Project

Rathfarnham to City Centre Core Bus Corridor

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EXECUTIVE SUMMARY

This report presents the route options assessment work undertaken for the Rathfarnham to Christchurch Core Bus Corridor (CBC) scheme and makes a recommendation on a preferred route.

Core Bus Network

The proposed scheme forms part of the planned Core Bus Network which was identified for the region in the Greater Dublin Area (GDA) Transport Strategy 2016-2035. The CBN is set out as representing 'the most important bus routes in the region, and are generally characterised by a high frequency of bus services, high passenger volumes and with significant trip attractors located along the route'.

The Rathfarnham – City Centre corridor generally aligns with the Marley Park – Rathmines corridor as one of the 16 radial bus corridors forming the Core Bus Network: which also comprises of the following:

- Clontarf – East Wall;
- M1/ M50 – Dublin Port Tunnel;
- Clongriffin – Artane – Fairview;
- Swords – Airport – Drumcondra;
- Ballymun – Phibsboro;
- Finglas – Phibsboro;
- Blanchardstown – Cabra – Stoneybatter;
- Lucan – Palmerstown – Kilmainham;
- Liffey Valley – Ballyfermot;
- N7/Clondalkin – Crumlin;
- Tallaght – Walkinstown – Crumlin;
- Tallaght – Rathfarnham – Terenure;
- Marley Park – Rathmines;
- Bray/N11 – UCD – Donnybrook;

- Dun Laoghaire – Blackrock – Ballsbridge; and
- Ringsend – Pearse Street.

CBC Scheme Objectives

The following scheme specific objectives have been set for the Rathfarnham CBC scheme:

- Deliver the on-street infrastructure necessary to provide continuous priority for bus movements along the Core Bus Corridor. This will mean enhanced bus lane provision on the corridor, removing current delays in relevant locations and enabling the bus to provide a faster alternative to car traffic along the route, making bus transport a more attractive alternative for road users. It will also make the bus system more efficient, as faster bus journeys means that more people can be moved with the same level of vehicle and driver resources; and
- Provide any cycle facilities along the route that are required under the Greater Dublin Area Cycle Network Plan (published by the NTA, 2013) to the target Quality of Service(s) specified therein and to give consideration to further providing cycle facilities along sections of the route where they may be not expressly required under the Cycle Network Plan.

The Study Area

The proposed Rathfarnham to City Centre Core Bus Corridor (CBC) will serve a transport corridor with several key destinations along, or close to, the route. These include Rathfarnham Castle and numerous education facilities as well as the villages of Rathfarnham, Terenure, Rathgar & Rathmines.

The corridor is already a busy transport artery, with additional capacity required to cater for the travel growth predicted. While a BRT solution may serve a portion of the route in the long term, Core Bus services can provide an attractive primary public transport service for the short and medium term and will act as a feeder to widen the BRT catchment in the long term.

It is not practical that the proposed scheme would directly serve all destinations within the broader corridor, and maintain a core scheme objective of journey time reduction and

reliability. As such, the introduction of proposed scheme will also result in a rationalisation of the wider bus network and service provision within the corridor. This network rationalisation will both complement the proposed scheme and improve overall transport accessibility and level of service provision for existing and new public transport users which include those using other Core Bus Corridors as identified in the GDA Transport Strategy (2016 – 2035). The study area considered, and the subsections into which it was divided is illustrated in Figure (i) below.

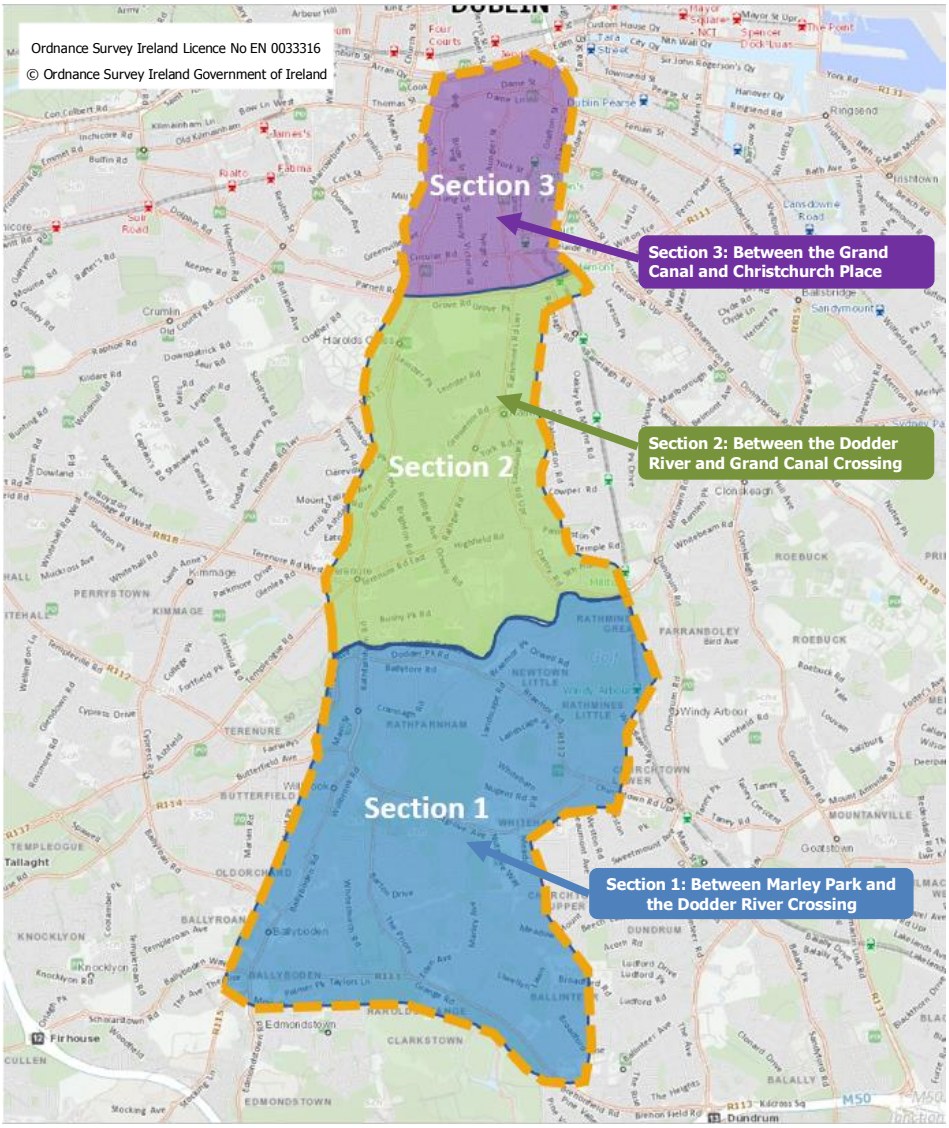

Figure (i): Study Area Sections

Route Options Assessment Methodology

A two-stage assessment was adopted:

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

At the start of the Stage 1 assessment, an initial 'spiders web' of potential route options that could accommodate a CBC was identified for each study area section. Route options considered in the Stage 1 assessment are illustrated in **Figure (ii)** below.

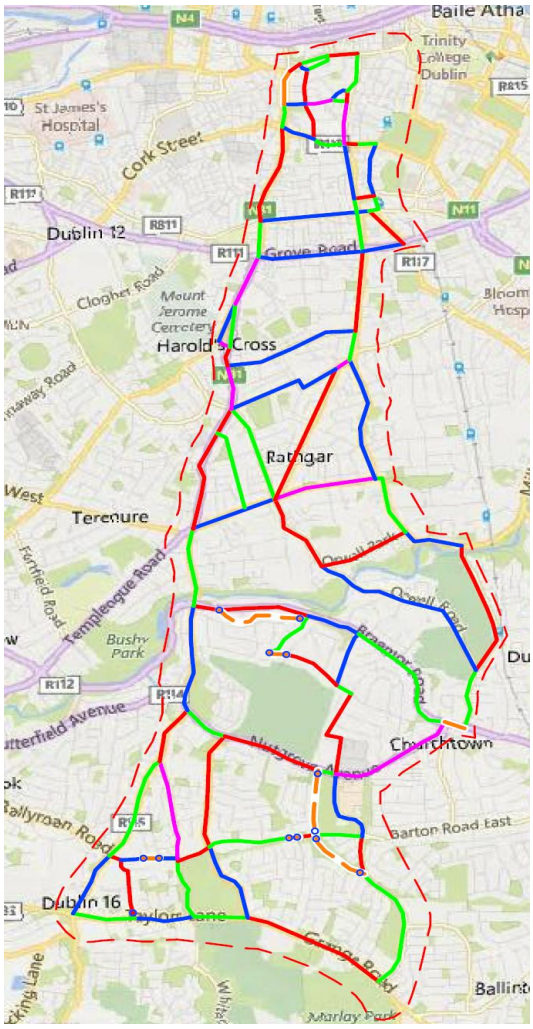

Figure (ii): Spiders Web of Route Options

This was narrowed down using a high level qualitative method based on professional judgement and a general appreciation for existing physical conditions/constraints within the study area. This exercise examined and assessed technically feasible route options, based upon the distinct project specific objectives. In addition to being assessed on their individual merits, routes were also assessed relative to each other enabling some routes to be ruled out if more suitable alternatives existed.

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

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

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

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

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

An appreciation of the constraints and opportunities within the study area, as well as the defined project objectives, led to the establishment of project-specific route options assessment sub-criteria under each of the 5 main criteria listed above. Table (i) presents a summary of the CBC assessment criteria and associated sub criteria used as part of the Stage 2 detailed route options assessment process. The assessment criteria are described further in Section 4 of this report.

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

Table (i): MCA Assessment Criteria

Options Assessment

The routes assessed in the MCA for each of the study area's three sections are summarised in the following paragraphs. Full details of the assessment are presented and discussed in Sections 5,6 & 7 of this report, with the full assessment presented in **Appendix A and Appendix B**.

Study Area Section 1: Grange Road/Nutgrove Avenue junction to Dodder Park Road/Rathfarnham Road junction (Pearse Bridge)

The Core Bus Network, as defined in the 'Transport Strategy for the Greater Dublin Area 2016 – 2035', is characterised by routes with a high frequency of bus services, high passenger volumes and with significant trip attractors along the route. It is along these routes where the demand for travel necessitates and justifies a greater level of infrastructural investment in order to minimise delays to these services.

Therefore, the junction between Nutgrove Avenue & Grange Road represents a natural starting point at southern extent of the Rathfarnham to City Centre CBC, as the anticipated travel demand between this point and the City Centre would justify the level of infrastructure proposed as part of the Transport Strategy for the GDA.

Following the 'Stage 1' sift for the Section 1 study area, the remaining feasible route options were combined to form 3 number cohesive routes as follows (Figure (iii)): -

- Option SA1 via Grange Road, Rathfarnham Road;
- Option SA2 via Grange Road, Rathfarnham Road (Parallel cycle route via Rathfarnham Wood, Castleside Drive); and
- Option SB1 via Nutgrove Avenue, Nutgrove Way, Braemor Road, Dodder Park Road.

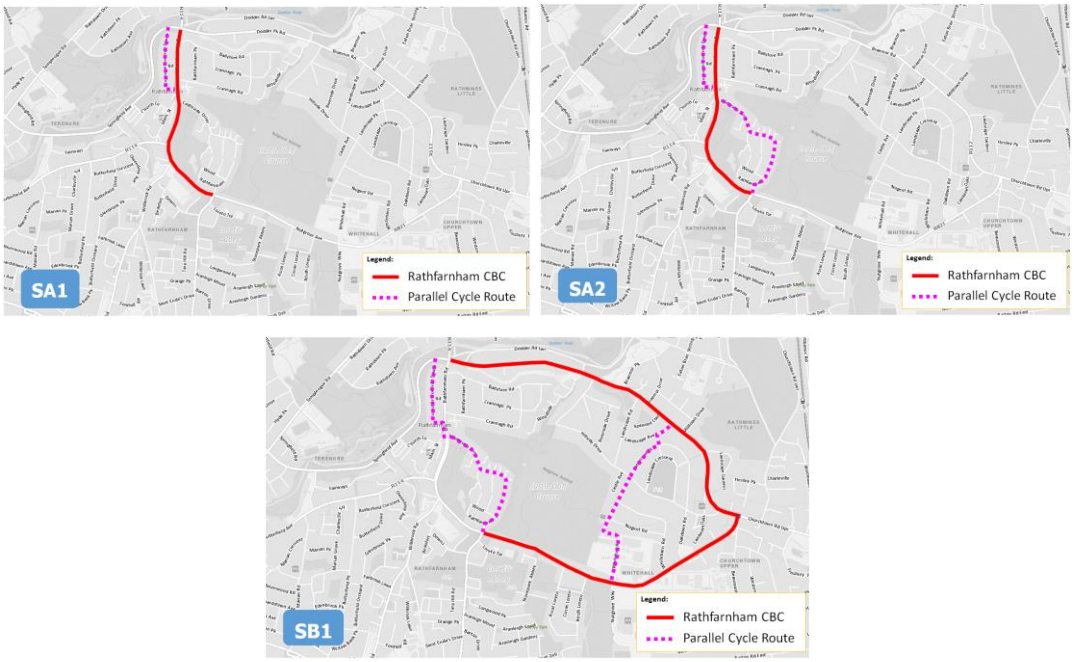

Figure (iii): Section 1 Route Options

The results of the assessment reveal that option SA1 offers more benefits over the other two options under assessment. Option SA1 is therefore the preferred route for Section 1 for the following principal reasons: -

- It delivers continuous bus priority in both directions for the entire 1.3km route. The directness of the route also lending itself to shorter journey times;
- Grange Road is one of the poorest performing sections of the existing Quality Bus Network. The proposed interventions at the Nutgrove Avenue junction will deliver enhanced bus services for this catchment which includes residential, leisure, commercial and educational land uses which are heavily reliant on buses to service its public transport needs;
- The scheme will generally provide segregated bus facilities in addition to the existing traffic lanes. However, reallocation of traffic lanes to bus lanes may be necessary at junctions at the expense of private vehicular traffic capacity. Bus priority may also impact on left turning capacity at junctions; and
- This route avoids impacting on protected structures/properties which reduces planning risk, scheme costs and construction disruption.

