about the impact of land acquisition on properties on Templeogue Road to the north east of Cypress Grove Road. For this reason, alternative scheme options which seek to reduce these impacts have been considered for this section of the route and have subsequently been brought through a multi criteria assessment to determine the optimum scheme design for this section.

3.4.1.2 Options Considered

An alternative option for the Templeogue to Terenure section from the M50 junction 11 to Springfield Avenue has been developed. The options considered within this section of the scheme are:

- *Option TG1:* Dedicated bus lanes provided through Templeogue Village. This option is a version of the EPR, refined slightly to reflect issues identified upon review of the topographical survey.
- *Option TG2:* Bus priority traffic signals provided on either side of Templeogue Village, with signal-controlled priority provided through the village.
- *Option TG3:* Bus priority traffic signals provided on either side of Templeogue Village, with signal-controlled priority provided through the village.

Outbound bus lane curtailed at Cypress Grove Road Junction to minimise land acquisition. Equivalent queuing space provided in advance of Cypress Grove Road for general traffic compared to TG2, thereby providing similar bus priority.

3.4.1.2.1 Alternative Options Considered

A number of other options were also considered in the area but were not carried forward for the reasons briefly outlined below:

- A sub option was also considered between Cypress Grove Road and Templeogue Village which sought to minimise the impact on properties on this section. This option proposed curtailing the inbound bus lane at Cypress Grove Road, and re-commencing it at the north-eastern side of Templeogue Village. However, it was considered that in combination with vehicular activity in Templeogue Village, this distance (~500m) was too much to give guaranteed bus priority through use of signal-controlled priority. It was considered that this option would not be in line with the objectives of the scheme and, as such, this option was not considered any further.
- An additional option considered curtailing the inbound bus lane at Cypress Grove Road, and re-commencing it at after Ashfield Place. However, under this option, no cycle facility would be provided between Cypress Grove Road and Ashfield Place meaning cyclists would have to share with general traffic. It was considered that this option would not be in line with the objectives of the scheme and, as such, this option was not considered any further.

3.4.1.2.2 Route Option TG1

Route Description

Route option TG1 is presented in **Figure 3.8**.

Figure 3.8: Route Option TG1

Inbound: This section of the route would commence on the R137 Templeogue Road at the junction with Cypress Grove Road. The CBC route would proceed along Templeogue Road as far as the junction with Springfield Avenue, where this section of the route ends.

Outbound: The outbound route would follow the same route as the inbound route.

Stops: A total of two stops would likely be provided in each direction along this route section.

Indicative Scheme Design

Figure 3.9 illustrates the indicative scheme design for this route option. The location of cross-sections and junctions referenced in subsequent sections describing this route option are also illustrated in this figure.

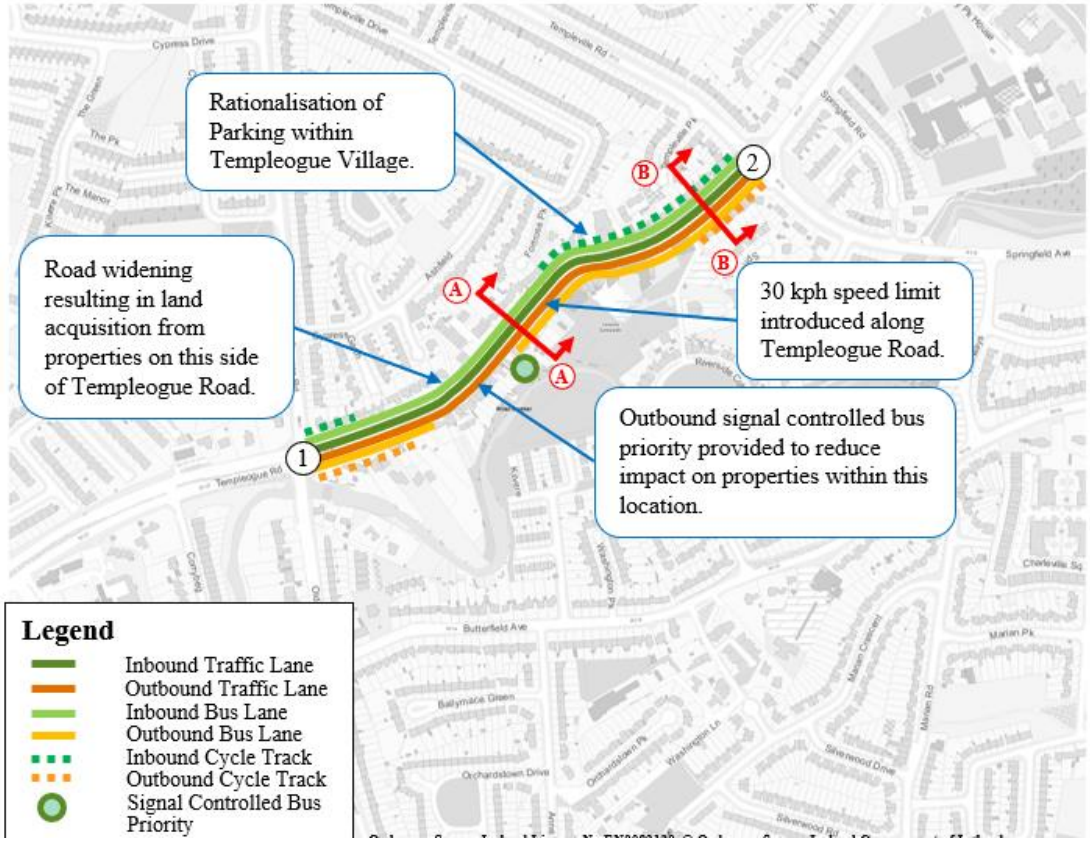

Figure 3.9: Route Option TG1 Indicative Scheme Design
[© Ordnance Survey Ireland Government of Ireland. All rights reserved.
Licence Number 2021/OSi_NMA_180 National Transport Authority.]

This section of the route commences on Templeogue Road at the junction with Cypress Grove Road. In the immediate vicinity of this junction, inbound and outbound cycle lanes are proposed, however, due to width constraints in the vicinity of the Ashfield Place development, these facilities terminate shortly after the junction.

In the vicinity of the Ashfield Place development, a cross-section consisting of two general traffic lanes and an inbound bus lane is proposed. Inbound cyclists would share the bus lane through this section with a 30 kph speed limit applied. Outbound bus priority would be provided through bus priority traffic signals through this section and cyclists and buses would share the general traffic lane within this section. This cross-section would result in widening into properties on the northern side of Templeogue Road through this section. This proposal would represent a change when compared to the published EPR which also proposed a very limited amount of widening into properties on the southern side of the road within this section. On review of more detailed topographical survey, the requirement for land take on the southern side of the road has been designed out.

The proposed cross-section along this section of Templeogue Road is presented in **Figure 3.10**.

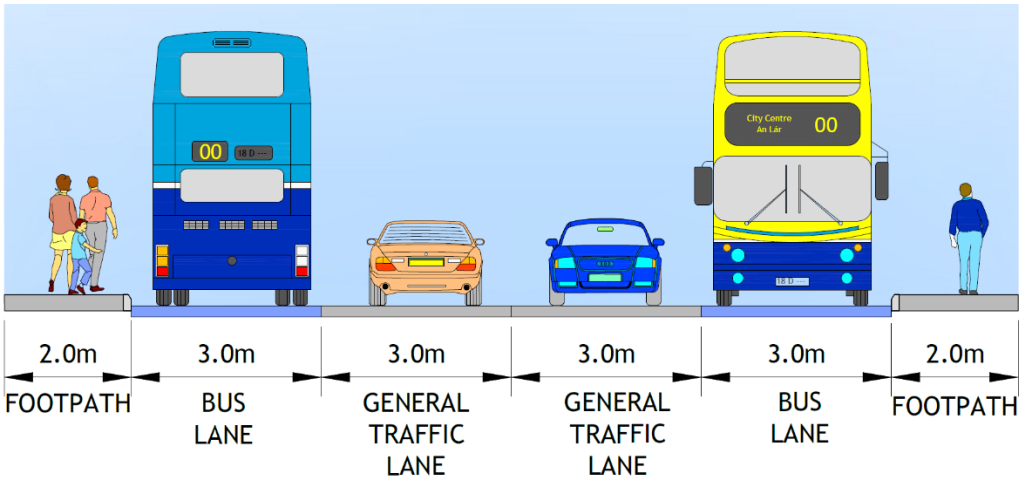

Figure 3.10: Route Option TG1 Cross-Section A-A

An inbound cycle track would develop as the Templeogue to Terenure section passes through Templeogue Village. Through the village a cross-section consisting of two dedicated bus lanes, two general traffic lanes and an inbound cycle track would be provided. This proposal would require the removal of approximately 10 parking spaces within the village. An outbound cycle track would be provided approximately 95m from the Springfield Avenue junction. The proposed cross-section on approach to this junction is presented in **Figure 3.11**.

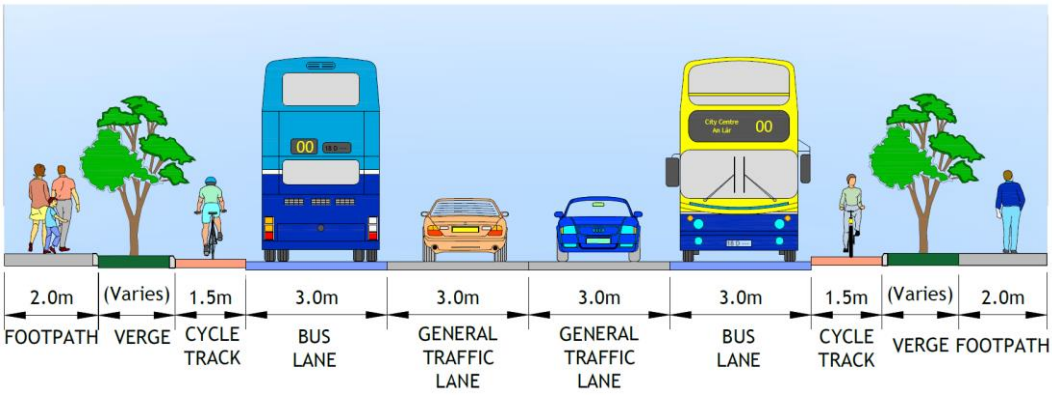

Figure 3.11: Route Option TG1 Cross-Section B-B

In summary, this route option would have the following characteristics:

- Fully segregated bus priority provided throughout this scheme section with the exception of a short section of outbound bus lane in the vicinity of the Ashfield College development, where bus priority would be achieved through use of signal-controlled priority;
- 2.0m wide cycle tracks in each direction within 100m of the junction with Cypress Grove Road;
- Inbound 2.0m wide cycle track through Templeogue Village, as far as the junction with Springfield Avenue;
- Outbound cycle track terminating approximately 95m from the junction with Springfield Avenue.

Junctions:

There are two signalised junctions along this route option, both of which would require upgrading to facilitate bus priority. The locations of these junctions are presented in **Figure 3.9** and discussed below:

1. **Templeogue Road/Cypress Grove Road:** Adjustments to the junction layout would be required to facilitate the bus lanes and the cycle tracks on approach to the junction. There is also a potential requirement to relocate/provide new signal equipment. The existing turn bans at this junction would be retained. The traffic slip lanes at this junction would be removed.
2. **Templeogue Road/Springfield Avenue:** Adjustments to the junction layout would be required to facilitate the bus lanes and cycle tracks on approach to the junction. There is also a potential requirement to relocate/provide new signal equipment. The traffic slip lanes at this junction would be removed.

3.4.1.2.3 Route Option TG2

Route Description

Route option TG2 is presented in **Figure 3.12**.

Figure 3.12: Route Option TG2

Inbound: This section of the route would commence on the R137 Templeogue Road at the junction with Cypress Grove Road. The CBC route would proceed along Templeogue Road as far as the junction with Springfield Avenue, where this section of the route ends.

Outbound: The outbound route would follow the same route as the inbound route.

Stops: A total of two stops would likely be provided in each direction along this route section.

Indicative Scheme Design

Figure 3.13 illustrates the indicative scheme design for this route option. The location of cross-sections and junctions referenced in subsequent sections describing this route option are also presented in this figure.

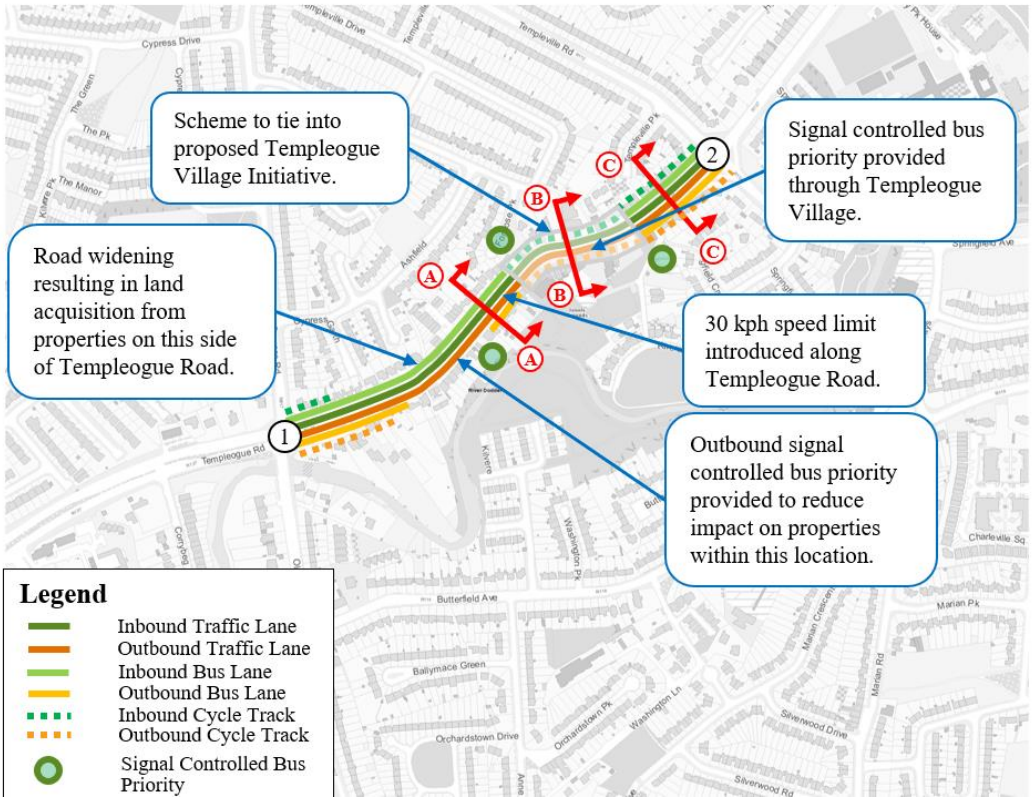

Figure 3.13: Route Option TG2 Indicative Scheme Design

This section of the route commences on Templeogue Road at the junction with Cypress Grove Road. In the immediate vicinity of this junction, inbound and outbound cycle lanes are proposed, however, due to width constraints in the vicinity of the Ashfield Place development, these facilities terminate shortly after the junction.

In the vicinity of the Ashfield Place development, a cross-section consisting of two general traffic lanes and an inbound bus lane is proposed. Inbound cyclists would share the bus lane through this section with a 30 kph speed limit applied.

Outbound bus priority would be provided through bus priority traffic signals through this section and cyclists and buses would share the general traffic lane within this section. This cross-section would result in widening into properties on the northern side of Templeogue Road through this section. This proposal would represent a change when compared to the published EPR which also proposed a very limited amount of widening into properties on the southern side of the road within this section. On review of more detailed topographical survey, the requirement for land take on the southern side of the road has been designed out. The proposed cross-section along this section of Templeogue Road is presented in **Figure 3.14**.

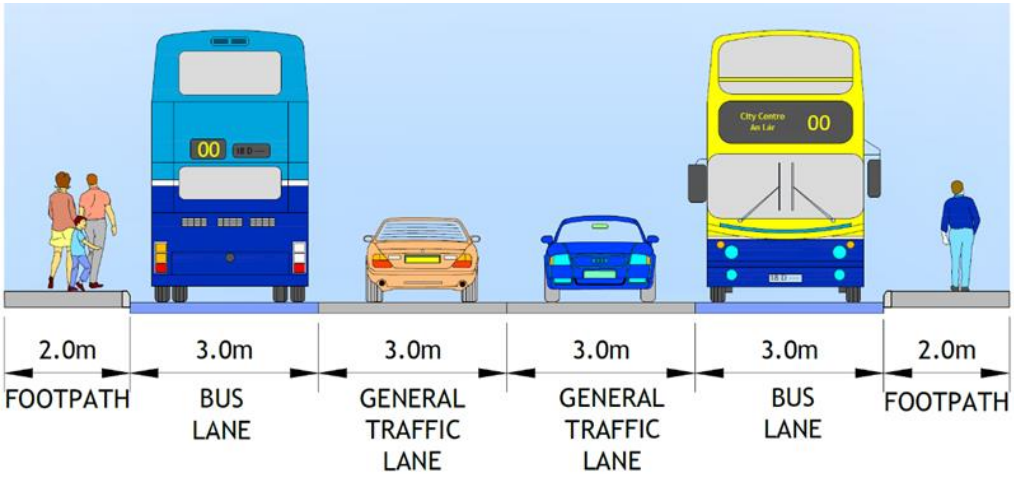

Figure 3.14: Cross-Section A-A (Relevant to TG2 and TG3)

The CBC scheme would tie into the Templeogue Village Initiative within Templeogue Village, delivered by SDCC in 2022. The Templeogue Village Initiative provided upgrades to cycle lanes through the village as well as improvements to lighting, improved pedestrian crossing facilities in addition to general public realm elements. This option would provide a general traffic lane and cycle facilities in each direction through the village with the retention of all existing parking within the village. The cross-section within this section of the scheme is presented in **Figure 3.15**.

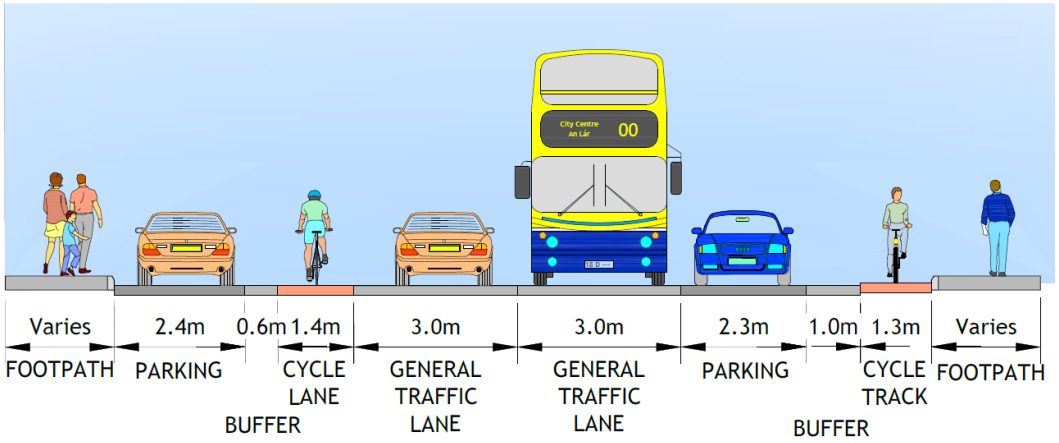

Figure 3.15: Cross-Section B-B (Relevant to TG2 and TG3)

Bus priority traffic signals would be provided on either side of Templeogue Village to provide signal-controlled priority through the village. Inbound and outbound cycle tracks would be provided between Templeogue Village and the Springfield Avenue junction. The cross-section within this section of the scheme is presented in **Figure 3.16**.

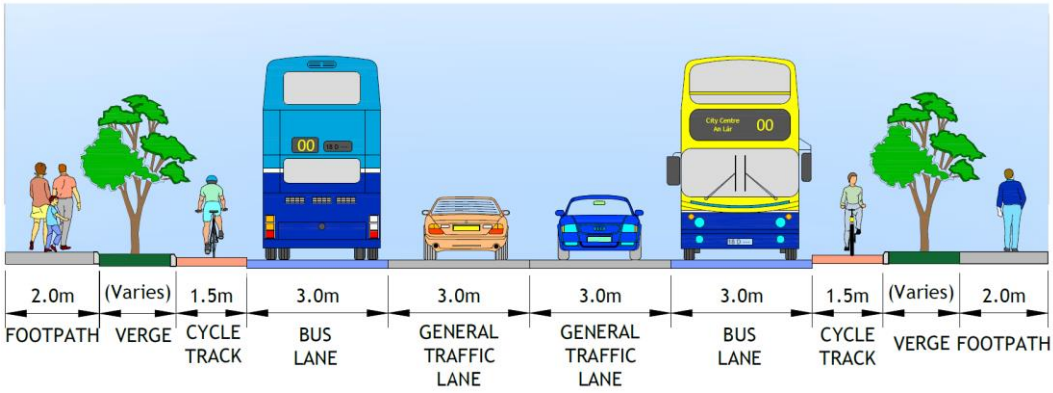

Figure 3.16: Cross-Section C-C (Relevant to TG2 and TG3)

In summary, this route option would result in the following characteristics:

- Fully segregated bus priority provided throughout this scheme section, with the exception of:
  - Templeogue Village, where priority would be achieved with signal-controlled priority.
  - Outbound in the vicinity of the Ashfield College development where bus priority would be achieved through use of signal-controlled priority due to width constraints;
- 2.0m wide cycle tracks in each direction within 100m of the junction with Cypress Grove Road; and
- 2.0m wide cycle tracks in each direction connecting Templeogue Village with the Springfield Avenue junction.

Junctions:

There are two signalised junctions along this route option, some of which would require upgrading to facilitate bus priority. The locations of these junctions are presented in **Figure 3.13** and discussed below:

1. **Templeogue Road/Cypress Grove Road:** Adjustments to the junction layout would be required to facilitate the bus lanes and the cycle tracks on approach to the junction. There is also a potential requirement to relocate/provide new signal equipment. The existing turn bans at this junction would be retained. The traffic slip lanes at this junction would be removed.
2. **Templeogue Road/Springfield Avenue:** Adjustments to the junction layout would be required to facilitate the bus lanes and cycle tracks on approach to the junction. There is also a potential requirement to relocate/provide new signal equipment. The traffic slip lanes at this junction would be removed.

3.4.1.2.4 Route Option TG3

Route Description

Route option TG3 is presented in **Figure 3.17**.

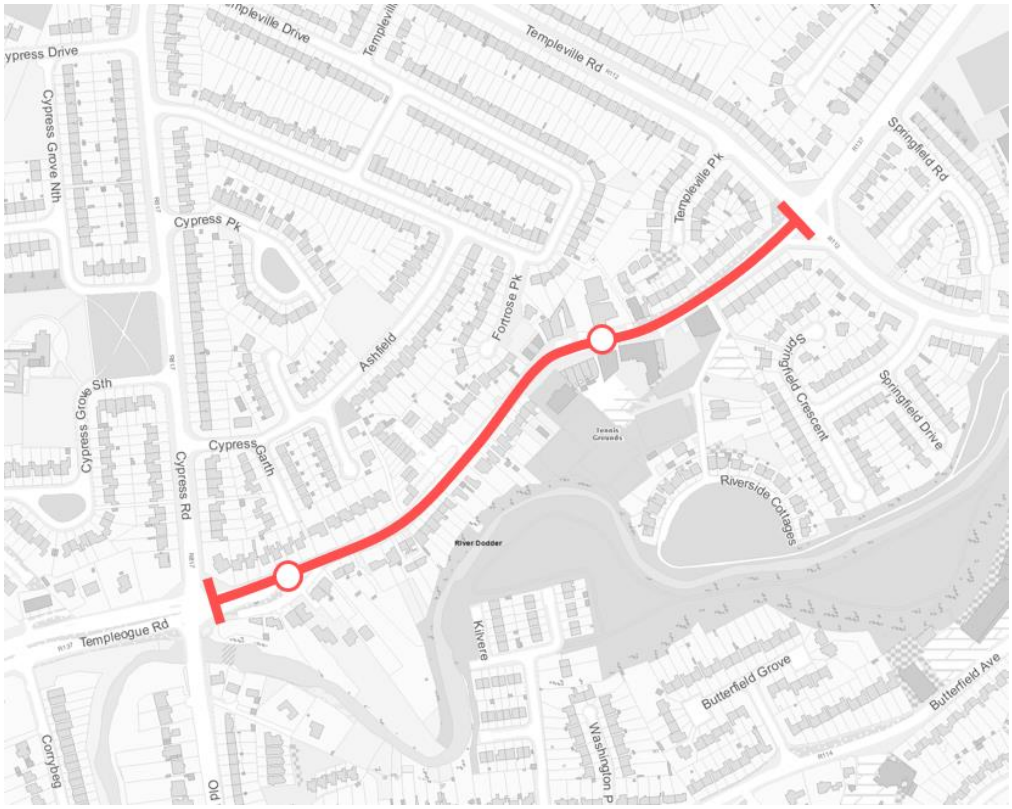

Figure 3.17: Route Option TG3

Inbound: This route option would follow the same route as route option TG2.

Outbound: The outbound route would follow the same route as the inbound route.

Stops: A total of two stops would likely be provided in each direction along this route section.

Indicative Scheme Design

Figure 3.18 illustrates the indicative scheme design for this route option. The location of cross-sections and junctions referenced in subsequent sections describing this route option are also presented in this figure.

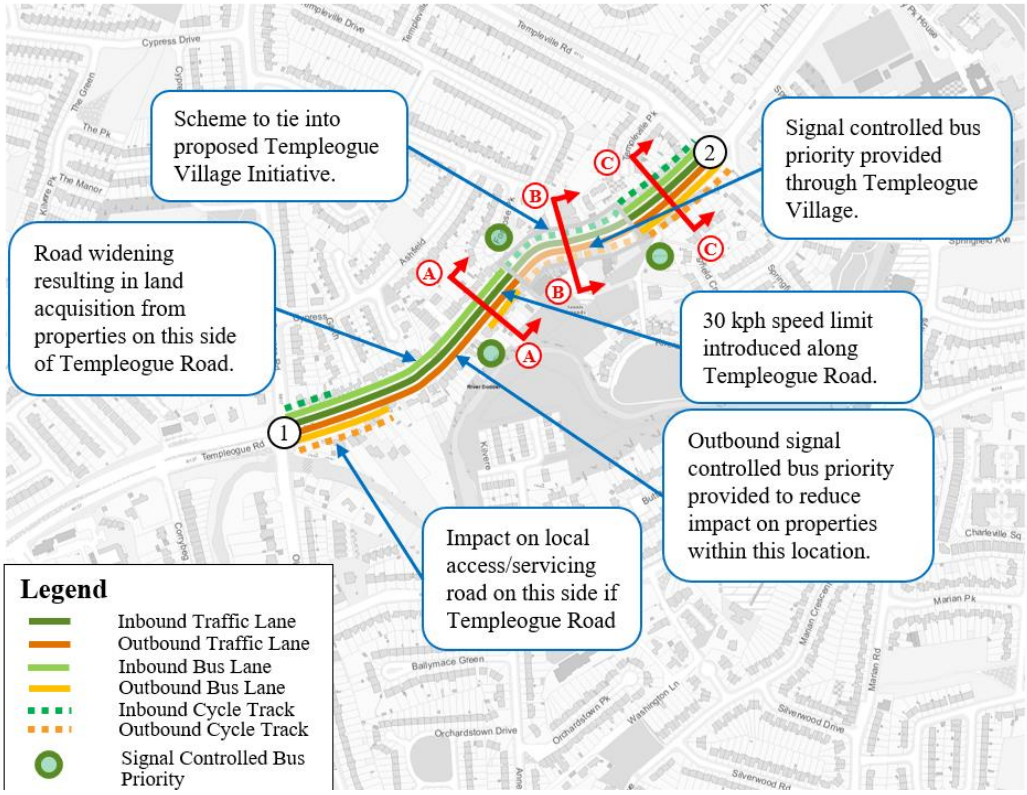

Figure 3.18: Route Option TG3 Indicative Scheme Design (refer to earlier report sections for duplicate cross-sections)

This route option is identical to Route Option TG2 with the exception of approximately 200m of the route on approach to the Cypress Grove Road junction. In this location, the outbound bus lane has been curtailed by approximately 50m when compared to Option TG2, and the carriageway realigned in order to improve its horizontal alignment, provide similar levels of queuing capacity for vehicles at the junction compared to TG2 and to reduce the impact on private properties and trees on the northern side of Templeogue Road. This realignment would impact on the local access/servicing road on the southern side of Templeogue Road in this location.

In the vicinity of the Ashfield Place development, the proposed cross-section is presented in **Figure 3.14**.

Within Templeogue Village, the proposed cross-section is presented in **Figure 3.15**.

Between Templeogue Village and the Springfield Avenue junction, the cross-section is presented in **Figure 3.16**.

In summary, this route option would have the following characteristics:

- Fully segregated bus priority provided throughout this scheme section, with the exception of:
    - Templeogue Village, where priority achieved with signal-controlled priority.
    - Outbound in the vicinity of the Ashfield Place development where bus priority would be achieved through use of signal-controlled priority due to width constraints;
- 2.0m wide cycle tracks in each direction within 100m of the junction with Cypress Grove Road; and
- 2.0m wide cycle tracks in each direction connecting Templeogue Village with the Springfield Avenue junction.

Junctions:

There are two signalised junctions along this route option, both of which would require upgrading to facilitate bus priority. The locations of these junctions are presented in **Figure 3.18** and discussed below:

3. **Templeogue Road/Cypress Grove Road:** Adjustments to the junction layout would be required to facilitate the bus lanes and the cycle tracks on approach to the junction. There is also a potential requirement to relocate/provide new signal equipment. The existing turn bans at this junction would be retained. The traffic slip lanes at this junction would be removed.
4. **Templeogue Road/Springfield Avenue:** Adjustments to the junction layout would be required to facilitate the bus lanes and cycle tracks on approach to the junction. There is also a potential requirement to relocate/provide new signal equipment. The traffic slip lanes at this junction would be removed.

3.4.1.3 Section 1 Route Option Assessment

Details of the route options assessment undertaken for the Templeogue Village study area section are presented in Appendix D. The relative ranking of route options against the scheme assessment sub-criteria is summarised in **Table 3.3**.

Table 3.3: Section 1 Route MCA Summary

Appraisal Criteria	Sub-Criteria	Option TG1	Option TG2	Option TG3
1 Economy	1A Capital Cost			
	1B Transport Quality & Reliability			
2 Integration	2A Land Use Policy			
	2B Residential Population and Employment Catchments			
	2C Transport Network Integration			
	2D Cycle Network integration			
	2E Traffic Network Integration			
3 Accessibility & Social Inclusion	3A Key Trip Attractors			
	3B Deprived Geographic Areas			
4 Safety	4A Road Safety			
	4B Pedestrian Safety			
5 Environment	5A Archaeology & Cultural Heritage			
	5B Architectural Heritage			
	5C Flora & Fauna			
	5D Soils, Geology & Hydrogeology			
	5E Landscape & Visual			
	5F Air Quality			
	5G Noise & Vibration			
	5H Land Use Character			

In terms of Capital Cost, Option TG1 is the most expensive option due to the additional land acquisition and infrastructure costs associated with delivering the bus lanes through Templeogue Village. Option TG3 performs the best due to the reduced land acquisition costs associated with reduced impact on properties on Rathfarnham Road to the north east of Cypress Grove Road.

In terms of Transport Quality and Reliability, Option TG1 performs slightly better than other options due to the fact that full physical bus priority is provided through Templeogue Village.

All options serve the same catchments and as such are ranked equally in relation to land use policy and residential population catchments and employment catchments. Similarly, in terms of transport network integration, as all options follow the same route, the opportunity for interchange with other routes is equal.

In terms of cycle network integration, options TG2 and TG3 allow for the provision of cycle facilities in either direction through Templeogue Village and as such score slightly better than option TG1 under this criterion.

Option TG1 better accommodates traffic movements through Templeogue Village and as such scores better than options TG2 and TG3 which propose the use of bus priority traffic signals to manage bus priority through this section, and thus have the potential to negatively affect traffic movement.

All options rank equally under accessibility and social inclusion as they all follow the same route.

Similarly, all options rank equally under safety as they all require the same number of turning movements at junctions and footpath widths are the same throughout.

In relation to flora and fauna, option TG3 performs the best as it has a lesser impact on trees on Templeogue Road than other options due to the reduced land acquisition.

Option TG1 performs worse than other options under the Landscape and Visual criterion due to the fact that more properties are impacted under this route proposal than under other options. While options TG2 and TG3 impact the same number of properties, the extent of this impact is slightly less under Option TG3.

Option TG1 also performs worse than other options under the criteria of Air Quality and Nosie and Vibration due to the fact that additional road widening is proposed within Templeogue Village under this option. Finally, Option TG1 performs worse than other options under the criterion of Land Use Character due to the fact that the removal of approximately 10 parking spaces within the village is required to facilitate the proposed bus lanes.

A summary of the assessment and relative ranking of route options against the five main assessment criteria is presented in **Table 3.4**.

Table 3.4: Section 1 MCA Criteria Summary

Appraisal Criteria	Option TG1	Option TG2	Option TG3
1 Economy			
2 Integration			
3 Accessibility & Social Inclusion			
4 Safety			
5 Environment			

3.4.1.4 Section 1 Conclusion and Preferred Option

Based on the assessment undertaken, route Option TG3 offers more benefits over other options.

It performs favourably in terms of Integration and Environmental criteria, while ranking equally to other options under the other criteria, with the exception of economy. Option TG3 is the PRO for the Templeogue Village area for the following reasons:

- It has a lower capital cost than other options;
- It minimises the impact on the village of Templeogue through the use of bus priority traffic signals to provide virtual bus priority over a short distance;
- It provides better facilities for cyclists along GDA Cycle Network Plan secondary route 9B than Option TG1;
- It has the least impact on trees of all options considered; and
- It minimises the impact on private lands within Templeogue Village and along Templeogue Road.

3.5 Preferred Route Option for the Templeogue to Terenure Section

3.5.1 Introduction

Chapter 3.4 of this report presented an appraisal of all route options considered for the Templeogue to Terenure section. Following this appraisal, the preferred options have been incorporated into the route from the 'Tallaght to Terenure Core Bus Corridor Feasibility Study and Options Assessment Report' to form an end-to-end PRO. This chapter of the report presents and describes the preferred route option identified and the PRO scheme design. The PRO scheme design drawings are included in Appendix A of this report.

3.5.2 Preferred Route Description

The Preferred Route for the Templeogue to Terenure section is presented in **Figure 3.19** below:

Figure 3.19: Templeogue to Terenure section Preferred Route Option

The Templeogue to Terenure section commences on the Tallaght Road, east of the M50 interchange. From here, the CBC is routed via the R137 along Tallaght Road and Templeogue Road, through Templeogue Village, to Terenure Cross, where it joins the Rathfarnham to City Centre section.

3.5.3 Preferred Route Option Scheme Design Description

3.5.3.1 Tallaght Road, Templeogue Road to Rathfarnham Road

The Templeogue to Terenure section commences on the Tallaght Road adjacent to D'Arcy McGee's, east of the M50 interchange.

It is proposed to retain the existing bus lane configuration on the R137. The EPR Option proposed to maintain the cycle track on the outside of the footpath along this section, however it is now proposed to provide the cycle track on the carriageway side of the footpath to better tie in with proposals at the Wellington Lane Roundabout. The EPR Option also proposed to retain the Wellington Lane Roundabout, however as part of the updated design proposal it is now proposed to convert this junction to a signalised junction with kerb protection for cyclists.

Between the Wellington Lane Roundabout and Cypress Grove Road junction, a design revision on the EPR Option provides a cycle track on the carriageway side of the footpath, with existing bus lane provision maintained through this section. At the Cypress Grove Road junction, general through traffic may divert to Old Bridge Road for access to the City Centre via the R114. Significantly enhanced cycle facilities are also provided at this junction with the introduction of kerb protection.

Between the Cypress Grove Road junction and the Ashfield Place development it is proposed to provide bus lanes and traffic lanes inbound and a partial bus lane outbound. Dedicated cycle facilities are provided on the approach to the Cypress Grove Road junction, as in the EPR proposals. To improve safety for cyclists, it is proposed to introduce a 30kph speed limit between Cypress Grove Road and Templeogue Village. Outside the Ashfield Place Development, there is insufficient space for a bus lane and a general traffic lane in each direction. Therefore, it is proposed to stop the outbound bus lane for a distance of approximately 180m and use Signal-controlled priority along this section.

Between Ashfield Place and the Templeogue Tennis Club, it is proposed to provide a bus lane and a general traffic lane in each direction, as in the EPR Option. It is proposed to utilise a limited amount of land-take within this section to achieve the desired cross-section.

Within Templeogue Village, between Templeogue Tennis Club and the Templeville Road junction, it is proposed to manage bus priority through the use of Signal-controlled priority and tie into South Dublin County Council plans for Templeogue Village.

Accordingly, a single combined traffic lane in each direction is being proposed through the village which is a revision from the previous proposals.

North of Templeogue Village, the full cross section is resumed. Between the village and the Springfield Avenue junction, the design has been developed to minimise the loss of trees – this has been achieved by narrowing the cycle lanes locally.

At the junction with Springfield Avenue, general inbound through traffic may divert to the R112 and further to the R114. It is proposed to introduce kerb protection at this junction which will significantly improve cycle facilities and cyclist safety. Land-take previously identified at this location to facilitate the improvements has now been designed out.

Between Templeville Road junction and Fortfield Road it is proposed to provide a bus lane, general traffic lane and cycle track in each direction, as in the EPR Option proposals. However, cycle tracks have been narrowed to 1.5m along this section to significantly reduce tree impacts on the eastern side of the road. The Fortfield Road junction is intended to be upgraded to provide a direct cycle crossing for inbound cyclists to the two-way cycle facility on the eastern side of Templeogue Road north of the junction.

Between Fortfield Road and Terenure Road West, the Templeogue Road width is heavily constrained. On this section of the route, it is proposed to maintain one outbound bus lane, one outbound general traffic lane and one inbound general traffic lane. It was previously proposed to provide a footpath on the eastern side of Templeogue Road, however the topographical survey showed that this is not practicable. The alternative proposal is to provide a footpath on the western side of Rathdown Drive which will provide a continuous footpath on the eastern side of Templeogue Road between Terenure and Templeogue.

It is intended to introduce the inbound bus lane for a shorter section north of Olney Grove compared to the EPR Option. Through the introduction of a Bus Gate with a short section of bus lane at the junction of Olney Grove, northbound general traffic on Templeogue Road will not be permitted to access Terenure Road West or Terenure Place during the hours of operation of the Bus Gate. A right turn ban is proposed from Fergus Road to Templeogue Road, and a left turn ban from Olney Grove to Templeogue Road. Land-take previously identified at this location to facilitate the bus gate has now been designed out.

Right turn bans are also proposed from Templeogue Road to Rathdown Park and to Rathdown Avenue. Traffic management measures such as turning restrictions at junctions or road closures will also be considered on adjoining residential streets at suitable locations to prevent through traffic diverting inappropriately. Traffic from Terenure Road West will not be restricted. A quiet street treatment to Rathdown Crescent is intended to tie into the proposed quiet street treatment on Rathdown Park as part of the Rathfarnham to City Centre section. This represents a design revision from the EPR Option.

The Templeogue to Terenure section ties into the Rathfarnham to City Centre section at the Rathfarnham Road / Terenure Road West junction.

3.5.4 Summary

3.5.4.1 Infrastructure Provision

The preferred route option drawings presented in Appendix A show the extent of the infrastructure proposed to deliver the Templeogue to Terenure section which is approximately 3.7km long from end to end.

The bullet points below present the length of existing and proposed bus and cycle priority as a percentage of the overall route length.

- *13*% Existing bus priority (outbound) (13% physical)
- *39*% Existing bus priority (citybound) (39% physical)
- *79*% Proposed bus priority (outbound) (66% physical, 13% virtual)
- *93*% Proposed bus priority (citybound) (54% physical, 39% virtual)
- *52*% Existing cycle priority (outbound) (39% cycle track, 4% mandatory, 9% advisory)
- *70*% Existing cycle priority (citybound) (34% cycle track, 2% mandatory, 34% advisory)
- *89*% Proposed cycle priority (outbound) (77% cycle track, 12% quiet street)
- *77*% Proposed cycle priority (citybound) (65% cycle track, 12% quiet street)

Alternative cycle facilities are proposed for sections where the provision of cycle infrastructure is not practicable along the CBC as summarised below:

- Rathdown Drive/Rathdown Crescent/Rathdown Park - 400m quiet street treatment between Rathdown Avenue and Rathfarnham Road

Virtual bus priority measures are proposed at the following locations:

- R137 Templeogue Road at the Ashfield Place development (outbound) - Approximately 180m length;
- R137 Templeogue Road within Templeogue Village between Templeogue Tennis Club and Hollingsworth Cycles (inbound and outbound) - Approximately 200m length; and
- R137 Templeogue Road between Fortfield Road and Terenure Road West (inbound) – Approximately 1.2km.

3.5.4.2 Main Scheme Changes

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

- It is proposed to convert Wellington Lane Roundabout to a signalised junction with kerb protection for cyclists;
- No physical interventions are now proposed within Templeogue Village as part of the Templeogue to Terenure section works. Signal-controlled priority is to be provided both east and west of Templeogue Village to manage bus priority through the village. BusConnects scheme proposals are intended to tie into the permitted South Dublin County Council Part VIII Templeogue Village Project at Templeogue Tennis Club and at Hollingsworth Cycles;
- Quiet street treatment to Rathdown Crescent and Rathdown Park is proposed to provide for inbound cyclists on The Templeogue to Terenure section to join The Rathfarnham to City Centre section;
- It is proposed to amend the layout of the Templeogue Road / Cypress Grove Road junction in order to improve alignment for inbound buses and reduce the impact on trees and minimise land acquisition from adjacent properties;
- Removal of land-take at inbound bus gate on Templeogue Road at Olney Grove and at properties just north of the Springfield Avenue junction.

3.5.5 Scheme Benefits

3.5.5.1 Bus Journey Times

Through the provision of increased bus priority infrastructure, the Proposed Scheme would improve both the overall journey times for buses along the route and their journey time reliability. This can help to realise the objectives of the Proposed Scheme as set out in Chapter 2.4 of this report. The facilitation of bus priority along the Templeogue to Terenure Section, through the delivery of dedicated bus lanes, bus gates and signal-controlled bus priority, is envisaged to reduce bus journey times. In addition to this, journey reliability is envisaged to be improved, by largely removing interaction between bus traffic and general traffic.

3.5.5.2 Walking & Cycling

In addition to the improvements to bus journey time and journey time reliability, the Proposed Scheme would provide benefits for cyclists and pedestrians. The provision of dedicated cycling infrastructure along the Templeogue to Terenure Section would improve the level of service provided for cyclists along the route, making cycling trips safer and more attractive.

The Proposed Scheme would deliver substantial elements of the GDA Cycle Network Plan as outlined in Chapter 2.2, as well as linking with other proposed cycling schemes, contributing towards the development of a comprehensive cycling network for Dublin.

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

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

4 Rathfarnham to City Centre Section

4.1 Background and Non-Statutory Public Consultation for the Rathfarnham to City Centre Section

4.1.1 Rathfarnham to City Centre Core Bus Corridor Feasibility Study and Options Assessment Report and Emerging Preferred Route

In early 2016, the NTA initiated plans to develop the network of CBCs identified in the GDA Transport Strategy. As part of this body of work, the 'Rathfarnham to City Centre Core Bus Corridor CBC Feasibility Study and Options Assessment Report' (December 2017) was prepared which identified feasible options along the corridor, assessed these options and arrived at an EPR Option. These proposals formed the basis for the first Non-Statutory Public Consultation on the Rathfarnham to City Centre section.

4.1.2 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 the 14th of November 2018 to the 29th of March 2019. The second phase ran from the 23rd of January 2019 to the 30th of April 2019 and the final phase ran from the 26th of February 2019 to the 31st of May 2019. The Rathfarnham to City Centre section EPR Option formed part of the second phase of consultation, which closed on the 30th of April 2019. The Information Brochure published as part of this consultation is included in Appendix J2.

There were **2,729** submissions received relating to the Rathfarnham to City Centre section. These submissions ranged from individual submissions by residents, commuters and local representatives, to detailed proposals from public bodies, various associations and private sector businesses.

A brief summary of the feedback received on the Rathfarnham to City Centre section during the public consultation is presented in this section of the report.

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

1. Diversion of cyclists off the most direct route
    1a. Cyclists diverted at Brookvale; and
    1b. Cyclists diverted at Rathmines.
2. Vulnerable road user safety;
3. Traffic disruption due to traffic diversions;

4. Route not suitable for bus corridor;
5. Proposed land acquisition;
6. Removal of trees;
7. Access to property;
8. Loss of parking;
9. Devaluation of property;
10. Insufficient consultation;
11. Loss of heritage;
12. A metro option should be considered; and
13. Noise pollution.

Further detail on these issues can be found in the Public Consultation Submissions Report – 1st Non-Statutory Public Consultation in Appendix B2.

4.1.3 Development of Draft Preferred Route Option

Following the first non-statutory public consultation, a review was undertaken of the scheme proposals along the Rathfarnham to City Centre section 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-to-one meetings with directly impacted landowners.

As part of this review, several new options were developed for consideration in specific areas where issues were identified. These new options were subject to further options assessment (as detailed in Section 4.4 of this report) to identify the draft PRO. The selected draft PRO that was subsequently identified formed the basis for the second non-statutory public consultation in March / April 2020.

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

The draft PRO was published in March 2020 and a second round of non-statutory public consultation commenced on the 4th of March 2020 and ran until the 17th of April 2020. The Information Brochure published as part of this consultation is included in Appendix K2.

Due to COVID-19 restrictions being imposed by Government in mid-March 2020, the planned Public Information Events were impacted. Consequently there were **66** submissions received relating to the Rathfarnham to City Centre section (compared to 2,729 submissions following the first non-statutory public consultation). These submissions ranged from individual submissions by residents, commuters and local representatives, to detailed proposals from various associations and private sector businesses.

A number of community forums, meetings with resident groups, and one-to-one meetings were also held as part of the process prior to COVID-19 restrictions being imposed.

A brief summary of the feedback received on the Rathfarnham to City Centre scheme section during the second 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:

1. Inadequacies in Consultation Process;
2. Pedestrian Safety;
3. Pedestrian Safety;
4. Traffic Issues Associated with Proposed Traffic Management Measures;
5. Supportive of the Scheme;
6. Proposed Land Acquisition;
7. Protected Structures;
8. Removal of Trees;
9. Increased Air & Noise Pollution;
10. Access to Property;
11. Need for the Scheme;
12. Loss of parking; and
13. Alternative Options.

The issues raised during the second non-statutory public consultation have been considered in the further development of the draft PRO. Further detail on these issues can be found in the Public Consultation Submissions Report – 2nd and 3rd Non-Statutory Public Consultation in Appendix C2.

Subsequently, it was determined by NTA that a third non-statutory public consultation would be conducted prior to finalising the PRO.

4.1.5 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 Rathfarnham to City Centre section 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 forums, resident groups and one-to-one meetings with directly impacted landowners.

As part of this review, options were reviewed further, and new options were developed for consideration in specific areas where issues were identified.

These new options were subject to further options assessment (as detailed in Chapter 4.4 of this report) to identify the updated draft PRO.

The updated draft PRO that was subsequently identified formed the basis for the third non-statutory public consultation in November / December 2020.

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

The third round of non-statutory public consultation for the Rathfarnham to City Centre section took place from the 4th of November 2020 until the 16th of December 2020 on the updated draft Preferred Route Option. The Information Brochure published as part of this consultation is included in Appendix L2.

With the continuing effect of the COVID-19 pandemic and associated Government restrictions, the third non-statutory public consultation was held virtually. Virtual consultation rooms for each CBC were developed and published. Along with offering a call back facility, these 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 the 16th of December 2020 and submissions were accepted by email, through the virtual consultation rooms or by post. All relevant information including the updated Information brochures and the EPR public consultation reports were made available on the BusConnects website (https://busconnects.ie) to view and download. In addition, landowner meetings were held over the phone and/or online, and minutes were recorded as part of the consultation process.

A total of **949** submissions were received relating to the Rathfarnham to City Centre section as part of the third consultation. These submissions ranged from individual submissions by residents, commuters and local representatives, to detailed proposals from various associations and private sector businesses.

A brief summary of the feedback received on the Rathfarnham to City Centre section during the third 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:

1. Inadequacies in Consultation Process;
2. Pedestrian Safety;
3. Cyclist Safety;
4. Traffic Issues Associated with Proposed Traffic Management Measures;
5. Supportive of Scheme;

6. Proposed Land Acquisition;
7. Protected Structures;
8. Removal of Trees;
9. Increased Air and Noise Pollution;
10. Loss of Access to Local Amenities;
11. Need for Scheme;
12. Loss of Parking;
13. Alternative Solutions;
14. Impact of Covid-19; and
15. Location of Bus stops

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 C2.

4.2 The Study Area for the Rathfarnham to City Centre Section

4.2.1 Introduction

The overall study area for this assessment is the same as that identified in the 'Rathfarnham to City Centre Core Bus Corridor CBC Feasibility Study and Options Assessment Report' see **Figure 4.20**.

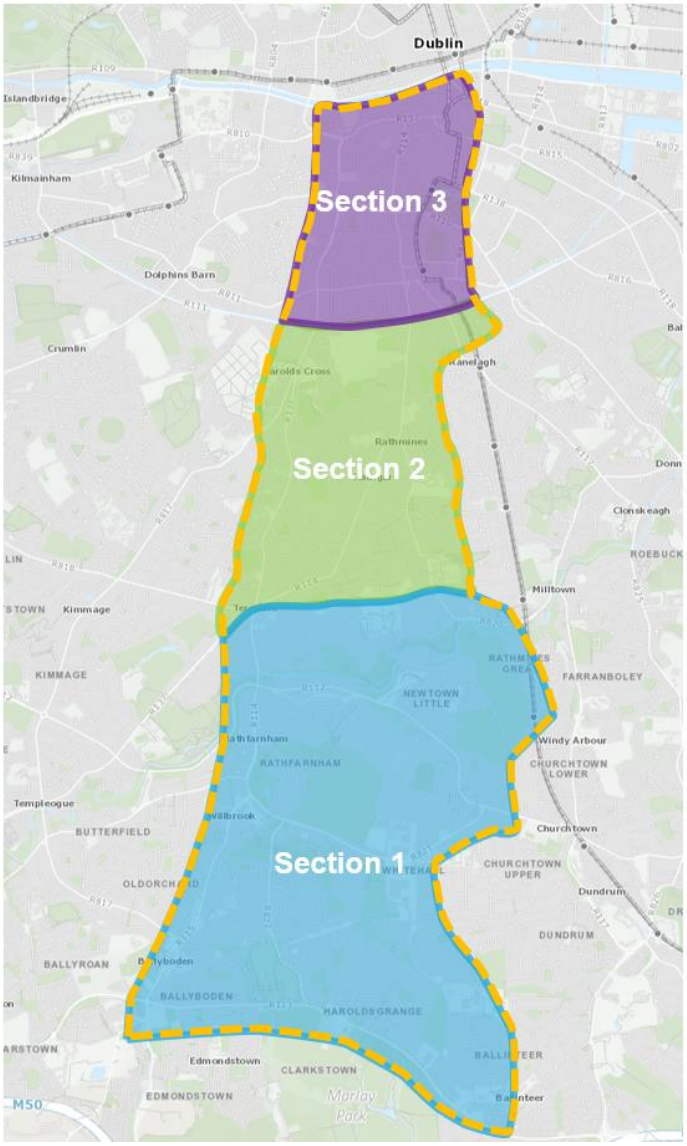

Figure 4.20: Study Area and Section Breakdown

(reproduced from Rathfarnham to City Centre Core Bus Corridor CBC Feasibility Study and Options Assessment Report and updated)

Arising from the transport policy context, the study area was taken to include the route of the existing Rathfarnham QBC corridor, but extends beyond this in places to consider alternative potentially feasible route options. The study area is generally bounded to the south by Taylors Lane and Grange Road and to the north by the River Liffey.

The western and eastern borders of the study area are generally an offset of 200m from feasible route options to assess road and street options within the same broad demand corridor.

4.2.2 Study Area Sections

4.2.2.1 Section 1

Section 1 was originally bounded to the south by Taylor's Lane and Grange Road and to the north by the River Dodder. The southern boundary of this section remains the same, however, in response to submissions from the public in relation to land acquisition on Rathfarnham Road north of the River Dodder, additional options were developed, some of which would terminate at Terenure Cross. As such, the northern boundary of this section has been extended slightly to include Rathfarnham Road as far as Terenure Cross.

The outer extent of the Rathfarnham to City Centre section was determined for the following reasons:

- It facilitates connectivity to and from key trip attractors such as Rathfarnham Village, Rathfarnham Castle and the residential areas of Rathfarnham;
- It provides cycling connectivity to Grange Road and Willbrook Road (both GDA Cycle network plan secondary routes); and
- Generally, there are three principal routes between Marley Park and the Dodder crossing, namely via Stone Mason's Way, Grange Road and Ballyboden Road which converge at Nutgrove Avenue in the vicinity of the junction with Grange Road. The Core Bus Network, as defined in the 'Transport Strategy for the Greater Dublin Area 2016 – 2035', is characterised by routes with a high frequency of bus services, high passenger volumes and with significant trip attractors along the route. It is along these routes where the demand for travel necessitates and justifies a greater level of infrastructural investment in order to minimise delays to these services. Therefore, the junction between Nutgrove Avenue & Grange Road represents a natural starting point at the southern extent of the Rathfarnham to City Centre section as the anticipated travel demand between this point and the City Centre would justify the level of infrastructure proposed.

4.2.2.2 Section 2

Section 2 was originally bounded to the south by the River Dodder, however, as indicated above, this boundary has been amended slightly such that the southern boundary of this scheme section is now Terenure Cross. The northern boundary of this scheme section remains the same, ending at the Grand Canal.

4.2.2.3 Section 3

Section 3 remains the same as per the previous study, bounded to the south by the Grand Canal and to the north by the River Liffey.

The 'Rathfarnham to City Centre Core Bus Corridor CBC Feasibility Study and Options Assessment Report' defined the inner extent of the Rathfarnham to City Centre section as the junction between Wexford Street and Cuffe Street.

The scheme was subsequently extended to provide improved cycling facilities along this busy city centre corridor, serving the busy catchment of Aungier Street and South Great Georges Street and the wider south inner city.

4.2.3 Physical Constraints and Opportunities

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

- Street trees and other natural features along the route;
- The existing urban and sub-urban roads and street network;
- Bridges at identified natural constraints (e.g. across the River Dodder and the Grand Canal);
- Availability of land in urban and suburban areas;
- Rathfarnham Castle and grounds;
- The available width along Rathfarnham Road between Castleside Drive and Terenure;
- The existing steep driveways along Rathfarnham Road;
- The built form in close proximity to the carriageway on Terenure Road East at Terenure Cross;
- The available width along Terenure Road East and Rathgar Road, and the known protected structures and mature trees in these areas;
- The available width along Rathmines Road Lower; and
- The available width along Richmond Street, Camden Street, Wexford Street Aungier Street and South Great Georges Street.

There are also a number of potential opportunities, which could potentially enhance the proposed CBC scheme within the defined study area including:

- The natural amenity of the River Dodder, and the opportunity for integration with the Dodder Greenway.
- The natural amenity of the Grand Canal, and the opportunity for integration with the Grand Canal Cycleway.
- The opportunity for the provision of enhanced public realm within the various villages and urban centres within the study area including Rathfarnham, Terenure, Rathgar and Rathmines and within the city centre north of the Grand Canal.

4.2.4 Integration with Existing and Proposed Public Transport Network

One of the key objectives of the proposed CBC 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.

Route options within the study area have therefore been developed with this in mind and, in so far as practicable, seek to provide for improved existing or new interchange opportunities with existing transport services including:

- Potential for interchange with existing 15B, 16, 17, 61 and 75 bus routes at Grange Road/Rathfarnham Road;
- Potential for interchange with existing 49 bus route at Terenure Cross;
- Potential for interchange with existing 15, 15A and 65B bus routes at Terenure Road East;
- Potential for interchange with existing 14 bus route at Rathgar Road;
- Potential for interchange with existing 18, 83 and 83A, 140 and 142 bus route at Rathmines Road;
- Potential for interchange with existing 9, 16, 68 and 122 bus route at Camden Street;
- Potential for interchange with existing 13, 27, 40, 54A, 77A, 123, 150 and 151 bus routes at Dame Street;
- Potential for interchange with the LUAS Green Line at Charlemont/Harcourt Street;
- Potential for interchange with the future Metrolink at Charlemont.

Figure 4.21 highlights the potential for interchange with existing public transport services along the Rathfarnham to City Centre section.

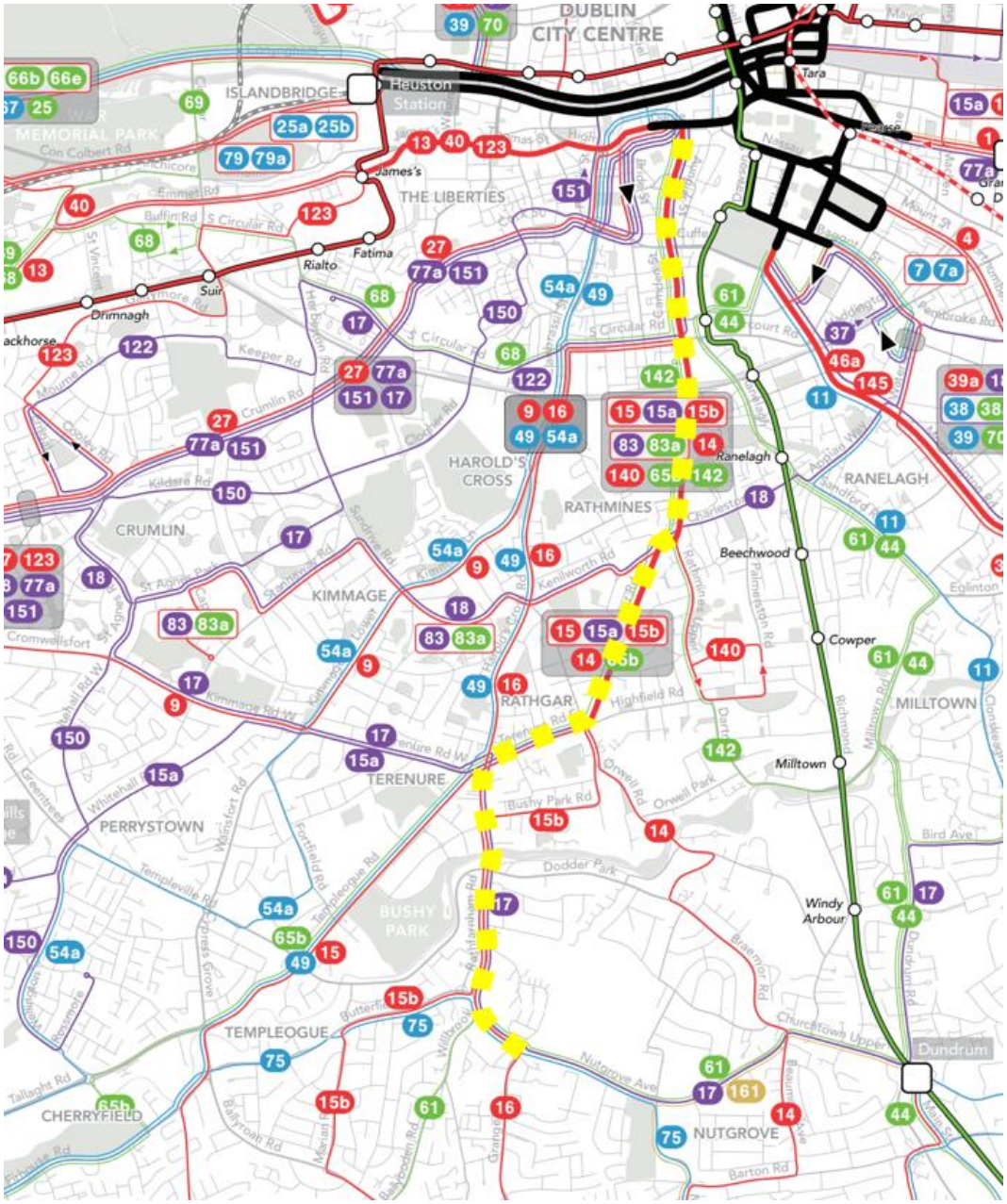

Figure 4.21: Existing Public Transport Services

(the Rathfarnham to City Centre section highlighted in yellow)

The route options also seek to provide for interchange opportunities with new transport services proposed within the New Dublin Area Bus Network, including:

- Potential for interchange with the proposed 74, 85 and P18 routes from the New Dublin Area Bus Network at Rathfarnham Road;
- Potential for interchange with the proposed S6 orbital route from the New Dublin Area Bus Network at Butterfield Avenue;
- Potential for interchange with the proposed S4 orbital route from the New Dublin Area Bus Network at Terenure Road East;

- Potential for interchange with the proposed 81 route from the New Dublin Area Bus Network at Terenure Road East, Rathgar Road and Rathmines Village;
- Potential for interchange with the proposed 80 route from the New Dublin Area Bus Network at Rathgar Village and Rathmines Village;
- Potential for interchange with the proposed S2 orbital route from the New Dublin Area Bus Network at Charleston Road;
- Potential for interchange with the proposed 82 route from the New Dublin Area Bus Network at Rathmines Village;
- Potential for interchange with the proposed O orbital route from the New Dublin Area Bus Network at South Circular Road; and
- Potential for interchange with the proposed F Spine radial route from the New Dublin Area Bus Network at Cuffe Street.

Figure 4.22, extracted from the BusConnects New Dublin Area Bus Network maps, highlights the potential for interchange with other proposed bus routes along the Rathfarnham to City Centre section.

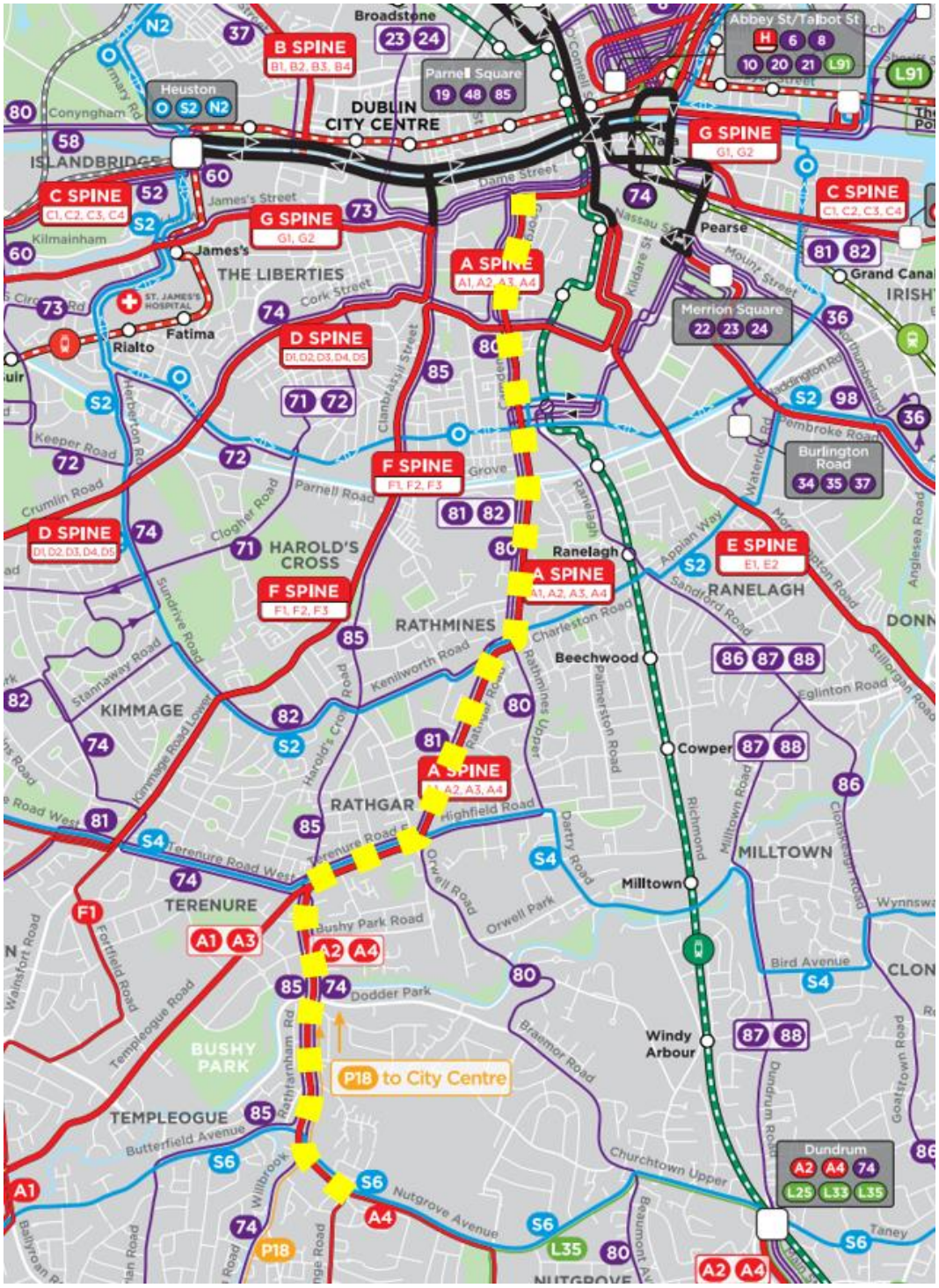

Figure 4.22: Extract from New Dublin Area Bus Network Maps

(the Rathfarnham to City Centre section highlighted in yellow)

4.2.5 Compatibility with Other Road Users

A key objective of the proposed CBC scheme is to improve pedestrian and cyclist facilities along the route. For cyclists, segregated facilities should be provided where practical to do so.

Figure 4.23, extracted from the GDA Cycle Network Plan, highlights the Rathfarnham to City Centre section in the context of the planned cycle network. 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.
- **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.

Specifically, Primary Cycle Route 10 and Secondary Route S04 and 10 from the GDA Cycle Network Plan run along, or are intercepted by, the Rathfarnham to City Centre section, with their provision considered at all stages of the options assessment process.

The interaction of the Rathfarnham to City Centre section with other schemes has also been considered, specifically, the Dodder Greenway and the Clonskeagh to City Centre Cycle route. The proposed CBC scheme also intersects the existing Grand Canal Cycleway at La Touche bridge.

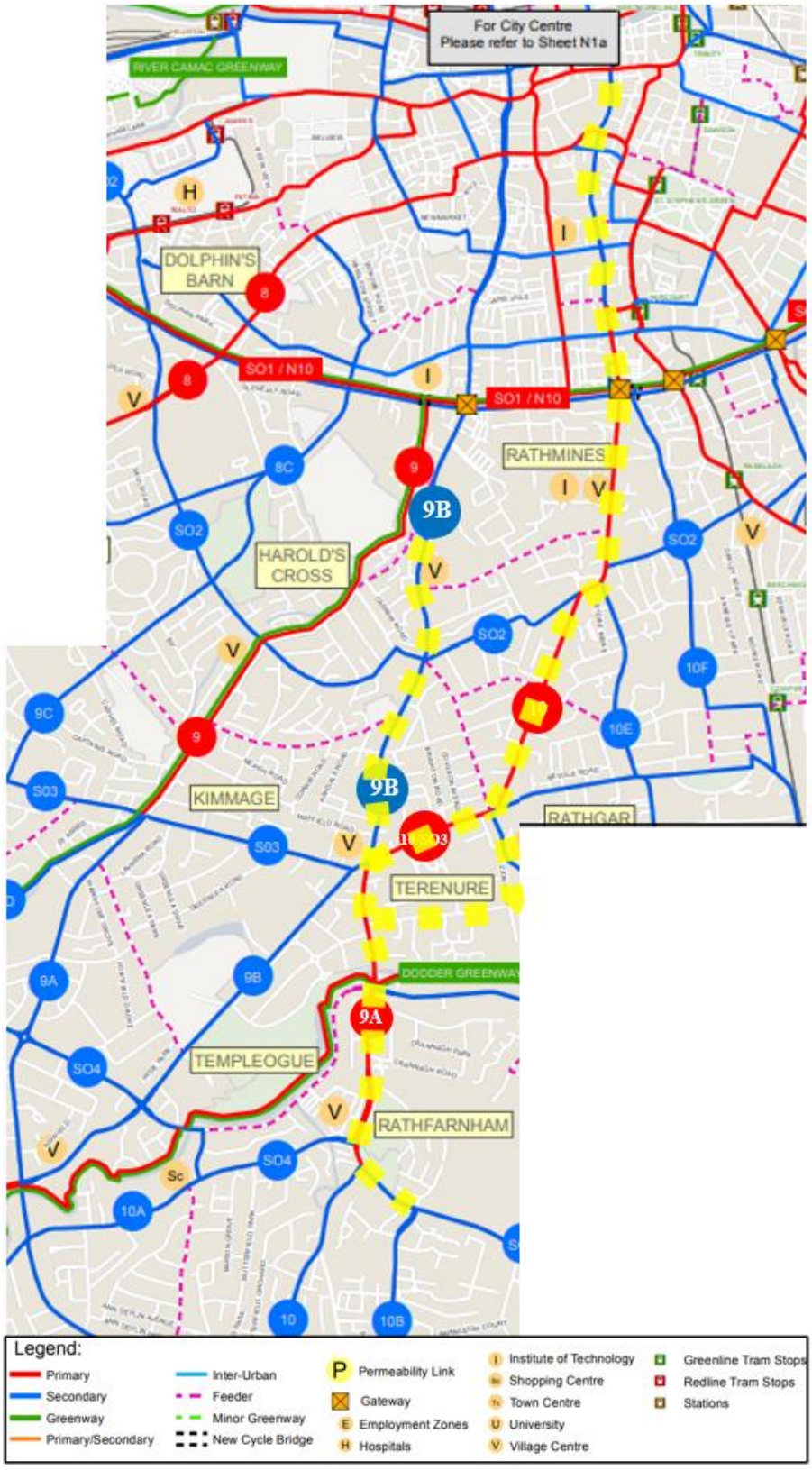

Figure 4.23: Extract from GDA Cycle Network Plan

(the Rathfarnham to City Centre section highlighted in yellow)

4.3 Review of the Rathfarnham to City Centre Core Bus Corridor CBC Feasibility Study and Options Assessment Report

4.3.1 Introduction

From a review of submissions received as part of the public consultation process, as well as a review of the topographical survey carried out since the EPR Option publication, a number of issues were identified which had the potential to be overcome through the implementation of alternative design solutions. These issues are described in the following sections.

4.3.2 Assessment Methodology

4.3.2.1 Route Option Assessment Methodology

The assessment methodology is as described in Section 3.3.2.

Figure 4.24 is an extract from the 'Rathfarnham to City Centre Core Bus Corridor CBC Feasibility Study and Options Assessment Report', illustrating the 'spider's web' of potential routes considered in the Stage 1 assessment.

Figure 4.24: Spider's Web of Route Options extracted from the 'Rathfarnham to City Centre Core Bus Corridor CBC Feasibility Study and Options Assessment Report'

In developing the PRO for the Proposed Scheme, consideration has been given to the carbon generated by the Proposed Scheme during construction and operation. Many of the changes made to the design since the EPR Option proposal have resulted in minor changes in the construction capital carbon generated by the Proposed Scheme, such as altering junction layouts and cycle track / footpath widths. Additionally, significant design iterations have been undertaken to mitigate against traffic re-distribution impacts and consequent impacts on greenhouse gas emissions.

4.3.3 Section 1: Grange Road to Terenure Cross

The EPR Option previously identified along the Rathfarnham to City Centre section is presented in **Figure 4.25**.

