Kimmage to City Centre Core Bus Corridor Scheme

January 2023

Preferred Route Option Report

BUS CONNECTS

SUSTAINABLE TRANSPORT FOR A BETTER CITY.

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Appendices

Glossary of Technical Terms

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

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

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

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

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

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

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

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

Executive Summary

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

The aim of the Kimmage to City Centre Core Bus Corridor 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 Kimmage to City CBC extends over a length of 3.7 km. It commences at the Kimmage Cross Roads junction at the southern end and extends along Kimmage Road Lower for 2km to Harold's Cross Park, and then along Harold's Cross Road for 0.4km to the Grand Canal at the junction with Parnell Road and Grove Road. After crossing the canal on Robert Emmett Bridge the proposed route continues northwards along Clanbrassil Street through the Leonard's Corner junction at South Circular Road, and then along New Street South to the tie-in point with the St Patrick's Street Junction at the northern end. Priority for buses is provided along the entire route, consisting of extensive dedicated bus lanes in each direction over a length of 1.6km, combined with bus gates at strategic locations where bus lanes will not be provided over a length of 1.1km on Kimmage Road Lower between the junction at Ravensdale Park near the southern end, and at Harold's Cross Park at the northern end. A mix of cycling facilities of various types will be provided along the route with cycle tracks beside the bus lanes, advisory cycle lanes (existing retained) in the bus gate section on Kimmage Road Lower, as well as a parallel quiet streets cycle route from Ravensdale Park to Mount Argus to the west of Kimmage Road Lower.

The Kimmage to City Centre CBC scheme connects to the Greenhills to City Centre CBC scheme at the Kevin Street / St Patrick's Street junction, providing a continuous route from the Kimmage / Terenure area to the City Centre. It also includes proposed modifications at the junction of Harold's Cross Road and Kenilworth Park which will integrate with the proposed cycle route along Harold's Cross Road as part of the Templeogue / Rathfarnham to City Centre CBC scheme.

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 the work done during earlier stages but rather compliments it and is a direct response to issues raised by the public during the public consultation process. This assessment has also been carried out in the context of more detailed information now available, including topographical survey.

A full review was undertaken of the previous design proposals as published for the Emerging Preferred Route. This review was informed by additional technical information and the feedback received from the non-statutory Public Consultations.

Changes from the Emerging Preferred Route

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

1. A southern bus gate is proposed on Kimmage Road Lower at the junction with Ravensdale Park instead of at Sundrive Cross further north.

2. The existing road layout is retained along Kimmage Road Lower north of the junction with Ravensdale Park which will become a quiet street with the diversion of through traffic to other routes.

3. An additional alternative Poddle Cycleway is included along quiet streets to the west of Kimmage Road Lower. This will include a new shared pedestrian and cycle link at the proposed Stone Boat Boardwalk overhanging the River Poddle between Sundrive Road and Mount Argus.

4. Public realm enhancement is proposed with a new median island in the centre of Kimmage Road Lower on either side of the Corrib Road junction with new street trees.

5. Public realm enhancements are proposed at Sundrive Cross with new street trees and an on-street parking bay on the eastern side of Kimmage Road Lower south of Sundrive Cross.

6. The junction of Harold's Cross Road and Kenilworth Park will be modified to provide for the southbound right-turn as an alternative route to Kimmage instead of the direct route from Harold's Cross Park where there will be a bus gate.

7. Cycle tracks are proposed along Harold's Cross Road through some localised road widening into adjoining properties where necessary to provide the required width. A short parking layby will be provided on the eastern side of Harold's Cross Road.

8. A new public car park will be provided at the front of Our Lady's Hospice to replace on-street parking spaces that will be removed nearby.

9. New trees will be planted on Harold's Cross Road at the junction with Mount Drummond Avenue, with some additional parking spaces.

10. At Robert Emmett Bridge over the Grand Canal, new footbridges will be provided on both sides of the existing concrete arch bridge to allow the road space on the existing bridge to be allocated to bus lanes in both directions.
11. Signal-controlled priority will be provided for buses in the north-south and east-west directions through the Leonard's Corner junction between Clanbrassil Street and South Circular Road.
12. Cycle tracks will be provided along Clanbrassil Street and New Street South instead of the alternative route on quiet streets through Portobello to the east.
13. Almost all existing street trees in the median along Clanbrassil Street and New Street South will be retained.

1. Introduction and Background

1.1. Introduction

This report presents the Preferred Route Option (PRO) for the Kimmage to City Centre Core Bus Corridor Scheme (herein after called the Proposed Scheme). The Proposed Scheme will be 3.7 km in length.

The Proposed Scheme commences at the Kimmage Cross Roads junction at the southern and extends along Kimmage Road Lower, Harold's Cross Road, Clanbrassil Street Upper and Lower and New Street South to the St Patrick's Street Junction at the northern end. Priority for buses is provided along the entire route, consisting of extensive dedicated bus lanes in each direction with bus gates at strategic locations where bus lanes will not be provided, and a mix of cycling facilities of various types including cycle tracks and quiet streets routes along Kimmage Road Lower and adjoining side streets.

At the Kevin Street / St Patrick's Street junction the Proposed Scheme will integrate with the Tallaght / Clondalkin to City Centre CBC Scheme, providing a continuous route from the Kimmage / Terenure area to the City Centre. The Proposed Scheme also includes proposed modifications at the junction of Harold's Cross Road and Kenilworth Park which will integrate with the proposed cycle route along Harold's Cross Road as part of the Templeogue / Rathfarnham to City Centre CBC scheme.

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

Refer to Figure 1-1 for the Scheme location.

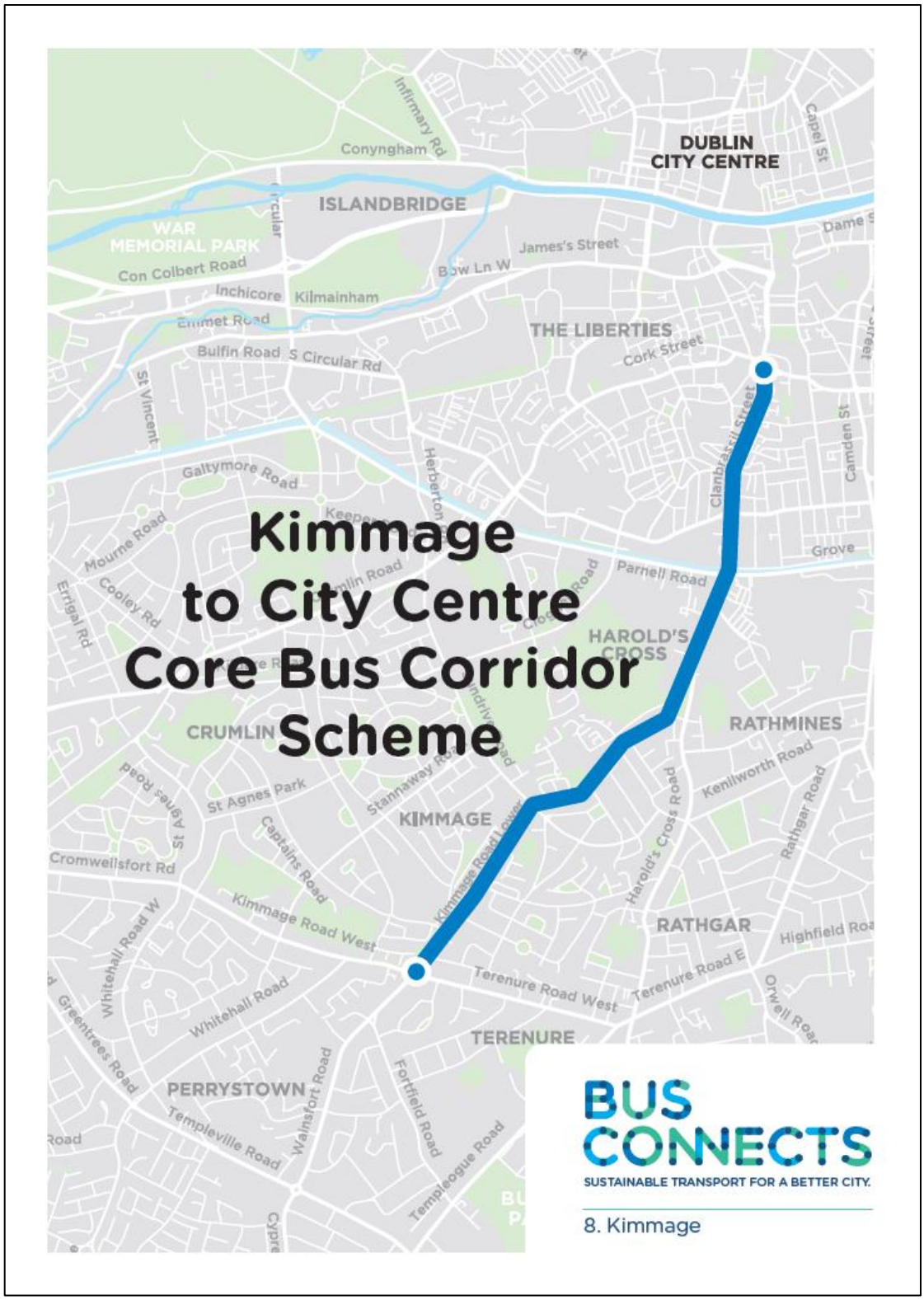

Figure 1-1: Scheme Location Map

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 Infrastructure Works). The Infrastructure Works, once completed, will deliver the radial core corridors identified in the Greater Dublin Area Transport Strategy 2016-2035 (herein after called the GDA Transport Strategy) Core Bus Network which is discussed below.

The BusConnects Dublin Programme is the National Transport Authority's (NTA) programme to greatly improve bus services in the Greater Dublin Area and the Infrastructure Works is one element of that Programme, itself containing 12 stand-alone Core Bus Corridor 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 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 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 Core Bus Corridors Schemes.

The 12 stand-alone Core Bus Corridor Schemes to be delivered under the Infrastructure Works are (see 2):

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

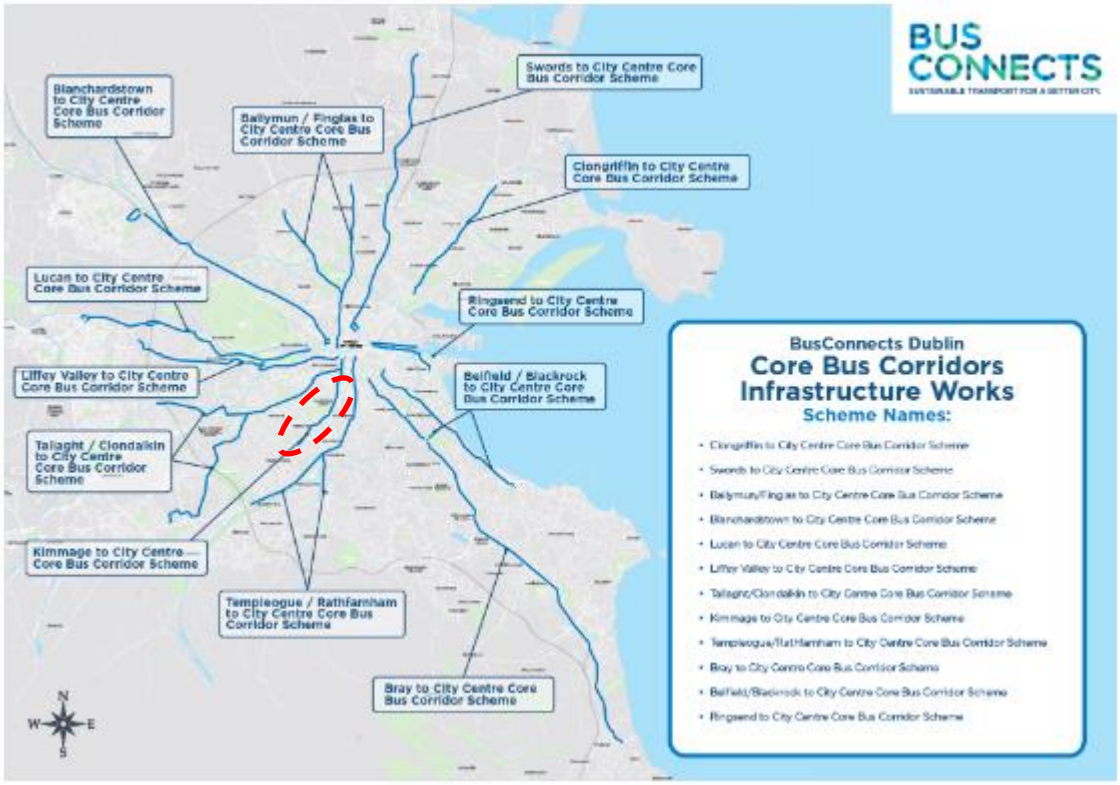

Figure 1-2 – Core Bus Corridor Infrastructure Works with the Proposed Scheme highlighted

1.3. Approach for this Report

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

As part of this process a 'Core Bus Corridor Route Selection Report was published for the Kimmage to City Centre CBC, which identified feasible options along the corridor, assessed these options and arrived at an Emerging Preferred Route (EPR) Option. 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.

The Route Selection Report referenced above, along with the associated appendices as published, are included in Appendix E.

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 public engagement and consultations.

- Clarifications to the previous assessments in the Route Selection Reports.
- Further design development and options assessment; and
- Change in the extent of the Proposed Scheme.

1.4. Report Structure

This report is structured as follows:

- **Chapter 2: Planning and Policy Context** – This chapter summarises a review of transport and planning policy which is relevant to the route selection process for the Proposed Scheme.
- **Chapter 3: Background and Non Statutory Public Consultation** – This chapter outlines the summary of the non-statutory public consultation process.
- **Chapter 4: Study Area** – In this chapter, the study area for the Proposed Scheme is detailed. The integration of the Proposed Scheme with existing and planned transport networks is considered, along with considerations of the Proposed Scheme for other road users.
- **Chapter 5: Review of The Route Selection Report** – This chapter is a summary of the options assessment that was previously carried out in each section of the previous Feasibility and Options 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 material changes resulting from the design development are detailed.
- **Chapter 6: Options Assessment** – This chapter updates the previous options assessment work undertaken in light of the additional considerations set out in Chapter 5.
- **Chapter 7: Preferred Route Option** – This chapter gives the overall conclusions adopted from the Proposed Scheme options assessment process and identifies and describes the PRO proposal.

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.

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 that 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 the identified need for BusConnects Dublin as determined in the preparation of that prior strategy remain. 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 Corridor schemes 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 is an essential component of the GDA Transport Strategy 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 identified key rail-based enhancements it is underpinned by the bus-based city-wide public transport system. The GDA Transport Strategy identified a "Core Bus Network", 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 Network forms part of an overall integrated transport system planned for the GDA. In developing the GDA Transport Strategy, 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 bus corridors. In doing so, the NTA has refined and altered the proposals across these corridors and has 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 Corridor Schemes 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

During the course of the analysis carried out to identify the preferred core bus corridor, 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.

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. In the 2014 plan there are a number of primary (Route 9) and secondary (Routes 9B, S01, SO2 and SO3) cycle routes and the *Poddle Greenway* 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.

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:

- The cycle route along Kimmage Road Lower is now a Secondary rather than a Primary route.
- North of the Grand Canal the cycle route along Clanbrassil Street is now a Primary rather than a Secondary route.
- The *Poddle Greenway* has been omitted and replaced by sections of feeder route that generally follow the river along quiet residential streets.

In order to ensure consistency with previous work in determining the Emerging Preferred Route (EPR) the assessments carried out within this report reference the 2013 GDA Cycle Network Plan.

2.3. Development Plan, Local Area Plans and Strategic Development Zones

2.3.1. Dublin City Council Development Plan (2022 – 2028)

The Dublin City 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: Dublin City Council 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 liveable, 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.

Table 2.2 (continued): Dublin City Council Development Plan Relevant Transport Policies

Relevant Transport Policies	
SMT8 Public Realm Enhancements	To support public realm enhancements that contribute to place making and liveability and which prioritise pedestrians in accordance with Dublin City Council's Public Realm Strategy ('Your City – Your Space'), the Public Realm Masterplan for the City Core (The Heart of the City), the Grafton Street Quarter Public Realm Plan and forthcoming public realm plans such as those for the Parnell Square Cultural Quarter Development and the City Markets Area.
SMT02 Improving the Pedestrian Network	To improve the pedestrian network and prioritise the introduction of tactile paving, ramps and kerb dishing at appropriate locations, including pedestrian crossings, taxi ranks, bus stops and rail platforms in order to optimise accessibility for all users.
SMT12 Pedestrians and Public Realm	To enhance the attractiveness and liveability of the city through the continued reallocation of space to pedestrians and public realm to provide a safe and comfortable street environment for pedestrians of all ages and abilities.
SMT14 City Centre Road Space	To manage city centre road-space to best address the needs of pedestrians and cyclists, public transport, shared modes and the private car, in particular, where there are intersections between DART, Luas and Metrolink and with the existing and proposed bus network.
SMT16 Walking, Cycling and Active Travel	To prioritise the development of safe and connected walking and cycling facilities and prioritise a shift to active travel for people of all ages and abilities, in line with the city's mode share targets.
SMT18 The Pedestrian Environment	To continue to maintain and improve the pedestrian environment and strengthen permeability by promoting the development of a network of pedestrian routes including laneway connections which link residential areas with recreational, educational and employment destinations to create a pedestrian environment that is safe, accessible to all in accordance with best accessibility practice.
SMT19 Integration of Active Travel with Public Transport	To work with the relevant transport providers, agencies, and stakeholders to facilitate the integration of active travel (walking/cycling etc.) with public transport, ensuring ease of access for all.
SMT22 Key Sustainable Transport Projects	To support the expeditious delivery of key sustainable transport projects so as to provide an integrated public transport network with efficient interchange between transport modes, serving the existing and future needs of the city and region and to support the integration of existing public transport infrastructure with other transport modes. In particular the following projects subject to environmental requirements and appropriate planning consents being obtained: (inter alia): • BusConnects Core Bus Corridor projects.

2.4. The Aims and Objectives of the Proposed Scheme

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

The objectives are to:

- Enhance the capacity and potential of the public transport system by improving bus speeds, reliability and punctuality through the provision of bus lanes and other measures to provide priority to bus movement over general traffic movements;
- Enhance the potential for cycling by providing safe infrastructure for cycling, segregated from general traffic wherever practicable;
- Support the delivery of an efficient, low carbon and climate resilient public transport service, which supports the achievement of Ireland's emission reduction targets;
- Enable compact growth, regeneration opportunities and more effective use of land in Dublin, for present and future generations, through the provision of safe and efficient sustainable transport networks;
- Improve accessibility to jobs, education and other social and economic opportunities through the provision of improved sustainable connectivity and integration with other public transport services; and
- Ensure that the public realm is carefully considered in the design and development of the transport infrastructure and seek to enhance key urban focal points where appropriate and feasible.

3. Background and Public Consultation

3.1 Route Selection Reports and Emerging Preferred Routes

In early 2016, the NTA initiated plans to develop the network of Core Bus Corridors identified in the GDA Transport Strategy. As part of this body of work, the 'City Centre to Kimmage CBC Route Selection Report' was prepared which identified feasible options along the corridor, assessed these options and arrived at an Emerging Preferred Route (EPR) Option. These proposals formed the basis for the first Non-Statutory Public Consultation on the proposed Core Bus Corridor.

3.2 First Non-Statutory Public Consultation – Emerging Preferred Route

The first non-statutory public consultation on the BusConnects Core Bus Corridor Emerging Preferred Routes took place on a phased basis and ran until the 31st of May 2019. The consultation for the Kimmage route was in Phase 3 from 26th of February 2019 to 31st of May 2019. The Information Brochure published as part of this consultation is included in Appendix F.

In total 644 submissions were received from 544 separate parties in relation to the Kimmage to City Centre Core Bus Corridor. These submissions ranged from individual submissions by residents, commuters, local representatives, various associations, and private sector businesses.

A brief summary of the feedback received on the Kimmage to City Centre CBC during the public consultation is presented in this section of the report. While a variety of matters were raised in the submissions, the key issues emerging from the consultation were as follows:

1) Traffic and access impacts.
2) Cycling Facilities.
3) Safety concerns.
4) Bus Gates.
5) Bus Lanes and Road Widening.
6) Suggestions for Modifications.
7) Impact for Properties.
8) Community Impacts.
9) Environmental Impacts.
10) Loss of Car Parking.
11) Bus Services and Stops.

Further detail on these issues can be found in the Corridor 11 Kimmage to City Centre Emerging Preferred Route- Public Consultation Report in Appendix B.

3.3 Development of the Preferred Route Option

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

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

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 6 of this report) to identify the Preferred Route Option (PRO). The selected draft PRO identified formed the basis for the second non-statutory public consultation in March / April 2020. The Information Brochure published as part of this consultation is included in Appendix G.

The key changes adopted in the Preferred Route Option are as follows:

- While many submissions welcomed the concept of a bus gate as a means of achieving improvements for bus services, there were concerns about the proposed location for the southern bus gate at Sundrive Cross because of the potential for diversion of large traffic volumes onto adjoining streets as well as the proposals for road widening for new bus lanes along the southern section of Kimmage Road Lower. In response a revised Bus Gate location at Ravensdale Park is proposed resulting in no widening of Kimmage Road Lower and eliminating the need for land take in this section.
- To accommodate alternative access for southbound traffic at Harold's Cross towards Kimmage it is proposed to introduce a right turn from Harold's Cross Road to Kenilworth Park to improve local access.
- Instead of provision of a quiet street cycle route to the east of Kimmage along part of the corridor, an opportunity was recognised to include a cycleway along the River Poddle to the west of Kimmage Road Lower between Kimmage Cross-Roads and Harold's Cross to improve the cycle network as identified in the Greater Dublin Area Cycle Network Plan. This will add a further route option for cyclists.
- Many submissions sought a more direct cycle route towards the city at Harold's Cross. Continuous, segregated cycle tracks are now proposed along Harold's Cross Road and Clanbrassil Street, eliminating the need for an offline cycle route, but would require the acquisition of some land from gardens for the necessary minor road widening.
- Some submissions sought environmental enhancements along the route. In response Urban Realm improvements are proposed at Sundrive Road and Corrib Road. This will include planting of new street trees. Additional permanent on-street parking is proposed to replace part-time parking on Kimmage Road Lower south of Sundrive Cross.
- The revised proposals allow the retention of the tree lined median on Clanbrassil Street and New Street.

3.4 Second Non-Statutory Public Consultation – Preferred Route Option

The Preferred Route Option was published in March 2020 and a second round of non-statutory public consultation took place from 4th of March 2020 to the 17th of April 2020.

Due to COVID-19 restrictions being imposed by Government in mid-March the planned Public Information Events were impacted. Consequently, there were 22 submissions received relating to the Proposed Scheme (compared to 644 submissions following the First Non-Statutory Public Consultation).