Study Area Section 2: Rathfarnham Road/Dodder Park Road/R112 junction (Pearse Bridge) to Rathmines Road Lower/Grove Road (La Touche Bridge)

Following the 'Stage 1' sift for the Section 2 study area, the remaining feasible route options were combined to form 7 number cohesive routes as follows (**Figure (iv)**): -

- Option CB1 via Rathfarnham Road – Rathmines Road (Inbound traffic only on Rathgar Road, Outbound traffic only Rathmines Road);
- Option CB2 via Rathfarnham Road – Rathmines Road (Inbound traffic only on Rathgar and Rathmines Road;
- Option CB3 via Rathfarnham Road – Rathmines Road (Outbound traffic only on Rathgar and Rathmines Road);
- Option CB4 via Rathfarnham Road – Rathmines Road Lower (Parallel cycle route via Charleville Road, Grosvenor Lodge and Cathal Brugha Barracks);
- Option CB5 via Rathfarnham Road – Rathmines Road Lower. A route option via Rathfarnham Road, Terenure Road East, Rathgar Road, Rathmines Road Lower (Inbound bus lane provided on Rathmines Road Lower from Rathmines Road Upper to Military road junction and outbound bus lane provided from Grove Road to Military Road junction);
- Option CB6 via Rathfarnham Road – Rathmines Road Lower (Outbound traffic only on Rathmines Road) (CB6) and;
- Option CB7 via Rathfarnham Road – Rathmines Road Lower (Bus lanes via Highfield Road/Rathmines Road Upper) Parallel cycle route via Rathgar Road Charleville Road, Grosvenor Lodge and Cathal Brugha Barracks;

Figure (iv): Section 2 Route Options

Based on the assessment undertaken, option CB4 offers more benefits over the other six options under assessment. Option CB4 is therefore the preferred route for Section 2 for the following reasons: -

- It will provide the shortest inbound and outbound journey times;
- It is ranked one of the highest in terms of Road Safety (No. of turning movements & junctions);
- It provides segregated bus facilities for the majority of the bus corridor;
- It provides segregated cycle facilities for the majority of its route, this includes parallel segregated cycle facilities; and
- Two-way general traffic maintained on Rathgar Road and Rathmines Road Lower.

<u>Study Area Section 3: Richmond Street (La Touche Bridge) to Wexford Street/Cuffe Street/Kevin Street Lower junction.</u>

Following the 'Stage 1' sift for the Section 3 study area, the remaining feasible route options were combined to form 2 number cohesive routes as follows (Figure (v)): -

- Option CC1 via Richmond Street, Camden Street and Wexford Street;
- Option CC2 via Richmond Street, South Circular Road, Clanbrassil Street and New Street South.

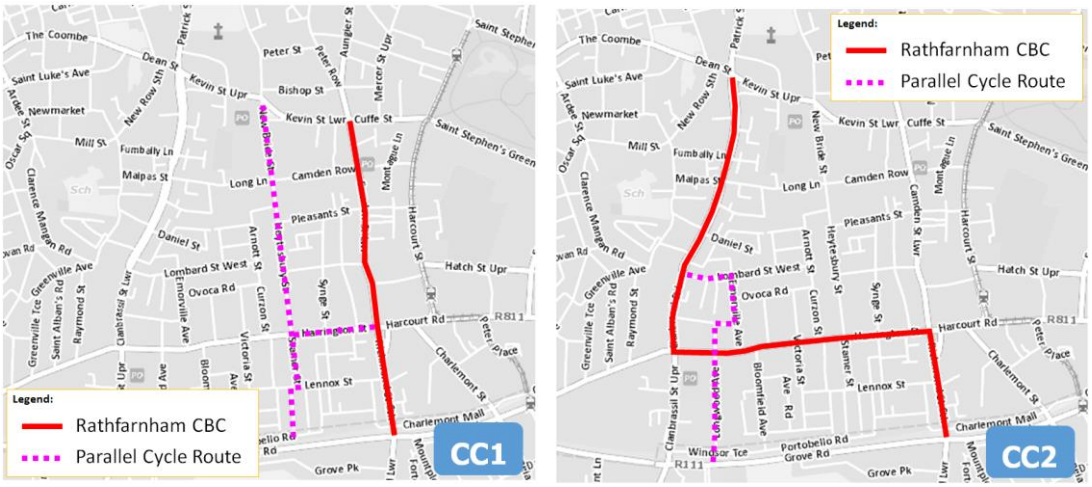

Figure (v): Section 3 Route Options

Based on the assessment undertaken, option CC1 offers more benefits over the other option under assessment. Option CC1 is therefore preferred route for Section 3 for the following reasons: -

- Continuous bus priority is provided in both directions for the the majority of the route delivering increased reliability and shorter journey times. The directness of the route also lending itself to shorter journey times to the destination of the Christchurch area;
- The route avoids impacting on protected structures/properties which reduces planning risk, scheme costs and construction disruption;
- The environmental impact of delivering the scheme would be minimal as the proposals could generally be delivered within the existing road reservation; and
- The route provides parallel segregated cycle facilities on Heytesbury Street which aligns with the GDA Cycle Network Plan proposal for the Primary Cycle Route 9.

The Emerging Preferred Route

Based on the findings of the route options assessment process, an emerging preferred route for the CBC scheme has been identified, as presented in Figure (vi) below, and is described in the following paragraphs.

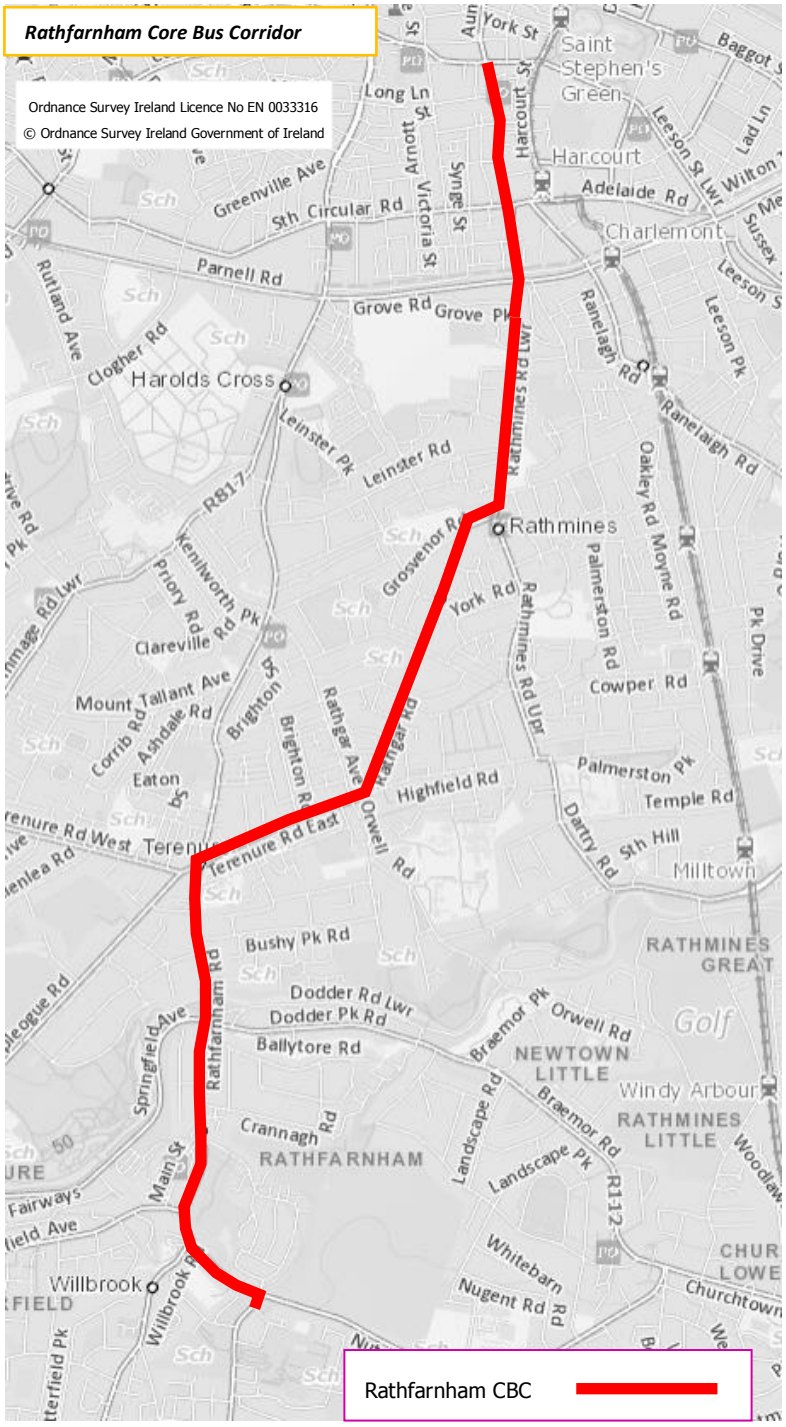

Figure (vi1): Rathfarnham to City Centre Core Bus Corridor Emerging Preferred Route

The emerging preferred CBC scheme commences/terminates on Grange Road at Loreto Terrace to the south of Grange Road/Nutgrove Avenue junction. To facilitate bus priority (in both directions) a new left turn slip lane will be provided on Grange Road/Nutgrove Avenue for inbound bus only traffic travelling from Grange Road.

The provision of bus lanes and cycle lanes on Grange Road between Nutgrove Avenue junction and Willbrook Road junction will require road widening to the north into Rathfarnham Castle grounds.

Adjustments to the Grange Road/Willbrook Road junction layout would be required to facilitate bus lanes on approach to the junction. In the inbound direction, the left turn lane onto Willbrook Road will be reallocated to a bus lane to provide a bus priority up to the stop line on approach to the junction on Grange Road. The 'ahead' lane will be replaced by a combined straight & left lane. In the outbound direction, the 'ahead' lane will be reallocated to a bus lane and the right turning lane onto Willbrook Road will be will be replaced by a combined straight & right lane. Cycle tracks (in both directions) will also be provided between these two signal controlled junctions aligning with Secondary route 10B/SO4, as identified in the CNP.

Continuous bus priority in both directions will be facilitated along Grange Road between the Willbrook Road/Grange Road junction and the Butterfield Avenue/Rathfarnham Road junction. In the outbound direction, the 'nearside ahead' lane on Rathfarnham Road will be reallocated to a bus lane to provide a bus lane up to the stop line on approach to the junction. Cycle lanes (in both directions) will also be provided between these two signal controlled junctions aligning with Primary route 10 as identified in the CNP.

Continuous bus priority in both directions will be facilitated along the Rathfarnham Road between the Butterfield Avenue/Rathfarnham Road junction and Rathfarnham Road/Main Street/Castleside Drive junction. Cycle lanes (in both directions) will also be provided between these two signal controlled junctions aligning with Primary route 10 as identified in the CNP. The CBC proposals along this section can be achieved within the existing road reservation.

Segregated bus facilities on Rathfarnham Road between Main Street and Dodder Park Road will require land acquisition of a portion of front gardens from residential properties

on the east side of the road. It is proposed to provide a parallel cycle route (mixed/shared street) via Brookvale Downs to connect with the Dodder Greenway.

Upgrades to the Dodder Park Road/Rathfarnham Road junction are required in the outbound direction. The southbound 'ahead' lane will be replaced by a combined straight & left lane. Left turning vehicles from Rathfarnham Road to Dodder Park Road will have to yield for buses in the inside lane. The existing outbound cycle lane will be removed. A shared pedestrian/cycle facility is to be provided to the west of the junction to create a link to the proposed two-way cycle bridge on the western side of Pearse Bridge.

In order to overcome the pinch point at Pearse Bridge and to provide continuous bus facilities in conjunction with cycle facilities, a 3m wide two-way cycle bridge on the west side of the bridge is proposed. To maintain the same cross section (which includes bus lanes and cycle lanes – 19m wide) to the north of Pearse Bridge land acquisition will be required from the front curtilages of a number of residential properties.