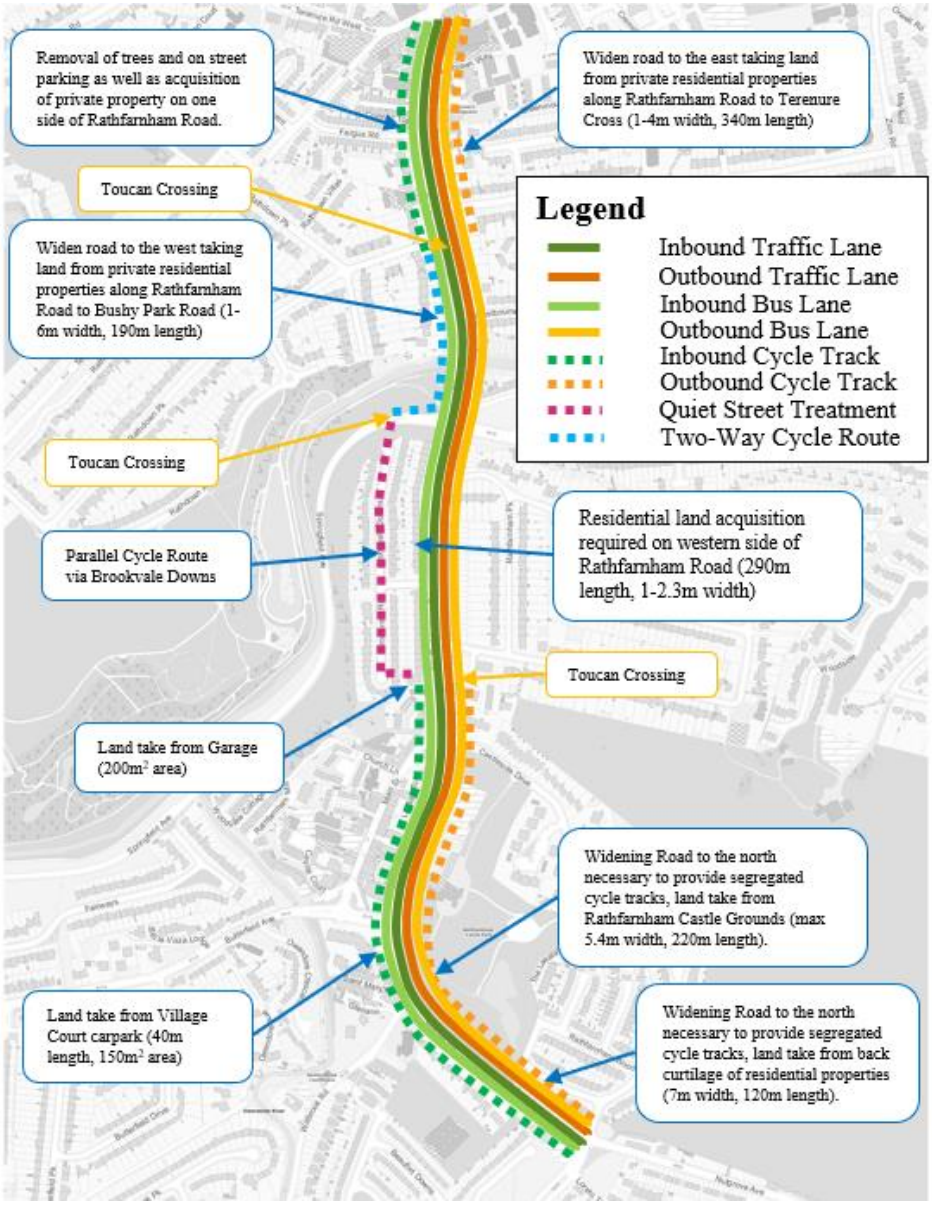

Figure 4.25: Section 1 EPR Option

The previous MCA undertaken determined that a route along Grange Road and Rathfarnham Road was the EPR Option.

Along this route it was determined that a parallel cycle route via Brookvale Downs provided a suitable alternative route for cyclists while minimising the impact on land along Rathfarnham Road.

The EPR Option indicated that land acquisition would be required along Rathfarnham Road. It is noted that section 8.3.7 of the 'Rathfarnham to City Centre Core Bus Corridor CBC Feasibility Study and Options Assessment Report' incorrectly stated that this widening would occur on the eastern side of the road. For clarity, this should have read that land acquisition would occur on the western side of the road, as per the subsequent EPR Option drawings.

Based on the public consultation submissions received and an assessment of topographical survey subsequently undertaken along this route section, a number of areas were identified as requiring further review. These are summarised in the following section. The EPR Option remains the preferred option for sections of the scheme not identified for further review.

4.3.3.1 Areas Identified for Re-examination

4.3.3.1.1 Grange Road/Rathfarnham Road (between Nutgrove Avenue and Butterfield Avenue)

The EPR Option identified in this location involved land acquisition from the rear gardens of a number of adjacent properties as well as from the grounds of Rathfarnham Castle. While a number of options were investigated in the development of the EPR Option, it was considered that additional options which were not previously considered, should now be assessed. Alternative design solutions have therefore been explored in this area in determining the PRO, as described in Section 4.4.1 of this report.

4.3.3.1.2 Brookvale Downs Cycle Route

The proposed connection for cyclists to Brookvale Downs is via a narrow laneway between an existing residential property and a petrol station. While it was proposed as part of the EPR Option to widen a section of this laneway, it is noted from a review of the topographical survey that this would require demolition of one or other of these buildings to accommodate a two-way cycle route as well as pedestrians. Coupled with concerns to the proposal from the public, as well as the delivery of a compromised and potentially unattractive route for cyclists, alternative cycle route options were explored in this area in determining the PRO, as described in Section 4.4.1.2.2 of this report.

4.3.3.1.3 Rathfarnham Road (between Texaco and Rathdown Park)

Based on a review of the topographical survey, it has become more evident that a number of properties along Rathfarnham Road, between Brookvale Road and Dodder Park Road, as well as north of the River Dodder, between Dodder Park Road and Rathdown Park, currently have steep driveways in excess of current standards. As part of the public consultation, the issue of compliance with Part M of the Building Regulations has been highlighted. It has been considered, that with the level of land acquisition proposed as part of the EPR Option, existing driveways may be made steeper than they currently are and would not be compliant with the Regulations without substantial mitigation.

Between Brookvale Road and Dodder Park Road, the cross-section is particularly constrained. Widening into properties within this section of the scheme would require the road to be raised in order to maintain driveway gradients at existing grades, which is a requirement of Part M Building Regulations. The potential impacts of the construction works would include:

- Potential temporary closure of vehicular access to some properties during construction works;
- Potential need to undertake significant utility works including raising of manhole covers/gullies, and potentially utility ducts;
- Potential temporary closure of Rathfarnham Road to traffic during construction to facilitate works;
- Extended construction period when compared to sections where works are less complex.

Upon review, the collective and individual impact of the required construction works were not considered to be practicably feasible due to significant disruption caused by the unique construction works required to deliver this option. Alternative design solutions have therefore been explored in this area in determining the PRO, as described in Section 4.4.1.2.3 of this report.

4.3.4 Section 2: Terenure Cross to Grand Canal

The EPR Option previously identified along the Rathfarnham to City Centre section is presented in **Figure 4.26**.

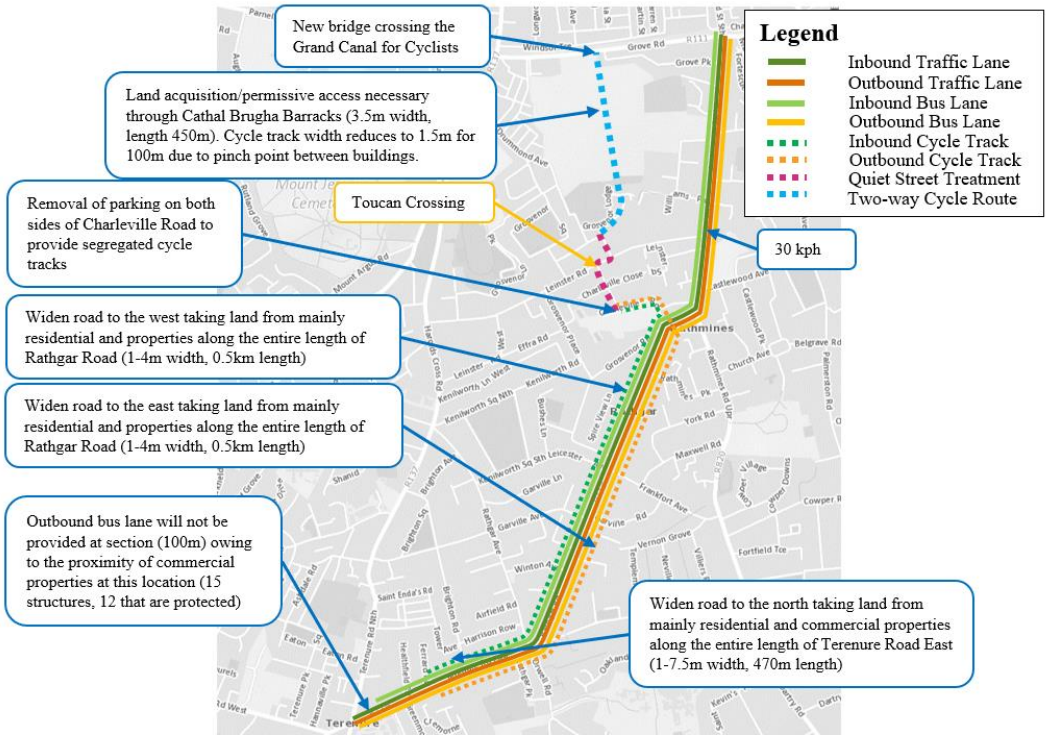

Figure 4.26: Section 2 EPR Option

The previous MCA undertaken determined that a route along Rathfarnham Road, Terenure Road East, Rathgar Road and Rathmines Road Lower was the EPR Option. Along this route it was determined that a parallel cycle route via Charleville Road, Grosvenor Lodge and Cathal Brugha Barracks provided a suitable alternative route for cyclists while maintaining bus priority and traffic movements through Rathmines Village.

Subsequent to the preparation of the 'Rathfarnham to City Centre Core Bus Corridor CBC Feasibility Study and Options Assessment Report', it was decided that an option which provided online bus and cycle lanes along the route and one-way traffic outbound through Rathmines should be given further consideration. As a result, both options were presented for consideration by the public in the first non-statutory public consultation.

It is considered that the options assessment presented in the 'Rathfarnham to City Centre Core Bus Corridor CBC Feasibility Study and Options Assessment Report' has appropriately assessed route options and that the selected corridor offers the most benefits for buses.

However, upon review of the topographical survey and public consultation submissions, a number of issues that were identified that could potentially be addressed through the consideration of alternative options along this route section. These are summarised in the following section. The EPR Option remains the preferred option for sections of the scheme not identified for further review.

4.3.4.1 Areas Identified for Re-examination

4.3.4.1.1 'Rathfarnham to City Centre Core Bus Corridor CBC Feasibility Study and Options Assessment Report' Clarifications

The following paragraphs are intended to clarify a specific query raised during the public consultation which relates to the determination of the EPR.

The primary route corridors considered in the assessment of Section 2 focussed on the Harold's Cross and the Rathgar/Rathmines corridors. The 'Rathfarnham to City Centre Core Bus Corridor CBC Feasibility Study and Options Assessment Report' concluded that the Rathgar/Rathmines corridor was preferred for a number of reasons, one of which being that the Harold's Cross corridor would have duplicated the then proposed Clongriffin to Tallaght Bus Rapid Transit (BRT) Route.

It is evident in section 5.5.4 of the previous revision of GDA Transport Strategy (2016-2035) which states:

"[a] number of the Core Radial Bus Corridors are proposed to be developed as Bus Rapid Transit routes, where the passenger numbers forecast on the routes are approaching the limits of conventional bus route capacity."

As design and planning work progressed, it became clear that the level of differentiation between the BRT corridors and the Core Bus Corridors would, ultimately, be limited, and that all of the Core Radial Bus Corridors should be developed to provide a BRT level of service.

The BRT routes shown in the GDA Transport Strategy (2016-2035) are indicative only. Section 5.5.4 of the strategy document states:

"The routes of these two BRT schemes are indicative and subject to design development. Such design development may include changes to the indicated alignments and /or terminal points of the schemes, including further extension of the routes."

Notwithstanding the fact that the BRT Route is no longer currently being progressed, the Rathgar/Rathmines Corridor remains the preferred corridor for the Rathfarnham to City Centre section.

The primary reason for this is the significantly stronger demand for bus along the Rathgar Road / Rathmines Road when compared to Harold's Cross Road. This route corridor serves the urban village of Rathmines, which is a significant trip attractor on southern side of the city. The strength of the high demand for bus in Rathmines compared to Harold's Cross Road is clearly evident from the extracts from the Dublin Area Bus Network Redesign Revised Proposal (October 2019) presented in **Figure 4.27** and **Figure 4.28**. The patronage shown in **Figure 4.27** is based on existing bus services.

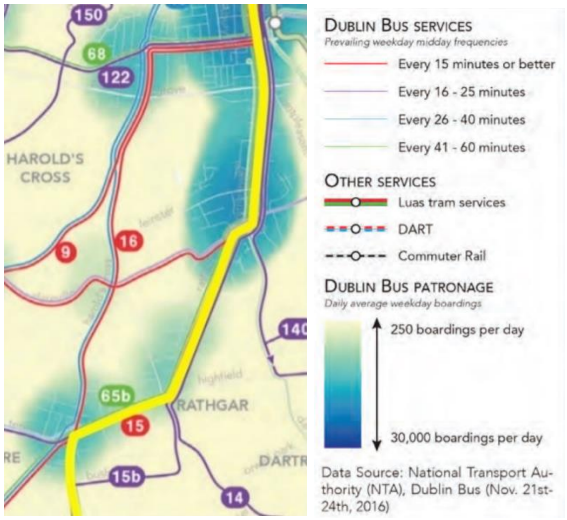

Figure 4.27: Average Daily Bus Patronage - Heatmap

(Source Dublin Area Bus Network Redesign Revised Proposal (October 2019) –the Rathfarnham to City Centre section highlighted yellow. Patronage based on existing bus services.)

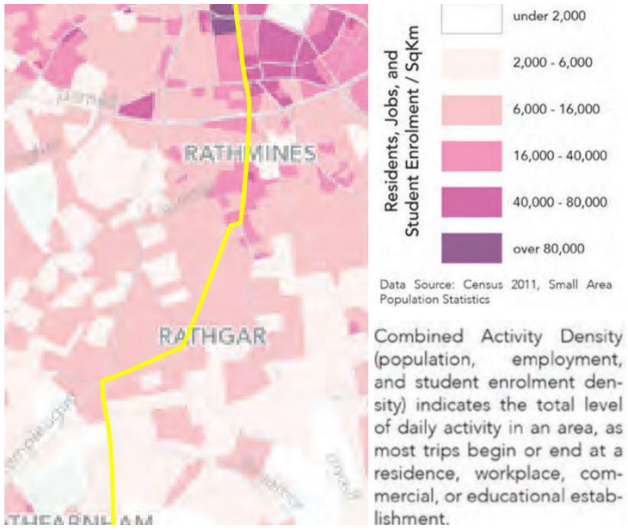

Figure 4.28: Combined Activity Density Map

(Source Dublin Area Bus Network Redesign Revised Proposal (October 2019) – the Rathfarnham to City Centre section highlighted yellow. Note darker colours represent areas with a higher density of activity)

4.3.4.1.2 Terenure Road East

The EPR Option proposed to provide bus and traffic lanes in each direction along Terenure Road East, except for a short section between Terenure Cross and Aldi where only an outbound bus lane was proposed.
Cycle lanes were proposed in each direction between Ferrard Road and Rathgar Avenue, but none were proposed between Terenure Cross and Ferrard Road.

It was highlighted through the public consultation process that this proposal impacted on several properties with heritage value, including the loss of mature trees from within these properties.

Additionally, a review of the EPR Option proposals against the detailed topographical survey showed that it was not possible to provide a bus lane and two traffic lanes on Terenure Road East immediately to the east of Rathfarnham Road, without impacting on existing built form.

Alternative design solutions have therefore been explored in this area in determining the PRO, as described in Section 4.4.2.1 of this report.

4.3.4.1.3 Rathgar Road

The EPR Option proposed bus lanes, traffic lanes and cycle tracks in each direction along Rathgar Road.

This would result in impact on heritage properties along the length of Rathgar Road as well as the loss of trees from within these properties. These impacts were noted as being of concern to many local residents during the public consultation.

Alternative design solutions have therefore been explored in this area in determining the PRO, as described in Section 4.4.2.1 of this report.

4.3.4.1.4 Rathmines Village

The EPR Option identified two potential options for Rathmines Village, both taken forward to public consultation and for more detailed assessment as part of this process. Option A proposed keeping cyclists on Rathmines Road Lower with bus lanes provided in each direction and only a single traffic lane to accommodate outbound traffic. Option B proposed diverting cyclists to an alternative cycle route to the west of Rathmines Road Lower with bus and traffic lanes provided in each direction along Rathmines Road Lower and is illustrated in **Figure 4.29**. The responses to the public consultation showed a clear preference for Option A on the basis that the cycle route proposed in Option B was indirect and unattractive compared to Option A. However, a review of Option A showed that this option would require reductions to footpath width along Rathmines Road Lower that could impact on the public realm within Rathmines Village. Further, more detailed alternative design solutions have therefore been explored in this area in determining the PRO, as described in Section 4.4.2.2 of this report.

4.3.5 Section 3: Grand Canal to Christchurch Place

The EPR Option previously identified along the Rathfarnham to City Centre section is presented in **Figure 4.29.**

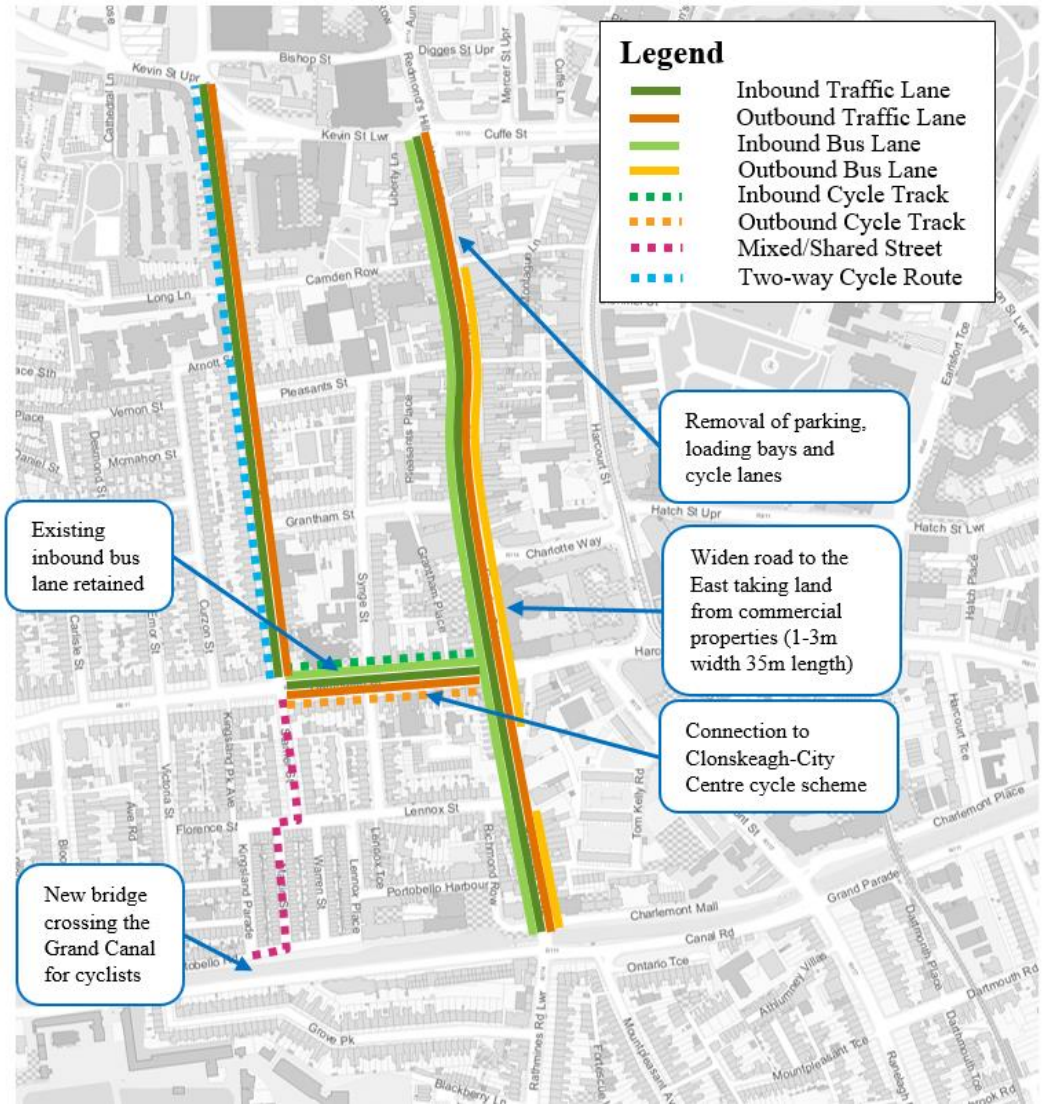

Figure 4.29: Section 3 EPR Option

The previous MCA undertaken determined that a route along Richmond Street, Camden Street and Wexford Street was the EPR Option. Along this route it was determined that a parallel cycle route via Marin Street, Heytesbury Street and Bride Street provided a suitable alternative route for cyclists and connecting to the Section 2 proposal.

Subsequent to the preparation of the 'Rathfarnham to City Centre Core Bus Corridor CBC Feasibility Study and Options Assessment Report', it was decided that the option which provided online bus and cycle lanes through Rathmines should be given further consideration.

North of the Grand Canal, this option proposed bus lanes in each direction for the majority of the length, one-way outbound traffic between Harrington Street and the canal, and online cycle lanes between Harrington Street and the canal.

Based on the public consultation submissions received and assessment of topographical survey subsequently undertaken along this route section, a number of areas were identified as requiring further review. These are summarised in the following section. The EPR Option remains the preferred option for sections of the scheme not identified for further review.

4.3.5.1 Areas Identified for Re-examination

4.3.5.1.1 Camden Street

The EPR Option proposed that Camden Street/Wexford Street between Harrington Street and Cuffe Street would be upgraded to include bus lanes in each direction along its length except for a short section on Wexford Street where only an inbound bus lane would be provided. No cycle tracks were proposed in this area and the published drawings stated that '*Additional cycle facilities along Camden Street (secondary cycle route 10) to be considered as part of next design development stage*'. These have been assessed in further detail as part of the process to identify the PRO, as described in Section 4.4.3 of this report.

4.3.6 Summary

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

- Alternative cycle route between Grange Road and Rathdown Park;
- Alternative design options along Rathfarnham Road between Willbrook Road and Terenure Village;
- Alternative design options along Terenure Road East;
- Alternative design options along Rathgar Road;
- Alternative design options within Rathmines Village; and
- Alternative design options providing cycle facilities on Camden Street.

Detail of the options assessment completed is presented in Chapter 4.4.

Carbon Considerations for the Preferred Route Options

Carbon for the proposed scheme will arise from 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 support enhanced bus capacity and public transport potential in line with the objectives of the Proposed Scheme, which would contribute to reductions in user carbon and contribute towards the 130% increase in trips by public transport by 2030 outlined as a target in the Climate Action Plan 2023.

4.4 Options Assessment for the Rathfarnham to City Centre Section

4.4.1 Section 1 Option Assessment: Grange Road to Terenure Cross

4.4.1.1 Section 1a – Nutgrove Avenue to Willbrook Road

4.4.1.1.1 Introduction

Submissions received as part of the public consultation raised concerns about the impact of land acquisition along this section of the route as well as the removal of trees.

In addition, upon review of the EPR Option within this section it was noted that while a number of options were explored, alternative options could be feasible within this Section of the Proposed Scheme. For these reasons, alternative options have been considered in these areas.

4.4.1.1.2 Options Considered

A number of alternative options have been developed with the objective of addressing the issues noted above. These options are outlined in more detail below:

Option RC1: Option RC1 would provide a general traffic lane in each direction along the entirety of this route section, as well as dedicated bus lanes and cycle tracks along the CBC for the entirety of this route section. This option is a version of the EPR Option, refined to reflect issues identified upon review of the topographical survey.

Option RC2: Option RC2 would provide a general traffic lane in each direction along the entirety of this route section, as well a combination of dedicated bus lanes and signal controlled priority and cycle tracks along the CBC.

4.4.1.1.3 Alternative Options Considered

No alternative options were considered for this scheme section, additional to those assessed through the MCA.

4.4.1.1.4 Route Option RC1

Route Description

Route option RC1 is presented in **Figure 4.30**.

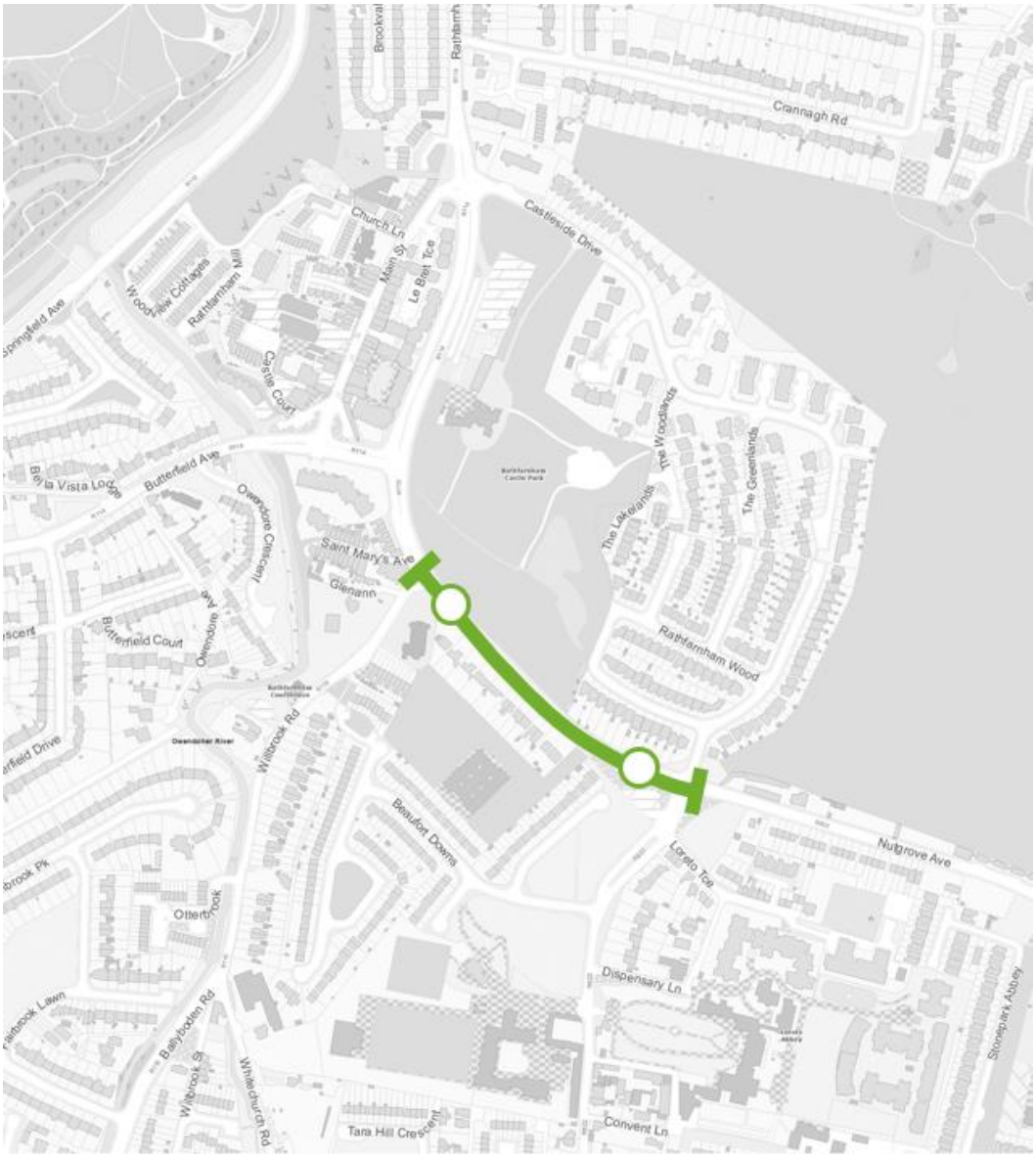

Figure 4.30: Route Option RC1

Inbound: This section of the route would commence on Grange Road at the junction with Nutgrove Avenue. The CBC route would proceed along Grange Road as far as the junction with Willbrook Road.

Outbound: The outbound route would follow the same route as the inbound route.

Stops: A total of two inbound stops and one outbound stop would likely be provided along this route section.

Indicative Scheme Design

Figure 4.31 illustrates the indicative scheme design for this route option. The location of cross-sections and junctions referenced in subsequent sections describing this route option are also presented in this figure.

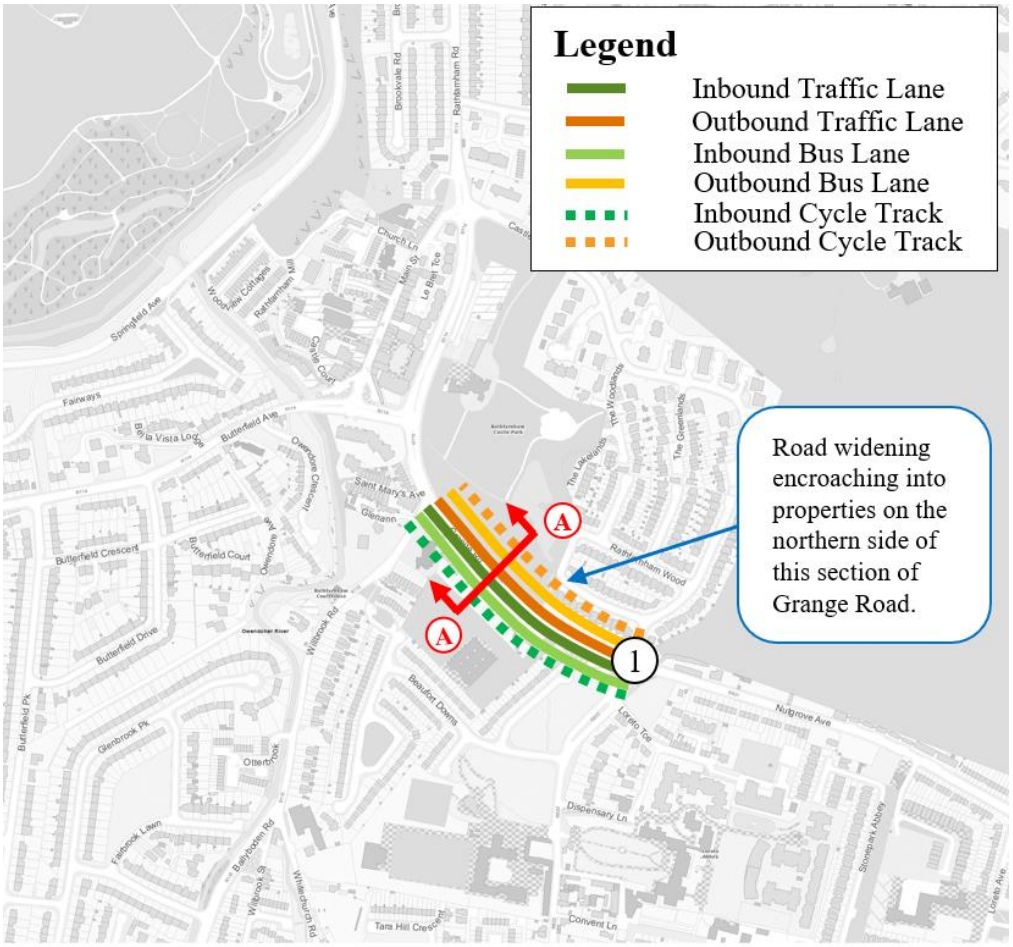

Figure 4.31: Route Option RC1 Indicative Scheme Design

This section of the route would commence on Grange Road at the junction with Nutgrove Avenue. A general traffic lane, bus lane and 2.0m wide cycle track in each direction is proposed.

The proposed cross-section along this section of Grange Road is presented in **Figure 4.32**.

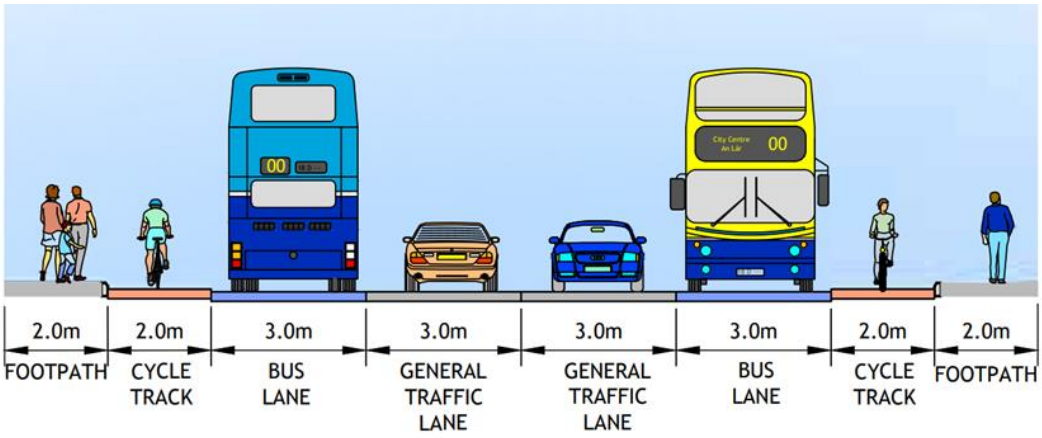

Figure 4.32: Cross-Section A-A

In summary, this route option would have the following characteristics:

- Bus lanes would be provided in each direction throughout this section; and
- 2.0m wide cycle tracks would be provided in each direction throughout this section.

Junctions:

There is one signalised junction along this route option, which would require upgrading to facilitate bus priority. The locations of these junctions are presented in **Figure 4.31** and discussed below:

1. **Grange Road/Nutgrove Avenue:** Adjustments to the junction layout would be required to facilitate the outbound bus lane and the cycle tracks on approach to the junction. There would also be a potential requirement to relocate/provide new signal equipment.

4.4.1.1.5 Route Option RC2

Route Description

Route option RC2 is presented in **Figure 4.33**.

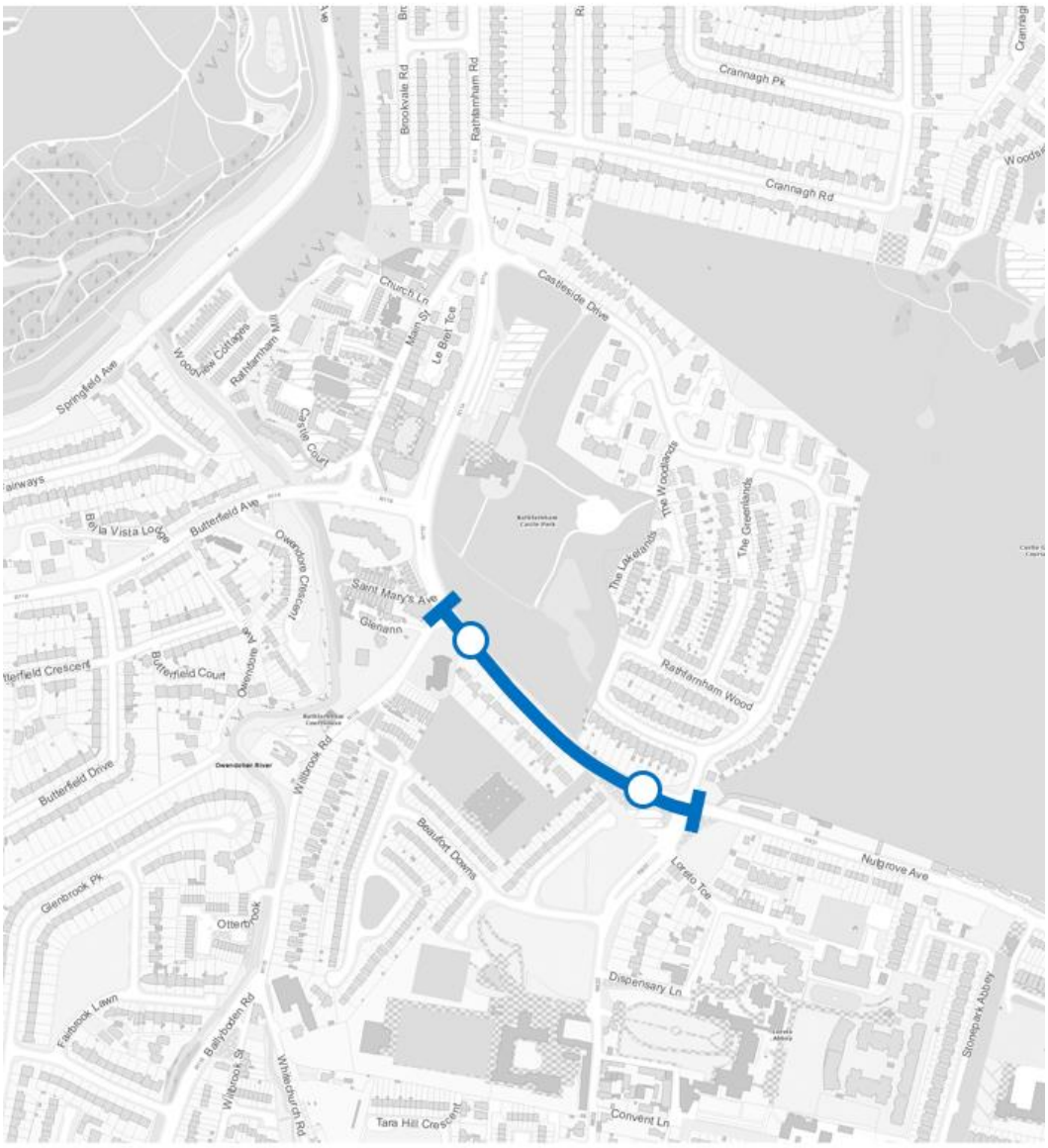

Figure 4.33: Route Option RC2

Inbound: This section of the route would commence on Grange Road at the junction with Nutgrove Avenue. The CBC route would proceed along Grange Road as far as the junction with Willbrook Road.

Outbound: The outbound route would follow the same route as the inbound route.

Stops: A total of two inbound stops and one outbound stop would likely be provided along this route section.

Indicative Scheme Design

Figure 4.34 illustrates the indicative scheme design for this route option. The location of cross-sections and junctions referenced in subsequent sections describing this route option are also presented in this figure.

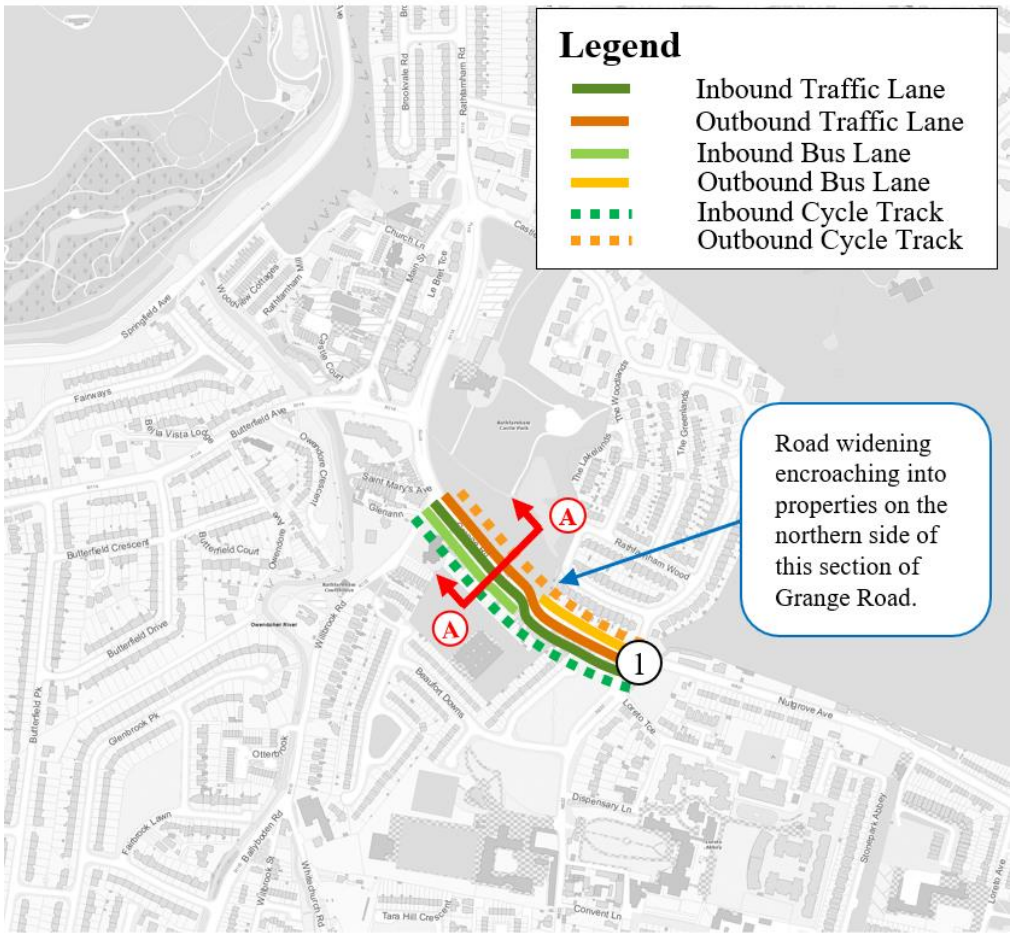

Figure 4.34: Route Option RC2 Indicative Scheme Design

This section of the route would commence on Grange Road at the junction with Nutgrove Avenue. A general traffic lane and 2.0m wide cycle track in each direction is proposed. An inbound bus lane would be provided on approach to the Willbrook Road junction and an outbound bus lane would be provided on approach to the Nutgrove Avenue junction.

The proposed cross-section along this section of Grange Road is presented in **Figure 4.35**.

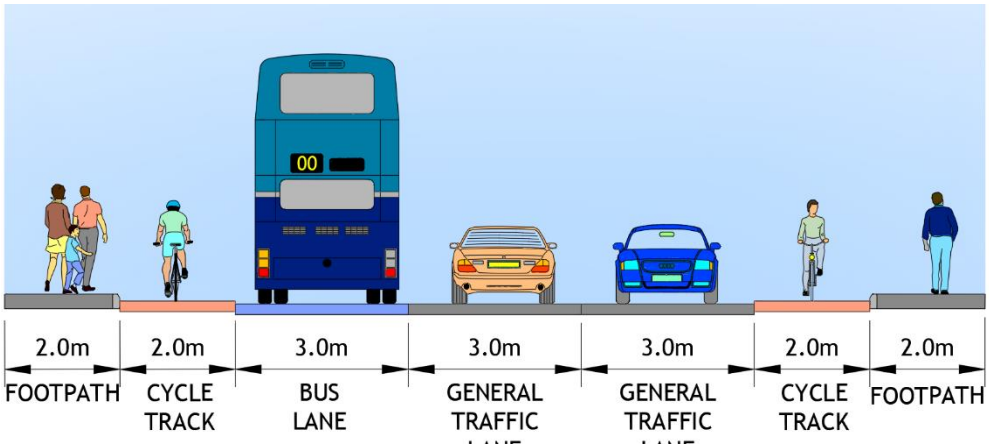

Figure 4.35: Cross-Section A-A

In summary, this route option would have the following characteristics:

- Bus priority would be managed through a combination of partial bus lanes on approach to junctions and signal controlled priority where bus lanes would not be provided; and
- 2.0m wide cycle tracks would be provided in each direction throughout this section.

Junctions:

There is one signalised junction along this route option, which would require upgrading to facilitate bus priority. The locations of these junctions are presented in **Figure 4.34** and discussed below:

1. **Grange Road/Nutgrove Avenue:** Adjustments to the junction layout would be required to facilitate the outbound bus lane and the cycle tracks on approach to the junction. There would also be a potential requirement to relocate/provide new signal equipment.

4.4.1.1.6 Section 1a Route Option Assessment

Details of the route options assessment undertaken for the Rathfarnham Road study area section are presented in Appendix E. The relative ranking of route options against the scheme assessment sub-criteria is summarised in **Table 4.10**.

Table 4.5: Section 1 Route MCA Summary

Appraisal Criteria	Sub-Criteria	Option RC1	Option RC2
1 Economy	1A Capital Cost		
	1B Transport Quality & Reliability		
2 Integration	2A Land Use Policy		
	2B Residential Population and Employment Catchments		

Appraisal Criteria	Sub-Criteria	Option RC1	Option RC2
	2C Transport Network Integration		
	2D Cycle Network integration		
	2E Traffic Network Integration		
3 Accessibility & Social Inclusion	3A Key Trip Attractors		
	3B Deprived Geographic Areas		
4 Safety	4A Road Safety		
	4B Pedestrian Safety		
5 Environment	5A Archaeology & Cultural Heritage		
	5B Architectural Heritage		
	5C Flora & Fauna		
	5D Soils, Geology & Hydrogeology		
	5E Landscape & Visual		
	5F Air Quality		
	5G Noise & Vibration		
	5H Land Use Character		

In terms of Capital Cost, Option RC1 would be the most expensive option due to the greater infrastructure costs associated with constructing bus lanes along this section coupled with greater land acquisition costs than Option RC2.

In terms of Transport Quality and Reliability, Option RC1 performs the best as it provides full physical bus priority throughout this section, whereas Option RC2 would rely on signal controlled priority.

Both options would serve the same catchments and as such are ranked equally in relation to land use policy and residential population catchments and employment catchments. Similarly, in terms of transport network integration, as both options would follow the same route, the opportunity for interchange with other routes is equal.

In terms of cycle network integration, both options would deliver cycle facilities along secondary route S04 from the GDA Cycle Network Plan and as such are ranked equally.

Options RC2 performs worse than option RC1 under the traffic network integration criterion, due to the impact of the signal-controlled priority on the traffic network.

Both options rank equally under accessibility and social inclusion as they would all follow the same route.

Both options rank equally under safety as they would all require the same number of turning movements at junctions and footpath widths would be the same throughout.

Both options rank equally under the archaeological and cultural heritage and architectural heritage criteria as there are similar impacts.

Option RF1 performs slightly worse than option RF2 under flora and fauna due to the higher number of trees that would be impacted, primarily within the grounds of Rathfarnham Castle. In this regard it is noted that there is dense tree coverage within this section of the grounds of the Castle.

Both options rank equally under the soils, geology and hydrogeology criterion as there is no impact envisaged under either option.

Option RF1 performs slightly worse than Option RF2 under the landscape and visual criterion due to the additional land acquisition required.

Option RF2 performs slightly better than option RF1 under the criteria of Air Quality and Noise and Vibration due to the fact that road widening is greater under Option RF1.

Both options rank equally under the land use character criterion as there is no impact envisaged under either option.

A summary of the assessment and relative ranking of route options against the five main assessment criteria is presented in **Table 4.11**.

Table 4.6: Section 1 MCA Criteria Summary

Appraisal Criteria	Option RC1	Option RC2
1 Economy		
2 Integration		
3 Accessibility & Social Inclusion		
4 Safety		
5 Environment		

4.4.1.1.7 Section 1 Conclusion and Preferred Option

Based on the assessment undertaken, route Option RC1 offers more benefits over other options.

It performs favourably under the Economy and Integration criteria, while performing equally to other options under the Accessibility and Social Inclusion and Safety criteria. Option RF1 is the PRO for the Rathfarnham Road area for the following reasons:

- It would provide segregated bus priority on the CBC throughout the entirety of this section of the scheme, supporting reliability of journey time for the bus;

- It would deliver segregated online cycle facilities on Secondary Route S04 of the GDA cycle network plan; and
- It would maintain existing general traffic provision along Grange Road.

4.4.1.2 Section 1b - Willbrook Road to Rathdown Park

4.4.1.2.1 Introduction

Numerous submissions received as part of the public consultation raised concerns about the impact of land acquisition along this section of the route, particularly in relation to the implications on existing steep driveway gradients and the ability of residents to park within their driveway. Submissions also raised concerns about the suitability of the proposed offline cycle facility along Brookvale Downs. A number of alternative options have been developed with the objective of mitigating these concerns.

Within the Rathfarnham to City Centre section, Rathfarnham Road is particularly constrained in terms of the available width. As such, this section of the route has been brought through an initial assessment to determine the optimum alternative cycle route for this section. The preferred alternative cycle route was then progressed for inclusion in an assessment of alternative bus infrastructure options for the CBC through this section, in addition to options which provided cycle facilities and bus priority infrastructure along the Rathfarnham to City Centre section corridor.

4.4.1.2.2 Initial Assessment of Alternative Cycle Routes

4.4.1.2.2.1 Introduction

Prior to the assessment of principal route options for Section 1, an assessment of alternative cycle routes was carried out to determine the optimum option for an offline cycle facility in conjunction with segregated bus facilities on Rathfarnham Road. The cycle route option emerging from this initial assessment was then taken forward to form part of the principal route options considered as part of the multi-criteria assessment.

4.4.1.2.2.2 Assessment of Potential Dodder Bridge Crossings

In developing options for alternative cycle routes, it became evident that some options being considered would require a new pedestrian and cyclist bridge crossing the River Dodder. The general location of a bridge crossing to facilitate these options, is indicated in **Figure 4.36**.

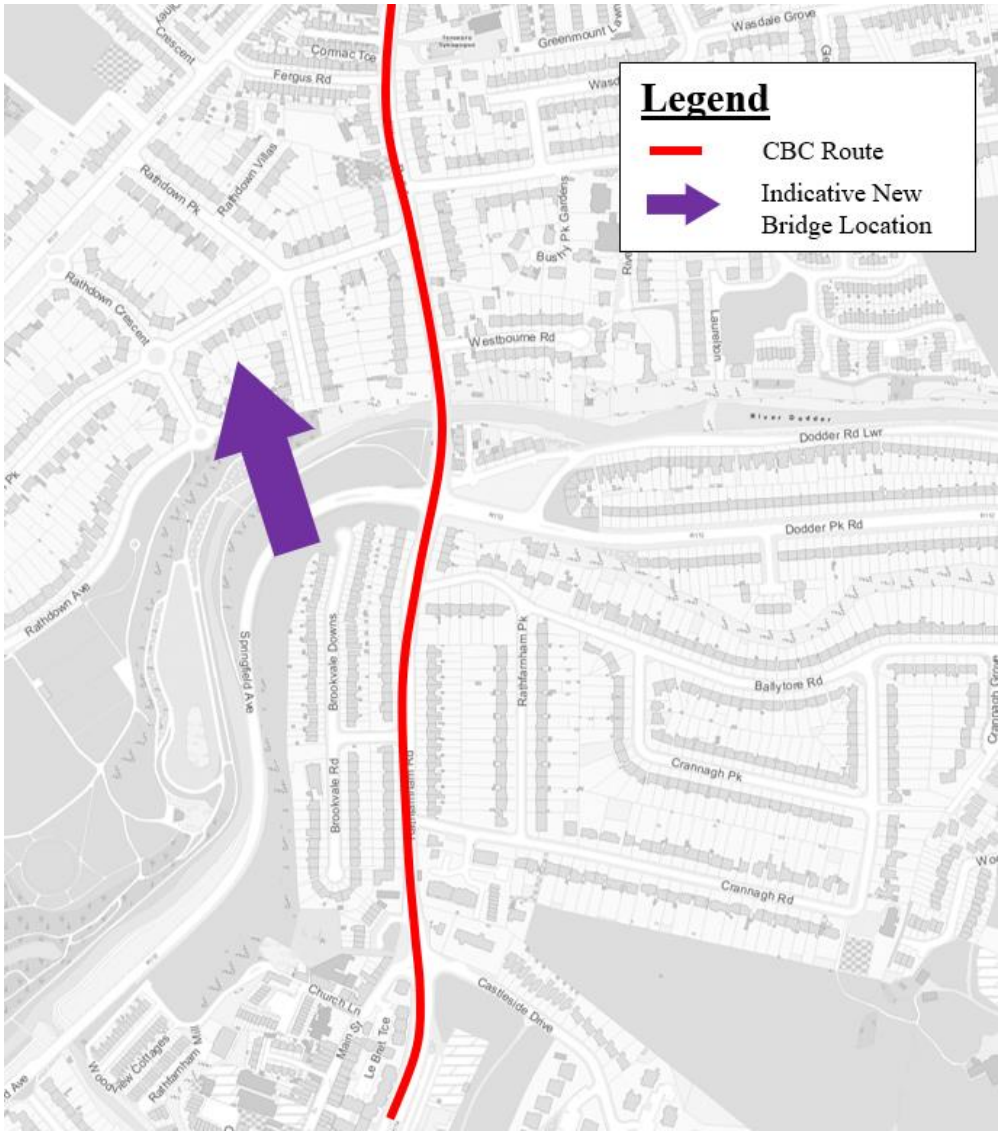

Figure 4.36: Indicative Location of potential Dodder Bridge crossing
[© Ordnance Survey Ireland Government of Ireland. All rights reserved.
Licence Number 2021/OSi_NMA_180 National Transport Authority.]

Two potential bridge sites have been identified within this general location. In order to rationalise the number of parallel cycle route options to be assessed, an initial assessment of two potential bridge locations within this area has been undertaken. The preferred bridge option was then incorporated into end-to-end parallel cycle route options for comparative assessment.

A bespoke MCA methodology has been developed to consider the merits of each bridge option. This methodology allows a high-level comparative assessment of these bridge options to be carried out based on the following criteria:

- Cost;
- Constructability and engineering constraints;
- Cycle connectivity;
- Impact on private property;

- Impact on flora & fauna; and
- Landscape & visual impacts.

The locations of the two bridge options developed are indicated in **Figure 4.37** and the proposals are described in further detail below.

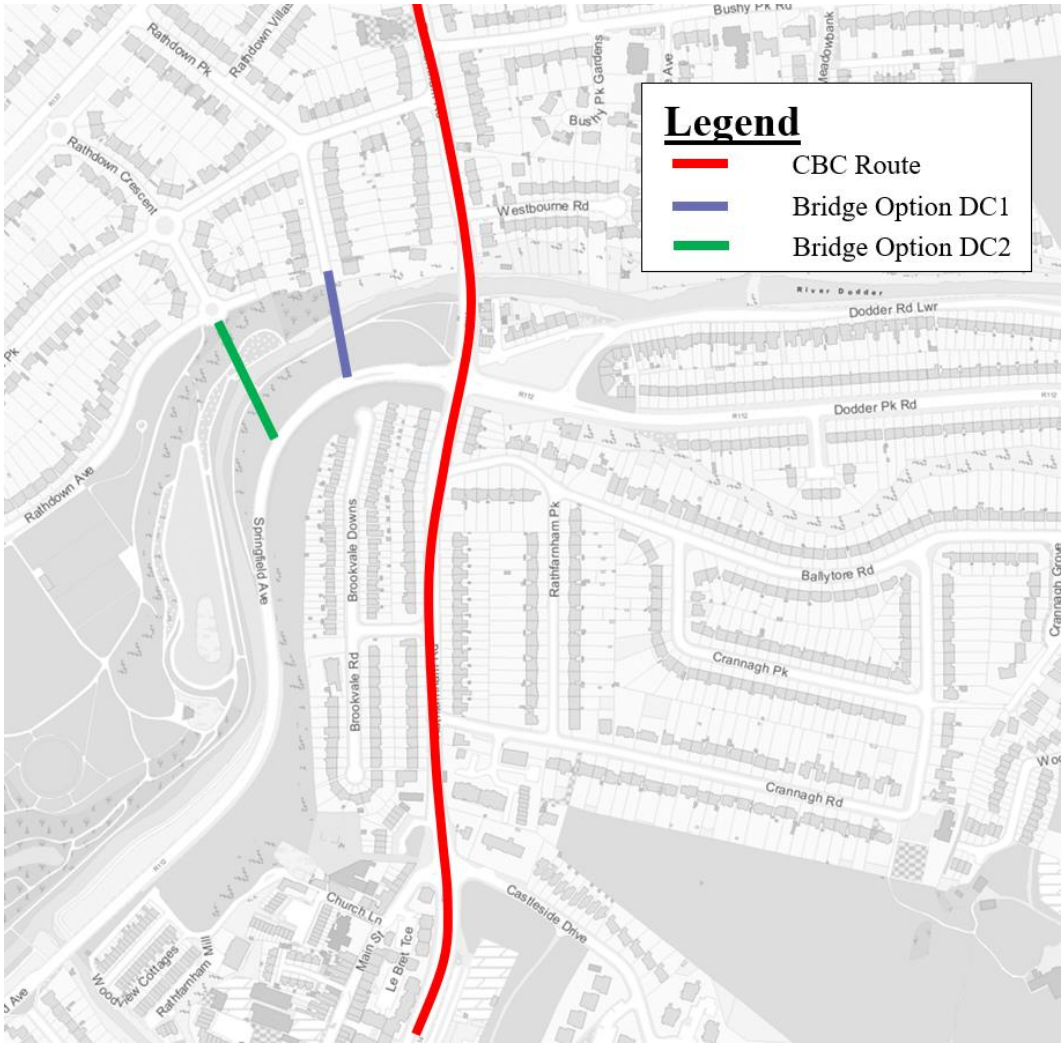

Figure 4.37: Potential Dodder Bridge crossing locations

Bridge Option DC1

Bridge Option DC1 consists of providing a pedestrian and cyclist bridge spanning the River Dodder linking from Springfield Avenue to Rathdown Park, as shown in **Figure 4.37**. The indicative proposed cross-section of this bridge is shown in **Figure 4.38**.

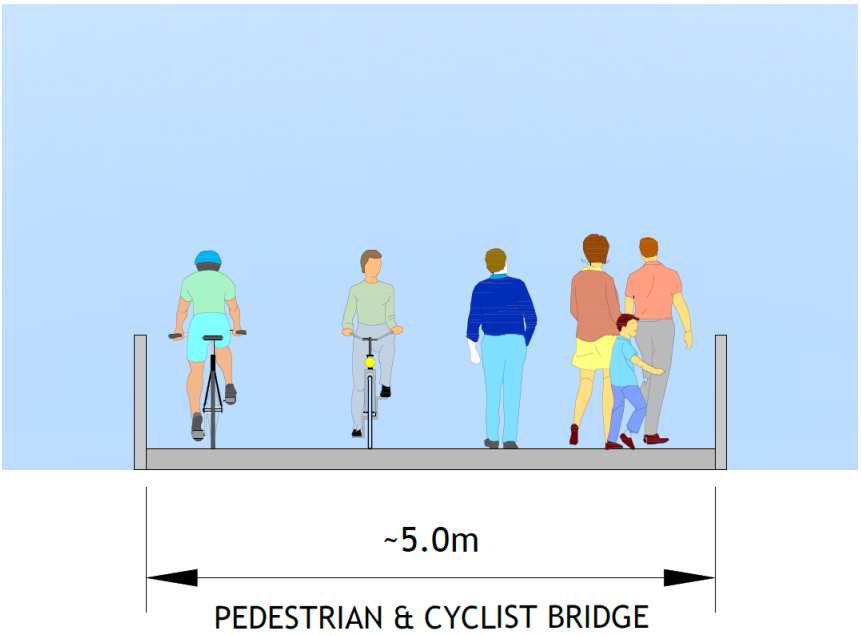

Figure 4.38: Bridge Option DC1 - Indicative cross-section

This bridge option would have the following characteristics:

- A main span of approximately 50m. This 50m main span would allow the northern bank and waterway to be crossed with a single span, limiting the impact on the existing environment below.
- Additional approach spans would be required within public open space on the southern side of the River Dodder to overcome the level difference (approx. 8m) between the southern and northern landings. It is anticipated that the main construction works would occur on the southern side of the river.
- Land acquisition from a private property on Rathdown Park would be required.
- There would be an impact on a number of mature trees in the vicinity of the bank of the River Dodder.
- South of the River Dodder, cyclists would utilise the Dodder Greenway. North of the River Dodder, cyclists would share with vehicles along Rathdown Park for approximately 260m before joining Rathfarnham Road, passing through 1 junction along the way.

Bridge Option DC2

Bridge Option DC2 consists of providing a pedestrian and cyclist bridge spanning the River Dodder linking from Springfield Avenue to Rathdown Crescent, as shown in **Figure 4.37**. The indicative proposed cross-section of this bridge is shown in **Figure 4.38**.

This bridge option would have the following characteristics:

- A main span of approximately 60m. Due to the topography on the northern side of the river, there is potential to install an additional pier, splitting this main span into two equal 30m spans. This would limit the effort required to erect the main span beams, however it would require a permanent pier within the heavily vegetated surrounds and result in disruption to the surrounding vegetation and fauna within Bushy Park, especially taking into account the access required for construction. As such, this option has been progressed with a 60m main span, to allow the northern bank and waterway to be crossed with a single span.
- Additional approach spans would be required within public open space on the southern side of the River Dodder to overcome the significant level difference (approx. 8m) between the southern and northern landings.
- There would be an impact on a number of mature trees in the vicinity of the bank of the River Dodder.
- The bridge would span over existing public walkways within Bushy Park.
- South of the River Dodder, cyclists would utilise the Dodder Greenway. North of the River Dodder, cyclists would share with vehicles along Rathdown Park for approximately 380m before joining Rathfarnham Road, passing through 2 roundabouts along the way.

Bridge Options Assessment

Details of the Dodder Bridge options assessment undertaken for the Grange Road to Terenure Cross study area section are presented in Appendix E. The relative ranking of route options against the scheme assessment sub-criteria is summarised in **Table 4.7**.

Table 4.7: Proposed Dodder Bridge Crossing MCA Summary

Appraisal Criteria	Option DC1	Option DC2
1 Cost		
2 Constructability		
3 Cycle Connectivity		
4 Impact on Private Property		
5 Flora and Fauna		
6 Landscape and Visual		

In terms of cost, Option DC2 would have a higher construction cost due to the additional length to be spanned and the associated construction complexity.

Option DC1 would have additional costs associated with the acquisition of private lands. As such, it is considered that the overall cost of both options would be comparable.

In terms of constructability, Option DC2 performs marginally worse under this criterion. This is due to the construction complexity added by the additional length of the span, which in turn would require deeper and heavier sections, impacting on constructability, particularly given the limited access to the site.

In terms of cycle connectivity, both options would connect to the Dodder Greenway south of the River Dodder. To the north, option DC2 would share with general traffic for approximately 120m longer than options DC1 and would pass through 2 roundabout junctions prior to joining the Rathfarnham to City Centre section on Rathfarnham Road. Option DC1 performs therefore performs marginally better as it would offer a more attractive route for cyclists north of the River Dodder.

In terms of impact on properties, Option DC1 performs worse under this criterion due to the fact that land acquisition from one private property would be required to deliver this option.

In terms of flora and fauna, Option DC1 performs marginally better due to the fact that fewer mature trees along the River Dodder would be impacted to deliver this bridge option.

Finally, in terms of landscape and visual impacts, it is considered that both options would have equal impacts under this criterion.

Based on the assessment carried out, Option DC1 is the preferred location for a new pedestrian and cyclist bridge crossing the River Dodder. This bridge has been incorporated into end-to-end parallel cycle route options where appropriate, as described in the following sections.

4.4.1.2.2.3 Parallel Cycle Route Options Considered

10 potential parallel cycle route options were identified as presented within this section and as illustrated in **Figure 4.39**. For completeness the EPR Option has been included in this assessment.

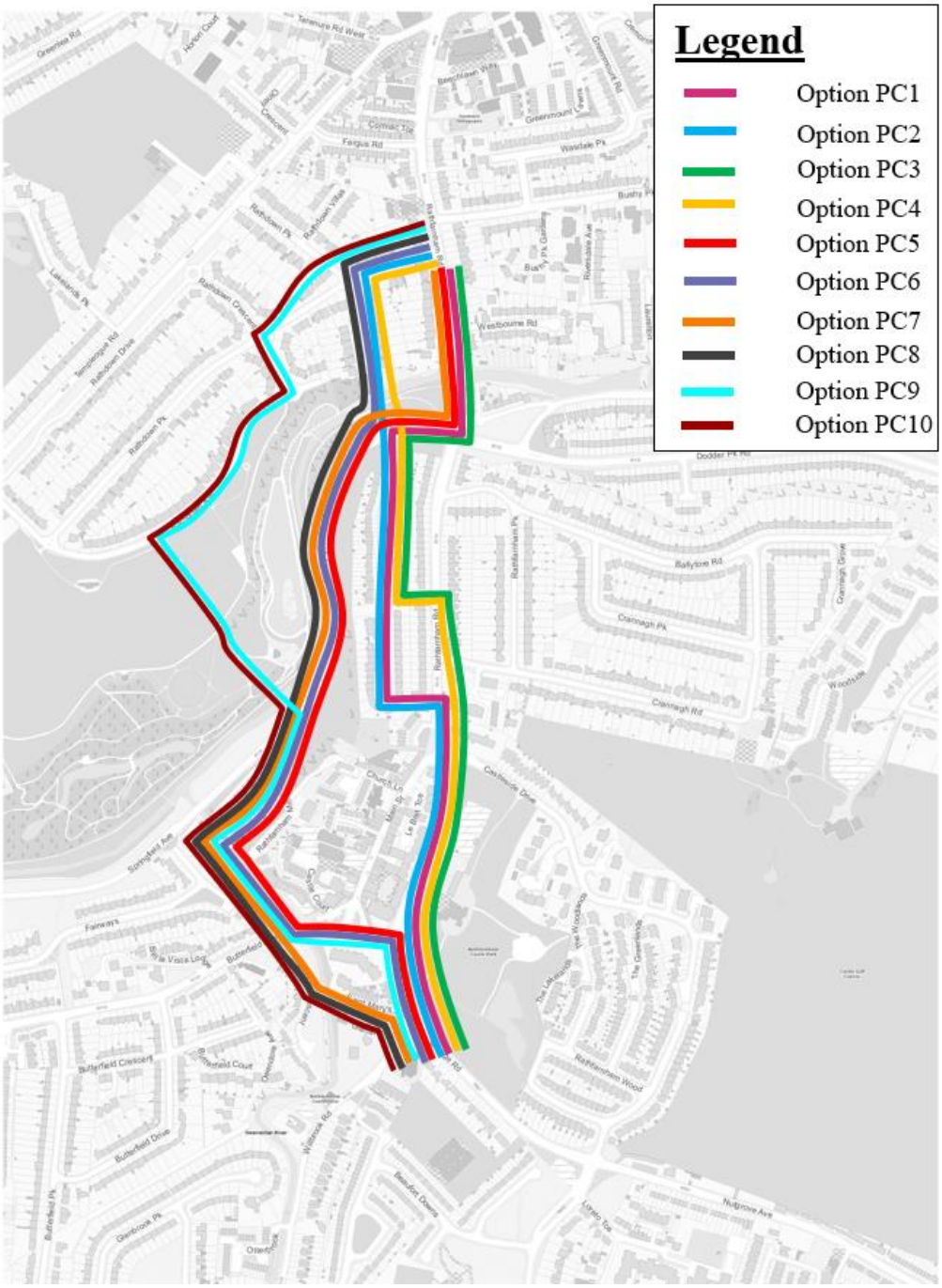

Figure 4.39: Section 1 Parallel Cycle Route Options

- **Option PC1** ***(EPR Option)*** – Parallel cycle route via Brookvale Downs using laneway north of Texaco Station and crossing River Dodder via a new boardwalk at Pearse Bridge;
- **Option PC2** - Parallel cycle route via Brookvale Downs using laneway north of Texaco Station and crossing River Dodder via a new pedestrian/cycle bridge to Rathdown Park;

- **Option PC3** - Parallel cycle route via Brookvale Downs using Brookvale Road and crossing the River Dodder via a new boardwalk at Pearse Bridge;
- **Option PC4** - Parallel cycle route via Brookvale Downs using Brookvale Road and crossing River Dodder via a new pedestrian/cycle bridge to Rathdown Park;
- **Option PC5** - Parallel cycle route along Butterfield Avenue and the Owendoher River connecting to the Dodder Greenway and crossing the River Dodder via a new boardwalk at Pearse Bridge;
- **Option PC6** - Parallel cycle route along Butterfield Avenue and Owendoher River connecting to the Dodder Greenway and a new bridge to Rathdown Park;
- **Option PC7** - Parallel cycle route along St Mary's Avenue and the Owendoher River connecting to the Dodder Greenway and a new boardwalk via a new boardwalk at Pearse Bridge;
- **Option PC8** - Parallel cycle route along St Mary's Avenue and the Owendoher River connecting to the Dodder Greenway and new bridge to Rathdown Park;
- **Option PC9** - Parallel cycle route along Butterfield Avenue and the Owendoher River connecting to Bushy Park utilising the proposed Dodder Greenway bridge; and
- **Option PC10** - Parallel cycle route along St Mary's Avenue and the Owendoher River connecting to Bushy Park utilising the proposed Dodder Greenway bridge.

These 10 parallel cycle route options have been comparatively assessed in order to determine the draft preferred option for a parallel cycle route. The assessment is based on the same methodology presented in the 'Rathfarnham to City Centre Core Bus Corridor CBC Feasibility Study and Options Assessment Report' for cycle route options considered in Rathgar/Rathmines.

This methodology assesses options using the 'Five Needs of a Cyclist' outlined in the National Cycle Manual Guidelines along with Capital Cost and Environmental Impacts. The cycle routes were assessed using the criteria and rationale presented in **Table 4.8**.

Table 4.8: Alternative Cycle Route Assessment Criteria

Appraisal Criteria	Rationale
1 Capital Cost	Capital cost estimates consist of both the indicative infrastructure cost estimate and land acquisition costs. The cycle route infrastructure cost examines the practicality and extent of works required to accommodate cycle route infrastructure along route options. This criterion evaluates the likely costs associated with land acquisition and associated boundary/accommodation works for each route option. The assessment takes consideration of:

Appraisal Criteria	Rationale
	• The number of adjacent public/commercial/ residential/industrial properties, from which land acquisition would be required as well as the extent (area) of land acquisition likely to be necessary; and • The costs associated with boundary/accommodation works.
2 Road Safety	For the purposes of comparing route options, the extent of segregation and the number of junctions along the route has been used as a proxy for road safety. The number of junctions is effectively a measure of the number of potential conflicts on the route and therefore a measure of the potential for a collision. The type of movement required by the cyclist at junctions on the route is also considered with routes where turning movements (either left or right) are required being assigned a lower ranking in terms of safety. The quality of cycle provision practically achievable on route options has been assessed. For comparison purposes, the highest level of practical cycle provision achievable on each route has been determined and compared between route options.
3 Coherence	This criterion considers whether a route option forms part of the GDA Cycle Network Plan, with routes where CBC and designated Cycle Routes overlap given a higher designation in terms of benefits arising where cycle infrastructure can be provided as part of a proposed CBC scheme. In some instances, however it may be more appropriate to provide a parallel cycle track off the CBC route. Consideration is also given to cycle routes intersecting with the CBC route. The cycle route should also link the main origin and destination zones along the CBC route.
4 Directness	For the purposes of comparing route options, the number of junctions, length of the route and the number of detours & gaps from the CBC has been used as a proxy for directness.
5 Attractiveness	The cycling environment along the route should be pleasant and interesting. Monotony and lack of points of interest along the cycle route are unattractive to cyclists. Cycle routes should also be adequately lit so as not to deter evening and night time use.
6 Comfort	The quality of cycle provision practically achievable on route options has been assessed. For comparison purposes, the highest level of practical cycle provision achievable on each route has been determined and compared between route options.
7 Environmental	The provision of segregated cycle tracks has the potential to impact on the archaeological, architectural and cultural heritage environment. At this stage of the assessment process, a conservative approach has been adopted in assessing the potential for impact and this is further described below. The provision of segregated cycle tracks has the potential to impact on flora and fauna, the townscape/streetscape along the route and on the land use character through land-take, severance or reduction of viability which prevents or reduces it from being used for its intended use.