A brief summary of the feedback received on the Kimmage to City Centre CBC during the public consultation is presented in this section of the report. While a variety of matters were raised in the submissions, the key issues emerging from the consultation were as follows:

1) Many submissions **welcomed the changes** of the proposals since the EPR.
2) Proposed **bus gates:**
    a) Welcomed by some people.
    b) Objected to in some submissions because of reduced accessibility by car to Kimmage Road Lower. Combined impacts for traffic management changes across several corridors were highlighted as unwelcome for general traffic movement.
    c) General query about the legality of bus lane provisions and whether taxis may use what appear to be “contra-flow” bus lanes in some places.
    d) Times of operation to be clarified with access for large delivery vehicles.
    e) Access for funerals at Mount Jerome during the late morning and early afternoon.
    f) Traffic impact on Clareville Road.
3) The **Poddle Cycleway** proposals at Mount Argus connecting to Sundrive Road raised concerns in relation to risks for security and anti-social behaviour, as well as some expressions of support.
4) More **street trees** and public realm improvements along Harold’s Cross Road were requested in some submissions.
5) The more direct **cycling facilities were welcomed** in many submissions, although there remain a few concerns about the proposed arrangements on Kimmage Road Lower at Sundrive Cross where on-street parking is proposed to replace the existing cycle lanes. The configuration of some on-street parking in relation to the cycle tracks was queried. Cycle tracks on Kimmage Road Lower are suggested in one case, even with requirement for 2m road widening. A desire for high-quality construction of the proposed cycle tracks was noted in one submission.
6) The extent of the **public realm proposals at Sundrive Cross** is a matter of concern from some businesses who do not welcome changes to existing parking arrangements and the potential CPO of private landing areas. The concept of urban realm improvements was welcomed by some people, but the extent is questioned: some want more; others want less.
7) A **30 km/h speed limit** has been suggested for much of the route including Harold’s Cross Road. Speeding concerns were noted. Suggestions for traffic calming and pedestrian crossings.
8) Complaints about the **non-statutory public consultation process**.

9) **Kimmage Road Lower at Kimmage Cross Roads** / Hazelbrook / Ravensdale: Suggested improvements for footpaths, cycle tracks and local traffic access restrictions. Coordination with the proposed flood defence scheme.

10) Various comments about narrow footpaths at Kimmage Road Lower opposite Ravensdale and at Harold's Cross Park.

The issues raised during the second non-statutory public consultation have been considered in the further development of the draft PRO. Subsequently it was determined by NTA that a third non-statutory public consultation would be conducted prior to finalising the Preferred Route Option.

3.5 Development of the Updated 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 forums, resident groups, and one-on-one meetings with directly impacted property owners.

As part of this review, several new 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 to identify the draft PRO. The updated draft PRO that was subsequently identified formed the basis for the third non-statutory public consultation in November / December 2020.

3.6 Third Non-Statutory Public Consultation – Preferred Route Option

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

With the continuing effect of the COVID-19 pandemic and associated Government restrictions, the third non-statutory public consultations were 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 202 and submissions were accepted by email, through the virtual consultation rooms or by post. All relevant information including the updated Information Brochures and the Emerging Preferred Route 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 353 submissions were received relating to the Proposed Scheme as part of the third consultation. These submissions ranged from individual submissions by residents, commuters, and local representations, to detailed proposals from various associations.

A summary of the feedback received on the Proposed Scheme during the third non-statutory public consultation is presented in this section of the report.

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

1) Increased traffic congestion on alternative routes
2) Safety of school drop offs at Clareville Road
3) Rat running through narrow residential streets such as, inter alia, Greenmount Lane and Lavarna Grove.
4) Access to amenities and members of the community within the bus gates on Kimmage Road lower
5) Severance of communities east of Kimmage Road Lower
6) Emergency access to the schools and hospitals
7) Increased noise and air pollution
8) Prematurity of works due to COVID-19
9) Preference for Metrolink
10) Unclear traffic modelling information
11) Bus stop locations being moved on Kimmage Road Lower
12) Objections to the proposed cycle facilities through Poddle Park
13) Poddle Cycleway proposals at Mount Argus connecting to Sundrive Road raised concerns in relation to risks for security and anti-social behaviour from several residents in that area
14) Complaints about the non-statutory consultation process.

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

4. The Study Area

4.1 Kimmage to City Centre CBC

The City Centre to Kimmage Bus Corridor Study Area as shown in Figure 4-1 runs from the Kimmage Cross Roads (Terenure Road West / Fortfield Road / Kimmage Road West) northwards over a distance of 3.7km to the edge of the City Centre at the Patrick Street / Kevin Street junction. The study area included in the Route Selection Report was generally developed to include the main trip generators between the City Centre and Kimmage either side of the central spine formed by the existing roads of Clanbrassil Street and Kimmage Road Lower. The entire study area lies within the administrative area of Dublin City Council.

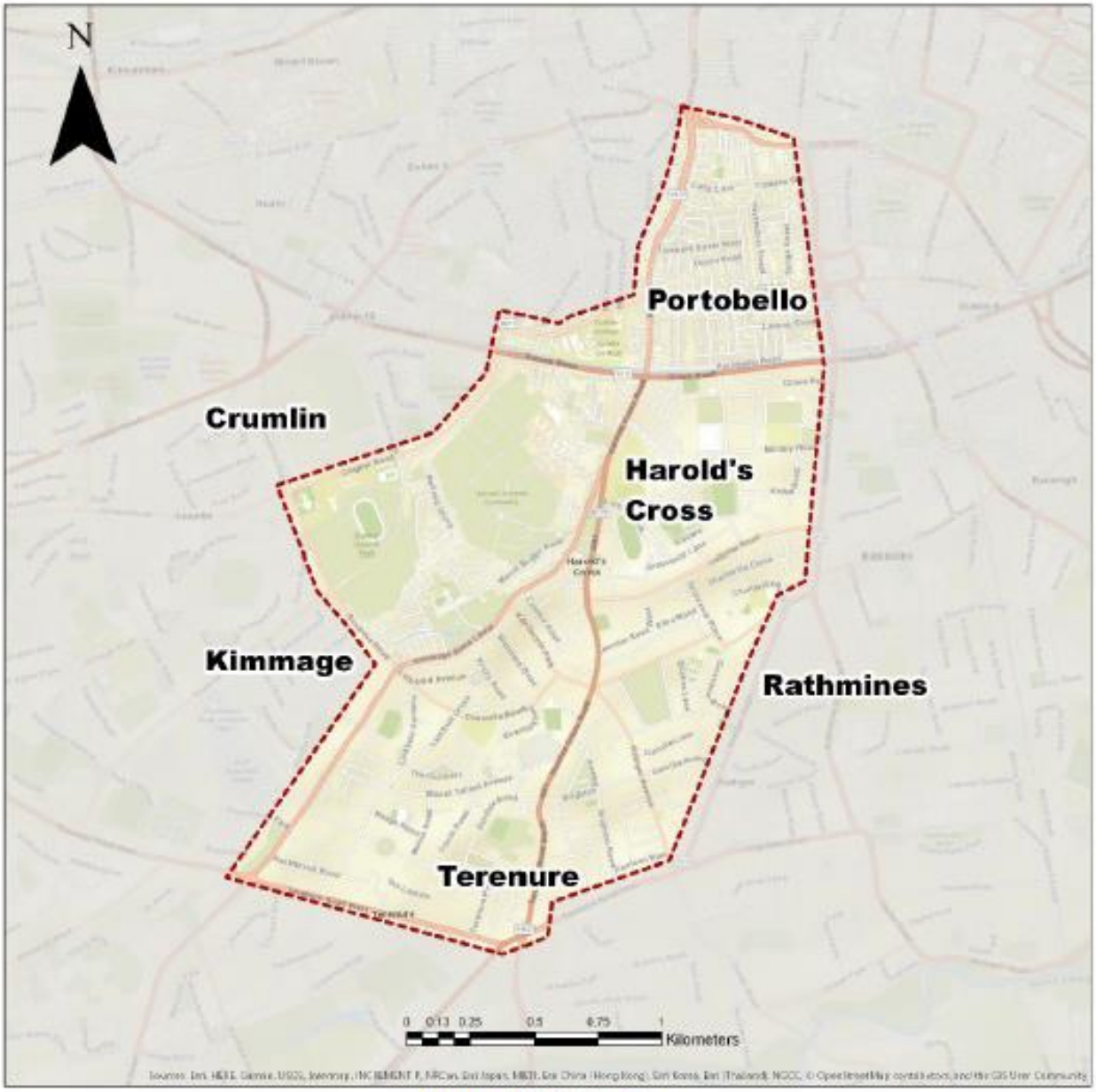

Figure 4-1 - Study Area as defined in the Route Selection Report

4.2 Physical Constraints and Opportunities

There are constraints and opportunities, both natural (i.e.: existing natural environment) and physical (the built environment), which affect the potential route options for the Proposed Scheme within the defined study area including:

- Kimmage Road Lower is a narrow single carriageway road without existing bus lanes and has part-time advisory cycle lanes at present. Widening of this largely residential street for bus lanes and segregated cycle tracks would involve acquisition of land from a very large number of houses with small front gardens, many of which do not have driveways, especially north of Sundrive Cross.
- Harold's Cross Road is wider than Kimmage Road Lower and already has bus lanes over much of the length, but no cycle tracks. Minor road widening could accommodate cycle tracks, and this would encroach into a number of small front gardens and other properties.
- The crossing of the Grand Canal at the Robert Emmett Bridge is a physical constraint where the street layout is quite narrow, and widening is required to accommodate suitable and segregated facilities for all road users including public transport, pedestrians, cyclists, and general traffic.
- North of the Grand Canal there are considerable lengths of existing bus lanes and cycle lanes, but these are not continuous and there are some narrower sections of street in the vicinity of the Leonard's Corner junction at South Circular Road.
- Clanbrassil Street Lower and New Street South were previously widened in the 1980's and has a dual carriageway cross-section. There is scope to reorganise the existing road space for more extensive bus lanes and segregated cycle tracks.
- The River Poddle follows the corridor on the western side over the full length. This minor watercourse is culverted in many places but is in an open channel that forms an attractive landscape corridor in several places. There is an opportunity in a few places to follow the river as a natural amenity within the urban landscape. However, there are considerable constraints along the section of the River Poddle through Harold's Cross where it traverses the grounds of Mount Jerome Cemetery and Our Lady's Hospice. The river is underground from Our Lady's Hospice northwards to Patrick Street.

4.3 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 in so far as possible to seek to provide for improved existing or new interchange opportunities with other transport services including from north to south:

- Greenhills to City Centre CBC at Patrick Street at the northern end of the Kimmage Corridor.
- Rathfarnham to City Centre CBC through Terenure: the cycle route for that corridor will link to Harold's Cross and join the Kimmage to City Centre CBC.
- Future City Centre Orbital Bus Route O at South Circular Road (Leonard's Corner).
- Future Orbital Bus Corridor S2 at Sundrive Cross.

- Future Orbital Bus Corridor S4 at Kimmage Cross Roads.

There are no regional or national bus routes along the corridor. Neither are there any existing or proposed railways in the study area.

4.3.1 Existing Bus Services

The existing bus and scheduled coach routes along the proposed Core Bus Corridor are listed below:

- No.9: Greenhills to Charlestown
- No.16 Ballinteer to Dublin Airport
- No.49: Tallaght to Pearse Street.
- No.54a: Kiltipper to Pearse Street.
- No.83(a): Kimmage to Charlestown

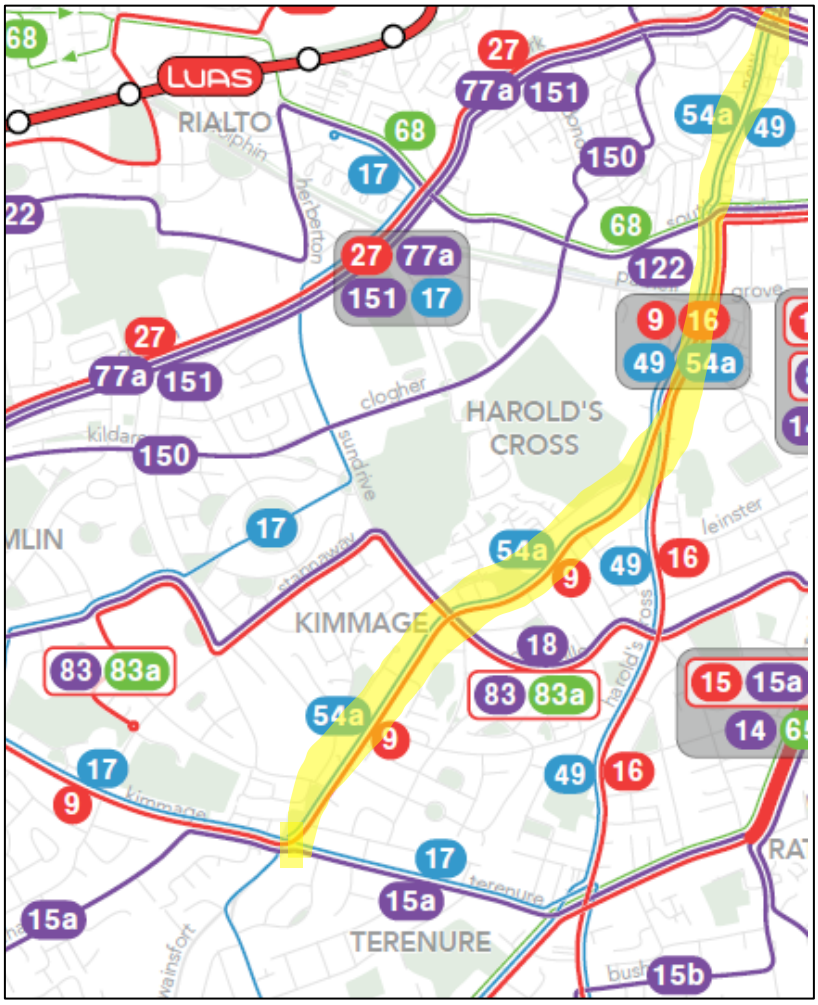

Figure 4-2 – Existing Bus Network – South Central Area with Proposed Scheme highlighted

4.3.2 Dublin Area Revised Bus Network

BusConnects Dublin will introduce a redesigned, higher capacity bus network which is more coherently planned and more understandable, delivering a better overall bus system for Dublin and the surrounding areas as shown in Figure 4-3.

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

- Spines & Branches

  F-SPINE: Kimmage – City Centre -Finglas - Charlestown
  - F1: Tallaght - City Centre – Charlestown
  - F2: Spawell - City Centre – Charlestown
  - F3: Greenhills - City Centre – Charlestown
- Orbital Routes
  - O crossing the corridor at Leonard's Corner junction on South Circular Road.
  - S2 crossing the corridor at Sundrive Cross.
  - S4 crossing the corridor at Kimmage Cross-Roads at the southern end.
- Radial Routes
  - 82: Killinarden-Crumlin Ringsend crossing the corridor at Sundrive Cross.
  - 85: Tallaght-Ballyboden-Harold's Cross-Parnell Square on the corridor from Harold's Cross to Patrick Street.

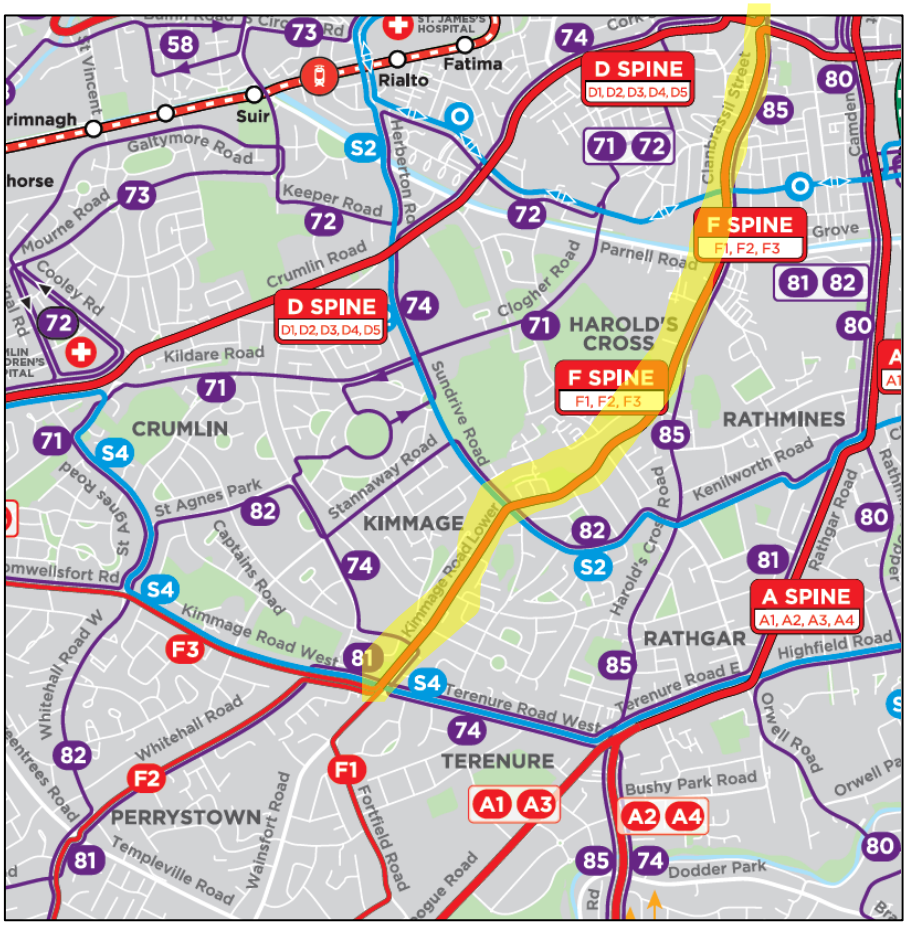

Figure 4-3 – Revised Bus Network – South Central Area. Proposed Scheme highlighted.

4.4 Compatibility with Other Road Users

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

Pedestrian Facilities

For pedestrians it is proposed to simplify and shorten the road crossings at major junctions, which can be a barrier to mobility. The design development has also undertaken an audit of the public realm for pedestrians so that necessary improvements can be undertaken through application of Universal Design principles to ensure that barriers to mobility are removed for people with mobility and visual impairments.

Cycling Facilities

The *Greater Dublin Area Cycle Network Plan* was adopted by the NTA in early 2014 and there are several of the proposed cycle routes identified along the *Kimmage* Corridor as follows as shown in Figure 4-4 and 4-4a for the south-central Dublin area:

- Radial Primary Route 9 from Kimmage and Secondary Route 9B from Terenure.
- The *River Poddle Greenway*.
- Orbital Secondary Routes that will cross the corridor at major junctions SO1 at Leonard's Corner (South Circular Road), , SO2 at Sundrive Cross and SO3 at Kimmage Cross Roads.

During the analysis carried out to identify the preferred core bus corridor, the provision of these cycle routes was considered at all stages. Therefore, as part of the analysis, any upgrading of infrastructure to provide bus priority also provides cycling infrastructure, where practical, to the appropriate level and quality of service (as defined by the NTA National Cycle Manual) required for primary and secondary cycle routes.

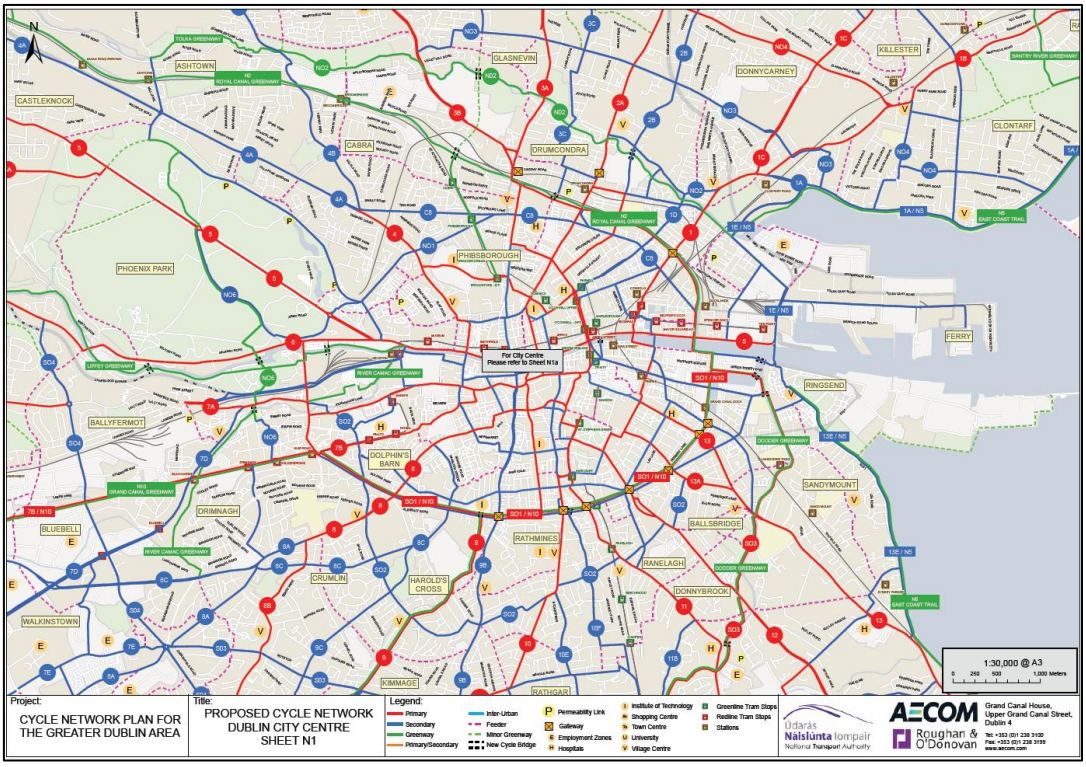

Figure 4-4 - GDA Cycle Network Plan for Central Dublin

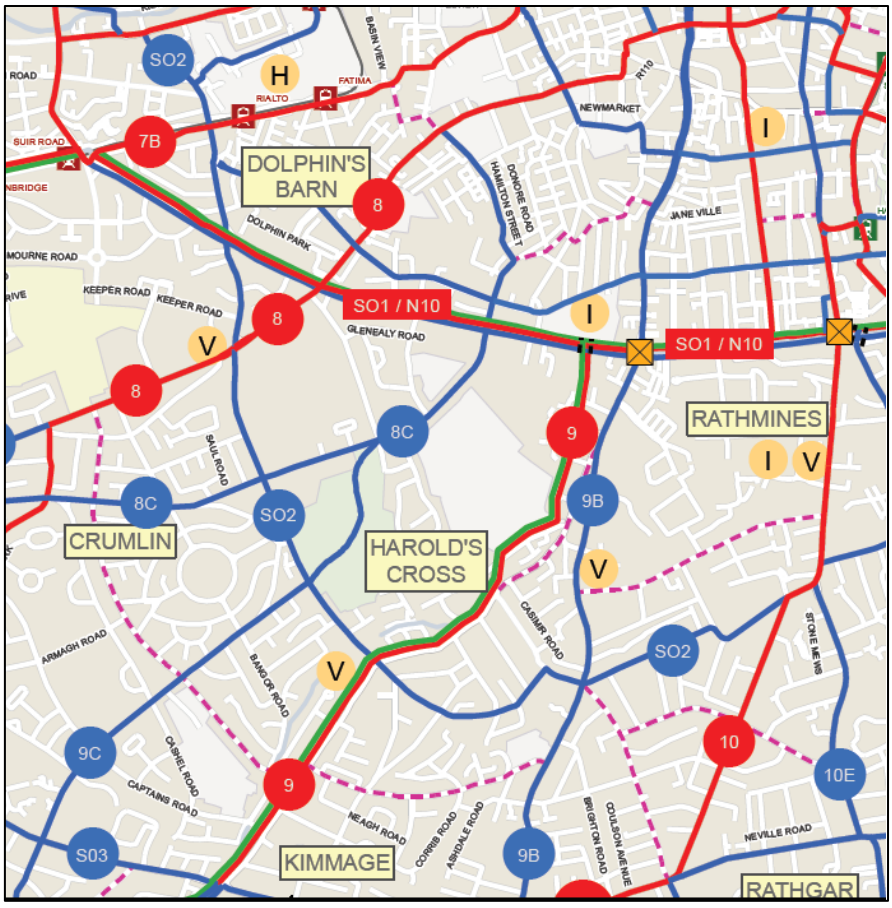

Figure 4.4a - GDA Cycle Network Plan for South-Central Dublin

While the analysis was carried out to identify the preferred core bus corridor, the provision of these cycle routes was considered at all stages. Where it may be thought impractical to construct cycle facilities directly along a particular section of the Proposed Scheme route, such facilities will need to be provided along a suitable alternative route. In the previously published Emerging Preferred Route it was proposed to provide the main radial cycle route along minor streets parallel to the main bus route along Kimmage Road Lower, Harold's Cross Road and Clanbrassil Street. This element of the proposals has been reviewed carefully in response to many submissions that expressed a preference for a more direct cycle route to and from the city centre.