The CBC service will run along Rathfarnham Road between the Dodder Park/ Rathfarnham Road/R112 junction and Terenure Road East/Rathfarnham Road (Terenure Village). Continuous bus priority in both directions will be facilitated along the Rathfarnham Road between the Dodder Park Road/Rathfarnham Road junction and Terenure Road East/Rathfarnham Road (Terenure Village).

Adjustments to the Rathfarnham Road/Bushy Park Road junction layout are required to facilitate an inbound bus lane on approach to the junction. In the outbound direction, the 'ahead' traffic lane will be reallocated to a bus lane to provide a bus lane to the stop line on approach to the junction at Rathdown Park. The right turn lane onto Rathdown Park will also be replaced by a combined straight & right lane.

Adjustments to the Rathfarnham Road/Terenure North/Terenure Road East junction layout would be required to facilitate bus lanes on approach to the junction and to facilitate the right turn for buses onto Terenure Road East. It will not be possible to accommodate an inbound bus lane bus lane for the first 100m of Terenure Road East due to the proximity of adjacent protected properties and as such the bus lane may need to share with general traffic.

Cycle facilities will also be provided along the Rathfarnham Road route to align with Primary Route 10 as identified within the CNP.

Continuous bus priority in both directions will be facilitated along the remainder of Terenure Road East, Rathgar Road, and Rathmines Road Lower to the crossing at the Grand Canal at La Touche Bridge. The following junctions:

- Rathgar Road/Leicester Avenue/Frankfort Avenue junction; Rathmines Road Lower/Castlewood Avenue junction;
- Rathmines Road Lower/Leinster Road junction; and
- Rathmines Road Lower/Grove Road/Richmond Street junction,

will all need their nearside traffic lanes to be reallocated to bus lanes (due to the proximity of adjacent properties) and as such, left turning vehicles will now need to yield for buses in the nearside lane.

Cycle facilities will also be provided along the Terenure Road East and Rathgar Road CBC route to align with Primary Route 10/SO3 as identified within the CNP.

Through Rathmines Village, cyclists will be catered for via parallel cycle routes as proposed via Charleville Road, Grosvenor Lodge and Cathal Brugha Barracks. Mixed or shared street cycle facilities are feasible along Charleville Place and Grosvenor Lodge due to width constraints, low traffic volumes and low vehicle speeds. This cycle route option requires land acquisition from the edge/perimeter of Cathal Brugha Barracks Football pitch. The proposed cycle route will travel through Cathal Brugha Barracks along an existing internal roadway (10m width at pinch point), however there will be no requirement for the land acquisition of buildings which would compromise architectural heritage. Permissive access will need to be arranged through the barracks lands. A new cycle bridge is also proposed, crossing the Grand Canal to Martin Street. A 30km/h zone is proposed along Rathmines Road Lower between Grosvenor Road and Grove Road to provide a safer environment for cyclists who choose to use the bus lanes on Rathmines Road Lower instead of the segregated parallel cycle route.

The CBC service will run in both directions between Richmond Street/Rathmines Road Lower junction and Wexford Street/Cuffe Street/Kevin Street Lower junction.

It is proposed to provide continuous bus priority in both directions along the route with the exception of a 75m section of Richmond Street and a 60m section of Wexford Street where segregated bus priority in the southbound direction is not achievable. The existing contra-flow bus lane on Richmond Street will continue to be used.

This route option comprises of Secondary Cycle Route 10 along Camden Street/George's Street, Primary Route 7 along Dame Street and Primary Route 9 along Heytesbury Street from the GDA Cycle Network Plan. Cyclists will be catered for via a parallel cycle route via Martin Street/Heytesbury Street/Bride Street. Due to width constraints, a mixed or shared street will be only feasible along the Martin Street. The proposed construction of a parallel cycle route on Heytesbury Street/Bride Street aligns entirely with Primary Route 9 and will connect with the new bridge proposed in Section 2. Segregated cycle facilities are also proposed on Harrington Street to link the Clonskeagh to City Centre cycle scheme with the parallel cycle route.

Concept Scheme Design Summary

Cost Estimate

A high-level cost estimate has been prepared based on the concept scheme design and a number of assumptions regarding the scheme details. As such the proposed Rathfarnham to City Centre Core Bus Corridor scheme infrastructure is anticipated to be in the region of €40-48 million excluding VAT.

Journey Time Benefits

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. A review of the available comparable journey time data along the route demonstrates that issues currently being experienced by buses could be addressed by the proposed scheme.

To create an accurate journey time comparison, an amalgamation of the existing 15 (Ballycullen Rd. towards Clongriffin) and 16 (Ballinteer towards Dublin Airport) Dublin Bus Services journey times was prepared. The section of the 16 bus route under consideration is from the existing inbound bus stop 1329 'St. Mary's Boys School' (on Grange Road) to bus stop 1336 'Fergus Road' (on Rathfarnham Road) and from the 15 bus route the existing inbound bus stop 1163 'Olney Crescent' (on Terenure Place) to bus stop 1354 'Peter Row'. In the outbound direction, the section of the 15 bus route under consideration is from the existing bus stop 7579 'Cuffe Street' to bus stop 1299 'Terenure Library' (on Terenure Place) and from the 16 bus route the existing outbound bus stop 1299 'Fergus Road' (on Rathfarnham Road) to bus stop 1305 'Willbrook Road'.

Through the provision of increased bus priority infrastructure, the proposed scheme would improve both the overall journey times for buses along the route and the journey time reliability. A review of available journey time data along the route illustrates the issues that will be largely addressed by the proposed scheme.

Currently, journey times for the combined 15 & 16 bus routes between Grange Road/Nutgrove Avenue junction and Wexford Street/Cuffe Street junction during the core hours of bus operation (07:00 – 19:00) are observed to vary between 18 minutes and 26 minutes in the inbound direction and between 14 minutes and 28 minutes in the outbound

direction (see **Figure 8.2** and **Figure 8.3** for further detail). The variation in journey times is most likely due to the lack of bus priority on large sections of the route and subsequent turbulence caused by traffic congestion, as well as long passenger boarding times at stops (due to requirements for driver interaction).

As such, the journey times outside of these hours, when traffic volumes and passenger volumes are lower, are more reflective of the journey times which could be achieved through a combination of the proposed bus priority infrastructure improvements, better enforcement of bus lanes and the introduction of cashless fares. In other words, the proposed infrastructure would effectively create an uncongested network for buses.

Currently, after 19:00 in the evening, the inbound journey time is observed to reduce to between 14 minutes and 18 minutes. Similarly, outbound journey times are seen to reduce to between 13 minutes and 21 minutes. For both inbound and outbound journey times after 19:00, the overall journey time is seen to drop by up to 8 minutes in the inbound direction and 7 minutes with the variance between the upper and lower limits halved for each direction.

Similarly, comparing the average speed of buses in the peak and off-peak hours it can be seen that the average speed for buses along the route is consistently higher at night, in uncongested conditions, compared to the morning peak hour where congestion slows the progression of buses (see **Figure 8.4** and **Figure 8.5** for further detail). This further illustrates the benefits improved bus priority will bring to buses operating along the proposed route.

The analysis of the average speed data for the 15 & 16 Dublin Bus Services suggests that for both inbound and outbound bus services the delays (slower speeds) are being experienced at/on approaches to the following junctions: -

- Terenure Road East/Rathfarnham Road junction (Terenure Village);
- Leinster Road/Rathmines Road Lower junction;
- Camden Street Upper/Charlotte Way junction;
- Rathgar Road/Grosvenor Road/Rathmines Road Lower junction (Rathmines Garda Station); and
- Terenure Road East/Rathgar Road/Orwell Road junction (Rathgar Village);

The CBC proposals at these aforementioned junctions include the provision of new/extended bus lanes up to the stop lines, in addition to a reduction in the length of the lanes where buses must share the traffic lane with general vehicular traffic.

In conclusion, the provision of new and extended bus lanes, with improved bus priority along the proposed CBC route, in addition to the introduction of cashless fares, would enable buses to travel with improved journey times and greater journey time reliability. The extent of these benefits will be confirmed and quantified at the next design stage.

Next Steps

This report has identified an emerging preferred route for the bus infrastructure along this Core Bus Corridor for which a concept design has been developed.

The next project stage (The development of a Preliminary Design) will further refine and update the initial concept design along the route. Further account will be taken of likely public transport service levels, particularly the bus service patterns and any changes to the overall bus network which may arise from the separate bus network review process. The proposals will be amended, if and as required, to integrate any resultant changes. The Preliminary Design will define the final practically achievable scheme for the CBC, taking into account more detailed studies of constraints, impacts and environmental assessment required at a local level.

Prior to finalisation of the CBC scheme design, a public consultation process will be undertaken, with inputs and feedback received incorporated where practical and appropriate to do so.

This Preliminary Design will form the basis of the planning consent process for the scheme, which will require a development consent application to be made directly to An Bord Pleanala, due to the nature and extent of the proposed works.

1.0 INTRODUCTION AND BACKGROUND

1.1 Preamble

1.1.1 This report presents the principle findings of the detailed route options assessment work undertaken for the Rathfarnham to City Centre Core Bus Corridor scheme (hereafter referred to as the 'proposed scheme') following which a recommendation on a preferred route is made.

1.1.2 This route options assessment report describes the detailed assessment of potential viable route options within the study area identified for the proposed scheme against established assessment criteria

1.2 Report Structure

1.2.1 The route option assessment process and corresponding report structure are detailed below: -

- Section 1 – This initial section provides an introduction and background to the planned Core Bus Network;
- Section 2 – The strategic transport policy context which has led to the identification of a need for the delivery of the Rathfarnham CBC is outlined. The objectives for the proposed scheme are presented;
- Section 3 – The proposed Study Area and associated three sub-sections are described identifying key constraints and opportunities, the integration of the Rathfarnham CBC with the wider public transport network and its compatibility with other road users;
- Section 4 – The structure and methodology for identifying and assessing the feasibility of the various route options is discussed in this section including:-
  - the identification of study area sections where practical route options were considered and presentation of the 'spiders web' network of potential route options;

- the selection and determination of initial criteria for screening and assessing technically feasible route options, based on distinct, project-specific objectives; and
- the definition of assessment criteria.

- Section 5 – details the route option assessment for Section 1 of the Study Area;
- Section 6 – details the route option assessment for Section 2 of the Study Area;
- Section 7 – details the route option assessment for Section 3 of the Study Area;
- Section 8 – The preferred route for the proposed scheme is identified and described, the cost estimate for the proposed scheme is outlined and the journey time benefits are defined; and
- Section 9 - The next steps for the project are set out in this section.

1.3 Core Bus Network

1.3.1 One of the principal additions to the latest (2016 – 2035) NTA Transport Strategy for the GDA was the introduction of a 'Core Bus Network' (CBN) identified for the region. The CBN is set out as representing 'the most important bus routes in the region, and are generally characterised by a high frequency of bus services, high passenger volumes and with significant trip attractors located along the route. The identified core network comprises sixteen radial bus corridors, three orbital bus corridors and six regional bus corridors. While this network represents the core high frequency bus routes, it is supplemented by other bus services operating on lower frequency routes and by local buses running on other routes.

1.3.2 The Core Bus Network will serve significant origins and destinations in the Dublin Metropolitan Area and throughout the GDA, particularly those locations not directly served by rail and light rail. It will also provide greater opportunity for reliable and convenient interchange with these services.

1.3.3 In order to ensure an efficient, reliable, and effective bus system, it is intended, as part of the Strategy, to develop the Core Bus Network to achieve, as far as practicable, continuous priority for bus movement on the portions of the Core Bus Network within the Metropolitan Area. This will mean enhanced bus lane provision on these corridors, removing current delays on the bus network in the relevant locations and enabling the bus to provide a faster alternative to car traffic along these routes, making bus transport a more attractive alternative for road users. It will also make the overall bus system more efficient, as faster bus journeys means that more people can be moved with the same level of vehicle and driver resources'.

1.3.4 The Rathfarnham – City Centre corridor generally aligns with the Marley Park – Rathmines corridor as one of the 16 radial bus corridors forming the Core Bus Network: which also comprises of the following:

- Clontarf – East Wall
- M1/ M50 – Dublin Port Tunnel
- Clongriffin – Artane – Fairview
- Swords – Airport – Drumcondra
- Ballymun – Phibsboro
- Finglas – Phibsboro
- Blanchardstown – Cabra – Stoneybatter
- Liffey Valley – Ballyfermot
- Tallaght – Walkinstown – Crumlin
- Tallaght – Rathfarnham – Terenure
- Bray/N11 – UCD – Donnybrook
- Dun Laoghaire – Blackrock – Ballsbridge
- Ringsend – Pearse Street
- Lucan – Palmerstown – Kilmainham

Figure 1.1: 2035 Core Bus Network - Radial Corridors
(Source NTA Transport Strategy for the GDA 2016 – 2035)

1.3.5 The combined Core Bus Network (CBN) comprising, Radial, Orbital & Regional corridors as well as the 2035 Bus Rapid Transit Network is illustrated in Figure 1.2.