Each of the alternative cycle routes are described in further detail in the next section of the report.

4.4.1.2.2.3.1 Cycle Route Option PC1

Parallel cycle route PC1 is presented in **Figure 4.40**.

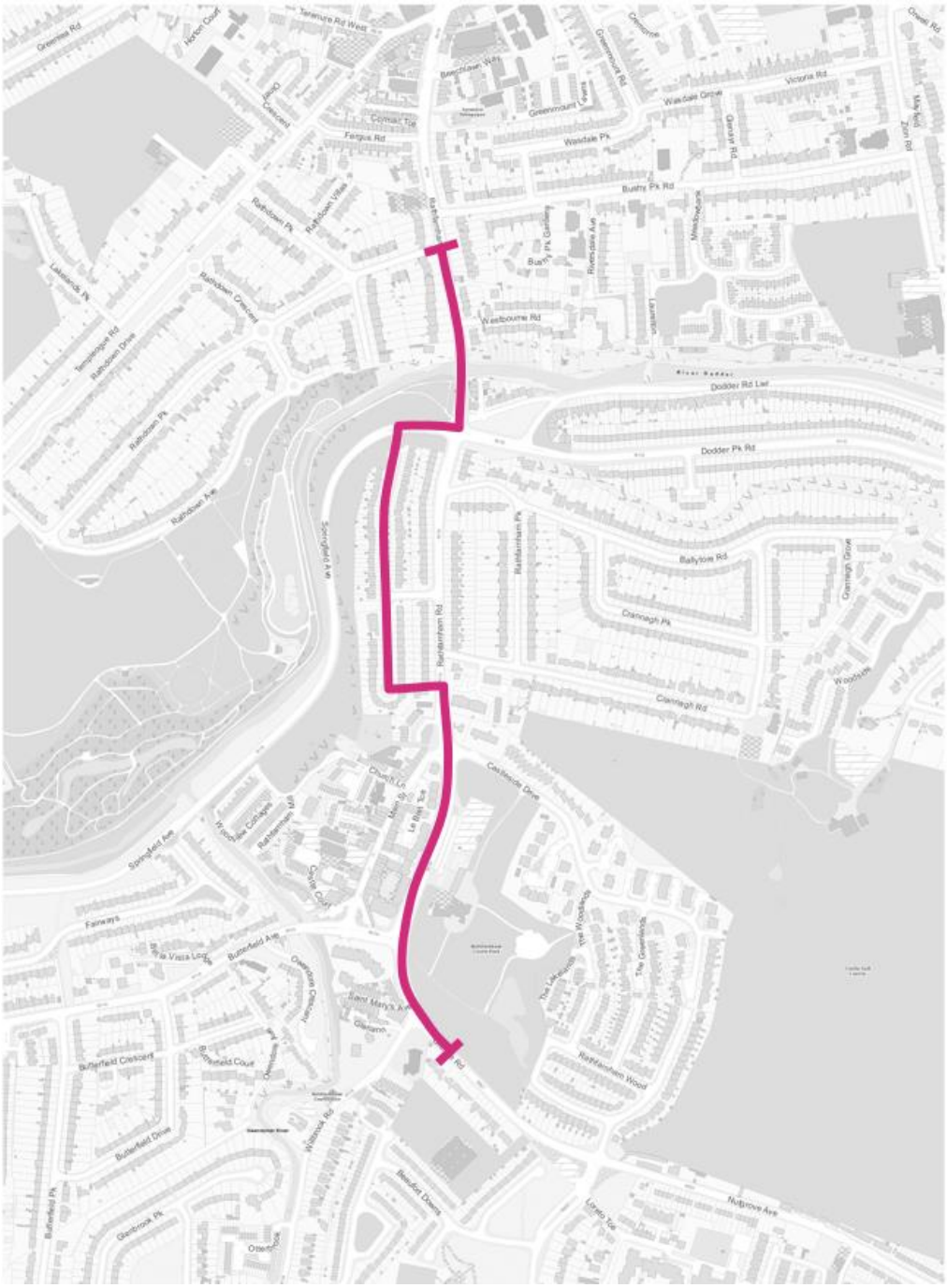

Figure 4.40: Cycle Route Option PC1
[© Ordnance Survey Ireland Government of Ireland. All rights reserved.
Licence Number 2021/OSi_NMA_180 National Transport Authority.]

Inbound (Northbound): The cycle route would proceed along Rathfarnham Road, linking to Brookvale Downs via an existing laneway adjacent to the Texaco garage.

The route would then continue on Brookvale Downs, linking to Dodder Park Road where the cycle track would cross the River Dodder via a new boardwalk adjacent to the western side of Pearse Bridge. The cycle route would then continue along Rathfarnham Road to Rathdown Park.

Outbound (Southbound): The outbound route would follow the same route as the inbound.

There are five signal-controlled junctions and two pedestrian/toucan crossings along this route.

This segregated cycle route would align with the GDA Cycle Network Plan proposal for Primary Route 10, with the exception of a 500m section which diverts to Brookvale Downs.

Cycle Route PC1 scheme proposals are presented in **Figure 4.41** while sample cross-sections are illustrated in **Figure 4.42**, **Figure 4.43** and **Figure 4.44**.

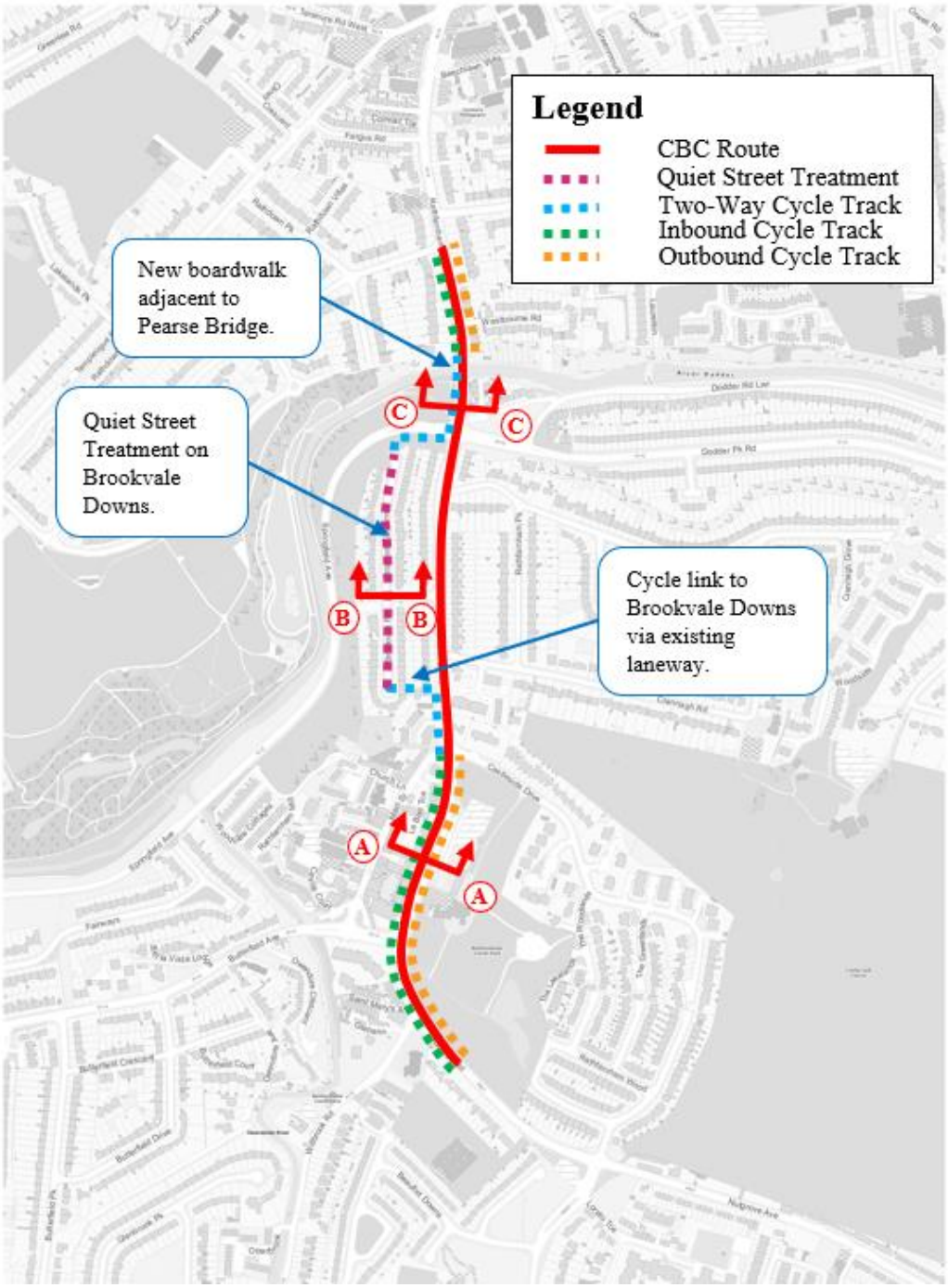

Figure 4.41: Cycle Route PC1 Scheme Proposals

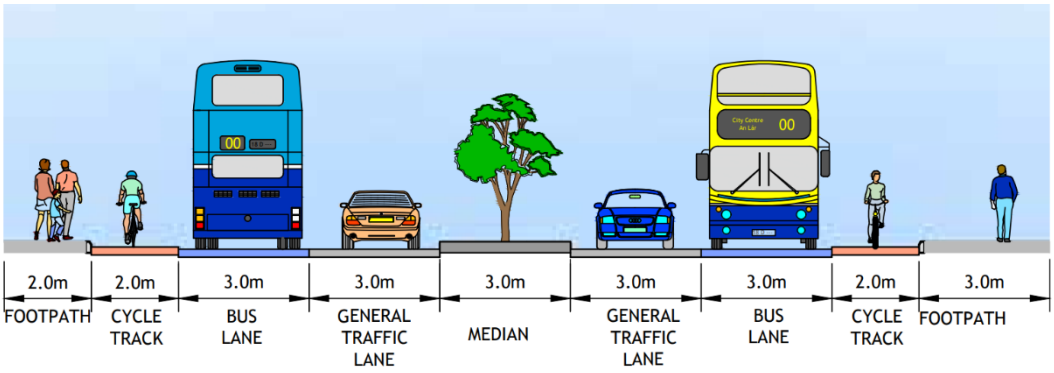

Figure 4.42: Cross-Section A-A (Relevant to PC1, PC2, PC3 & PC4)

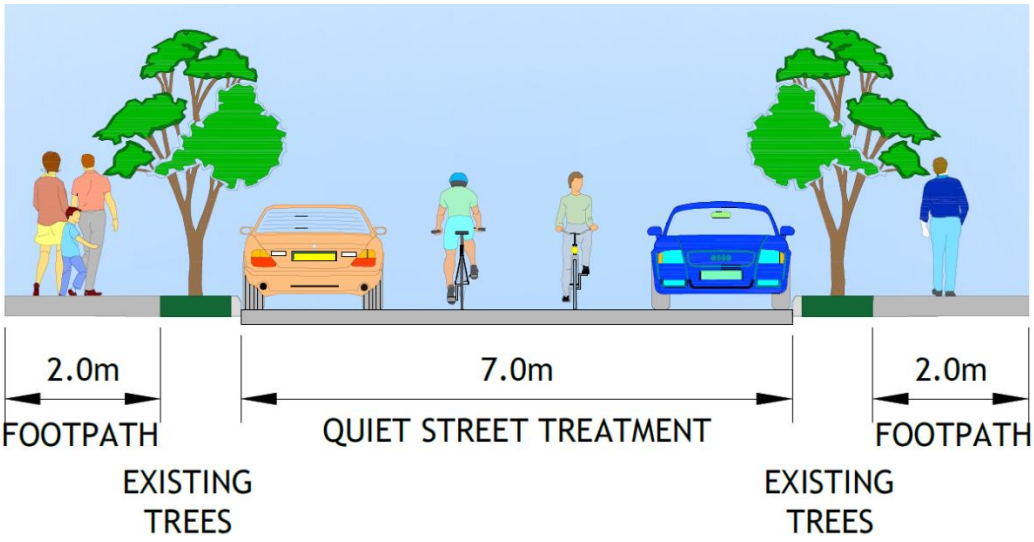

Figure 4.43: Cross-Section B-B (Relevant to PC1, PC2, PC3 & PC4)

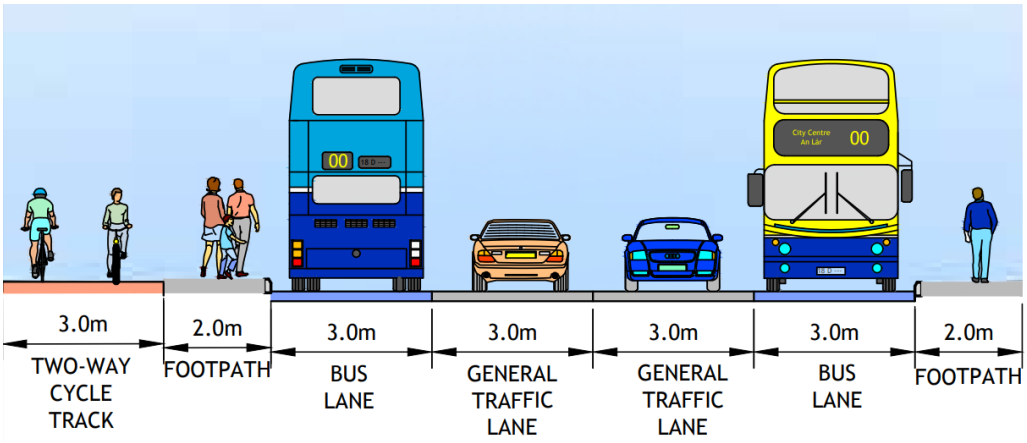

Figure 4.44: Cross-Section C-C (Relevant to PC1 & PC3)

Cycle route option PC1 represents the cycle facilities presented in EPR Option. This option would provide dedicated cycle facilities in each direction on each side of Rathfarnham Road between Willbrook Road and Castleside Drive.

North of Main Street, cyclists would continue on a segregated two-way cycle facility on the western side of Rathfarnham Road before turning onto the existing pedestrian laneway north of the Texaco Station which would be widened to improve access for pedestrians and cyclists.

This laneway leads to Brookvale Downs where cyclists would continue along the road sharing with low volumes of residential traffic in a quiet street environment. Cyclists would exit Brookvale Downs via the existing pedestrian/cycle access on Dodder View Road and cross the road using a new toucan crossing. From here cyclists would continue along a two-way cycle facility along the northern side of Dodder View Road before continuing north across the River Dodder via a new 2-way cycle boardwalk on the western side of Pearse Bridge. Just north of the bridge a toucan crossing would be provided to allow cyclists to cross. North of this point, segregated cycle tracks would be provided on each side of the road.

In summary, this route option would have the following characteristics.

- Segregated cycle facilities would be provided between Willbrook Road and Texaco Rathfarnham;
- There would be no segregated cycle facilities provided along a 400m section of Rathfarnham Road between Texaco and Dodder Park Road, which is identified as Primary Route 10 within the GDA Cycle Network Plan;
- A Quiet Street Treatment would be provided on Brookvale Downs. In order to connect cyclists from the main CBC route to Brookvale Downs, a narrow existing laneway is proposed to be utilised. Accessing this laneway would require sharp diversions for cyclists, it lacks passive surveillance and is very narrow in some locations;
- A new boardwalk would be provided adjacent to Pearse Bridge crossing the River Dodder; and
- Segregated cycle facilities would be provided north of the River Dodder.

4.4.1.2.2.3.2 Cycle Route Option PC2

Parallel cycle route option PC2 is presented in **Figure 4.45**.

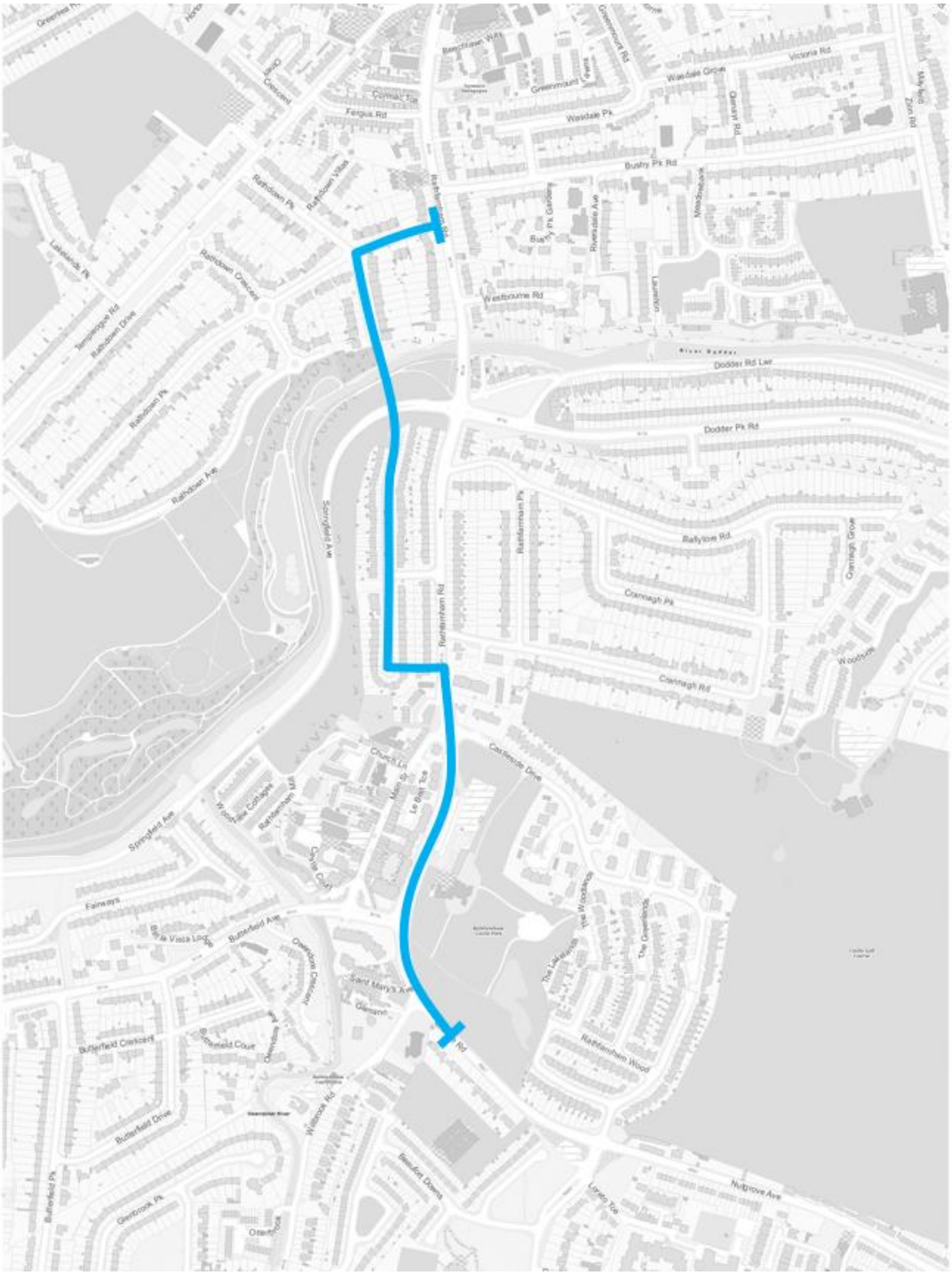

Figure 4.45: Cycle Route Option PC2

Inbound (Northbound): The cycle route would follow the same route as Option PC1 as far as Dodder View Road, at which point the cycle track would cross the River Dodder via a new bridge linking to Rathdown Park where a Quiet Street Treatment would be provided connecting back to the CBC.

Outbound (Southbound): The outbound route would follow the same route as the inbound.

There are four signal-controlled junctions and one pedestrian/toucan crossing along this route.

This segregated cycle route would align with the GDA Cycle Network Plan proposal for Primary Route 10, with the exception of a 650m section which would divert to Brookvale Downs and Rathdown Park.

The Cycle Route PC2 scheme proposals are presented in **Figure 4.46** while sample cross-sections are presented in **Figure 4.42**, **Figure 4.43** and **Figure 4.47**.

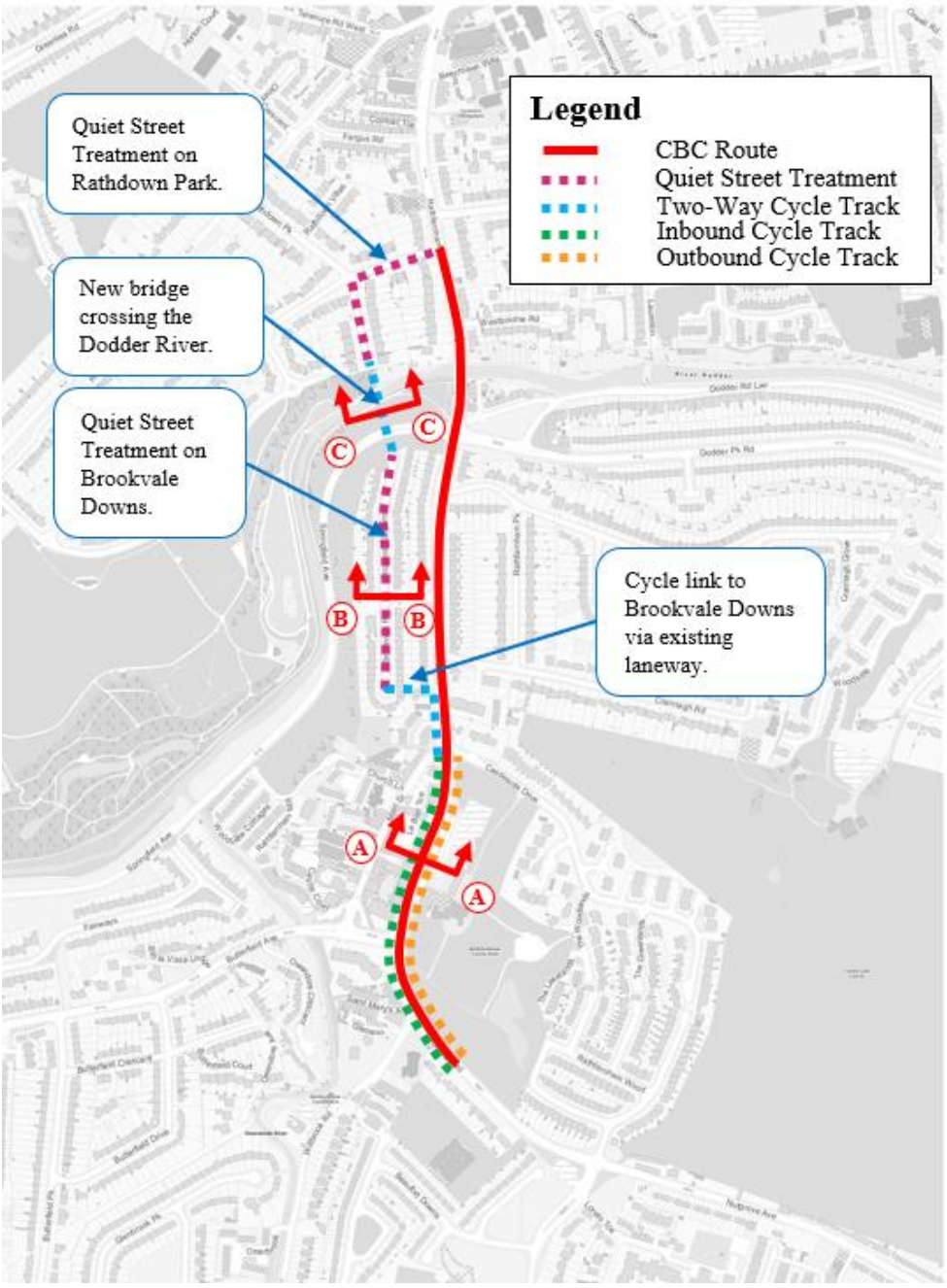

Figure 4.46: Cycle Route PC2 proposal (refer to earlier report sections for duplicate cross-sections)

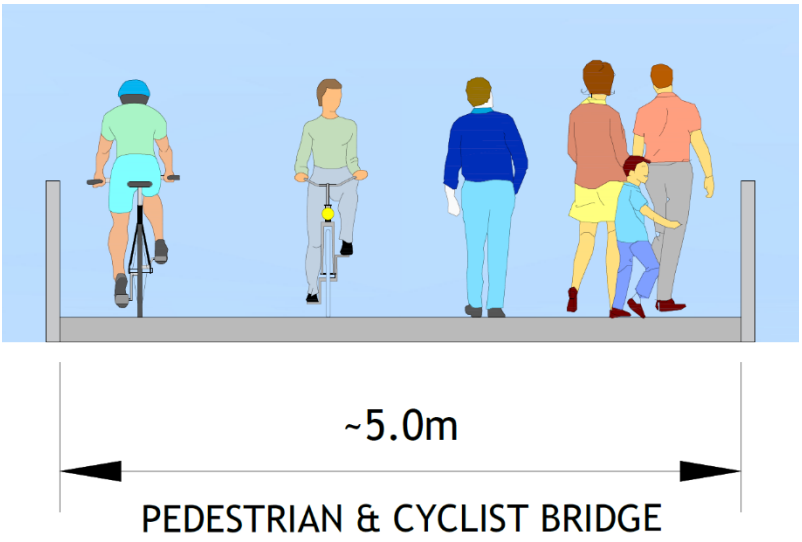

Figure 4.47: Cross-Section C-C (Relevant to PC2, PC4, PC6 & PC8)

Between Willbrook Road and Dodder Park Road, the infrastructure proposed would be as described in Option PC1. Cyclists would exit Brookvale Downs via the existing pedestrian/cycle access on Dodder View Road and cross the road using a new toucan crossing. From here, cyclists would cross the River Dodder via a new pedestrian and cyclist bridge linking to Rathdown Park, where a Quiet Street Treatment would be provided, linking back to the CBC.

In summary, this route option would have the following characteristics:

- Segregated cycle facilities would be provided between Willbrook Road and Texaco Rathfarnham;
- There would be no segregated cycle facilities provided along a 650m section of Rathfarnham Road between Texaco and Rathdown Park, which is identified as Primary Route 10 within the GDA Cycle Network Plan;
- A Quiet Street Treatment would be provided on Brookvale Downs. In order to connect cyclists from the CBC to Brookvale Downs, a narrow existing laneway is proposed to be utilised. Accessing this laneway would require sharp diversions for cyclists, lacks passive surveillance and it is very narrow in some locations;
- A new structure would be provided crossing the River Dodder and connecting to Rathdown Park; and
- A Quiet Street Treatment would be provided on Rathdown Park.

4.4.1.2.2.3.3 Cycle Route Option PC3

Parallel cycle route option PC3 is presented in **Figure 4.48.**

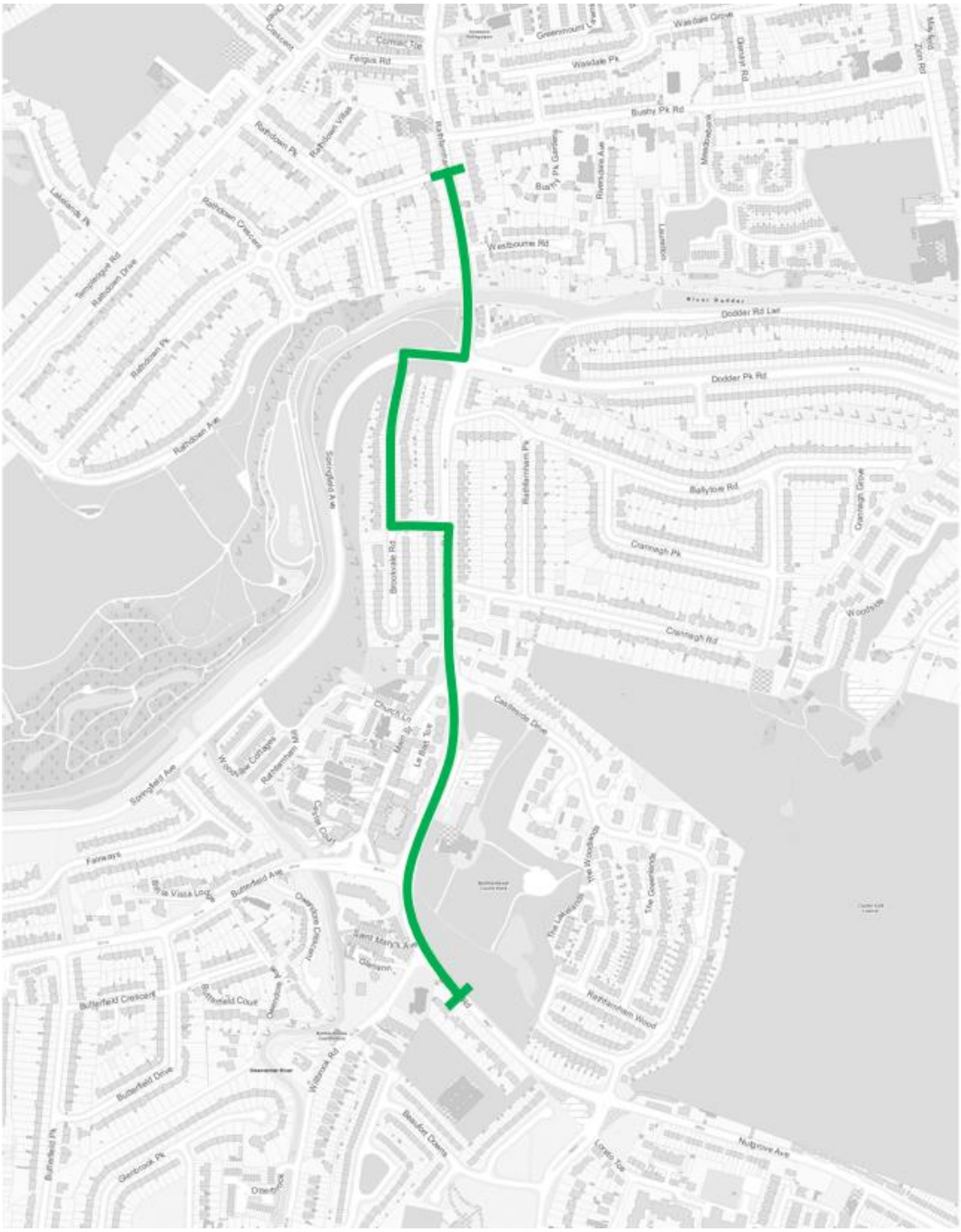

Figure 4.48: Cycle Route Option PC3

Inbound (Northbound): The cycle route would proceed along Rathfarnham Road, linking to Brookvale Downs via Brookvale Road. The cycle route would continue on Brookvale Downs, linking to Dodder View Road where the cycle track would cross the River Dodder via a new boardwalk adjacent to the western side of Pearse bridge. The cycle route would then continue along Rathfarnham Road to Rathdown Park.

Outbound (Southbound): The outbound route would follow the same route as the inbound.

There are five signal-controlled junctions and four pedestrian/toucan crossings along this route.

This segregated cycle route would align with the GDA Cycle Network Plan proposal for Primary Route 10, with the exception of a 250m section which would divert to Brookvale Downs.

Cycle Route PC3 scheme proposals are presented in **Figure 4.49** while sample cross-sections are illustrated in **Figure 4.42**, **Figure 4.43** and **Figure 4.44**.

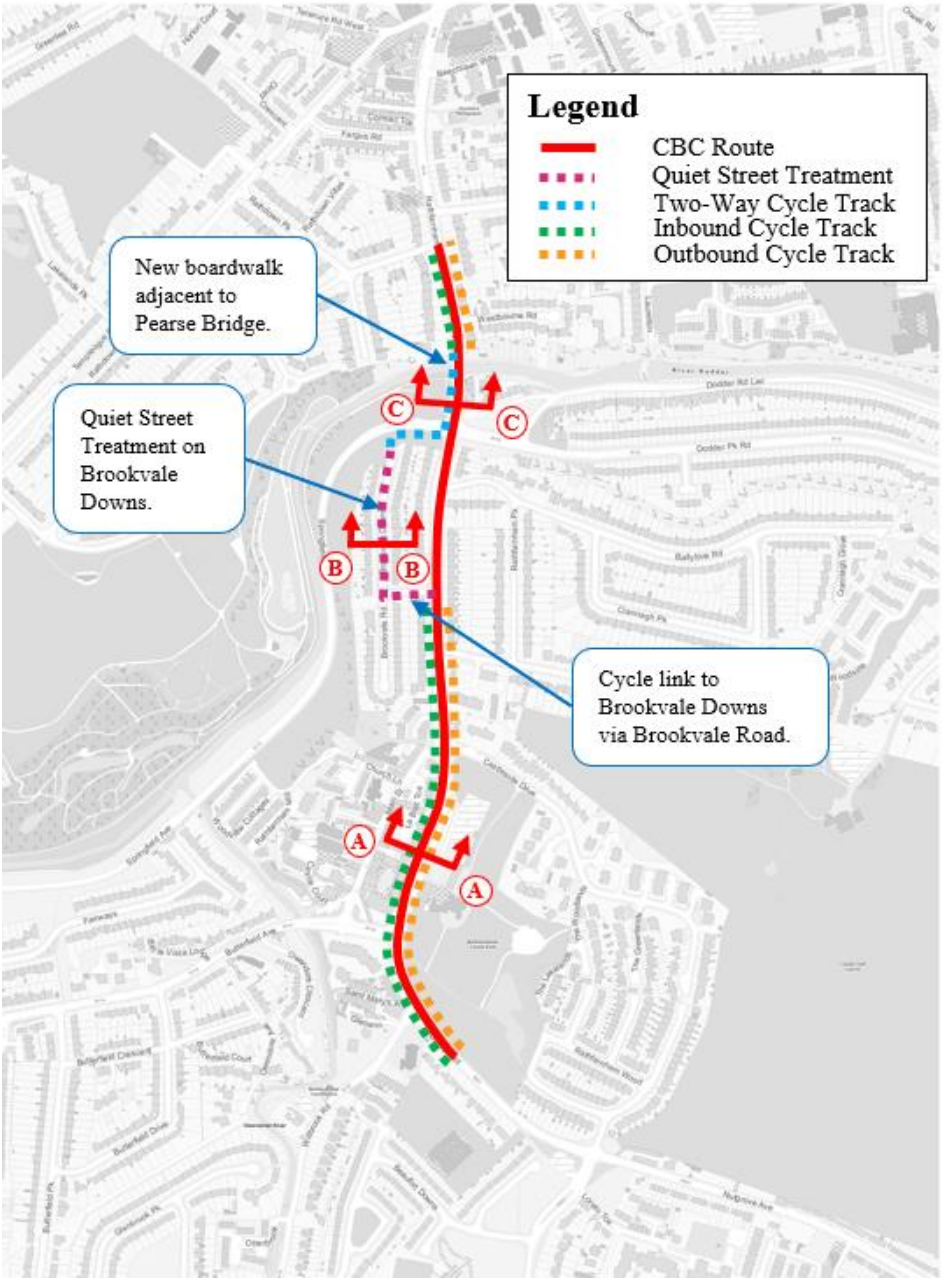

Figure 4.49: Cycle Route PC3 Scheme Proposals (refer to earlier report sections for duplicate cross-sections)

Cycle route Option PC3 would provide dedicated cycle facilities in each direction on each side of Rathfarnham Road between Willbrook Road and Brookvale Road. At Brookvale Road, cyclists would divert to Brookvale Downs where cyclists would continue along the road sharing with low volumes of residential traffic in a quiet street environment.

Cyclists would exit Brookvale Downs via the existing pedestrian/cycle access on Dodder View Road and cross the road using a new toucan crossing.

From here cyclists would continue along a two-way cycle facility along the northern side of Dodder View Road before continuing north across the River Dodder via a new 2-way cycle boardwalk on the western side of Pearse Bridge. Just north of the bridge a toucan crossing would be provided to allow cyclists to cross. North of this point, segregated cycle tracks would be provided on each side of the road.

In summary, this route option would have the following characteristics:

- Segregated cycle facilities would be provided between Willbrook Road and Brookvale Road;
- There would be no segregated cycle facilities provided along a 250m section of Rathfarnham Road between Brookvale Road and Dodder Park Road, which is identified as Primary Route 10 within the GDA Cycle Network Plan;
- A Quiet Street Treatment would be provided on Brookvale Downs;
- A new boardwalk would be provided adjacent to Pearse Bridge crossing the River Dodder; and
- Segregated cycle facilities would be provided on Rathfarnham Road between the River Dodder and Rathdown Park.

4.4.1.2.2.3.4 Cycle Route Option PC4

Parallel cycle route option PC4 is presented in **Figure 4.50**.

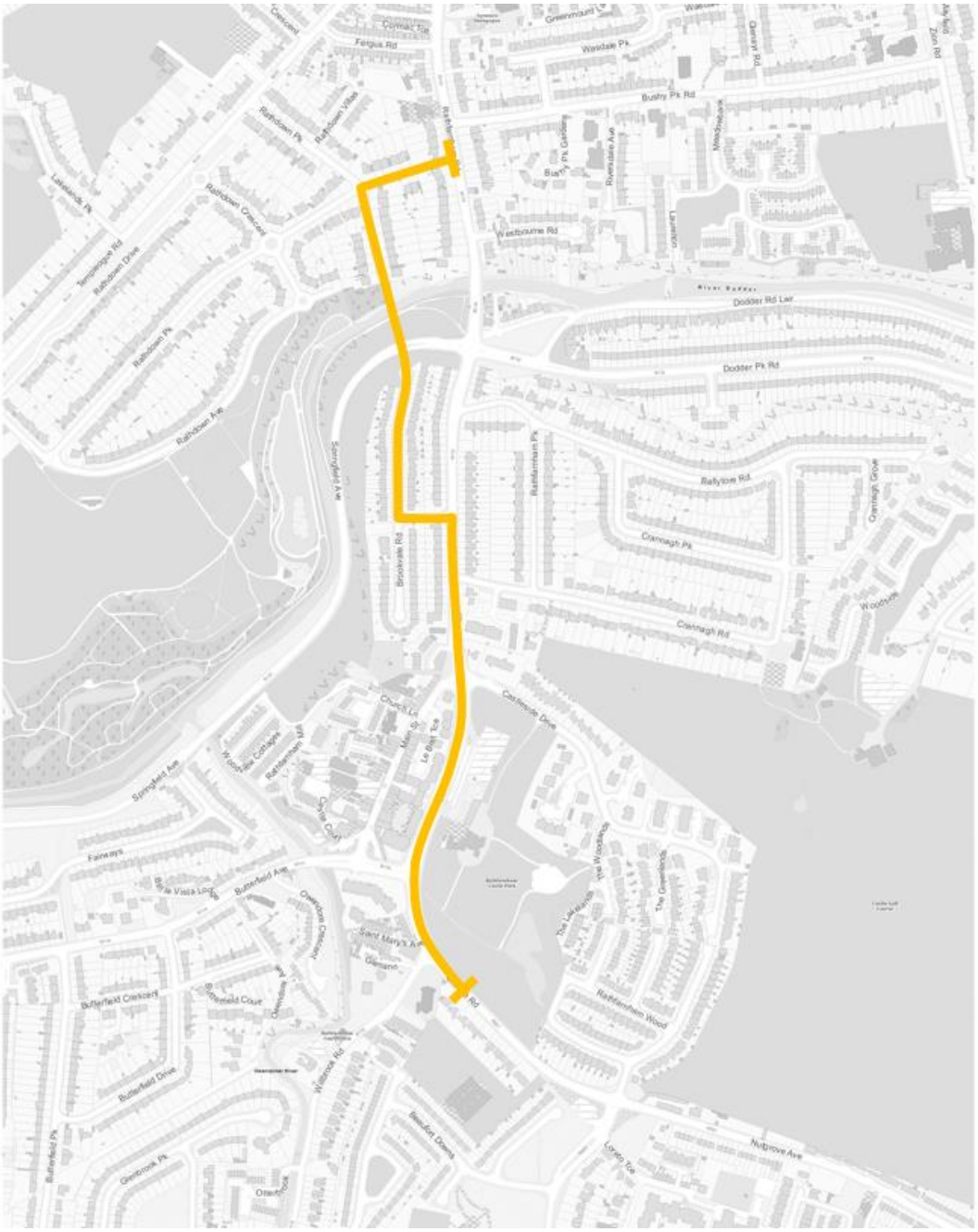

Figure 4.50: Cycle Route Option PC4

Inbound (Northbound): The cycle route would follow the same route as Option PC3 as far as Dodder View Road, at which point the cycle track would cross the River Dodder via a new bridge linking to Rathdown Park where a Quiet Street Treatment would be provided connecting back to the CBC.

Outbound (Southbound): The outbound route would follow the same route as the inbound.

There are four signal-controlled junctions and three pedestrian/toucan crossings along this route.

This segregated cycle route would align with the GDA Cycle Network Plan proposal for Primary Route 10, with the exception of a 500m section which would divert to Brookvale Downs and Rathdown Park.

Cycle Route PC4 scheme proposals are presented in **Figure 4.51** while sample cross-sections are illustrated in **Figure 4.42**, **Figure 4.43** and **Figure 4.47**.

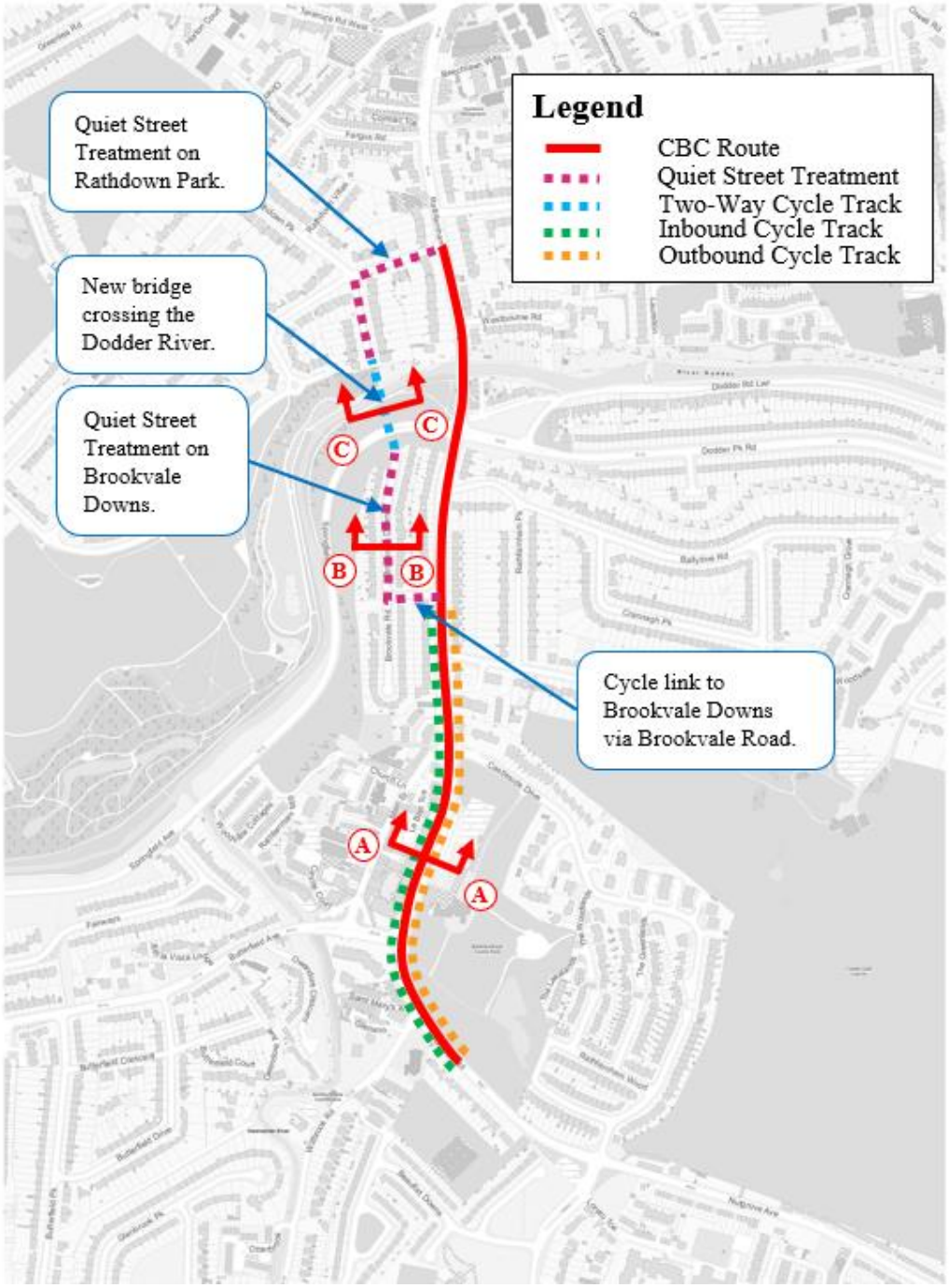

Figure 4.51: Cycle Route PC4 Scheme Proposals (refer to earlier report sections for duplicate cross-sections)

Between Willbrook Road and Dodder Park Road, the infrastructure proposed would be as described in Option PC3. Between Dodder Park Road and Rathdown Park, the infrastructure proposed would be as described in Option PC2.

In summary, this route option would have the following characteristics:

- Segregated cycle facilities would be provided between Willbrook Road and Brookvale Road;
- There would be no segregated cycle facilities provided along a 500m section of Rathfarnham Road between Brookvale Road and Rathdown Park, which is identified as Primary Route 10 within the GDA Cycle Network Plan;
- A Quiet Street Treatment would be provided on Brookvale Downs;
- A new structure would be provided crossing the River Dodder and connecting to Rathdown Park; and
- A Quiet Street Treatment would be provided on Rathdown Park.

4.4.1.2.2.3.5 Cycle Route Option PC5

Parallel cycle route option PC5 is presented in **Figure 4.52**.

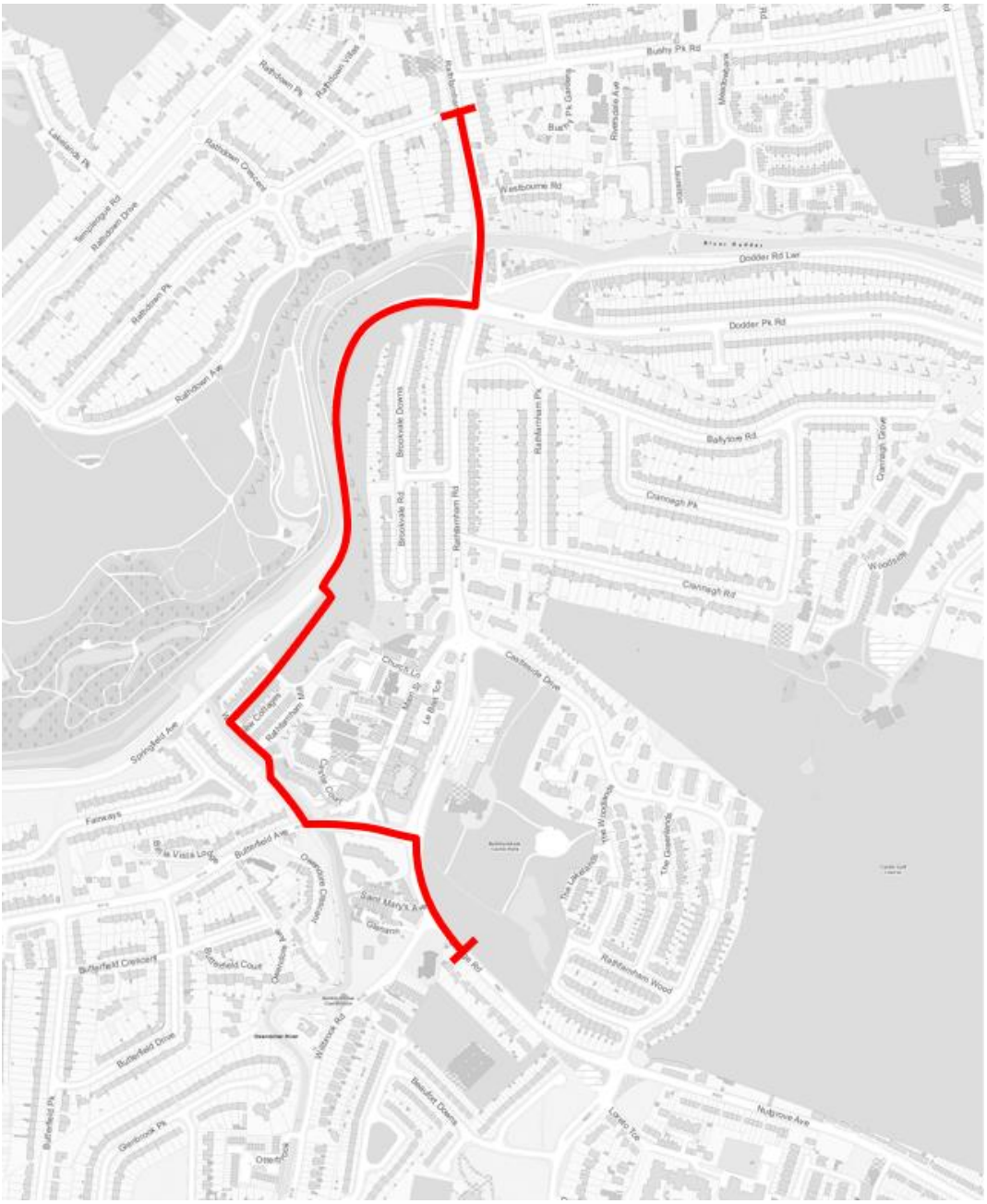

Figure 4.52: Cycle Route Option PC5

Inbound (Northbound): The cycle route would proceed along Rathfarnham Road as far as Butterfield Avenue. At this point, the route would divert to Butterfield Avenue. A toucan crossing would be provided on Butterfield Road, linking to a pedestrian and cycle facility along the banks of the Owendoher River, crossing to Woodview Cottages.

A toucan crossing would be provided crossing Springfield Avenue, connecting to a two-way cycle facility on the western side of Springfield Avenue being proposed as part of the Dodder Greenway.

This two-way facility would continue to a new boardwalk structure crossing the River Dodder at the Pearse Bridge. A segregated facility would continue along Rathfarnham Road as far as Rathdown Park.

Outbound (Southbound): The outbound route would follow the same route as the inbound.

There are three signal-controlled junctions and three pedestrian/toucan crossings along this route.

This segregated cycle route would not align directly with the GDA Cycle Network Plan proposal for Primary Route 10 for the majority of the route (750m).

Cycle Route PC5 scheme proposals are presented in **Figure 4.53** while sample cross-sections are illustrated in **Figure 4.54**, **Figure 4.55** and **Figure 4.56**.

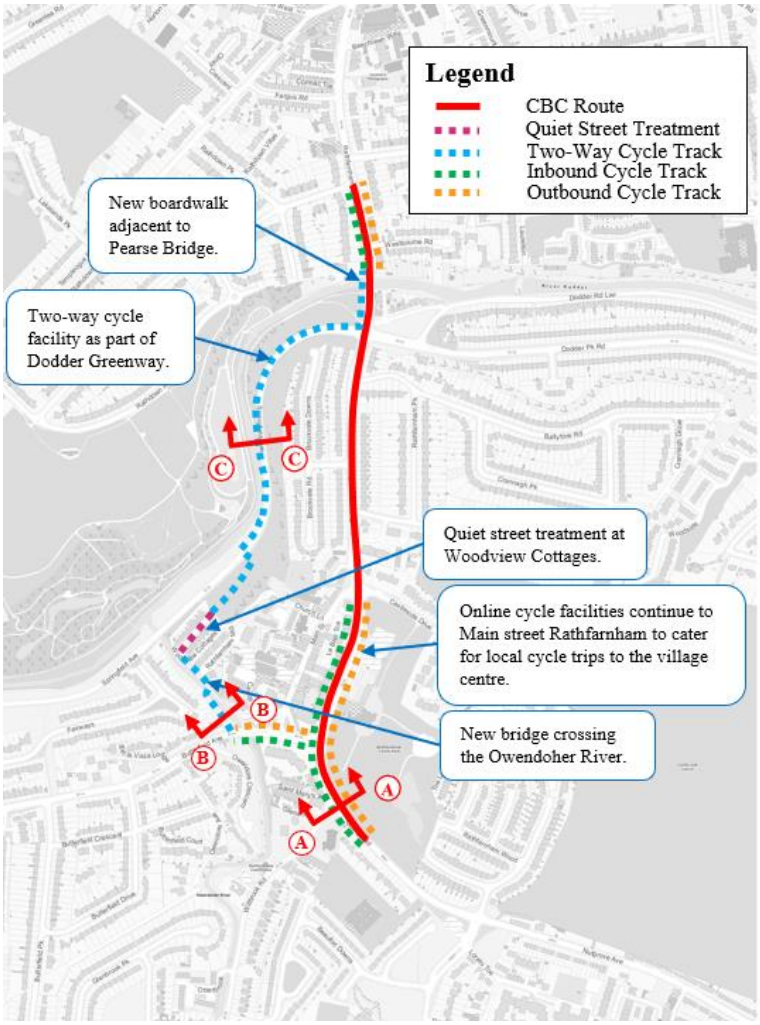

Figure 4.53: Cycle Route PC5 Scheme Proposals (refer to earlier report sections for duplicate cross-sections)

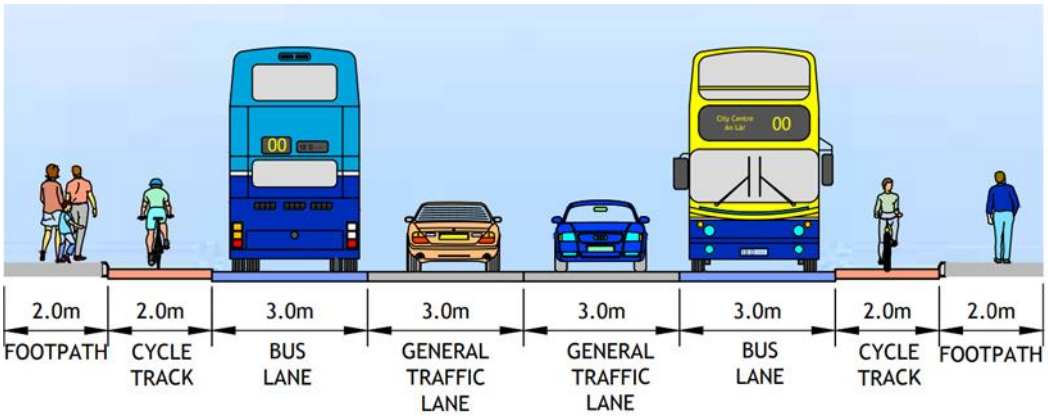

Figure 4.54: Cross Section A-A (Relevant to PC5, PC6, PC7, PC8, PC9 & PC10)

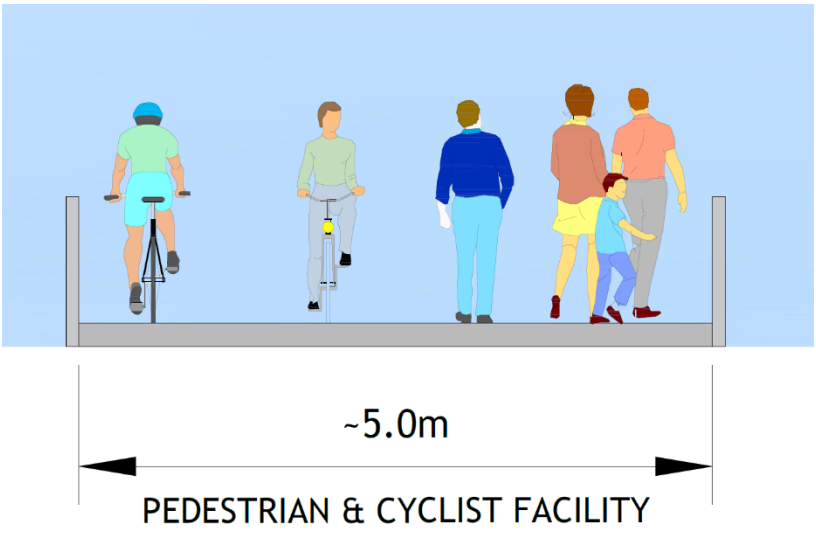

Figure 4.55: Cross-Section B-B (Relevant to PC5, PC6, PC7, PC8, PC9 & PC10)

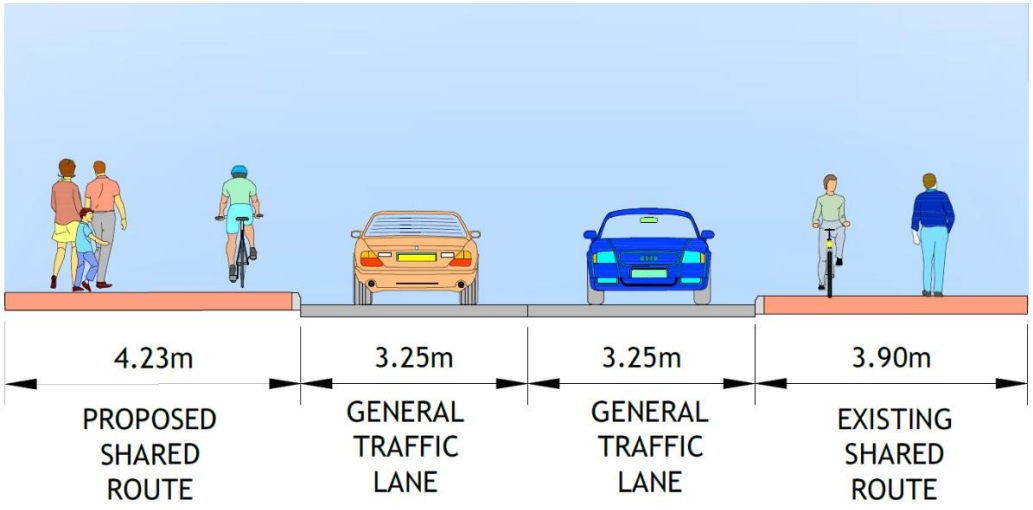

Figure 4.56: Cross-Section C-C (reproduced based SDCC Part VIII application) (Relevant to PC5, PC6, PC7 & PC8)

Cycle route Option PC5 would provide dedicated cycle facilities in each direction on each side of Rathfarnham Road between Willbrook Road and Butterfield Avenue. Cyclists would divert at Butterfield Avenue with segregated cyclist facilities provided along this road as far as the Owendoher River. A new toucan crossing would be provided crossing Butterfield Avenue at this point, connecting to a new proposed pedestrian and cyclist link crossing the Owendoher River via a new structure and connecting to Woodview Cottages. A Quiet Street Treatment would be provided for cyclists along Woodview Cottages.

The proposed cycle facility would then link to the Dodder Greenway Scheme, via a toucan crossing of Springfield Avenue. Shared pedestrian and cyclist facilities would be provided on either side of Springfield Avenue/Dodder View Road as far as the junction with Rathfarnham Road, as part of the Dodder Greenway Scheme. A new 2-way cycle boardwalk would be provided on the western side of Pearse Bridge. Just north of the bridge a toucan crossing would be provided to allow cyclists to cross. North of this point, segregated cycle tracks would be provided on each side of the road.

The following constraints would need to be considered if this route option is progressed:

In summary, this route option would have the following characteristics:

- Segregated cycle facilities would be provided between Willbrook Road and Texaco Rathfarnham;
- There would be no segregated cycle facilities provided along a 500m section of Rathfarnham Road between Texaco Rathfarnham and Dodder Park Road, which is identified as Primary Route 10 within the GDA Cycle Network Plan;
- A new structure would be provided crossing the Owendoher River;
- A Quiet Street Treatment would be provided on Woodview Cottages linking to the Dodder Greenway Scheme on Springfield Avenue;
- A new boardwalk would be provided adjacent to Pearse Bridge crossing the River Dodder; and
- Segregated cycle facilities would be provided on Rathfarnham Road between the River Dodder and Rathdown Park.

4.4.1.2.2.3.6 Cycle Route Option PC6

Parallel cycle route option PC6 is presented in **Figure 4.57**.

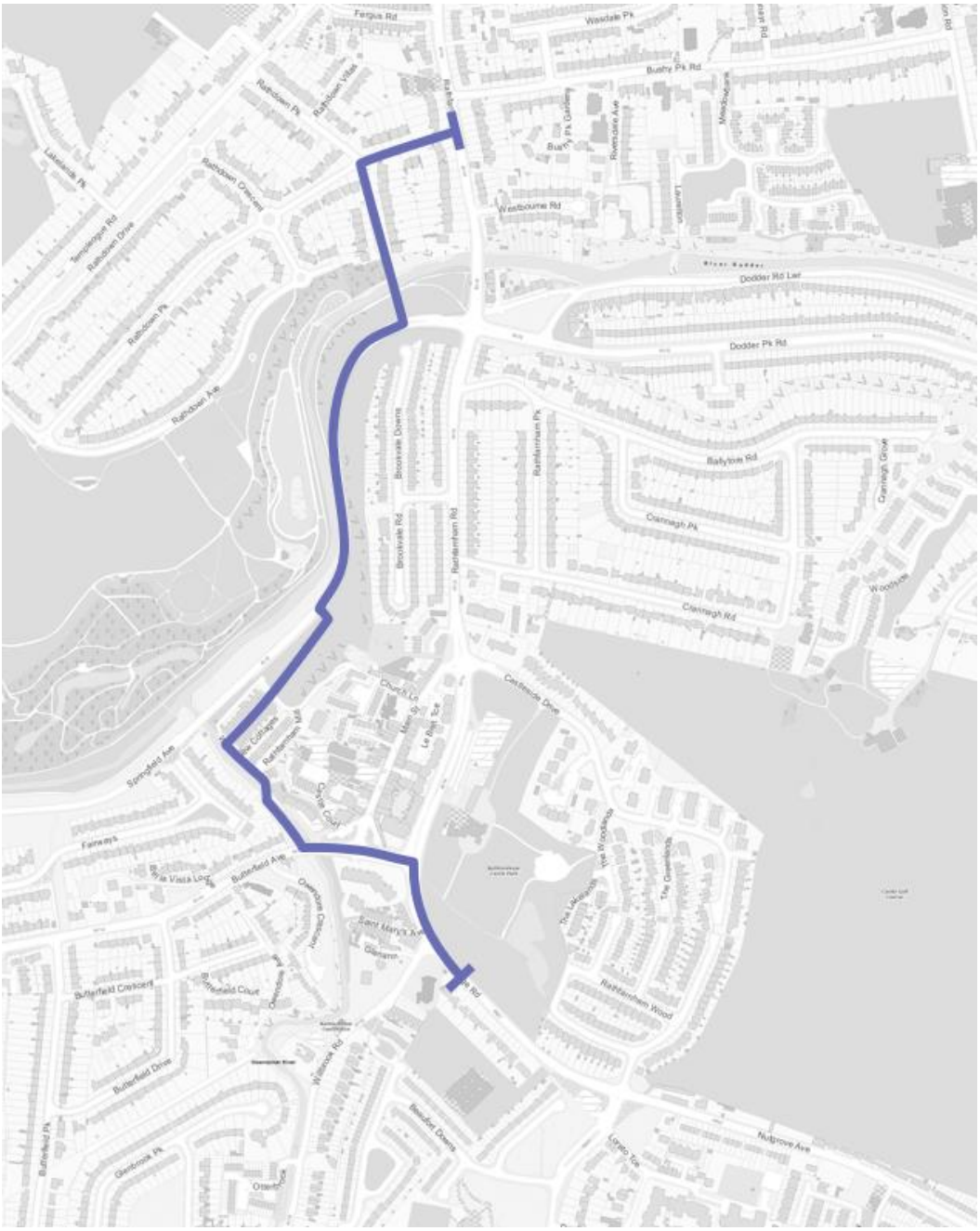

Figure 4.57: Cycle Route Option PC6

Inbound (Northbound): The cycle route would follow the same route as Option PC5 as far as a point approx. 100m west of the junction between Dodder Park Road and Rathfarnham Road, at which point the two-way facility would connect to a new pedestrian and cyclist bridge crossing the River Dodder and linking to Rathdown Park.

Outbound (Southbound): The outbound route would follow the same route as the inbound.

There are two signal-controlled junctions and three pedestrian/toucan crossings along this route.

This segregated cycle route would not align directly with the GDA Cycle Network Plan proposal for Primary Route 10 for the majority of the route (1km).

Cycle Route PC6 scheme proposals are presented in **Figure 4.58** while sample cross-sections are presented in **Figure 4.54**, **Figure 4.55** and **Figure 4.56**.

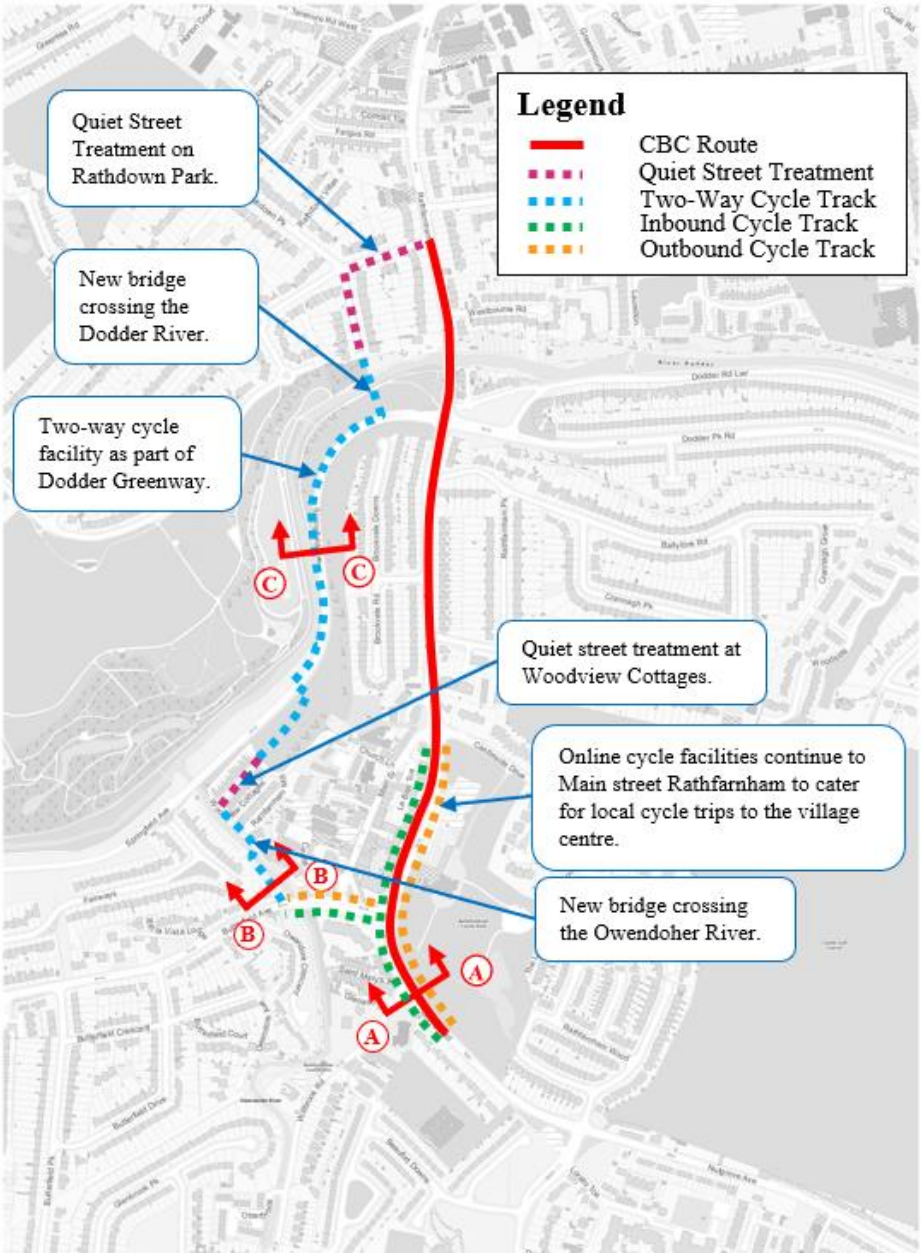

Figure 4.58: Cycle Route PC6 Scheme Proposals (refer to earlier report sections for duplicate cross-sections)

Between Willbrook Road and a point approx. 100m west of the junction between Dodder Park Road and Rathfarnham Road, the infrastructure proposed would be as described in Option PC5. At this point, the scheme would connect to a new pedestrian and cyclist bridge linking to Rathdown Park, where a Quiet Street Treatment would be provided, linking back to the CBC.

In summary, this route option would have the following characteristics:

- Segregated cycle facilities would be provided between Willbrook Road and Texaco Rathfarnham;
- There would be no segregated cycle facilities provided along a 750m section of Rathfarnham Road between Texaco Rathfarnham and Rathdown Park, which is identified as Primary Route 10 within the GDA Cycle Network Plan;
- A new structure would be provided Crossing the Owendoher River;
- A Quiet Street Treatment would be provided on Woodview Cottages linking to the Dodder Greenway Scheme;
- A new structure would be provided crossing the River Dodder and connecting to Rathdown Park; and
- A Quiet Street Treatment would be provided on Rathdown Park.

4.4.1.2.2.3.7 Cycle Route Option PC7

Parallel cycle route option PC7 is presented in **Figure 4.59**.

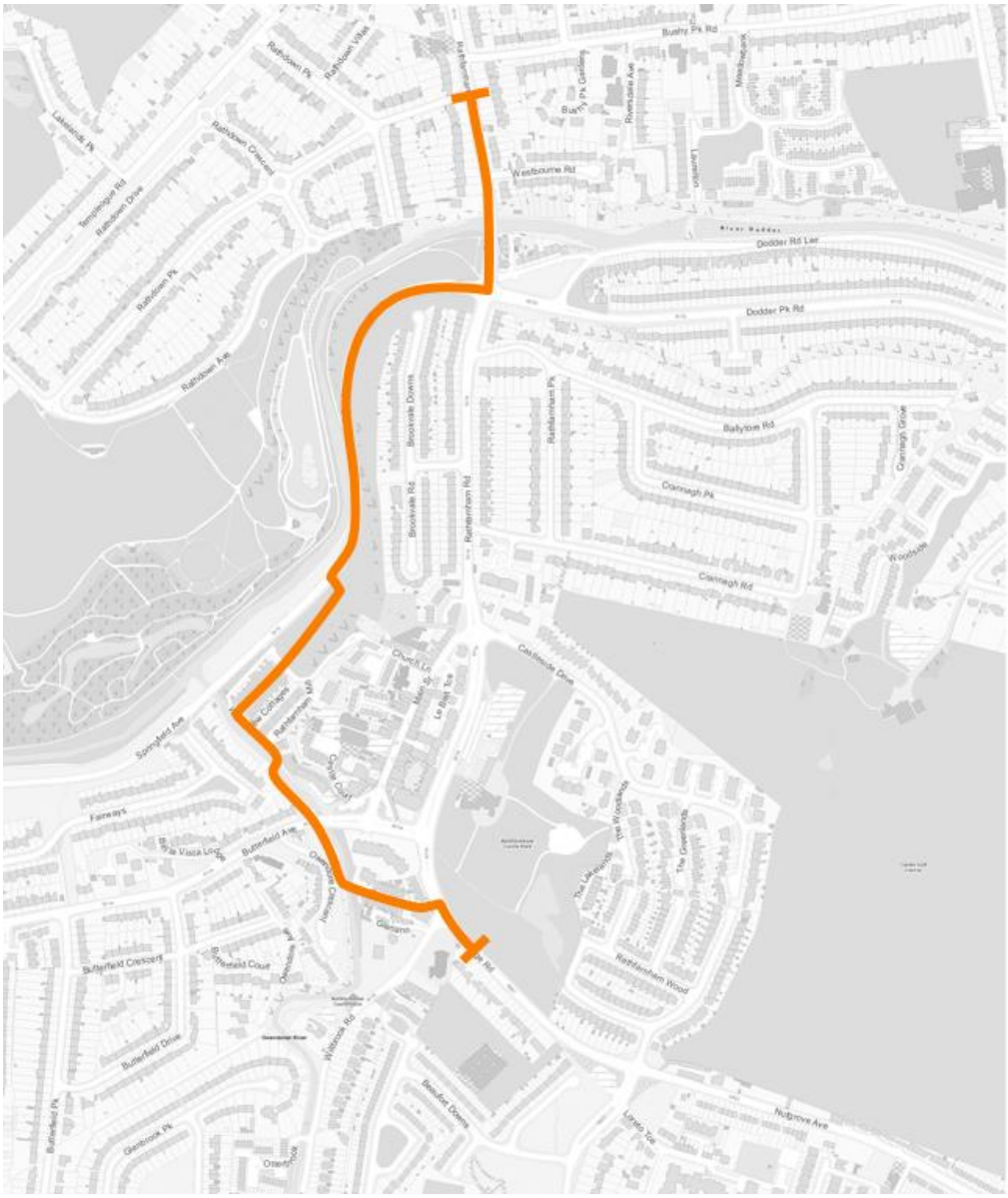

Figure 4.59: Cycle Route Option PC7

Inbound (Northbound): The cycle route would proceed along Rathfarnham Road as far as St Mary's Avenue. At this point, the route would divert to St. Mary's Avenue. This would link to a new structure crossing the Owendoher River to the Owendoher Crescent green area. From here, a dedicated cyclist and pedestrian track would then cross Butterfield Avenue via a new toucan crossing. From this point the cycle route would follow the same route as Option PC5.