General Traffic

Provision of bus priority will result in some impact for general traffic flow along this corridor where bus priority cannot be achieved through provision of bus lanes and bus gates are necessary as an alternative. On the narrow street of Kimmage Road Lower approaching Harold's Cross, it would not be feasible to widen the road into very small front gardens sufficiently for the addition of bus lanes. Instead, a bus gate will divert through traffic off this route and thereby provide bus priority. Local access will generally be maintained along the Proposed Scheme corridor although there could be some impacts on local traffic where it is required to follow diversion routes around bus gates. At some locations it may be necessary to adopt turning movement restrictions or local road closures for appropriate traffic management. Reductions in traffic carrying capacity of the road network will be compensated for by the overall increase in quality and level of service of other modes (walking, cycling and public transport) on the Proposed Scheme route once implemented.

5. Review of the Previous Route Selection Report

5.1 Introduction

Following a comprehensive review of the potential route options within the study area a 2-stage assessment process was used to narrow down the number of routes available to one optimal route per study area. These routes then converged to form the overall EPR which was presented at public consultation for information and feedback.

As part of the consultation process the preparation of the Feasibility Study & Options Assessment Reports served to give the public a greater insight to how the process took place in addition to providing a transparency to the process of elimination used to determine the optimal route, given the information available and best engineering judgement.

From a review of submissions received as part of the 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 could be overcome through the implementation of alternative design solutions. These issues are described in the following sections.

5.2 Route Options Assessment Methodology

The first step in the assessment process was to review the Route Selection Report. The development of the Emerging Preferred Option during the feasibility and options stage was carried out in 2 stages. The first stage was a high-level route options assessment or 'sifting' process which appraised several potentially viable route options in terms of their ability to achieve the project objectives. The second stage of the option assessment is a comparison of each viable scheme option for each of the study area sections using a multi-Criteria Analysis to determine the Emerging Preferred Route.

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.

5.2.1. Stage 1 – Route Options Assessment – Sifting Stage

A 'spider's web' of route options was identified in the Route Selection Report that would accommodate the objectives of the Proposed Scheme as shown in Figure 5-1.

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

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

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

The previous Route Selection Report is included in Appendix E. The initial route selection process assessed a wide set of potential routes along existing streets in a wedge-shaped corridor up to 2 km wide defined by Clogher Road at the western edge and Rathmines Road at the eastern edge. Within this study area the two other main radial routes are Kimmage Road Lower and Harold's Cross Road.

In the Stage 1 Assessment a “spider’s web” of potential routes was identified within the study area that consisted of 23 separate road links that could be assembled in various configurations to form the core bus corridor as shown in Figure 5-1.

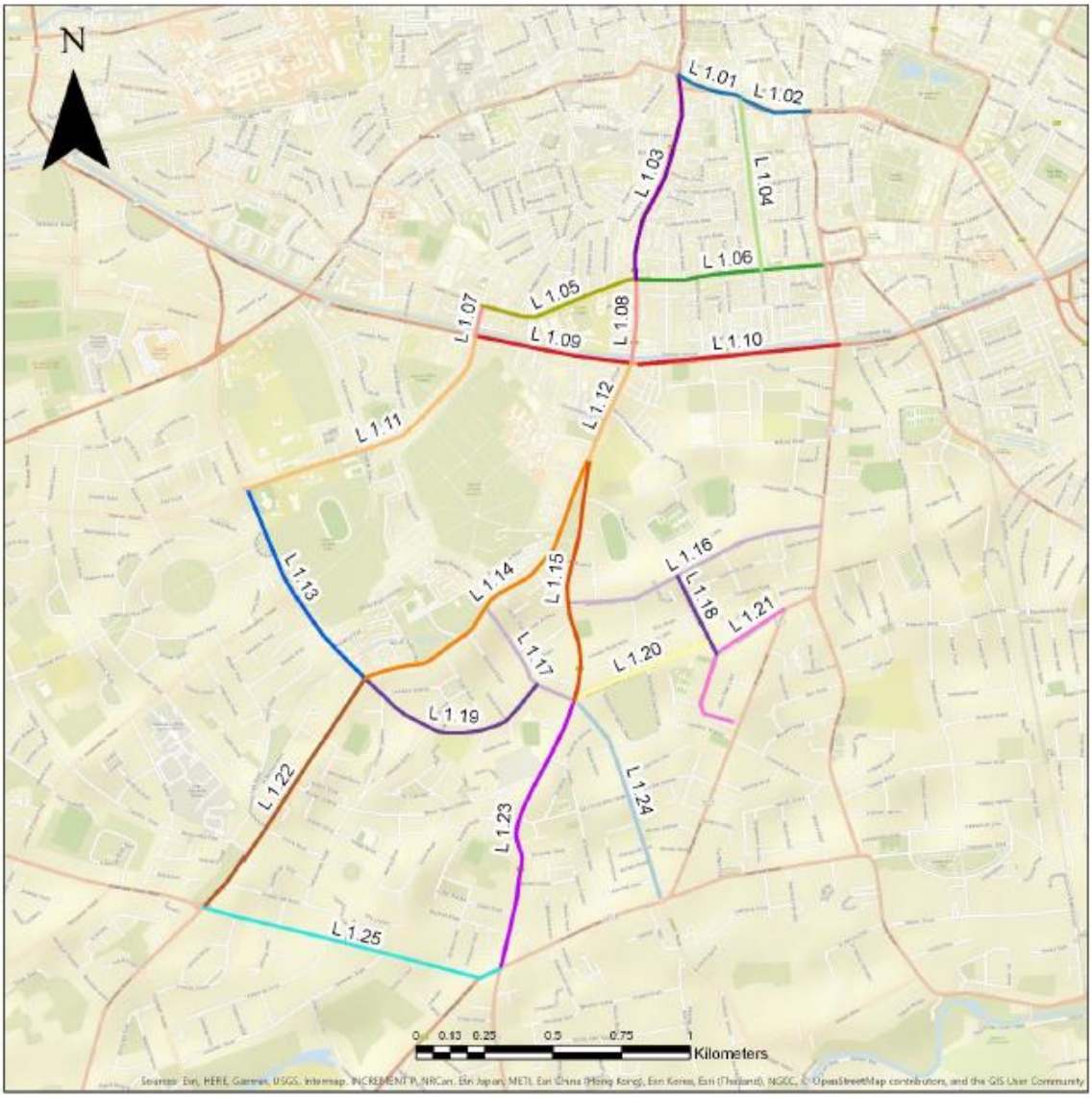

Figure 5-1 - Spider’s Web from Route Selection Report for Kimmage to City Centre CBC

Two Route Options 1 and 2 had been identified at the end of the Stage 1 assessment in the previous Route Selection Report as shown on Figure 5-2, which were then brought forward into the Stage 2 assessment.

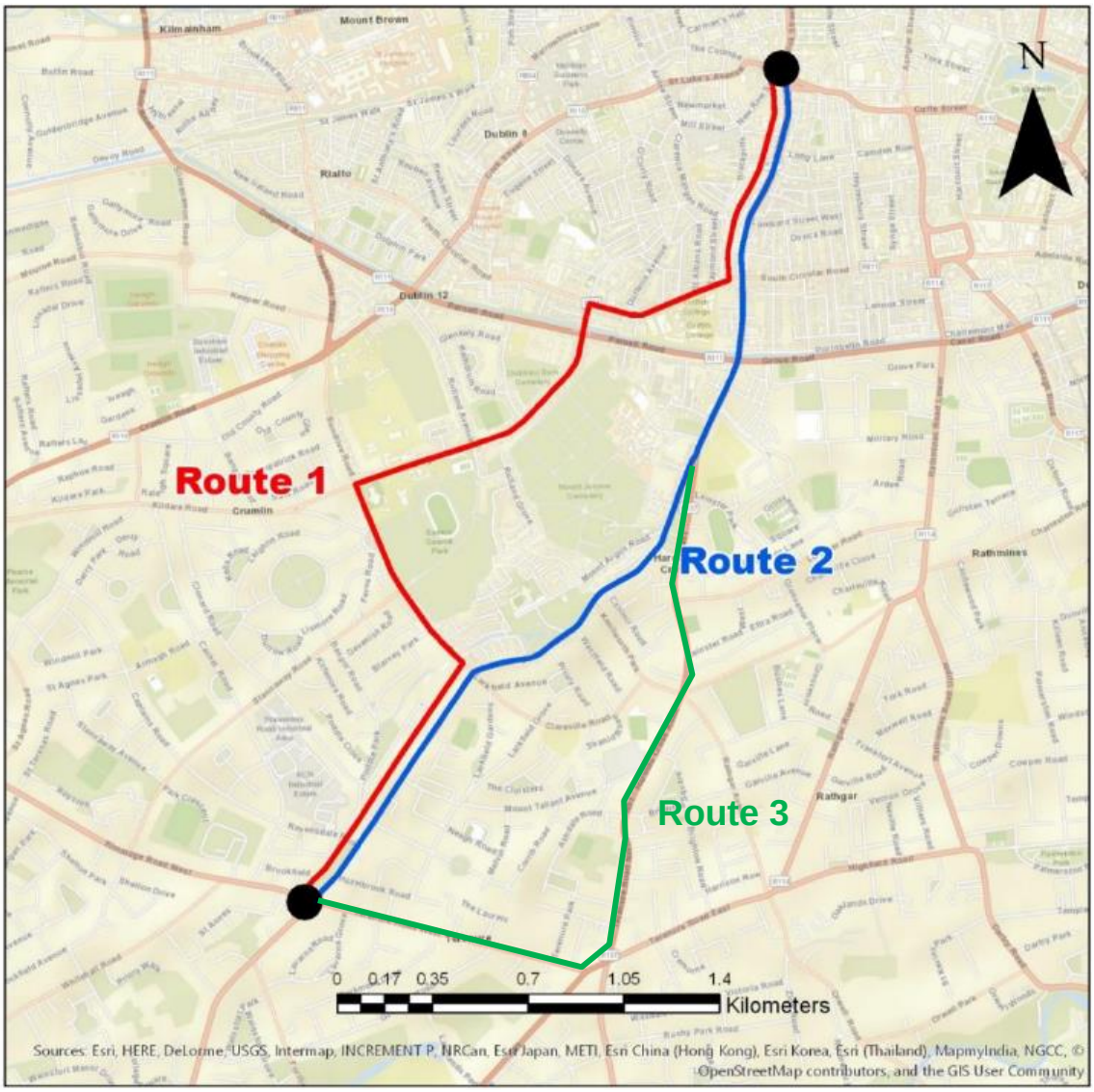

Figure 5-2 - Bus Route Options for Kimmage CBC

A third possible Route 3 option would have been along Terenure Road West and Terenure Road North. This route would have required extensive road widening for the provision of bus lanes, like Route 2. It is the least direct of the 3 options, considerably longer than the more direct Route 2 along Kimmage Road Lower, although only slightly longer than Route 1.

The three potential coherent routes are shown in Figure 5-2.

Of relevance in the route selection process is the spatial relationship with the other parallel core bus corridors and the compatibility between their 500m catchment areas. Corridor 11 fits between Corridor 9 to the west and Corridor 12 to the east as shown by a series of red circles in Figure 5-3. The distance from CBC9 at Crumlin area to the west of the Kimmage corridor is up to 2 km between Crumlin Road and Kimmage Road Lower at the Kimmage Cross Roads. On the other side to the east, the distance between Kimmage Road Lower and Rathgar Road on CBC12 is 1.4 km at the furthest. It can therefore be seen that Kimmage Road Lower is reasonably centrally located within the 3.4 km wide gap between CBC9 and CBC12 in the Kimmage area. This gap narrows as the routes converge towards the city centre. If the Kimmage CBC were to be routed through Terenure that would overlap directly with CBC 12 from Rathfarnham but would leave a wide gap of up to 2.8 km on the western side to the CBC9 route at Crumlin Road. In terms of accessibility to bus services on the Core Bus Corridor network it would not

therefore be appropriate for the Kimmage route to pass through Terenure which would leave an excessively wide gap in the catchment areas of the CBC services.

This review has confirmed that the Kimmage CBC should generally follow Kimmage Road Lower at the southern end between the KIMMAGE CROSS ROADS and Sundrive Road junctions.

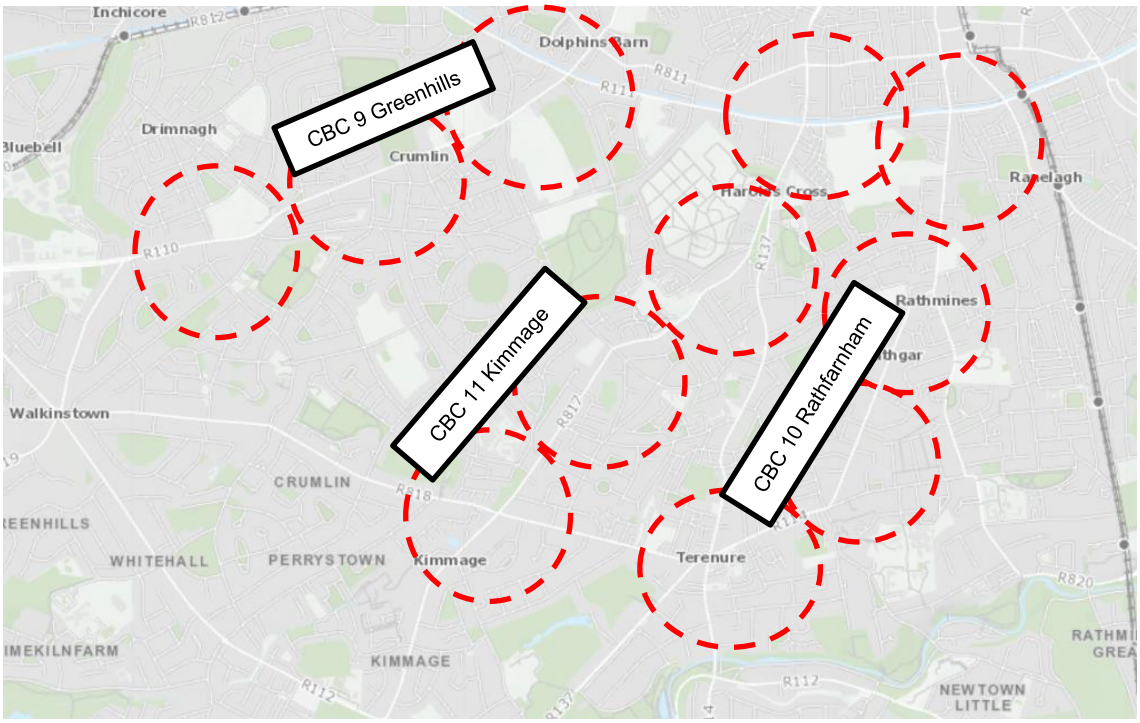

Figure 5-3 - Catchment Areas for CBC's in Dublin South-West

Both Route Options 1 & 2 for the bus corridor shared a common route in Section 1 along Kimmage Road Lower from Kimmage Cross Roads over a distance of 1km to Sundrive Cross, and also in Section 3 along Clanbrassil Street Lower and New Street north of Leonard's Corner on South Circular Road over a distance of 0.75 km.

In the central area Route 1 extended for 2.6 km along Sundrive Road, Clogher Road, Donore Avenue and South Circular Road. Route 2 is more direct along Kimmage Road Lower, Harold's Cross Road and Clanbrassil Street Upper over a shorter length of 2 km.

Route Option 1 proposed road widening for the provision of bus lanes along the full length.

Route Option 2 proposed some road widening for the provision of bus lanes along the southern section of Kimmage Road Lower only. Along the northern section of Kimmage Road Lower it was not proposed to widen the road for provision of bus lanes due to the constraints of houses with very small front gardens and significant level differences above road level in places. Instead various traffic management options were considered such as one-way operation in certain directions or bus gates for bus only access arrangements.

In combination with the core bus corridor potential variations for the cycle route were also examined for the area from Mount Argus via Harold's Cross to the Grand Canal.

Conclusion of the Review of the Stage 1 – Route Options Assessment – Sifting Stage

Route 2 is the most direct route for the bus corridor compared to the other options and therefore fulfils the Proposed Scheme objectives better than the alternatives.

This Preferred Route Option Report confirms that the previous Route Selection Study completed in April 2018 reached the appropriate conclusion as to the Emerging Preferred Route for the Proposed Scheme from Kimmage to the City Centre.

5.2.2. Stage 2 – Route Options Assessment – Detailed Assessment

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

The indicative Proposed Scheme for each route option was then progressed to a multi-criteria assessment. The 'Common Appraisal Framework for Transport Projects and Programmes published by the Department of Transport, Tourism and Sport (DTTAS), March 2016, requires Proposed Schemes to undergo a 'Multi-Criteria Analysis' (MCA) under the following criteria.

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

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

Table 5-1 presents a summary of the assessment criteria and sub-criteria used as part of the route options assessment process.

Table 5-1: Assessment Criteria

Assessment Criteria	Assessment Sub-Criteria
Economy	1.a. Capital Cost
	1.b. Journey-time Reliability and Consistency
Integration	2.a. Land Use Integration
	2.b. Residential Population and Employment Catchments
	2.c. Public Transport Network Integration
	2.d. Traffic Network Integration
	2.e. Cyclists and Pedestrian Integration
Accessibility and Social Inclusion	3.a. High Volume Trip Attractors
	3.b. Deprived Geographic Areas
Safety	4. Road Safety

Assessment Criteria	Assessment Sub-Criteria
Environment	5.a. Archaeological, Architectural and Cultural Heritage
	5.b. Flora and Fauna
	5.c. Soils and Geology
	5.d. Hydrology
	5.e. Landscape and visual
	5.f. Noise, Vibration and Air Quality
	5.g. Land Use and the Built Environment

(Note: In the previous Route Selection Report there were separate sub-criteria for Noise and Vibration and Air Quality, which have now been combined in one sub-criterion).

Options were compared based on a five-point scale, ranging from having significant advantages to having significant disadvantages over other route options. Table 5.2 shows the colour coding of the five-point scale, with advantageous routes graded “dark green” and disadvantageous routes graded “red.

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

Where the design has undergone a change in respect of infrastructure provision or route choice, this has been recorded and explained. An MCA has been undertaken which assessed the newly developed and designed solutions against the EPR Option from the Route Selection Report. Where the design has undergone more general updates and enhancements, as expected during design development, these have not been subject to a new MCA.

5.3 Emerging Preferred Route Option Summary

5.3.1. Route Sections

The route may be considered in 3 separate sections as follows and as shown on Figure 5-4:

Section 1: Kimmage Road Lower from Kimmage Cross Roads to the junction with Harold's Cross Road over 2.2 km. (In red on Figure 5-4).

Section 2: Harold's Cross Road from Harold's Cross Park to the Grand Canal over 0.4 km. (In blue on Figure 5-44).

Section 3: Clanbrassil Street Upper and Lower and New Street from the Grand Canal to the Patrick Street junction over 1.1 km. (In green on Figure 5-4).