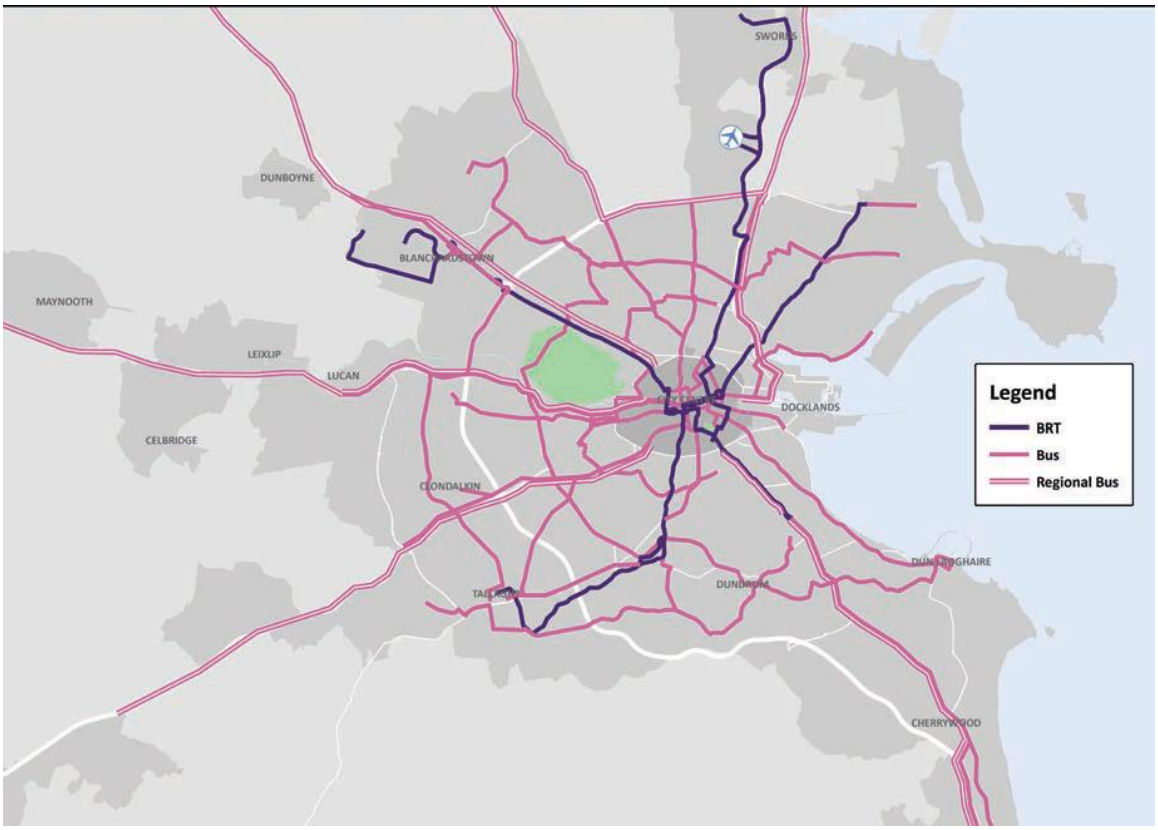

Figure 1.2: 2035 Core Bus Network

(Source NTA Transport Strategy for the GDA 2016 – 2035)

1.3.6 The brief for the subject study has been developed as a result of the identification of the CBN in the Strategy. Whilst, the study focuses on the Rathfarnham – City Centre radial route, potential interchange with orbital corridors has also been considered.

2.0 TRANSPORT PLANNING AND POLICY CONTEXT

2.1 Introduction

2.1.1 This section of the report will provide an overview of the national, regional, and local transportation policy relevant to the Rathfarnham CBC scheme. These documents provide the policy framework for the development of an improved bus corridor between Rathfarnham and the City Centre. Relevant extracts from the documents are outlined in this section and commentary provided where necessary.

2.2 Greater Dublin Area Transport Strategy 2016-2035

2.2.1 The GDA Transport Strategy 2016-2035 outlines transport vision and objectives to '*contribute to the economic, social and cultural progress of the Greater Dublin Area by providing for the efficient, effective and sustainable movement of people and goods'*. The current strategy was adopted in April 2016 as an update to the original 2012 draft strategy. One of the principal amendments to the Strategy was the introduction of a 'Core Bus Network' (CBN) which was identified for the region and has been discussed previously in **Section 1.3** above.

2.2.2 The *Outer Orbital Movement* Study & the *Inner Orbital Study* (both published by the NTA in September 2015) informed the development of the updated Transport Strategy and focussed on distinct areas with a view to determining the most appropriate form of transport 'solution' to serve these areas.

2.2.3 The Outer Orbital Movement Study investigated the connection of 5 key centres within the Dublin area namely; Swords, Blanchardstown, Tallaght, Dundrum & Dun Laoghaire. The connections between Dundrum and Dun Laoghaire and Dundrum to Tallaght are of most relevance to the Rathfarnham CBC with a number of options considered as part of the Outer Orbital study traversing the subject study area.

2.2.4 The Inner Orbital Study focussed on a study area between the M50 and the City Centre, from Finglas to Rathmines, forming a half ring shape around Dublin City Centre. It was recommended that 2 additional orbital bus routes be introduced

to serve the study area as shown in **Figure 2.1** below. This includes the provision of a 'long orbital bus route' from Churchtown/ Rathfarnham to Finglas and from Rathmines to Glasnevin.

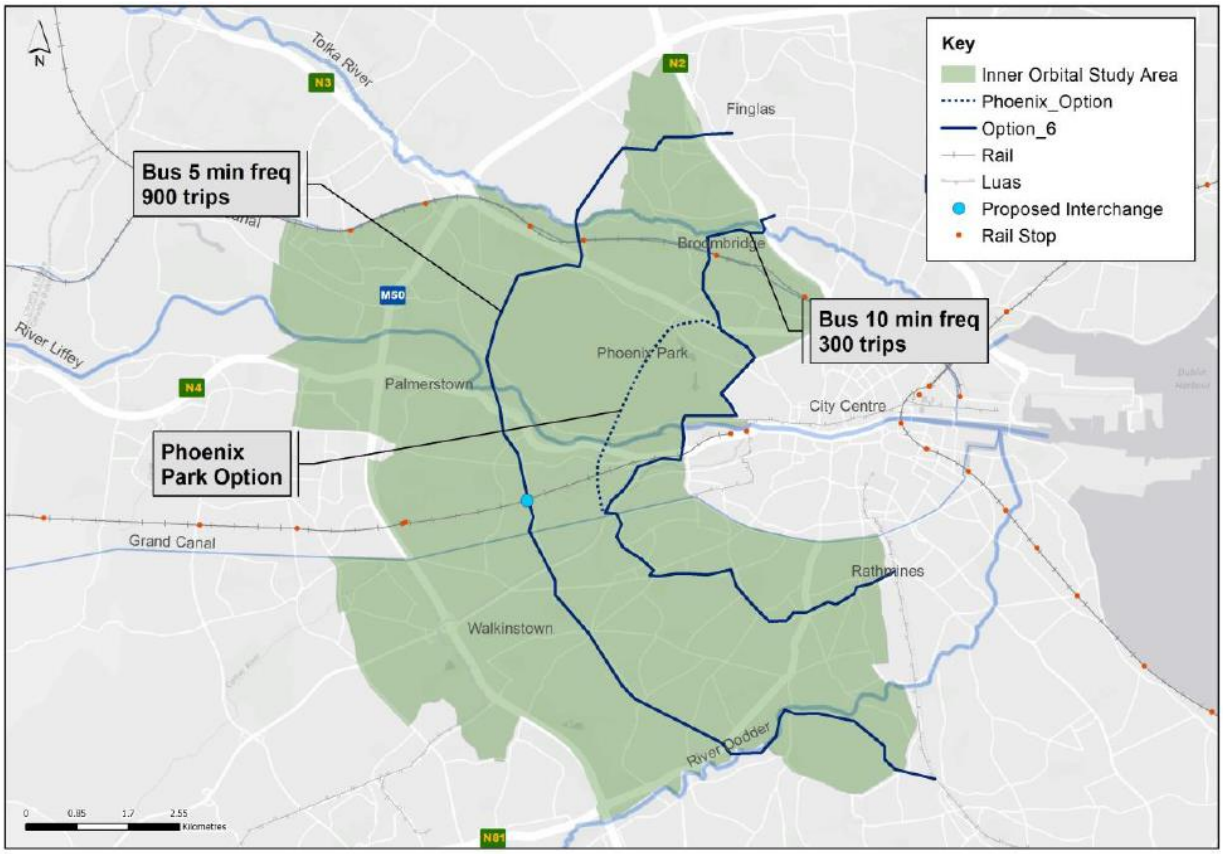

Figure 2.1: Inner Orbital Study Area and Proposed Orbital Bus Routes

2.3 Integrated Implementation Plan 2013 – 2018

2.3.1 The NTA published the Integrated Implementation Plan 2013 – 2018 in February 2014. This report sets out the short-term infrastructure investment programme for the Greater Dublin Area for a five-year period up to 2018 including in investment in existing bus services.

2.3.2 The proposals in relation to Bus investment are encompassed in four investment themes:

1) Bus Fleet Investment;

2) Bus Stop and Shelter Provision;

3) General Bus Network Improvements; and

4) Bus Rapid Transit Schemes.

2.3.3 Investment themes 2 & 3 are of most relevant to the subject scheme. More specifically, the Integrated Implementation Plan proposes the following measures in relation to bus network improvements:

- *Further development of a quality bus network appropriate to serve the needs of the GDA;*
- *Seeking to achieve, as far as practicable, continuous inbound priority and the maximum possible outbound priority on key bus routes into Dublin City Centre;*
- *Enhancing bus priority at other urban locations in the GDA;*
- *Seeking enhanced bus prioritisation at signalised traffic junctions in the GDA;*
- *Improving the level of interchange facilities between services and with other transport modes;*
- *Creation of bus hubs or bus focal points in key urban locations in the GDA; and*
- *Reducing the level of bus layover and parking in central urban areas*.

2.3.4 These measures will provide an interim transport solution in the shorter term, pending the development of a higher capacity rail solution, such as a New Metro North amongst others.

2.4 Dublin City Centre Transport Study

2.4.1 The Dublin City Centre Transport Study has been prepared to integrate the transport policies and proposals of Dublin City Council (DCC) and the National Transport Authority (NTA) and inform an agreed framework for strategic investment. The study proposes the following relevant measures to improve the operation, management and efficiency of the bus network within Dublin City: -

- To maximise the performance of the bus network by ensuring that sufficient road capacity and junction priority are provided to allow buses to operate efficiently, with reliable and predictable journey times; and
- To further optimise the routing of the bus corridors through the City Centre area, improving interchange arrangements and optimising the efficiency of the service.

2.5 Infrastructure & Capital Investment 2016 – 2021: Medium – Term Exchequer Framework

2.5.1 The 'Medium Term Exchequer Framework' was published by the Department of Public Expenditure and Reform (DEPR) in September 2015. It presented the findings of a Government-wide review of infrastructure and capital investment policy and outlined the Government's commitment to ensuring that the country's stock of infrastructure is capable of facilitating economic growth. The investment programme included proposed expenditure of €3.6 billion on public transport which included *'further upgrading of Quality Bus Corridors'* amongst other items.

2.6 Dublin City Council Development Plan (2016 – 2022)

2.6.1 The current Development Plan for Dublin City Council came into effect on 21st October 2016 and contains some objectives in relation to bus travel which are of general relevance to the Scheme such as:

- *To support improvements to the city's bus network and related services to encourage greater usage of public transport in accordance with the objectives of the NTA's strategy and the Government's 'Smarter Travel' document.*
- *To facilitate and support measures proposed by transport agencies to enhance capacity on existing public transport lines and services, to provide/improve interchange facilities and provide new infrastructure.*

- *To review future strategic provision of bus depots/garages in the city in consultation with Dublin Bus and the NTA.*

2.7 South Dublin County Council Development Plan 2016 - 2022

2.7.1 The current Development Plan for South Dublin County Council came into effect on 12th June 2016 and generally seeks to 'ensure an integrated strategy for transport and mobility that enhances access and movement within and through the County, while promoting change, in favour of sustainable modes.'

2.7.2 It is a stated Action of the Plan to 'work with the NTA to secure the extension and expansion of the Core Bus Network and other bus services to serve new areas of employment, housing and tourism potential, whilst also improving the efficiency and frequency of services within more established areas'.

2.8 Dun Laoghaire Rathdown County Council Development Plan 2016 - 2022

2.8.1 The current Development Plan for Dun Laoghaire Rathdown County Council was adopted on 16th March 2016 containing a policy *'to co-operate with the NTA and other relevant agencies to facilitate the implementation of the Bus Network measures as set out in the NTA's 'Greater Dublin Area Draft Transport 2016-2035' and to extend the bus network to other areas'.*

2.9 Greater Dublin Area Cycle Network Plan

2.9.1 In August 2013, the NTA published the Greater Dublin Area Cycle Network Plan. Following a period of consultation with the public and various stakeholders it was officially adopted and published in early 2014. The plan undertook a review of existing cycle facilities in the GDA and sets out the strategy for the development of an integrated cycle network for the future.