Outbound (Southbound): The outbound route would follow the same route as the inbound.

There are three signal-controlled junctions and three pedestrian/toucan crossings along this route.

This segregated cycle route would not align directly with the GDA Cycle Network Plan proposal for Primary Route 10 for the majority of the route (850m).

Cycle Route PC7 scheme proposals are presented in **Figure 4.60** while sample cross-sections are illustrated in **Figure 4.54**, **Figure 4.55** and **Figure 4.56**.

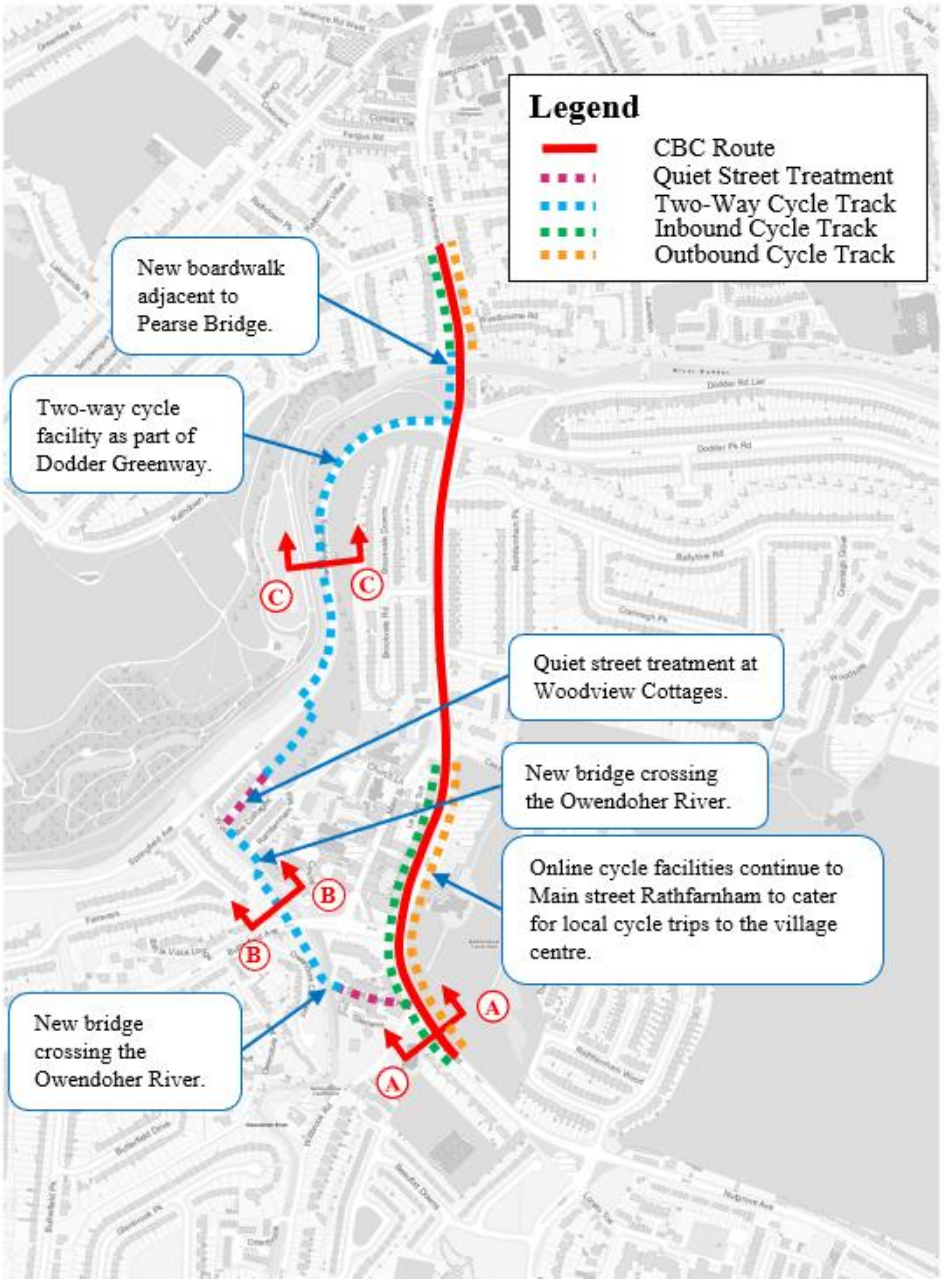

Figure 4.60: Cycle Route PC7 Scheme Proposals (refer to earlier report sections for duplicate cross-sections)

Cycle Route Option PC7 would provide dedicated cycle facilities in each direction on each side of Rathfarnham Road as far as St. Mary's Avenue. Cyclists would divert at St. Mary's Avenue where a Quiet Street Treatment would be provided.

This would link to a new structure crossing the Owendoher River to the Owendoher Crescent green area. From here, a dedicated cyclist and pedestrian track would then cross Butterfield Avenue via a new toucan crossing. From this point as far as Rathdown Park, the infrastructure proposed would be as described in Option PC5.

In summary, this route option would have the following characteristics:

- Segregated cycle facilities would be provided between Willbrook Road and Texaco Rathfarnham;
- There would be no segregated cycle facilities provided along an 500m section of Rathfarnham Road between Texaco Rathfarnham and Dodder Park Road, which is identified as Primary Route 10 within the GDA Cycle Network Plan;
- A Quiet Street Treatment would be provided on St. Mary's Avenue;
- Two new structures would be provided crossing the Owendoher River; and
- A Quiet Street Treatment would be provided on Woodview Cottages linking to the Dodder Greenway Scheme;
- A new boardwalk structure would be provided at the Pearse Bridge; and
- Segregated cycle facilities would be provided on Rathfarnham Road between the River Dodder and Rathdown Park.

4.4.1.2.2.3.8 Cycle Route Option PC8

Parallel cycle route option PC8 is presented in **Figure 4.61**.

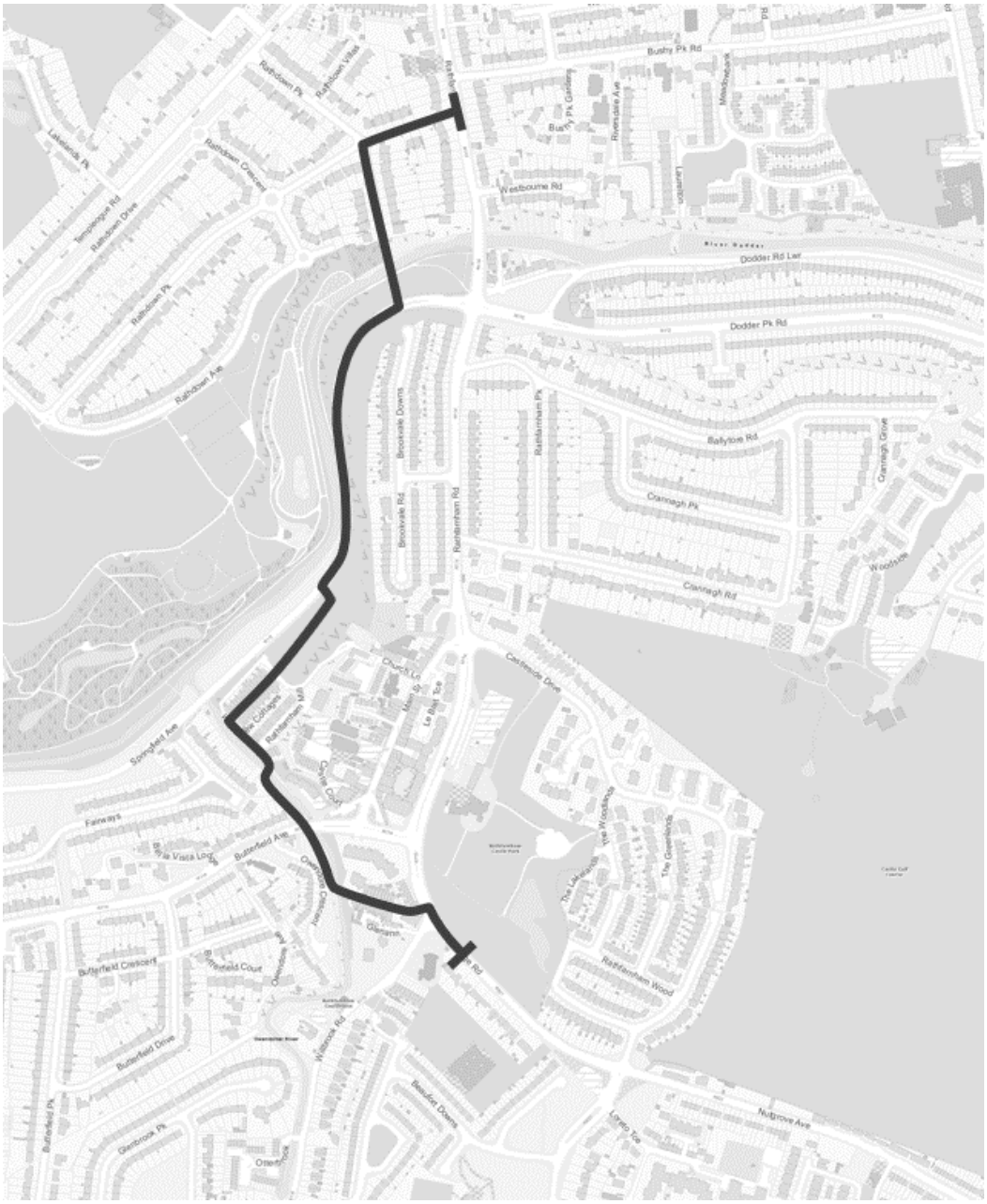

Figure 4.61: Cycle Route Option PC8

Inbound (Northbound): The cycle route would follow the same route as Option PC7 as far as Dodder View Road, at which point the cycle track would cross the River Dodder via a new bridge linking to Rathdown Park where a Quiet Street Treatment would be provided connecting back to the CBC.

Outbound (Southbound): The outbound route would follow the same route as the inbound.

There is one signal-controlled junction and three pedestrian/toucan crossings along this route.

This segregated cycle route would not align directly with the GDA Cycle Network Plan proposal for Primary Route 10 for the majority of the route (1.1km).

Cycle Route PC8 scheme proposals are presented in **Figure 4.62** while sample cross-sections are presented in **Figure 4.54**, **Figure 4.55** and **Figure 4.56**.

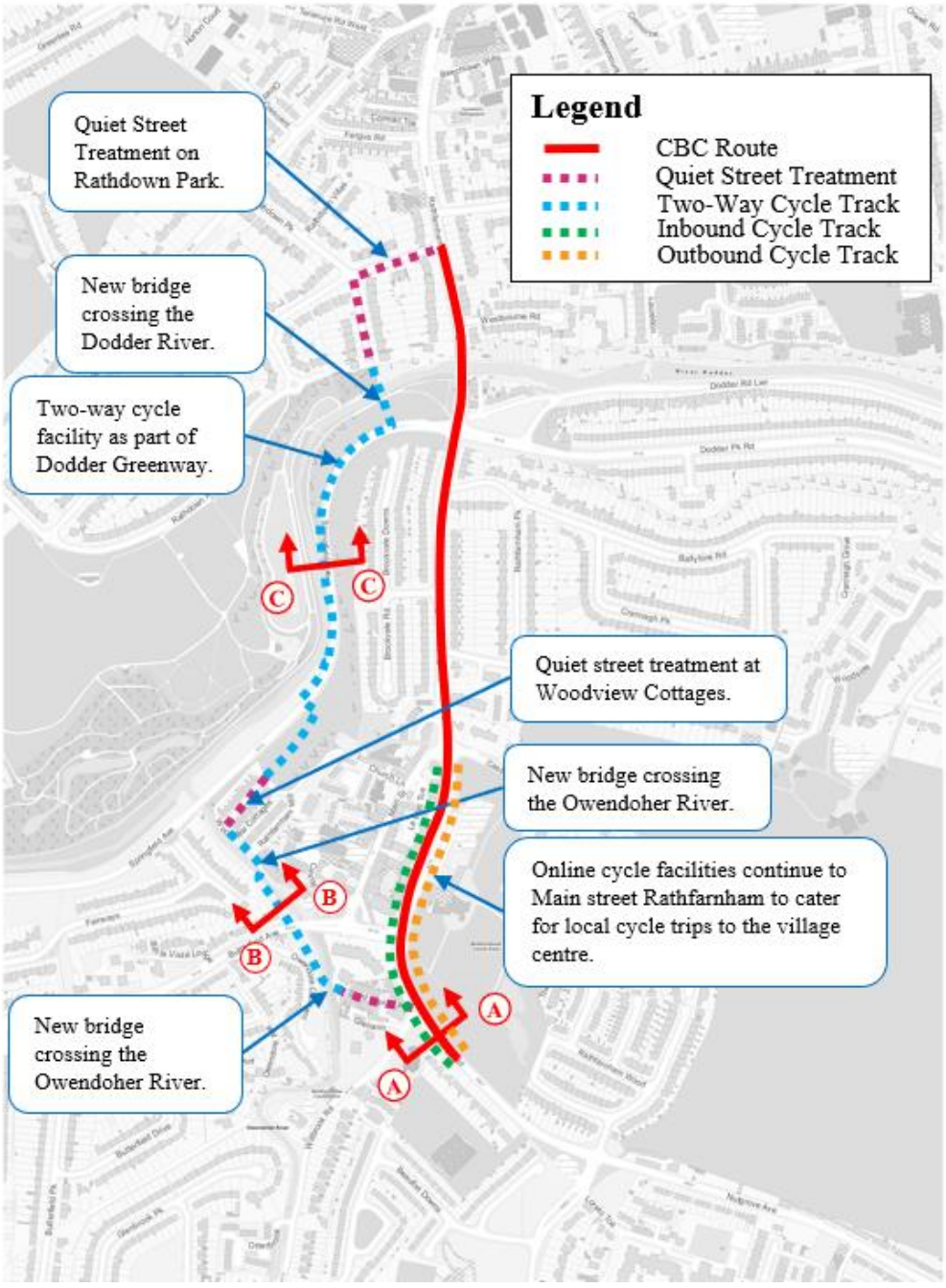

Figure 4.62: Cycle Route PC8 Scheme Proposals (refer to earlier report sections for duplicate cross-sections)

Between Willbrook Road and a point approx. 100m west of the junction between Dodder Park Road and Rathfarnham Road, the infrastructure proposed would be as described in Option PC7. Between this point and Rathdown Park, the infrastructure proposed would be as described in Option PC2.

In summary, this route option would have the following characteristics:

- Segregated cycle facilities would be provided between Willbrook Road and Texaco Rathfarnham;
- There would be no segregated cycle facilities provided along a 750m section of Rathfarnham Road between Texaco Rathfarnham and Rathdown Park, which is identified as Primary Route 10 within the GDA Cycle Network Plan;
- A Quiet Street Treatment would be provided on St. Mary's Avenue;
- Two new structures would be provided crossing the Owendoher River;
- A Quiet Street Treatment would be provided on Woodview Cottages linking to the Dodder Greenway scheme;
- A new bridge structure would be provided linking to Rathdown Park; and
- A Quiet Street Treatment would be provided on Rathdown Park.

4.4.1.2.2.3.9 Cycle Route Option PC9

Parallel cycle route option PC9 is presented in **Figure 4.63**.

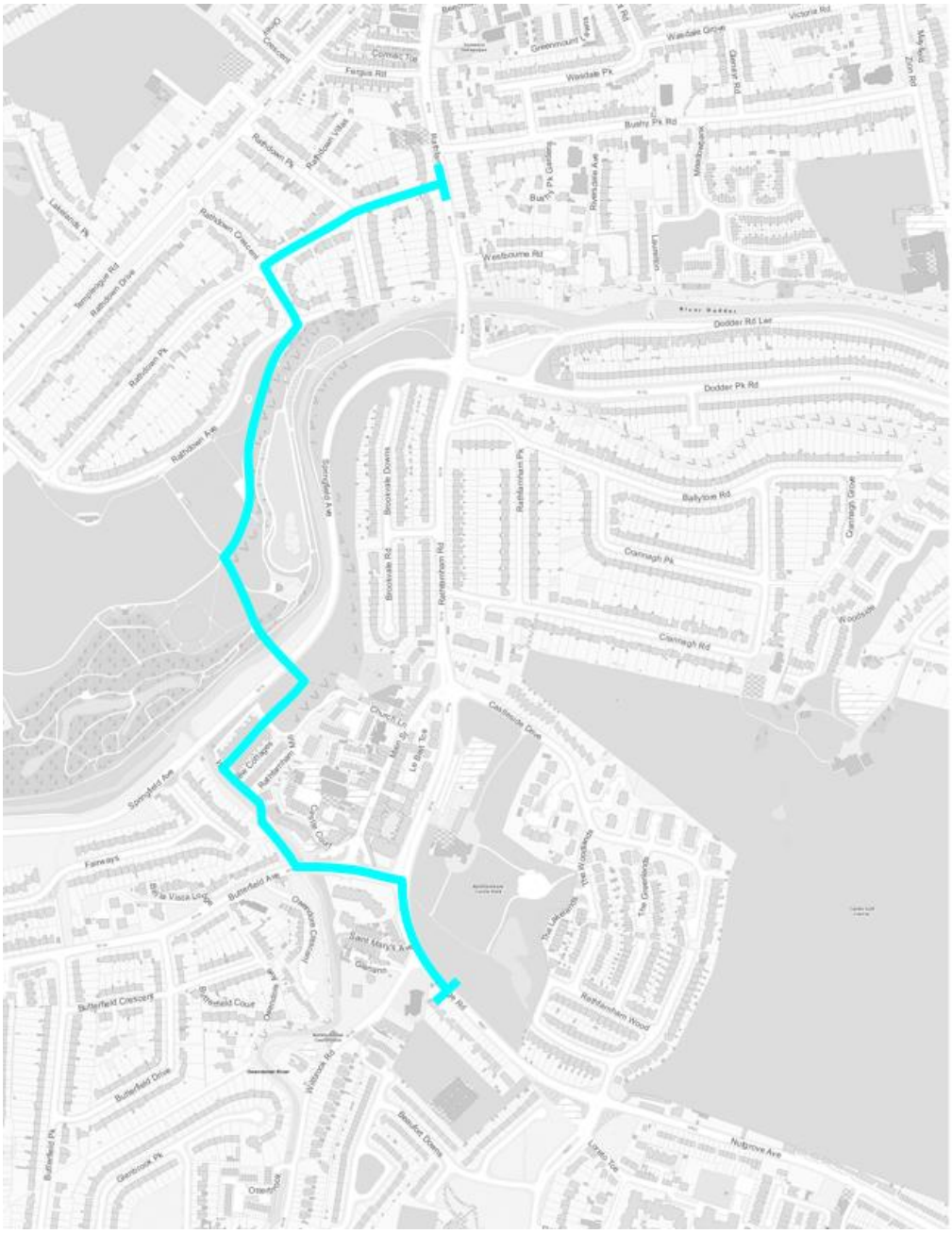

Figure 4.63: Cycle Route Option PC9

Inbound (Northbound): The cycle route would follow the same route as Option PC5 as far as Springfield Avenue, at which point a toucan crossing would be provided crossing Springfield Avenue, connecting to the Dodder Greenway pedestrian and cyclist bridge. From here, a dedicated cycle track would be provided through Bushy Park, connecting to Rathdown Crescent.
From here, a Quiet Street Treatment would be provided along Rathdown Crescent and Rathdown Park, linking back to the CBC.

Outbound (Southbound): The outbound route would follow the same route as the inbound.

There is one signal-controlled junction and two pedestrian/toucan crossings along this route.

This segregated cycle route would not align directly with the GDA Cycle Network Plan proposal for Primary Route 10 for the majority of the route (1.55km).

Cycle Route PC9 scheme proposals are presented in **Figure 4.64** while sample cross-sections are presented in **Figure 4.54**, **Figure 4.55** and **Figure 4.65**.

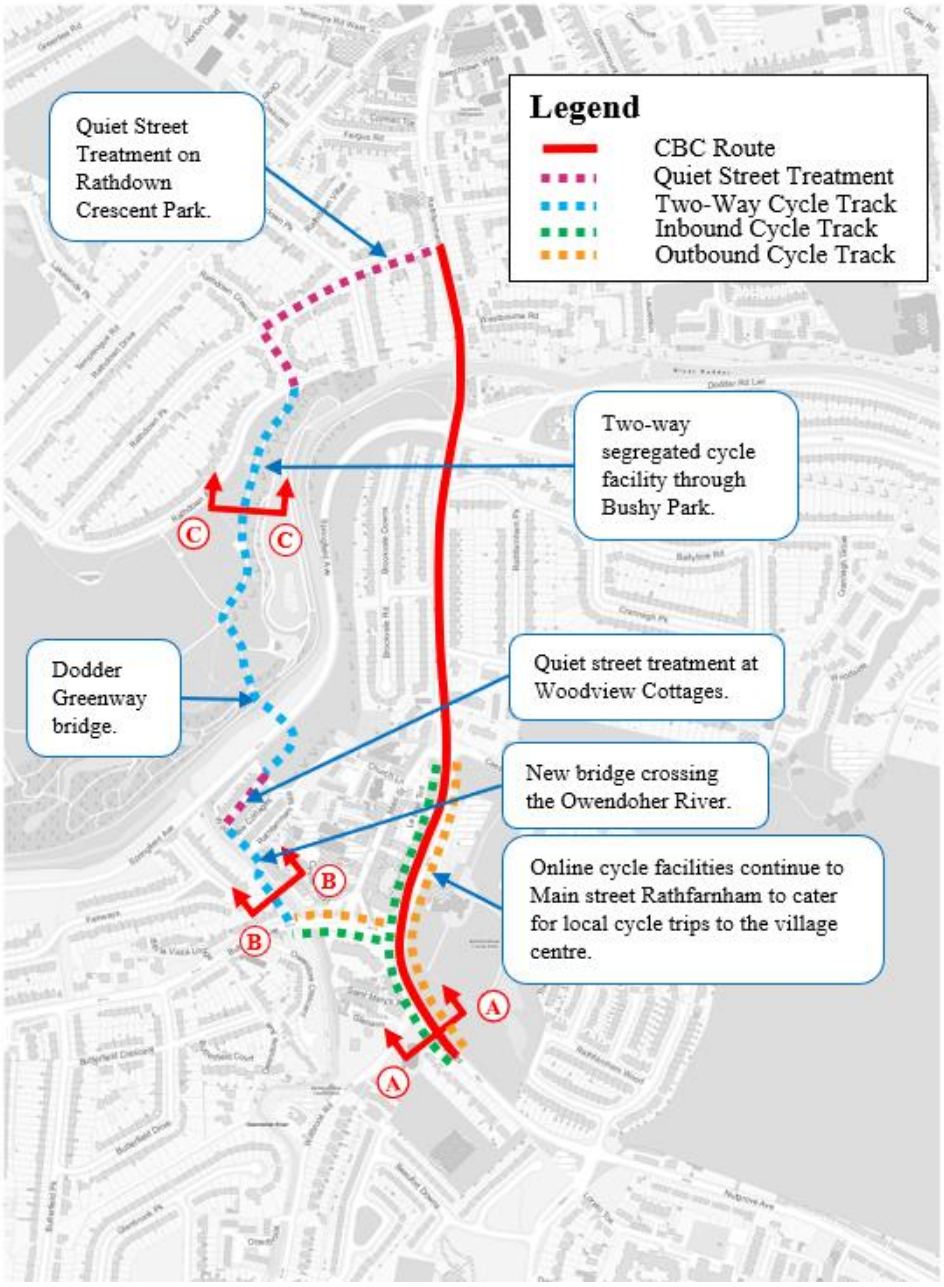

Figure 4.64: Cycle Route PC9 Scheme Proposals (refer to earlier report sections for duplicate cross-sections)

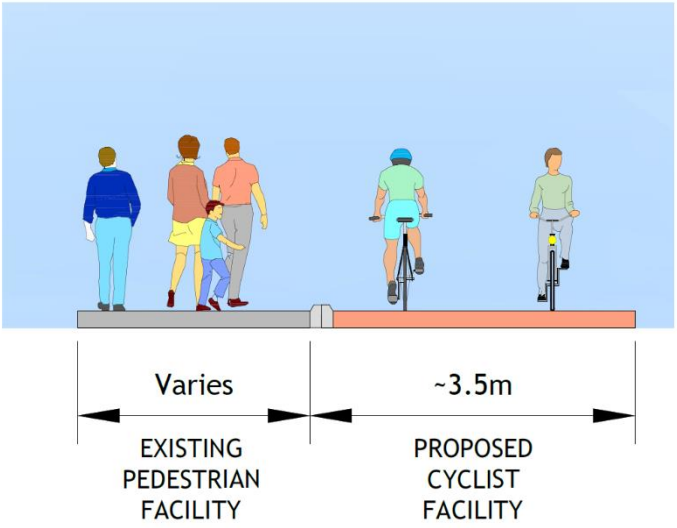

Figure 4.65: Cross-Section C-C (Relevant to PC9 & PC10)

Between Willbrook Road and Springfield Avenue, the infrastructure provided would be as described in Option PC5. From here, a toucan crossing would be provided across Springfield Avenue, linking to the Dodder Greenway bridge crossing the River Dodder into Bushy Park. Within Bushy Park, a segregated cyclist facility would be provided, maintaining existing footways within the park. This would connect to Rathdown Crescent where a Quiet Street Treatment would be provided, connecting to Rathdown Park and linking back to the CBC.

In summary, this route option would have the following characteristics:

- Segregated cycle facilities would be provided between Willbrook Road and Texaco Rathfarnham;
- There would be no segregated cycle facilities provided along a 750m section of Rathfarnham Road between Texaco Rathfarnham and Rathdown Park, which is identified as Primary Route 10 within the GDA Cycle Network Plan;
- A new structure would be provided crossing the Owendoher River;
- A Quiet Street Treatment would be provided on Woodview Cottages linking to the Dodder Greenway Scheme and crossing the River Dodder via a new bridge to be provided as part of that scheme;
- New segregated cyclist facilities would be constructed through Bushy Park; and
- A Quiet Street Treatment would be provided on Rathdown Crescent and Rathdown Park.

4.4.1.2.2.3.10 Cycle Route Option PC10

Parallel cycle route option PC10 is presented in **Figure 4.66.**

Figure 4.66: Cycle Route Option PC10

Inbound (Northbound): The cycle route would follow the same route as Option PC7 as far as Springfield Avenue, at which point a toucan crossing would be provided crossing Springfield Avenue, connecting to the Dodder Greenway pedestrian and cyclist bridge. From here, a dedicated cycle track would be provided through Bushy Park, connecting to Rathdown Crescent. From here, a Quiet Street Treatment would be provided along Rathdown Crescent and Rathdown Park, linking back to the CBC.

Outbound (Southbound): The outbound route would follow the same route as the inbound.

There are two pedestrian/toucan crossings along this route.

This segregated cycle route would not align directly with the GDA Cycle Network Plan proposal for Primary Route 10 for the entirety of the route (1.6km).

Cycle Route PC10 scheme proposals are presented in **Figure 4.67** while sample cross-sections are presented in **Figure 4.54**, **Figure 4.55** and **Figure 4.65**.

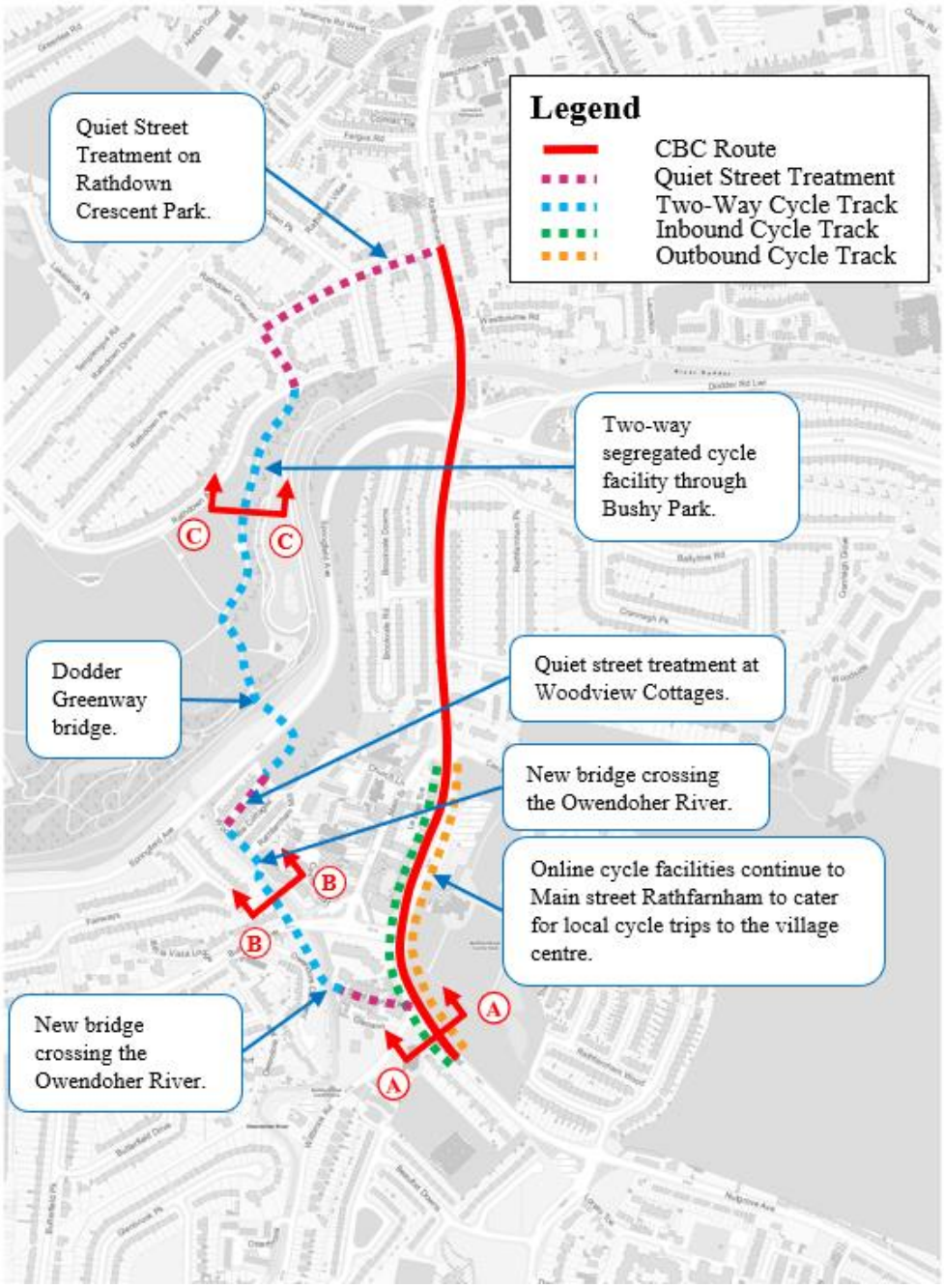

Figure 4.67: Cycle Route PC10 Scheme Proposals (refer to earlier report sections for duplicate cross-sections)

Between Willbrook Road and Springfield Avenue, the infrastructure proposed would be as described in Option PC7. Between Springfield Road and Rathdown Park, the infrastructure proposed would be as described in Option PC9.

In summary, this route option would have the following characteristics:

- Segregated cycle facilities would be provided between Willbrook Road and Texaco Rathfarnham;
- There would be no segregated cycle facilities provided along a 750m section of Rathfarnham Road between Texaco Rathfarnham and Rathdown Park, which is identified as Primary Route 10 within the GDA Cycle Network Plan;
- A Quiet Street Treatment would be provided on St. Mary's Avenue;
- Two new structures would be provided crossing the Owendoher River;
- A Quiet Street Treatment would be provided on Woodview Cottages linking to the Dodder Greenway Scheme and crossing the River Dodder via a new bridge to be provided as part of that scheme;
- New segregated cyclist facilities would be constructed through Bushy Park; and
- A Quiet Street Treatment would be provided on Rathdown Crescent and Rathdown Park.

4.4.1.2.2.4 Section 1 Parallel Cycle Route Options Assessment

Details of the parallel cycle route options assessment undertaken for the Grange Road to Rathdown Park study area section are presented in Appendix F. The relative ranking of route options against the scheme assessment sub-criteria is summarised in **Table 4.9**.

Table 4.9: Section 1 - Parallel Cycle Routes Summary MCA

Appraisal Criteria	Option PC1	Option PC2	Option PC3	Option PC4	Option PC5	Option PC6	Option PC7	Option PC8	Option PC9	Option PC10
1 Capital Cost										
2 Road Safety										
3 Coherence										
4 Directness										
5 Attractiveness										
6 Comfort										
7 Environmental										

In terms of Capital Cost, Option PC1 is the cheapest option due to lower infrastructure costs than other options. Options PC7 and PC8 are the most expensive options, due to significant infrastructure delivery costs. Options PC2, PC3, PC4 and PC9 also perform relatively well under this criterion.

In terms of road safety, Options PC7, PC8 and PC10 perform the best as they would segregate cyclists from large signalised junctions along the main CBC route and would utilise quiet alternative routes.

Options which align with the CBC perform well under the criterion of coherence, since they would deliver cycle infrastructure along Primary Route 10 from the GDA cycle network plan.

As such, PC1 – PC4 perform marginally better than PC5 – PC10 under this criterion.

Similarly, in terms of directness, options which align with the CBC route perform well under this criterion, as the CBC follows the most direct route. As such, PC1 – PC4 perform marginally better than PC5 – PC10 under this criterion.

In terms of Attractiveness, Options PC1 and PC2 perform very poorly, due to the requirement for cyclists to utilise the existing narrow laneway connecting to Brookvale Downs, as well as the fact that the diversion length is not considered long enough to attract cyclists off the CBC route. Options PC3 and PC4 perform marginally better in this regard but are still not considered particularly attractive for cyclists. Options PC7 – PC10 are considered highly attractive options, as they would connect to the Dodder Greenway and would provide high quality cycle infrastructure with good amenity value. They would also have less interaction with busy trafficked routes when compared to other options.

In terms of comfort, Options PC1, PC2, PC9 and PC10 perform marginally worse under this criterion due to the significant proportion of the route which would be made up of Quiet Street Treatment.

Finally, in terms of environment, Options PC4, PC7 and PC8 perform marginally worse than other options. Option PC8 would have a lesser impact on properties than other options but would have a significant impact on trees. Options PC4 and PC7 would have a greater cumulative impact on properties and trees than other options. All other options perform marginally better under this criterion.

It is noted that Options PC9 and PC10 may have a potential impact on the amenity value of Bushy Park, due to the provision for commuter cycling through the park.

4.4.1.2.2.5 Section 1 Parallel Cycle Route Options Conclusion and Preferred Option

Based on the assessment undertaken, route Option PC8 offers more benefits over other options. While it would be the most expensive option, and would have slightly greater environmental impacts, it performs better than other options overall in providing for the five needs of the cyclists, particularly in terms of key criteria, namely road safety and attractiveness.

While it would have some disadvantages over other routes in terms of coherence and directness, it is considered that given the attractiveness, more cyclists would be inclined to use the route, regardless of the directness.

Option PC8 is therefore the preferred parallel cycle route option for the Willbrook Road to Rathdown Park scheme section for the following reasons:

- It would provide an attractive alternative cycle route which avoids the pinch point on Rathfarnham Road. It is considered likely that a higher proportion of cyclists would utilise such a high-quality connection compared to other options linking to the Dodder Greenway, and as such ensure that bus priority along the main CBC route is not compromised;
- It would provide a safe alternative for cyclists, removing them from major junctions along the CBC route;
- The delivery of a new bridge linking to Rathdown Park would significantly reduce the impact on a number of properties on Rathfarnham Road with steep existing driveways; and
- The parallel route represents a 300m longer route when compared to the CBC route. This detour is considered long enough that this additional length, when considered over the entire length of the parallel cycle facility will not be a major deterrent to cyclists.

Parallel Cycle Route Option PC8 in combination with bus priority measures along the CBC will be brought forward to the principal route options assessment for Section 1.

4.4.1.2.3 Grange Road to Terenure Cross – Principal Route Options

4.4.1.2.3.1 Introduction

Numerous submissions received as part of the public consultation raised concerns about the impact of land acquisition along this section of the route. In addition, upon review of the EPR Option proposals with the benefit of topographical survey, it was evident that portions of the EPR Option proposals, namely the Brookvale Downs parallel cycle route as well as the impact on steep driveways on Rathfarnham Road, required further consideration. For these reasons, alternative options have been considered in this area.

4.4.1.2.3.2 Options Considered

Following the initial assessment of Parallel Cycle Route options, a number of options for the delivery of the Rathfarnham to City Centre section from Grange Road to Terenure Cross have been developed. These are:

Option RF1: Two bus lanes and two general traffic lanes provided on Rathfarnham Road south of Brookvale Road with cyclists diverted to Brookvale Downs.

Between Brookvale Road and the River Dodder, two general traffic lanes and an inbound bus lane would be provided with outbound bus priority being maintained through use of signal-controlled priority. Two bus lanes, two general traffic lanes and two 1.5m wide cycle tracks provided on Rathfarnham Road north of the River Dodder as far as Terenure Cross. This option is a version of the EPR Option, refined to reflect issues identified upon review of the topographical survey, namely the existing steep driveway gradients on Rathfarnham Road.

Option RF2: Two bus lanes and two general traffic lanes provided on Rathfarnham Road south of Brookvale Road with cyclists diverted to the preferred parallel route as identified during the initial assessment of parallel cycle route options of the route selection process, detailed in Section 4.4.1.2.2 of this report. Between Brookvale Road and the River Dodder, two general traffic lanes and an inbound bus lane would be provided with outbound bus priority being maintained through use of signal-controlled priority.

Two bus lanes, two general traffic lanes on Rathfarnham Road north of the River Dodder as far as Terenure Cross with two 1.5m wide cycle tracks provided north of Rathdown Park where the parallel cycle route re-joins the CBC.

Option RF3: A combination of bus lanes and signal-controlled priority, with two general traffic lanes and two 1.5m wide cycle tracks provided on Rathfarnham Road between Main Street Rathfarnham and Bushy Park Road. The inbound cycle track would be curtailed for a short section (c.270m) from the Texaco station to c. 100m in advance of the junction with Dodder Park Road. For this short section, cyclists would use the bus lane. Two bus lanes, two general traffic lanes and two 1.5m wide cycle tracks provided on Rathfarnham Road between Bushy Park Road and Terenure Cross.

Option RF4: An inbound bus lane, two general traffic lanes and two 1.5m wide cycle tracks provided on Rathfarnham Road between Main Street Rathfarnham and Bushy Park Road. The inbound cycle track would be curtailed for a short section (c.270m) from the Texaco station to c. 100m in advance of the junction with Dodder Park Road. For this short section, cyclists would use the bus lane. Two bus lanes, two general traffic lanes and two 1.5m wide cycle tracks provided on Rathfarnham Road between Bushy Park Road and Terenure Cross.

Option RF5: An inbound bus lane, two general traffic lanes and two 1.5m wide cycle tracks provided on Rathfarnham Road south of the River Dodder. A combination of bus lanes and signal-controlled priority, with two general traffic lanes and two 1.5m wide cycle tracks provided on Rathfarnham Road between the River Dodder and Bushy Park Road. The inbound cycle track would be curtailed for a short section (c.270m) from the Texaco station to c. 100m in advance of the junction with Dodder Park Road. For this short section, cyclists would use the bus lane. Two bus lanes, two general traffic lanes and two 1.5m wide cycle tracks provided on Rathfarnham Road between Bushy Park Road and Terenure Cross.

Option RF6: A combination of bus lanes and signal-controlled priority, with two general traffic lanes and two 1.5m wide cycle tracks provided on Rathfarnham Road south of the River Dodder. The inbound cycle track would be curtailed for a short section (c.270m) from the Texaco station to c. 100m in advance of the junction with Dodder Park Road.

For this short section, cyclists would use the bus lane. An inbound bus lane, two general traffic lanes and two 1.5m wide cycle tracks provided on Rathfarnham Road between the River Dodder and Bushy Park Road. Two bus lanes, two general traffic lanes and two 1.5m wide cycle tracks provided on Rathfarnham Road between Bushy Park Road and Terenure Cross.

Option RF7: An inbound bus lane, two general traffic lanes and two 1.5m wide cycle tracks provided on Rathfarnham Road between Main Street Rathfarnham and Terenure Cross. The inbound cycle track would be curtailed for a short section (c.270m) from the Texaco station to c. 100m in advance of the junction with Dodder Park Road. For this short section, cyclists would use the bus lane. An outbound bus gate provided on Rathfarnham Road, north of Dodder Park Road.

Option RF8: One-way inbound general traffic, two bus lanes and two 1.5m wide cycle tracks on Rathfarnham Road south of the River Dodder. The inbound cycle track would be curtailed for a short section (c.270m) from the Texaco station to c. 100m in advance of the junction with Dodder Park Road.

For this short section, cyclists would use the bus lane. A combination of bus lanes and signal-controlled priority, with two general traffic lanes and two 1.5m wide cycle tracks provided on Rathfarnham Road between the River Dodder and Bushy Park Road. Two bus lanes, two general traffic lanes and two 1.5m wide cycle tracks provided on Rathfarnham Road between Bushy Park Road and Terenure Cross.

Option RF9: One-way inbound general traffic and two bus lanes provided on Rathfarnham Road south of the River Dodder. Two bus lanes and two general traffic lanes provided on Rathfarnham Road between the River Dodder and Bushy Park Road. Cyclists diverted to the preferred parallel route as identified during the initial assessment of parallel cycle route options of the route selection process, detailed in Section 4.4.1.2.2 of this report. Two bus lanes, two general traffic lanes and two 1.5m wide cycle tracks provided on Rathfarnham Road between Bushy Park Road and Terenure Cross.

4.4.1.2.3.2.1 Alternative Options Considered

A number of other options were also considered in the area but were not carried forward for the reasons briefly outlined below:

- **Option of a bus gate along Rathfarnham Road between Castleside Drive and Dodder Park Road**. This option was not considered practicable as through traffic would be required to undertake a diversion of up to 2km to continue beyond the bus gate, resulting in a route almost four times as long when compared to the most direct route. Similarly, local access for residents along Rathfarnham Road could be increased by up to 2.5km resulting in a route almost 10 times as long for some residents compared to the most direct route. This diversion length is considered to be too disruptive in this area and as such a bus gate at this location was not considered further.
- **Option of a bus gate along Rathfarnham Road between Dodder Park Road and Rathdown Park**. A variety of bus gate options were considered in this area.

A two-way bus gate was not considered practicable as through traffic in each direction would be required to undertake a diversion of up to 3km to continue beyond the bus gate, resulting in a route almost six times as long when compared to the most direct route.

Similarly, local access for residents along Rathfarnham Road could be increased by up to 2.5km resulting in a route over 10 times as long for some residents compared to the most direct route.

Given the constraints in this area, the provision of a one-way bus gate in this location was given further consideration. In light of the proposal to provide an inbound bus gate along Templeogue Road (where physical space is not available for other options) as part of the Templeogue to Terenure section, an outbound bus gate was considered to be the most appropriate option, and this option was brought through to the MCA.

4.4.1.2.3.2.2 Route Option RF1

Route Description

Route option RF1 is presented in **Figure 4.68**.

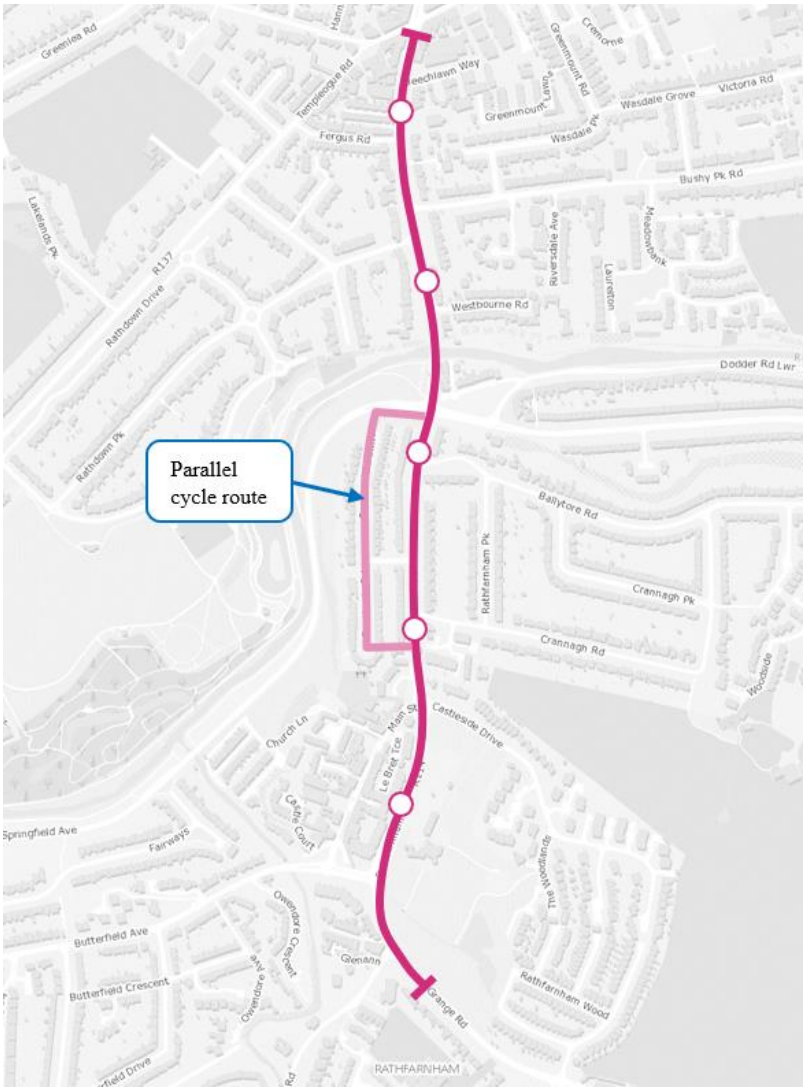

Figure 4.68: Route Option RF1

Inbound: This section of the route would commence on Grange Road just south of the junction with Willbrook Road. The CBC route would proceed along Rathfarnham Road as far as Terenure Cross. Cycle facilities would be provided on the CBC from Willbrook Road as far as the Texaco service station on Rathfarnham Road, just north of Rathfarnham Village. At this point, cyclists would be diverted down an existing shared pedestrian and cyclist laneway connecting to a Quiet Street Treatment on Brookvale Downs. This would connect to the southern side of Dodder View Road, linking cyclists back to the CBC at the junction of Rathfarnham Road and Dodder Park Road. Cycle facilities would be provided on the CBC between here and Terenure Cross. This section of the route would end at Terenure Cross.

Outbound: The outbound route would follow the same route as the inbound route.

Stops: A total of five stops would likely be provided in each direction along this route section, indicatively annotated in **Figure 4.68**.

Indicative Scheme Design

Figure 4.69 illustrates the indicative scheme design for this route option. The location of cross-sections and junctions referenced in subsequent sections describing this route option are also illustrated in this figure.

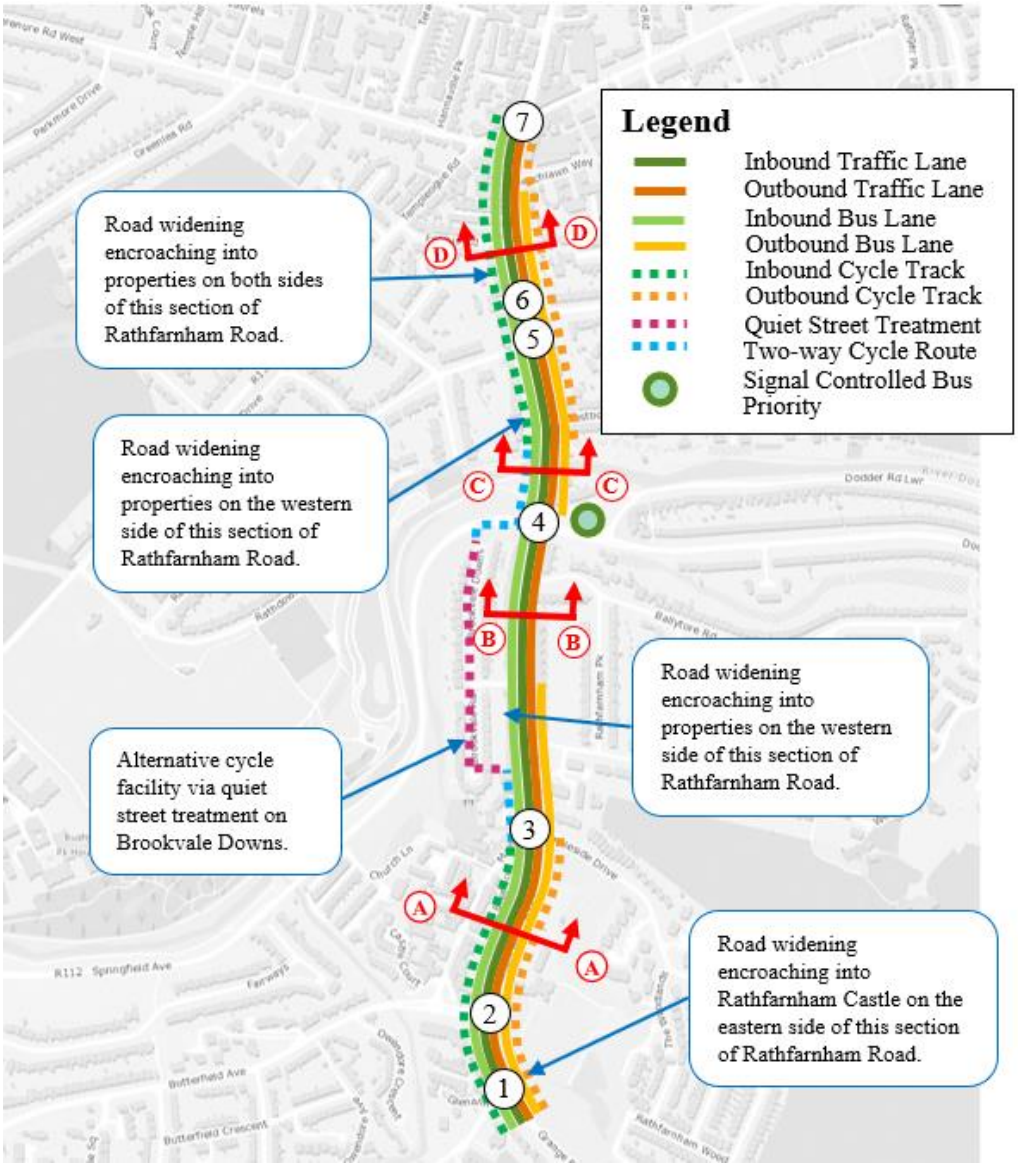

Figure 4.69: Route Option RF1 Indicative Scheme Design

This section of the route would commence on Grange Road just south of the junction with Willbrook Road. Between Willbrook Road and Castleside Drive, a cross-section consisting of a dedicated bus lane, a general traffic lane and a 2.0m wide cycle track in each direction would be provided. The proposed cross-section along this section of Rathfarnham Road is presented in **Figure 4.70**.

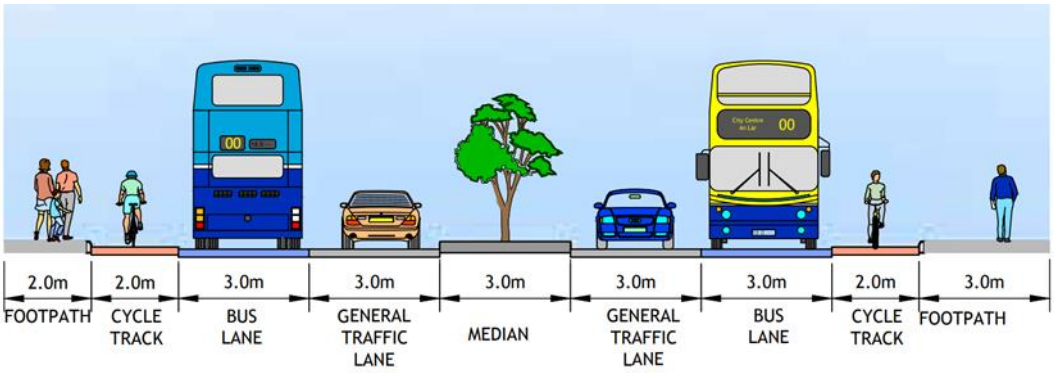

Figure 4.70: Cross-Section A-A (relevant to all options)

At the junction between Castleside Drive and Rathfarnham Road, cyclists would be directed to a two-way facility on the western side of Rathfarnham Road, and onwards via an existing laneway to Brookvale Downs where a Quiet Street Treatment would be provided. Along the main CBC route, a dedicated bus lane and a general traffic lane would be provided in each direction between Castleside Drive and Brookvale Road. Due to the constraints described in Section 4.3.3.1, between Brookvale Road and Dodder Park Road, the Cross section would consist of a dedicated inbound bus lane and a general traffic lane in each direction.

The proposed cross-section within this section of the scheme is presented in **Figure 4.71**. This cross-section would result in widening into adjacent properties on the western side of Rathfarnham Road between Castleside Drive and Brookvale Road.

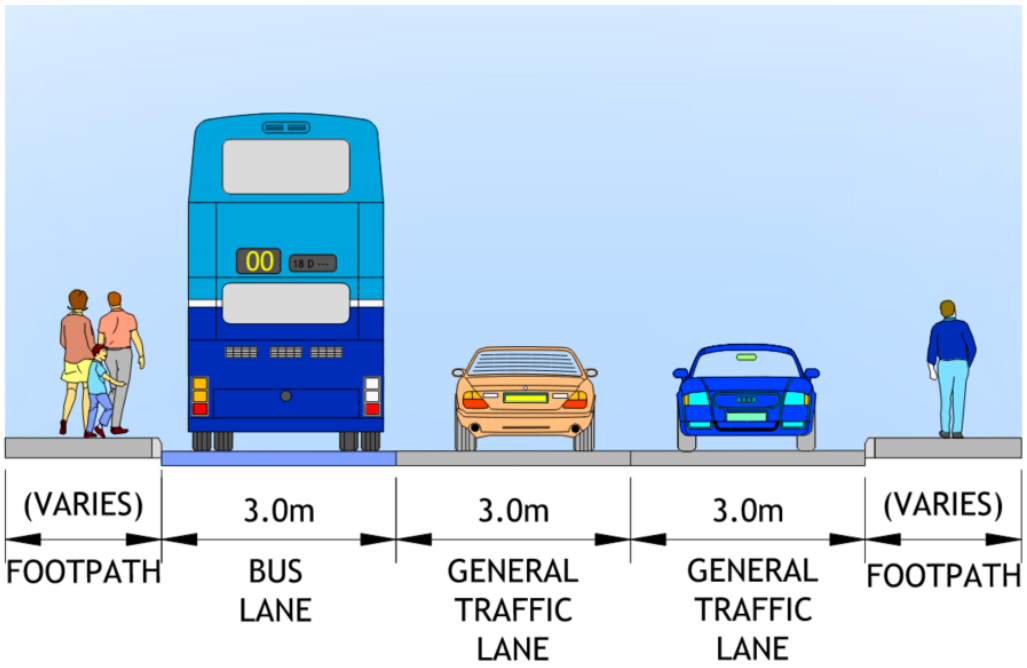

Figure 4.71: Cross-Section B-B (relevant to RF1 and RF2)

Cycle facilities would re-join the main CBC route at Dodder View Road and cross the River Dodder via a new boardwalk structure adjacent to the Pearse Bridge. The proposed cross-section within this section is indicated in **Figure 4.72**.

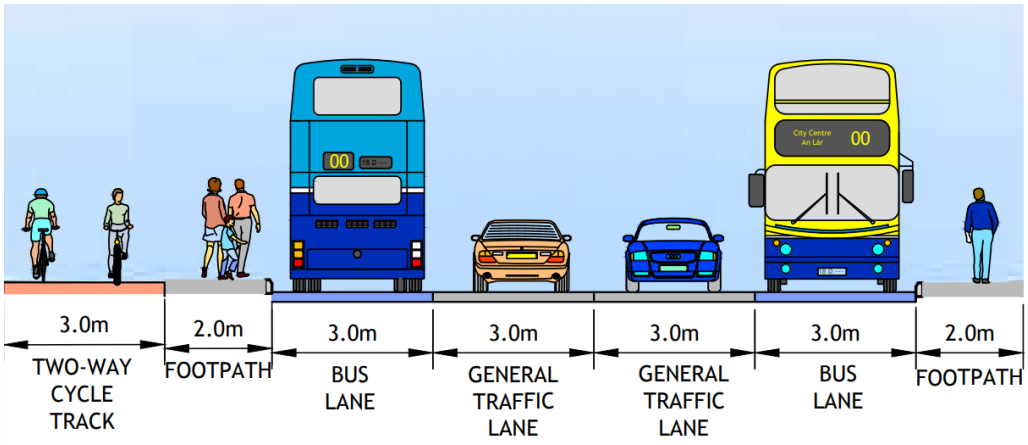

Figure 4.72: Cross-Section C-C (Relevant to RF1)

North of Pearse Bridge, a toucan crossing would be provided, and the cross-section would revert to a dedicated bus lane, a general traffic lane, and a 1.5m wide cycle track in each direction as far as Terenure Cross. This represents a change when compared to the EPR option which proposed 2.0m wide cycle tracks in this location. This change has been incorporated in order to reduce the impacts on steep driveways on Rathfarnham Road. The proposed cross-section in this location is indicated in **Figure 4.73**.

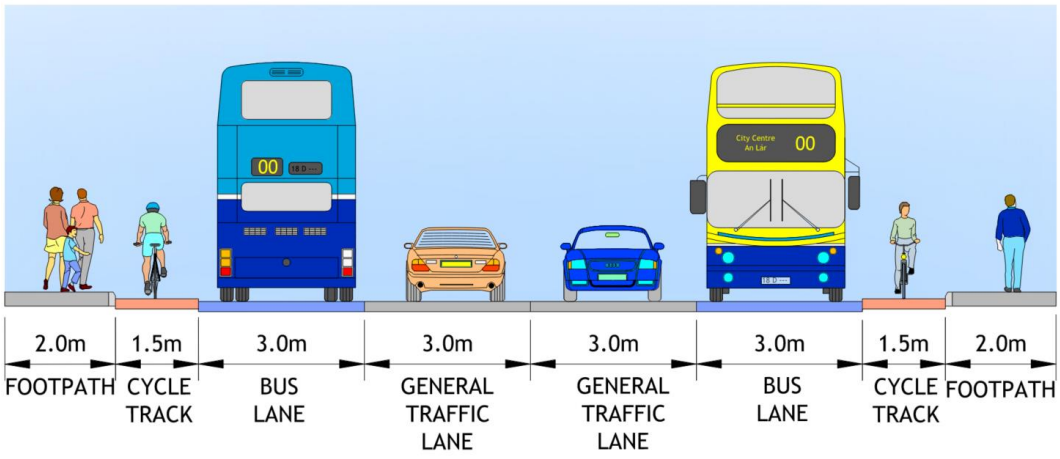

Figure 4.73: Route Option RF1 Cross-Section D-D (relevant to RF1, RF2, RF3, RF4, RF5, RF6, RF8 and RF9)

In summary, this route option would have the following characteristics:

- Fully segregated bus priority would be provided throughout this scheme section, with the exception of a short section between Dodder Park Road and Brookvale Road where no outbound bus lane would be provided. Through this section, bus priority would be secured through signal-controlled priority;
- 2.0m wide cycle tracks would be provided in each direction between Willbrook Road and Castleside Drive;
- Alternative cycle facility would be provided linking to Brookvale Downs, where a Quiet Street Treatment would be provided;

- A new boardwalk structure would be provided adjacent to the Pearse Bridge; and
- 1.5m wide cycle tracks would be provided in each direction from immediately north of the River Dodder to Terenure Cross.

Junctions:

There are seven signalised junctions along this route option, some of which would require upgrading to facilitate bus priority. The locations of these junctions are presented in **Figure 4.69** and discussed below:

1. **Grange Road/Rathfarnham Road/Willbrook Road:** Adjustments to the junction layout would be required to facilitate the outbound bus lane and the cycle tracks on approach to the junction, as well as to bring the inbound bus lane to the stop line. There would also be a potential requirement to relocate/provide new signal equipment.
2. **Rathfarnham Road/Butterfield Avenue:** Adjustments to the junction layout would be required to facilitate the bus lanes and cycle tracks on approach to the junction. There would also be a potential requirement to relocate/provide new signal equipment.
3. **Rathfarnham Road/Castleside Drive:** Adjustments to the junction layout would be required to facilitate the bus lanes and cycle tracks on approach to the junction. There would also be a potential requirement to relocate/provide new signal equipment.
4. **Rathfarnham Road/Dodder Park Road:** Adjustments to the junction layout would be required to facilitate the bus lanes and cycle tracks on approach to the junction. There would also be a potential requirement to relocate/provide new signal equipment.
5. **Rathfarnham Road/Rathdown Park:** Adjustments to the junction layout would be required to facilitate the bus lanes and cycle tracks on approach to the junction. There would also be a potential requirement to relocate/provide new signal equipment.
6. **Rathfarnham Road/Bushy Park Road:** Adjustments to the junction layout would be required to facilitate the bus lanes and cycle tracks on approach to the junction. There would also be a potential requirement to relocate/provide new signal equipment.
7. **Terenure Cross:** Adjustments to the junction layout would be required to facilitate the bus lanes and cycle tracks on approach to the junction. There would also be a potential requirement to relocate/provide new signal equipment.

4.4.1.2.3.3 Route Option RF2

Route Description

Route option RF2 is presented in **Figure 4.74**.

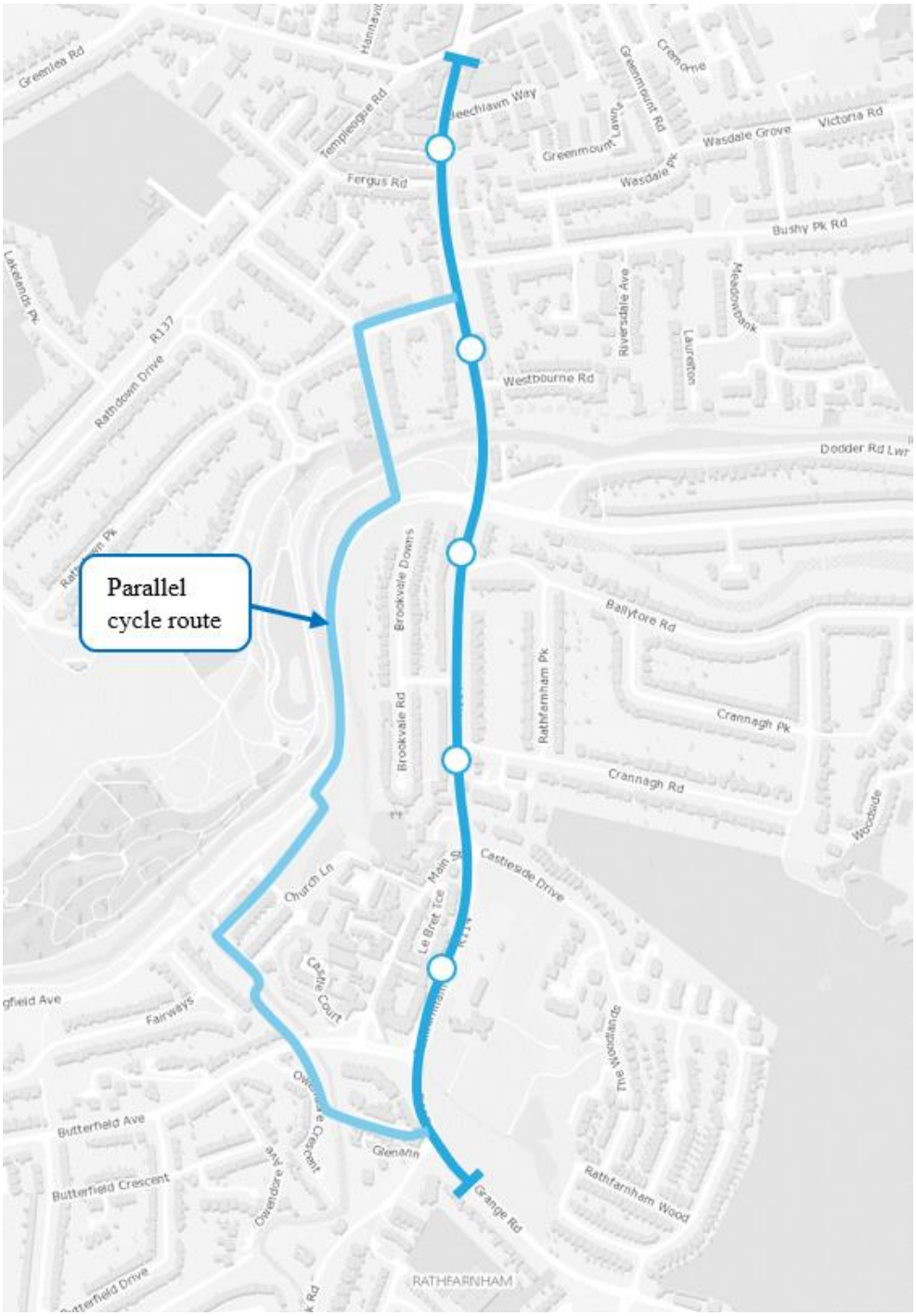

Figure 4.74: Route Option RF2

Inbound: This section of the route would commence on Grange Road just south of the junction with Willbrook Road. The CBC route would proceed along Rathfarnham Road as far as Terenure Cross. At the junction with Willbrook Road, cyclists would be directed to St. Mary's Avenue.

This would link to a new structure crossing the Owendoher River to the Owendoher Crescent green area. From here, a dedicated cyclist and pedestrian track would then cross Butterfield Avenue, connecting to a new proposed pedestrian and cyclist link crossing the Owendoher River via a second new structure and connecting to Woodview Cottages. The proposed cycle facility would then link to the Dodder Greenway Scheme. This would then link to a new pedestrian and cyclist bridge linking to Rathdown Park, linking back to the CBC. From here, cyclists would continue on the CBC route as far as Terenure Cross.

Outbound: The outbound route would follow the same route as the inbound route.

Stops: A total of four stops would likely be provided in each direction along this route section, indicatively annotated in **Figure 4.75**.

Indicative Scheme Design

Figure 4.75 illustrates the indicative scheme design for this route option. The location of cross-sections and junctions referenced in subsequent sections describing this route option are also presented in this figure.

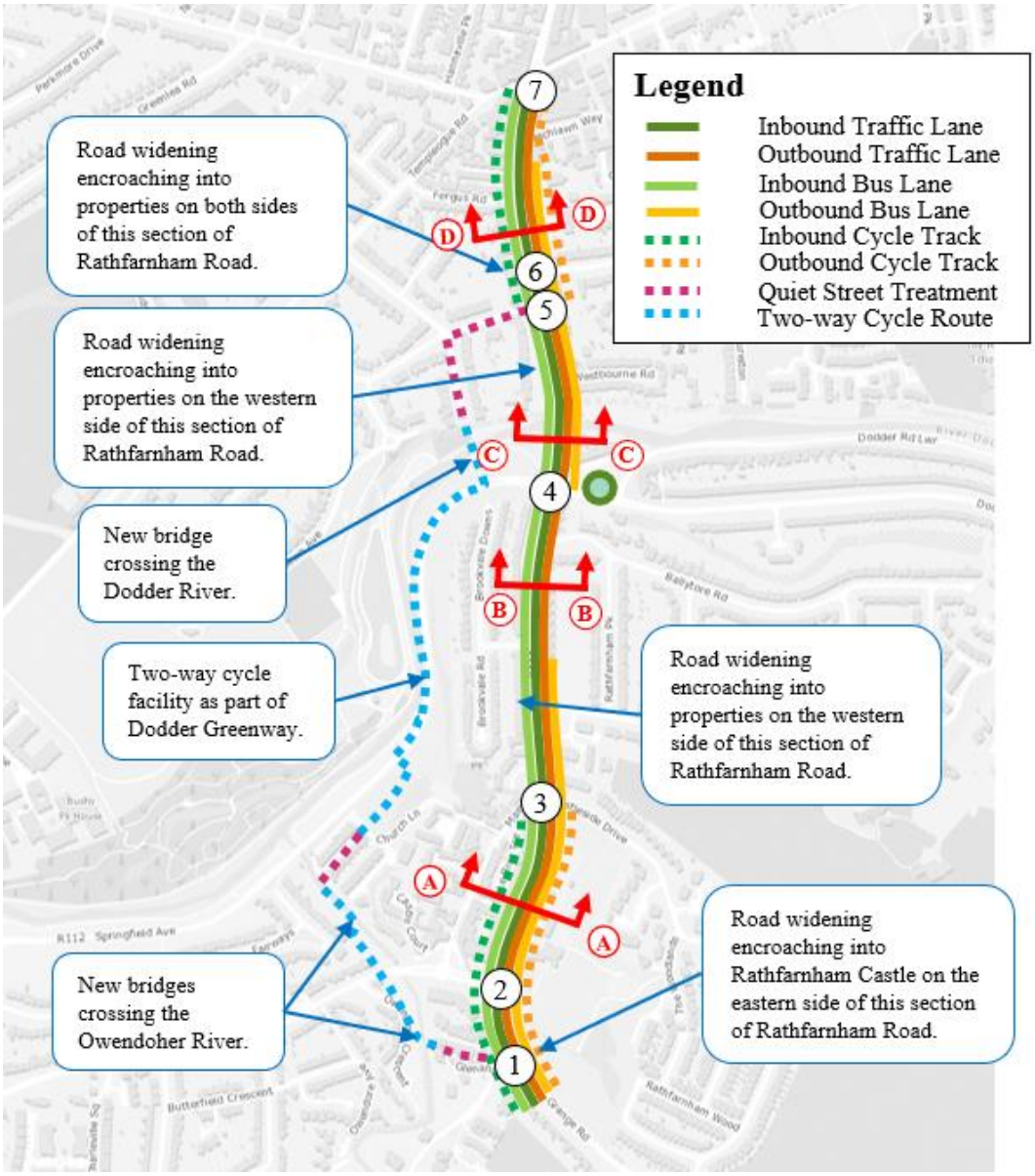

Figure 4.75: Route Option RF2 Indicative Scheme Design (refer to earlier report sections for duplicate cross-sections)

This section of the route would commence on Grange Road just south of the junction with Willbrook Road. Between Willbrook Road and Castleside Drive, a cross-section consisting of a dedicated bus lane, a general traffic lane and a 2.0m wide cycle track in each direction would be provided. The proposed cross-section along this section of Rathfarnham Road is presented in **Figure 4.70**.