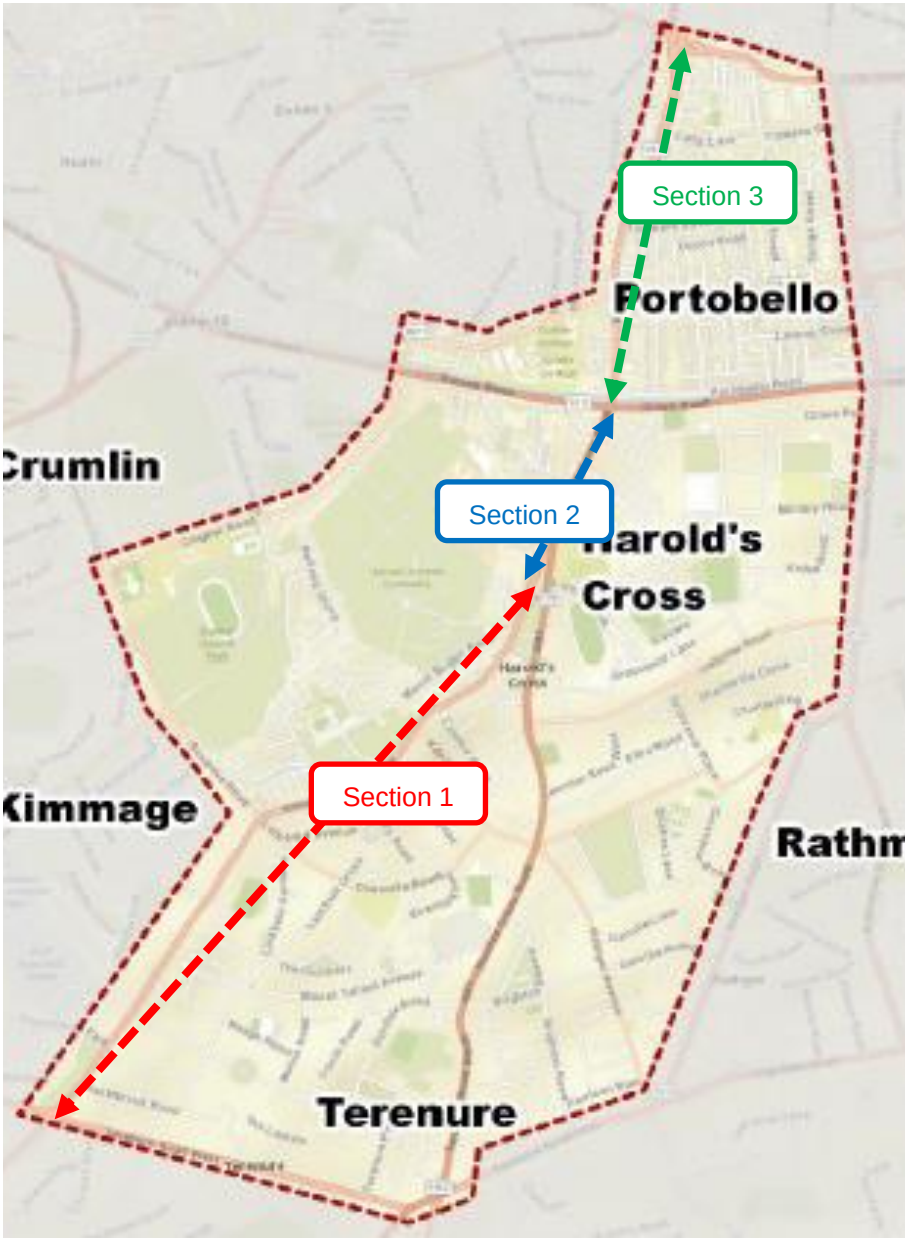

Figure 5-4 - Route Sections

5.4 Emerging Preferred Route Option Summary

After the assessment process, it is considered that the options assessment presented in the Route Selection Report has appropriately assessed route options and that the selected corridor offers the most benefits for pedestrians, cyclists and buses, and the extents appropriately consider the infrastructure requirements of the new proposed bus network. However, upon review of the topographical survey and public consultation submissions, a number of issues were identified that could potentially be addressed through the consideration of alternative options along this route section.

Following a thorough review of the Route Selection Report, submissions to the non-statutory public consultation and topographical survey subsequently undertaken, a number of areas were identified as requiring further review, and alternative design solutions have therefore been explored in this area in determining a PRO. These are summarized in the following sections. Further details are presented in Chapter 6.

5.4.1 Review of Section 1 - Kimmage Road Lower: KCR to Harold's Cross

The Emerging Preferred Route, as shown in 5-5, consisted of the following elements:

a) Road widening for Bus Lanes from Kimmage Cross Roads to Sundrive Cross.

b) Bus Gates just north of Sundrive Cross and just south of Harold's Cross Park.

c) A partially parallel cycle route along quiet streets to the east of the corridor south of Sundrive Cross, and then shared road in the northern part from Priory Road to Harold's Cross.

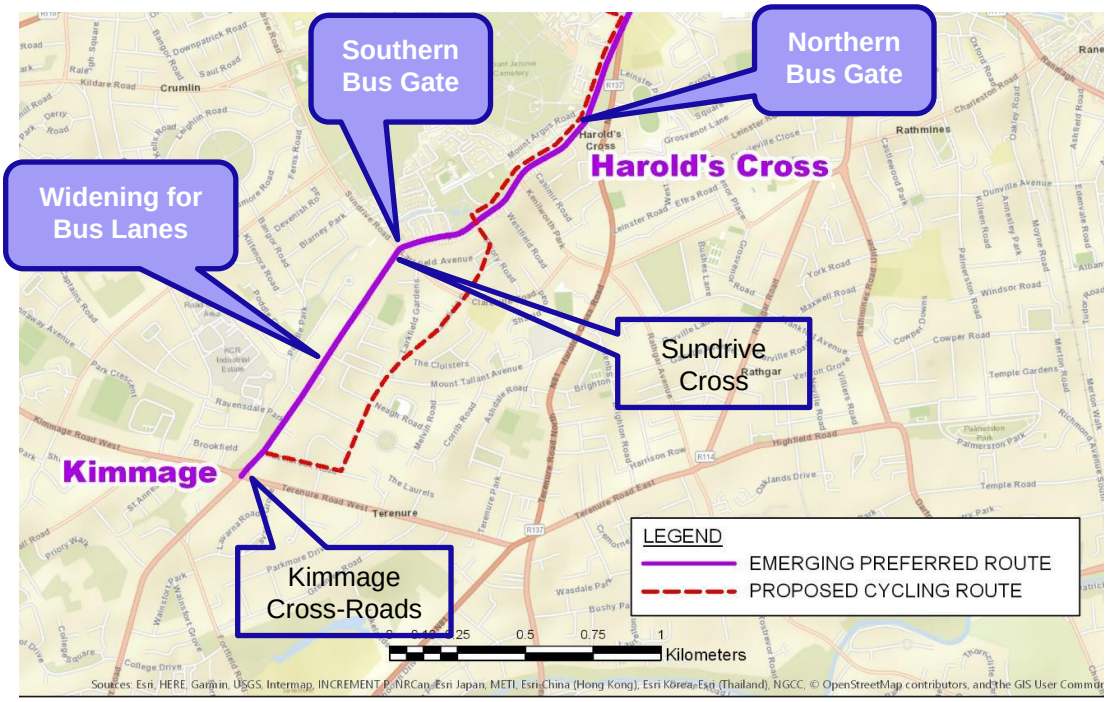

Figure 5-5 - Emerging Preferred Route in Section 1 – Kimmage Road Lower

Two key issues were reassessed for this section based on the concerns raised in non-statutory public consultation No.1:

a) Most suitable Bus Priority provisions in terms of where the road would be widened for bus lanes or where bus gates will provide an alternative form of bus priority.

b) Options for the Cycle Route either along the core bus corridor or through quiet streets in the adjoining residential areas.

5.4.2 Review of Section 2 - Harold's Cross Road

The Emerging Preferred Route, as shown in Figure 5-6, consisted of the following elements:

a) Retention of the existing Bus Lanes along Harold's Cross Road.

b) A partially parallel cycle route through Our Lady's Hospice and along quiet streets to the west of the corridor at Greenmount.

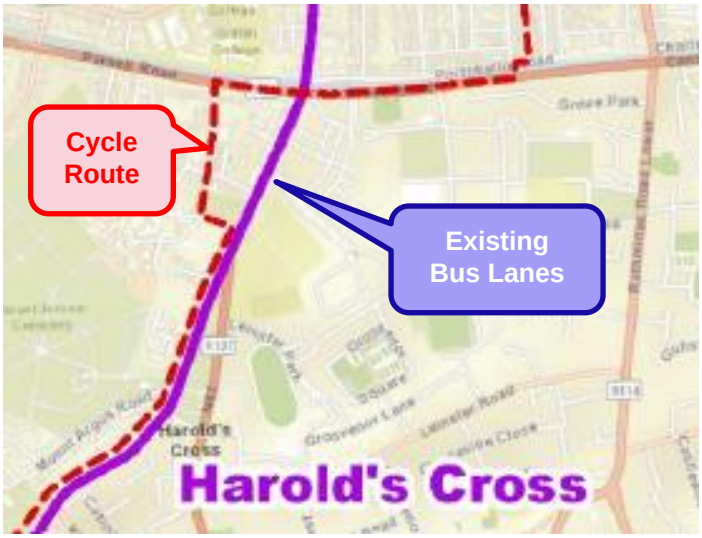

Figure 5-6 - Emerging Preferred Route in Section 2 – Harold's Cross Road

One key issue was reassessed for this section based on the concerns raised in non-statutory public consultation No.1:

a) Options for the Cycle Route either along the core bus corridor or through a parallel quiet streets route.

5.4.3 Review of Section 3 – Clanbrassil Street & New Street South

The Emerging Preferred Route, as shown in Figure 5-7, consisted of the following elements:

a) Extension of the existing Bus Lanes in both directions along Clanbrassil Street and New Street South.

b) A parallel cycle route through the Portobello area to the east along quiet streets with closure of Heytesbury Street-Bride Street to through traffic.

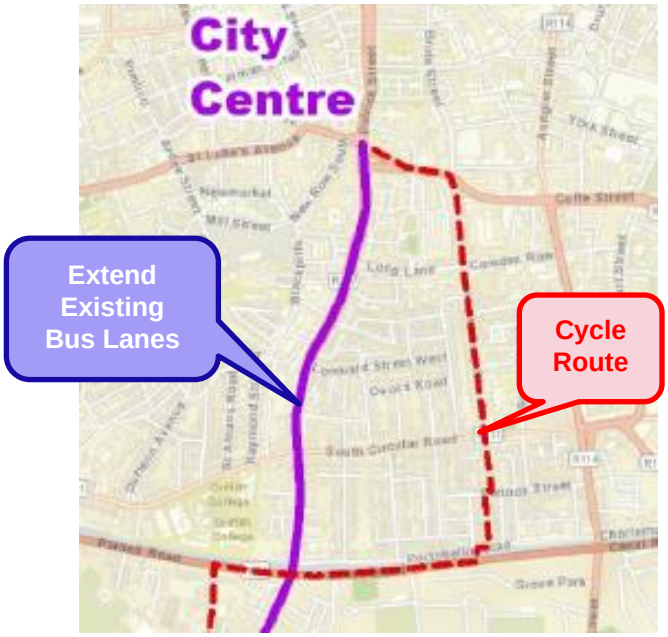

Figure 5-7 - Emerging Preferred Route in Section 3 – Clanbrassil Street & New Street South

The key issues that were reassessed for this section based on the concerns raised in Non-Statutory Public Consultation No.1:

a) Options for the Cycle Route either along the core bus corridor or through quiet streets in the adjoining residential area.

b) Options for road widening at Robert Emmett Bridge over the Grand Canal.

c) Provision of cycle tracks and impacts for trees in the median of Clanbrassil Street Lower and New Street South.

5.5 Summary of the Emerging Preferred Route Review

The following is a summary of the areas considered for review and the issues to be assessed therein:

Section 1 - Kimmage Road Lower: KCR to Harold's Cross

Two key issues were reassessed for this section based on the concerns raised in non-statutory public consultation No.1:

a) Most suitable Bus Priority provisions: Bus lanes or a longer bus gate section.

b) Options for the Cycle Route

Section 2 - Harold's Cross Road

One key issue was reassessed for this section based on the concerns raised in non-statutory public consultation No.1:

a) Options or the cycling facilities.

Section 3 – Clanbrassil Street & New Street South

The key issues that were reassessed for this section based on the concerns raised in Non-Statutory Public Consultation No.1:

a) Options for the Cycle Route: on the core bus corridor or a parallel route.

b) Options for road widening at Robert Emmett Bridge.

c) Options for cycle tracks and impact for trees in the median of Clanbrassil Street Lower and New Street South.

5.6 Carbon Considerations for the Route Options

In the case of the Proposed Scheme, carbon arises from the three potential sources namely User Carbon, Capital Carbon and Operational Carbon.

- User Carbon is produced by cars, light and heavy goods vehicles and buses. The majority of the current bus fleet is combustion engine based but a programme to transition the fleet to electric vehicles is in place. The Climate Action Plan 2021 outlines a range of targets for the electrification of private and public service vehicles in the medium term,
- Capital Carbon is produced by road construction and is a necessary investment to reconfigure the roadway infrastructure to facilitate a shift to sustainable modes for the safe, efficient and reliable movement of people. The Proposed Scheme is designed to put the infrastructure in place to facilitate a long-term User Carbon footprint reduction; and
- The Operational Carbon arises from the operations along the route such as junction signals, street lighting and routine 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 de-carbonisation 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.

The impacts of construction capital carbon were initially considered as part of the route options assessment process. Ultimately the capital carbon elements for the Proposed Scheme will be less than that of the user carbon footprint and as such it was not considered to be a reasonable differentiator for the purposes of route options assessment. Although carbon was not directly assessed for the route options, each route option was assessed using a range of environmental factors including Noise and Air Quality which reflect similar contributory elements (i.e. construction and operational stage impacts) to that for carbon emissions.

Furthermore, the development of the preferred route option supports enhanced bus capacity and public transport potential in line with the objectives, which would contribute to reductions in user carbon and contribute towards the 500,000 additional trips by public transport by 2030 outlined as a target in the Climate Action Plan 2021.

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

The preferred route proposals will improve bus journey times and reliability, which will contribute to achieving reductions in user carbon through an efficient public transport service. This would in turn make the existing bus services more attractive to existing road users and thereby encourage mode change from private car-based transport to more sustainable public transport commuting.

Construction carbon has been considered and assessed as part of the evolving Proposed Scheme design and the preparation of the supporting Environmental Impact Assessment Report (EIAR) documentation.

6. Options Assessment

During 2019 and 2020 a full review was undertaken of the previous design proposals as published for the Emerging Preferred Route. This review was informed by additional technical information and the feedback received from the non-statutory public consultations. The route may be considered in 3 separate sections as follows and as shown on Figure 6-1:

Section 1: Kimmage Road Lower from Kimmage Cross Roads to the junction with Harold's Cross Road over 2.2 km. (In red on Figure 5-4).

Section 2: Harold's Cross Road from Harold's Cross Park to the Grand Canal over 0.4 km. (In blue on Figure 5-4).

Section 3: Clanbrassil Street Upper and Lower and New Street from the Grand Canal to the Patrick Street junction over 1.1 km. (In green on Figure 5-4).

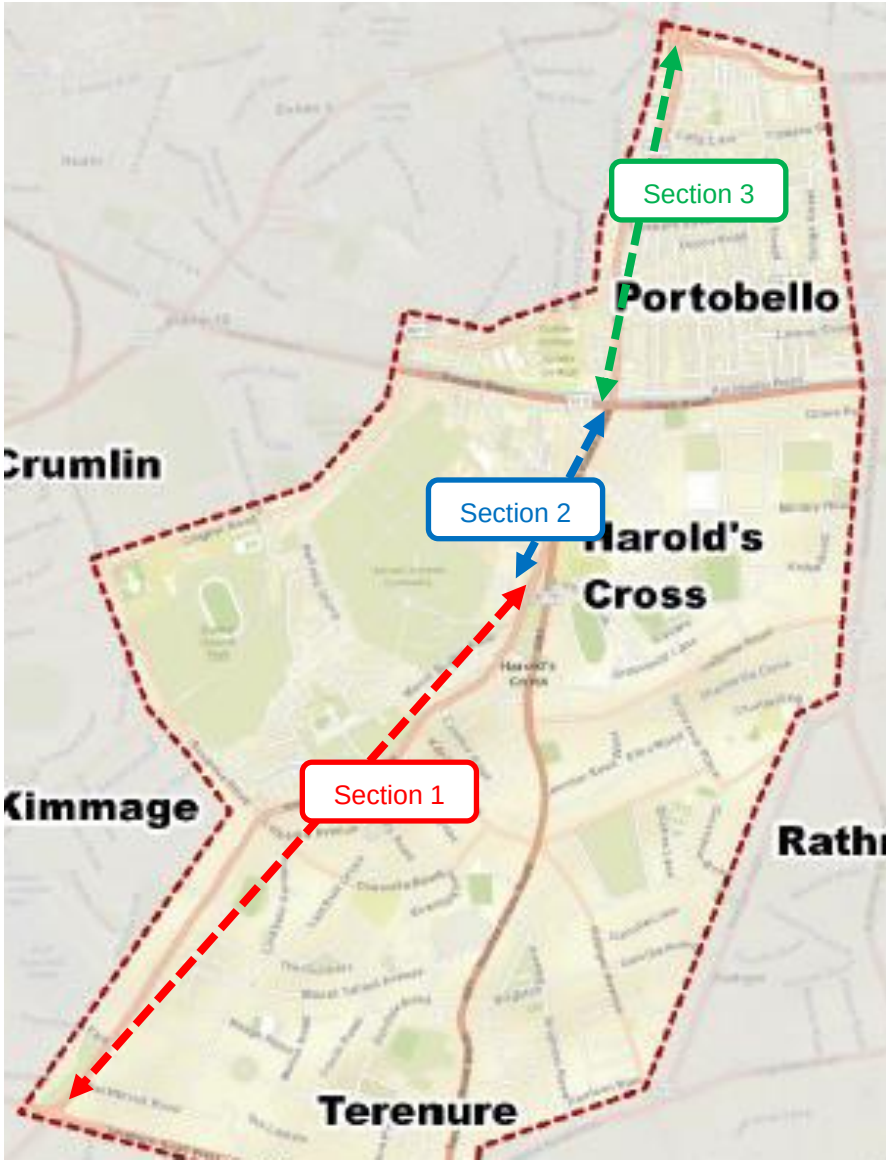

Figure 6-1 - Route Sections

6.1 Section 1 - Kimmage Road Lower: KCR to Harold's Cross

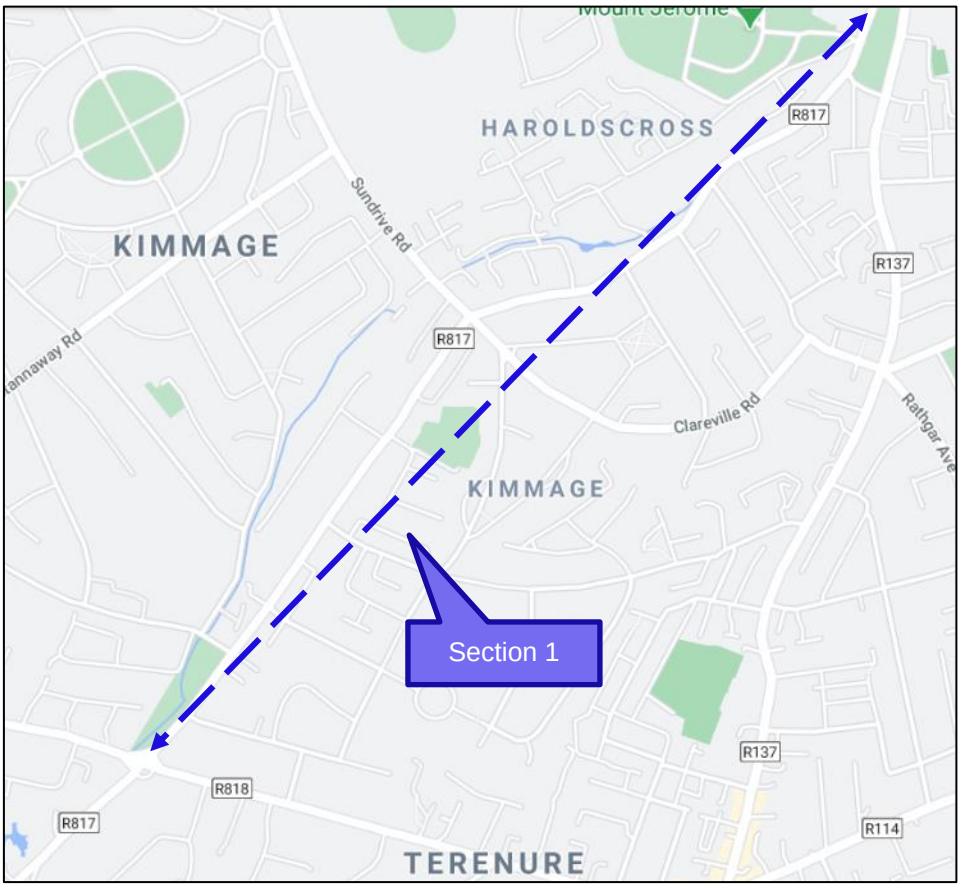

Figure 6-2 - Section 1 Location Map [Google Maps]

6.1.1 Introduction

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

Two key issues were reassessed for this section based on the concerns raised:

a) Most suitable Bus Priority provisions in terms of the alternatives of road widening for bus lanes on the southern part of Kimmage Road Lower to a longer bus gate section.

b) Options for the cycle route on-line with the core bus corridor and/or along parallel quiet street routes.

In addition, opportunities were identified for improvements or modifications to the design proposals for:

c) Parking on Kimmage Road Lower south of Sundrive Cross.

d) Public Realm at the local centre on Kimmage Road Lower at Corrib Road and at Sundrive Cross.

6.1.2 Bus Priority Options in Section 1: Kimmage Cross Roads to Harold's Cross

The Emerging Preferred Route proposed to provide bus gates at three locations on the northern section of Kimmage Road Lower as shown on Figure 6-2a as red bars, at Harold's Cross Park and just north of Sundrive Cross, and to widen the road south of Sundrive Cross to provide bus lanes on the southern section of Kimmage Road Lower. This arrangement would require northbound traffic at Sundrive Cross to divert either westward onto Sundrive Road or eastward onto Larkfield Avenue, Larkfield Park and Clareville Road, which are shown as dashed blue lines on Figure 6-2a. Southbound traffic would continue along Harold's Cross Road instead of forking right at Harold's Cross Park onto Kimmage Road Lower.