2.9.2 The plan identified that the existing Rathfarnham QBC corridor between Marley Park and Rathfarnham would form part of the secondary cycle network (Routes

S04, S06 & S10B). The existing dual carriageway section of Rathfarnham Road north to Terenure Village will form Primary Route 10. This primary route runs along Terenure Road East and via Rathgar & Rathmines.

2.9.3 The western sections of the study area primarily comprise of secondary cycle links such as S04, S10D & S10E whilst there are also a number of primary orbital routes such as S05 (Dun Laoghaire to Tallaght via Grange Downs), S03 (Dodder Greenway) and S01 (Grand Canal Premium Cycle Route).

2.9.4 It is therefore important that any upgrade to bus priority infrastructure within the subject Rathfarnham CBC study area takes cognisance of the objectives of the Plan and, where practical, provides cycle infrastructure to the appropriate level and quality of service (as defined by the NTA National Cycle Manual) required for the identified routes.

2.10 Policy Conclusion

2.10.1 The various studies discussed in the preceding sub-sections set out the transport planning policy context and need for the proposed scheme. The need for the scheme is predominantly borne out of the need to provide a higher quality bus service, than currently exists, to serve the Rathfarnham corridor in the short to medium term.

2.11 CBC Scheme Objectives

2.11.1 Having regard to the findings of the transport planning and policy context for the proposed CBC's in the GDA, the following objectives have been established for the Rathfarnham CBC Corridor:

- Deliver the on-street infrastructure necessary to provide continuous priority for bus movements along the Core Bus Corridor. This will mean enhanced bus lane provision on the corridor, removing current delays in relevant locations and enabling the bus to provide a faster alternative to car traffic along the route, making bus transport a more attractive alternative for road

users. It will also make the bus system more efficient, as faster bus journeys means that more people can be moved with the same level of vehicle and driver resources; and

- Provide any cycle facilities along the route that are required under the Greater Dublin Area Cycle Network Plan (published by the NTA, 2013) to the target Quality of Service(s) specified therein and to give consideration to further providing cycle facilities along sections of the route where they may be not expressly required under the Cycle Network Plan.

3.0 STUDY AREA

3.1 Introduction

3.1.1 This section of the report focusses on the study area for the scheme and the characteristics of the three sub sections of this area in terms of physical features, opportunities and constraints as well as identifying potential for integration with other travel modes and road users.

3.1.2 Arising from the transport policy context the broad study area identified for the proposed scheme is illustrated in Figure 3.1 below. Generally speaking, the study area was taken to include roads of the existing Rathfarnham QBC corridor, but extends beyond this in places to consider potentially feasible route options. The study area is generally bounded to the south by Taylors Lane and Grange Road and to the north by the River Liffey. The western and eastern borders of the study area are generally an offset of 200m from feasible route options.

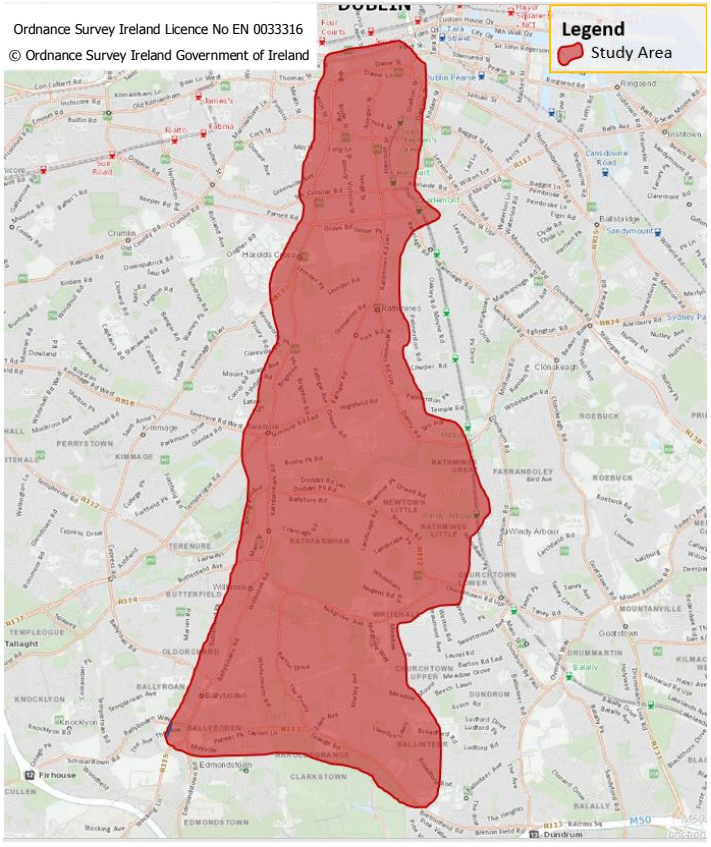

Figure 3.1: Proposed Scheme Study Area

3.2 Study Area Sections

3.2.1 The study area has been divided into three more manageable sub sections to simplify the assessment process as illustrated below in **Figure 3.2**: -

- Section 1 – From the southern boundary of the study area to the River Dodder;
- Section 2 – From the River Dodder to the Grand Canal; and
- Section 3 – From the Grand Canal to the River Liffey.

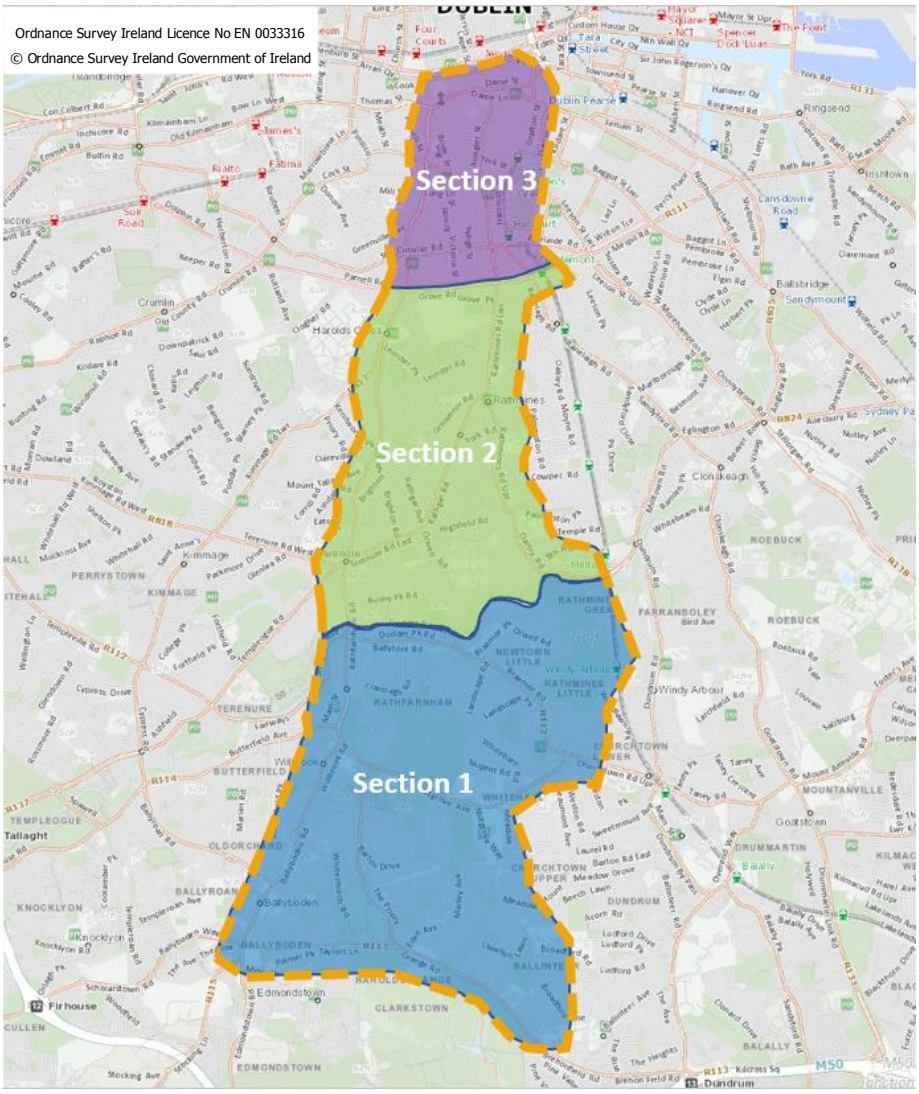

Figure 3.2: Study Area Sections

Section 1 – From the Southern Boundary of the study area to the River Dodder

3.2.2 The land-use along the corridor south of the River Dodder is predominantly residential in nature. However, a large proportion of the section is covered in leisure areas with a number of educational sites. There is employment and a retail centre at Nutgrove. Section 1 also includes three village centres at Ballyboden, Rathfarnham and Churchtown. A description of the characteristics of the different routes in this section is presented below:

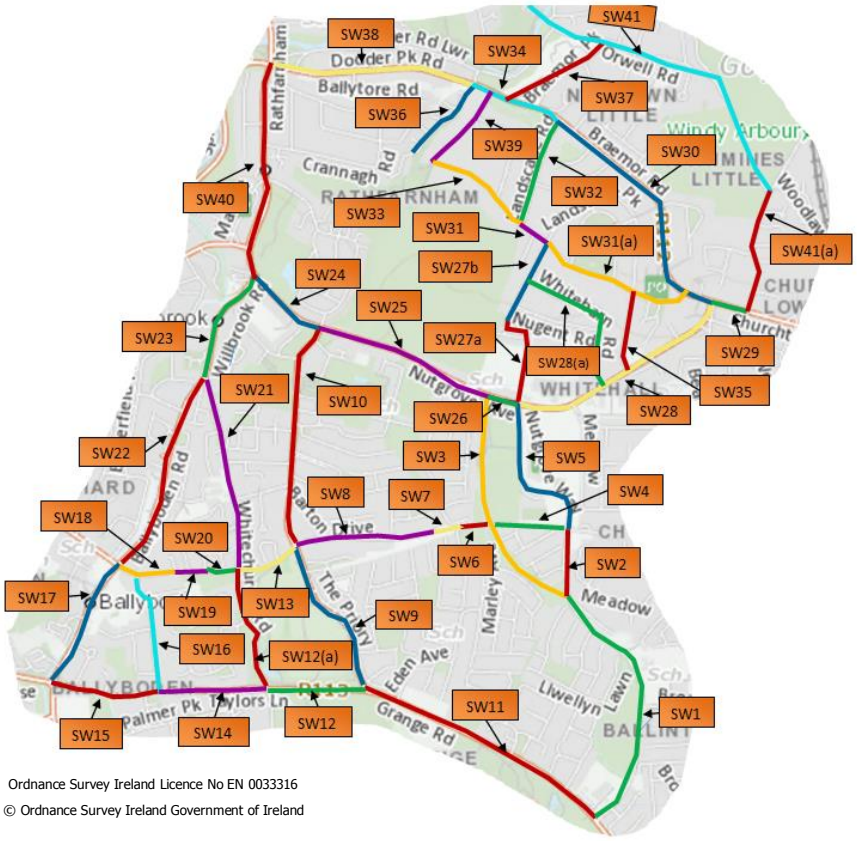

Figure 3.3: Section 1 Study Area

SW1: Stone Mason's Way and Section of Broadford Road; Lidl to Dargle View

3.2.3 This is a single carriageway,2 lane road (8m-9m including advisory cycle lane). An off-road Pedestrian/cycle track is available Northbound for 100m from the R882 junction. Advisory cycle lanes and footpaths are available on both sides for

the remainder of the corridor. Most footpaths along the corridor are separated from carriageway by verge ranging from 1- 4m wide. There is on-street parking available on the western side in the vicinity of Scoil Naithi. The Dublin Bus services along this route are 14, 14C, 75, 116 and 161.

SW2: Broadford Road

3.2.4 This is a single carriageway with 2 lanes (9m-9.5m including advisory cycle lane). Advisory cycle lanes and footpaths are available on both sides, separated from carriageway by verges ranging from 2 - 4m wide. There is a large green area on the western side. The Dublin Bus services along this route are 14, 14C, 75 and 161.

SW4: Barton Road East

3.2.5 This is a single carriageway 2 lane road (8m-9m wide including advisory cycle lane). An advisory cycle lane is available on the Southern side, and an off-road cycle track is available on the northern side at the start of the link (from Grange junction 85m) which then changes to an advisory cycle lane. Footpaths are available both sides and separated from the carriageway by verges ranging from 1.5 - 2m wide. Dublin Bus does not currently service this route. The route is set in a suburban residential area.