At the junction between Rathfarnham Road and Willbrook Road, cyclists would be directed to a Quiet Street Treatment on St. Mary's Avenue, which would link to an alternative cycle facility connecting to the Dodder Greenway and re-joining the CBC at Rathdown Park. Along the main CBC route, a dedicated bus lane and a general traffic lane would be provided in each direction between Castleside Drive and Brookvale Road.

This cross-section would result in widening into adjacent properties on the western side of Rathfarnham Road between Castleside Drive and Brookvale Road. Between Brookvale Road and Dodder Park Road, the cross section would consist of a dedicated inbound bus lane and a general traffic lane in each direction. Outbound through this section, bus priority would be secured through signal-controlled priority. This proposed cross-section is presented in **Figure 4.71**.

North of the River Dodder, an outbound bus lane would also be provided. This proposed cross-section is presented in **Figure 4.76.**

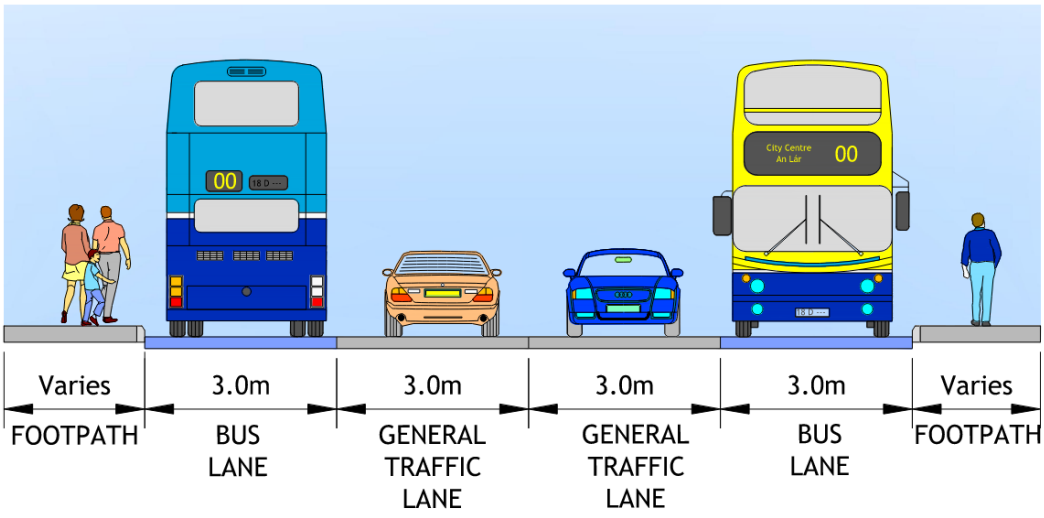

Figure 4.76: Cross-Section C-C (Relevant to RF2)

At Rathdown Park, cyclists re-join the CBC and the cross-section would revert to a dedicated bus lane, a general traffic lane, and a 1.5m wide cycle track in each direction as far as Terenure Cross. This represents a change when compared to the EPR option which proposed 2.0m wide cycle tracks in this location. This change has been incorporated in order to reduce the impacts on steep driveways on Rathfarnham Road. The proposed cross-section in this location is indicated in **Figure 4.73**.

In summary, this route option would have the following characteristics:

- Fully segregated bus priority would be provided throughout this scheme section, with the exception of a short section between Dodder Park Road and Brookvale Road where no outbound bus lane would be provided;
- 2.0m wide cycle tracks would be provided in each direction between Willbrook Road and Castleside Drive;
- Alternative cycle facility would be provided utilising a Quiet Street Treatment on St. Mary's Avenue and linking to the proposed Dodder Greenway via two structures crossing the Owendoher River.
  This facility would link to Rathdown Park via a new cyclists and pedestrian bridge structure where a Quiet Street Treatment would be provided; and
- 1.5m wide cycle tracks would be provided between Rathdown Park and Terenure Cross.

Junctions:

There are seven signalised junctions along this route option, some of which would require upgrading to facilitate bus priority. The locations of these junctions are presented in **Figure 4.75** and discussed below:

1. **Grange Road/Rathfarnham Road/Willbrook Road:** Adjustments to the junction layout would be required to facilitate the outbound bus lane and the cycle tracks on approach to the junction, as well as to bring the inbound bus lane to the stop line. There would also be a potential requirement to relocate/provide new signal equipment. A new high-quality crossing would be provided at this junction as well as a short section of two-way cycle track to link cyclists to the alternative route via St. Mary's Avenue.
2. **Rathfarnham Road/Butterfield Avenue:** Adjustments to the junction layout would be required to facilitate the bus lanes and cycle tracks on approach to the junction. There would also be a potential requirement to relocate/provide new signal equipment.
3. **Rathfarnham Road/ Castleside Drive:** Adjustments to the junction layout would be required to facilitate the bus lanes and cycle tracks on approach to the junction. There would also be a potential requirement to relocate/provide new signal equipment.
4. **Rathfarnham Road/Dodder Park Road:** Adjustments to the junction layout would be required to facilitate the bus lanes on approach to the junction. There would also be a potential requirement to relocate/provide new signal equipment.
5. **Rathfarnham Road/Rathdown Park:** Adjustments to the junction layout would be required to facilitate the bus lanes and cycle tracks on approach to the junction. There would also be a potential requirement to relocate/provide new signal equipment. A high-quality right turning facility would be provided for southbound cyclists accessing Rathdown Park.
6. **Rathfarnham Road/Bushy Park Road:** Adjustments to the junction layout would be required to facilitate the bus lanes and cycle tracks on approach to the junction. There would also be a potential requirement to relocate/provide new signal equipment.
7. **Terenure Cross:** Adjustments to the junction layout would be required to facilitate the bus lanes and cycle tracks on approach to the junction. There would also be a potential requirement to relocate/provide new signal equipment.

4.4.1.2.3.4 Route Option RF3

Route Description

Route option RF3 is presented in **Figure 4.77**.

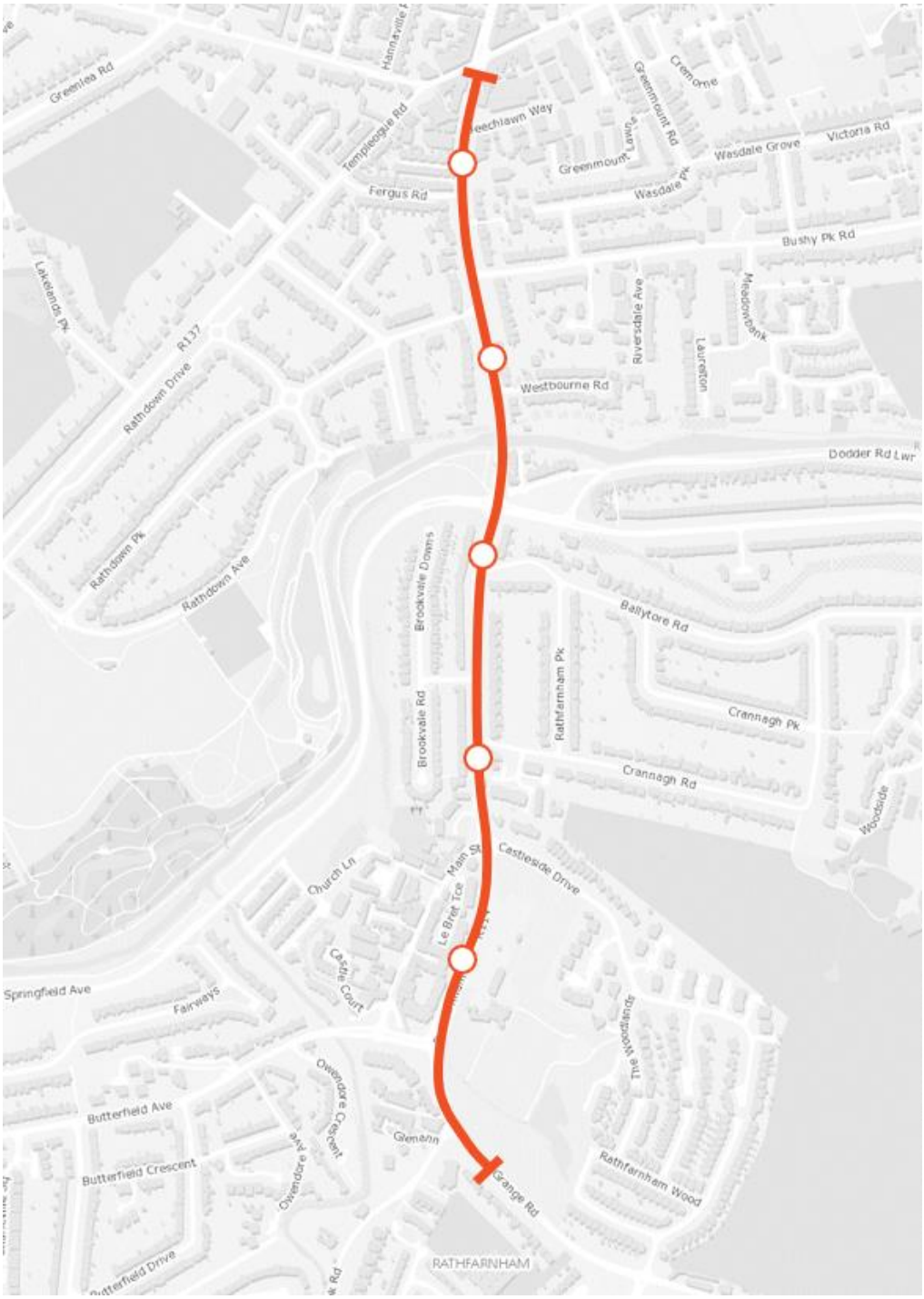

Figure 4.77: Route Option RF3

Inbound: This section of the route would commence on Grange Road just south of the junction with Willbrook Road. The CBC route would proceed along Rathfarnham Road as far as Terenure Cross. Cycle facilities would be provided on the CBC as part of this route option.

Outbound: The outbound route would follow the same route as the inbound route.

Stops: A total of five stops would likely be provided in each direction along this route section, indicatively annotated in **Figure 4.77**.

Indicative Scheme Design

Figure 4.78 illustrates the indicative scheme design for this route option. The location of cross-sections and junctions referenced in subsequent sections describing this route option are also presented in this figure.

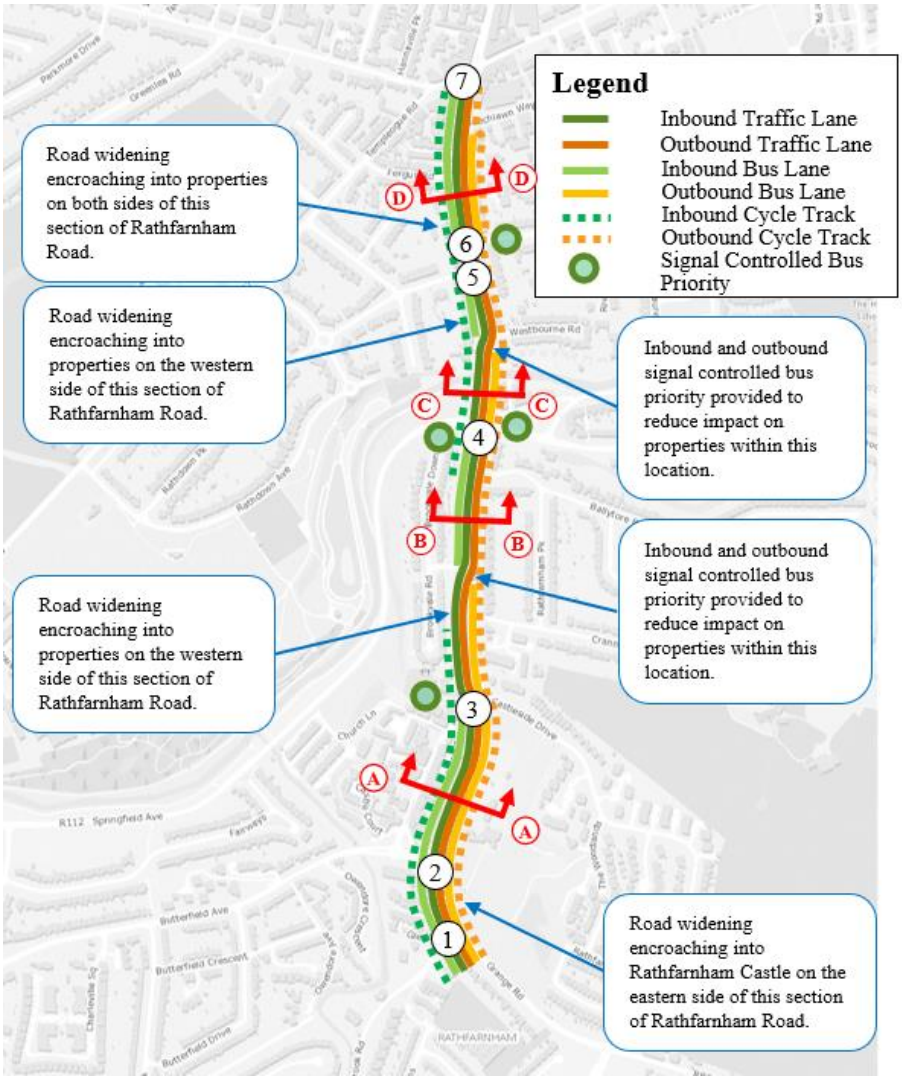

Figure 4.78: Route Option RF3 Indicative Scheme Design (refer to earlier report sections for duplicate cross-sections)

This section of the route would commence on Grange Road just south of the junction with Willbrook Road. Between Willbrook Road and Castleside Drive, a cross-section consisting of a dedicated bus lane, a general traffic lane and a 2.0m wide cycle track in each direction is proposed. The proposed cross-section along this section of Rathfarnham Road is presented in **Figure 4.70.**

Between Castleside Drive and Rathdown Park, bus priority would be provided by a combination of signal-controlled priority and partial bus lanes. Between Castleside Drive and Brookvale Road, and between Dodder Park Road and Westbourne Road, a cross-section including a dedicated outbound bus lane and two general traffic lanes would be provided. This cross-section would result in widening into adjacent properties on the western side of Rathfarnham Road between Castleside Drive and Brookvale Road. This proposed cross-section is presented in **Figure 4.79**.

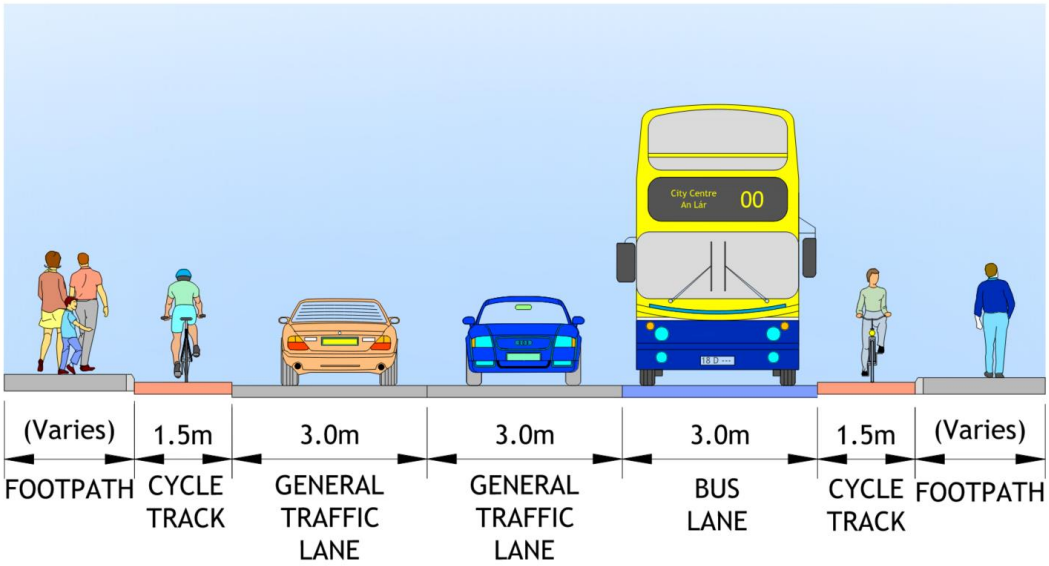

Figure 4.79: Cross-Section C-C (relevant to RF3, RF5 & RF8)

Between Brookvale Road and Dodder Park Road, and between Westbourne Road and Rathdown Park a cross-section including a dedicated inbound bus lane and two general traffic lanes tracks would be provided. This proposed cross-section is presented in **Figure 4.80**.

1.5m wide cycle tracks would be provided between Castleside Drive and Rathdown Park, with the exception of a short section (c.270m) of the inbound cycle track from the Texaco station to c. 100m in advance of the junction with Dodder Park Road. For this short section, inbound cyclists would use the bus lane.

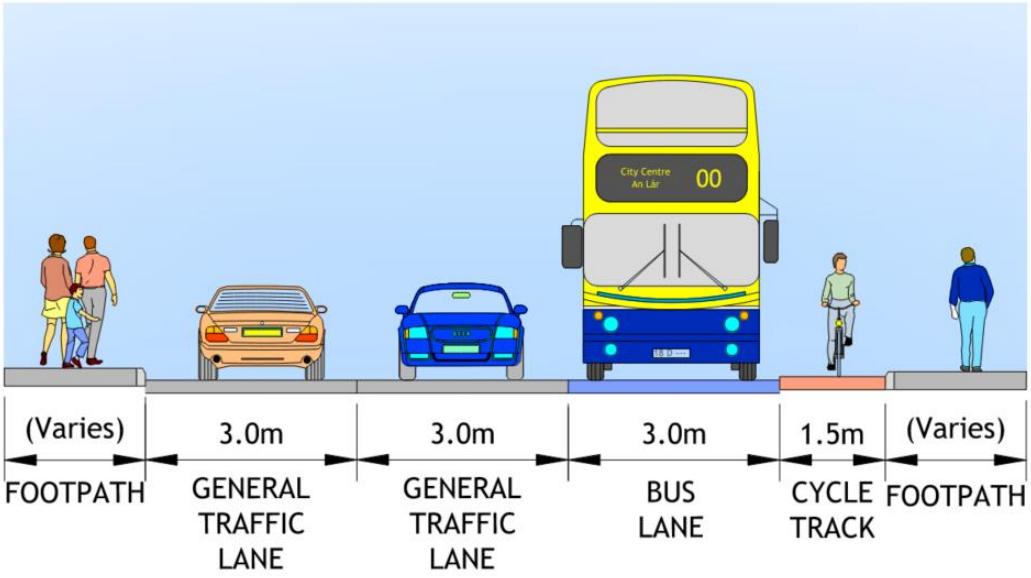

Figure 4.80: Cross-Section B-B (relevant to RF3, RF4, RF5, RF6 & RF7)

North of Bushy Park Road, cycle tracks would be provided on the CBC and the cross-section would revert to a dedicated bus lane, a general traffic lane, and a 1.5m wide cycle track in each direction as far as Terenure Cross. This represents a change when compared to the EPR option which proposed 2.0m wide cycle tracks in this location. This change has been incorporated in order to reduce the impact on Rathfarnham War Memorial Hall, which is a protected structure. The proposed cross-section in this location is indicated in **Figure 4.73**.

In summary, this route option would have the following characteristics:

- Fully segregated bus priority would be provided between Willbrook Road and Castleside Drive;
- Bus priority would be provided through a combination of signal-controlled priority and bus lanes in each direction between Castleside Drive and Rathdown Park;
- 2.0m wide cycle tracks would be provided in each direction between Willbrook Road and Castleside Drive;
- 1.5m wide cycle tracks would be provided between Castleside Drive and Terenure Cross with the exception of a short section (c.270m) the Texaco station to c. 100m in advance of the junction with Dodder Park Road where no inbound cycle track would be provided; and
- Fully segregated bus priority would be provided between Rathdown Park and Terenure Cross.

Junctions:

There are seven signalised junctions along this route option, some of which would require upgrading to facilitate bus priority. The locations of these junctions are presented in **Figure 4.78** and discussed below:

1. **Grange Road/Rathfarnham Road/Willbrook Road:** Adjustments to the junction layout would be required to facilitate the outbound bus lane and the cycle tracks on approach to the junction, as well as to bring the inbound bus lane to the stop line. There would also be a potential requirement to relocate/provide new signal equipment.

   A new high-quality crossing would be provided at this junction as well as a short section of two-way cycle track to link cyclists to the alternative route via St. Mary's Avenue.

2. **Rathfarnham Road/Butterfield Avenue:** Adjustments to the junction layout would be required to facilitate the bus lanes and cycle tracks on approach to the junction. There would also be a potential requirement to relocate/provide new signal equipment.

3. **Rathfarnham Road/ Castleside Drive:** Adjustments to the junction layout would be required to facilitate the bus lanes and cycle tracks on approach to the junction, as well as the removal of the outbound traffic lane on approach from the north. There would also be a potential requirement to relocate/provide new signal equipment.

4. **Rathfarnham Road/Dodder Park Road:** Adjustments to the junction layout would be required to facilitate the bus lanes on approach to the junction as well as to redirect outbound traffic to alternative routes and remove the outbound traffic lane from the southern approach. There would also be a potential requirement to relocate/provide new signal equipment.

5. **Rathfarnham Road/Rathdown Park:** Adjustments to the junction layout would be required to facilitate the bus lanes and cycle tracks on approach to the junction. There would also be a potential requirement to relocate/provide new signal equipment.

6. **Rathfarnham Road/Bushy Park Road:** Adjustments to the junction layout would be required to facilitate the bus lanes and cycle tracks on approach to the junction. There would also be a potential requirement to relocate/provide new signal equipment.

7. **Terenure Cross:** Adjustments to the junction layout would be required to facilitate the bus lanes and cycle tracks on approach to the junction. There would also be a potential requirement to relocate/provide new signal equipment.

4.4.1.2.3.5 Route Option RF4

Route Description

Route option RF4 is presented in **Figure 4.81**.

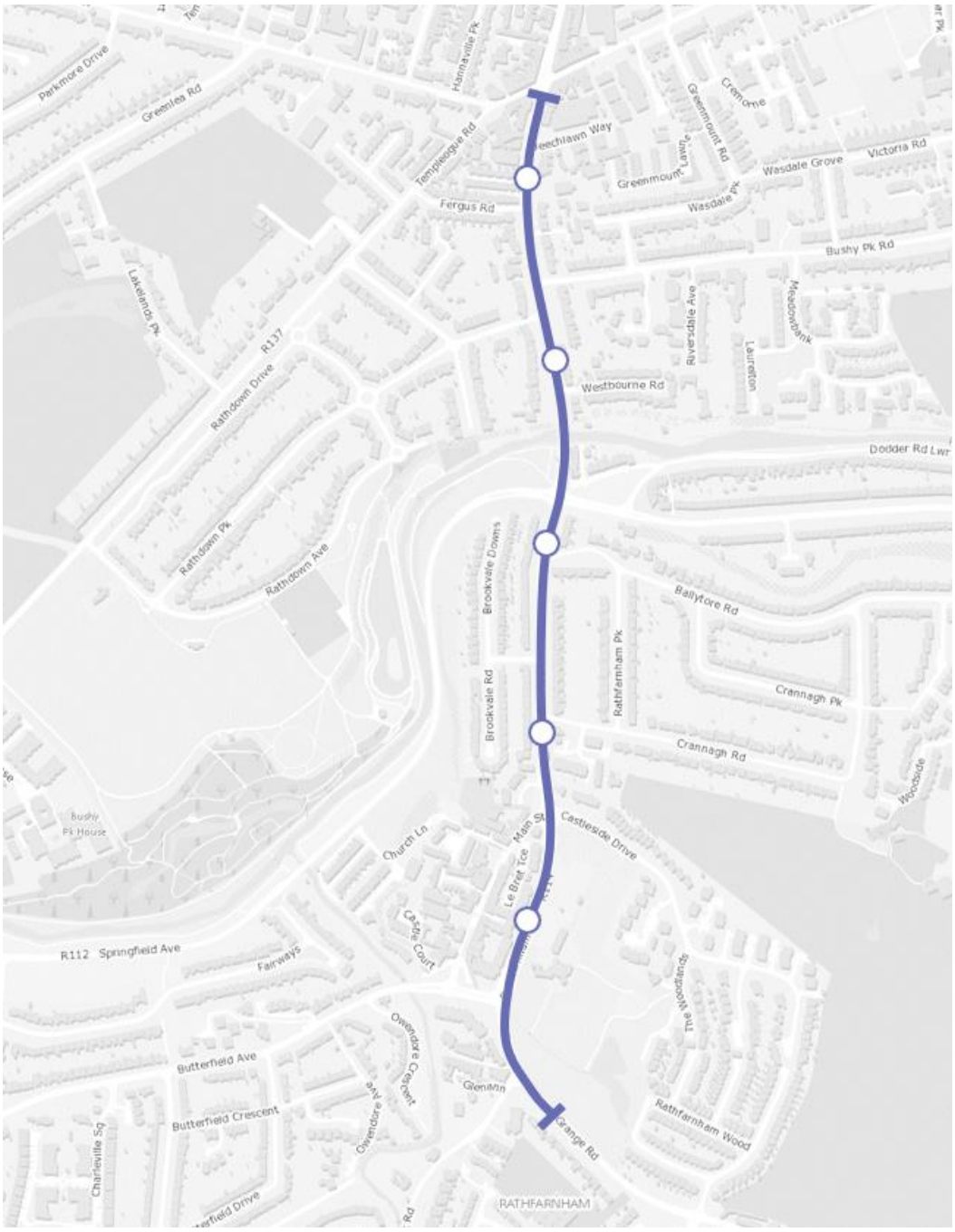

Figure 4.81: Route Option RF4

Inbound: This section of the route would commence on Grange Road just south of the junction with Willbrook Road. The CBC route would proceed along Rathfarnham Road as far as Terenure Cross. Cycle facilities would be provided on the CBC as part of this route option.

Outbound: The outbound route would follow the same route as the inbound route.

Stops: A total of five stops would likely be provided in each direction along this route section, indicatively annotated in **Figure 4.81**.

Indicative Scheme Design

Figure 4.82 illustrates the indicative scheme design for this route option. The location of cross-sections and junctions referenced in subsequent sections describing this route option are also presented in this figure.

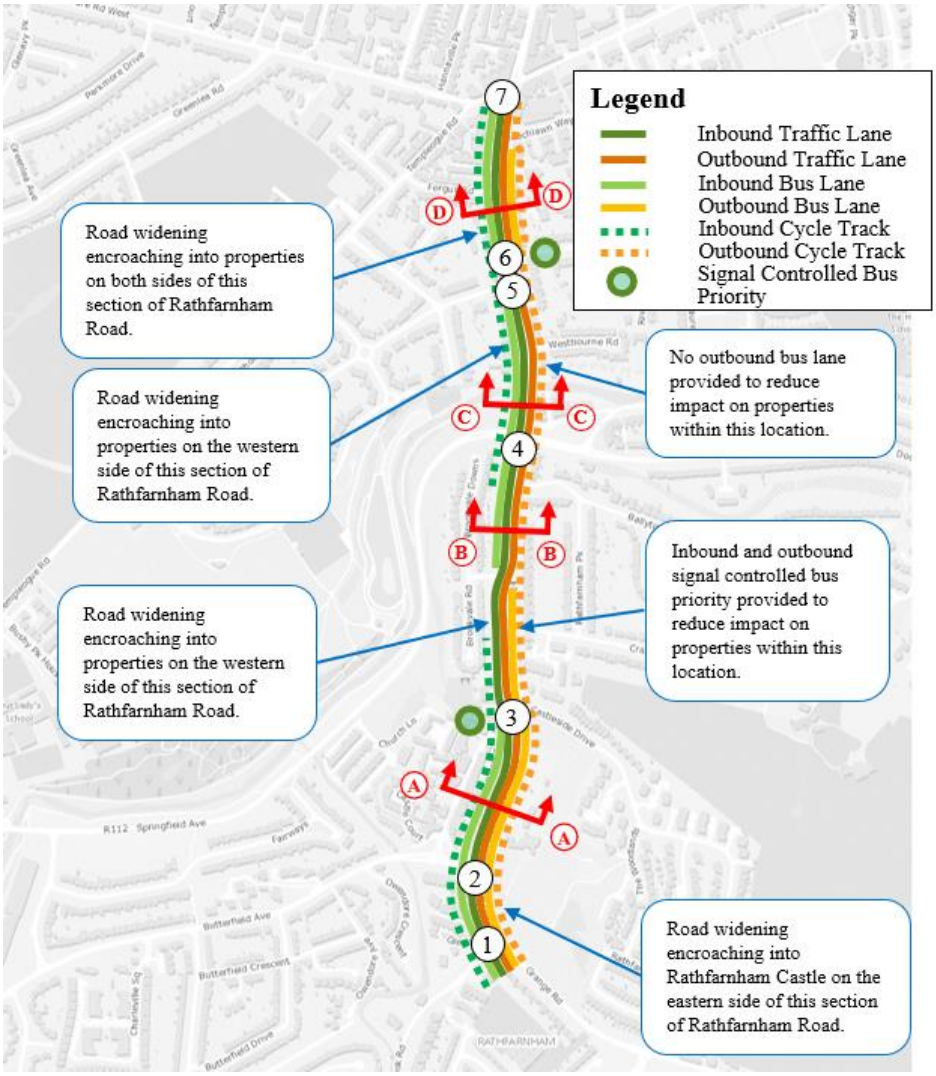

Figure 4.82: Route Option RF4 Indicative Scheme Design (refer to earlier report sections for duplicate cross-sections)

This section of the route would commence on Grange Road just south of the junction with Willbrook Road Between Willbrook Road and Castleside Drive, a cross-section consisting of a dedicated bus lane, a general traffic lane and a 2.0m wide cycle track in each direction is proposed. The proposed cross-section along this section of Rathfarnham Road is presented in **Figure 4.70.**

No outbound bus lane would be provided between Castleside Drive and Bushy Park Road, with outbound bus priority provided through signal-controlled priority through this section. The cross-section within this area would include a dedicated inbound bus lane and two general traffic lanes. Two 1.5m wide cycle tracks would be provided along the majority of this section, as indicated in **Figure 4.83**.

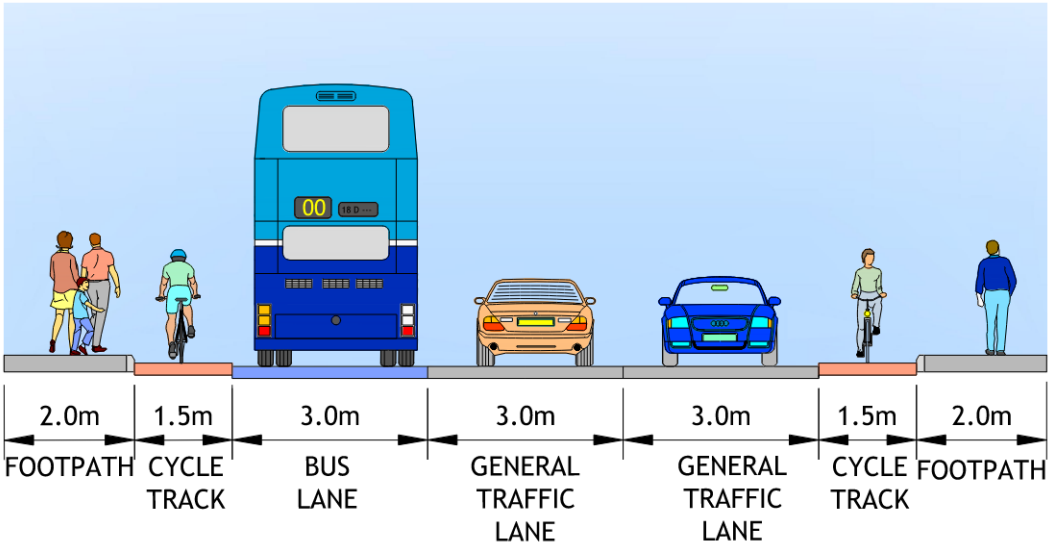

Figure 4.83: Cross-Section C-C (relevant to RF4, RF6 & RF7)

For a short section (c.270m) from the Texaco station to c. 100m in advance of the junction with Dodder Park Road no inbound cycle track would be provided. The proposed cross-section along this section of Rathfarnham Road is presented in **Figure 4.80**.

North of Bushy Park Road, the cross-section would revert to a dedicated bus lane, a general traffic lane, and a 1.5m wide cycle track in each direction as far as Terenure Cross. This represents a change when compared to the EPR option which proposed 2.0m wide cycle tracks in this location. This change has been incorporated in order to reduce the impact on Rathfarnham War Memorial Hall, which is a protected structure. The proposed cross-section in this location is indicated in **Figure 4.73**.

In summary, this route option would have the following characteristics:

- Fully segregated inbound bus priority would be provided between Willbrook Road and Terenure Cross;
- Fully segregated outbound bus priority would be provided between Terenure Cross and Bushy Park Road and between Castleside Drive and Willbrook Road;

- Outbound bus priority would be provided through bus priority traffic signalling between Bushy Park Road and Castleside Drive;
- 2.0m wide cycle tracks would be provided in each direction between Willbrook Road and Castleside Drive; and
- 1.5m wide cycle tracks would be provided in each direction between Castleside Drive and Terenure Cross, with the exception of a short section (c.270m) the Texaco station to c. 100m in advance of the junction with Dodder Park Road where no inbound cycle track would be provided.

Junctions:

There are seven signalised junctions along this route option, some of which would require upgrading to facilitate bus priority. The locations of these junctions are presented in **Figure 4.82** and discussed below:

1. **Grange Road/Rathfarnham Road/Willbrook Road:** Adjustments to the junction layout would be required to facilitate the outbound bus lane and the cycle tracks on approach to the junction, as well as to bring the inbound bus lane to the stop line. There would also be a potential requirement to relocate/provide new signal equipment.
2. **Rathfarnham Road/Butterfield Avenue:** Adjustments to the junction layout would be required to facilitate the bus lanes and cycle tracks on approach to the junction. There would also be a potential requirement to relocate/provide new signal equipment.
3. **Rathfarnham Road/ Castleside Drive:** Adjustments to the junction layout would be required to facilitate the bus lanes and cycle tracks on approach to the junction. There would also be a potential requirement to relocate/provide new signal equipment.
4. **Rathfarnham Road/Dodder Park Road:** Adjustments to the junction layout would be required to facilitate the bus lanes on approach to the junction. There would also be a potential requirement to relocate/provide new signal equipment.
5. **Rathfarnham Road/Rathdown Park:** Adjustments to the junction layout would be required to facilitate the bus lanes and cycle tracks on approach to the junction. There would also be a potential requirement to relocate/provide new signal equipment.
6. **Rathfarnham Road/Bushy Park Road:** Adjustments to the junction layout would be required to facilitate the bus lanes and cycle tracks on approach to the junction. There would also be a potential requirement to relocate/provide new signal equipment.
7. **Terenure Cross:** Adjustments to the junction layout would be required to facilitate the bus lanes and cycle tracks on approach to the junction. There would also be a potential requirement to relocate/provide new signal equipment.

4.4.1.2.3.6 Route Option RF5

Route Description

Route option RF5 is presented in **Figure 4.84**.

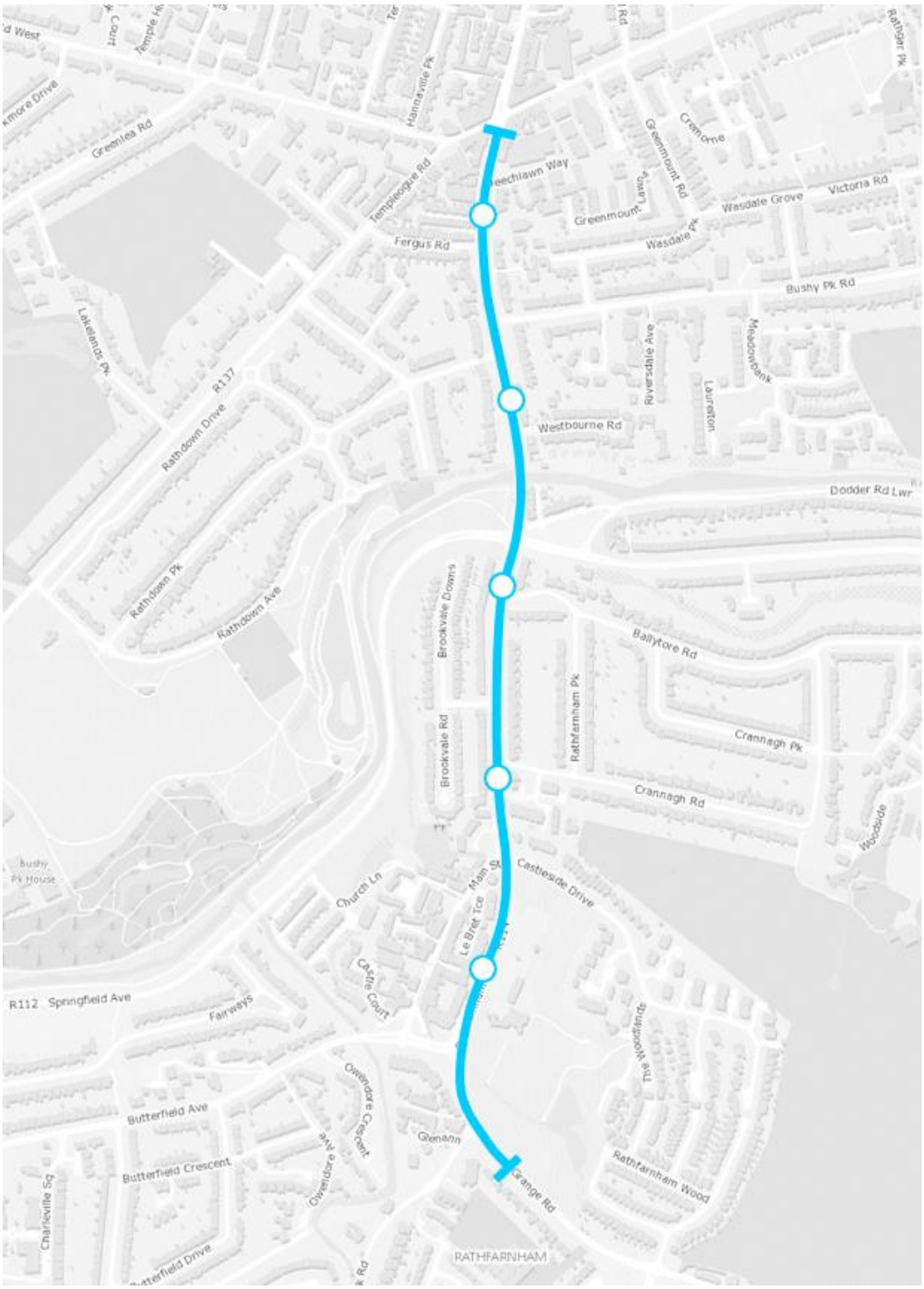

Figure 4.84: Route Option RF5

Inbound: This section of the route would commence on Grange Road just south of the junction with Willbrook Road. The CBC route would proceed along Rathfarnham Road as far as Terenure Cross.

Outbound: The outbound route would follow the same route as the inbound route.

Stops: A total of five stops would likely be provided in each direction along this route section, indicatively annotated in **Figure 4.84**.

Indicative Scheme Design

Figure 4.85 illustrates the indicative scheme design for this route option. The location of cross-sections and junctions referenced in subsequent sections describing this route option are also presented in this figure.

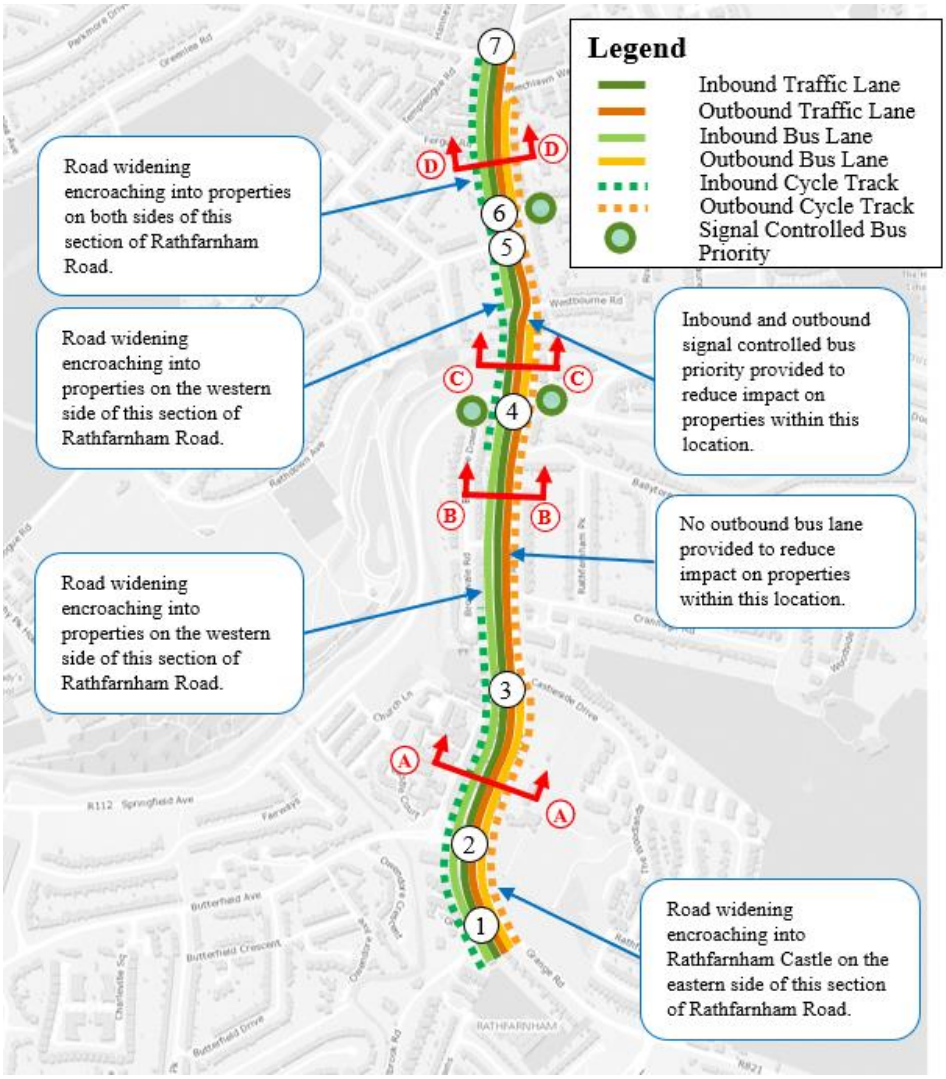

Figure 4.85: Route Option RF5 Indicative Scheme Design (refer to earlier report sections for duplicate cross-sections)

This section of the route would commence on Grange Road just south of the junction with Willbrook Road. Between Willbrook Road and Castleside Drive, a cross-section consisting of a dedicated bus lane, a general traffic lane and a 2.0m wide cycle track in each direction is proposed. The proposed cross-section along this section of Rathfarnham Road is presented in **Figure 4.70.**

No outbound bus lane would be provided between Castleside Drive and Dodder Park Road, with outbound bus priority provided through signal-controlled priority through this section. The cross-section within this area would consist of a dedicated inbound bus lane, two general traffic lanes and two 1.5m wide cycle tracks with the exception of a short section (c.270m) the Texaco station to c. 100m in advance of the junction with Dodder Park Road where no inbound cycle track would be provided. The proposed cross-section along this section of Rathfarnham Road is presented in **Figure 4.80**.

Between Dodder Park Road and Rathdown Park a combination of bus lanes and signal-controlled priority would be provided on Rathfarnham Road. Between Dodder Park Road and Westbourne Road the cross-section would consist of a dedicated outbound bus lane, two general traffic lanes and two 1.5m wide cycle tracks. The proposed cross-section along this section of Rathfarnham Road is presented in **Figure 4.79**. Between Westbourne Road and Rathdown Park the cross-section would consist of a dedicated inbound bus lane, two general traffic lanes and two 1.5m wide cycle tracks.

North of Bushy Park Road, the cross-section would revert to a dedicated bus lane, a general traffic lane, and a 1.5m wide cycle track in each direction as far as Terenure Cross. This represents a change when compared to the EPR option which proposed 2.0m wide cycle tracks in this location. This change has been incorporated in order to reduce the impacts on steep driveways on Rathfarnham Road. The proposed cross-section in this location is indicated in **Figure 4.73**.

In summary, this route option would have the following characteristics:

- Fully segregated inbound bus priority would be provided between Willbrook Road and Dodder Park Road;
- Fully segregated outbound bus priority would be provided between and Castleside Drive and Willbrook Road and between Terenure Cross and Rathdown Park;
- Outbound bus priority would be provided by signal-controlled priority between Dodder Park Road and Castleside Drive;
- A combination of bus lanes and signal-controlled priority would be provided between Dodder Park Road and Rathdown Park;
- 2.0m wide cycle tracks would be provided in each direction between Willbrook Road and Castleside Drive; and
- 1.5m wide cycle tracks would be provided in each direction between Castleside Drive and Terenure Cross, with the exception of a short section (c.270m) the Texaco station to c. 100m in advance of the junction with Dodder Park Road where no inbound cycle track would be provided.

Junctions:

There are seven signalised junctions along this route option, some of which would require upgrading to facilitate bus priority. The locations of these junctions are presented in **Figure 4.85** and discussed below:

1. **Grange Road/Rathfarnham Road/Willbrook Road:** Adjustments to the junction layout would be required to facilitate the outbound bus lane and the cycle tracks on approach to the junction, as well as to bring the inbound bus lane to the stop line. There would also be a potential requirement to relocate/provide new signal equipment.
2. **Rathfarnham Road/Butterfield Avenue:** Adjustments to the junction layout would be required to facilitate the bus lanes and cycle tracks on approach to the junction. There would also be a potential requirement to relocate/provide new signal equipment.
3. **Rathfarnham Road/ Castleside Drive:** Adjustments to the junction layout would be required to facilitate the bus lanes and cycle tracks on approach to the junction. There would also be a potential requirement to relocate/provide new signal equipment.
4. **Rathfarnham Road/Dodder Park Road:** Adjustments to the junction layout would be required to facilitate the bus lanes on approach to the junction. There would also be a potential requirement to relocate/provide new signal equipment.
5. **Rathfarnham Road/Rathdown Park:** Adjustments to the junction layout would be required to facilitate the bus lanes on approach to the junction. There would also be a potential requirement to relocate/provide new signal equipment.
6. **Rathfarnham Road/Bushy Park Road:** Adjustments to the junction layout would be required to facilitate the bus lanes and cycle tracks on approach to the junction. There would also be a potential requirement to relocate/provide new signal equipment.
7. **Terenure Cross:** Adjustments to the junction layout would be required to facilitate the bus lanes and cycle tracks on approach to the junction. There would also be a potential requirement to relocate/provide new signal equipment.

4.4.1.2.3.7 Route Option RF6

Route Description

Route option RF6 is presented in **Figure 4.86**.

Figure 4.86: Route Option RF7

Inbound: This section of the route would commence on Grange Road just south of the junction with Willbrook Road. The CBC route would proceed along Rathfarnham Road as far as Terenure Cross. Cycle facilities would be provided on the CBC as part of this route option.

Outbound: The outbound route would follow the same route as the inbound route.

Stops: A total of five stops would likely be provided in each direction along this route section, indicatively annotated in **Figure 4.86**.

Indicative Scheme Design

Figure 4.87 illustrates the indicative scheme design for this route option. The location of cross-sections and junctions referenced in subsequent sections describing this route option are also presented in this figure.

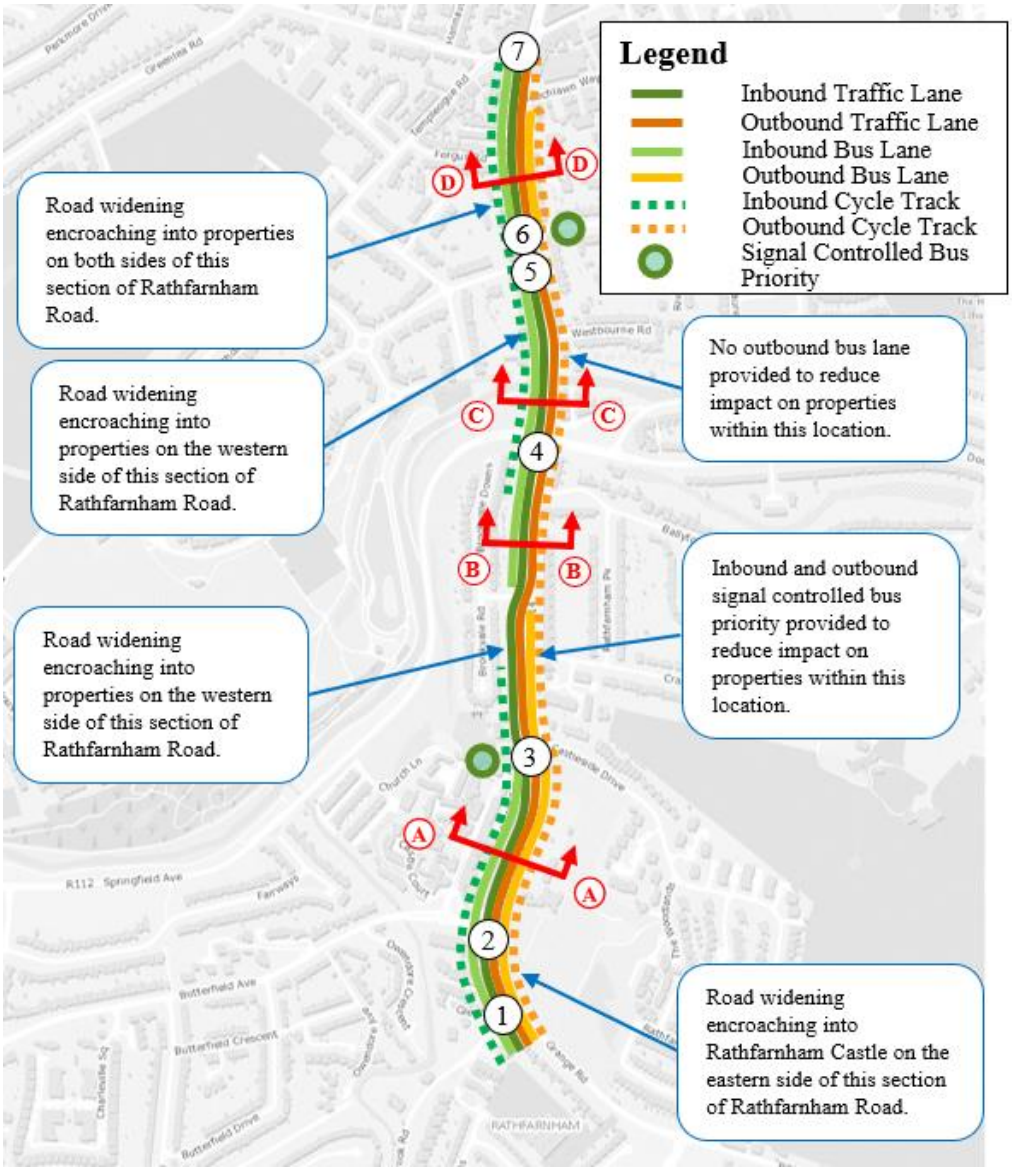

Figure 4.87: Route Option RF6 Indicative Scheme Design (refer to earlier report sections for duplicate cross-sections)

This section of the route would commence on Grange Road just south of the junction with Willbrook Road. Between Willbrook Road and Castleside Drive, a cross-section consisting of a dedicated bus lane, a general traffic lane and a 2.0m wide cycle track in each direction is proposed. The proposed cross-section along this section of Rathfarnham Road is presented in **Figure 4.70.**

Between Castleside Drive and Dodder Park Road a combination of bus lanes and signal-controlled priority would be provided on Rathfarnham Road.

Between Castleside Drive and Brookvale Road the cross-section would include a dedicated outbound bus lane and two general traffic lanes. Between Brookvale Road and Dodder Park Road the cross-section would include a dedicated inbound bus lane and two general traffic lanes. 1.5m wide cycle tracks would be provided in both directions throughout this section of the scheme, with the exception of a short section (c.270m) the Texaco station to c. 100m in advance of the junction with Dodder Park Road where no inbound cycle track would be provided. The proposed cross-section along this section of Rathfarnham Road is presented in **Figure 4.80**.

No outbound bus lane would be provided between Dodder Park Road and Rathdown Park, with outbound bus priority provided through signal-controlled priority through this section. The cross-section within this area would consist of a dedicated inbound bus lane, two general traffic lanes and two 1.5m wide cycle tracks. The proposed cross-section along this section of Rathfarnham Road is presented in **Figure 4.83**.

North of Bushy Park Road, the cross-section would revert to a dedicated bus lane, a general traffic lane, and a 1.5m wide cycle track in each direction as far as Terenure Cross. This represents a change when compared to the EPR option which proposed 2.0m wide cycle tracks in this location. This change has been incorporated in order to reduce the impact on Rathfarnham War Memorial Hall, which is a protected structure. The proposed cross-section in this location is indicated in **Figure 4.73**.

In summary, this route option would have the following characteristics:

- Fully segregated bus priority would be provided between Willbrook Road and Castleside Drive;
- A combination of signal-controlled priority and partial bus lanes would be provided between Castleside Drive and Dodder Park Road;
- Outbound bus priority would be provided by signal-controlled priority between Rathdown Park and Dodder Park Road;
- Fully segregated inbound bus priority would be provided between Dodder Park Road and Rathdown Park;
- 2.0m wide cycle tracks would be provided in each direction between Willbrook Road and Castleside Drive; and

- 1.5m wide cycle tracks would be provided in each direction between Castleside Drive and Terenure Cross, with the exception of a short section (c.270m) the Texaco station to c. 100m in advance of the junction with Dodder Park Road where no inbound cycle track would be provided.

Junctions:

There are seven signalised junctions along this route option, some of which would require upgrading to facilitate bus priority. The locations of these junctions are presented in **Figure 4.87** and discussed below:

1. **Grange Road/Rathfarnham Road/Willbrook Road:** Adjustments to the junction layout would be required to facilitate the outbound bus lane and the cycle tracks on approach to the junction, as well as to bring the inbound bus lane to the stop line. There would also be a potential requirement to relocate/provide new signal equipment.
2. **Rathfarnham Road/Butterfield Avenue:** Adjustments to the junction layout would be required to facilitate the bus lanes and cycle tracks on approach to the junction. There would also be a potential requirement to relocate/provide new signal equipment.
3. **Rathfarnham Road/Castleside Drive:** Adjustments to the junction layout would be required to facilitate the bus lanes and cycle tracks on approach to the junction. There is also a potential requirement to relocate/provide new signal equipment.
4. **Rathfarnham Road/Dodder Park Road:** Adjustments to the junction layout would be required to facilitate the bus lanes on approach to the junction. There would also be a potential requirement to relocate/provide new signal equipment.
5. **Rathfarnham Road/Rathdown Park:** Adjustments to the junction layout would be required to facilitate the bus lanes on approach to the junction. There would also be a potential requirement to relocate/provide new signal equipment.
6. **Rathfarnham Road/Bushy Park Road:** Adjustments to the junction layout would be required to facilitate the bus lanes and cycle tracks on approach to the junction. There would also be a potential requirement to relocate/provide new signal equipment.
7. **Terenure Cross:** Adjustments to the junction layout would be required to facilitate the bus lanes and cycle tracks on approach to the junction. There would also be a potential requirement to relocate/provide new signal equipment.

4.4.1.2.3.8 Route Option RF7

Route Description

Route option RF7 is presented in **Figure 4.88**.

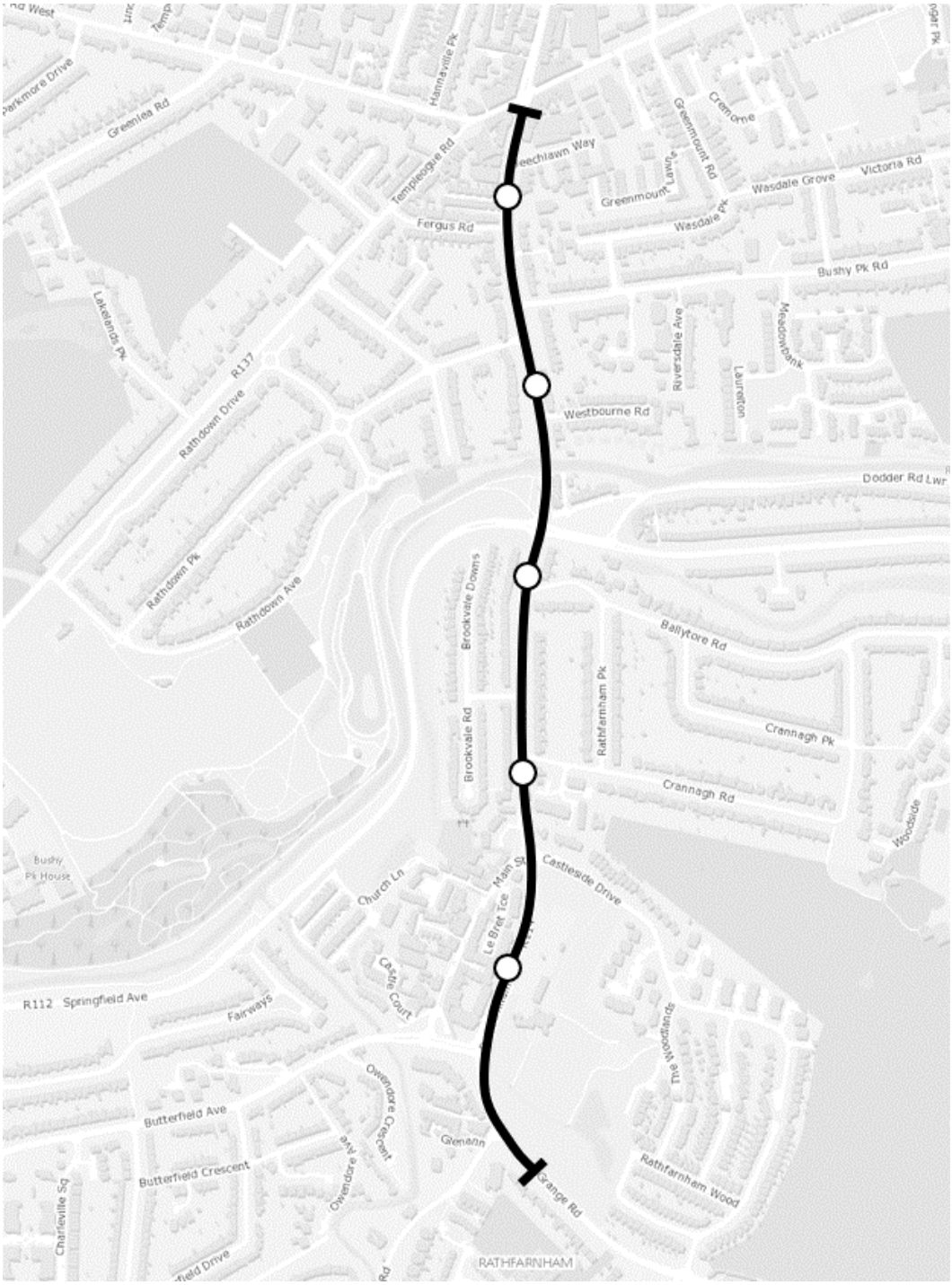

Figure 4.88: Route Option RF7

Inbound: This section of the route would commence on Grange Road just south of the junction with Willbrook Road. The CBC route would proceed along Rathfarnham Road as far as Terenure Cross. Cycle facilities would be provided on the CBC as part of this route option.

Outbound: The outbound route would follow the same route as the inbound route.

Stops: A total of five stops would likely be provided in each direction along this route section, indicatively annotated in **Figure 4.88**.

Indicative Scheme Design

Figure 4.89 illustrates the indicative scheme design for this route option. The location of cross-sections and junctions referenced in subsequent sections describing this route option are also presented in this figure.

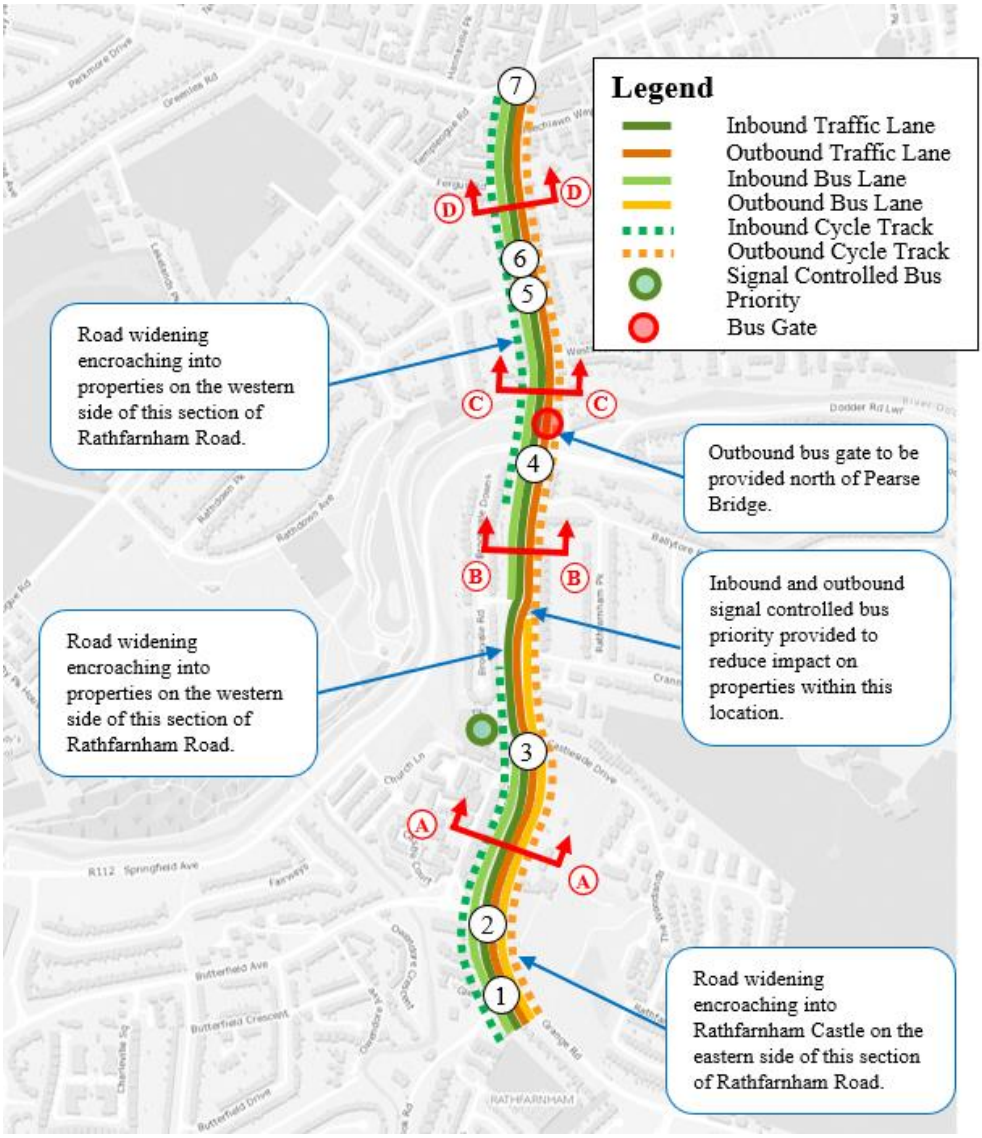

Figure 4.89: Route Option RF7 Indicative Scheme Design (refer to earlier report sections for duplicate cross-sections)

This section of the route would commence on Grange Road just south of the junction with Willbrook Road. Between Willbrook Road and Castleside Drive, a cross-section consisting of a dedicated bus lane, a general traffic lane and a 2.0m wide cycle track in each direction is proposed. The proposed cross-section along this section of Rathfarnham Road is presented in **Figure 4.70.**

Between Castleside Drive and Dodder Park Road a combination of bus lanes and signal-controlled priority would be provided on Rathfarnham Road.

Between Castleside Drive and Brookvale Road the cross-section would include a dedicated outbound bus lane and two general traffic lanes. Between Brookvale Road and Dodder Park Road the cross-section would include a dedicated inbound bus lane and two general traffic lanes. 1.5m wide cycle tracks would be provided in both directions throughout this section of the scheme, with the exception of a short section (c.270m) the Texaco station to c. 100m in advance of the junction with Dodder Park Road where no inbound cycle track would be provided. The proposed cross-section along this section of Rathfarnham Road is presented in **Figure 4.80**.

An outbound bus gate would be provided north of Pearse bridge, providing bus priority through this section by restricting outbound general traffic movements past this point. The cross-section between Dodder Park Road and Terenure Cross would consist of a dedicated inbound bus lane, two general traffic lanes, and two 1.5m wide cycle tracks. The proposed cross-section along this section of Rathfarnham Road is presented in **Figure 4.83**.

In summary, this route option would have the following characteristics:

- Fully segregated bus priority would be provided between Willbrook Road and Castleside Drive;
- A combination of signal-controlled priority and partial bus lanes would be provided in each direction between Castleside Drive and Dodder Park Road;
- An outbound bus gate would be provided north of Pearse Bridge
- Fully segregated inbound bus priority would be provided between Dodder Park Road and Terenure Cross;
- 2.0m wide cycle tracks would be provided in each direction between Willbrook Road and Castleside Drive; and
- 1.5m wide cycle tracks would be provided in each direction between Castleside Drive and Terenure Cross, with the exception of a short section (c.270m) the Texaco station to c. 100m in advance of the junction with Dodder Park Road where no inbound cycle track would be provided.

Junctions:

There are seven signalised junctions along this route option, some of which would require upgrading to facilitate bus priority. The locations of these junctions are presented in **Figure 4.89** and discussed below:

1. **Grange Road/Rathfarnham Road/Willbrook Road:** Adjustments to the junction layout would be required to facilitate the outbound bus lane and the cycle tracks on approach to the junction, as well as to bring the inbound bus lane to the stop line. There would also be a potential requirement to relocate/provide new signal equipment.

2. **Rathfarnham Road/Butterfield Avenue:** Adjustments to the junction layout would be required to facilitate the bus lanes and cycle tracks on approach to the junction. There would also be a potential requirement to relocate/provide new signal equipment.
3. **Rathfarnham Road/ Castleside Drive:** Adjustments to the junction layout would be required to facilitate the bus lanes and cycle tracks on approach to the junction. There would also be a potential requirement to relocate/provide new signal equipment.
4. **Rathfarnham Road/Dodder Park Road:** Adjustments to the junction layout would be required to facilitate the bus lanes on approach to the junction. There would also be a potential requirement to relocate/provide new signal equipment.
5. **Rathfarnham Road/Rathdown Park:** Adjustments to the junction layout would be required to facilitate the bus lanes on approach to the junction. There would also be a potential requirement to relocate/provide new signal equipment.
6. **Rathfarnham Road/Bushy Park Road:** Adjustments to the junction layout would be required to facilitate the bus lanes and cycle tracks on approach to the junction. There would also be a potential requirement to relocate/provide new signal equipment.
7. **Terenure Cross:** Adjustments to the junction layout would be required to facilitate the bus lanes and cycle tracks on approach to the junction. There would also be a potential requirement to relocate/provide new signal equipment.

4.4.1.2.3.9 Route Option RF8

Route Description

Route option RF8 is presented in **Figure 4.90**.

Figure 4.90: Route Option RF8

Inbound: This section of the route would commence on Grange Road just south of the junction with Willbrook Road. The CBC route would proceed along Rathfarnham Road as far as Terenure Cross. Cycle facilities would be provided on the CBC as part of this route option.

Outbound: The outbound route would follow the same route as the inbound route.

Stops: A total of five stops would likely be provided in each direction along this route section, indicatively annotated in **Figure 4.90**.

Indicative Scheme Design

Figure 4.91 illustrates the indicative scheme design for this route option. The location of cross-sections and junctions referenced in subsequent sections describing this route option are also presented in this figure.

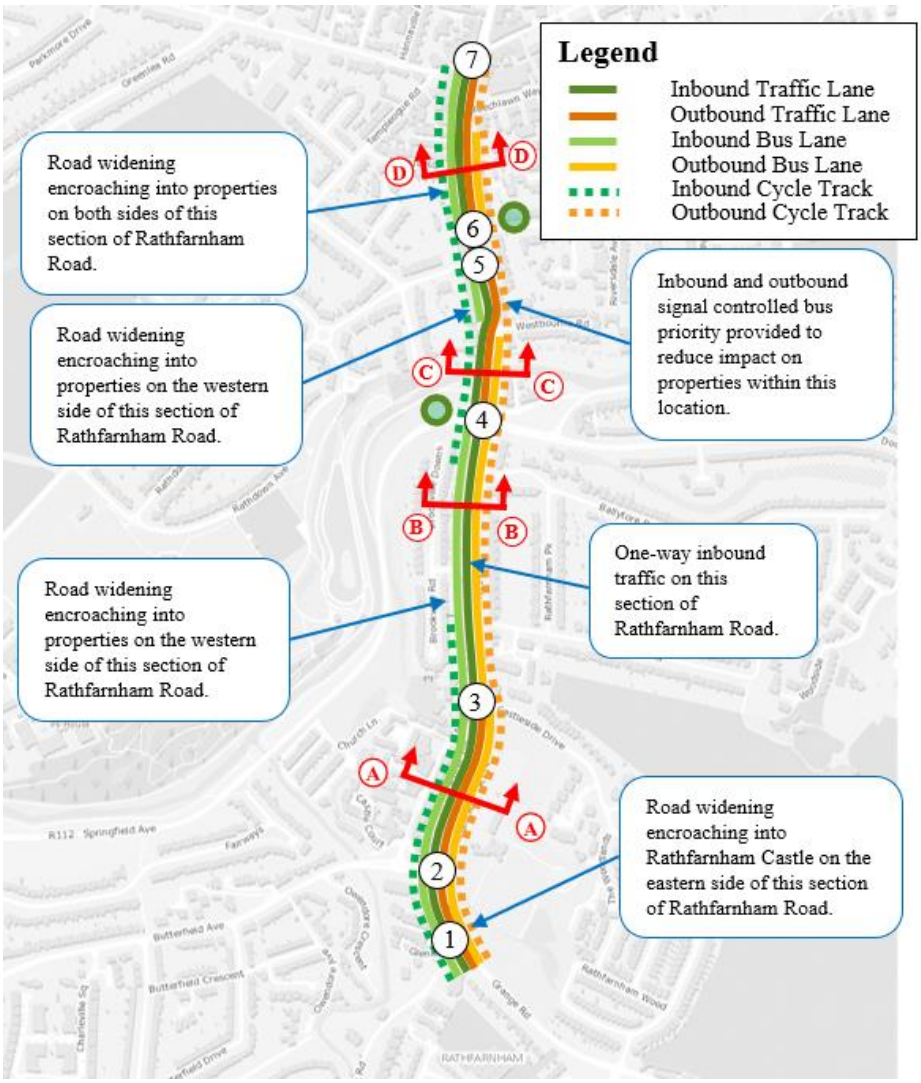

Figure 4.91: Route Option RF8 Indicative Scheme Design (refer to earlier report sections for duplicate cross-sections)

This section of the route would commence on Grange Road just south of the junction with Willbrook Road. Between Willbrook Road and Castleside Drive, a cross-section consisting of a dedicated bus lane, a general traffic lane and a 2.0m wide cycle track in each direction is proposed. The proposed cross-section along this section of Rathfarnham Road is presented in **Figure 4.70.**

No outbound traffic lane would be provided between Castleside Drive and Dodder Park Road, with outbound general traffic diverted to other routes. The cross-section within this area would include two dedicated bus lanes and an inbound general traffic lane. 1.5m wide cycle tracks would be provided in both directions throughout this section of the scheme, with the exception of a short section (c.270m) the Texaco station to c. 100m in advance of the junction with Dodder Park Road where no inbound cycle track would be provided. The proposed cross-section along this section of Rathfarnham Road is presented in **Figure 4.92**.