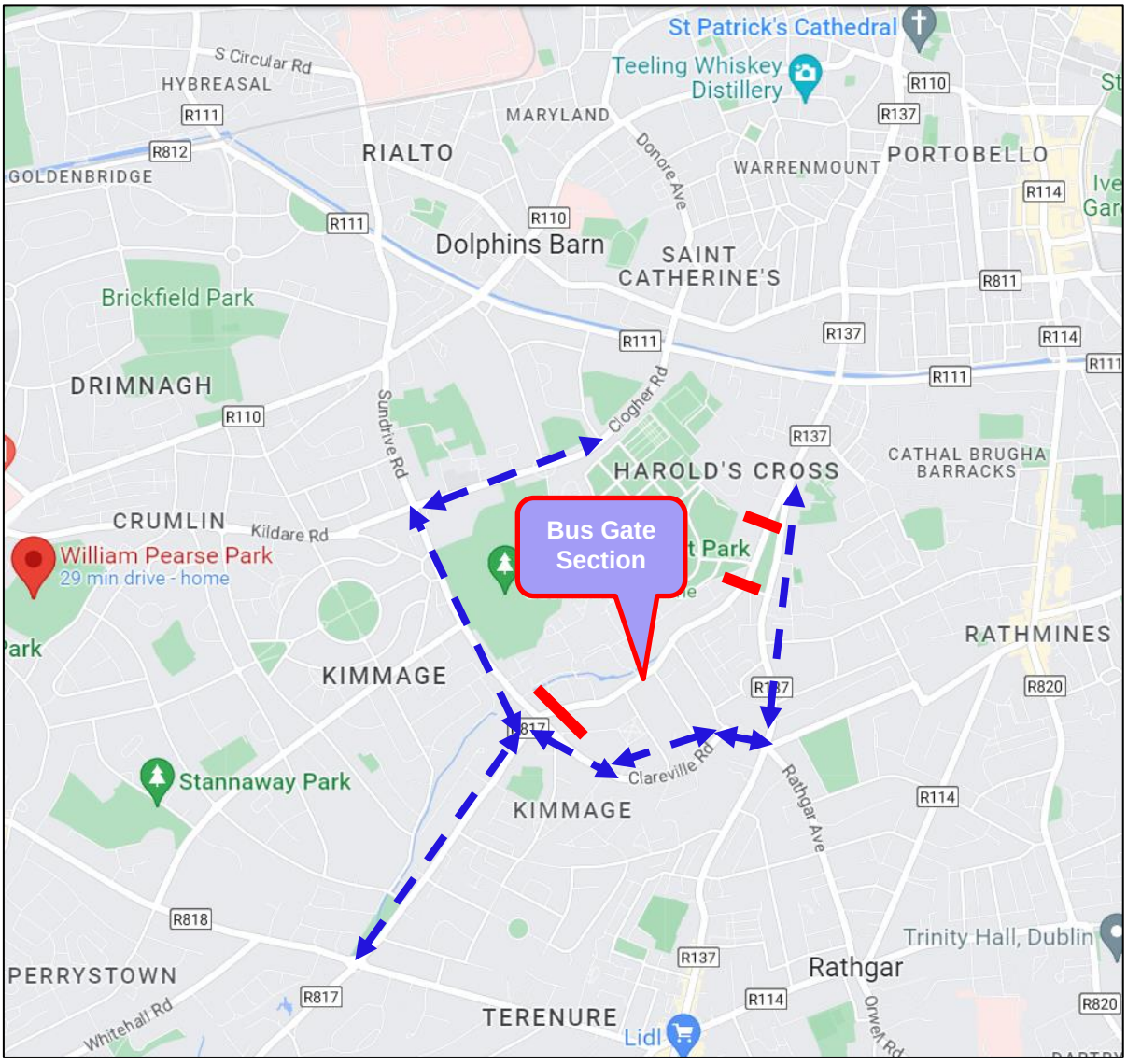

Figure 6 2a – Traffic Routes for EPR Option for Bus Priority in Section 1

An alternative option for bus priority in Section 1 would be to extend the bus gate-controlled road section southward to the junction of Kimmage Road Lower with Ravensdale Park close to Kimmage Cross Roads. This alternative would avoid the need for road widening for bus lanes along Kimmage Road Lower as had been proposed in the EPR. With the alternative location for the southern bus gate access would not be obstructed from the south to the KCR Industrial Estate on Ravensdale Park and the business park at Cashel Road / Stannaway Road on the western side of the corridor.

The two possible options for the bus priority in Section 1 are shown in Figure 6-2b & Figure 6.2c:

- Option A: Bus Gate north of Sundrive Cross as included in the Emerging Preferred Route as shown in Figure 6-2b, or
- Option B: Bus Gate at Ravensdale Park, 250m north of Kimmage Cross Roads with a northbound bus lane to enable buses to bypass any traffic queue as shown in Option 6-2c.

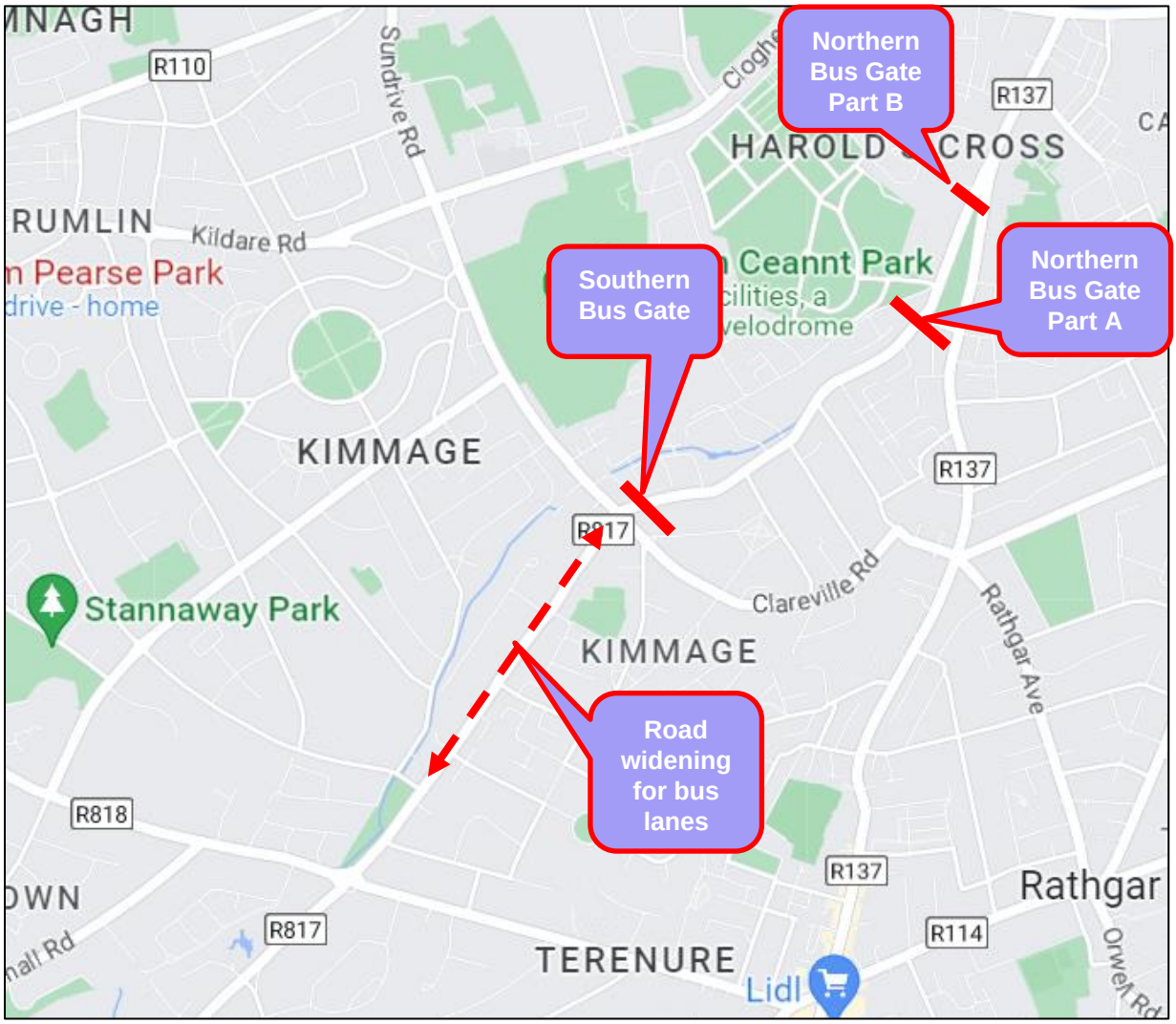

Figure 6 2b - Option A (EPR) for Bus Priority in Section 1

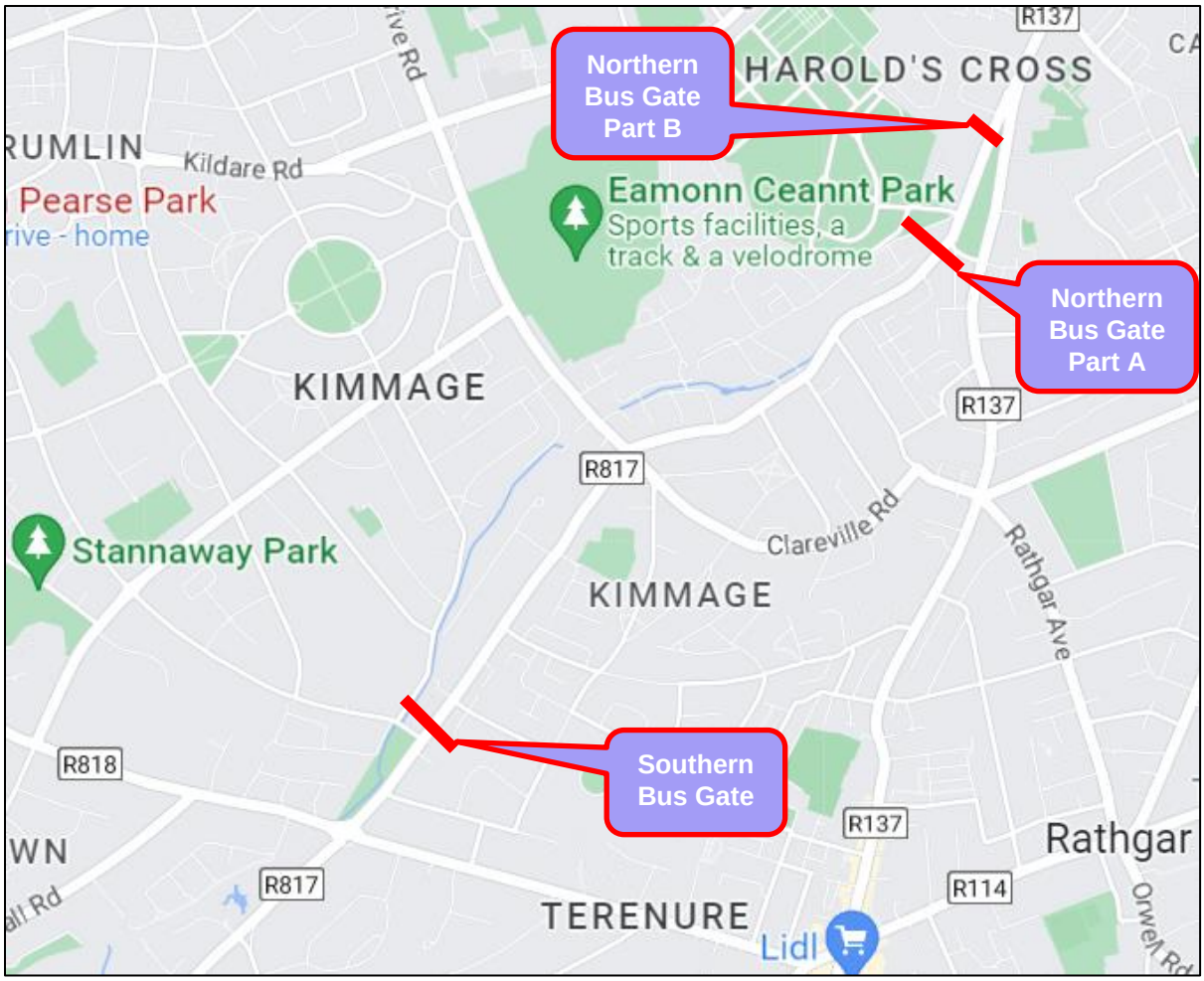

Figure 6-2c - Option B for Bus Priority in Section 1

Table 6.1.1 – Evaluation of Options for Bus Facilities in Section 1 Kimmage Road Lower

Appraisal Criteria	Option A - EPR Bus Gate at Sundrive & Bus Lanes on LKR	Option B Bus Gate at Ravensdale Park
Economy		
Capital Cost		
Journey Time Reliability (Bus)		
Integration		
Integration with Land-Use policy		
Residential Population and Employment Catchments		
Public Transport Network		
Cycle Network		
Traffic Network		
Accessibility & Social Inclusion		

Key Trip Attractors within Catchment		
Deprived Geographic Areas		
Safety		
Environment		
Archaeology & Cultural Heritage		
Flora & Fauna / Biodiversity		
Soils & Geology		
Hydrology		
Landscape & Visual		
Air & Noise		
Land Use and the Built Environment		
Preference	**2**	**1**

Option A involves significantly greater cost than Option B for major road widening and land acquisition from properties. Option A would be slightly better than Option B for bus journey reliability. Option B is therefore ranked first for Economy

For Integration and for Accessibility and Social Inclusion the two options are similar.

For Safety Option A requires cyclists to share the bus lanes along the southern half of Section 1, whereas in Option B cyclists will benefit from much quieter traffic conditions over a longer distance between the bus gates with the existing advisory cycle lanes, so Option B is ranked first.

Under Environment Option B ranks first for Flora & Fauna and for Landscape & Visual due to avoidance of loss of garden areas and planting, for Air and Noise because it keeps buses further from the houses and has greatly reduced traffic, and for Land Use and Built Environment due to no impact on many properties compared to Option A.

A summary of the assessment and relative ranking of route options against the five main assessment criteria is presented in Table 6.1.2.

Table 6.1.2 MCA Summary for Bus Facilities in Section 1 Kimmage Road Lower

Assessment Criteria	Option A - EPR Bus Gate at Sundrive & Bus Lanes on LKR	Option B Bus Gate at Ravensdale Park
Economy		
Integration		
Accessibility & Social Inclusion		
Safety		
Environment		
Preference	**2**	**1**

The assessment concluded that Option B for the southern bus gate to be located at Ravensdale Park is the preferred arrangement and this has been adopted in the Preferred Route Option design.

6.1.3 Cycle Route Options in Section 1 - Kimmage Road Lower

The Emerging Preferred Route proposed no segregated facilities for cyclists along Kimmage Road Lower between KCR and Sundrive Cross. Cyclists could either share the proposed bus lanes or use an alternative "quiet route" through the residential area to the east in the Kimmage area, and on the western side in Harold's Cross. Numerous submissions in the non-statutory public consultations sought segregated cycling facilities along the most direct route rather than directing cyclists along the less direct alternative route.

There are 4 potential options for cycling facilities along this section of Kimmage Road Lower:

A. Bus Gate with low traffic flows, 30 km/h speed limit and existing advisory cycle lanes retained.

B. Cycle Tracks along Kimmage Road Lower.

C. Alternative (or Complementary) Cycle Routes

   C1: Quiet street route via Hazelbrook and Larkfield parallel on eastern side.

   C2: Poddle Greenway Cycle Route parallel on western side.

D. Combination of Cycle Routes A, C1 and C2.

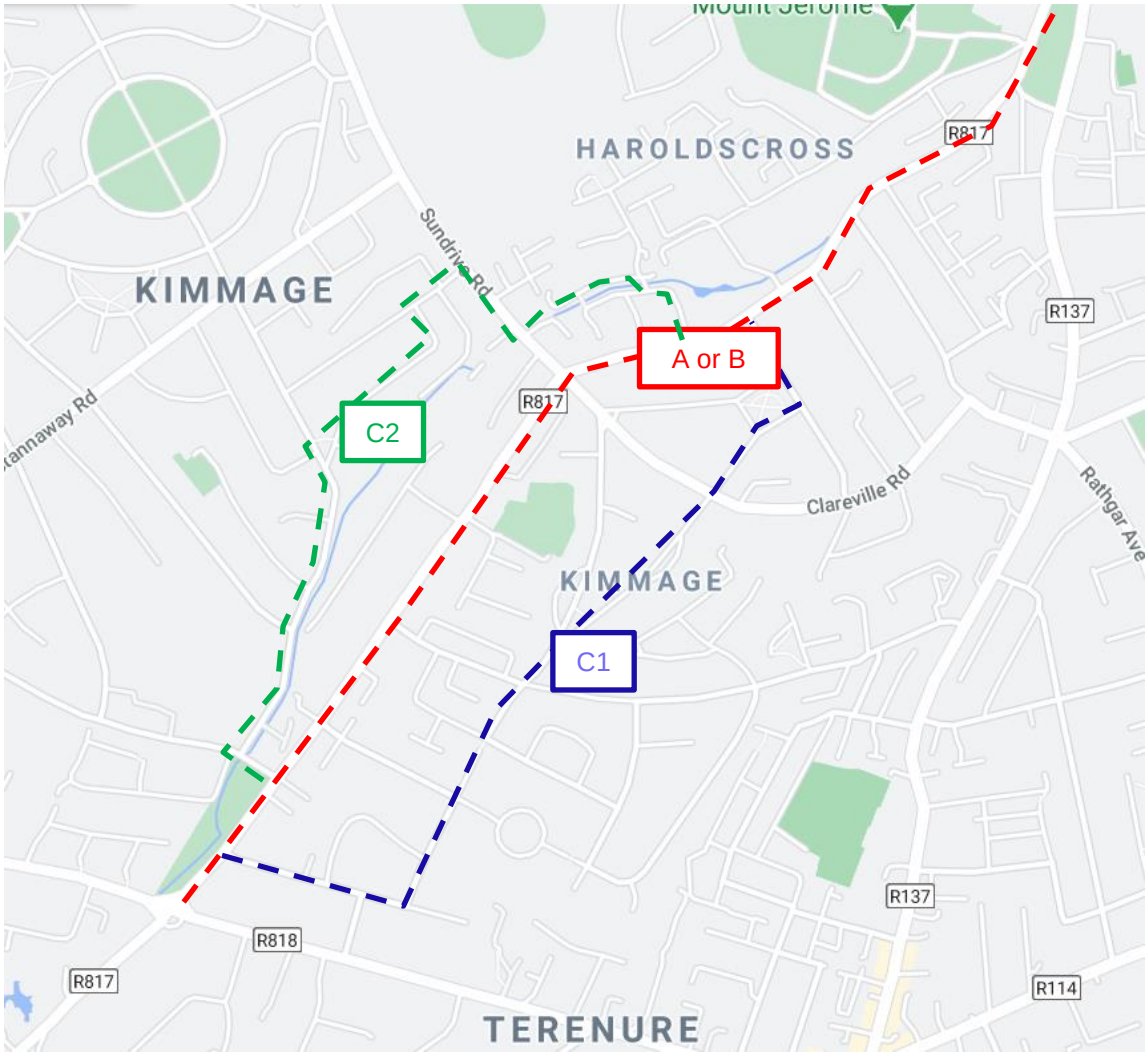

Figure 6-3 - Cycle Route Options in Section 1: Kimmage Road Lower

Section 1 Cycle Route Option A – Shared Road with Part-Time Advisory Cycle Lanes

On the issue of where segregation for cyclists is desirable, the *National Cycle Manual* provides a guidance graph as indicated in the Figure below. The key factors are traffic speeds and volumes. Shared use of the road is suitable where traffic speeds are 30 km/h or less, with traffic flows of less than 10,000 AADT. These conditions will apply on Kimmage Road Lower downstream of the proposed bus gate. However, the existing advisory cycle lanes that are to be retained will provide enhanced facilities for cyclists at peak times when on-street parking is not permitted on particular sides of the street.

1.7.4 Guidance Graph

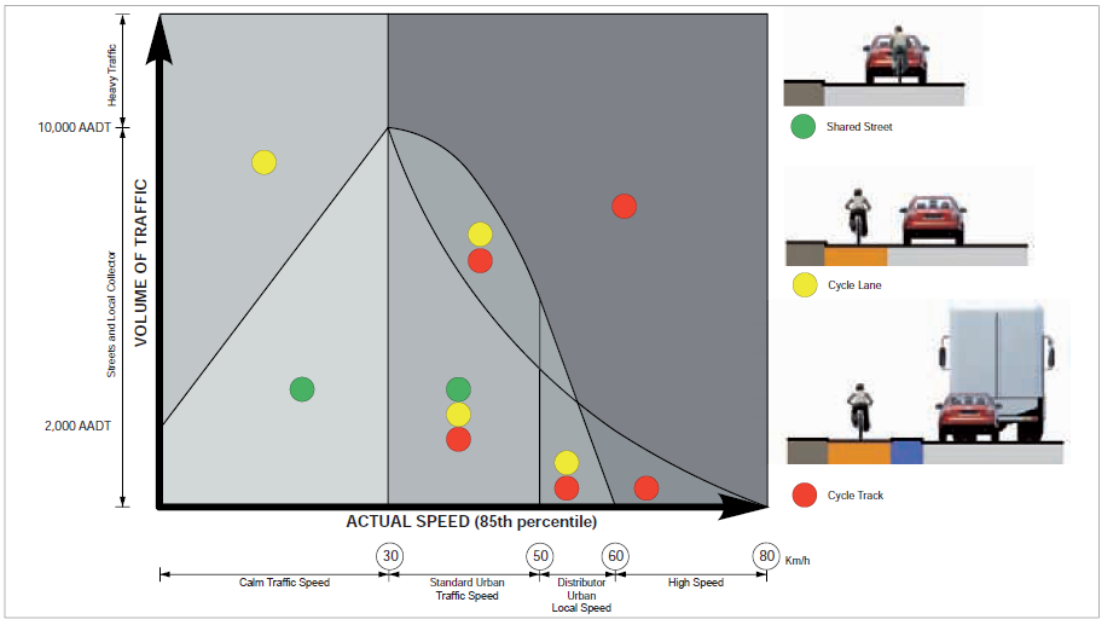

Figure 6-4 - Guidance Graph from the National Cycle Manual for Integration or Segregation for Cyclists

Section 1 Cycle Route Option B – Segregated Cycle Tracks

For segregated cycle tracks the required road width 14m for 2m footpaths, 2m cycle tracks and 3m traffic lanes. This could reduce to 13m if the cycle tracks were narrowed to 1.5m, which is lower than the desirable width, but is acceptable for single file cycling. The typical width of the narrowest part of Kimmage Road Lower in Section 1 is 12m, and therefore up to 2m would need to be acquired from the front gardens of the houses.

Section 1 Cycle Route Option C1 – Quiet Streets Cycle Route

The alternative cycle route Option C1 requires only a minor intervention for the provision of gaps through an existing road closure barrier at Derravaragh Road (and on the eastward link at Mount Tallant Avenue).

Section 1 Cycle Route Option C2 – River Poddle Cycleway

The *Greater Dublin Area Cycle Network Plan (December 2013)* proposed a recreational amenity cycleway along the River Poddle from the Tymon Park area on the eastern side of Tallaght through Greenhills and Kimmage to Harold's Cross. The river channel is open over most of its length through the Kimmage area commencing at Poddle Park at Kimmage Cross Roads and flows northward a short distance to the west of Kimmage Road Lower. A cycleway can follow the river through public park areas in some places, and along quiet residential streets beside the river channel elsewhere. At Sundrive Road the river is underground for a section before re-emerging at Mount Argus View on the northern

side. Here a new link would be required to open up access for pedestrians and cyclists to follow the river course over a short length. Additional cost would be required for a boardwalk beside the River Poddle for this link at the Stone Boat historical feature in the river channel which would be visible but not directly impacted.

At Mount Argus the cycle route would re-join Kimmage Road Lower for the remaining length of 0.6km to Harold's Cross Park. From Harold's Cross the River Poddle channel is not publicly accessible as it passes alongside the Mount Jerome Cemetery and Our Lady's Hospice.