SW5: Nutgrove Way; Nutgrove Shopping Centre

3.2.6 This is a single carriageway road from the roundabout junction at Barton road (9m wide, 2 lane carriageway), with a footway (2m wide) provided on both sides. The carriageway widens past Nutgrove travelling Northbound to c. 16m providing four general traffic lanes. The route is set in a suburban residential area. Footpaths are provided on both sides, separated from carriageway by verges ranging from 1- 2m wide. Dublin Bus services along this route are 75 and 161.

SW6: Barton Road East Extension

3.2.7 This is a single carriageway 2 lane road (8m-9m wide including advisory cycle lanes). An advisory cycle lane is available on the Southern side and an off-road cycle track is available on the northern side. Footpaths are available on both sides and separated from carriageway by verges ranging from 2 - 3m wide. The route is set in a suburban residential area and Dublin Bus does not service this route.

SW8: Barton Road Extension

3.2.8 This is a single carriageway 2 lane road (7.5m-8m wide) with footways and verges (4.0-4.5m wide) provided on both sides of the road for half of the link. For the remainder of the link there is a footpath and a verge on the northern side (4m), and a green area Southern side. On street parking is present. The route is set in a suburban residential area and Dublin Bus does not currently service this route.

SW9: Grange Road; Between Taylor's Lane and Barton Road

3.2.9 The route is a single carriageway 2 lane road (approx. 6.7-7m flares/widens at junction). The carriageway widens on approach to the Taylor's lane junction (13.2-13.7m). Footpaths are available on the western side for the entire link, whilst footpaths are intermittently provided on the eastern side. Grass verges/areas are provided both sides intermittently. The Priory Estate wall bounds the western side of the carriageway. The Dublin Bus services along this route are 16 and 16C.

SW10: Grange Road; Between Barton Road West and Nutgrove Avenue

3.2.10 This is a single carriageway 2 lane road with footways available on both sides between Barton Road and Nutgrove Ave, separated from the carriageway by grass verges on the eastern side. Verges (with early mature to mature trees) are present along the route. A pinch point exists in the vicinity of Heatco's Stoves & Fireplaces by Convent Lane and Loreto College. Along the route, cottages and

the front gate/wall of Loreto College and Convent (adjacent) are all protected structures. The route is set in a suburban residential area. The Dublin Bus services along this route are 16 and 16C.

SW11: Grange Road; Between Grange Road West and Stone Mason's Way

3.2.11 The route is a single carriageway 2-4 lane road with footways on both sides (approx. 10.3-13.2m). There are bus lanes for part of the link in both directions. To the east of the Grange Road junction in the vicinity of the Eden pub, the bus lane starts/terminates for outbound (eastbound) and inbound (westbound) direction, respectively. At the junction with Grange Wood the bus lane starts/terminates for inbound (westbound) and outbound (eastbound) bound direction, respectively. The route is set in a suburban residential area. The Dublin Bus services along this route are 16, 16C, 116 and 161.

SW12: Taylor's Lane; Between Grange Road West and Whitechurch Road

3.2.12 The route is a single carriageway 3 lane road (approx. 13.3 - 13.6m wide including cycle lanes, widening at junction). The bus lane travelling outbound (eastbound) starts approx. 120m after the Whitechurch junction. There is no bus lane provided for westbound traffic. The route is set in a suburban residential area. There is a car park present between St. Enda's Park and the junction of Taylor's Lane / Grange Road. Dublin Bus services along this route are 116 and 161.

SW12(a): Whitechurch Rd; Between Willbrook Estate and Taylor's Lane

3.2.13 Single carriageway road with a footway available on one side of the route (6.2-6.5m wide). There is a large green area located on the western side in the vicinity of Whitecliff, and a grass verge/trees along the route towards Sarah Curran Avenue. There are no cycle or bus lanes present. The route is set in a suburban residential area. Dublin Bus does not service this route.

SW13: Sarah Curran Avenue

3.2.14 The route is a narrow single carriageway 2 lane road (5.7 - 6.2m), with narrow intermittent footways. There are no cycle or bus facilities present. The route is set in a suburban residential area and Dublin Bus does not service this route.

SW14: Taylor's Lane; Between Whitechurch Road and Glendoher Drive

3.2.15 The route is a single carriageway 3 lane road with footways on both sides (approx. 13.0 - 13.3m). There are bus lanes available for part of the link in both directions. Bus lanes begin midway along the link (at the Topaz garage) and travel in opposite directions. The route is set in a suburban residential area. Dublin Bus services along this route are 15B, 61 and 161.

SW15: Taylor's Lane; Between Ballyboden Road and Glendoher Drive

3.2.16 The route is a single carriageway 3 lane road (approx. 13m). There is a bus lane along the southern side of the carriageway along this section. The route is set in a suburban residential area. There are wide footpaths available along the north side of the carriageway and a narrow footpath on the southern side of the carriageway. There is on-street parking available outside the Costcutter shop. Cycle lanes are present on both sides of the carriageway. Dublin Bus services along this route are 15B, 61 and 161.

SW16: Glendoher Drive

3.2.17 The route is a single carriageway (7.0 - 7.4m), with narrow footways / grass margins on both sides (combined width 2.8 - 3.0m). The route is set in a suburban residential area. Large verges/green area are available on both sides of the road at the end of the section approaching Ballyboden Rd/Ballyroan Rd junction (footpath & verge approx. 7m wide). On-street car parking is available. Dwellings are located within 7.5 - 8m of back of footway. This is a residential cul-de-sac, secluded and circuitous route. Dublin Bus does not service this route.

SW17: Ballyboden Road

3.2.18 This is a single carriageway 2 lane road (7.8 - 8.5m including cycle lanes). At the approach to junction at Ballyroan Road, the carriageway widens (8.5 -12m) to two general traffic lanes northbound and one southbound. The initial 200m section benefits from large pedestrian footways on the eastern side (4-6m width) accompanied by large household driveways. The route is set in a suburban residential area. On-street parking is available in a number of locations on paved areas. Cycle lanes are present on both sides of the carriageway. Dublin Bus services along this route are 15B and 61.

SW18: Glendoher Road

3.2.19 Glendoher Road is a single carriageway 2 lane road, ranging from 7.2 - 7.5m in width, with footways available on both sides, separated from the carriageway by grassed verges. On-street car parking is present. Dwellings are located within 7.5 - 8m of back of footway. The route is set in a suburban residential area. Dublin Bus does not service this route.

SW20: Willbrook Estate

3.2.20 Willbrook Estate is a single carriageway 2 lane road, ranging from 8 - 8.2m in width, with footways available on the northern side, separated from the carriageway by grassed verges. There are no cycle or bus facilities present. The route is set in a suburban residential area. Dublin Bus does not service this route.

SW21: Whitechurch Road; Between Willbrook Estate and Ballyboden Road

3.2.21 Whitechurch Road is a single carriageway 2 lane road, ranging from 5.3 - 6.5m in width, with footways available on the western side and intermittently on the eastern side of the carriageway. There are no cycle or bus facilities present. The route is set in a suburban residential area. Dublin Bus does not service this route.

SW22: Ballyboden Road; Between Glendoher Road and Whitechurch Road

3.2.22 This is a single carriageway 3 lane road (approx. 10 - 11m wide) with footways on both sides of the route. The bus lane travelling northbound starts some 50m after Ballyroan Road junction and terminates approx. 100m before Whitechurch junction. There is no bus lane provided for southbound (outbound) traffic. A southbound on-road mandatory cycle lane is present. The route is set in a suburban residential area. The only Dublin Bus service along this route is the 61.

SW23: Willbrook Road

3.2.23 This route is a narrow single carriageway 2 lane road (6-7m wide) with narrow footways. The route is set in a suburban residential area. Advisory cycle lanes are available on both sides of the carriageway. The only Dublin Bus service along this route is the 61.

SW24: Nutgrove Avenue; Between Grange Road and Loreto Row

3.2.24 This route is a narrow single carriageway 3 lane road. The route is set in a suburban residential area (approx. 8.6 - 10.6m wide). There is currently a bus lane travelling in the inbound direction. An off-road cycle track is present in the eastbound/outbound direction (exception by Nutgrove Court Apartments). An off-road cycle track is available in the westbound/inbound direction from Loreto Abbey junction to Grange Road. Footpaths are present on both sides of the carriageway. The Rathfarnham Castle Park wall is located on the northern side of the carriageway. Dublin Bus services along this route are 16, 16C, 17, 61 and 75.

SW25: Nutgrove Avenue; Between Loreto Row and Nutgrove Way

3.2.25 This route is a narrow single carriageway 3 lane road (approx. 9-13m). The route is set in a mainly suburban residential area. There is currently a bus lane travelling westbound/inbound direction. Footpaths are available on both sides of the carriageway. A number of commercial properties are located adjacent to the

footpath on the northern side of the road. On-street parking is available on the northern side of the carriageway at Nutgrove Court. Off road cycle tracks and footpaths are present on both sides of the carriageway. Dublin Bus services along this route are 17, 61 and 75.

SW26: Section of Nutgrove Avenue

3.2.26 This route is a narrow single carriageway 3 lane road (approx. 9.2m wide). The route is set in a suburban residential area. Footpaths are present on both sides of the carriageway. There is currently a bus lane travelling in the inbound direction. Off road cycle tracks and footpaths are present on both sides of the carriageway. Dublin Bus services along this route are 17, 61 and 75.

SW27(a): Whitehall Road

3.2.27 This is a single carriageway road including advisory cycle lane (approx. 10.0-10.2m wide), set within a residential suburban area. Footpaths are available on both sides of the carriageway. There are no bus facilities at present and Dublin Bus does not service this route.

SW27(b): Whitehall Road

3.2.28 This is a single carriageway road 2 lane road (5.8 -8.0m wide), set within a residential suburban area. Footpaths are available on both sides of the carriageway. There are no bus facilities at present and Dublin Bus does not service this route.

SW28: Nutgrove Avenue

3.2.29 This is a single carriageway 3 lane road (9.3-9.4m wide) set within a residential suburban area. Off road cycle tracks and footpaths are present on both sides of the carriageway. The Bus lane start in either direction at the Church of the Good Shepherd. Dublin Bus services along this route are 17, 61 and 161.

SW28(a): Whitebarn Road

3.2.30 This route is a single carriageway 2 lane road (approx. 4.9 - 6.3m wide), with footways available on both sides. There are no cycle or bus facilities present. The route is set in a suburban residential area. Residents generally have parking within their property boundaries. Dublin Bus does not service this route.

SW29: Section of Churchtown Road Upper

3.2.31 This is a four-lane carriageway approximately 15m wide (2 lanes in each direction), with an off-road cycle track and footway available on both sides. The route is set in a suburban residential area. Dublin Bus services along this route are 17, 61 and 161.

SW30: Braemor Road; Between Nutgrove Avenue and Whitehall Road

3.2.32 Braemor Road is a single carriageway 2 lane road, ranging from 7.5 - 8m in width, with off road cycle tracks and footways available on either side. Footpaths are separated from the carriageway by grassed verges. The route is set in a suburban residential area. The Dublin Bus services along this route are 14 and 14C.

SW31: Churchtown Road Upper; Between Whitehall Road and Landscape Road

3.2.33 This Route is a single carriageway 2 lane road (9 - 9.2m), with footways available on either side. The footpaths are separated from the carriageway by grassed verges. There are no cycle or bus facilities present. The route is set in a suburban residential area. Dublin Bus does not service this route.

SW31(a): Churchtown Road Upper

3.2.34 This route is a single carriageway 2 lane road (8.7-9.5m wide), with footways available on either side. Footpath separated from the carriageway by grassed verges. There are no cycle or bus facilities present. The route is set in a suburban

residential area. Residents generally have parking within property boundaries. Dublin Bus does not service this route.

SW32: Landscape Road

3.2.35 This road is a single carriageway 2 lane road (approx. 8.3 - 8.6m wide), with footways available on both sides located in a suburban residential area. On-street parking is available for the commercial properties. There are no cycle or bus facilities present. The route is set in a suburban residential area. Dublin Bus does not service this route.

SW33: Hillside Drive; Between Whitehall Road and Castle Golf Club

3.2.36 This road is a single carriageway 2 lane road (approx. 9.0 - 9.2m wide), with footways available on either side. Footpaths are separated from the carriageway by grassed verges. Residents generally have parking within their property boundaries. There are no cycle or bus facilities present. The route is set in a suburban residential area. Dublin Bus does not service this route.

SW34: Braemor Road; Between Whitehall Road and Woodside

3.2.37 Braemor Road is a single carriageway 2 lane road (approx. 9.1 - 9.3m wide), with off road cycle tracks and footways available on both sides. The route is set in a suburban residential area. Dublin Bus does not service this route.

SW35: Oakdown Road

3.2.38 This road is a single carriageway 2 lane road (approx. 4.9 - 6.3m wide), with footways available on both sides. Residents generally have parking within property boundaries. The route is set in a suburban residential area. Residents generally have parking within property boundaries. The route is used as an access to the Church of the Good Shepherd. Dublin Bus does not service this route.

SW36: Woodside

3.2.39 This Route is a single carriageway 2 lane road, approx. 9m in width, with footways available on either side. The route is set within a suburban residential area. Residents generally have parking within their property boundaries. There is a significant level difference of over 10m between the adjacent route links. There are no cycle or bus facilities present. Dublin Bus does not service this route.