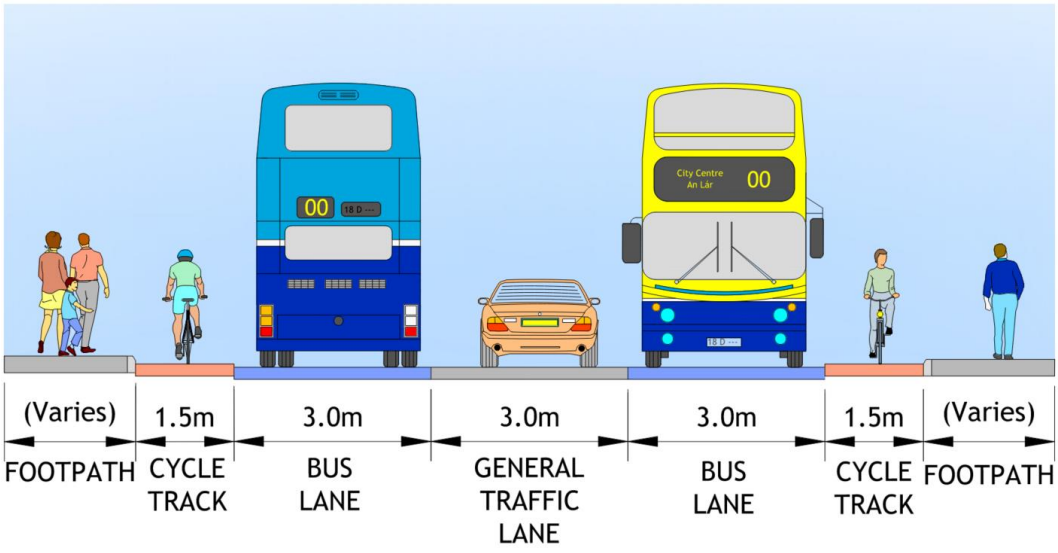

Figure 4.92: Cross-Section B-B (Relevant to RF8)

Between Dodder Park Road and Rathdown Park a combination of bus lanes and signal-controlled priority would be provided on Rathfarnham Road. Between Dodder Park Road and Westbourne Road the cross-section would consist of a dedicated outbound bus lane, two general traffic lanes and two 1.5m wide cycle tracks. Between Westbourne Road and Rathdown Park the cross-section would consist of a dedicated inbound bus lane, two general traffic lanes and two 1.5m wide cycle tracks. The proposed cross-section along this section of Rathfarnham Road is presented in **Figure 4.79**.

North of Rathdown Park, the cross-section would revert to a dedicated bus lane, a general traffic lane, and a 1.5m wide cycle track in each direction as far as Terenure Cross. This represents a change when compared to the EPR option which proposed 2.0m wide cycle tracks in this location. This change has been incorporated in order to reduce the impact on Rathfarnham War Memorial Hall, which is a protected structure. The proposed cross-section in this location is indicated in **Figure 4.73**.

In summary, this route option would have the following characteristics:

- Fully segregated bus priority would be provided between Willbrook Road and Dodder Park Road;
- One-way inbound traffic regime proposed between Castleside Drive and Dodder Park Road, with outbound general traffic directed to alternative routes;
- Fully segregated bus priority would be provided between Castleside Drive and Dodder Park Road;
- Bus priority would be provided through a combination of signal-controlled priority and partial bus lanes in each direction between Dodder Park Road and Rathdown Park;
- Fully segregated bus priority would be provided between Rathdown Park and Terenure Cross;
- 2.0m wide cycle tracks would be provided in each direction between Willbrook Road and Castleside Drive; and
- 1.5m wide cycle tracks would be provided in each direction between Castleside Drive and Terenure Cross, with the exception of a short section (c.270m) the Texaco station to c. 100m in advance of the junction with Dodder Park Road where no inbound cycle track would be provided.

Junctions:

There are seven signalised junctions along this route option, some of which would require upgrading to facilitate bus priority. The locations of these junctions are presented in **Figure 4.91** and discussed below:

1. **Grange Road/Rathfarnham Road/Willbrook Road:** Adjustments to the junction layout would be required to facilitate the outbound bus lane and the cycle tracks on approach to the junction, as well as to bring the inbound bus lane to the stop line. There would also be a potential requirement to relocate/provide new signal equipment.
2. **Rathfarnham Road/Butterfield Avenue:** Adjustments to the junction layout would be required to facilitate the bus lanes and cycle tracks on approach to the junction. There would also be a potential requirement to relocate/provide new signal equipment.
3. **Rathfarnham Road/Castleside Drive:** Adjustments to the junction layout would be required to facilitate the bus lanes and cycle tracks on approach to the junction and the one way traffic regime proposed on Rathfarnham Road north of this junction. There would also be a potential requirement to relocate/provide new signal equipment.
4. **Rathfarnham Road/Dodder Park Road:** Adjustments to the junction layout would be required to facilitate the bus lanes on approach to the junction and the one way traffic regime proposed on Rathfarnham Road south of this junction. There would also be a potential requirement to relocate/provide new signal equipment.

5. **Rathfarnham Road/Rathdown Park:** Adjustments to the junction layout would be required to facilitate the bus lanes on approach to the junction. There would also be a potential requirement to relocate/provide new signal equipment.
6. **Rathfarnham Road/Bushy Park Road:** Adjustments to the junction layout would be required to facilitate the bus lanes and cycle tracks on approach to the junction. There would also be a potential requirement to relocate/provide new signal equipment.
7. **Terenure Cross:** Adjustments to the junction layout would be required to facilitate the bus lanes and cycle tracks on approach to the junction. There would also be a potential requirement to relocate/provide new signal equipment.

4.4.1.2.3.10 Route Option RF9

Route Description

Route option RF9 is presented in **Figure 4.93**.

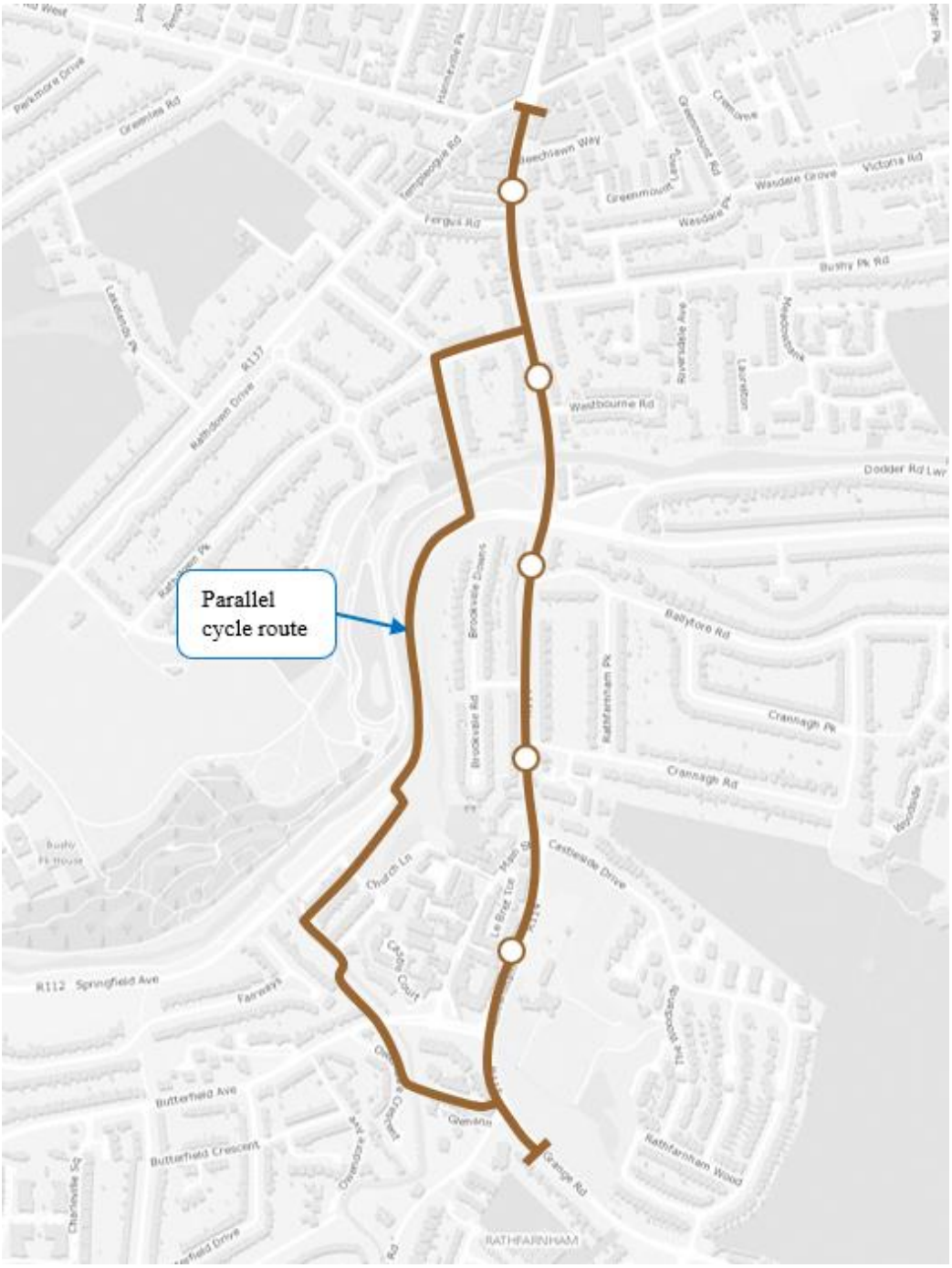

Figure 4.93: Route Option RF9

Inbound: The CBC route would proceed along Rathfarnham Road as far as Terenure Cross. At the junction with Willbrook Road, cyclists would be directed to St. Mary's Avenue. This would link to a new structure crossing the Owendoher River to the Owendoher Crescent green area. From here, a dedicated cyclist and pedestrian track would then cross Butterfield Avenue, connecting to a new proposed pedestrian and cyclist link crossing the Owendoher River via a second new structure and connecting to Woodview Cottages.

The proposed cycle facility would then link to the Dodder Greenway. This would then link to a new pedestrian and cyclist bridge linking to Rathdown Park, linking back to the CBC. From here, cyclists would continue on the CBC as far as Terenure Cross.

Outbound: The outbound route would follow the same route as the inbound route.

Stops: A total of five stops would likely be provided in each direction along this route section, indicatively annotated in **Figure 4.93**.

Indicative Scheme Design

Figure 4.94 illustrates the indicative scheme design for this route option. The location of cross-sections and junctions referenced in subsequent sections describing this route option are also presented in this figure.

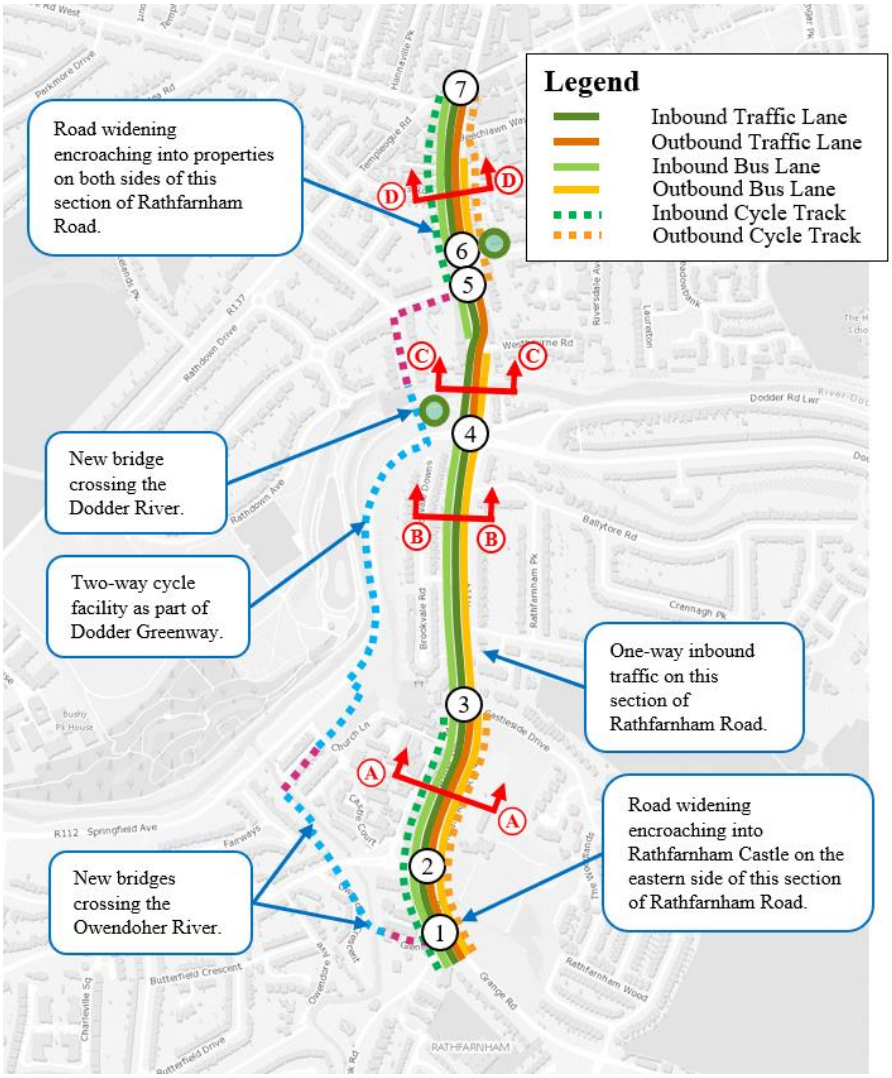

Figure 4.94: Route Option RF9 Indicative Scheme Design (refer to earlier report sections for duplicate cross-sections)

This section of the route commences on Grange Road just south of the junction with Willbrook Road. Between Willbrook Road and Castleside Drive, a cross-section consisting of a dedicated bus lane, a general traffic lane and a 2.0m wide cycle track in each direction is proposed. The proposed cross-section along this section of Rathfarnham Road is presented in **Figure 4.70.**

At the junction between Rathfarnham Road and Willbrook Road, cyclists would be directed to a Quiet Street Treatment on St. Mary's Avenue, which would link to an alternative cycle facility connecting to the Dodder Greenway and re-joining the CBC at Rathdown Park. Along the CBC, no outbound traffic lane would be provided between Castleside Drive and Dodder Park Road, with outbound general traffic diverted to other routes. The cross-section within this area would consist of two dedicated bus lanes and an inbound general traffic lane. The proposed cross-section along this section of Rathfarnham Road is presented in **Figure 4.95**.

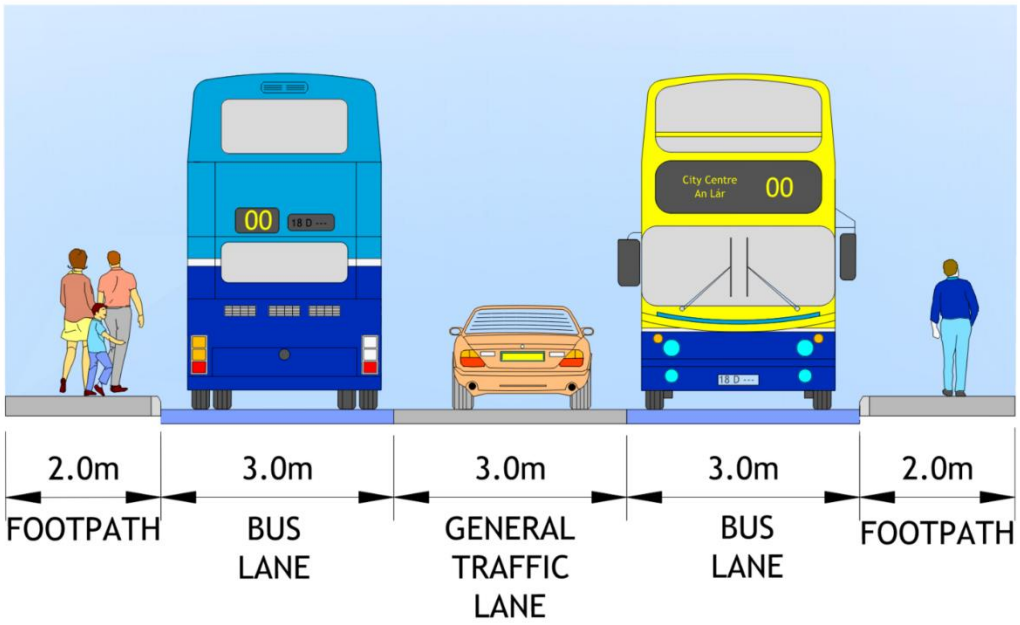

Figure 4.95: Cross-Section B-B (Relevant to RF9)

Between Dodder Park Road and Rathdown Park a combination of bus lanes and signal-controlled priority would be provided on Rathfarnham Road. Between Dodder Park Road and Westbourne Road the cross-section would consist of a dedicated outbound bus lane and two general traffic lanes. Between Westbourne Road and Rathdown Park the cross-section would consist of a dedicated inbound bus lane and two general traffic lanes. The proposed cross-section along this section of Rathfarnham Road is presented in **Figure 4.96**.

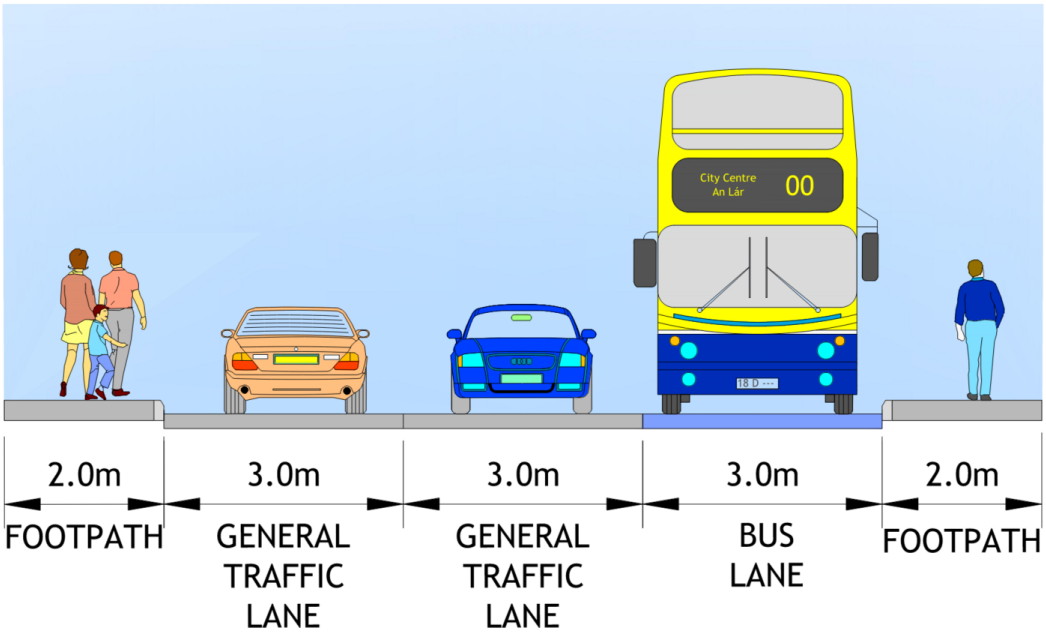

Figure 4.96: Cross-Section C-C (Relevant to RF9)

North of Rathdown Park, the cross-section would revert to a dedicated bus lane, a general traffic lane, and a 1.5m wide cycle track in each direction as far as Terenure Cross. This represents a change when compared to the EPR option which proposed 2.0m wide cycle tracks in this location. This change has been incorporated in order to reduce the impact on Rathfarnham War Memorial Hall, which is a protected structure. The proposed cross-section in this location is indicated in **Figure 4.73**.

In summary, this route option would have the following characteristics:

- Fully segregated bus priority would be provided between Willbrook Road and Dodder Park Road;
- One-way inbound traffic regime proposed between Castleside Drive and Dodder Park Road, with outbound general traffic directed to alternative routes;
- Bus priority would be provided through a combination of signal-controlled priority and partial bus lanes between Castleside Drive and Rathdown Park;
- Fully segregated bus priority would be provided between Rathdown Park and Terenure Cross;
- 2.0m wide cycle tracks would be provided in each direction between Willbrook Road and Castleside Drive;
- Alternative cycle facility would be provided utilising a Quiet Street Treatment on St. Mary's Avenue and linking to the Dodder Greenway via two structures crossing the Owendoher River. This facility would link to Rathdown Park via a new cyclists and pedestrian bridge structure where a Quiet Street Treatment would be provided; and
- 1.5m wide cycle tracks would be provided between Rathdown Park and Terenure Cross.

Junctions:

There are seven signalised junctions along this route option, some of which would require upgrading to facilitate bus priority. The locations of these junctions are presented in **Figure 4.94** and discussed below:

1. **Grange Road/Rathfarnham Road/Willbrook Road:** Adjustments to the junction layout would be required to facilitate the outbound bus lane and the cycle tracks on approach to the junction, as well as to bring the inbound bus lane to the stop line. There would also be a potential requirement to relocate/provide new signal equipment.
2. **Rathfarnham Road/Butterfield Avenue:** Adjustments to the junction layout would be required to facilitate the bus lanes and cycle tracks on approach to the junction. There would also be a potential requirement to relocate/provide new signal equipment.
3. **Rathfarnham Road/ Castleside Drive:** Adjustments to the junction layout would be required to facilitate the bus lanes and cycle tracks on approach to the junction and the one way traffic regime proposed on Rathfarnham Road north of this junction. There would also be a potential requirement to relocate/provide new signal equipment.
4. **Rathfarnham Road/Dodder Park Road:** Adjustments to the junction layout would be required to facilitate the bus lanes on approach to the junction and the one way traffic regime proposed on Rathfarnham Road south of this junction. There would also be a potential requirement to relocate/provide new signal equipment.
5. **Rathfarnham Road/Rathdown Park:** Adjustments to the junction layout would be required to facilitate the bus lanes on approach to the junction. There would also be a potential requirement to relocate/provide new signal equipment. A high quality right turn facility would be provided for outbound turning onto Rathdown Park.
6. **Rathfarnham Road/Bushy Park Road:** Adjustments to the junction layout would be required to facilitate the bus lanes and cycle tracks on approach to the junction. There would also be a potential requirement to relocate/provide new signal equipment.
7. **Terenure Cross:** Adjustments to the junction layout would be required to facilitate the bus lanes and cycle tracks on approach to the junction. There would also be a potential requirement to relocate/provide new signal equipment.

4.4.1.2.4 Section 1b Route Option Assessment

Details of the route options assessment undertaken for the Rathfarnham Road study area section are presented in Appendix F. The relative ranking of route options against the scheme assessment sub-criteria is summarised in **Table 4.10**.

Table 4.10: Section 1 Route MCA Summary

Appraisal Criteria	Sub-Criteria	Option RF1	Option RF2	Option RF3	Option RF4	Option RF5	Option RF6	Option RF7	Option RF8	Option RF9
1 Economy	1A Capital Cost									
	1B Transport Quality & Reliability									
2 Integration	2A Land Use Policy									
	2B Residential Population and Employment Catchments									
	2C Transport Network Integration									
	2D Cycle Network integration									
	2E Traffic Network Integration									
3 Accessibility & Social Inclusion	3A Key Trip Attractors									
	3B Deprived Geographic Areas									
4 Safety	4A Road Safety									
	4B Pedestrian Safety									
5 Environment	5A Archaeology & Cultural Heritage									
	5B Architectural Heritage									
	5C Flora & Fauna									
	5D Soils, Geology & Hydrogeology									
	5E Landscape & Visual									
	5F Air Quality									
	5G Noise & Vibration									

Appraisal Criteria	Sub-Criteria	Option RF1	Option RF2	Option RF3	Option RF4	Option RF5	Option RF6	Option RF7	Option RF8	Option RF9
	5H Land Use Character									

In terms of Capital Cost, Options RF2 would be the most expensive option due to the significant infrastructure costs associated with delivering the alternative cycle facilities coupled with land acquisition costs. Option RF9 would have a higher cost than other options, but slightly lower than RF2 due to lower levels of land acquisition. Other options would have lower associated capital costs as generally less physical infrastructure is required to deliver them. Option RF1 performs slightly less favourably than Options RF3-RF8 under this criterion due to slightly higher infrastructure costs and land acquisition costs.

In terms of Transport Quality and Reliability, Option RF9 performs the best as it provides significant levels of physical bus priority in combination with segregated or cycle facilities. Options RF1, RF2 and RF5 also perform well under this criterion.

These options would rely on signal-controlled priority in certain areas to provide bus priority, however the balance of inbound and outbound bus priority that would be provided under these options is considered to be more appropriate when compared to Options RF3,RF4, RF6 RF7 and RF8.

All options would serve the same catchments and as such are ranked equally in relation to land use policy and residential population catchments and employment catchments. Similarly, in terms of transport network integration, as all options would follow the same route, the opportunity for interchange with other routes is equal.

In terms of cycle network integration, Options RF3-RF8 would provide cycle facilities along Primary Route 10 in the GDA cycle network plan, and as such perform the best under this criterion. Options RF2 and RF9 also perform well as while they would not provide cycle facilities along a section of Primary Route 10, they do deliver high-quality facilities along the Dodder Greenway. Option RF1 would provide an alternative cycle facility on an existing narrow laneway linking to Brookvale Downs, which is not considered attractive for cyclists and so performs worse than other options under this criterion.

Options RF7, RF8 and RF9 perform much worse than other options under the traffic network integration criterion, due to the significant detours that would be required for southbound through traffic as well as local access to Rathfarnham Village and the surrounding residential area. Options RF1 and RF2 perform the best under this criterion as all traffic movements would be retained. Options RF3-RF6 perform less favourably under this criterion due to the impact of the signal-controlled priority on the traffic network

All options rank equally under accessibility and social inclusion as they would all follow the same route.

All options rank equally under safety as they would all require the same number of turning movements at junctions and footpath widths would be the same throughout.

Option RF1 performs slightly worse than other options under the archaeological and cultural heritage criteria due to the impact on Pearse bridge which is a recorded monument.

Options RF1 and RF2 perform slightly worse than other options under the architectural heritage criteria due to the impact of Option RF1 on Pearse Bridge and of both options on Rathfarnham War Memorial Hall which are both protected structures.

Options RF1, RF2 and RF9 perform worse than other options under flora and fauna due to the significantly higher number of trees that would be impacted. These trees would be impacted due to road widening that would be required to deliver these options, as well as the construction of the boardwalk at the Pearse bridge and the parallel cycle route, respectively.

In addition to the impact on trees, Option RF2 and RF9 would have the potential to impact on the habitats of bats, badgers, otters and kingfishers which are present in the vicinity of the proposed bridge locations.

Options RF2 and RF9 perform the worst under the landscape and visual criterion due to the likely impacts that would be associated with the construction of new bridge structures as well as the land acquisition impacts. All remaining options perform the best under this criterion as they would not require the construction of new bridge structures.

Options RF7, RF8 and RF9 perform slightly better than other options under the criteria of Air Quality and Noise and Vibration due to the fact that through traffic would be diverted off of the route under those options.

A summary of the assessment and relative ranking of route options against the five main assessment criteria is presented in **Table 4.11**.

Table 4.11: Section 1 MCA Criteria Summary

Appraisal Criteria	Option RF1	Option RF2	Option RF3	Option RF4	Option RF5	Option RF6	Option RF7	Option RF8	Option RF9
1 Economy									
2 Integration									
3 Accessibility & Social Inclusion									
4 Safety									
5 Environment									

4.4.1.2.5 Section 1b Conclusion and Preferred Option

Based on the assessment undertaken, route Option RF5 offers more benefits over other options.

It performs favourably under the Economy, Integration and Environment criteria, while performing equally to other options under the Accessibility and Social Inclusion and Safety criteria. Option RF5 is the PRO for the Rathfarnham Road area for the following reasons:

- It would provide segregated inbound bus priority on the CBC throughout the majority of this section of the scheme, supporting reliability of journey time for the bus. Bus priority would be secured through bus priority traffic signals over the short section where an inbound bus lane would not be provided;
- It would provide sections of segregated outbound bus priority on approach to junctions, in combination with signal-controlled priority, thus reducing the impact on properties with steep existing driveways along Rathfarnham Road both north and south of the River Dodder and reducing the associated construction impact of works to mitigate any such impacts;
- It would deliver significant portions of segregated online cycle facilities on Primary Route 10 of the GDA cycle network plan; and
- It would maintain existing general traffic movements along Rathfarnham Road.

4.4.2 Section 2 Option Assessment: Terenure Cross to Grand Canal

4.4.2.1 Section 2a - Terenure to Grosvenor Road

4.4.2.1.1 Introduction

Numerous submissions received as part of the public consultation raised concerns about the impact of land acquisition along this section of the route, particularly in relation to the implications on heritage, considering the number of protected structures along this route as well as the removal of trees.

In addition, upon review of the EPR Option proposals with the benefit of topographical survey, it was evident that portions of the EPR Option proposals, namely Terenure Road East immediately east of Rathfarnham Road, were not practicable due to lack of available space. For these reasons, alternative options have been considered in these areas.

4.4.2.1.2 Options Considered

A number of alternative options have been developed with the objective of addressing the issues noted above. These options are outlined in more detail below:

Option RG1: Option RG1 would provide a general traffic lane in each direction along the entirety of this route section, as well as dedicated bus lanes and cycle tracks along the CBC for the majority of the route section.

Under this option, bus lanes and cycle tracks would not be provided over a short section of Terenure Road East immediately east of Terenure Cross where bus priority would be managed through traffic signals.

This option is a version of the EPR Option, refined to reflect issues identified upon review of the topographical survey.

Option RG2: Option RG2 would provide a general traffic lane in each direction on Terenure Road East as well as bus lanes in each direction. Under this option, bus lanes would not be provided over a short section of Terenure Road East immediately east of Terenure Cross where bus priority would be managed through signal-controlled priority. No cycle facilities would be provided on Terenure Road East under this option. Additional cycle facilities would be provided on Terenure Road North and Harold's Cross Road, linking to the Kimmage to City Centre CBC, and providing an alternative route for cyclists travelling towards the city which would otherwise use Terenure Road East.

Additional secondary cycle facilities would also be provided on Bushy Park Road, Wasdale Park, Wasdale Grove, Victoria Road, Zion Road and Orwell Road, linking back to the CBC at Rathgar Village to provide some level of service for east-west cyclists. A one-way inbound traffic arrangement would be provided on Rathgar Road, with outbound traffic diverted to alternative routes. 1.5m wide cycle tracks would be provided along Rathgar Road.

Option RG3: Option RG3 would provide a general traffic lane in each direction on Terenure Road East as well as bus lanes and cycle tracks in each direction.

Under this option, bus lanes and cycle tracks would not be provided over a short section of Terenure Road East immediately east of Terenure Cross where bus priority would be managed through signalling.

A one-way inbound general traffic arrangement would be provided on Rathgar Road, with outbound traffic diverted to alternative routes. 2.0m wide cycle tracks would be provided along Rathgar Road.

Option RG4: Option RG4 would provide a general traffic lane in each direction on Terenure Road East as well as bus lanes in each direction. Under this option, bus lanes would not be provided over a short section of Terenure Road East immediately east of Terenure Cross where bus priority would be managed through signal-controlled priority.

No cycle facilities would be provided on Terenure Road East under this option. Additional cycle facilities would be provided on Terenure Road North and Harold's Cross Road, linking to the Kimmage to City Centre CBC, and providing an alternative route for cyclists travelling towards the city which would otherwise use Terenure Road East. Additional cycle facilities would also be provided on Bushy Park Road, Wasdale Park, Wasdale Grove, Victoria Road, Zion Road and Orwell Road, linking back to the CBC at Rathgar Village to provide some level of service for east-west cyclists. A two-way general traffic arrangement would be provided on Rathgar Road. An inbound bus lane would be provided between Highfield Road and Frankfort Avenue, while north of this point inbound bus priority would be managed through signal-controlled priority.

An outbound bus lane would be provided between Grosvenor Road and Frankfort Avenue, while south of this point outbound bus priority would be managed through signal-controlled priority. 1.5m wide cycle tracks would be provided along Rathgar Road.

Option RG5: Option RG5 would provide a general traffic lane in each direction on Terenure Road East as well as bus lanes and cycle tracks in each direction. Under this option, bus lanes and cycle tracks would not be provided over a short section of Terenure Road East immediately east of Terenure Cross where bus priority would be managed through signalling. A two-way general traffic arrangement would be provided on Rathgar Road. An inbound bus lane would be provided between Highfield Road and Frankfort Avenue, while north of this point inbound bus priority would be managed through signal-controlled priority.

An outbound bus lane would be provided between Grosvenor Road and Frankfort Avenue, while south of this point outbound bus priority would be managed through signal-controlled priority. 2.0m wide cycle tracks would be provided along Rathgar Road.

4.4.2.1.3 Alternative Options Considered

A number of other options were also considered in the area but were not carried forward for the reasons briefly outlined below:

- **Option of a bus gate along Terenure Road East between Rathfarnham Road and Rathgar Road**. This option was not considered practicable due to the orbital traffic movement function of Terenure Road East and the lack of an alternative route for east-west traffic movements. In addition, a bus gate at this location was not considered practicable in combination with scheme proposals for a bus gate within Rathmines Village, which is considered a more appropriate location given the inability to introduce other bus priority measures on this road section.
- **Option of a bus gate along Rathgar Road.** A bus gate on Rathgar Road was not considered practicable in combination with scheme proposals for a bus gate within Rathmines Village, which is considered a more appropriate location given the inability to introduce other bus priority measures on this road section. Furthermore, the permeable nature of the surrounding road network would make it difficult to mitigate against vehicular traffic bypassing the bus gate, whilst also maintaining vehicular access to these areas for residents.
- **Option of the Rathfarnham to City Centre section following Harold's Cross Road and connecting to the Kimmage to City Centre CBC.** This option has been previously discussed in section 4.3.4.1 of this report. The primary reason that this option has not been progressed is the significantly stronger demand for bus along the Rathgar Road / Rathmines Road when compared to Harold's Cross Road as illustrated in **Figure 4.27** and **Figure 4.28**.

4.4.2.1.4 Route Option RG1

Route Description

Route option RG1 is presented in **Figure 4.97**.

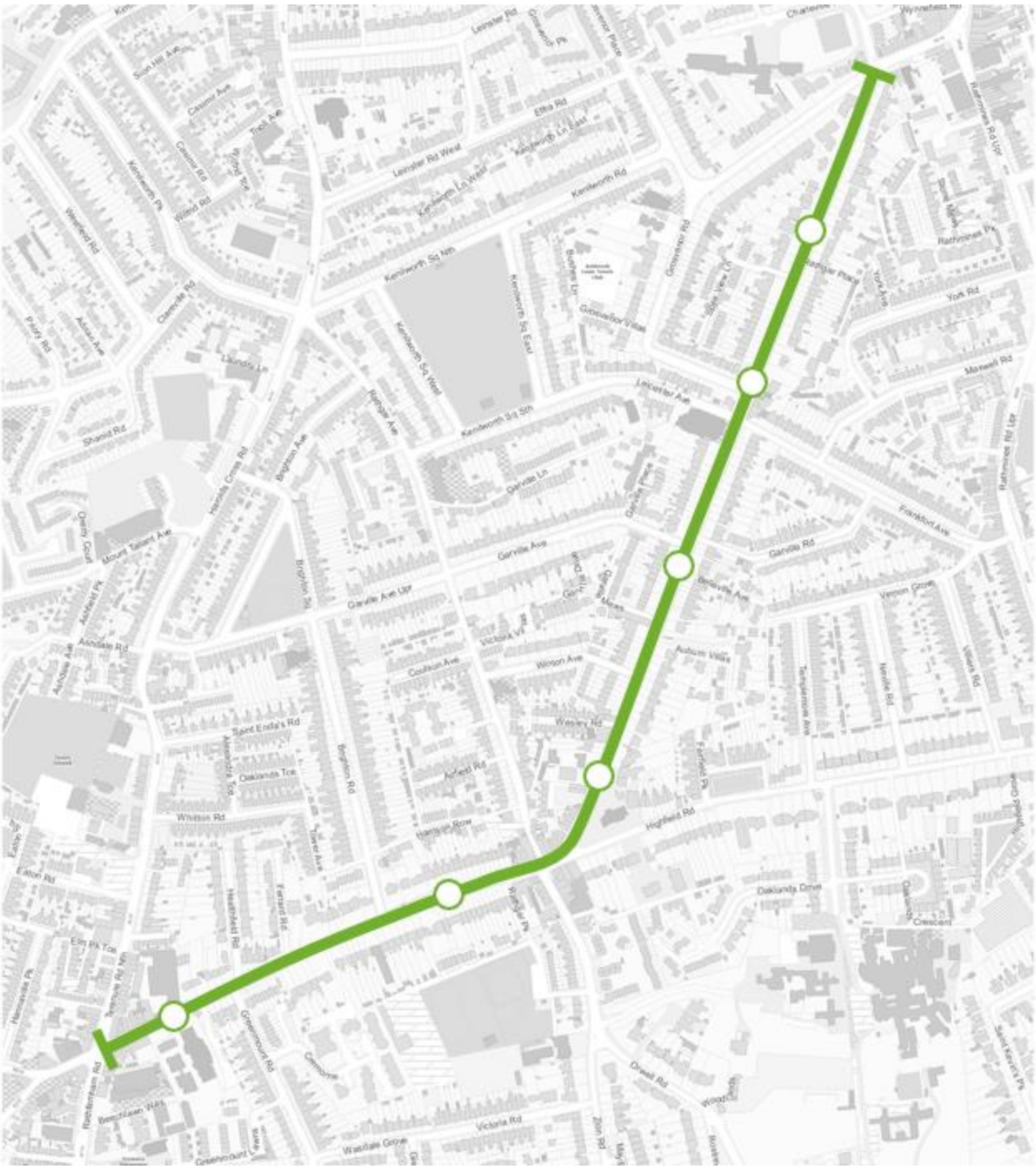

Figure 4.97: Route Option RG1

Inbound: This section of the route would commence on Terenure Road East at Terenure Cross. The CBC route would proceed along Terenure Road East and Rathgar Road. This route section would end at the junction of Rathgar Road and Grosvenor Road.

Outbound: The outbound route would follow the same route as the inbound route.

Stops: A total of six stops would likely be provided in each direction along this route section.

Indicative Scheme Design

Figure 4.98 illustrates the indicative scheme design for this route option. The location of cross-sections and junctions referenced in subsequent sections describing this route option are also presented in this figure.

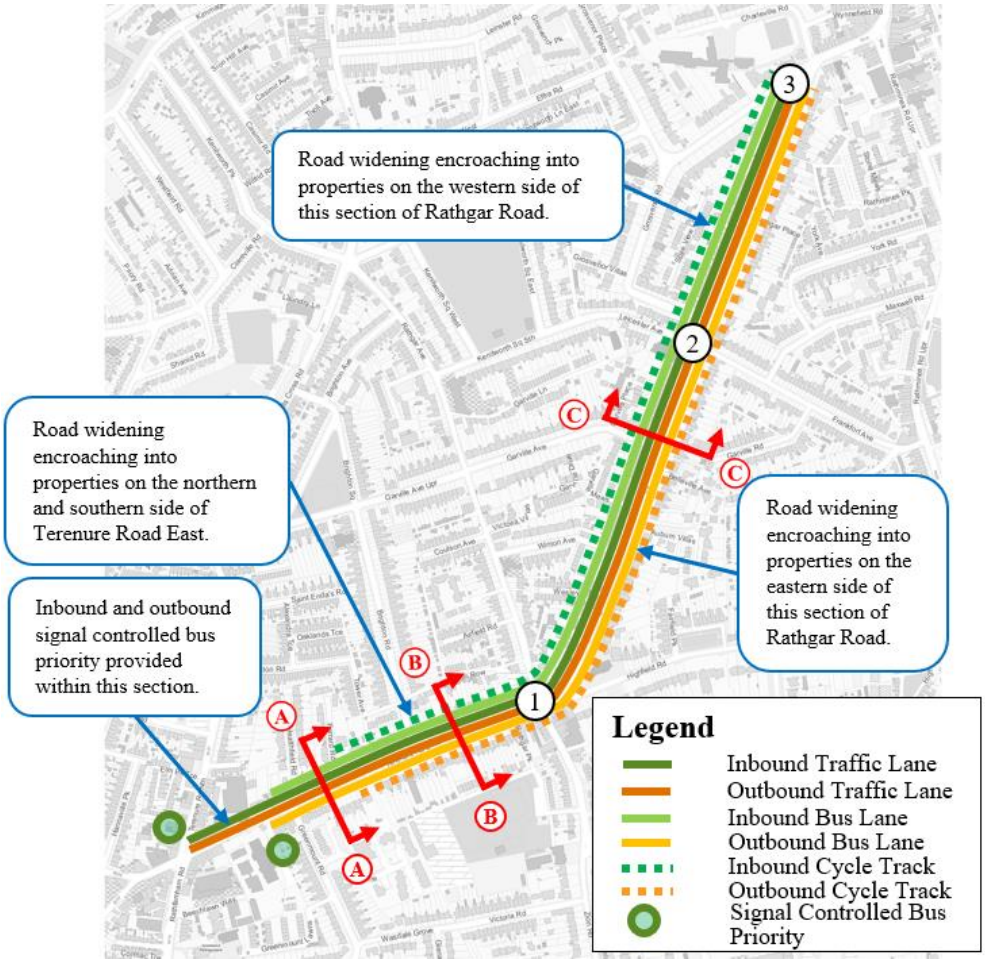

Figure 4.98: Route Option RG1 Indicative Scheme Design

This section of the route would commence on Terenure Road East at Terenure Cross. Between Terenure Cross and St Joseph's Church a general traffic lane in each direction is proposed. Inbound and outbound bus priority would be managed through signal-controlled priority through this section.

An inbound and outbound bus lane would be developed at St. Joseph's Church. The cross-section at this point would consist of a general traffic lane and a bus lane in each direction. This option would require widening into properties on the northern and southern sides of Terenure Road East. The proposed cross-section along this section of Terenure Road East is presented in **Figure 4.99**.

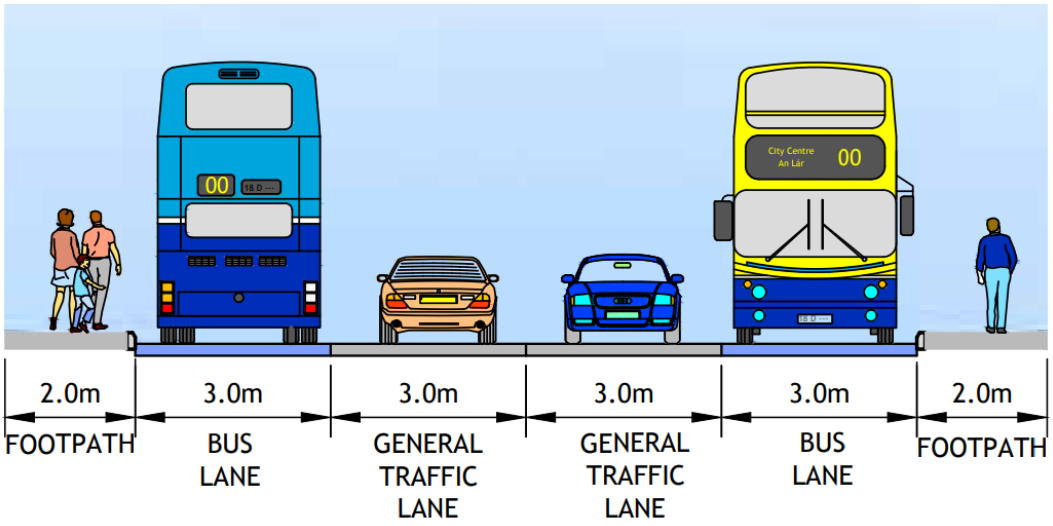

Figure 4.99: Cross-Section A-A (relevant to RG1, RG2, RG3, RG4 & RG5)

Inbound and outbound cycle tracks would be provided between the junction with Ferrard Road as far as Grosvenor Road. This cross-section, consisting of dedicated cycle tracks, a bus lane and a general traffic lane in each direction, would continue onto Rathgar Road. This cross-section would result in widening into adjacent properties on both Terenure Road East and Rathgar Road. This proposed cross-section is presented in **Figure 4.100** and **Figure 4.101**.

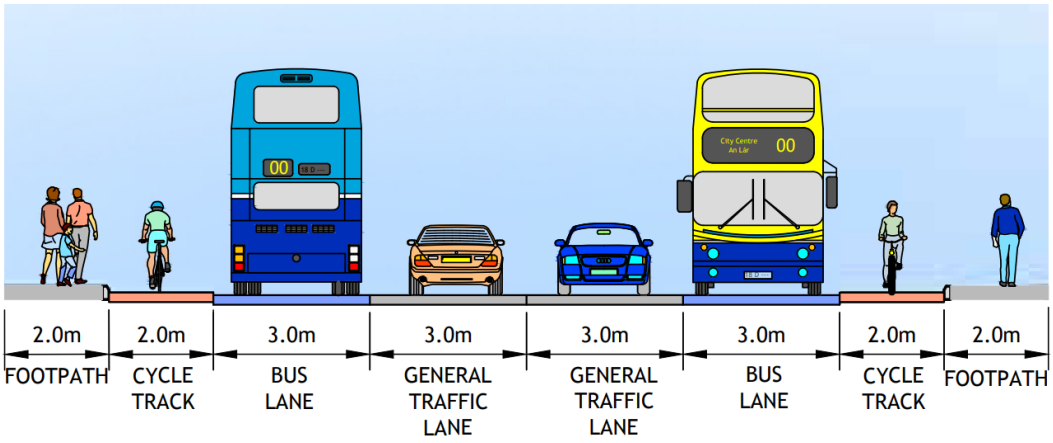

Figure 4.100: Cross-Section B-B (relevant to RG1, RG3 & RG5)

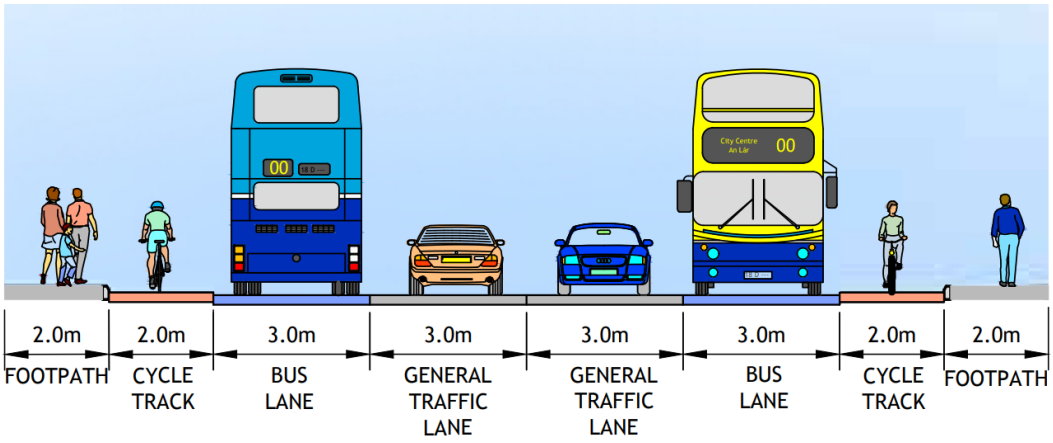

Figure 4.101: Cross-Section C-C (relevant to RG1)

In summary, this route option would have the following characteristics:

- Bus priority would be managed through signal-controlled priority between Terenure Cross and St. Joseph's Church;
- Bus lanes would be provided in each direction between St. Joseph's Church and Grosvenor Road; and
- 2.0m wide cycle tracks would be provided in each direction between Ferrard Road and Grosvenor Road.

Junctions:

There are three signalised junctions along this route option, some of which would require upgrading to facilitate bus priority. The locations of these junctions are presented in **Figure 4.98** and discussed below:

1. **Terenure Road East/Rathgar Road/Rathgar Avenue/ Orwell Road/Highfield Road:** Adjustments to the junction layout would be required to facilitate the outbound bus lane and the cycle tracks on approach to the junction. There would also be a potential requirement to relocate/provide new signal equipment.
2. **Rathgar Road/Leicester Avenue/Frankfort Avenue:** Adjustments to the junction layout would be required to facilitate the bus lanes and cycle tracks on approach to the junction. There would also be a potential requirement to relocate/provide new signal equipment.
3. **Rathgar Road/Grosvenor Road:** Adjustments to the junction layout would be required to facilitate the bus lanes and cycle tracks on approach to the junction. Outbound traffic at this junction would not be permitted to turn onto Rathgar Road, but would instead be directed to Grosvenor Road. There would also be a potential requirement to relocate/provide new signal equipment.

4.4.2.1.5 Route Option RG2

Route Description

Route option RG2 is presented in **Figure 4.102**.

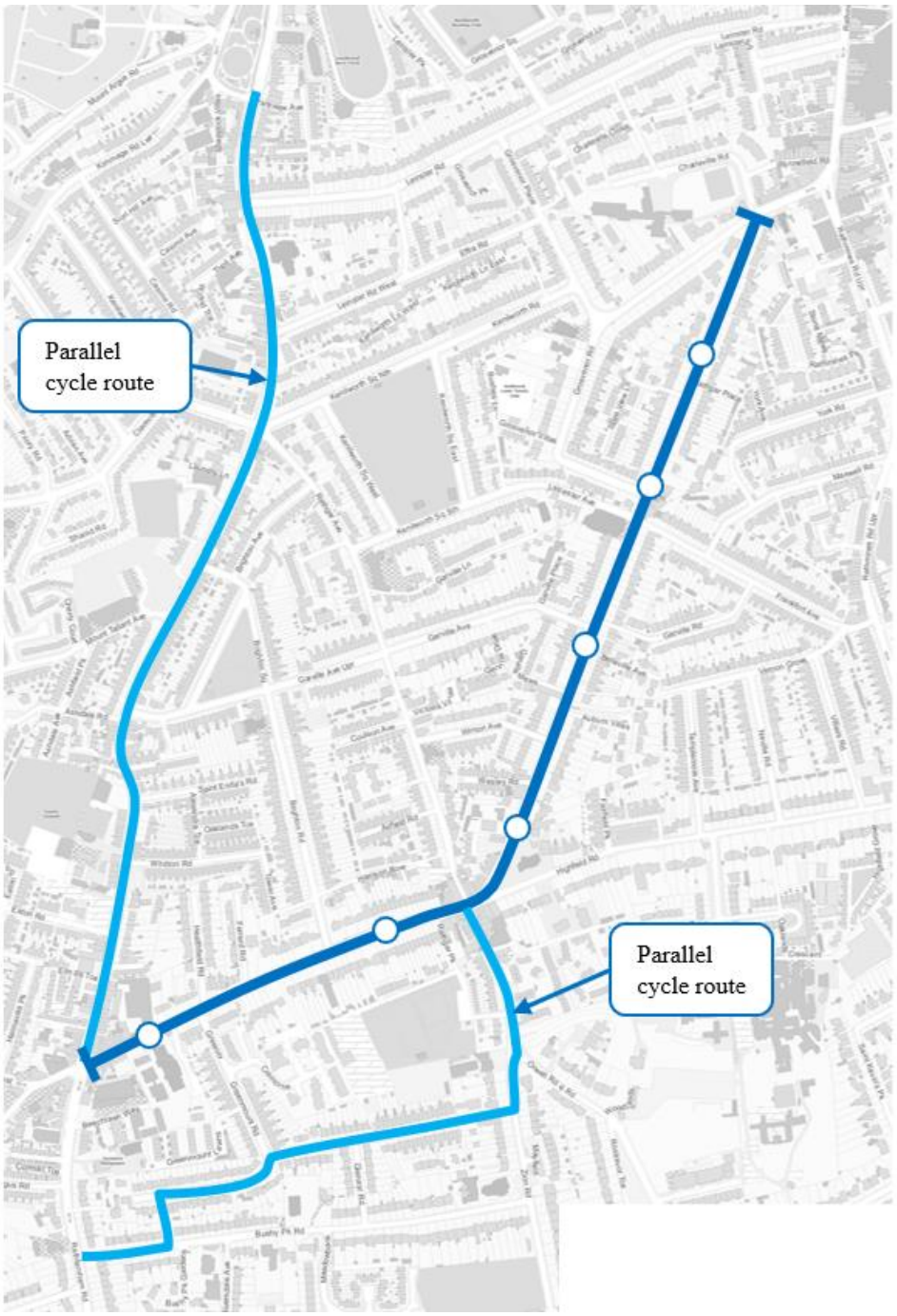

Figure 4.102: Route Option RG2

Inbound: This section of the route would commence on Terenure Road East at Terenure Cross. The CBC route would proceed along Terenure Road East and Rathgar Road.

This route section would end at the junction of Rathgar Road and Grosvenor Road. Alternative cycle facilities would be provided on Terenure Road North and Harold's Cross Road, linking to the Kimmage to City Centre CBC at Harold's Cross, as well as on Bushy Park Road, Wasdale Park, Wasdale Grove, Victoria Road, Zion Road and Orwell Road, linking back to the CBC at Rathgar Village.

Outbound: The outbound route would follow the same route as the inbound route.

Stops: A total of six stops would likely be provided in each direction along this route section.

Indicative Scheme Design

Figure 4.103 illustrates the indicative scheme design for this route option. The location of cross-sections and junctions referenced in subsequent sections describing this route option are also presented in this figure.

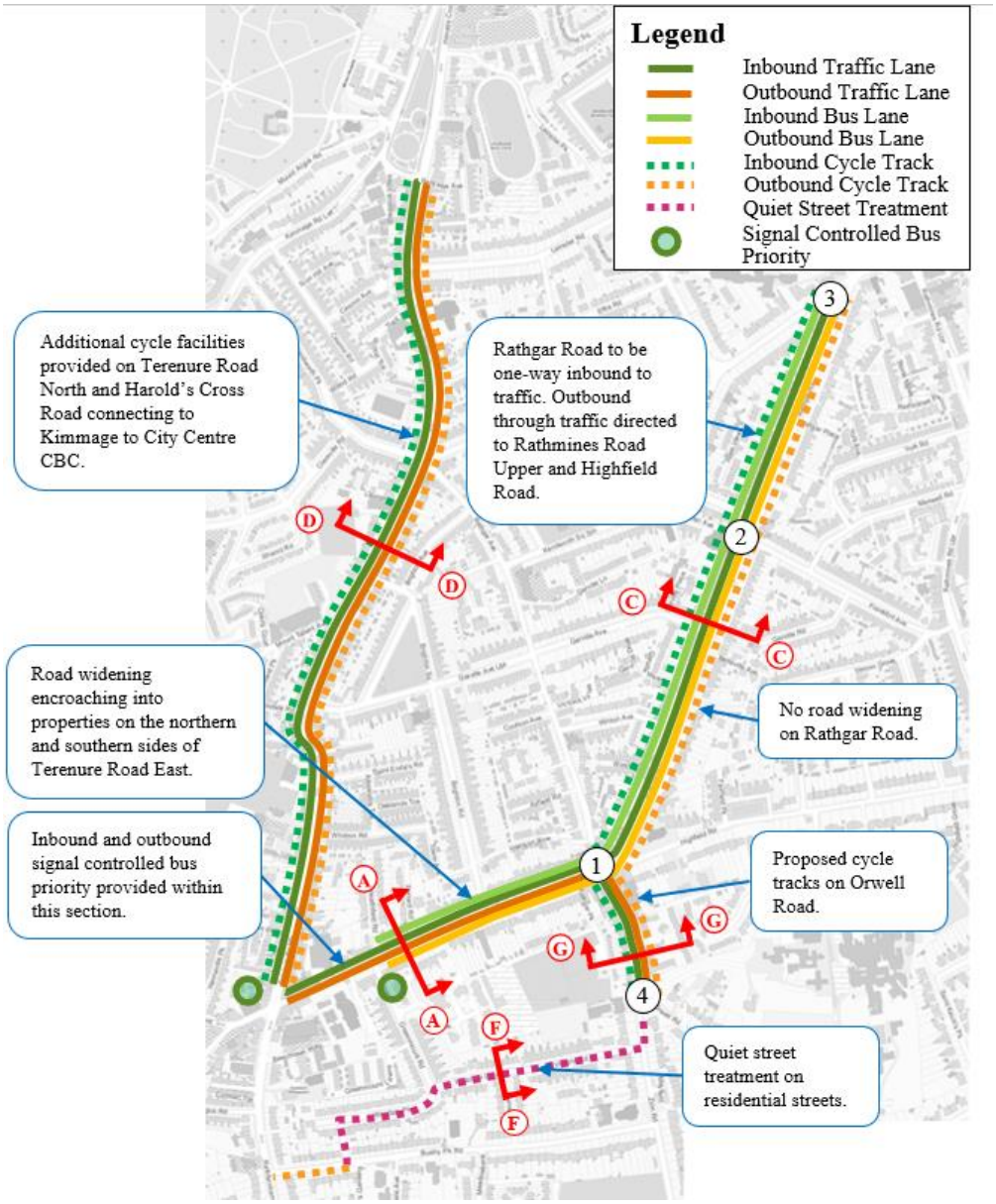

Figure 4.103: Route Option RG2 Indicative Scheme Design (refer to earlier report sections for duplicate cross-sections)

Between Terenure Cross and Ferrard Road the infrastructure provided would be as described in Option RG1. Between Ferrard Road and Rathgar Road the cross section would consist of a general traffic lane and a bus lane in each direction. The proposed cross-section along this section of Terenure Road East is presented in **Figure 4.99**.

Rathgar Road would be made one-way inbound for traffic, with outbound traffic diverted to other routes. Outbound through traffic would be directed to Rathmines Road Upper and Highfield Road, while local outbound traffic would use the numerous streets connecting to Rathgar Road for access. The right turn movements from Rathmines Road Upper to Highfield Road and from Highfield Road onto Rathgar Road would be reinstated under this option.

1.5m wide inbound and outbound cycle tracks would be provided along Rathgar Road. No road widening would be required on Rathgar Road to deliver this cross-section, significantly reducing the impact on protected structures, private garden trees and resulting in reduced land acquisition when compared with options requiring road widening. This proposed cross-section is presented in **Figure 4.104**.

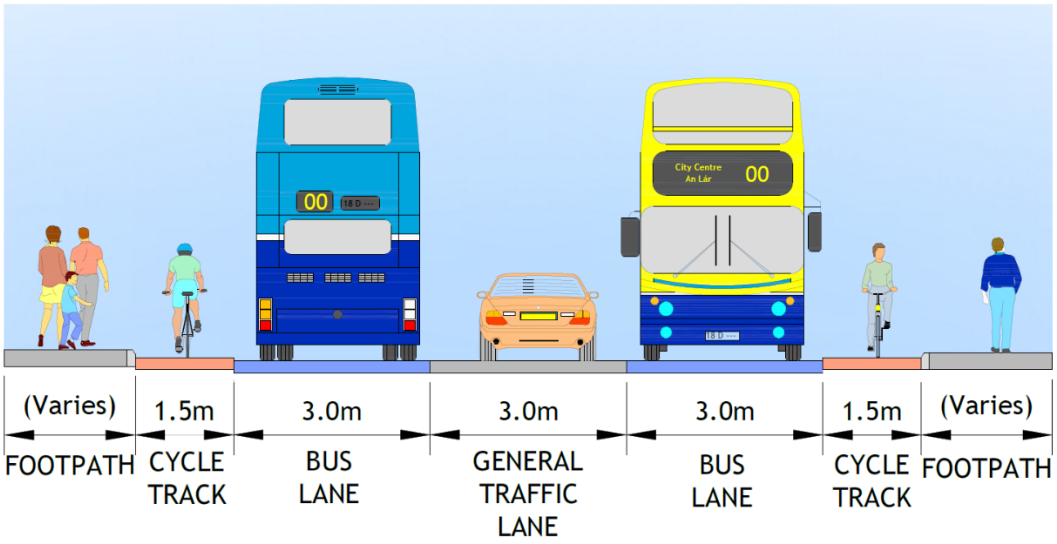

Figure 4.104: Cross-Section C-C (relevant to RG2)

Additional cycle facilities would be provided on Terenure Road North and Harold's Cross Road to cater for city bound cyclists. A general traffic lane in each direction would be maintained along this section of the route. The removal of some on-street parking would be required to deliver these additional cycle facilities. The proposed cross-section on this portion of the route is presented in **Figure 4.105**.

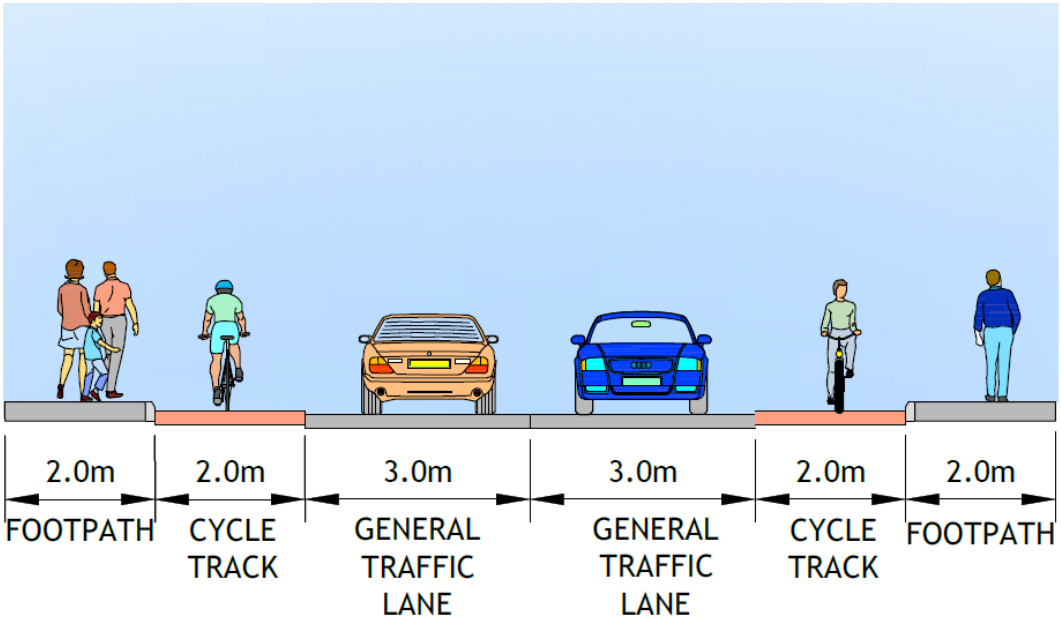

Figure 4.105: Cross-Section D-D (relevant to RG2 & RG4)

A short section of outbound cycle track would also be provided on Bushy Park Road, in addition to a Quiet Street Treatment on Wasdale Park, Wasdale Grove, Victoria Road and Zion Road linking to proposed cycle tracks on Orwell Road. This facility would provide a secondary east-west link between the CBC on Rathfarnham Road and Rathgar Village northwards. A general traffic lane in each direction would be maintained along this section of the route. Typical cross-sections on this portion of the route are presented in **Figure 4.106** and **Figure 4.107**.

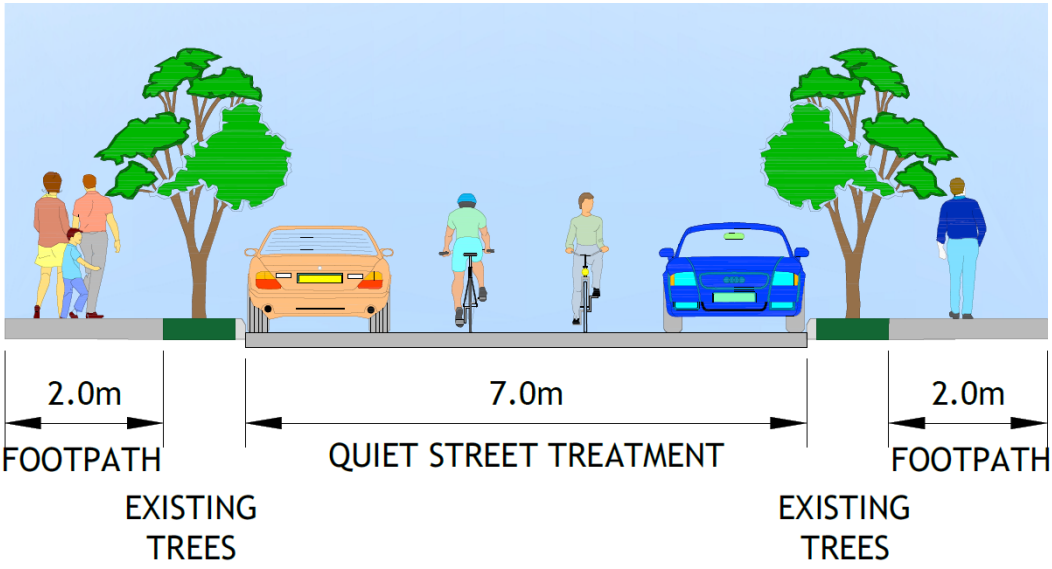

Figure 4.106: Cross-Section F-F (relevant to RG2 & RG4)

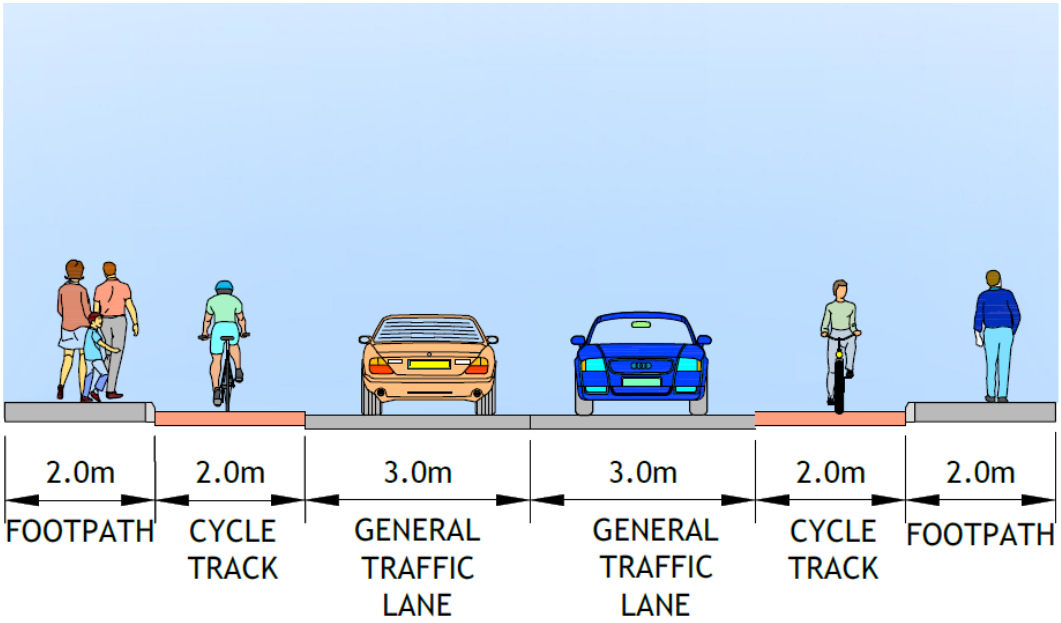

Figure 4.107: Cross-Section G-G (relevant to RG2 & RG4)

In summary, this route option would have the following characteristics:

- Bus priority would be managed through signal-controlled priority between Terenure Cross and St. Joseph's Church;

- Bus lanes would be provided in each direction between St. Joseph's Church and Grosvenor Road;
- 1.5m wide cycle tracks would be provided in each direction between Highfield Road and Grosvenor Road;
- Additional 2.0m wide cycle tracks would be provided on Terenure Road North and Harold's Cross Road from Terenure Cross to Harold's Cross Park, linking the Kimmage to City Centre CBC; and
- Additional section of outbound cycle track on Bushy Park Road, Quiet Street Treatment on Wasdale Park, Wasdale Grove, Victoria Road and Zion Road would be provided, linking to additional 2.0m wide cycle tracks on Orwell Road.

Junctions:

There are three signalised junctions along this route option, some of which would require upgrading to facilitate bus priority. The locations of these junctions are presented in **Figure 4.103** and discussed below:

1. **Terenure Road East/Rathgar Road/Rathgar Avenue/ Orwell Road/Highfield Road:** Adjustments to the junction layout would be required to facilitate the outbound bus lane and the cycle tracks on approach to the junction. There would also be a potential requirement to relocate/provide new signal equipment.
2. **Rathgar Road/Leicester Avenue/Frankfort Avenue:** Adjustments to the junction layout would be required to facilitate the bus lanes and cycle tracks on approach to the junction. There would also be a potential requirement to relocate/provide new signal equipment.
3. **Rathgar Road/Grosvenor Road:** Adjustments to the junction layout would be required to facilitate the bus lanes and cycle tracks on approach to the junction. Outbound traffic at this junction would not be permitted to turn onto Rathgar Road, but would instead be directed to Grosvenor Road. There would also be a potential requirement to relocate/provide new signal equipment.
4. **Orwell Road/Zion Road**: Adjustments to the junction layout would be required to facilitate the cycle tracks on approach to the junction. There would also be a potential requirement to relocate/provide new signal equipment.

4.4.2.1.6 Route Option RG3

Route Description

Route option RG3 is presented in **Figure 4.108**.