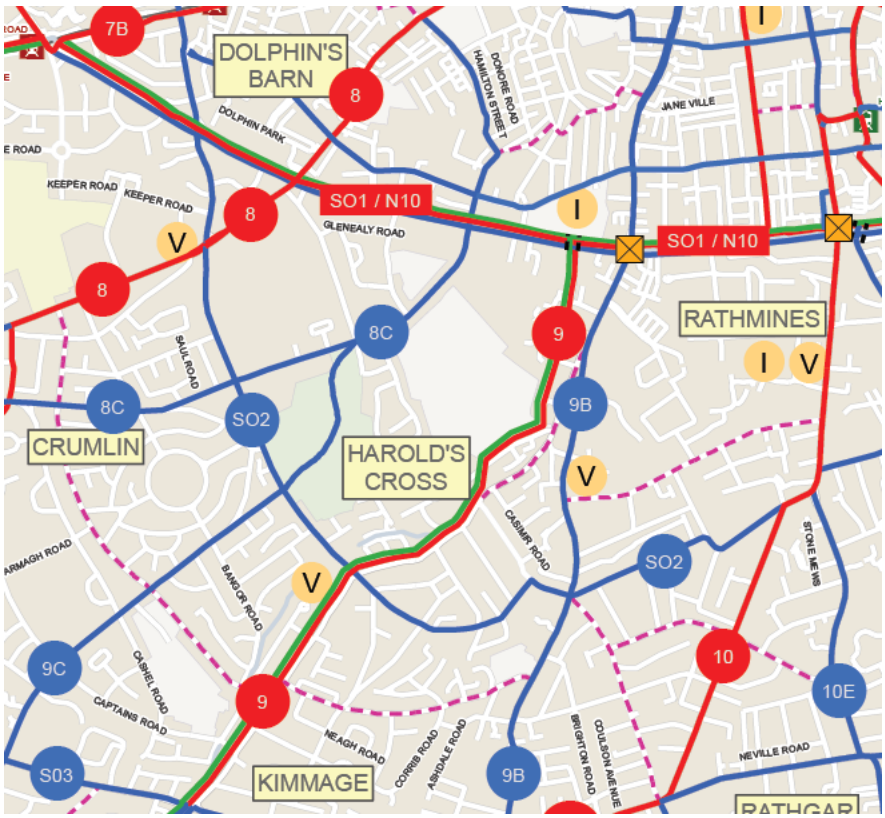

Figure 6-5 - River Poddle Greenway (green line) as shown in an extract from Map N1 of GDA Cycle Network Plan

Section 1 Cycle Route Option D – Shared Road with alternative Quiet Street routes to the East and West

This options incorporates the provision of shared use of Kimmage Road Lower, Option A, with the alternative cycle route Options C1 and C2 each as described above.

Table 6.1.3 – Evaluation of Options for Cycling Facilities in Section 1 Kimmage Road Lower

Appraisal Criteria	Option A (EPR) Bus Lanes and Shared Road / Advisory Cycle Lanes	Option B Cycle Tracks	Option C1 Alternative Route to East	Option C2 Alternative Route to West	Option D Shared Road & Alternative Routes East & West
Economy					
Capital Cost					
Journey Time Reliability (Bus)					
Integration					
Integration with Land-Use policy					
Residential Population and Employment Catchments					
Public Transport Network					
Cycle Network					
Traffic Network					
Accessibility & Social Inclusion					
Key Trip Attractors within Catchment					
Deprived Geographic Areas					
Safety					
Environment					
Archaeology & Cultural Heritage					
Flora & Fauna / Biodiversity					
Soils & Geology					
Hydrology					
Landscape & Visual					

Air & Noise					
Land Use and the Built Environment					
Preference	**4**	**5**	**2**	**3**	**1**

For Economy Option B would involve very significant cost for acquisition of land from many houses and for construction cost. The other options are either very low cost, or medium cost for Options C2 and D which entails a boardwalk structure along the River Tolka at Mount Argus. For bus journey reliability Option B ranks first as it avoids buses being delayed by cyclists sharing the road compared to the other options which would all involve such sharing to a certain degree. Overall Options A and C rank first for Economy.

All options would improve the cycle route network under integration, but Option D maximises this and is ranked first.

For Accessibility and Social Inclusion all options are equal.

Options B and D rank first for safety as they provide the greatest segregation from traffic.

For environment Option B ranks last it involves encroachment into gardens and the loss of planting, while all the other options score the same.

Table 6.1.4 – MCA Summary of Options for Cycling Facilities in Section 1 - Kimmage Road Lower

Assessment Criteria	Option A (EPR) Shared Road / Advisory Cycle Lanes	Option B Cycle Tracks	Option C1 Alternative Route to East	Option C2 Alternative Route to West	Option D Shared Road & Alternative Routes East & West
Economy					
Integration					
Accessibility & Social Inclusion					
Safety					
Environment					
Preference Rank	**2**	**5**	**3**	**4**	**1**

Following this review of the options for cycling facilities, the Preferred Route Option is to provide a bus gate and shared use of the road with low traffic flows and speeds. The existing road layout provides advisory cycle lanes which operate in the peak periods inbound in the morning and outbound in the evening. These arrangements can be retained unchanged along the proposed Bus Corridor. The part-time cycle lanes enable some on-street parking at other times, which suits residents with no driveways, or with limited space for visitors, while ensuring a clear route for cyclists in the peak directions.

The complementary cycle routes along the River Poddle corridor to the west and through the residential areas of Hazelbrook and Larkfield to the east will allow those cyclists who prefer quiet routes to take a slightly less direct alternative to the main corridor as far as Section 2 to the north. Each of these options is likely to suit cyclists in the two different directions by avoiding the need to cross the main road: towards the city along the western Poddle route, and outbound along the eastern route, with simple left-turns at each end.

6.1.4 Conclusions and Preferred Route Option for Section 1 - Kimmage Road Lower: KCR to Harold's Cross

The Emerging Preferred Route was adjusted to adopt the following changes in the Preferred Route Option:

a) The Southern Bus Gate is located at Ravensdale Park instead of at Sundrive Cross.

b) Road widening for Bus Lanes is no longer proposed along Kimmage Road Lower south of Sundrive Cross.

c) The existing road layout with advisory cycle lanes is retained along Kimmage Road Lower.

d) An additional alternative *Poddle Cycleway* is proposed along the western side of the corridor.

The local residential streets along the eastern side of the corridor will remain available for cyclists parallel to Kimmage Road Lower as far north as Priory Road.

In summary, cyclists will have 3 route options available to them in Section 1 that will converge towards the northern end at Harold's Cross. This will provide shorter and more direct routes for cyclists within the surrounding catchment area of the Kimmage corridor.

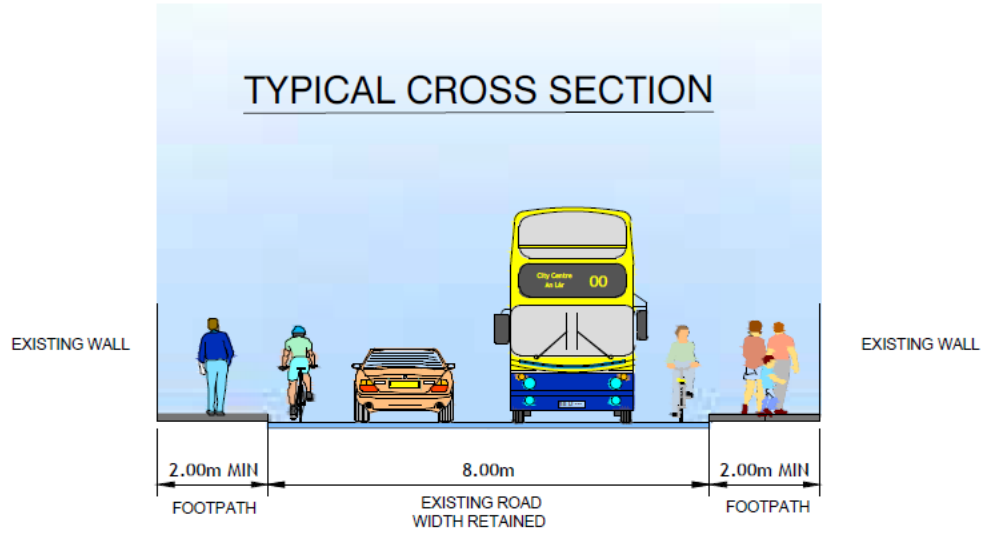

Figure 6-6 - Typical Cross-Section on Kimmage Road Lower in Section 1

6.2 Section 2 - Harold's Cross Road

6.2.1 Introduction

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

One key issue was reassessed for this section based on the concerns raised in Non-Statutory Public Consultation No.1: the options for the cycle route.

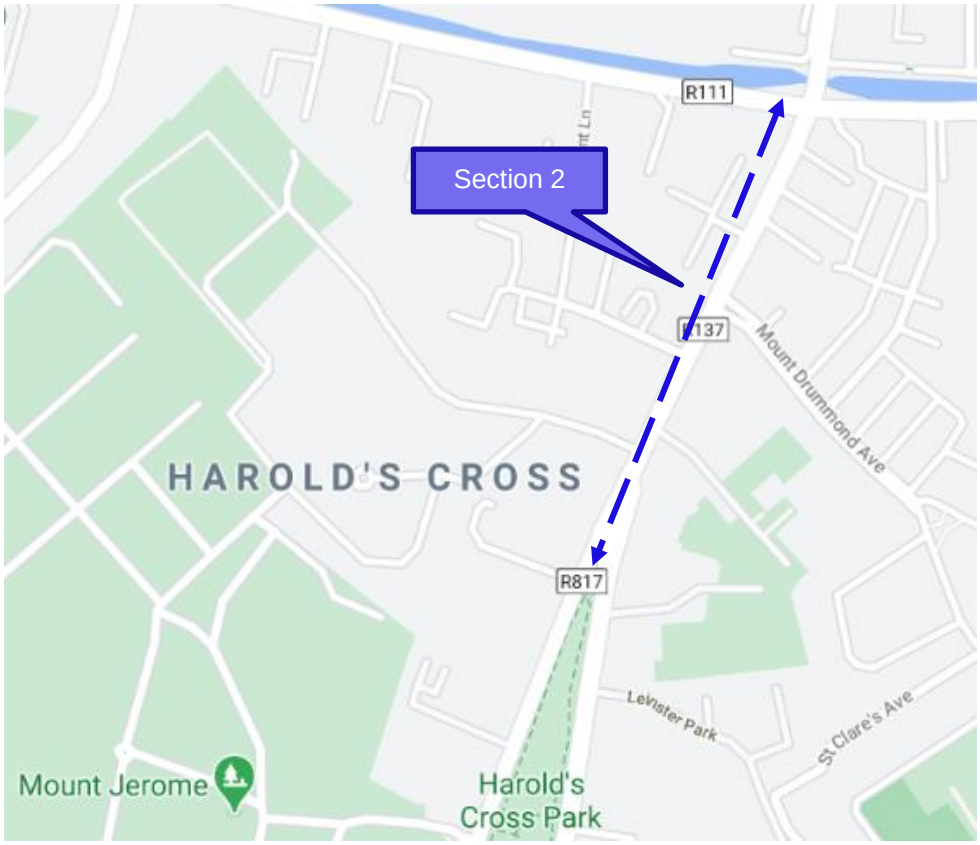

Figure 6-7 - Section 2 at Harold's Cross

6.2.2 Cycle Route Options in Section 2 - Harold's Cross Road

The Emerging Preferred Route proposed to provide a separate cycle route to the west of Harold's Cross Road though the grounds of Our Lady's Hospice and then along the quiet street route of Greenmount Lane to Parnell Road at the Grand Canal. Numerous submissions expressed a preference for a direct cycle route along Harold's Cross Road rather than the indirect route via Greenmount Lane and Our Lady's Hospice. Two options are shown in Figure 6-8:

Option A: the Emerging Preferred Route with a section of two-way cycle track along the western side of Harold's Cross Road, and then through the grounds of Our Lady's Hospice to connect to Greenmount Lane, and sharing this quiet street to Parnell Road to connect eastwards to Robert Emmett Bridge over the Grand Canal.

Option B: cycle tracks along Harold's Cross Road which would involve some road widening and acquisition of property.

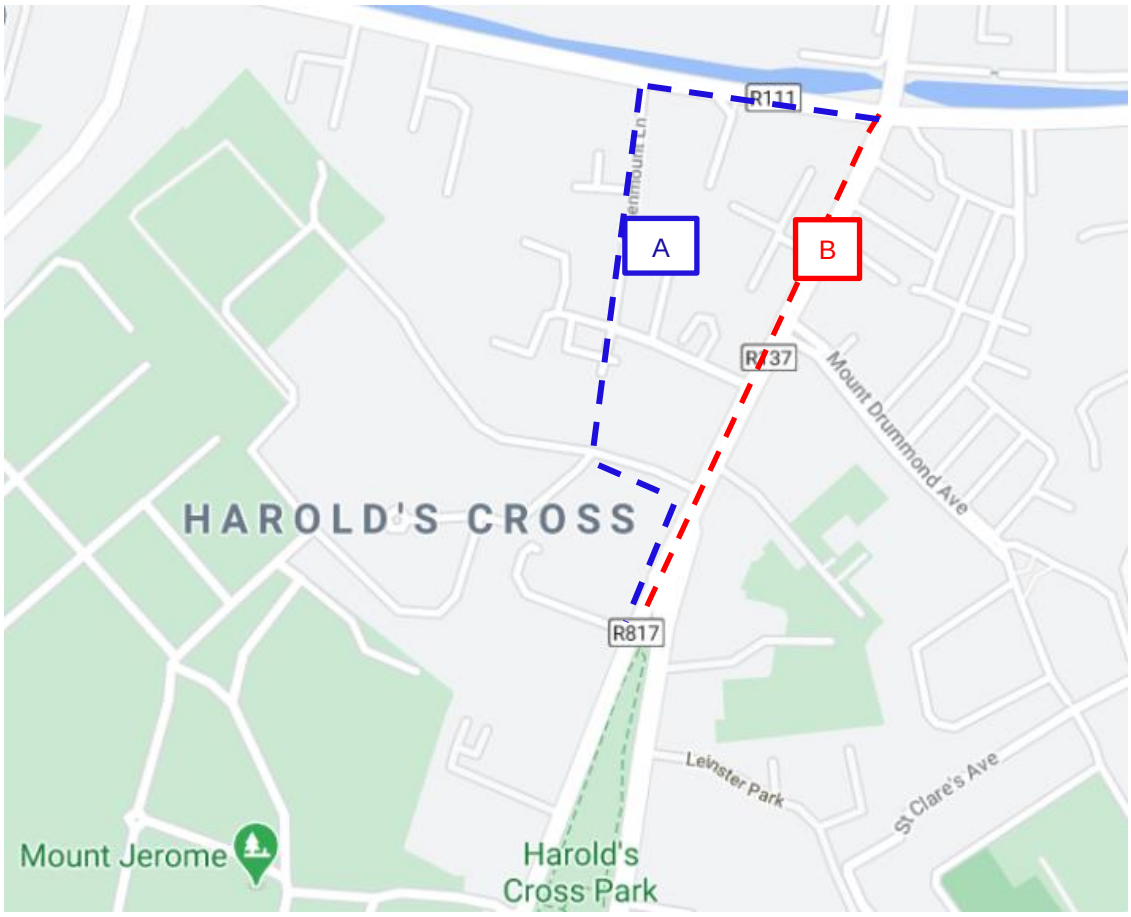

Figure 6-8 - Cycle Route Options in Section 2 at Harold's Cross

A review of the potential for the inclusion of cycle tracks along Harold's Cross Road is summarised as follows

a) The existing road width is 18.0m minimum and in many places is 20.0m wide or more.

b) For a road layout with 2 x 2m wide footpaths, 2 x 3m bus lanes, 2 x 3m traffic lanes and 2 x 2m wide segregated cycle tracks requires a total width of 20m.

c) From Harold's Cross Park to the entrance at Our Lady's Hospice (a length of 90m) cycle tracks can fit on the existing road with removal of on-street parking on the western side (which is common to both Options A and B).

d) Immediately north of the hospice gate there is a 15m long pinch-point where the maximum width that can be achieved is 19m and the cycle tracks would need to reduce from 2.0m wide to 1.5m wide. This will require acquisition of a 1m wide strip from the narrow garden in front of No.14 to 20 Harold's Cross Road on the western side just north of Our Lady's Hospice.

e) The necessary 20m width can be achieved through acquisition of a 2m wide strip from front gardens on the eastern side of the street over a length of 100m between St. Clare's Primary School and Mount Drummond Avenue.

f) Just south of the junction at Parnell Road along the Grand Canal there is a pinch-point where the road is only 16m wide. There is an office development on the western side where the corner of the building is setback by 4m from the boundary within a garden space, such that the road could be widened sufficiently for the required layout.

Option B for the cycle route at Harold's Cross was developed as shown in Figure 6-9.

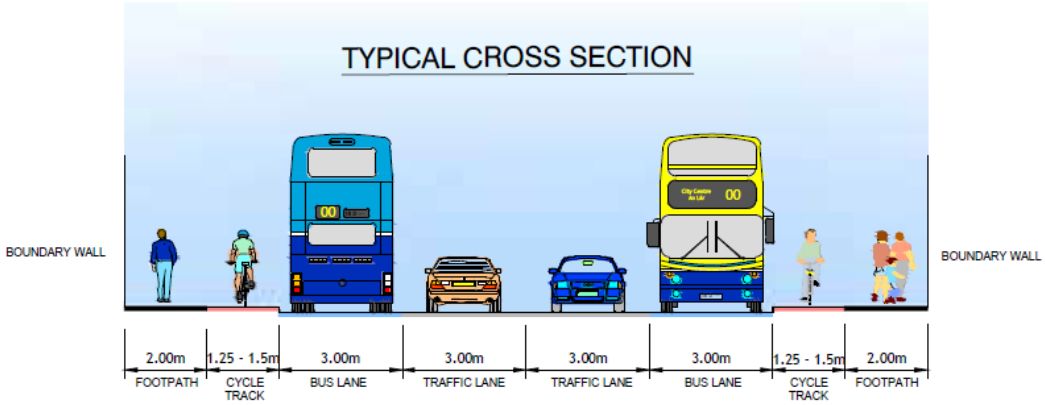

Figure 6-9 - Option B with Cycle Tracks on Harold's Cross Road

The two options for the cycle route at Harold's Cross are compared in Table 6.2.1.

Table 6.2.1 – Evaluation of Options for Cycling Facilities in Section 2 Harold's Cross

Appraisal Criteria	Option A - EPR Greenmount Lane	Option B Harold's Cross Road
Economy		
Capital Cost		
Journey Time Reliability (Bus)		
Integration		
Integration with Land-Use policy		
Residential Population and Employment Catchments		
Public Transport Network		
Cycle Network		
Traffic Network		
Accessibility & Social Inclusion		
Key Trip Attractors within Catchment		
Deprived Geographic Areas		
Safety		
Environment		
Archaeology & Cultural Heritage		
Flora & Fauna / Biodiversity		
Soils & Geology		
Hydrology		
Landscape & Visual		
Air & Noise		
Land Use and the Built Environment		
Preference	**2**	**1**

Option B involves significantly greater cost than Option A for minor road widening and land acquisition from properties. Both options are equal for bus journey reliability. Option A is therefore ranked first for Economy

For Integration Option B is better as it provides a direct cycle route compared to the indirect route in Option A.

For Accessibility and Social Inclusion the two options are similar.

For Safety in Option A some cyclists are likely to remain on the main road and share the bus lane, whereas Option B will fully segregate cyclists from all traffic, so for Safety Option B is ranked first.

Option B scores second for Environment under Landscape & Visual due to the loss of garden areas and planting, and for Land Use and Built Environment due to the impact on many properties.

A summary of the assessment and relative ranking of route options against the five main assessment criteria is presented in Table 6.2.2.

Table 6.2.2 – MCA Summary for Cycling Facilities in Section 2 - Harold's Cross Road

Assessment Criteria	Option A (EPR) Cycleway at Greenmount	Option B Cycle Tracks on Harold's Cross Road
Economy		
Integration		
Accessibility & Social Inclusion		
Safety		
Environment		
Preference Rank	**2**	**1**

The options assessment concluded that Option B for cycle tracks along Harold's Cross Road is preferred and this was incorporated into the Preferred Route Option.

6.2.3 Conclusions and Preferred Route Option for Section 2 - Harold's Cross Road

The Preferred Route Option for Section 2 was adjusted to incorporate cycle tracks along Harold's Cross Road through some localised road widening into adjoining properties where necessary to provide the required width.

6.3 Section 3 - Clanbrassil Street Upper and Lower and New Street South

6.3.1 Introduction

There were few concerns raised in Non-Statutory Public Consultation No.1 for Section 3 through the Portobello area to the edge of the City Centre. The following issues were reviewed in this section:

a) Options for the cycle route, indirectly through quiet streets in Portobello to the east of the core bus corridor, or more directly along the core bus corridor.

b) Options for road widening at Robert Emmett Bridge over the Grand Canal and the southern section of Clanbrassil Street Upper.

c) Reduction of impacts for existing trees in the median island along Clanbrassil Street Lower and New Street South.

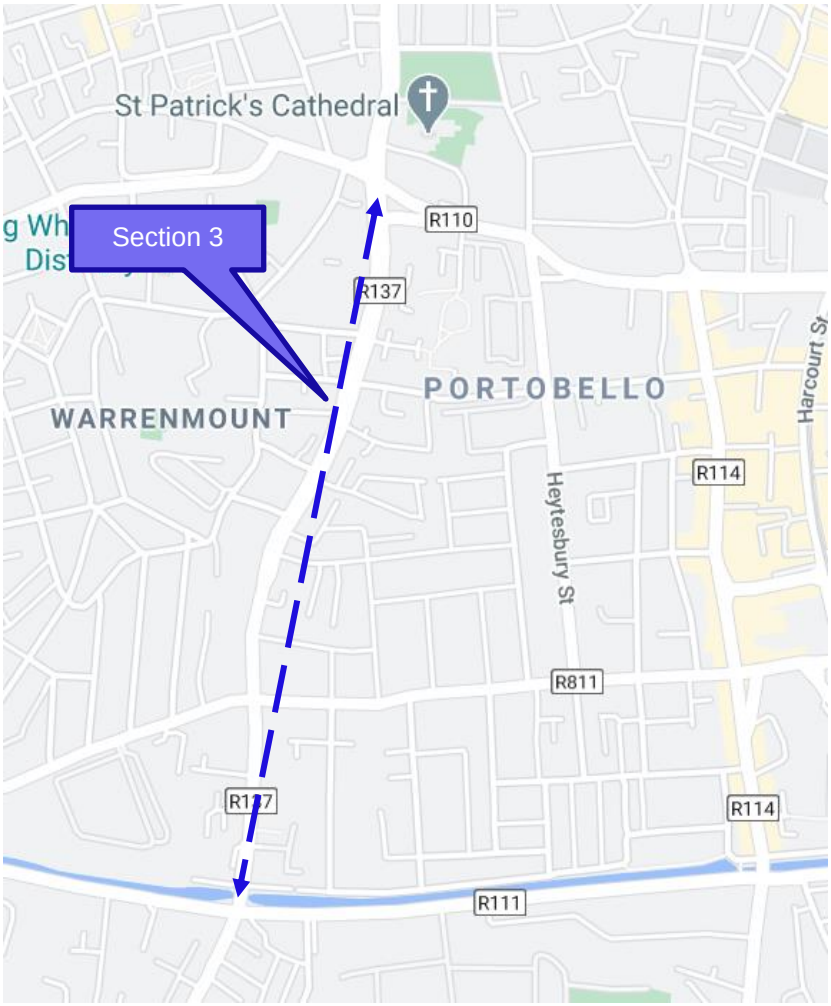

Figure 6-10 - Section 3 at Clanbrassil Street & New Street South

6.3.2 Cycle Route Options in Section 3

In the Emerging Preferred Route (EPR) proposals published for non-statutory public consultation in early 2019 it was proposed to provide a cycle route along quiet streets through the Portobello area to the east of the bus corridor along Clanbrassil Street as shown in Figure 6-11 below. This cycle route turned east at Robert Emmett Bridge in Harold's Cross and followed the Grand Canal for 0.5km to Martin Street, where it turned north for 1km on a route via Heytesbury Street as far as the Kevin Street Junction. It involved a new bridge over the canal at Grove Road. This route is shown as Option A on Figure 6-11. A second Option B would follow the main bus corridor directly along Clanbrassil Street and New Street South.