SW103: Braemor Park

3.2.40 This road is a single carriageway 2 lane road (approx. 6.5-7.8m), with narrow footways. There are no cycle or bus lanes present. The route is set in a suburban residential area. Residents generally have parking within their property boundaries. The route was used as an access to Mount Carmel Hospital. Dublin Bus services this route with the 14 and 14C.

SW38: Dodder Park Road; Between Woodside Road and Rathfarnham Road

3.2.41 Dodder Park Road is a single carriageway (9.0-9.2m wide including advisory cycle lane) 2 lane road, on road cycle lanes and footways available on either side. The footpath is separated from the carriageway by a grassed verge. The route is set in a suburban residential area. Dublin Bus does not service this route.

SW39: Hillside Drive; Between Whitehall Road and Castle Golf Club

3.2.42 The route is located within a suburban residential area. This Route is a single carriageway 2 lane road (6.0-6.2m), with footways available on either side. The footpaths are separated from the carriageway by grassed verge. Residents generally have parking within property boundaries. The route is set in a suburban residential area. Dublin Bus does not service this route.

SW40: Rathfarnham Road

3.2.43 This route ranges in carriageway width from 14m (2 General Traffic lanes including cycle lane) to 17m (2 General Traffic and 2 Bus lanes with no cycle lanes). There is a retaining wall present on parts of the route. The route passes through Rathfarnham Village Centre. There are significant level differences between the driveway of properties on both sides of the existing road. Dublin Bus services along this route are 15B, 16, 16C and 17.

SW41: Orwell Road; Between Churchtown Road and Orwell Park

3.2.44 This route is a single carriageway 2 lane road (6.6-12.6m wide), with footways available on both sides of the carriageway, except for the section from Churchtown Road through Milltown Golf Course which has footpath on the eastern side only. The route is set in a suburban residential area. Dublin Bus services along this route are 14 and 14C (around Mount Carmel Hospital only). A bridge over the Dodder River is present along the route.

SW41(a): Churchtown Rd Lower; Churchtown Rd Upper between Whitechurch Road and Orwell Road

3.2.45 This is a single carriageway 2 lane road (approx. 5.0-8.0m), at start of link there is room for only one footpath on the eastern side of the carriageway. There is no cycle or bus lanes present. The route is set in a suburban residential area. Dublin Bus does not service this route.

SW42: Churchtown Road; Between Orwell Road and Milltown Road

3.2.46 The route is a single carriageway road (approx. 9 - 9.2m wide). A bridge over the Dodder River is present along the route. The route is set in a suburban residential area. There are no cycle or bus facilities present. Dublin Bus does not service this route.

Section 2 – From the River Dodder to the Grand Canal

3.2.47 The land-uses within Section 2 are predominantly residential in nature. However, a large proportion of the section are covered by leisure areas with many educational sites. There is employment and retail centre in Rathmines. Section 2 also includes three village centres at Terenure, Rathgar and Rathmines.

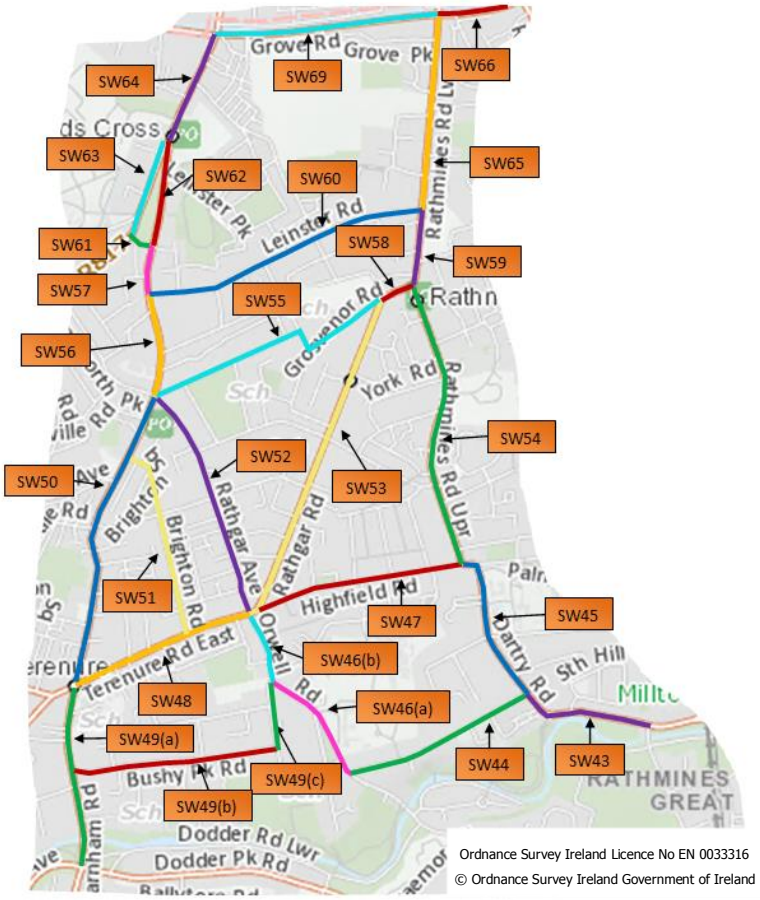

Figure 3.4: Section 2 Study Area

3.2.48 Section 2 of the study area includes individual buildings & streets of significant heritage value including a proposed Architectural Conservation Areas (ACA) for the Rathmines District, as set out in the DCC Development Plan.

3.2.49 A description of the characteristics of the different routes in this section is presented overleaf.

SW43: Milltown Road; Between Churchtown Road & Dartry Road

3.2.50 The route is a single carriageway 2 lane road (approx. 7.2 - 11.4m wide) with footways available on both sides, set within a suburban residential area. No bus or cycle lanes are present. Dublin Bus services this route with the 142.

SW44: Milltown/Dantry Road

3.2.51 The route is a single carriageway 2 lane road (approx. 6.3 - 8.1m wide) with footways available on both sides, set within a suburban residential area. No bus or cycle lanes are present. Dublin Bus services this route with the 142.

SW45: Dartry Road

3.2.52 Dartry Road is a single carriageway 2 lane road (approx. 8.5-10.5m wide), with footways available on both sides, set within a suburban residential area with a large student accommodation complex present. No bus or cycle lanes are available. Dublin Bus services this route with the 142.

SW46: Orwell Road; between Orwell Park and Rathgar Village

3.2.53 The route is a single carriageway road 2 lane road (approx. 6.25-11.2m wide) with footways available on both sides, set in a suburban residential area with Stratford College being adjacent on the western side of the route. The northern end of the route approaches Rathgar Village Centre from the south. No bus or cycle lanes are present. Dublin Bus services this route with the 14, 14C and 15B.

SW46(b): Orwell Road (between Zion Park and Rathgar Village)

3.2.54 The route is a single carriageway road 2 lane road (approx. 9-9.3 wide) with footways available on both sides, set in a suburban residential area with Stratford College being adjacent on the western side of the route. The northern end of the

route approaches Rathgar Village Centre from the south. No bus or cycle lanes are present. Dublin Bus services this route with the 14, 14C and 15B.

SW47: Highfield Road

3.2.55 The route is a single carriageway road 2 lane road (approx. 5.6 - 7.0m wide) with footways available on both sides, set in a suburban residential area. No bus or cycle lanes are present. Dublin Bus does not service this route.

SW48: Terenure Road East

3.2.56 The carriageway along this route varies from 2 lanes to 4 lanes, ringing in width from (7.8-12.0m). The route connects Terenure Village Centre with Rathgar Village Centre and is generally set in a suburban residential area. The route is used as an access for St. Joseph's School and St. Joseph's Church. There are bus lanes available along part of the link in both directions. In the vicinity of Brighton Road, bus lanes start/terminate for inbound (eastbound) and outbound (westbound) direction, respectively. At the junction with Orwell Road, bus lanes both start/terminate for outbound (westbound) and inbound (eastbound) direction respectively. Advisory cycle lanes are provided along sections of the route. There are no bus lanes available. On-street parking is available at Rathgar village. Dublin Bus services this route with the 15, 15A, 65 and 65B.

SW49: Rathfarnham Road

3.2.57 This is predominately a single carriageway 3 lane road (10.6-11.6m wide). There is a bus lane available for majority of the link travelling inbound, the bus lane terminates on the approaches to the junctions along the route. The route is set in a mix of a suburban area and Terenure Village Centre. Advisory cycle lanes are provided along the route. The route is used as an access for the Terenure Synagogue. The southern end of the route crosses the Dodder via Pearse Bridge. Dublin Bus services this route with the 16, 16C and 17.

SW50: Harold's Cross Road

3.2.58 This is a single carriageway 3 lane road for most of the route (10.6-11.6m wide). The route is surrounded by a suburban environment and also encompasses Terenure Village Centre. This link has been separated into 3 sections. The first section of link has an advisory cycle lane northbound and bus lane southbound starting at Mick Dowling's shop and terminating at the bus stop entering Terenure Village. The second section, from Mick Dowling's shop to the signalised crossing at Ashdale Road has an advisory cycle lane both sides of road. The third section to the north of Ashdale Road includes on-road mandatory cycle lane on both sides of the road briefly before changing to bus lane northbound and advisory cycle lane southbound to/from Harold's Cross/Rathgar Rd junction. Dublin Bus services this route with the 16, 16C, 17 and 49.

SW51: Brighton Road

3.2.59 The route is a single carriageway 2 lane road (approx. 6.0 - 8.5m wide), with residential frontage and dedicated parking provided along the street for the residents. Footways are available on both sides, however there are no bus or cycle lanes are present. Dublin Bus does not service this route.

SW52: Rathgar Avenue

3.2.60 This route is a single carriageway 2 lane road (approx. 5.7 - 8.5m wide) with residential frontage and dedicated parking provided along the street for the residents. Footways are available on both sides of the route. The route is set in a mix of a suburban residential area and also encompasses Rathgar Village Centre. The route is used as an access for Rathgar National School. No bus or cycle lanes are provided. Dublin Bus does not service this route.

SW53: Rathgar Road

3.2.61 This road is a single carriageway 3 lane road (approx. 10.0 - 11.3m wide). There is a bus lane available for majority of the link travelling in the northbound direction (bus lane terminates on some 80m before Grosvenor Rd junction). The route is set in a residential urban environment. Footways are available on both sides with one on-road mandatory cycle lane provided. The route connects Rathgar Village Centre with Rathmines Village Centre. There is indented 'on-street' parking available. Dublin Bus services this route with the 14, 14C, 15, 15A, 15B, 65 and 65B.

SW54: Rathmines Road Upper

3.2.62 The route is a single carriageway 2 lane road (approx. 8.0-10.6m wide). The route is set in a mix of a residential urban environment and also encompasses Rathmines Village Centre. Footways are available on both sides however there are no cycle or bus lanes provided. There is indented 'on-street' parking provided along the route. Dublin Bus services this route with the 140 and 142.

SW55: Kenilworth Square, Kenilworth Road and Grosvenor Road

3.2.63 The route is a single carriageway 2 lane road (approx. 8.0-9.5m wide) with footways available on both sides, set in a suburban residential area. There are no cycle or bus lanes provided. On-street parking is present along the route. The route is used as an access for Kenilworth Square and a Baptist Church. Dublin Bus services this route with the 18, 83 and 83A.

SW56: Harold's Cross Road; Between Kenilworth Square north and Leinster Road

3.2.64 The route is a single carriageway (approx. 8.0-9.5m wide) 3 lane road. There is a bus lane for approximately half of the link travelling in the northbound direction (bus lane terminates some 140m before Leinster Rd junction). The route is set in a residential urban environment. Footways are available on both sides with one

outbound advisory cycle lane provided. There is indented 'on-street' parking available. Dublin Bus services this route with the 16, 16C, and 49.

SW57: Harold's Cross Road; Between Leinster Road and Harold's Cross Park

3.2.65 This is a single carriageway road with 2-3 lanes along the route (approx. 9.0-12.6m wide). There is an inbound (northbound) bus lane available for half the link (bus lane starts some 80m before Leinster Rd junction). There is a pinch point present approaching the existing junction with Leinster Road (13.8m wide). The route is set in a mix of a residential and commercial urban environment. Footways are available on both sides with one advisory cycle lane provided available. There is indented 'on-street' parking. Dublin Bus services this route with the 16, 16C, and 49.

SW58: Rathgar Road; between Grosvenor Road and Rathmines Road

3.2.66 The route is a single carriageway 4 lane road (approx. 16.5m wide). The route is set in the urban form of Rathgar Village. Footways are available on both sides with two advisory cycle lanes provided. Dublin Bus services this route with the 14, 14C, 15, 15A, 15B, 18, 65, 65B, 83 and 83A.