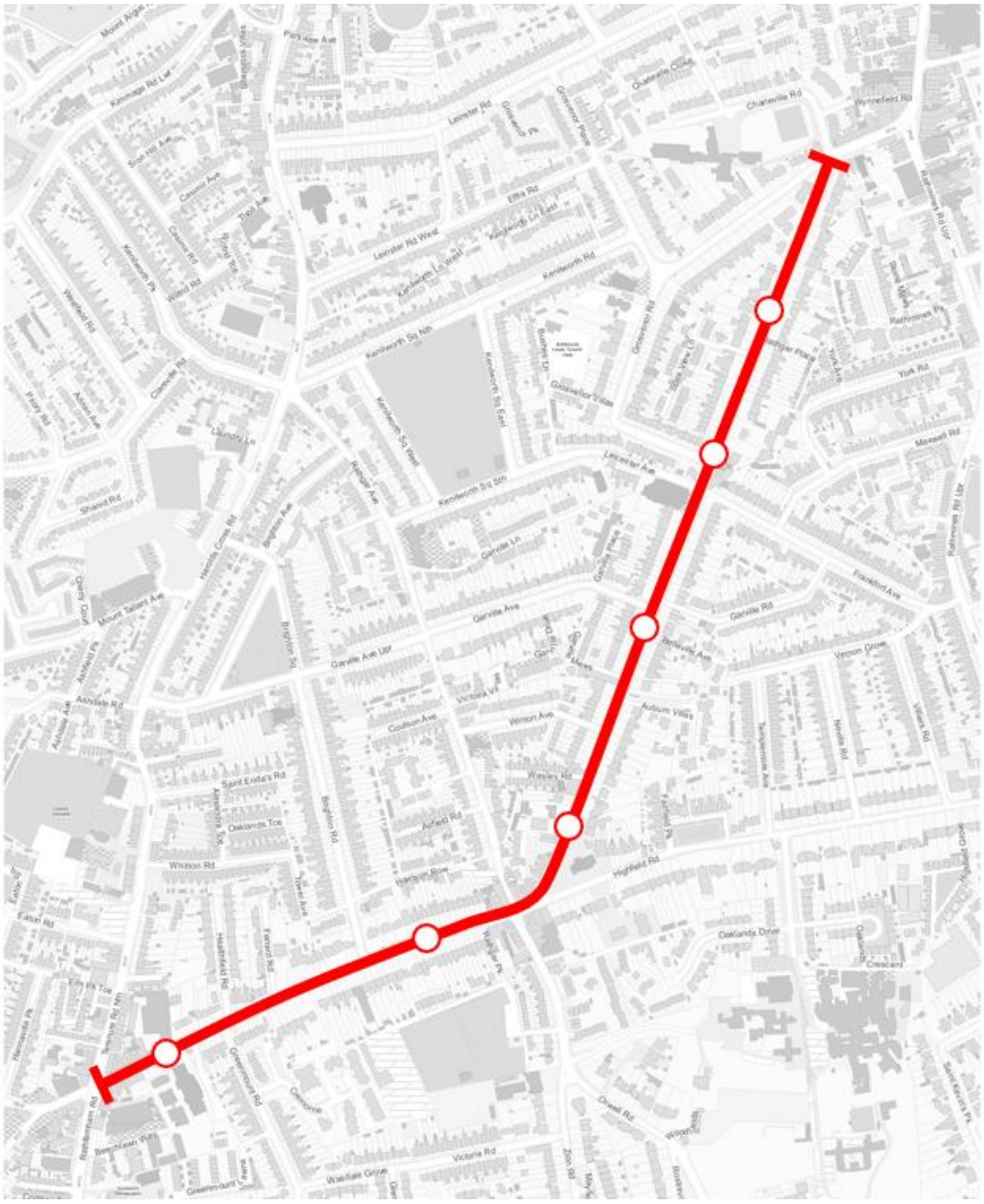

Figure 4.108: Route Option RG3

Inbound: This section of the route would commence on Terenure Road East at Terenure Cross. The CBC route would proceed along Terenure Road East and Rathgar Road. This route section would end at the junction of Rathgar Road and Grosvenor Road.

Outbound: The outbound route would follow the same route as the inbound route.

Stops: A total of six stops would likely be provided in each direction along this route section.

Indicative Scheme Design

Figure 4.109 illustrates the indicative scheme design for this route option. The location of cross-sections and junctions referenced in subsequent sections describing this route option are also presented in this figure.

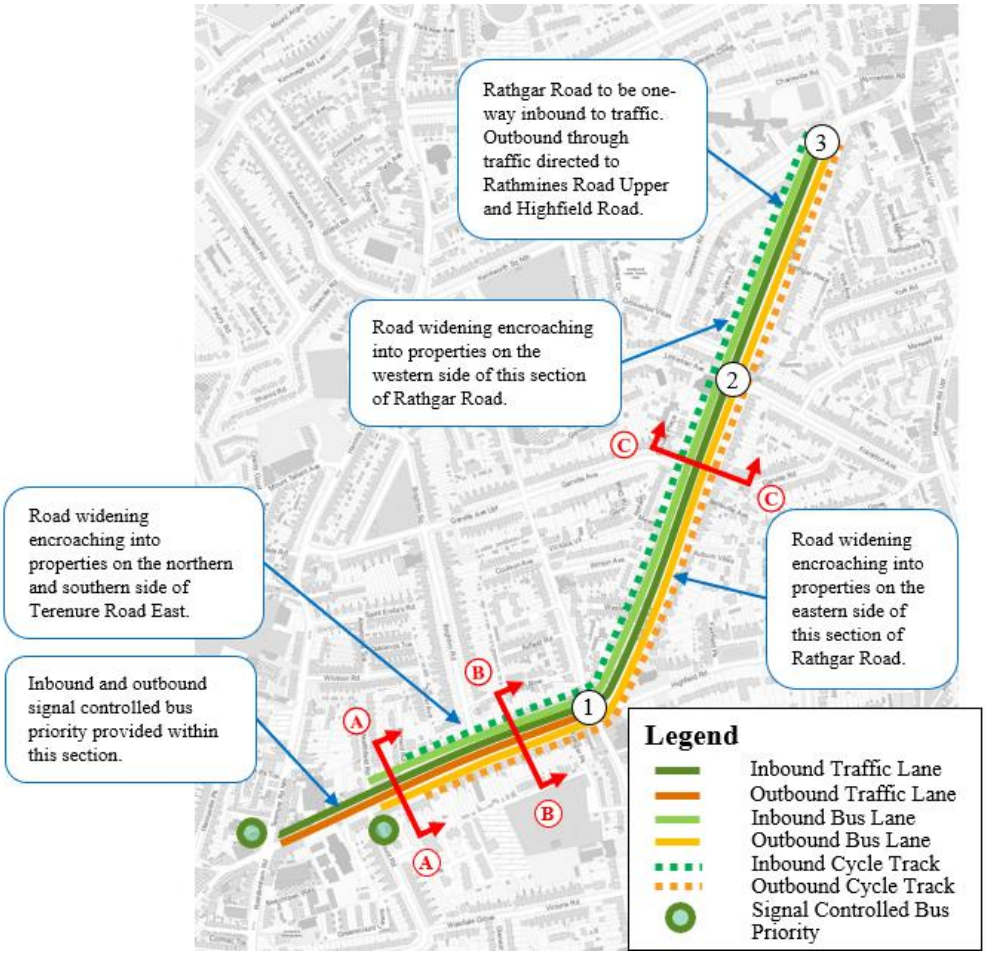

Figure 4.109: Route Option RG3 Indicative Scheme Design (refer to earlier report sections for duplicate cross-sections)

Between Terenure Cross and Rathgar Village the infrastructure to be provided would be as described in Option RG1. The proposed cross-sections on this portion of the route are presented in **Figure 4.99** and **Figure 4.100**.

Rathgar Road would be made one-way inbound for traffic, with outbound traffic diverted to other routes.

Outbound through traffic would be directed to Rathmines Road Upper and Highfield Road, while local outbound traffic would use the numerous streets connecting to Rathgar Road for access.

The right turn movements from Rathmines Road Upper to Highfield Road and from Highfield Road onto Rathgar Road would be reinstated under this option.

2.0m wide inbound and outbound cycle tracks would be provided along Rathgar Road. This proposed cross-section is presented in and **Figure 4.110**.

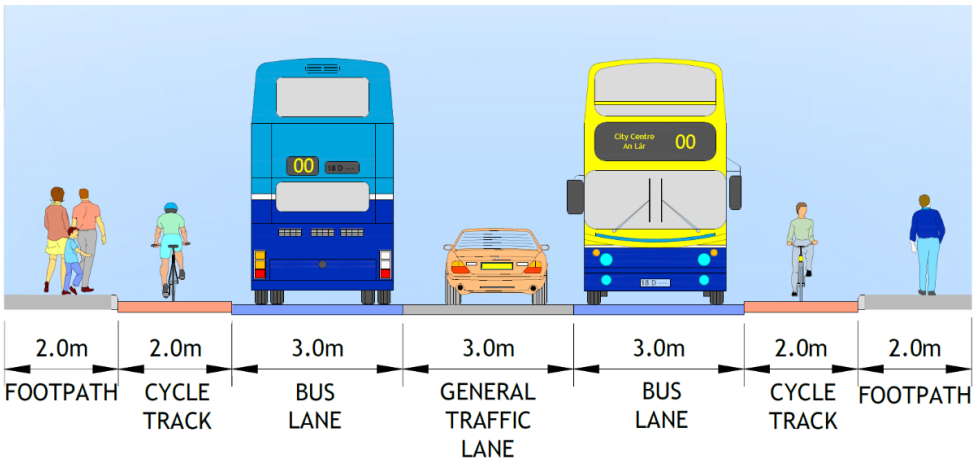

Figure 4.110: Cross Section C-C (Relevant to RG3)

In summary, this route option would have the following characteristics:

- Bus priority would be managed through signal-controlled priority between Terenure Cross and St. Joseph's Church;
- Bus lanes would be provided in each direction between St. Joseph's Church and Grosvenor Road;
- A one-way inbound general traffic regime would be implemented on Rathgar Road; and
- 2.0m wide cycle tracks would be provided in each direction between Ferrard Road and Grosvenor Road.

Junctions:

There are three signalised junctions along this route option, some of which would require upgrading to facilitate bus priority. The locations of these junctions are presented in **Figure 4.109** and discussed below:

1. **Terenure Road East/Rathgar Road/Rathgar Avenue/ Orwell Road/Highfield Road:** Adjustments to the junction layout would be required to facilitate the outbound bus lane and the cycle tracks on approach to the junction. There would also be a potential requirement to relocate/provide new signal equipment.
2. **Rathgar Road/Leicester Avenue/Frankfort Avenue:** Adjustments to the junction layout would be required to facilitate the bus lanes and cycle tracks on approach to the junction.
   There would also be a potential requirement to relocate/provide new signal equipment.

3. **Rathgar Road/Grosvenor Road:** Adjustments to the junction layout would be required to facilitate the bus lanes and cycle tracks on approach to the junction. Outbound traffic at this junction would not be permitted to turn onto Rathgar Road, but would instead be directed to Grosvenor Road. There would also be a potential requirement to relocate/provide new signal equipment.

4.4.2.1.7 Route Option RG4

Route Description

Route option RG4 is presented in **Figure 4.111**.

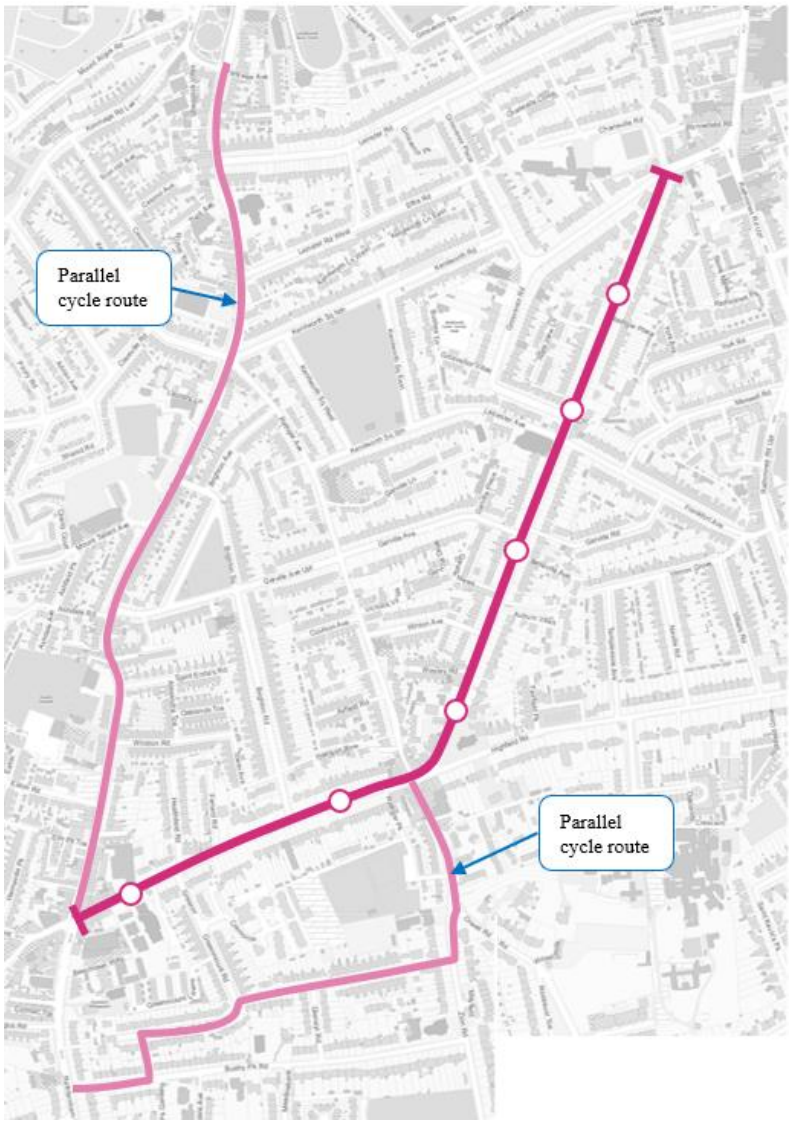

Figure 4.111: Route Option RG4

Inbound: This section of the route would commence on Terenure Road East at Terenure Cross. The CBC route would proceed along Terenure Road East to and Rathgar Road.

This route section ends at the junction of Rathgar Road and Grosvenor Road. Alternative cycle facilities would be provided on Terenure Road North and Harold's Cross Road, linking to the Kimmage to City Centre CBC at Harold's Cross, as well as on Bushy Park Road, Wasdale Park, Wasdale Grove, Victoria Road, Zion Road and Orwell Road, linking back to the CBC at Rathgar Village.

Outbound: The outbound route would follow the same route as the inbound route.

Stops: A total of six stops would likely be provided in each direction along this route section.

Indicative Scheme Design

Figure 4.112 illustrates the indicative scheme design for this route option. The location of cross-sections and junctions referenced in subsequent sections describing this route option are also presented in this figure.

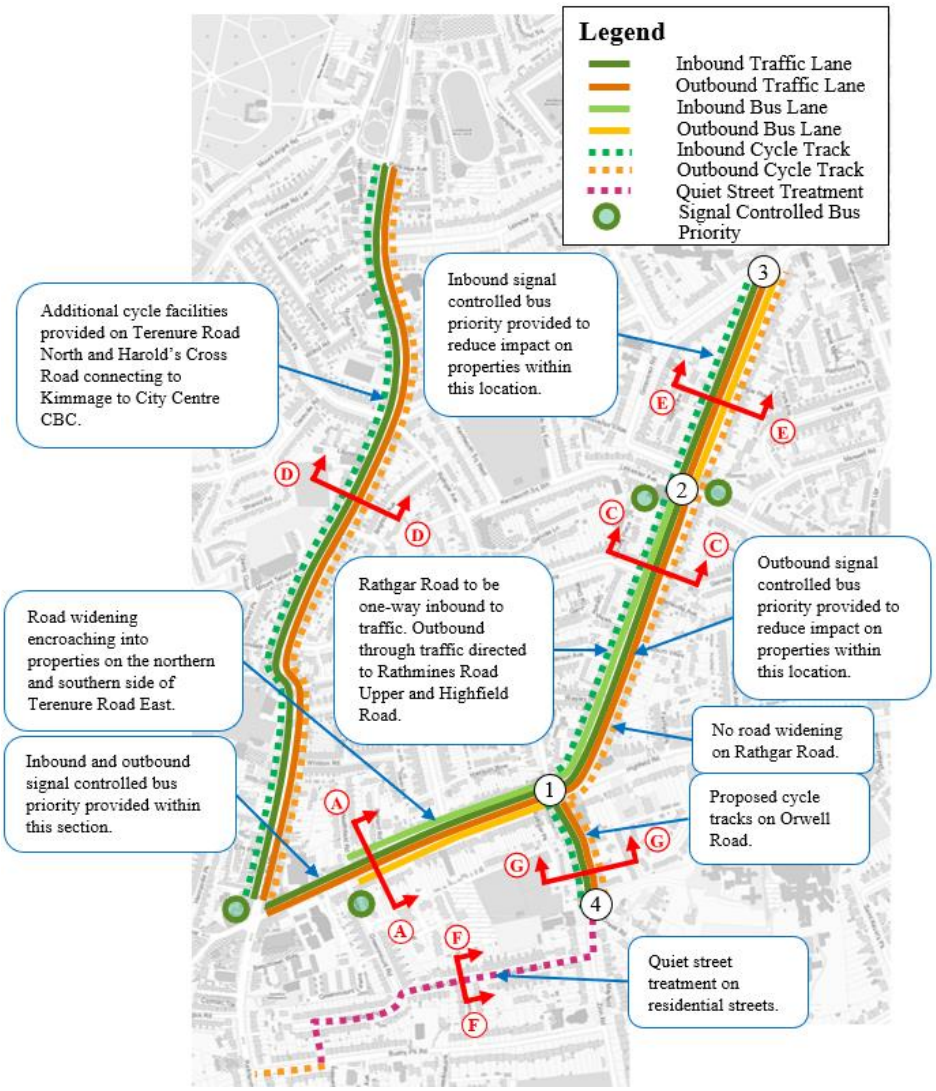

Figure 4.112: Route Option RG4 Indicative Scheme Design (refer to earlier report sections for duplicate cross-sections)

This section of the route would commence on Terenure Road East at Terenure Cross. Between Terenure Cross and Rathgar Village, the infrastructure to be provided would be as per Option RG2. The proposed cross-section along this section of Terenure Road East is presented in **Figure 4.99**.

1.5m wide inbound and outbound cycle tracks would be provided along Rathgar Road.

A dedicated inbound bus lane would be provided between Highfield Road and Frankfort Avenue with signal-controlled priority provided.

No road widening would be required on Rathgar Road to deliver this cross-section, significantly reducing the impact on protected structures, private garden trees and resulting in reduced land acquisition when compared with options requiring road widening. This proposed cross-section is presented in **Figure 4.113**.

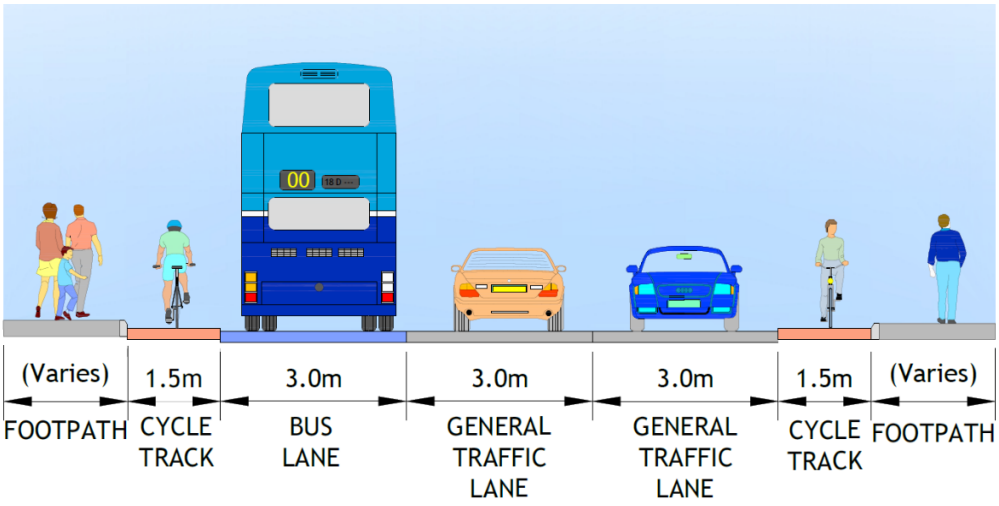

Figure 4.113: Route Option RG4 Cross-Section C-C

A dedicated outbound bus lane would be provided between Frankfort Avenue and Grosvenor Road with Signal-controlled priority provided. This proposed cross-section is presented in **Figure 4.114**.

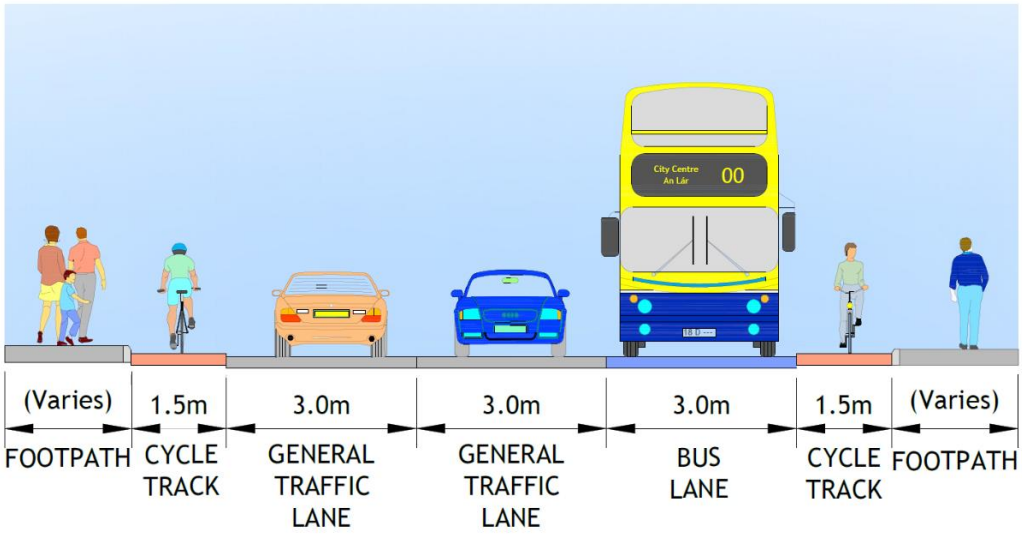

Figure 4.114: Route Option RG4 Cross-Section E-E

As per Option RG2, additional cycle facilities would be provided on Terenure Road North and Harold's Cross Road to cater for city bound cyclists. The proposed cross-section on this portion of the route is presented in **Figure 4.105**.

As per Option RG2, a short section of outbound cycle track would also be provided on Bushy Park Road, in addition to a Quiet Street Treatment on Wasdale Park, Wasdale Grove, Victoria Road and Zion Road linking to proposed cycle tracks on Orwell Road. This facility would provide a secondary east-west link between the CBC on Rathfarnham Road and Rathgar Village northwards.

A general traffic lane in each direction would be maintained along this section of the route. Typical cross-sections on this portion of the route are presented in **Figure 4.106** and **Figure 4.107**.

In summary, this route option would have the following characteristics:

- Bus priority would be managed through signal-controlled priority between Terenure Cross and St. Joseph's Church;
- Bus lanes would be provided in each direction between St. Joseph's Church and Orwell Road;
- A combination of bus lanes and signal-controlled priority would be provided along Rathgar Road, with signal-controlled priority provided;
- 1.5m wide cycle tracks would be provided in each direction between Highfield Road and Grosvenor Road;
- Additional 2.0m wide cycle tracks would be provided on Terenure Road North and Harold's Cross Road from Terenure Cross to Harold's Cross Park, linking to the Kimmage to City Centre CBC; and
- Additional section of outbound cycle track on Bushy Park Road, Quiet Street Treatment on Wasdale Park, Wasdale Grove, Victoria Road and Zion Road would be provided, linking to additional 2.0m wide cycle tracks on Orwell Road.

Junctions:

There are three signalised junctions along this route option, some of which would require upgrading to facilitate bus priority. The locations of these junctions are presented in **Figure 4.112** and discussed below:

1. **Terenure Road East/Rathgar Road/Rathgar Avenue/ Orwell Road/Highfield Road:** Adjustments to the junction layout would be required to facilitate the outbound bus lane and the cycle tracks on approach to the junction. There would also be a potential requirement to relocate/provide new signal equipment.
2. **Rathgar Road/Leicester Avenue/Frankfort Avenue:** Adjustments to the junction layout would be required to facilitate the bus lanes and cycle tracks on approach to the junction. There would also be a potential requirement to relocate/provide new signal equipment.
3. **Rathgar Road/Grosvenor Road:** Adjustments to the junction layout would be required to facilitate the bus lanes and cycle tracks on approach to the junction. Outbound traffic at this junction would not be permitted to turn onto Rathgar Road, but would instead be directed to Grosvenor Road. There would also be a potential requirement to relocate/provide new signal equipment.
4. **Orwell Road/Zion Road**: Adjustments to the junction layout would be required to facilitate cycle tracks on approach to the junction. There would also be a potential requirement to relocate/provide new signal equipment.

4.4.2.1.8 Route Option RG5

Route Description

Route option RG5 is presented in **Figure 4.115**.

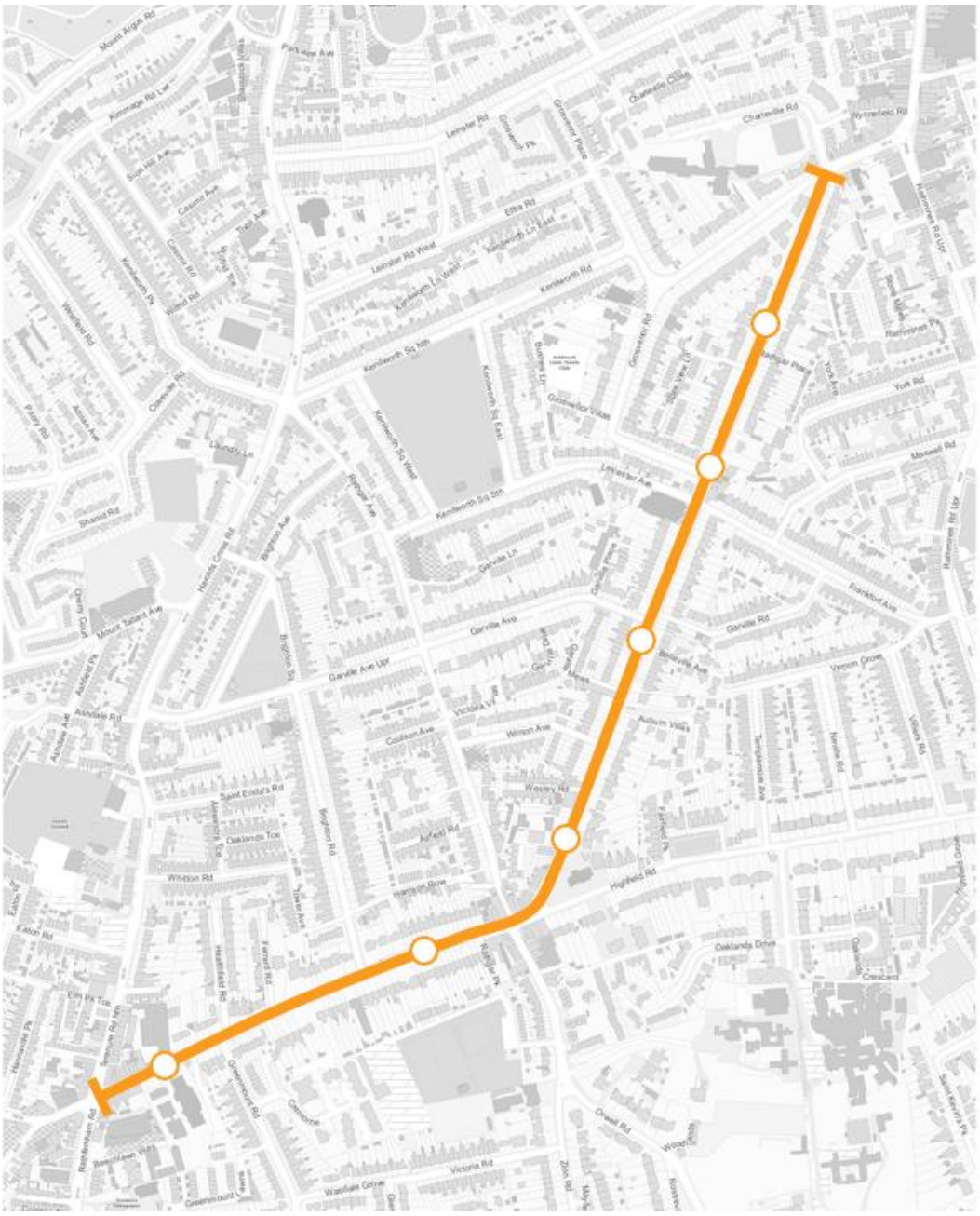

Figure 4.115: Route Option RG5

Inbound: This section of the route would commence on Terenure Road East at Terenure Cross. The CBC route would proceed along Terenure Road East and Rathgar Road. This route section would end at the junction of Rathgar Road and Grosvenor Road.

Outbound: The outbound route would follow the same route as the inbound route.

Stops: A total of six stops would likely be provided in each direction along this route section.

Indicative Scheme Design

Figure 4.116 illustrates the indicative scheme design for this route option. The location of cross-sections and junctions referenced in subsequent sections describing this route option are also presented in this figure.

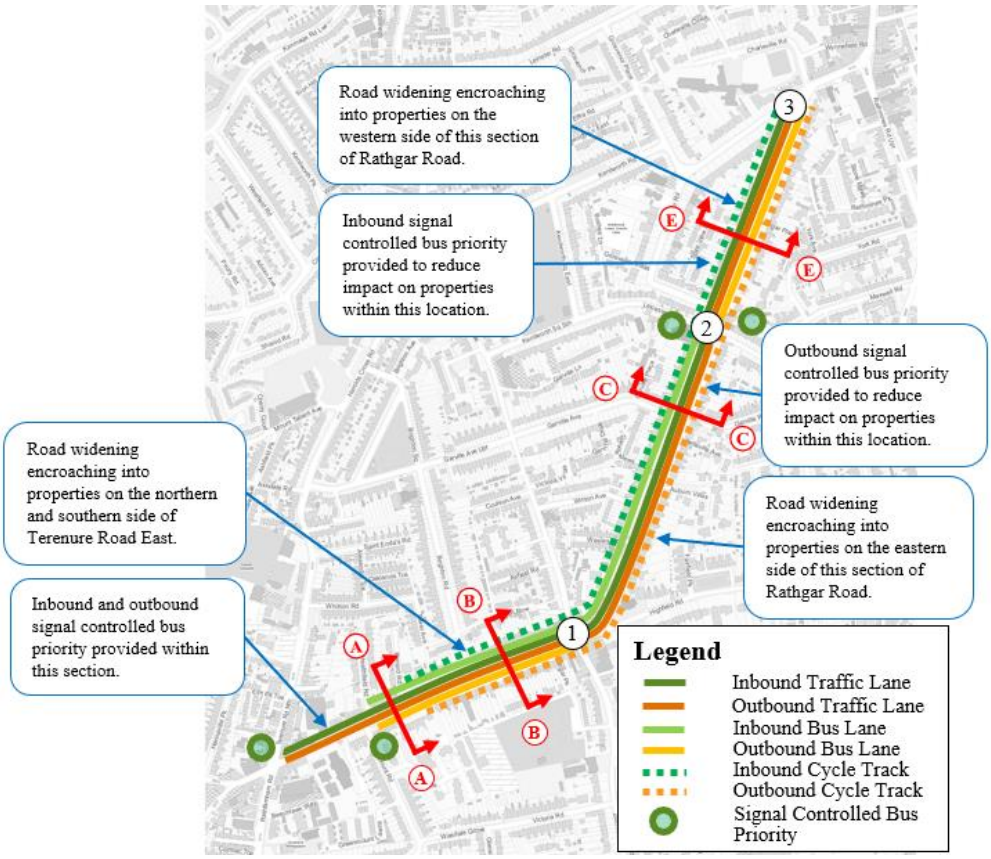

Figure 4.116: Route Option RG5 Indicative Scheme Design (refer to earlier report sections for duplicate cross-sections)

This section of the route commences on Terenure Road East at Terenure Cross. Between Terenure Cross and Rathgar Village the infrastructure provided would be as described in Option RG1. The proposed cross-sections along this section of Terenure Road East are presented in **Figure 4.99** and **Figure 4.100**.

A dedicated inbound bus lane would be provided between Highfield Road and Frankfort Avenue with outbound bus priority managed through signal-controlled priority. This proposed cross-section is presented in **Figure 4.117**.

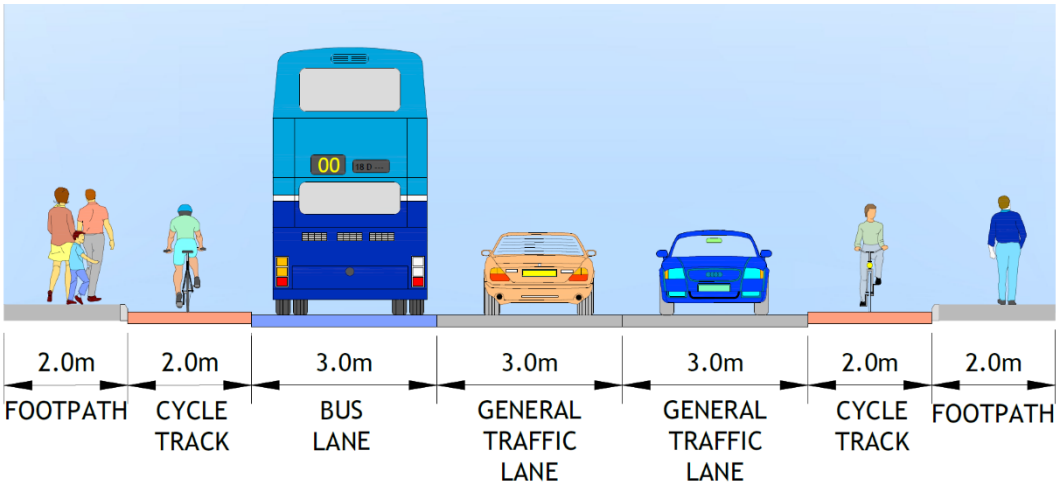

Figure 4.117: Cross-Section C-C (Relevant to RF5)

A dedicated outbound bus lane would be provided between Frankfort Avenue and Grosvenor Road with outbound bus priority managed through signal-controlled priority. This proposed cross-section is presented in **Figure 4.118**. This cross-section would result in widening into adjacent properties on Rathgar Road.

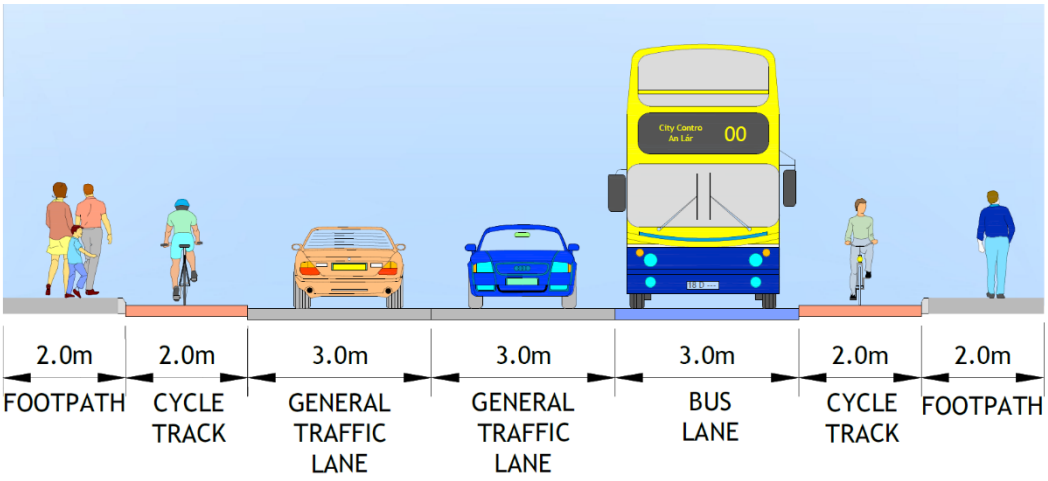

Figure 4.118: Cross-Section E-E (Relevant to RF5)

In summary, this route option would have the following characteristics:

- Bus priority would be managed through signal-controlled priority between Terenure Cross and St. Joseph's Church;
- Bus lanes would be provided in each direction between St. Joseph's Church and Orwell Road;
- A combination of bus lanes and signal-controlled priority would be provided along Rathgar Road, with bus priority provided through signal-controlled priority; and
- 2.0m wide cycle tracks would be provided in each direction between Ferrard Road and Grosvenor Road.

Junctions:

There are three signalised junctions along this route option, some of which would require upgrading to facilitate bus priority. The locations of these junctions are presented in **Figure 4.116** and discussed below:

1. **Terenure Road East/Rathgar Road/Rathgar Avenue/ Orwell Road/Highfield Road:** Adjustments to the junction layout would be required to facilitate the outbound bus lane and the cycle tracks on approach to the junction. There would also be a potential requirement to relocate/provide new signal equipment.
2. **Rathgar Road/Leicester Avenue/Frankfort Avenue:** Adjustments to the junction layout would be required to facilitate the bus lanes and cycle tracks on approach to the junction. There would also be a potential requirement to relocate/provide new signal equipment.
3. **Rathgar Road/Grosvenor Road:** Adjustments to the junction layout would be required to facilitate the bus lanes and cycle tracks on approach to the junction. Outbound traffic at this junction would not be permitted to turn onto Rathgar Road, but would instead be directed to Grosvenor Road. There would also be a potential requirement to relocate/provide new signal equipment.

4.4.2.1.9 Section 2a Route Options Assessment

Details of the route options assessment undertaken for the Terenure Road East and Rathgar Road study area section are presented in Appendix G. The relative ranking of route options against the scheme assessment sub-criteria is summarised in **Table 4.12**.

Table 4.12: Section 2a Route MCA Summary

Appraisal Criteria	Sub-Criteria	Option RG1	Option RG2	Option RG3	Option RG4	Option RG5
1 Economy	1A Capital Cost					
	1B Transport Quality & Reliability					
2 Integration	2A Land Use Policy					
	2B Residential Population and Employment Catchments					
	2C Transport Network Integration					
	2D Cycle Network integration					
	2E Traffic Network Integration					

Appraisal Criteria	Sub-Criteria	Option RG1	Option RG2	Option RG3	Option RG4	Option RG5
3 Accessibility & Social Inclusion	3A Key Trip Attractors					
	3B Deprived Geographic Areas					
4 Safety	4A Road Safety					
	4B Pedestrian Safety					
5 Environment	5A Archaeology & Cultural Heritage					
	5B Architectural Heritage					
	5C Flora & Fauna					
	5D Soils, Geology & Hydrogeology					
	5E Landscape & Visual					
	5F Air Quality					
	5G Noise & Vibration					
	5H Land Use Character					

In terms of Capital Cost, Option RG1 would be by far the most expensive option in terms of capital cost due to the significant land acquisition costs associated with it. Options RG2 and RG4 would have the lowest capital costs due to the fact that significantly less private land acquisition would be required to deliver them. Options RG3 and RG5 also perform well under this sub-criterion due to lower land acquisition costs compared with RG1.

In terms of Transport Quality and Reliability, Options RG1, RG2 and RG3 perform well as full physical bus priority would be provided throughout, with the exception of a short section of Terenure Road East near Terenure Cross. Options RG4 and RG5 perform slightly worse under this criterion due to the fact that buses would be required to share the general traffic lane for substantial sections of Rathgar Road.

All options would serve the same catchments and as such are ranked equally in relation to land use policy and residential population catchments and employment catchments. Similarly, in terms of transport network integration, as all options would follow the same route, the opportunity for interchange with other routes is equal.

In terms of cycle network integration, Options RG1, RG3 and RG5 would provide high-quality cycle facilities along Primary Route 10 in the GDA cycle network plan, with the exception of a short section of Terenure Road East near Terenure Cross.

Options RG2 and RG4 would not provide cycle facilities on Terenure Road East, and cycle facilities of a reduced cross-section are proposed on Rathgar Road, however to compensate for this, additional high-quality facilities are proposed on Terenure Road North and Harold's Cross Road linking to the Kimmage to City Centre CBC. This would deliver more of the cycle network (a section of Secondary Route 9B from the GDA Cycle Network Plan) and would provide a continuous segregated cycle route for cyclists into the city centre. As such, all options perform equally under this sub-criterion.

All options rank equally under accessibility and social inclusion as they would all follow the same route.

All options rank equally under safety as they would all require the same number of turning movements at junctions and footpath widths would be the same throughout.

Under the environment criterion, Option RG1 performs the worst due to the impact on the curtilage of protected structures, the impact on private garden trees and the requirement for significant land acquisition. Options RG3 and RG5 perform marginally better in this regard due to reduced land impact, however these options would still result in impacts on a substantial number of protected structure curtilages and the removal of private garden trees. Options RG2 and RG4 performs the best under this criterion, due to significantly reduced impacts on protected structures, private garden trees and the requirement for significantly less land acquisition compared to other options.

A summary of the assessment and relative ranking of route options against the five main assessment criteria is presented in **Table 4.13**.

Table 4.13: Section 2 Criteria MCA Summary

Appraisal Criteria	Option RG1	Option RG2	Option RG3	Option RG4	Option RG5
1 Economy					
2 Integration					
3 Accessibility & Social Inclusion					
4 Safety					
5 Environment					

4.4.2.1.10 Section 2a Conclusion and Preferred Option

Based on the assessment undertaken, route Option RG2 offers more benefits over other options. It performs well under all criteria, with the exception of Integration due to the fact that outbound traffic is diverted to alternative routes. Option RG2 is the PRO for the Terenure Road East and Rathgar Road area for the following reasons:

- It would provide physical bus priority throughout this section, with the exception of a short section of Terenure Road East at Terenure Cross due to the presence of built form in close proximity to the carriageway (valid for all options considered). It is proposed to manage bus priority through this short section using signal-controlled priority;
- It would have the lowest relative capital cost;
- It would provide a continuous high-quality cycle facility from Terenure Cross linking to the city centre along Terenure Road North and Harold's Cross Road and via the Kimmage to City Centre CBC. High-quality cycle facilities would also be provided on Primary Route 10 from the Cycle Network Plan along Rathgar Road;
- While it would have an impact on traffic movements in the area, suitable diversion routes exist, and the length of diversions is reasonable (increase of up to 0.5km for through traffic); and
- It would minimise the impact on the curtilage of protected structures and private gardens and trees through the redirection of outbound general traffic away from the CBC route along Rathgar Road.

4.4.2.2 Section 2b - Rathmines to Grand Canal

4.4.2.2.1 Introduction

Two options were presented for this scheme section as part of the EPR Option Public Consultation, then referred to as Option A and Option B. Numerous submissions received raised concerns about the standard of cycling provision throughout the scheme, with Rathmines Village attracting a large proportion of these submissions. In addition to this, access to Rathmines Village was also raised as a concern.

4.4.2.2.2 Options Considered

One alternative option has been developed with the objective of addressing the issues noted above. This option, in addition to the two options published in the EPR Option public consultation, are reconsidered in this assessment and are outlined in more detail below:

Option RM1: Two Bus lanes, one outbound general traffic lane and two 1.5m wide cycle tracks would be provided through Rathmines Village. *(Previously EPR Option A)*

Option RM2: Two Bus lanes and two general traffic lanes through Rathmines Village with an alternative offline cycle route provided. The offline route would commence by directing cyclists down Charleville Road and Wynnefield Road. It is proposed to run a cycleway access through Wynnefield Park connecting to Prince Arthur Terrace and on to Leinster Square. The cycle route would cross Leinster Road and down Louis Lane through a proposed entry point to the lands at the rear of DIT Conservatory of Music and Drama into William Park and Ardee Road.

The proposed cycleway would then cross Military Road and across the sports ground in front of St. Mary's College Rathmines Senior School. The cycle lane would then be routed through Cathal Brugha Barracks around the boundary with the Lissenfield Development and the rear of the Grove Park properties. The proposed cycle route then crosses Grove Road onto a new canal crossing and continues on other streets to the city centre. *(Previously EPR Option B)*

Option RM3: Two general traffic lanes and two 2m wide cycle tracks would be provided through Rathmines Village with a bus gate located between Richmond Hill and Lissenfield.

4.4.2.3 Alternative Options Considered

No alternative options were considered for this scheme section, additional to those assessed through the MCA.

4.4.2.4 Route Option RM1

Route Description

Route option RM1 is presented in **Figure 4.119**.

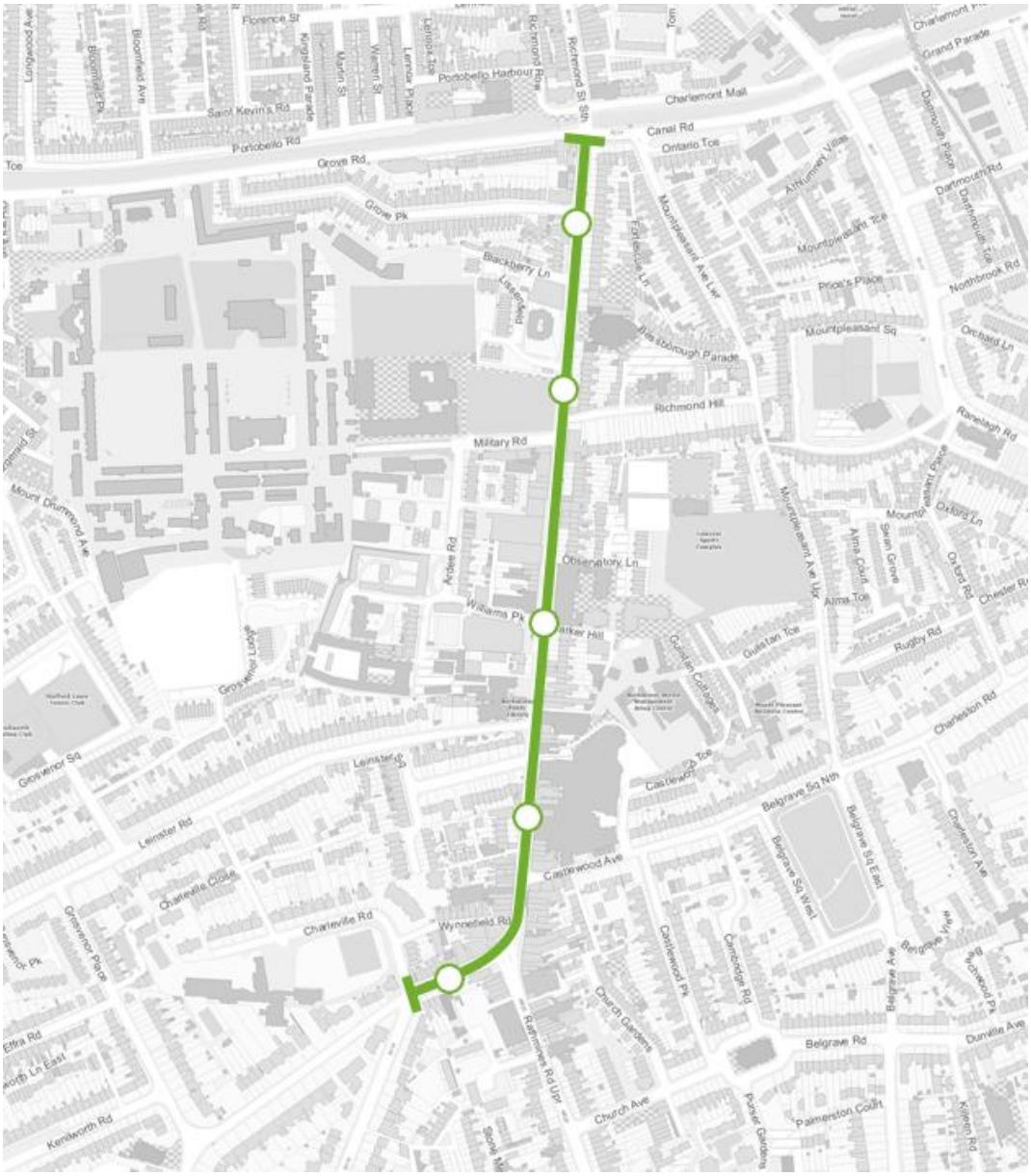

Figure 4.119: Route Option RM1

Inbound: This section of the route would commence on Rathgar Road at the junction of Charleville Road. The CBC route would proceed from Rathgar Road onto Rathmines Road Lower. This section of the route would end at the junction of Rathmines Road Lower and Grove Road.

Outbound: The outbound route would follow the same route as the inbound route.

Stops: A total of four stops would likely be provided in each direction along this route section.

Indicative Scheme Design

Figure 4.120 illustrates the indicative scheme design for this route option. The location of cross-sections and junctions referenced in subsequent sections describing this route option are also presented in this figure.

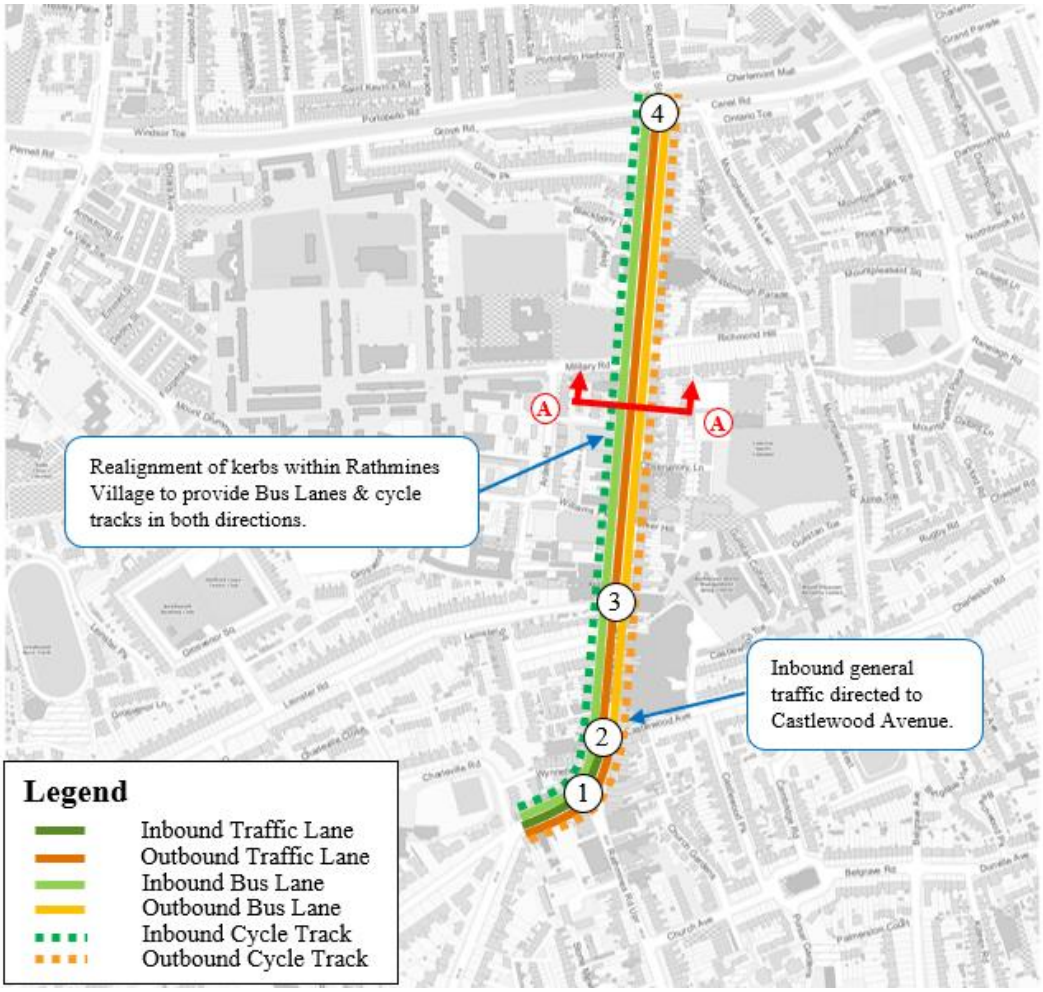

Figure 4.120: Route Option RM1 Indicative Scheme Design

This section of the route would commence on Rathgar Road at the junction of Charleville Road.

Between Charleville Road and Castlewood Avenue, a dedicated inbound bus lane, a general traffic lane in each direction and a cycle track in each direction are proposed.

Residual inbound general traffic would be redirected onto Castlewood Avenue, while a dedicated bus lane and cycle track would continue inbound on Rathmines Road Lower. From Castlewood Avenue to Grove Road, the cross-section would consist of, dedicated bus lanes in each direction, an outbound traffic lane and 1.5m wide cycle tracks in each direction.

This option would require that footpath widths be narrowed along this section. A cross-section on Rathmines Road Lower is presented in **Figure 4.121**.

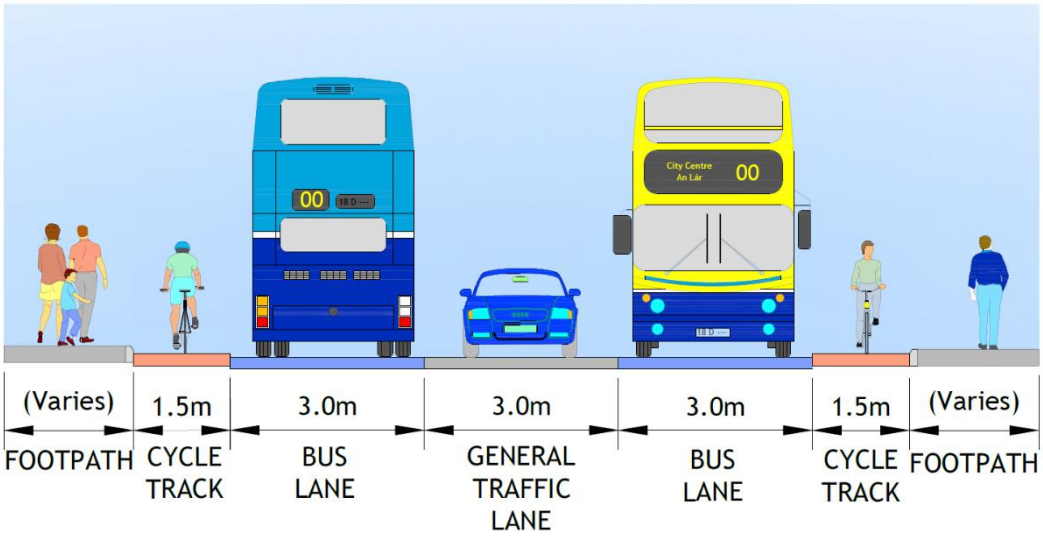

Figure 4.121: Route Option RM1 Cross-Section A-A

In summary, this route option would have the following characteristics:

- An inbound bus lane and cycle tracks would be provided in each direction between Charleville Road and Castlewood Avenue; and
- Bus lanes and cycle tracks would be provided in each direction between Castlewood Avenue and Grove Road.

Junctions:

There are four signalised junctions along this route option, some of which would require upgrading to facilitate bus priority. The locations of these junctions are presented in **Figure 4.120** and discussed below:

1. **Rathgar Road/Rathmines Road Upper/Rathmines Road Lower:** Adjustments to the junction layout would be required to facilitate the inbound bus lane on approach to the junction. There would also be a potential requirement to relocate/provide new signal equipment.
2. **Rathmines Road Lower/Castlewood Avenue:** Adjustments to the junction layout would be required to facilitate the bus lanes on approach to the junction. There would also be a potential requirement to relocate/provide new signal equipment.
3. **Rathmines Road Lower/Leinster Road:** Currently the right turn from Leinster Road onto Rathmines Road Upper is banned. The proposed route option RM1 would require that this turn ban be reversed, i.e. that the right turn be reinstated, and the left turn banned. There would also be a potential requirement to relocate/provide new signal equipment.

4. **Rathmines Road Lower/Grove Road:** Adjustments to the junction layout would be required to facilitate the bus lanes on approach to the junction as well as the proposed one-way traffic arrangement from La Touch Bridge to Rathmines Road Lower. There would also be a potential requirement to relocate/provide new signal equipment.

4.4.2.5 Route Option RM2

Route Description

Route option RM2 is presented in **Figure 4.122**.

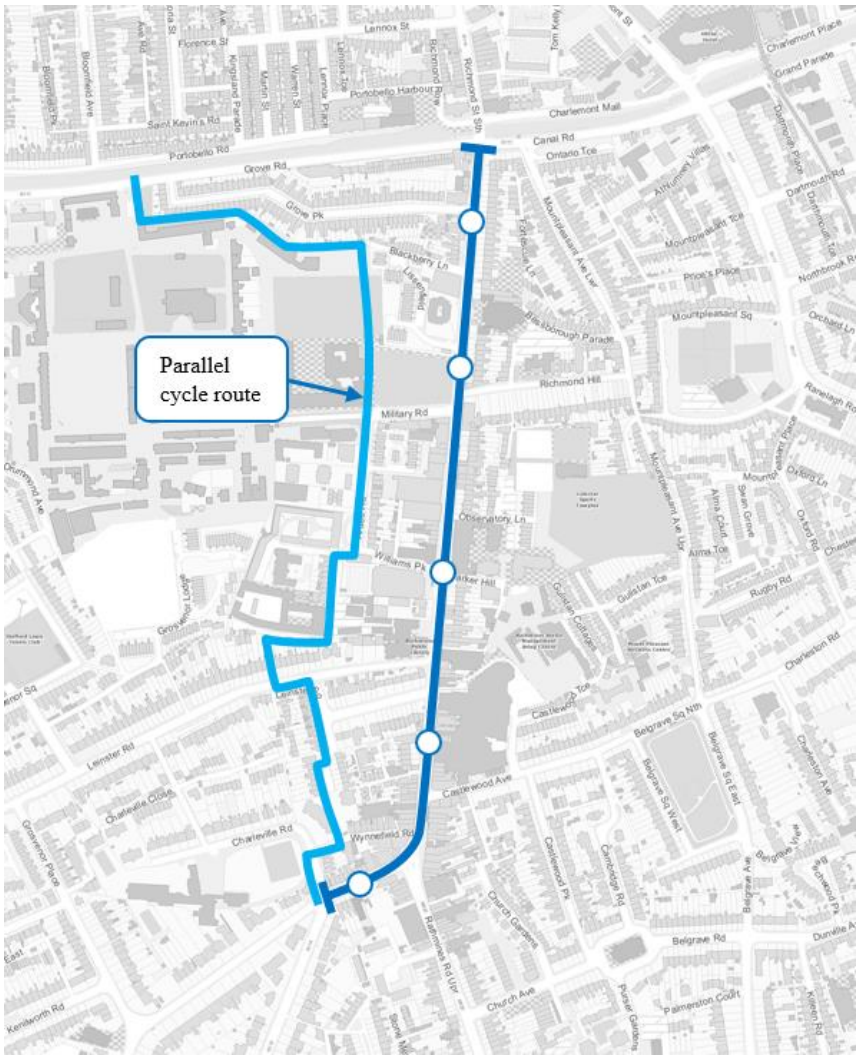

Figure 4.122: Route Option RM2

Inbound: This section of the route would commence on Rathgar Road at the junction of Charleville Road. The main CBC route would proceed from Rathgar Road onto Rathmines Road Lower. This section of the route would end at the junction of Rathmines Road Lower and Grove Road.

Cyclists would be directed down Charleville Road and Wynnefield Road to an alternative cycle facility through Wynnefield Park connecting to Prince Arthur Terrace and on to Leinster Square. The cycle route would cross Leinster Road and down Louis Lane through a proposed entry point to the lands at the rear of DIT Conservatory of Music and Drama into William Park and Ardee Road.

The proposed cycleway would then cross Military Road and across the sports ground in front of St. Mary's College Rathmines Senior School.

The cycle lane would then be routed through Cathal Brugha Barracks around the boundary with the Lissenfield Development and the rear of the Grove Park properties.

Outbound: The outbound route would follow the same route as the inbound route.

Stops: A total of four stops would likely be provided in each direction along this route section.

Indicative Scheme Design

Figure 4.123 illustrates the indicative scheme design for this route option. The location of cross-sections and junctions referenced in subsequent sections describing this route option are also presented in this figure.

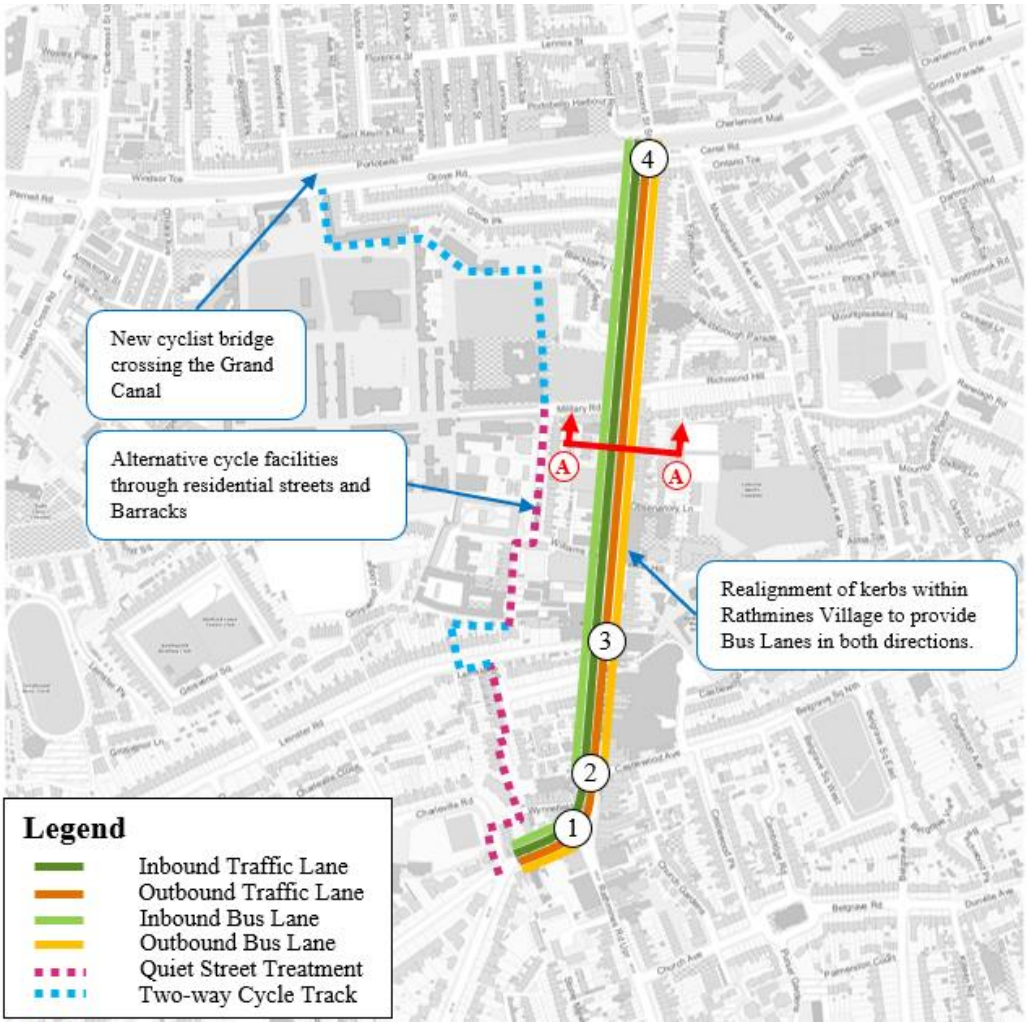

Figure 4.123: Route Option RM2 Indicative Scheme Design

This section of the route would commence on Rathgar Road at the junction of Charleville Road.

Between Charleville Road and Rathmines Road Upper, a dedicated bus lane in each direction and a general traffic lane in each direction are proposed.

Between Rathmines Road Upper and Castlewood Avenue signal-controlled priority would be provided, with no dedicated bus lane provided. A straight-ahead lane and a right-turn lane for traffic turning onto Castlewood Avenue would be provided. Between Castlewood Avenue and Grove Road, a dedicated bus lane and a general traffic lane would be provided in each direction. The proposed cross-section through Rathmines village is presented in **Figure 4.124**.

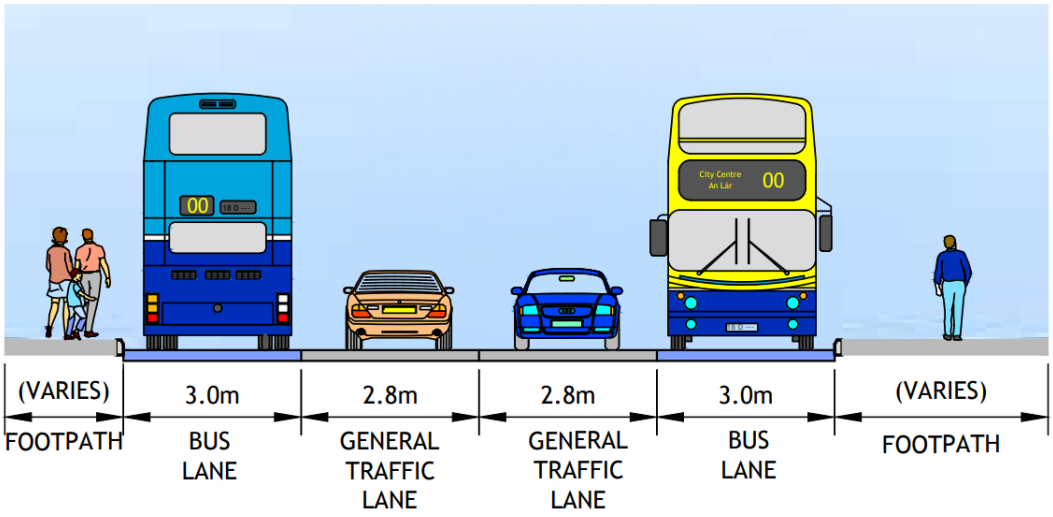

Figure 4.124: Route Option RM2 Cross-Section A-A

No dedicated online cycle facilities would be provided within this section of the scheme. Cyclists would be directed down Charleville Road and Wynnefield Road. It is proposed to run a cycleway access through Wynnefield Park connecting to Prince Arthur Terrace and on to Leinster Square. The cycle route would cross Leinster Road and down Louis Lane through a proposed entry point to the lands at the rear of DIT Conservatory of Music and Drama into Williams Park and Ardee Road. The proposed cycleway would then cross Military Road and across the sports ground in front of St. Mary's College Rathmines Senior School. The cycle lane would then be routed through Cathal Brugha Barracks around the boundary with the Lissenfield Development and the rear of the Grove Park properties.

General traffic would be permitted in both directions along Rathmines Road through Rathmines Village under this arrangement, with dedicated bus lanes provided in each direction. From Castlewood Avenue to Grove Road, the cross-section would consist of dedicated bus lanes in each direction and 2.8m wide traffic lanes in each direction. This option would require that footpath widths be narrowed along this section.

In summary, this route option would have the following characteristics:

- A bus lane would be provided in each direction between Charleville Road and Rathmines Road Lower;
- Two inbound general traffic lanes and one outbound general traffic lane would be provided between Rathmines Road Upper and Castlewood Avenue;
- A bus lane would be provided in each direction between Castlewood Avenue and Grove Road; and
- An alternative cycle facility would be provided between Charleville Road and Grove Road, as described above.

Junctions:

There are four signalised junctions along this route option, some of which would require upgrading to facilitate bus priority. The locations of these junctions are presented in **Figure 4.123** and discussed below:

1. **Rathgar Road/Rathmines Road Upper/Rathmines Road Lower:** Adjustments to the junction layout would be required to facilitate the inbound bus lane on approach to the junction. There would also be a potential requirement to relocate/provide new signal equipment.
2. **Rathmines Road Lower/Castlewood Avenue:** Adjustments to the junction layout would be required to facilitate the outbound bus lane on approach to the junction. There would also be a potential requirement to relocate/provide new signal equipment.
3. **Rathmines Road Lower/Leinster Road:** Adjustments to the junction layout would be required to facilitate the bus lanes on approach to the junction. There would also be a potential requirement to relocate/provide new signal equipment.
4. **Rathmines Road Lower/Grove Road:** Adjustments to the junction layout would be required to facilitate the bus lanes on approach to the junction. There would also be a potential requirement to relocate/provide new signal equipment.

4.4.2.6 Route Option RM3

Route Description

Route option RM3 is presented in **Figure 4.125**.

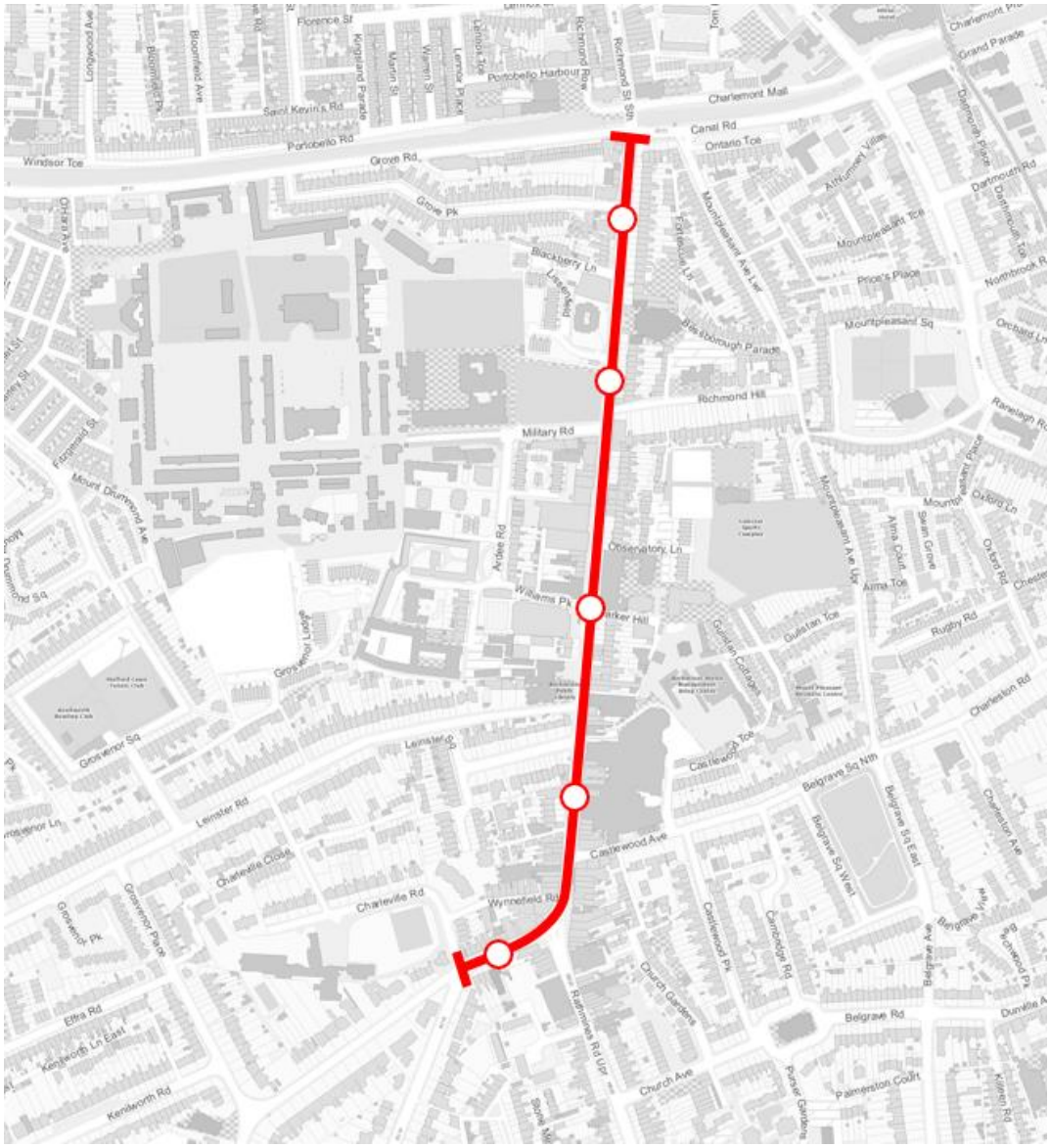

Figure 4.125: Route Option RM3

Inbound: This section of the route would commence on Rathgar Road at the junction of Charleville Road. The CBC route would proceed from Rathgar Road onto Rathmines Road Lower. This section of the route would end at the junction of Rathmines Road Lower and Grove Road.

Outbound: The outbound route would follow the same route as the inbound route.

Stops: A total of four stops would likely be provided in each direction along this route section.

Indicative Scheme Design

Figure 4.126 illustrates the indicative scheme design for this route option. The location of cross-sections and junctions referenced in subsequent sections describing this route option are also presented in this figure.