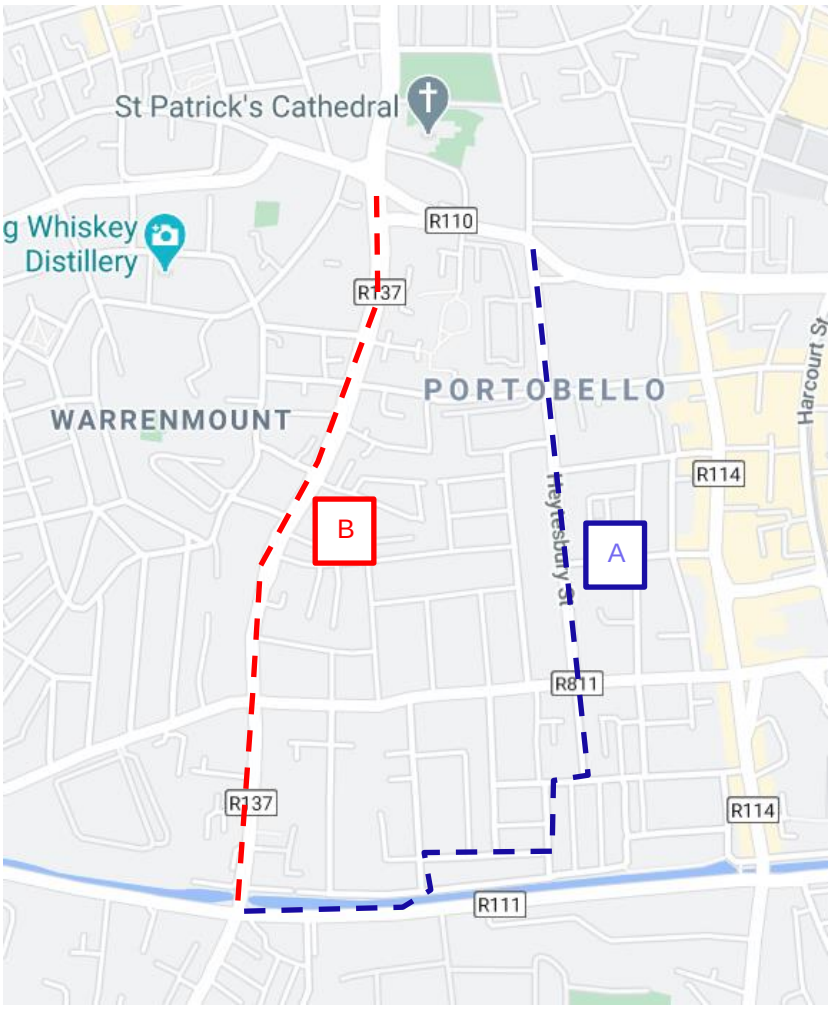

Figure 6-11 - Cycle Route Options in Section 3

The cycle route Option A shown in the EPR is Primary Cycle Route No.9 included in the *Greater Dublin Area Cycle Network Plan* as shown in Figure 6-12.

The *Greater Dublin Area Cycle Network Plan* includes Secondary Cycle Route No. 9B along Clanbrassil Street and New Street South to Patrick Street. Option B would deliver Cycle Route 9B instead of Route 9 further east, which could be delivered as a separate element outside of the BusConnects Infrastructure Works. In this context by providing fully segregated 2m wide cycle tracks along the Proposed Scheme route it would enable the primary cycle route to follow the more direct route along Clanbrassil Street instead of the indirect route through Portobello to the east.

Figure 6-12 - GDA Cycle Network Plan at Portobello

The Emerging Preferred Route proposals for Bus Connects Corridor 11 from Kimmage required cyclists to share with bus lanes as shown in Figure 6-13a and 6.13b below.

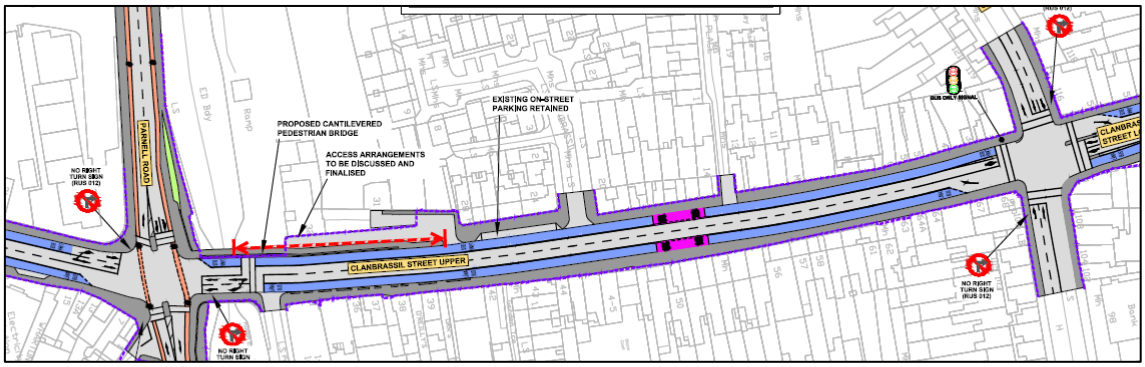

Figure 6-13a - EPR at Clanbrassil Street Upper

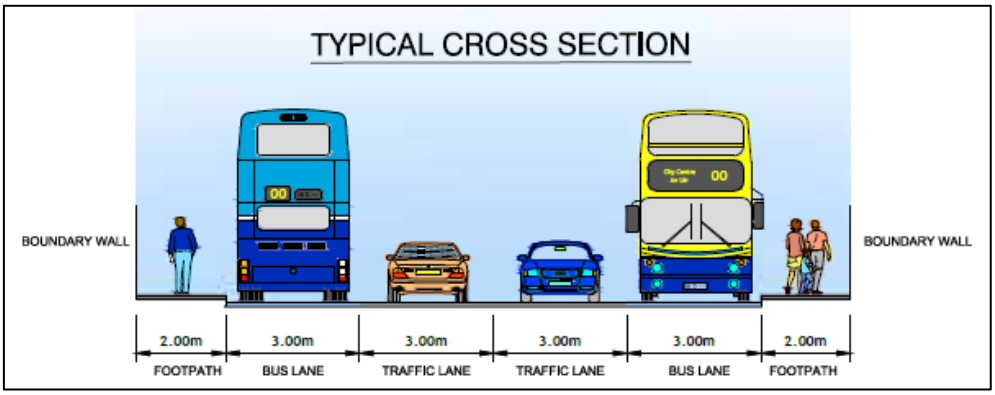

Figure 6-13b– Typical Cross Section for EPR at Clanbrassil Street Upper

Numerous submissions in Non-Statutory Public Consultation No.1 expressed a preference for cycling facilities to be provided along the most direct route along this corridor. While most comments focussed on the section south of the Grand Canal, some submissions also referred to the northern section along Clanbrassil Street.

In the developing design for Bus Connects Corridor 11 from Kimmage, an opportunity was derived to provide high-quality cycling facilities along Route 9B with 1.5m to 2.0m wide cycle tracks fully segregated from the bus lanes instead of shared with bus lanes as shown in the EPR. This would enable Route 9B to be promoted from Secondary to Primary status to complement Route 9 as an additional primary cycle route. The alternative cycle route option is shown in Figure 6-14 below.

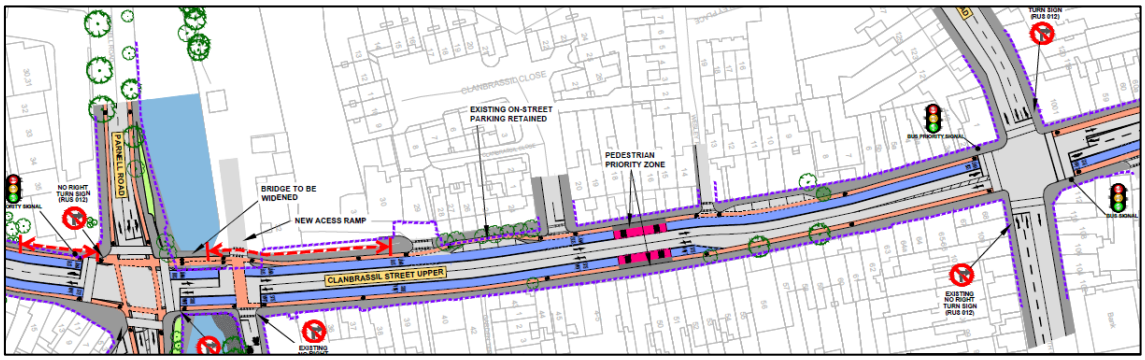

Figure 6-14 - Alternative Cycle Route Option B at Clanbrassil Street Upper

The key difference between the 2 options above is that Option B includes continuous cycle tracks along the core bus corridor compared to Option A which would require cyclists to divert to an alternative quiet street route to the east or to share the bus lanes on the more direct route. However for bus priority Option A provides continuous bus lanes through Leonard's Corner in both directions, whereas Option B omits some sections of bus lane immediately downstream of the junction (200m in the northbound direction and 100m in the southbound direction) so as to accommodate cycle tracks instead. Bus priority would be provided through signal-controlled priority at the Leonard's Corner junction which will provide an early start for the bus lane ahead of the general traffic as they enter the short section of shared use just after the junction. This will also enable northbound buses to turn right from the left lane so as to enable the No.16 service to join South Circular Road.

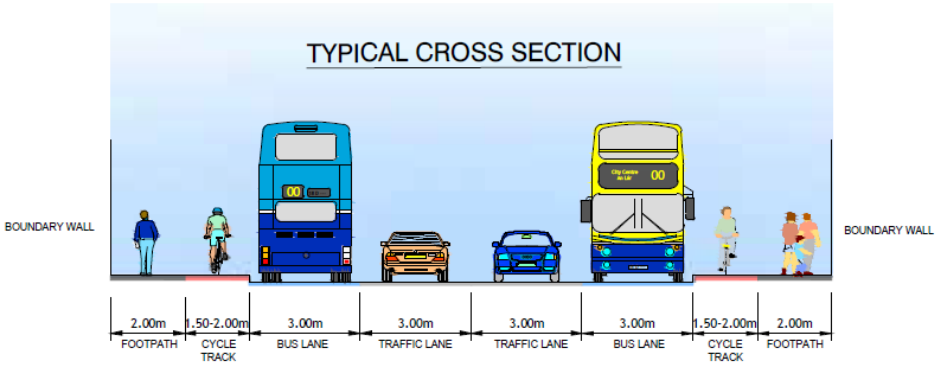

Figure 6-15 - Typical Cross Section with Cycle Route Option B at Clanbrassil Street Upper

The two options for the cycle route at Portobello are compared in Table 6.3.1.

Table 6.3.1 – Evaluation of Options for Cycling Route Options in Section 3 Portobello

Appraisal Criteria	Option A - EPR Quiet Streets through Portobello	Option B Cycle Tracks on Clanbrassil Street & New Street South
Economy		
Capital Cost		
Journey Time Reliability (Bus)		
Integration		
Integration with Land-Use policy		
Residential Population and Employment Catchments		
Public Transport Network		
Cycle Network		
Traffic Network		
Accessibility & Social Inclusion		
Key Trip Attractors within Catchment		
Deprived Geographic Areas		
Safety		
Environment		
Archaeology & Cultural Heritage		
Flora & Fauna / Biodiversity		
Soils & Geology		
Hydrology		
Landscape & Visual		
Air & Noise		
Land Use and the Built Environment		
Preference	**2**	**1**

Both options will involve significant cost for new structures at the southern end of Section 3 and are equal in that regard, but Option B will involve more works and costs along most of Section 3 for additional cycle tracks, so Option A ranks first for construction cost. For bus journey reliability Option B ranks first as it will avoid delays to the bus when cyclists continue on the more direct route in the bus lanes rather than diverting to the alternative route. Both options therefore rank equally first for Economy.

For Integration Option B is better as it provides a direct cycle route compared to the indirect route in Option A.

For Accessibility and Social Inclusion the two options are similar.

For Safety in Option A some cyclists are likely to remain on the main road and share the bus lane, whereas Option B will fully segregate cyclists from all traffic, so it is slightly better for safety and is ranked first.

For Environment both options have similar impacts for Landscape & Visual due, but Option B scores second for Land Use and Built Environment due to the impact on several properties.

A summary of the assessment and relative ranking of route options against the five main assessment criteria is presented in Table 6.3.2.

Table 6.3.2 – Options for Cycling Facilities in Section 3 - Clanbrassil Street & New Street South

Assessment Criteria	Option A Quiet Street Cycle Route through Portobello	Option B Cycle Tracks on Clanbrassil Street & New Street
Economy		
Integration		
Accessibility & Social Inclusion		
Safety		
Environment		
Preference Rank	**2**	**1**

The options assessment concluded that Option B for cycle tracks along Clanbrassil Street and New Street South was preferred and this was incorporated into the Preferred Route Option as published in March 2020.

6.3.3 Options for Widening at Robert Emmett Bridge on Grand Canal

The Kimmage CBC crosses the Grand Canal at Robert Emmett Bridge in Harold's Cross beside the junction of Harold's Cross Road to the south, Parnell Road to the west, Clanbrassil Street Upper to the north and Grove Road to the east as shown in Figure 6-16 below.

Figure 6-16 - Clanbrassil Street Upper at Robert Emmett Bridge over the Grand Canal

As shown in Figure 6-16 above, the road layout on the bridge is narrow with an overall width of 15m between the parapets. This accommodates an 11m wide carriageway and a pair of 2m wide footpaths. Advisory cycle lanes are marked on the road but southbound traffic queueing at the junction encroaches into the cycle lane and obstructs cyclists. There are no bus lanes on the bridge, nor for a 200m length in the northbound direction, with the southbound bus lane only starting just to the south of the Grove Road junction. The existing bridge is too narrow for the provision of bus lanes alongside two traffic lanes, which requires a minimum carriageway width of 12m. Widening is required to gain 1m of road width plus at least 4m for a pair of cycle tracks while maintaining 2m wide footpaths.

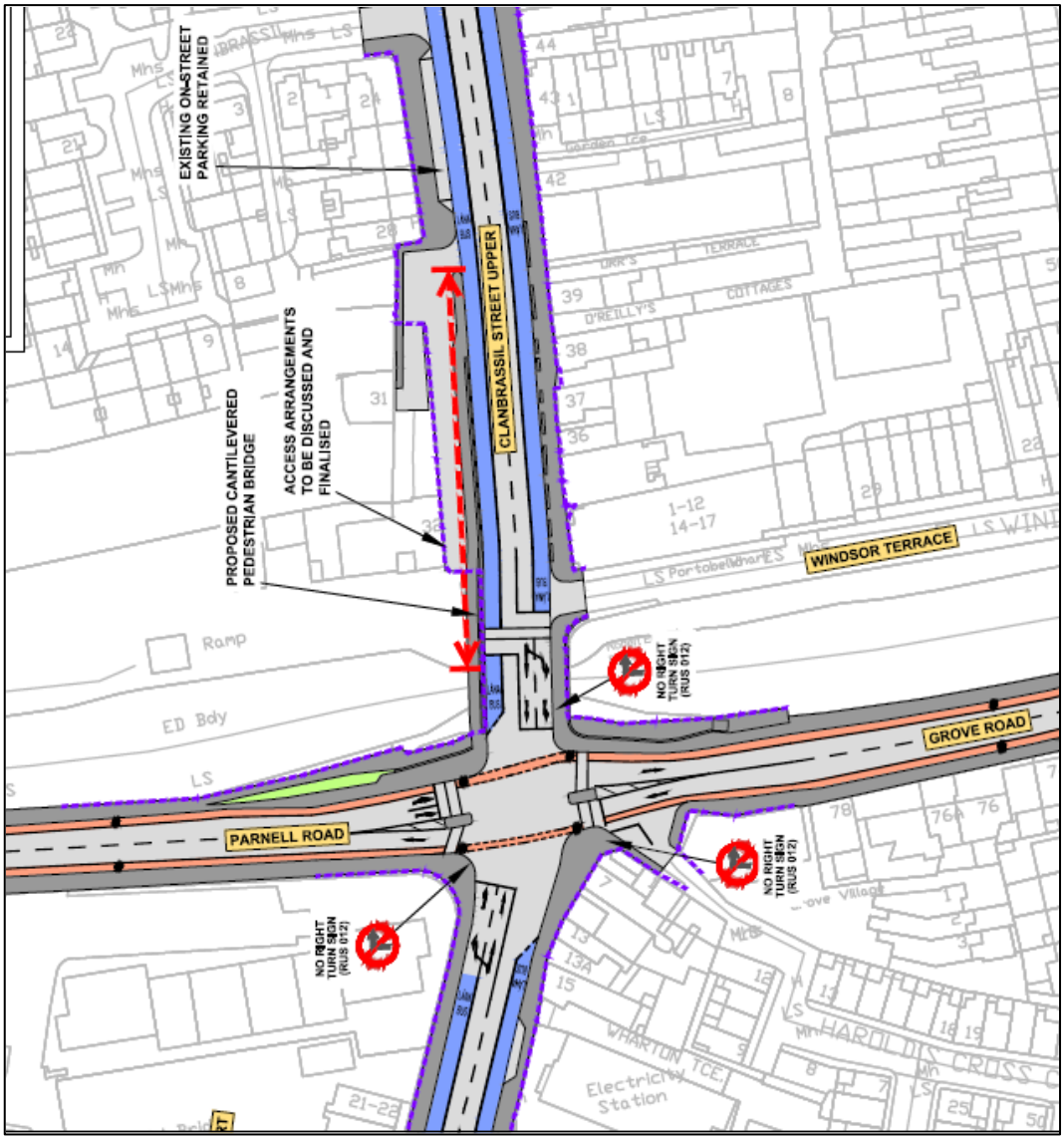

Figure 6-17 - Emerging Preferred Route Proposals at Grand Canal Crossing

In the Emerging Preferred Route as shown in Figure 6-17 above, no cycling facilities had been proposed in the north-south direction at the Grand Canal Bridge. Instead the cycle route was arranged along an indirect route linking west-east from Greenmount Lane along Parnell Road and Grove Road over a distance of 650m and from there crossing the Grand Canal on a new footbridge to continue northward through Portobello. However, the existing bridge is still too narrow for 4 traffic lanes (including 1 bus lane) as shown in Figure 6-17. It would therefore be necessary to widen the bridge on the western side.

In this Preferred Route Option Report as discussed in Section 6.3.2, it has been concluded that the cycle route would be best to follow the same direct route as the core bus corridor at this location. This would require widening of Robert Emmett Bridge to accommodate both bus lanes and cycle tracks. A further consideration is the necessity for a significant right-turn facility for northbound cyclists to join the Grand Canal cycle route in the eastward direction. The transport model indicates that more than half of the northbound cyclists in the morning peak will wish to turn right, which could amount to 800 or more cyclists per hour. Stacking space for 20 or more turning cyclists will be needed at this location while they await a signal to cross the street.

Robert Emmett Bridge is a concrete arch structure as shown in Figure 6-18 below and it is described in the National Inventory of Architectural Heritage as follows:

"Single-arch bridge, built 1935-6, carrying road over the Grand Canal. Elliptical arch with rendered spandrels and string course. Balustrade comprising balusters and rendered handrail, terminating in rendered piers with inset panels surmounted by lamp standards. Rendered wing walls with rendered string courses, cut limestone and rendered copings. Carved limestone plaque with bust of Robert Emmet to eastern balustrade."

"The original canal bridge at this location was named for James Hamilton, 2nd Earl of Clanbrassil, and was constructed around 1790. The current structure was rebuilt in 1935-6, its design echoing the composition of the eighteenth-century bridges on this stretch of the Grand Canal. It was renamed Robert Emmet Bridge to commemorate the member of the United Irishmen who led a failed rebellion against the British in the early nineteenth century. Emmet was captured in Harold's Cross and executed in 1803. A limestone plaque and relief bust by Albert George Power and an inscription in Irish add artistic and historical interest."

Figure 6-18 - Robert Emmett Bridge over the Grand Canal at Clanbrassil Street Upper (Eastern façade)

Immediately to the west of the bridge the canal widens to form a harbour as may be seen in Figure 6-16 earlier. Widening of the short-span arch bridge on the western side could potentially impact on the canal harbour and might require modifications to the harbour walls and canal channel.

Three layout options were developed for this location as follows:

Option A: Western Footbridge as shown in Figure 6-19 from Emerging Preferred Route map (March 2020)

- New 6m wide footbridge on the western side for a 2m wide footpath, 2m wide northbound cycle track and 2m wide right-turn cycle track.
- Widening of the road carriageway on the western side to replace the 2m wide footpath with a 0.3m wide rubbing strip alongside the bridge parapet.
- 12m wide road for 2 x 3m bus lanes & 2 x 3m traffic lanes.

- 1.5m wide southbound cycle track.
- 1.8m wide footpath on the eastern side.

This option makes best use of the 15m width available on the existing bridge, but it is 0.7m wide narrower than desirable to accommodate a 2.0m wide southbound cycle track and a 2.0m wide footpath on the eastern side.

Provision of a lightweight footbridge on the western side in this option will allow a longer span than the existing arch bridge and avoid interference with the canal harbour. It will also allow a separation from the existing bridge to maintain visibility of the arch structure and parapet that would not be altered.