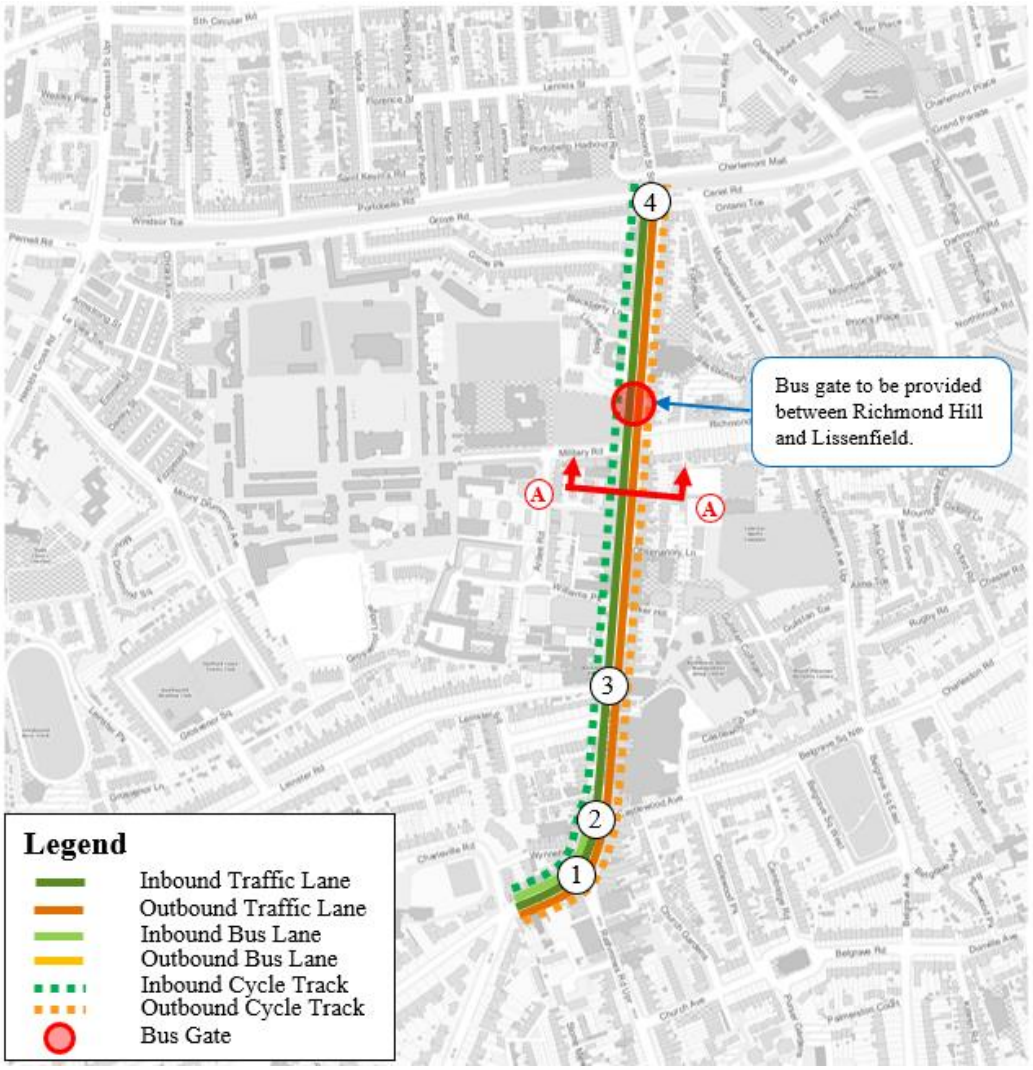

Figure 4.126: Route Option RM3 Indicative Scheme Design

This section of the route would commence on Rathgar Road at the junction of Charleville Road. Between Charleville Road and Castlewood Avenue, a dedicated inbound bus lane, a cycle track and a general traffic lane in each direction are proposed. Between Rathmines Road Upper and Castlewood Avenue, an inbound bus lane is proposed whereas outbound bus priority would be provided through signal-controlled priority, with no dedicated bus lane provided.

Between Castlewood Avenue and Grove Road, a general traffic lane and a cycle track would be provided in each direction.

A bus gate is proposed on Rathmines Road Lower, located between Richmond Hill and Lissenfield. The proposed cross-section through Rathmines Village is presented in **Figure 4.127**.

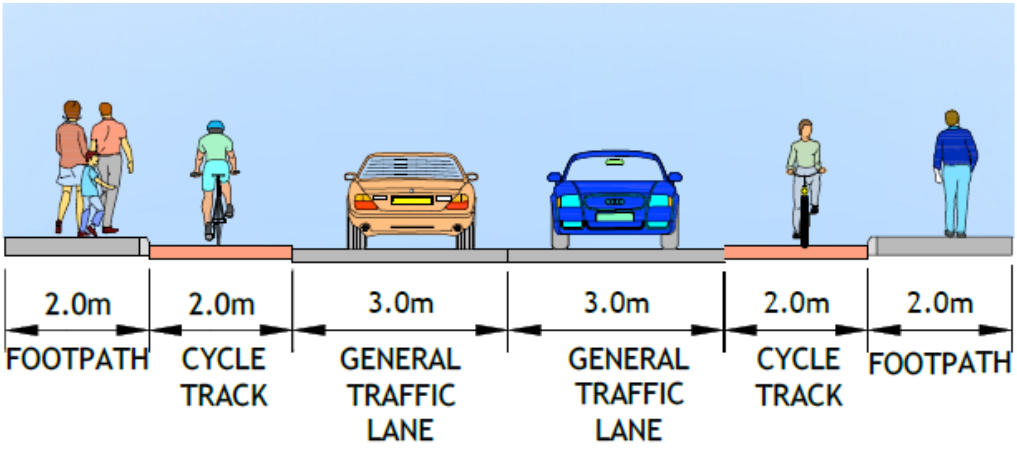

Figure 4.127: Route Option RM3 Cross-Section A-A

Local access would be permitted in both directions along Rathmines Road through Rathmines Village under this arrangement, however through traffic would be directed to other corridors by the presence of the bus gate. Any residual city centre traffic would be redirected to Castlewood Avenue. Additional traffic management measures would be considered on Mountpleasant Avenue to mitigate against traffic bypassing the bus gate in this location. The flow of traffic on Williams Park would also be reversed to provide an option for traffic reaching the bus gate to use Military Road, Ardee Road and Williams Park to return in a southbound direction. From Castlewood Avenue to Grove Road, the cross-section would consist of a traffic lane and a 2m wide cycle track in each direction. This option would allow footpath widths to be increased slightly along this section.

In summary, this route option would have the following characteristics:

- An inbound bus lane and a cycle track would be provided in each direction between Charleville Road and Castlewood Avenue;
- A general traffic lane and a cycle track would be provided in each direction between Castlewood Avenue and Grove Road; and
- A bus gate would be provided on Rathmines Road Lower, located between Richmond Hill and Lissenfield.

Junctions:

There are four signalised junctions along this route option, some of which would require upgrading to facilitate bus priority. The locations of these junctions are presented in **Figure 4.126** and discussed below:

1. **Rathgar Road/Rathmines Road Upper/Rathmines Road Lower:** Adjustments to the junction layout would be required to facilitate the inbound bus lane on approach to the junction. There would also be a potential requirement to relocate/provide new signal equipment.

2. **Rathmines Road Lower/Castlewood Avenue:** Adjustments to the junction layout would be required to facilitate the inbound bus lane on approach to the junction. There would also be a potential requirement to relocate/provide new signal equipment.
3. **Rathmines Road Lower/Leinster Road:** No major adjustments would be required at this junction.
4. **Rathmines Road Lower/Grove Road:** Adjustments to the junction layout would be required to facilitate the proposed one-way traffic arrangement from La Touch Bridge to Rathmines Road Lower. There would also be a potential requirement to relocate/provide new signal equipment.

4.4.2.7 Section 2b Route Option Assessment

Details of the route options assessment undertaken for the Rathmines Village study area section are presented in Appendix G. The relative ranking of route options against the scheme assessment sub-criteria is summarised in **Table 4.14**.

Table 4.14: Section 2b Route Options Assessment Summary (Sub-Criteria)

Appraisal Criteria	Sub-Criteria	Option RM1	Option RM2	Option RM3
1 Economy	1A Capital Cost			
	1B Transport Quality & Reliability			
2 Integration	2A Land Use Policy			
	2B Residential Population and Employment Catchments			
	2C Transport Network Integration			
	2D Cycle Network integration			
	2E Traffic Network Integration			
3 Accessibility & Social Inclusion	3A Key Trip Attractors			
	3B Deprived Geographic Areas			
4 Safety	4A Road Safety			
	4B Pedestrian Safety			
5 Environment	5A Archaeology & Cultural Heritage			
	5B Architectural Heritage			
	5C Flora & Fauna			
	5D Soils, Geology & Hydrogeology			

Appraisal Criteria	Sub-Criteria	Option RM1	Option RM2	Option RM3
	5E Landscape & Visual			
	5F Air Quality			
	5G Noise & Vibration			
	5H Land Use Character			

In terms of Capital Cost, Option RM2 would be by far the most expensive option due to the significant land acquisition and infrastructure costs associated with the delivery of the alternative cycle route, including the cost of a new structure over the Grand Canal.

In terms of delivering physical bus priority and journey time reliability, Options RM1 and RM2 perform marginally better as Option RM3 would not provide physical bus lanes, and instead would provide virtual bus priority through the provision of a bus gate.

All options would serve the same catchments and as such are ranked equally in relation to land use policy and residential population catchments and employment catchments. Similarly, in terms of transport network integration, as all options would follow the same route, the opportunity for interchange with other routes is equal.

In terms of cycle network integration, Option RM3 performs significantly better than other options as high-quality cycle facilities are proposed along Primary Route 10 from the GDA cycle network plan. Option RM1 provides facilities along this route, however the cycle tracks would be less than optimal in terms of quality of service provided. Option RM2 performs poorly in this regard as it would not provide cycle facilities along this route and the alternative route proposed is considered neither direct nor attractive.

All options rank equally under accessibility and social inclusion as they would all follow the same route.

In terms of safety, all options perform the same with respect to road safety as the route would be the same for each and the number of junctions and turning movements would be equal. Option RM3 performs marginally better in terms of pedestrian safety as it would allow for existing footpaths to be widened, whereas the other options would require existing footpaths to be narrowed.

In terms of environment, Option RM3 performs marginally better than the other options as it would not require the removal of any trees whereas, due to footpath widening, Options RM1 and RM2 may require the removal of a small number of trees. In terms of air quality and noise and vibration, Option RM2 performs the worst as all traffic movements would be retained on the CBC.

A summary of the assessment and relative ranking of route options against the five main assessment criteria is presented in **Table 4.15**.

Table 4.15: Section 3 Criteria MCA Summary

Appraisal Criteria	Option RM1	Option RM2	Option RM3
1 Economy			
2 Integration			
3 Accessibility & Social Inclusion			
4 Safety			
5 Environment			

4.4.2.8 Section 2b Conclusion and Preferred Option

Based on the assessment undertaken, route Option RM3 offers more benefits over other options and it performs well under all criteria. Option RM3 is the PRO for the Rathmines area for the following reasons:

- It would provide appropriate bus priority measures through the implementation of a bus gate, while also allowing local access for residents and acknowledging the urban village function of Rathmines Village;
- It would provide high-quality cycle facilities on Primary Route 10 from the GDA Cycle Network Plan, serving the urban village of Rathmines which is a significant trip attractor and cycling destination;
- It would allow for the widening of footpaths and public realm improvements within Rathmines Village, while maintaining existing parking and loading; and
- It would have the lowest environmental impacts of any of the options.

4.4.3 Section 3 Options Assessment: Grand Canal to Christchurch Place

4.4.3.1 Introduction

The EPR Option noted that additional cycle facilities along this section of the scheme would be considered as part of the next stage of design development. Additionally, numerous submissions received as part of the public consultation raised concerns about the provision for cyclists along the CBC.

4.4.3.2 Options Considered

One alternative option has been developed with the objective of addressing the issues noted above. This option, in addition to the two options published in the EPR Option public consultation, are reconsidered in this assessment and are outlined in more detail below:

Option CS1: Option CS1 would consist of providing a traffic lane in each direction along Camden Street Lower, as well as dedicated bus lanes in each direction, with the exception of a short section between Cuffe Street and Montague Street where no outbound bus lane would be provided. No dedicated cycle facilities would be provided along Camden Street Lower under this option. A short section of inbound cycle track would be provided on Camden Street Upper *(Previously EPR Option A).*

Option CS2: Option CS2 would consist of providing a traffic lane in each direction along Camden Street Lower, as well as dedicated bus lanes in each direction, with the exception of a short section between Cuffe Street and Montague Street where no outbound bus lane would be provided. A parallel cycle route would be provided along Martin Street, Lennox Street, Stamer Street, Heytesbury Street and New Bride Street *(Previously EPR Option B).*

Option CS3: Option CS3 would consist of a one-way outbound traffic arrangement on Camden Street and Wexford Street in this section, with inbound traffic diverted to Harcourt Street. 1.5m wide cycle tracks would be provided along the CBC, as well as dedicated bus lanes in each direction, with the exception of a short section between Cuffe Street and Montague Street where no outbound bus lane would be provided. A single inbound general traffic lane, a bus lane in each direction and a 2.0m wide cycle track in each direction would be provided on Camden Street Upper.

4.4.3.3 Alternative Options Considered

No alternative options were considered for this scheme section, additional to those assessed through the MCA.

4.4.3.4 Route Option CS1

Route Description

Route option CS1 is presented in **Figure 4.128**.

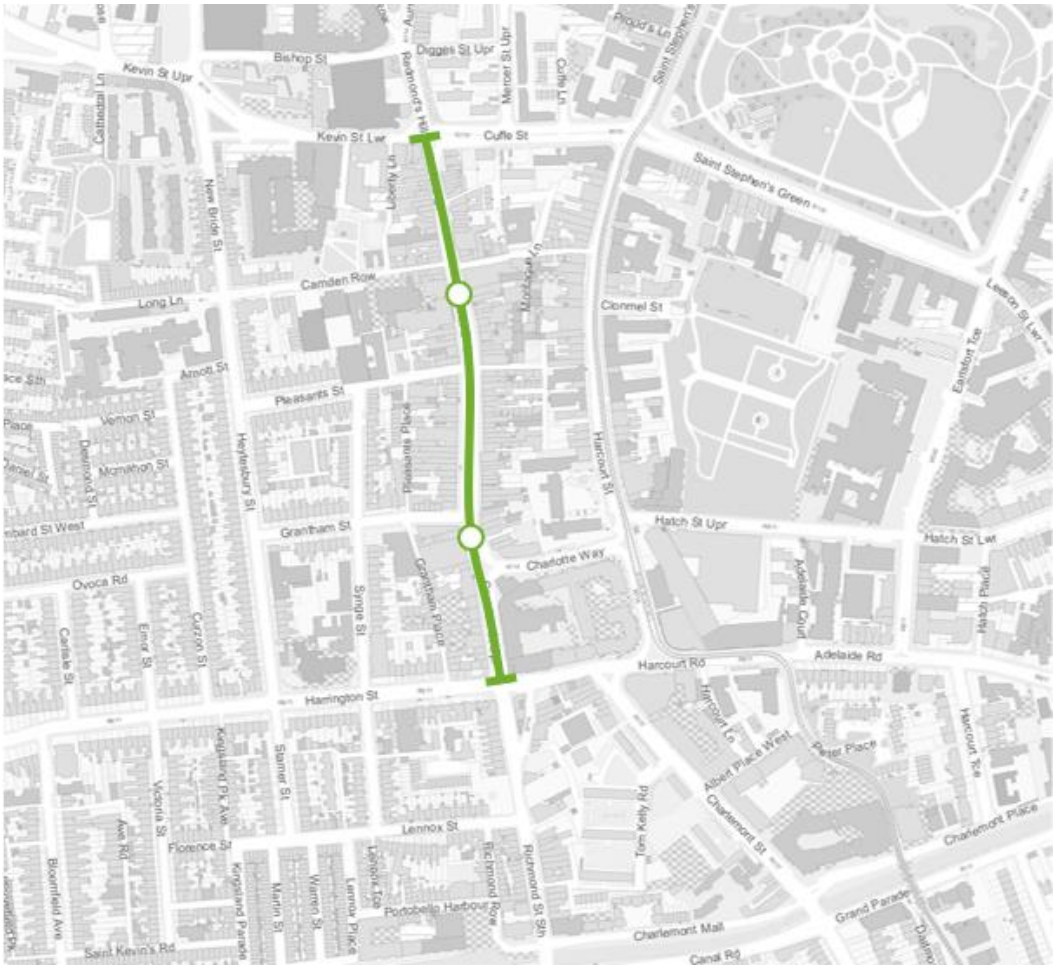

Figure 4.128: Route Option CS1

Inbound: This section of the route would commence on Camden Street at the junction with Charlotte Way. The CBC route would proceed along Camden Street and Wexford Street, ending at the junction with Cuffe Street.

Outbound: The outbound route would follow the same route as the inbound route.

Stops: A total of two stops would likely be provided in each direction along this route section.

Indicative Scheme Design

Figure 4.129 illustrates the indicative scheme design for this route option. The location of cross-sections and junctions referenced in subsequent sections describing this route option are also presented in this figure.

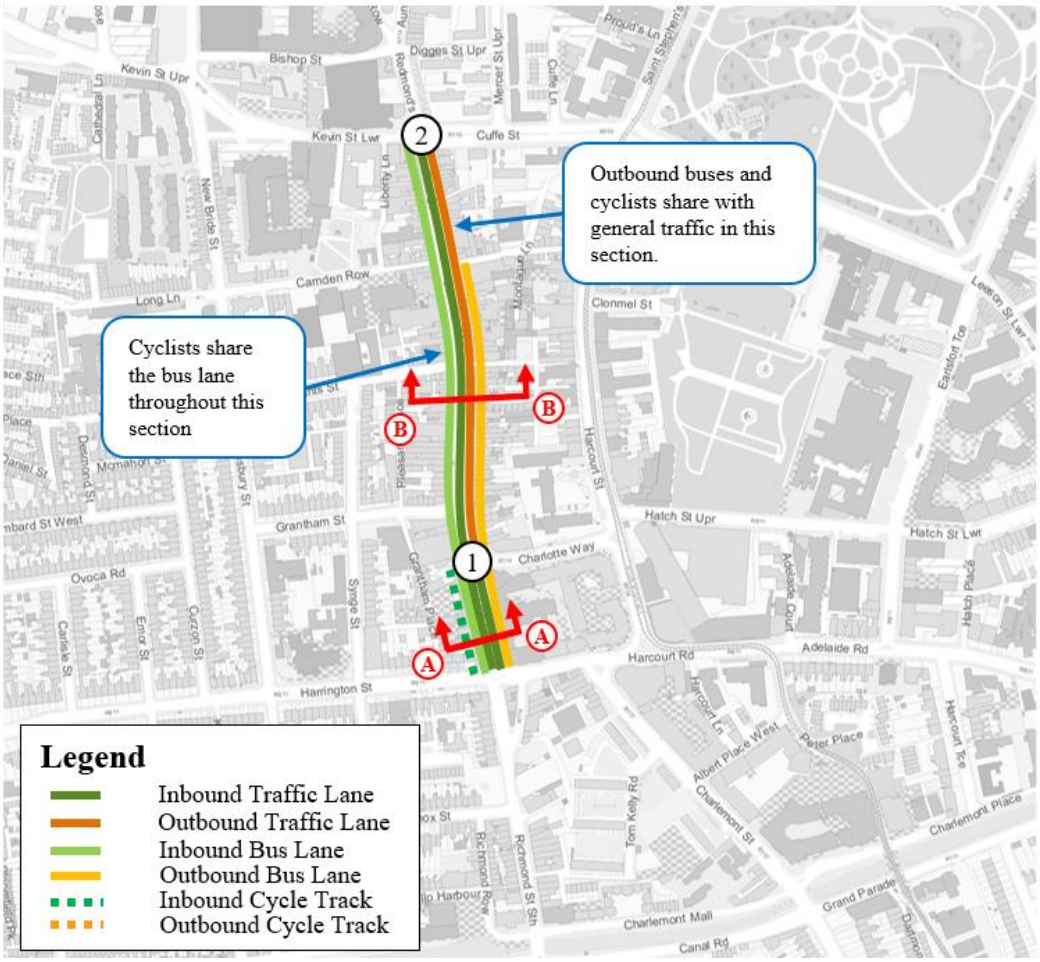

Figure 4.129: Route Option CS1 Indicative Scheme Design

This section of the route would commence on Camden Street Upper at the junction with Harrington Street. Between Harrington Street and Charlotte Way the cross-section would consist of a bus lane in each direction, two general traffic lanes and a 1.5m wide inbound cycle track. The proposed cross-section along this section of Camden Street is presented in **Figure 4.130**.

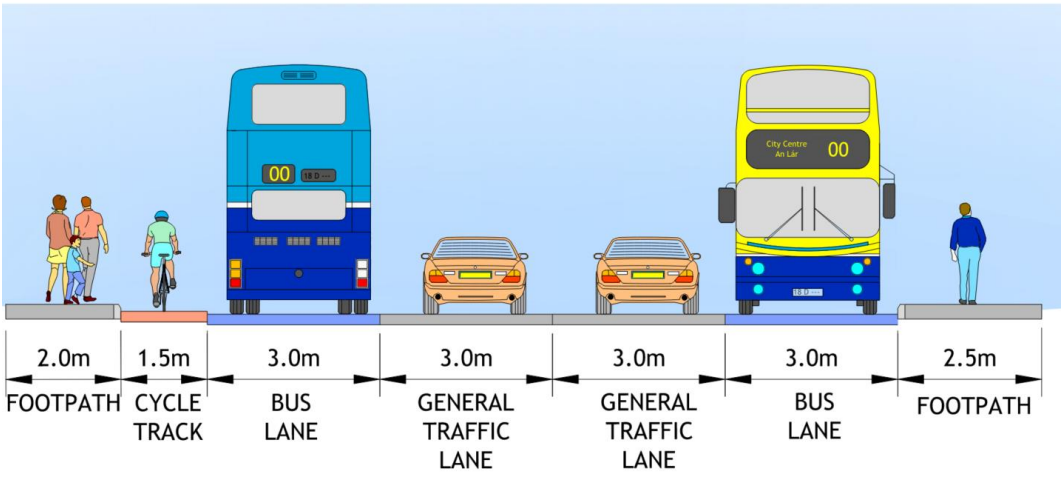

Figure 4.130: Route Option CS1 Cross-Section A-A

Between Charlotte Way and Montague Street the cross-section would consist of a dedicated bus lane and a general traffic lane in each direction. On-street parking and loading would be retained where practicable. The proposed cross-section along this section of Camden Street is presented in **Figure 4.131**.

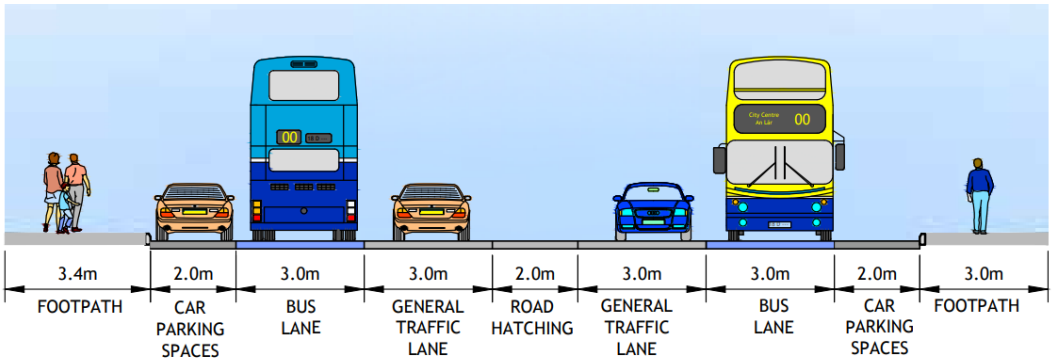

Figure 4.131: Route Option CS1 Cross-Section B-B

North of Montague Street, outbound buses would share with the general traffic lane over a short section. Bus priority through this section would be managed through signal-controlled priority at the Cuffe Street junction.

In summary, this route option would have the following characteristics:

- Bus lanes would be provided in each direction between Harrington Street and Montague Street;
- An inbound bus lane would be provided between Montague Street and Cuffe Street, outbound bus priority through this section would be managed through signal-controlled priority; and
- No dedicated cycle facilities would be provided on Camden Street Lower, a 1.5m wide inbound cycle track would be provided on Camden Street Upper.

Junctions:

There are two signalised junctions along this route option, both of which would require upgrading to facilitate bus priority. The locations of these junctions are presented in **Figure 4.129** and discussed below:

1. **Camden Street/Charlotte Way:** Adjustments to the junction layout would be required to facilitate the inbound bus lane on approach to the junction. There would also be a potential requirement to relocate/provide new signal equipment.
2. **Wexford Street/Cuffe Street:** Adjustments to the junction layout would be required to facilitate the inbound bus lane on approach to the junction. There would also be a potential requirement to relocate/provide new signal equipment.

4.4.3.5 Route Option CS2

Route Description

Route option CS2 is presented in **Figure 4.132**.

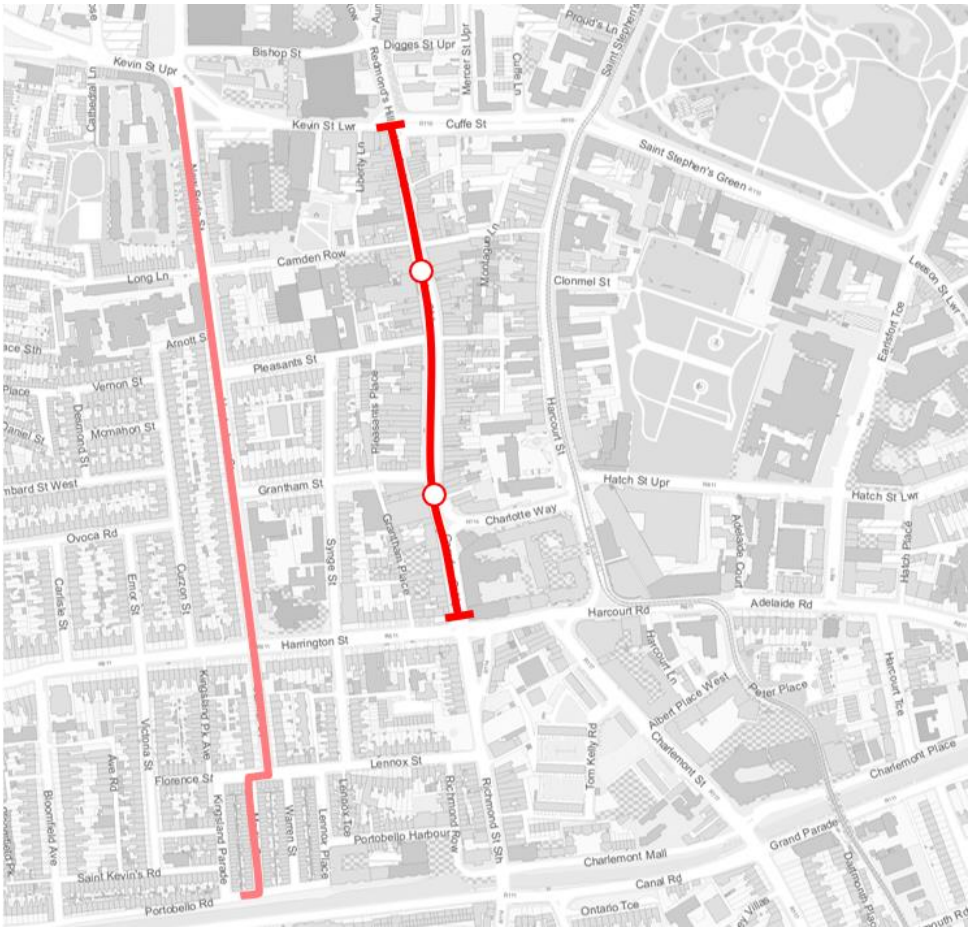

Figure 4.132: Route Option CS2

Inbound: This section of the route would commence on Camden Street at the junction with Charlotte Way. The CBC route would proceed along Camden Street and Wexford Street, ending at the junction with Cuffe Street. A parallel cycle route would be provided along Martin Street, Lennox Street, Stamer Street, Heytesbury Street and New Bride Street.

Outbound: The outbound route would follow the same route as the inbound route.

Stops: A total of two stops would likely be provided in each direction along this route section.

Indicative Scheme Design

Figure 4.133 illustrates the indicative scheme design for this route option. The location of cross-sections and junctions referenced in subsequent sections describing this route option are also presented in this figure.

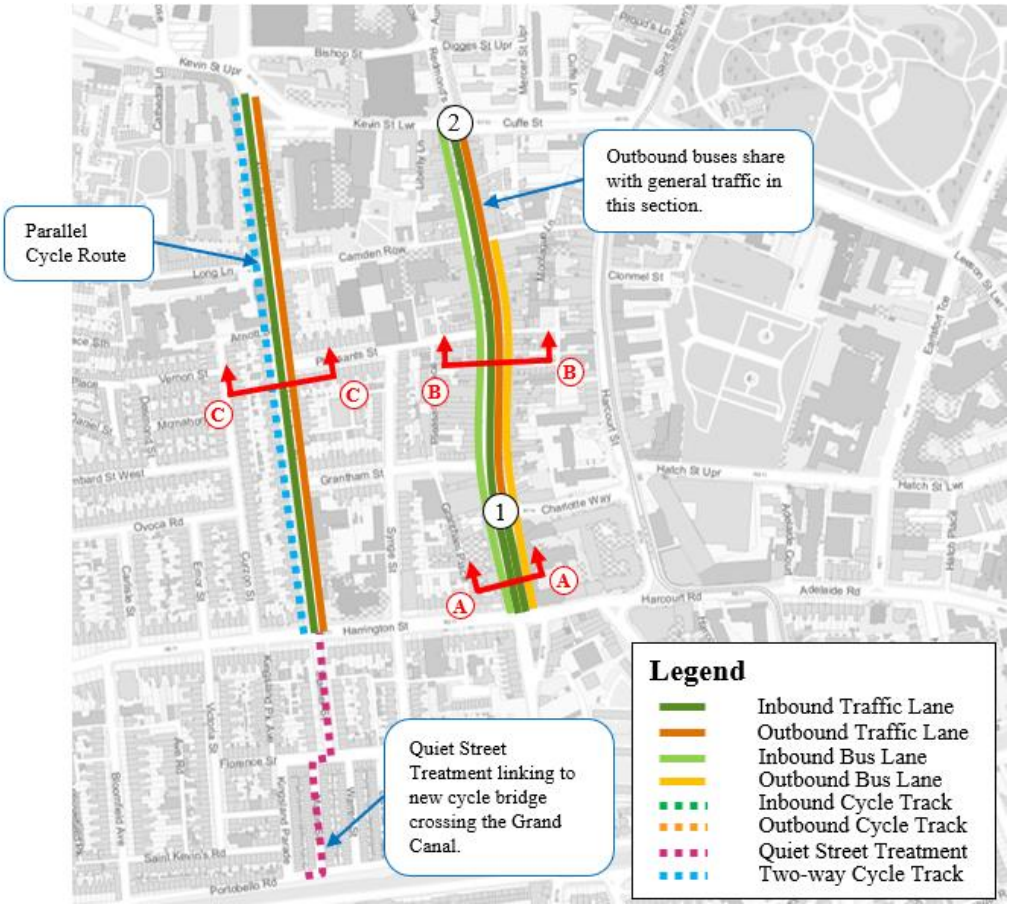

Figure 4.133: Route Option CS2 Indicative Scheme Design

This section of the route would commence on Camden Street Upper at the junction with Harrington Street.

Between Harrington Street and Charlotte Way the cross-section would consist of a bus lane in each direction and two inbound general traffic lanes. The proposed cross-section along this section of Camden Street is presented in **Figure 4.134**.

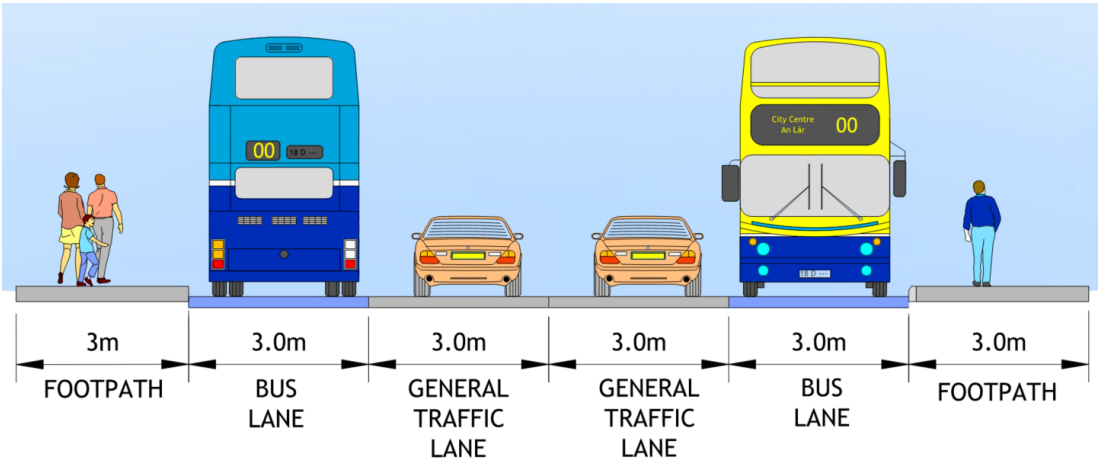

Figure 4.134: Route Option CS2 Cross-Section A-A

Between Charlotte Way and Montague Street the cross-section would consist of a dedicated bus lane and a general traffic lane in each direction. On-street parking and loading would be retained where practicable.

The proposed cross-section along this section of Camden Street is presented in **Figure 4.135**.

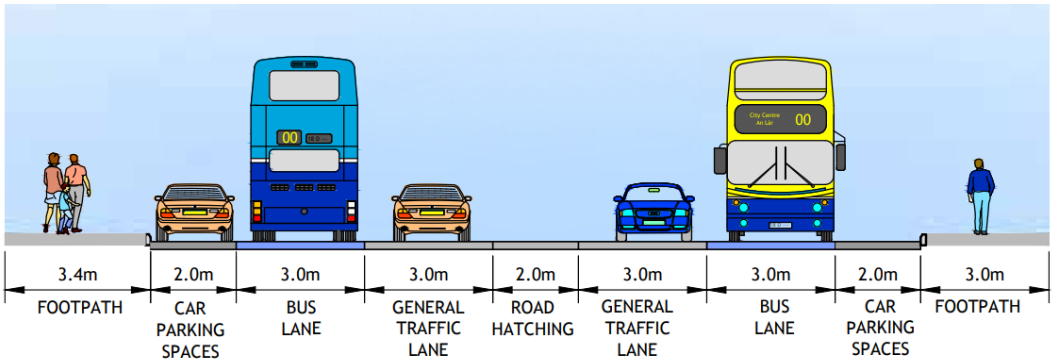

Figure 4.135: Route Option CS2 Cross-Section B-B

North of Montague Street, outbound buses would share with the general traffic lane over a short section. Bus priority through this section would be managed through signal-controlled priority at the Cuffe Street junction.

A parallel cycle route would be provided consisting of a Quiet Street Treatment on Martin street and Stamer street, and a two-way cycle track on Heytesbury Street and New Bride Street. The proposed cross-section along this portion of the scheme is indicated in **Figure 4.136**. This parallel cycle facility would connect to a new cycle bridge crossing the Grand Canal at its southern end.

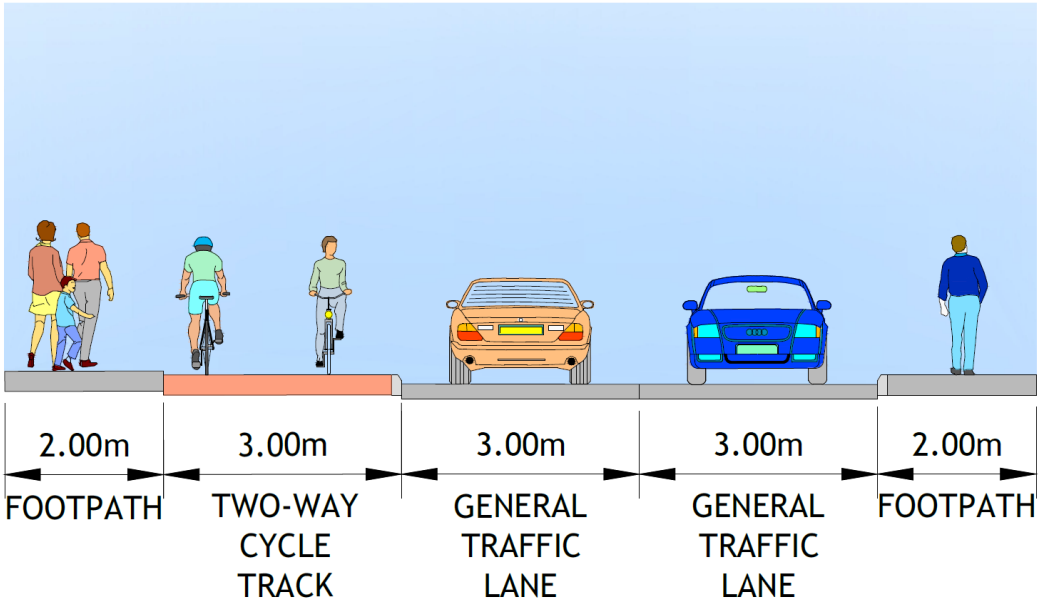

Figure 4.136: Route Option CS2 Cross-Section C-C

In summary, this route option would have the following characteristics:

- Bus lanes would be provided in each direction between Harrington Street and Montague Street;
- An inbound bus lane would be provided between Montague Street and Cuffe Street, outbound bus priority through this section would be managed through signal-controlled priority;
- A Quiet Street Treatment would be provided on Martin Street and Stamer Street; and
- A two way cycle track would be provided on Heytesbury Street and New Bride Street.

Junctions:

There are two signalised junctions along this route option, some of which would require upgrading to facilitate bus priority. The locations of these junctions are presented in **Figure 4.133** and discussed below:

1. **Camden Street/Charlotte Way:** Adjustments to the junction layout would be required to facilitate the inbound bus lane on approach to the junction. There would also be a potential requirement to relocate/provide new signal equipment.
2. **Wexford Street/Cuffe Street:** Adjustments to the junction layout would be required to facilitate the inbound bus lane on approach to the junction. There would also be a potential requirement to relocate/provide new signal equipment.

4.4.3.6 Route Option CS3

Route Description

Route option CS3 is presented in **Figure 4.137**.

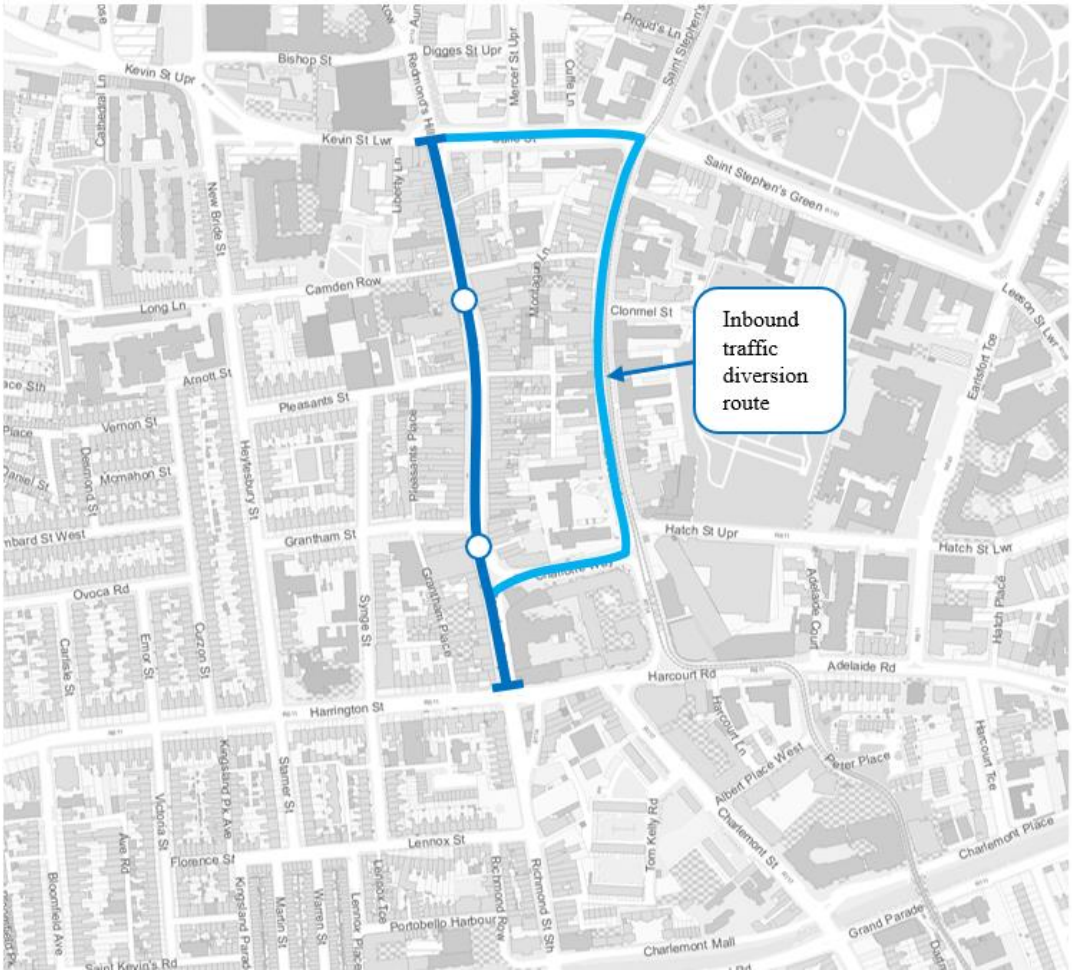

Figure 4.137: Route Option CS3

Inbound: This section of the route would commence on Camden Street at the junction with Charlotte Way. The CBC route would proceed along Camden Street and Wexford Street, ending at the junction with Cuffe Street. Inbound general traffic would be directed via Charlotte Way to Harcourt Street, linking back to the CBC route via Cuffe Street.

Outbound: The outbound route would follow the same route as the inbound route. Outbound general traffic would still be permitted on the CBC.

Stops: A total of two stops would likely be provided in each direction along this route section.

Indicative Scheme Design

Figure 4.138 illustrates the indicative scheme design for this route option. The location of cross-sections and junctions referenced in subsequent sections describing this route option are also presented in this figure.

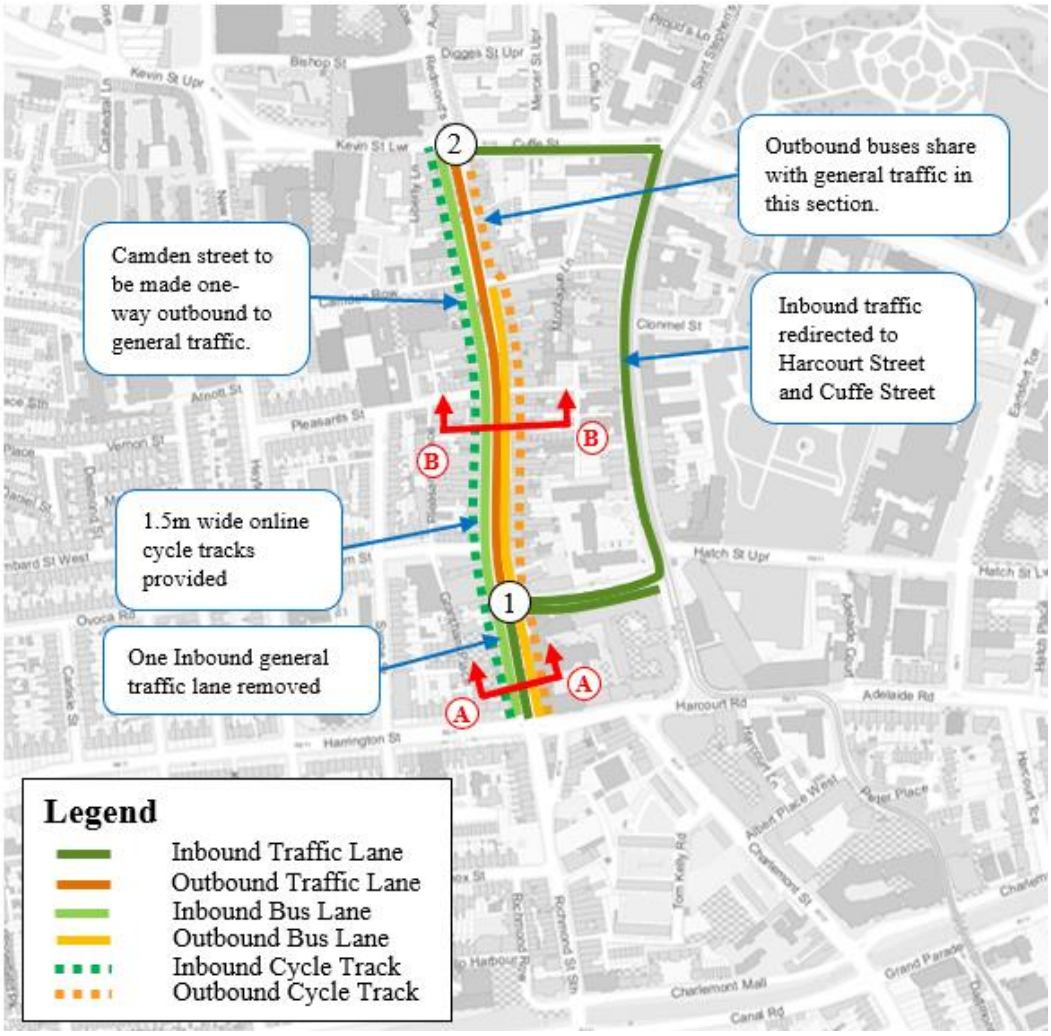

Figure 4.138: Route Option CS3 Indicative Scheme Design

This section of the route would commence on Camden Street Upper at the junction with Harrington Street. Between Harrington Street and Charlotte Way the cross-section would consist of a bus lane in each direction, one inbound general traffic lane and a 2.0m wide cycle track in each direction. The proposed cross-section along this section of Camden Street is presented in **Figure 4.139**.

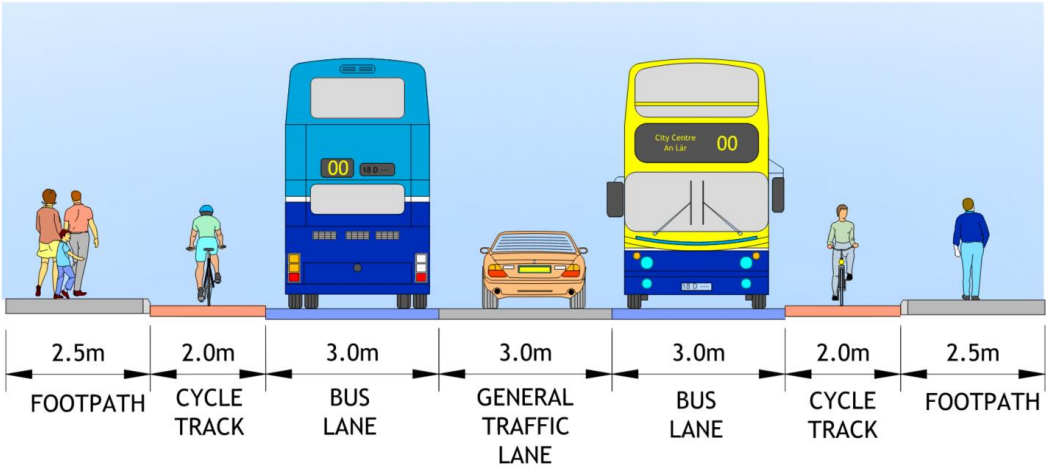

Figure 4.139: Route Option CS3 Cross-Section A-A

Between Charlotte Way and Montague Street the cross-section would consist of a dedicated bus lane and a 1.5m cycle track in each direction, and an outbound general traffic lane. On-street parking and loading would be retained where practicable. The proposed cross-section along this section of Camden Street is presented in **Figure 4.140**.

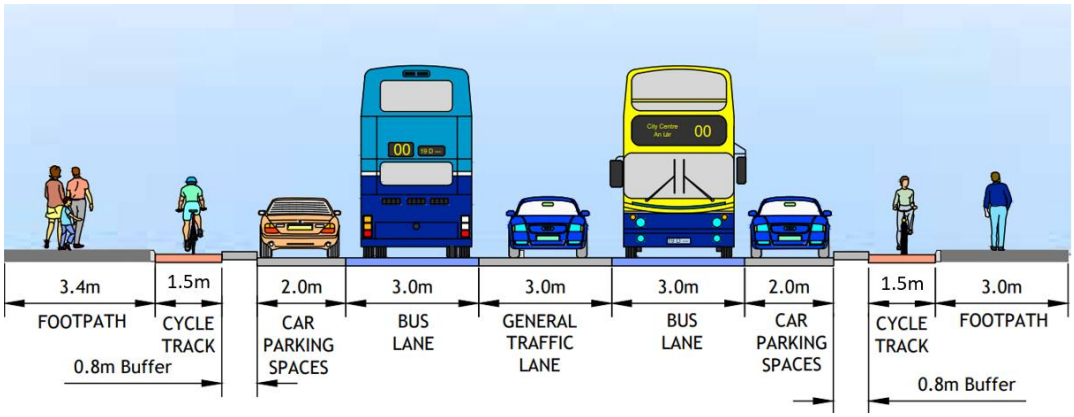

Figure 4.140: Route Option CS3 Cross-Section B-B

North of Montague Street, outbound buses would share with the general traffic lane over a short section. Bus priority through this section would be managed through signal-controlled priority at the Cuffe Street junction.

In summary, this route option would have the following characteristics:

- Bus lanes would be provided in each direction between Harrington Street and Montague Street;
- One inbound general traffic lane would be removed between Harrington Street and Charlotte Way;
- An inbound bus lane would be provided between Montague Street and Cuffe Street, outbound bus priority through this section would be managed through signal-controlled priority;

- Dedicated 2.0m wide cycle tracks would be provided on Camden Street Upper and 1.5m wide cycle tracks would be provided on Camden Street Lower; and
- Inbound general traffic would be redirected to Charlotte Way, Harcourt Street and Cuffe Street.

Junctions:

There are two signalised junctions along this route option, some of which would require upgrading to facilitate bus priority. The locations of these junctions are presented in **Figure 4.138** and discussed below:

1. **Camden Street/Charlotte Way:** Adjustments to the junction layout would be required to facilitate the inbound bus lane on approach to the junction as well as to redirect inbound general traffic to Charlotte Way. There would also be a potential requirement to relocate/provide new signal equipment.
2. **Wexford Street/Cuffe Street:** Adjustments to the junction layout would be required to facilitate the inbound bus lane on approach to the junction. There would also be a potential requirement to relocate/provide new signal equipment.

4.4.3.7 Section 3 Route Option Assessment

Details of the route options assessment undertaken for the Rathmines Village study area section are presented in Appendix H. The relative ranking of route options against the scheme assessment sub-criteria is summarised in **Table 4.16**.

Table 4.16: Section 3 Route Options Assessment Summary (Sub-Criteria)

Appraisal Criteria	Sub-Criteria	Option CS1	Option CS2	Option CS3
1 Economy	1A Capital Cost			
	1B Transport Quality & Reliability			
2 Integration	2A Land Use Policy			
	2B Residential Population and Employment Catchments			
	2C Transport Network Integration			
	2D Cycle Network Integration			
	2E Traffic Network Integration			
3 Accessibility & Social Inclusion	3A Key Trip Attractors			
	3B Deprived Geographic Areas			
4 Safety	4A Road Safety			

Appraisal Criteria	Sub-Criteria	Option CS1	Option CS2	Option CS3
	4B Pedestrian Safety			
5 Environment	5A Archaeology & Cultural Heritage			
	5B Architectural Heritage			
	5C Flora & Fauna			
	5D Soils, Geology & Hydrogeology			
	5E Landscape & Visual			
	5F Air Quality			
	5G Noise & Vibration			
	5H Land Use Character			

In terms of Capital Cost, both CS1 and CS3 would require similar levels of infrastructure upgrades, while Option CS2 would be slightly more expensive due to the additional works required to construct the parallel cycle facility. In terms of transport quality and reliability, Option CS1 performs marginally worse under this criterion due to the fact that cyclists would have to share the bus lane which may lead to delays to the bus.

All options would serve the same catchments and as such are ranked equally in relation to land use policy and residential population catchments and employment catchments.

Similarly, in terms of transport network integration, as all options would follow the same route, the opportunity for interchange with other routes is equal.

In terms of cycle network integration, Option CS3 performs significantly better than Options CS1 and CS2 as high-quality cycle facilities are proposed along Primary Route 10 from the GDA cycle network plan. Option CS1 would not provide any dedicated cycle facilities through this section of the scheme and as such performs the worst under this criterion.

Options CS1 and CS2 perform marginally better than Option CS3 under the criterion of traffic network integration, as all inbound traffic movements on Camden Street and Wexford Street would be retained.

Option CS3 would result in diversions for motorists, however due to the existing one-way regime on Harcourt Street and the city centre context of this scheme section, this is not considered a significant impact.

All options rank equally under accessibility and social inclusion as they would all follow the same route.

In terms of safety, all options perform the same with respect to road safety as the route would be the same for each and the number of junctions and turning movements would be equal. Similarly, all options would provide for pedestrian footpaths and crossings and perform equally in terms of pedestrian safety.

In terms of environment, Option CS3 performs marginally better due to the fact that general traffic would be redirected away from the CBC.

A summary of the assessment and relative ranking of route options against the five main assessment criteria is presented in **Table 4.17**.

Table 4.17: Section 3 Criteria MCA Summary

Appraisal Criteria	Option CS1	Option CS2	Option CS3
1 Economy			
2 Integration			
3 Accessibility & Social Inclusion			
4 Safety			
5 Environment			

4.4.3.8 Section 3 Conclusion and Preferred Option

Based on the assessment undertaken, route Option CS3 offers more benefits over other options. It performs well under all criteria. Option CS3 is the PRO for the Camden Street and Wexford Street area for the following reasons:

- It would provide physical bus priority throughout this section, with the exception of a short section of Wexford Street due to the presence of built form in close proximity to the carriageway (valid for all options considered).
- It would provide high-quality cycle facilities on Primary Route 10 from the GDA Cycle Network Plan, serving the urban village of Camden Street which is a significant trip attractor and cycling destination;
- It would retain approximately 20 parking spaces and 8 loading bay spaces of the existing 30 parking spaces and 14 loading bay spaces on Camden Street Lower; and
- The impact of redirecting inbound general traffic to Harcourt Street is not considered significant.

4.5 Preferred Route Option for the Rathfarnham to City Centre Section

4.5.1 Introduction

Chapter 4.4 of this report presented an appraisal of all route options considered for the Rathfarnham to City Centre section. Following this appraisal, the preferred options have been incorporated into the route from the 'Rathfarnham to City Centre Core Bus Corridor CBC Feasibility Study and Options Assessment Report' to form an end-to-end PRO. This chapter of the report presents and describes the PRO identified and the PRO scheme design. The PRO scheme design drawings are included in Appendix A of this report.

4.5.2 Preferred Route Description

The Preferred Route for the Rathfarnham to City Centre section is presented in **Figure 4.141** below:

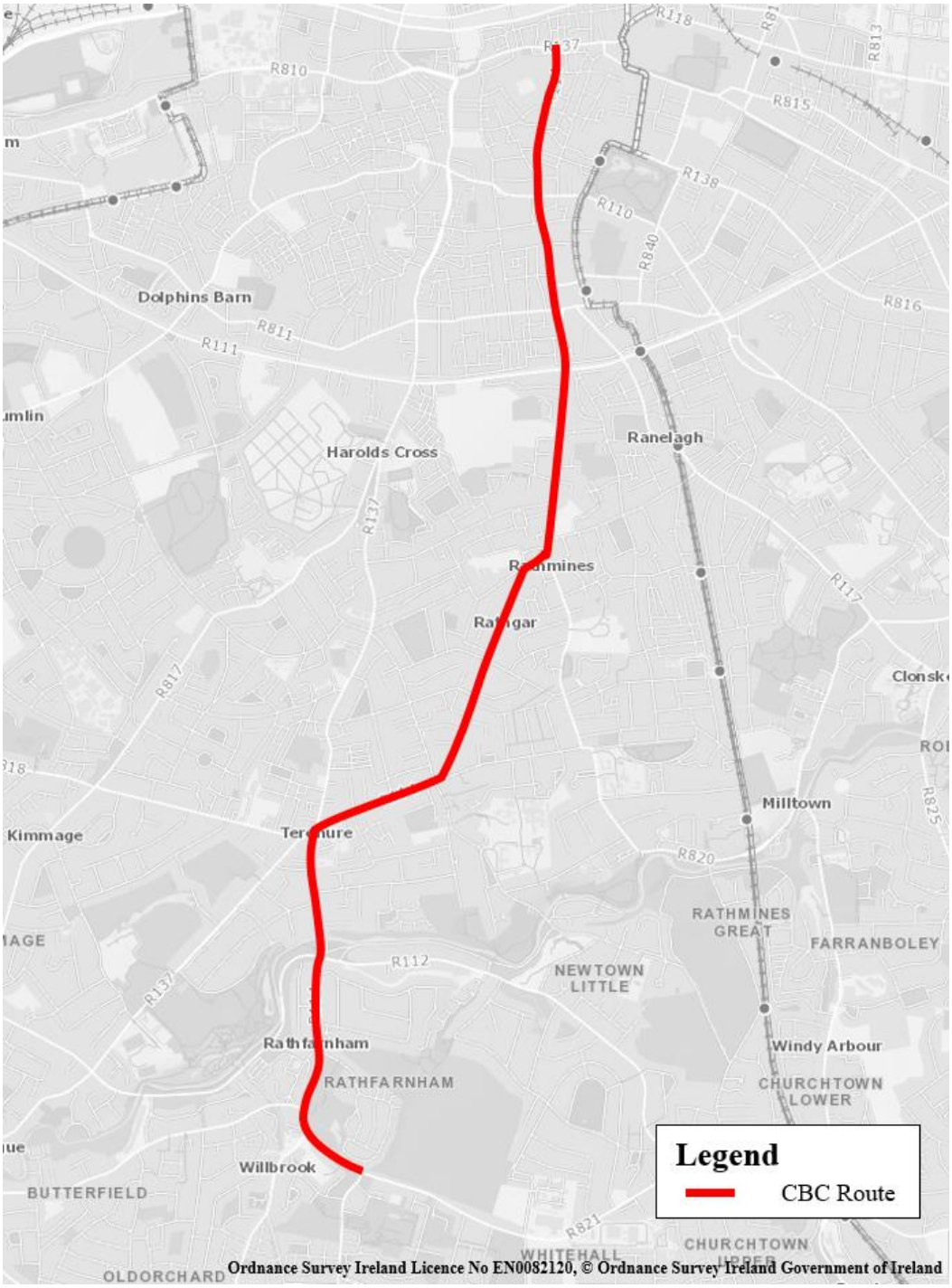

Figure 4.141: The Rathfarnham to City Centre section Preferred Route Option

The Rathfarnham to City Centre section commences/terminates on the R821 Grange Road at the junction with Nutgrove Avenue.

The CBC is routed along the Grange Road, Rathfarnham Road, Terenure Road East, Rathgar Road, Rathmines Road Lower, Richmond Street South, Camden Street Upper and Lower, and Wexford Street to its junction with Kevin Street Lower and Cuffe Street where priority bus lanes end.

From Cuffe Street to Dame Street along Redmond's Hill, Aungier Street and South Great George's Street, the route will involve a traffic lane and a cycle track in both directions where it will join the existing traffic management regime in the city centre.

4.5.3 Preferred Route Option Scheme Design Description

4.5.3.1 Section 1: Nutgrove Avenue to Terenure Road North – Grange Road, Rathfarnham Road

The Rathfarnham to City Centre section commences at the junction of Grange Road and Nutgrove Avenue, where it will tie into the Grange Road Cycle scheme. Between this junction and the Castleside Drive junction it is intended to provide a single bus lane alongside general traffic lanes and cycle tracks in both directions, as per the EPR Option. To accommodate the road layout, it is proposed to utilise limited land-take from the following properties:

- Private properties in Rathfarnham Wood development; and
- Green space in Rathfarnham Castle Park.

In the EPR Option proposal, land-take was proposed from the Village Court development. However, through the design changes this land-take has been mitigated.

On the section of Rathfarnham Road between Castleside Drive and Dodder Park Road, it is proposed to provide an inbound bus lane, two general traffic lanes and a 1.5m wide outbound cycle track, with outbound bus priority provided through signal-controlled priority. Due to significant construction related constraints, the inbound cycle track will be curtailed over an approximately 270m long section, with cyclists sharing with the bus. A section of inbound cycle track will be provided at either end of this section, on approach to junctions.

To accommodate the new configuration on Rathfarnham Road between Castleside Drive and Dodder Park Road, it is proposed to utilise land-take from adjacent properties on the western side of the road. The number of properties impacted, and the extent of the impact, has been reduced when compared to the EPR option.

To maintain bus priority through the Dodder Park Road and Rathfarnham Road junction, it is intended to provide signal-controlled priority on the southern and northern approaches to the junction.

Between Dodder Park Road and Rathdown Park, it is proposed to provide bus priority through a combination of signal-controlled priority and partial bus lanes, with 1.5m wide cycle tracks provided on the CBC. Between Rathdown Park and Bushy Park Road, it is intended to maintain bus priority by providing signal-controlled priority in both directions and managing traffic queues in this area. This represents a reduction in the cross-section compared to the EPR Option and results in reduced land-take from adjacent properties.

From Bushy Park Road to Terenure Road North it is proposed to provide cycle tracks, bus lanes and traffic lanes in both directions. To accommodate these new bus lanes on this section of Rathfarnham Road, it is proposed to acquire land from adjacent properties. The number of properties impacted, and the extent of the impact, has been reduced when compared to the EPR option. At the Terenure Road North junction it is intended to extend the existing bus lane and proposed cycle track as far as the junction stop line, as per the EPR Option. Bus movements through this junction will be managed with signal-controlled priority.

4.5.3.2 Section 2: Terenure Road North to Charleville Road – Terenure Road East, Rathgar Road

Between the Terenure Road North junction and St. Joseph's Church, it is proposed to provide a single general traffic lane in each direction. Bus priority will be provided through this section by signal-controlled priority. In the EPR Option it was proposed to provide for an outbound bus lane and two general traffic lanes on this section, however, information distilled from the topographical survey has identified that this arrangement was not feasible without impact on adjacent buildings. The proposed layout will allow for the footpaths to be widened, and provide opportunity for urban realm improvements.

Between St. Joseph's Church and the Rathgar Avenue junction it is intended to provide a bus lane and general traffic lane in both directions. The EPR Option proposed to provide a cycle track in each direction between Ferrard Road and Rathgar Avenue. However, due to the width constraints along this section of the corridor it is now proposed to provide an alternative cycle facility consisting of cycle tracks in each direction along Terenure Road North and Harold's Cross Road, connecting to the Kimmage to City Centre CBC at Harold's Cross. An additional alternative cycle facility is proposed along Bushy Park Road, Wasdale Park, Wasdale Grove, Victoria Road, Zion Road and Orwell Road to provide a secondary east-west route for cyclists travelling between the CBC on Rathfarnham Road and Rathgar Road.

At Rathgar Avenue, it is proposed to maintain bus priority through the junction with signal-controlled priority. This will require land-take on Terenure Road East, between St. Joseph's Church and Brighton Road.

Along Rathgar Road it is proposed to provide bus lanes and cycle tracks in each direction and a one-way inbound general traffic lane only, where the EPR Option previously proposed two-way traffic along this section. Local access for residents on Rathgar Road and adjoining streets can be maintained through the surrounding road network via Rathgar Avenue or Rathmines Road Upper including Frankfort Avenue, Leicester Avenue, Garville Avenue, Garville Road, and Highfield Road.

It is proposed to remove the current right turn ban from Rathmines Road Upper to Highfield Road as well as the right turn ban from Highfield Road onto Rathgar Road. No land acquisition or tree removal is required on Rathgar Road due to these design revisions.

4.5.3.3 Section 3: Charleville Road to Dame Street

As part of the first round of consultation, two options were presented as part of the EPR Option for this section of the CBC, namely;

- Option A – Online cycleway through Rathmines Road, Richmond Street and Camden Street Upper, following Primary Cycle Route 10 and connecting to Primary Cycle Route 11. This option also identified that a Secondary Cycle Route 10 along Camden Street and Wexford Street would be developed as part of the next design development stage.
- Option B – Offline cycleway through side streets adjacent to Rathmines Road with a new canal crossing and a quiet cycle route through Martin Street, Stamer Street, Heytesbury Street and New Bride Street.

Further to concerns raised during the first round of consultation, the current proposal consists of providing a single inbound bus lane, two general traffic lanes and cycle tracks between Charleville Road and Castlewood Avenue. Between Castlewood Avenue and Grove Road, a general traffic lane and a cycle track in each direction are proposed, with the provision of a Bus Gate between Richmond Hill and Lissenfield which will restrict general traffic movements. This proposal also allows for some increase to footpath widths through Rathmines and the provision of 2m wide cycle tracks in each direction through the village.

On Richmond Street South, it is proposed to maintain the outbound traffic lane with a bus lane and cycle tracks in both directions. Immediately south of the junction of Harrington Street/Harcourt Road/Richmond Street South, it is intended to have bus lanes in both directions with no general traffic lanes.

On Camden Street between Harcourt Road and Charlotte Way, one bus lane in each direction and one inbound general traffic lane is proposed, with a cycle track provided in each direction. This represents a change to the EPR Option, which provided for two general traffic lanes on Camden Street Upper.

Between Grantham Street and Cuffe Street it is proposed to provide bus lanes in each direction and a single outbound general traffic lane on Camden Street/Wexford Street. This represents a change to the EPR Option, which provided for two-way traffic on this section of Camden Street. Under this proposal, inbound traffic would reroute to Harcourt Street to get to Cuffe Street and beyond.

Between Cuffe Street and Dame Street it is proposed to provide one general traffic lane and one cycle lane in both directions. No bus lanes will be provided on this section of the route. Where practicable, on-street parking bays and loading bays will be retained. The CBC ties into the existing road network on Dame Street.

4.5.4 Summary

4.5.4.1 Infrastructure Provision

The preferred route option drawings presented in Appendix A show the extent of the infrastructure proposed to deliver the Rathfarnham to City Centre section which is approximately 6.2km long from end to end.

The bullet points below present the length of existing and proposed bus and cycle priority as a percentage of the overall route length.

- *21*% Existing bus priority (outbound) *(16% physical – 5% virtual)*
- *49*% Existing bus priority (citybound) *(48% physical – 1% virtual)*
- *88*% Proposed bus priority (outbound) *(47% physical – 41% virtual)*
- *90*% Proposed bus priority (citybound) *(67% physical – 23% virtual)*
- *72*% Existing cycle priority (outbound) (40% mandatory cycle lane – 27% advisory cycle lane - 5% cycle track)
- *32*% Existing cycle priority (citybound) (32% advisory cycle lane)
- *91*% Proposed cycle priority (outbound) (91% cycle track)
- *87*% Proposed cycle priority (citybound) (87% cycle track)

Alternative cycle facilities are proposed for sections where the provision of cycle infrastructure is not practicable along the CBC as summarised below:

- Terenure Road North - 1.5km segregated cycle tracks in both directions between Terenure Cross and Harold's Cross Park
- Orwell Road - 220m of segregated cycle tracks in both direction between Zion Road and Rathgar Village
- Bushy Park Road/Wasdale Park/Wasdale Grove/Victoria Road/Zion Road - 850m quiet street treatment between Rathdown Avenue and Rathfarnham Road

Virtual bus priority measures are proposed at the following locations:

1. Rathfarnham Road between Castleside Drive and Dodder Park Road (outbound) – Approximately 450m length;
2. Rathfarnham Road between Dodder Park Road and Westbourne Road (inbound) – Approximately 145m length;
3. Rathfarnham Road between Westbourne Road and Rathdown Park (outbound) - Approximately 100m length;
4. Rathfarnham Road between Rathdown Park and Bushy Park Road (inbound and outbound) – Approximately 50m length;
5. Rathfarnham Road and Terenure Road East between St. Joseph's Church and Beechlawn Way (outbound) – Approximately 250m length;

6. Terenure Road East between Terenure Cross and St. Joseph's Church (inbound and outbound) – Approximately 150m length;
7. Terenure Road East between Highfield Road and Rathgar Park (outbound) – Approximately 45m length;
8. Rathgar Road between Rathgar Avenue and Christ Church Rathgar (inbound) – Approximately 40m length;
9. Rathmines Road Lower between Castlewood Avenue and Grove Road (inbound) – Approximately 850 length;
10. Rathmines Road Lower between Grove Road and Charleville Road (outbound) – Approximately 1km length; and
11. Wexford Street between Kevin Street and Montague Street (outbound) – Approximately 100m length.

4.5.4.2 Main Scheme Changes

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

- In lieu of the EPR Option proposal to provide an alternative cycle facility connecting to Brookvale Downs, the current proposal for Rathfarnham Road between Castleside Drive and Rathdown Park includes for 1.5m segregated cycle tracks on Rathfarnham Road, with the exception of a 270m long section of inbound cycle track, with bus priority provided through a combination of signal-controlled priority and partial bus lanes.
- Signal-controlled priority proposed between Rathdown Park and Bushy Park Road, reducing land-take along this section.
- Signal-controlled priority proposed through Terenure Cross to minimise impacts on parking and loading, which will also allow urban realm improvements.
- Alternative cycle facilities proposed on Terenure Road North and Harold's Cross Road connecting to the Kimmage to City Centre CBC at Harold's Cross.
- Additional alternative cycle facilities proposed on Bushy Park Road, Wasdale Park, Wasdale Grove, Victoria Road, Zion Road and Orwell Road. No cycle facilities proposed on Terenure Road East, and 1.5m cycle tracks proposed on Rathgar Road. This will reduce the impact on trees and properties on Terenure Road East whilst maintaining a high level of service for cyclists travelling to and from the city centre.
- Signal-controlled priority proposed through Rathgar Village to minimise impacts on parking and loading, which will also allow urban realm improvements.
- One-way inbound traffic regime proposed on Rathgar Road, removing the need for land-take and impact on heritage properties on this section.

- Two general traffic lanes, and 2m cycle track in each direction proposed between Castlewood Avenue and Grove Road with a Bus Gate between Richmond Hill and Lissenfield. This will allow for wider footpaths and urban realm improvements through the village.
- A bus lane and cycle track provided in each direction on Camden Street Upper between Harcourt Road and Charlotte Way. The number of traffic lanes has been reduced from two to one lane to enhance cycle facilities.
- One-way traffic regime and 1.5m cycle track in each direction proposed on Camden Street between Charlotte Way and Cuffe Street.
  This will enhance the cycle facilities along this section of the scheme while maintaining commercial loading and parking where practicable.

4.5.5 Scheme Benefits

4.5.5.1 Bus Journey Times

Through the provision of increased bus priority infrastructure, the Proposed Scheme would improve both the overall journey times for buses along the route and their journey time reliability. This can help to realise the objectives of the Proposed Scheme as set out in Chapter 2.4 of this report. The facilitation of bus priority along the Rathfarnham to City Centre Section, through the delivery of dedicated bus lanes, bus gates and signal-controlled bus priority, is envisaged to reduce bus journey times. In addition to this, journey reliability is envisaged to be improved, by largely removing interaction between bus traffic and general traffic.

4.5.5.2 Walking & Cycling

In addition to the improvements to bus journey time and journey time reliability, the Proposed Scheme would provide benefits for cyclists and pedestrians. The provision of dedicated cycling infrastructure along the Rathfarnham to City Centre Section would improve the level of service provided for cyclists along the route, making cycling trips safer and more attractive.

The Proposed Scheme would deliver substantial elements of the GDA Cycle Network Plan as outlined in Chapter 2.2, as well as linking with other proposed cycling schemes, contributing towards the development of a comprehensive cycling network for Dublin.

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

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