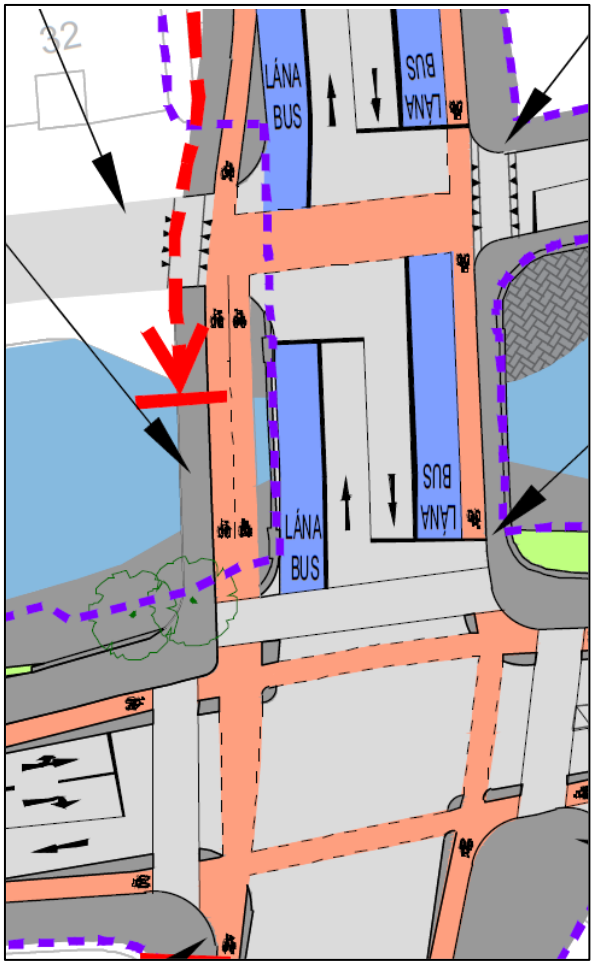

Figure 6-19 - Proposed Widening of Robert Emmett Bridge Option A (EPR)

Option B – Bridge Widening (as shown in Figure 6-20):

- Widening of the existing concrete arch bridge by 7m from 15m wide to 22m wide for
- 2m wide footpath on the western side.
- 4m wide northbound cycle track including 2m wide right-turn cycle lane.
- 12m wide road for 2 x 3m bus lanes & 2 x 3m traffic lanes.
- 2.0m wide southbound cycle track.
- 2.0m wide footpath on the eastern side.

This option provides the full 2m widths for the southbound cycle track and eastern footpath, which is better than in Option A.

Widening of the existing concrete arch bridge on the western side in this option will have a short span to match the existing bridge which will require modification of the canal harbour including the historic quay walls.

The new bridge facade will be a replica of the existing 85-year old bridge, including the parapet banister.

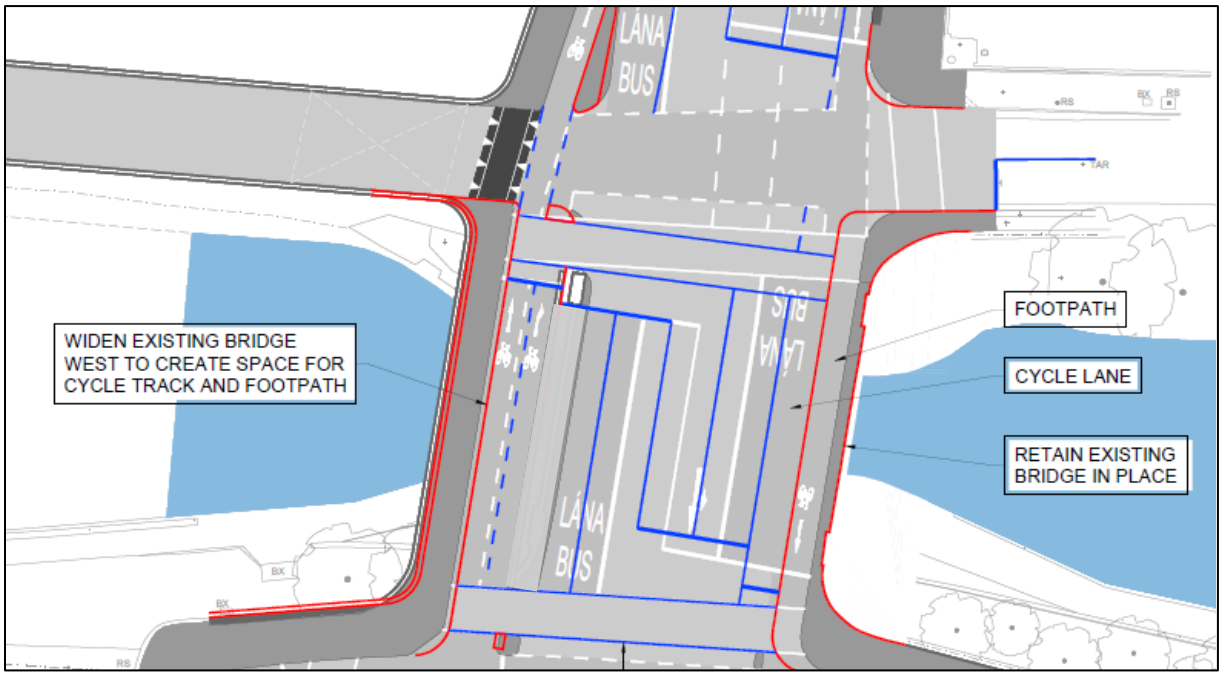

Figure 6-20 - Widening of Robert Emmett Bridge Option B

Option C: Footbridges on both sides (as shown in Figure 6-21)

- This option is the same as Option 1 on the western side.
- An additional 2.5m wide footbridge would be provided on the eastern side for pedestrians.
- On the existing bridge a wider 3.0m wide southbound cycle track would be provided alongside the 12m wide road and a pair of 0.3m wide rubbing strips alongside the existing parapets. The wider cycle track would accommodate a double line of cyclists and shorten the queue length at the signals.

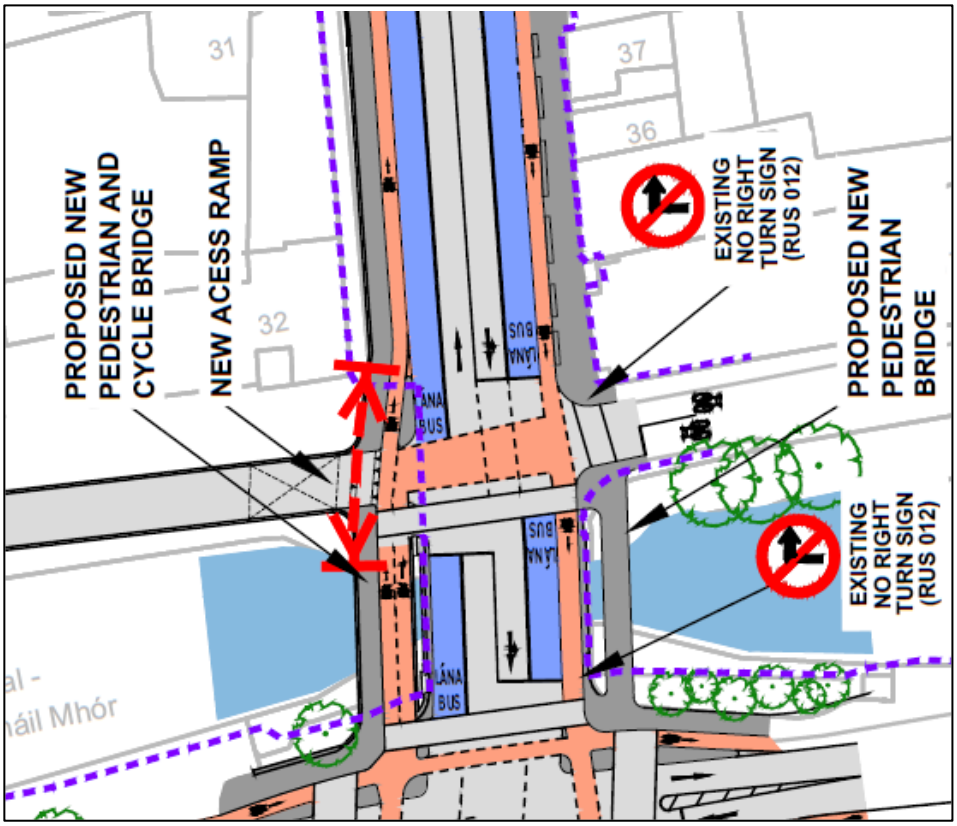

Figure 6-21 - Proposed footbridges on both sides of Robert Emmett Bridge

The options at Robert Emmett Bridge are compared in Table 6.3.3.

Table 6.3.3 – Evaluation of Options at Robert Emmett Bridge

Appraisal Criteria	Option A (EPR) Footbridge on western side	Option B Widening of existing bridge on western side	Option C Footbridges on both sides
Economy			
Capital Cost			
Journey Time Reliability (Bus)			
Integration			
Integration with Land-Use policy			
Residential Population and Employment Catchments			
Public Transport Network			
Cycle Network			
Traffic Network			
Accessibility & Social Inclusion			
Key Trip Attractors within Catchment			
Deprived Geographic Areas			

Appraisal Criteria	Option A (EPR) Footbridge on western side	Option B Widening of existing bridge on western side	Option C Footbridges on both sides
Safety			
Environment			
Archaeology & Cultural Heritage			
Flora & Fauna / Biodiversity			
Soils & Geology			
Hydrology			
Landscape & Visual			
Air & Noise			
Land Use and the Built Environment			
Preference	**2**	**3**	**1**

The highest cost option is Option B, and Option A has the least cost. All options are equal for bus journey reliability, so Option A is scored first for Economy.

For Integration Option C is better as it has the best provision for cyclists.

For Accessibility and Social Inclusion the options are similar.

For Safety Options A and C are best as they provide segregated facilities for cyclists.

All options score the same for Environment as they have similar impacts for Landscape & Visual.

A summary of the assessment and relative ranking of route options against the five main assessment criteria is presented in Table 6.3.4.

Table 6.3.4 – Evaluation of Options for Widening of Emmett Bridge

Assessment Criteria	Option A Western Footbridge	Option B (EPR) Bridge Widening	Option C Two Footbridges
Economy			
Integration			
Accessibility & Social Inclusion			
Safety			
Environment			
Preference Rank	**2**	**3**	**1**

The options assessment concluded that Option C is preferred as it provides the best overall functionality for pedestrians and cyclists.

6.3.4 Street Trees in Section 3

An opportunity was found in the development of the design to retain the existing median and street trees along Section 3, rather than to remove the median and trees as previously shown in the EPR, as shown in Figure 6-22 below.

Figure 6-22 - Retention of Street Trees on Clanbrassil Street & New Street South

These streets were widened to a dual carriageway in the 1980's, and the footpaths are unusually wide at typically 4m to 5m and wider in places. Road design standards at the time provided for a 7.5m wide carriageway, with 3.75m wide traffic lanes. Revised standards adopted in the Design Manual for Urban Roads and Streets in 2013, require considerably narrower traffic lanes of 3m in low-speed environments. The BusConnects proposals generally provide for 3m wide bus lanes and 3m wide traffic lanes. In Section 3 therefore, 1.5m of surplus road width is available for provision of cycle tracks segregated from the bus lanes. To provide the optimum 2m wide cycle tracks, a further 0.5m may be gained from minor narrowing of the footpaths, which will still remain wider than usual at 3.5m typically. No road widening is required at the median, apart from a short section over a length of 100m at Cathedral Court north of Fumbally Lane where the median is less than 1m wide and there are no trees.

6.3.5 Conclusions and Preferred Route Option for Section 3 - Clanbrassil Street & New Street South

a) The Preferred Route Option for Section 3 has incorporated cycle tracks along Clanbrassil Street and New Street South. The alternative route on quiet streets through Portobello to the east has therefore been omitted from the BusConnects proposals.

b) For the widening at Robert Emmett Bridge over the Grand Canal, the preferred option is for new footbridges on both sides of the existing concrete arch bridge.

c) All existing street trees in the median along Clanbrassil Street and New Street South will be retained in the Preferred Route Option.

7. Preferred Route Option

7.1 Introduction

Chapter 6 of this report presented an appraisal of all route options considered for Kimmage CBC Corridor 11. Following this appraisal, the Preferred Route Option has been confirmed as summarised in this chapter of the report. The updated Preferred Route Option scheme design drawings are included in Appendix B of this report.

7.2 Preferred Route Option Scheme Description

The Kimmage to City CBC extends over a length of 3.7 km. It commences at the Kimmage Cross Roads junction at the southern end and extends along Kimmage Road Lower for 2km to Harold's Cross Park, and then along Harold's Cross Road for 0.4km to the Grand Canal at the junction with Parnell Road and Grove Road. After crossing the canal on Robert Emmett Bridge the proposed route continues northwards along Clanbrassil Street through the Leonard's Corner junction at South Circular Road, and then along New Street South to the tie-in point with the St Patrick's Street Junction at the northern end. Priority for buses is provided along the entire route, consisting of extensive dedicated bus lanes in each direction over a length of 1.6km, combined with bus gates at strategic locations where bus lanes will not be provided over a length of 1.1km on Kimmage Road Lower between the junction at Ravensdale Park near the southern end, and at Harold's Cross Park at the northern end. A mix of cycling facilities of various types will be provided along the route with cycle tracks beside the bus lanes, advisory cycle lanes (existing retained) in the bus gate section on Kimmage Road Lower, as well as a parallel quiet streets cycle route from Ravensdale Park to Mount Argus to the west of Kimmage Road Lower.

The Kimmage to City Centre Core Bus Scheme is shown in Figure 7-1.

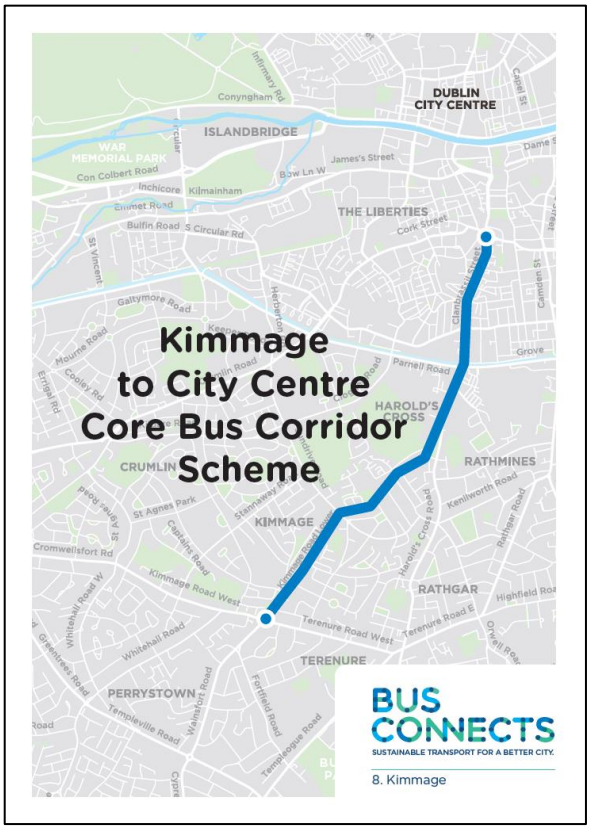

Figure 7-1: Scheme Location Map

7.2.1. Preferred Route Option in Section 1 - Kimmage Road Lower: KCR to Harold's Cross

The proposed road layout in Section 1 will be as follows:

1) Bus lanes will be provided in both directions on Kimmage Road Lower over a length of 250m from Kimmage Cross-Roads (KCR) northwards to Ravensdale Park.

2) A southern bus gate will be provided on Kimmage Road Lower just north of the junction at Ravensdale Park, which will allow only bus lane traffic and cyclists to continue along the street in either direction. A complementary northern bus gate will be provided where Kimmage Road Lower joins Harold's Cross Park at the southwest corner. These measures will divert all through traffic away from Kimmage Road Lower and thereby provide bus priority on the main route over a length of 1.6 km, without need for road widening to provide bus lanes.

3) Local streets to the west of Kimmage Road Lower will be protected from diverted through traffic by road closure (except for cyclists and pedestrians) at the southern end of Poddle Park at the junction with Ravensdale Park.

4) Local streets to the east of Kimmage Road Lower will be protected from diverted through traffic by road closure (except for cyclists and pedestrians) on Derravaragh Road just south of the junction with Corrib Road.

5) Cycle lanes will be provided through the Kimmage Cross-Roads (KCR) junction in all directions, with protected corners and dedicated turning facilities.

6) Cycle tracks will be provided along Kimmage Road Lower north of Ravensdale Park, over the full 250m length on the eastern side, and over half the length of the western side between the KCR junction and Hazelbrook Road. A toucan signal crossing facility will be provided for pedestrians and cyclists on Kimmage Road Lower on the northern side of the junction with Hazelbrook Road.

7) A *Poddle Cycleway* will be provided with a cycle track through the open park space of *Poddle Park* from the toucan crossing on Kimmage Road Lower at Hazelbrook Road to Ravensdale Park. The cycle route will cross the road at Ravensdale Park to Poddle Park and then will follow quiet residential streets on Bangor Road and Blarney Park to Sundrive Road over a distance of approximately 1 km. The cycle route will extend along Sundrive Road for a distance of 140m east of Blarney Park with segregated cycle tracks. Then it will turn north through a small public car park, and a new connection will be provided into Mount Argus View. An elevated boardwalk structure will carry the greenway over the River Poddle at the *Stone Boat* historic feature. The route will share the local residential streets through Mount Argus View to Mount Argus Park. It will pass through the park along an existing path on the western side, which will be widened from 3m to 4m. The route will then link through the car park of Mount Argus Church to Mount Argus Road, which it will share as far as Harold's Cross.

8) A public realm improvement scheme will be provided at the village centre at the junction of Kimmage Road Lower and Sundrive Road. Some additional on-street parking will be provided on the eastern side of Kimmage Road Lower. The footpath areas will be repaved with high-quality materials and various landscape features will be provided, including new street trees.

7.2.2. Preferred Route Option in Section 2 - Harold's Cross Road

The proposed road layout in Section 2 will be as follows:

1) A bus gate at the northern end of Harold's Cross Park will restrict general traffic from the direct link between Kimmage Road Lower and Harold's Cross Road on the western side of the park. Local access for general traffic will be diverted around the southern end of Harold's Cross Park with suitable adjustments to the road layout, including a right-turn lane on Harold's Cross Road in the southbound direction.

2) On the eastern side of Harold's Cross Park, the southbound bus lane on Harold's Cross Road will be removed and replaced by cycle tracks on both sides of the street. This will connect to the Rathfarnham cycle route corridor from Terenure.

3) The existing Bus Lanes will be retained on Harold's Cross Road over a length of 400m from Harold's Cross Park to the junction at the Grand Canal.

4) Segregated cycle tracks will be provided on both sides of Harold's Cross Road over a length of 400m from Harold's Cross Park to the junction at the Grand Canal.

7.2.3. Preferred Route Option in Section 3 - Clanbrassil Street & New Street South

The proposed road layout in Section 3 will be as follows:

1) Continuous bus lanes will be provided in both directions along this 1 km long route section, with the exception of short lengths immediately downstream of the *Leonard's Corner* junction on South Circular Road. over a length of 170m in the northbound direction, and 70m in the southbound direction.

2) Segregated cycle tracks will be provided in both directions along the full length.

7.3 Scheme Changes Summary

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

1. A southern bus gate is proposed on Kimmage Road Lower at the junction with Ravensdale Park instead of at Sundrive Cross further north.
2. The existing road layout is retained along Kimmage Road Lower north of the junction with Ravensdale Park which will become a quiet street with the diversion of through traffic to other routes.
3. An additional alternative Poddle Cycleway is included along quiet streets to the west of Kimmage Road Lower. This will include a new shared pedestrian and cycle link at the proposed Stone Boat Boardwalk overhanging the River Poddle between Sundrive Road and Mount Argus.
4. Public realm enhancement is proposed with a new median island in the centre of Kimmage Road Lower on either side of the Corrib Road junction with new street trees.
5. Public realm enhancements are proposed at Sundrive Cross with new street trees and an on-street parking bay on the eastern side of Kimmage Road Lower south of Sundrive Cross.
6. The junction of Harold's Cross Road and Kenilworth Park will be modified to provide for the southbound right-turn as an alternative route to Kimmage instead of the direct route from Harold's Cross Park where there will be a bus gate.
7. Cycle tracks are proposed along Harold's Cross Road through some localised road widening into adjoining properties where necessary to provide the required width. A short parking layby will be provided on the eastern side of Harold's Cross Road.
8. A new public car park will be provided at the front of Our Lady's Hospice to replace on-street parking spaces that will be removed nearby.
9. New trees will be planted on Harold's Cross Road at the junction with Mount Drummond Avenue, with some additional parking spaces.
10. At Robert Emmett Bridge over the Grand Canal, new footbridges will be provided on both sides of the existing concrete arch bridge to allow the road space on the existing bridge to be allocated to bus lanes in both directions.
11. Signal-controlled priority will be provided for buses in the north-south and east-west directions through the Leonard's Corner junction between Clanbrassil Street and South Circular Road.
12. Cycle tracks will be provided along Clanbrassil Street and New Street South instead of the alternative route on quiet streets through Portobello to the east.
13. Almost all existing street trees in the median along Clanbrassil Street and New Street South will be retained.

7.4 Route Summary

The Kimmage to City Centre Core Bus Corridor is approximately 3.7 km long from end to end.

Table 7-1: Bus Priority Comparison

Bus Priority	Existing (km)	Proposed (km)
Inbound Bus Lane	0.89	1.5
Inbound Signal Controlled Priority	0	0.2
Inbound Bus Gate section	0	2.0
Outbound Bus Lane	0.24	1.6
Outbound Signal Controlled Priority	0	0.1
Outbound Bus Gate section	0	2.0
Total Bus Priority (both directions)	1.13	**7.4 (+550%)**
Physical priority	15%	42%
Virtual Bus Priority	0%	58%

Bus priority measures are proposed at the following locations:

Outbound direction bus priority:

- Signal controlled priority section at Clanbrassil Street Upper from Leonard's Corner junction for 100m length.
- Bus gate section on Kimmage Road Lower from the junction at Harold's Cross Road to the junction at Ravensdale Park for a length of 2km.

Inbound direction bus priority:

- Bus gate section on Kimmage Road Lower from the junction at Ravensdale Park to the junction at Harold's Cross Road for a length of 2km.
- Signal controlled priority section at Clanbrassil Street Lower from Leonard's Corner junction for 200m length.

Table 7-2: Cycle Facility Comparison

Cycle Facilities	Existing (km)	Proposed (km)
Cycle Tracks – Segregated		
Inbound	0	1.75
Outbound	0	1.75
Cycle Lanes – Non-segregated		
Inbound	2.5	2.25
Outbound	3.1	2.25
Total Cycle Facilities (both directions)	**5.6**	**8.0 (43+%)**

7.5 Scheme Benefits

7.5.1. 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 would help to realise the objectives of the scheme as set out in Section 2.4 of this report.

Bus priority is achieved along the Proposed Scheme through a combination of dedicated bus lanes and bus gate controls over a 2km long section, plus signal-controlled propriety at Leonard's Corner junction (South Circular Road). This will reduce bus journey times and improve reliability by largely removing interaction between bus traffic and general traffic.

7.5.2. Walking & Cycling

The Proposed Scheme will provide considerable benefits for cyclists and pedestrians.

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

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

A number of public realm upgrades are proposed at focal points along the route such as Sundrive Cross in Kimmage Village, including high quality hard and soft landscaping and street furniture to be provided, where practicable, in areas of high activity to contribute towards a safer, more attractive environment of pedestrians. The scheme would also provide improved pedestrian crossing facilities along the route.

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