SW59: Rathgar Road; Between Rathmines Rd Upper and Leinster Road

3.2.67 The route is a single carriageway (approx. 10.5m wide) 2-3 lane road (approx. 10.5m wide). There is a bus lane for half of the route in the inbound direction (bus lane starts some 50m after Castlewood Ave junction). The route is set in the urban form of Rathmines Village Centre. Footways are available on both sides on the route. An advisory cycle lane is available southbound prior to start of bus lane northbound. Dublin Bus services this route with the 14, 14C, 15, 15A, 15B, 65, 65B, 83, 83A, 140 and 142.

SW60: Leinster Road

3.2.68 This is a single carriageway route (9.5-11.5m wide), with footways available along both sides. The route is set in a suburban residential area. No bus or cycle lanes are present. On street parking is provided along the route. Dublin Bus does not service this route.

SW61: Harold's Cross Road; South of Harold's Cross Park

3.2.69 The route is a single carriageway 2 lane road (approx. 8.5 -10.3m wide including on-street parking). The route is set in a mainly commercial urban environment. No bus or cycle lanes are present. On street parking is provided along the route. Dublin Bus does not service this route.

SW62: Harold's Cross Road; Eastern side of Harold's Cross Park

3.2.70 The route is a single carriageway (approx. 8.5 -10.3m) which changes from 4 lanes (2 General Traffic Lanes and 2 Bus Lanes) to 3 lane road (2 General Traffic Lane to 1 Bus Lane). The route is set in a mix of a residential and commercial urban environment. There is no footpath on the eastern side of roadway along the park. An advisory cycle lane (140m) is provided outbound/southbound and terminates on approach to bus lane. There is indented 'on-street' parking available. Dublin Bus services this route with the 16, 16C, and 49.

SW63: Kimmagh Road / Harold's Cross Road

3.2.71 The route is a single carriageway (approx. 6.8-8.3m wide including advisory cycle lanes) 2 lane road, which widens to 3 lanes (2 General Traffic Lane to 1 Bus Lane inbound/northbound) on approach to junction at Harold's Cross (20m). The route is set in a mix of a residential and commercial urban environment. Advisory cycle lanes and footways are available on both sides of the carriageway. There is indented 'on-street' parking. Dublin Bus services this route with the 9 and 54A.

SW64: Harold's Cross Road; Between Our Lady's Hospice & Parnell Road

3.2.72 The route is a single carriageway, 4 lane road for the majority of the route (approx. 9.7-13.6m wide). There are existing bus lanes in both directions, both southbound/outbound and northbound/inbound bus lanes terminate at St. Clare's Primary School and 60m before Parnell Road junction respectively. An advisory cycle lanes commence where the bus lanes terminate. The route is set in a mixed urban environment. The route is used as an access for Our Lady's Hospice, St. Claire's School and both office and residential blocks. Dublin Bus services this route with the 9, 16, 16C, 49 and 54A.

SW65: Rathmines Road; Between Leinster Road and Grove / Canal Road

3.2.73 The route is a single carriageway 3 lane road (approx. 10.2m). There is an existing bus lane in the northbound direction (terminating on approach to the junctions). The route is set in the urban form of Rathmines Village Centre. Footways are available of both sides on the route. An advisory cycle lane is available southbound. Dublin Bus services this route with the 14, 14C, 15, 15A, 15B, 65, 65B, 83, 83A, 140 and 142.

SW66: Canal Road

3.2.74 This is a single carriageway road (9m-15.3m wide) with a flared approach to junctions at both ends of link. There are footways and mandatory cycle lanes available along both sides. No bus lanes are present along the route. The route is set in a mixed urban environment. Dublin Bus does not service this route.

SW69: Grove Road

3.2.75 This is a single carriageway route (8.9m-10.6m wide) with footways and mandatory cycle lanes provided along both sides of the route. The route is set in a mixed city centre environment. No bus lanes are present along the route. Dublin Bus does not service this route.

SW102: Bushy Park Road

3.2.76 This is a single carriageway route (6.8-9.2m wide), with footways available along both sides. The route is set in a suburban residential area. No bus or cycle lanes are present. The route is used as an access to High School, Zion Parish School, Zion Court (Church) and the Church of the Jesus Christ of Latter-day Saints. Dublin Bus services this route with the 15B.

SW103: Zion Road

3.2.77 Single carriageway route, with footways available along both sides (6.2-7.7m wide). The route is set in a suburban residential area. No bus or cycle lanes are present. The route is used as an access to High School, Zion Court (Church) and Stratford College. Dublin Bus services this route with the 15B.

Section 3 – From the Grand Canal to the River Liffey

3.2.78 The study area for this sub section of the route encompasses the City Centre area. Existing residential land uses dominate the initial south-western section from the Grand Canal to the River Liffey of Section 3. The existing land-use varies in the eastern portion of Section 3 considerably, as one enters the City Centre area and includes pockets of residential, retail, office, other commercial and educational / institutional uses such as the Dublin Institution of Technology, Dublin Castle, the Temple Bar Area, the Grafton Street shopping district, Camden Street and Harcourt Street.

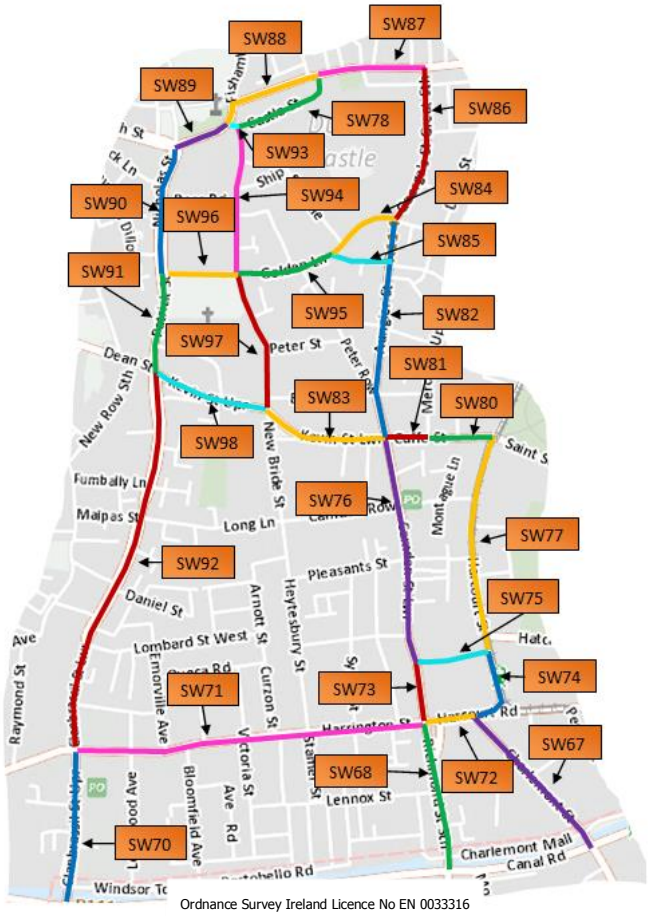

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Figure 3.5: Section 3 Study Area

3.2.79 The City Centre study area includes individual buildings & streets of significant heritage value including several Architectural Conservation Areas (ACAs). Major landmarks include:

- Architectural Landmark Buildings (inter alia, St. Patrick's Cathedral, Christchurch Cathedral, Dublin Castle, numerous Churches & Friary's);
- Protected bridges (Robert Emmet Bridge) and streetscapes; and
- the zone of archaeological potential that surrounds the historic core of Dublin City (DU018-020).

3.2.80 A description of the characteristics of the different roads in this section are presented in the paragraphs below:

SW67: Charlemont Street

3.2.81 This is a single carriageway 3 lane road (12.5-15.0m wide). This route has a northbound bus lane as well as footways & mandatory cycle lanes along both sides of the carriageway. The route is set in an office / commercial city centre environment. There is indented 'on-street' parking provided. Dublin Bus services this route with the 44 and 61.

SW68: Richmond Street South

3.2.82 This is a single carriageway route with footways and mandatory cycle lanes provided along both sides of the route. A southbound/outbound bus lane is present for part of the route (8.9m-10.6m wide). The route is set in a commercial city centre environment with the Portobello College adjacent to the southern end of the route. The route crosses the Grand Canal via the La Touche Bridge. Dublin Bus services this route with the 14, 14C, 15, 15A, 15B, 65, 65B, 83, 83A, 140 and 142.

SW70: Clanbrassil Street Upper

3.2.83 This is a single carriageway, 2-3 lane road (10.8m-15.4m wide). A bus lane is provided for 75m inbound/northbound with footways and mandatory cycle lanes also provided along both sides of the route. The route contains the Robert Emmet Bridge and the limestone walls on the northern side of the bridge which are protected structures. The route is set in a commercial city centre environment. There is indented 'on-street' parking. Dublin Bus services this route with the 9, 16, 16C, 49 and 54A.

SW71: South Circular Road; Between Clanbrassil Street Upper and Richmond Street South

3.2.84 This is a single carriageway 3 lane road (9.0m-13.5m wide). Bus Lanes begin in both directions at junction between Emor St and South Circular Road. Footpaths are available on both sides of the road and no cycle lane provided along the route. The route is set in a primarily residential city centre environment. There is on street parking present. Dublin Bus services this route with the 9, 16, 16C, 68, 68A and 122.

SW72: Harcourt Road; Between Richmond Street South and Charlemont Street

3.2.85 There is a one-way 3-4 lane single carriageway road with footways on both sides of the carriageway (10.7-14.2m wide). There are no bus or cycle lanes present. The route is set in an office / commercial city centre environment. Dublin Bus services this route with the 44 and 61.

SW73: Camden Street Upper; Between Harcourt Road and Charlotte Way

3.2.86 There is a single carriageway, 4 lane road (approx. 13.8 - 14.4m wide). It has a one-way traffic northbound/inbound with a mandatory cycle lane. There is a Contra Flow Bus and cycle lane southbound/outbound with footways on both sides of the route. Currently there is only one general traffic lane on this link

travelling northbound towards Wexford Street into City Centre. The route is set in a commercial city centre environment. Dublin Bus services this route with the 9, 14, 14C, 15, 15A, 15B, 16, 16C, 44, 61, 65, 65B, 68, 68A, 83, 83A, 120, 140 and 142.

SW74: Harcourt Street; between Charlotte Way and Harcourt Road

3.2.87 This is a one-way route with two southbound/inbound general traffic lanes (approx. 6m wide) and two-way tram lanes. Harcourt Luas Station is situated on this link. There are no cycle or bus lanes present. The route is set in an office / commercial city centre environment. Dublin Bus services this route with the 44 and 61.

SW75: Charlotte Way; Between Camden Street and Harcourt Street

3.2.88 This is a one-way carriageway (approx. 11-12.6m wide) with a mandatory cycle lane. There are 3-4 lanes flared approaches to the junction. There are no cycle or bus lanes present. The route is set in an office/commercial city centre environment. Dublin Bus services this route with the 44 and 61.

SW76: Camden Street/Wexford Street

3.2.89 Single carriageway 2- 4 lane road (approx. 13.8 -14.4m wide). There is a bus lane travelling northbound starting at the Grantham Street junction and terminating at the Camden Row Junction (BoBo's restaurant). There is an advisory cycle lane at the beginning of link. The bus lane travelling southbound starts after the Camden Place Junction and terminates at the junction with Charlotte Way. There is on street parking and loading bays present along the route. The route is set in a commercial city centre environment. Dublin Bus services this route with the 9, 14, 14C, 15, 15A, 15B, 16, 16C, 44, 61, 65, 65B, 68, 68A, 83, 83A, 120, 140 and 142.

SW77: Harcourt Street

3.2.90 This is a one-way (northbound) single carriageway (5.6 - 7.5m including advisory cycle lane). The route also encompasses a two-way tram lane (Harcourt Street to St. Stephen's Green Stop). There are a large number of parked garda vehicels by the Garda Station. The route is set in a commercial/office city centre environment. Dublin Bus does not service this route.

SW78: Castle Street

3.2.91 This is a one-way single carriageway (5.3-7.6m wide including on-street parking) with footways on both sides of the carriageway. There are no cycle or bus facilities present. Dublin Castle is located adjacent to the route. On street car parking and coach parking facilities alternate between both sides of the carriageway. Dublin Bus does not service this route.

SW80: Cuffe Street; Between Harcourt Street and Mercer Street Upper

3.2.92 This route encompasses 4 general traffic lanes and a central median with footways and advisory cycle lanes on both sides of the carriageway (approx. 16.7m wide including median). There are no bus lanes present. The Luas Green line operates adjacent to the route. The route is set in a mixed-use city centre environment. Dublin Bus does not service this route.

SW81: Cuffe Street; between Mercer Street Upper and Wexford Street

3.2.93 This route encompasses 4 general traffic lanes, a central median with footways and advisory cycle lanes on both sides of the carriageway (approx. 16.7m wide including median). There are no bus lanes present. The Luas Green line is adjacent to the route. The route is set in a mixed city centre environment. Dublin Bus does not service this route.

SW82: Aungier Street; Between Cuffe Street and Longford Street Great

3.2.94 This route encompasses 3 lanes with footways on both sides on the carriageway(approx. 10.6-12.1m wide including cycle lanes). There is an outbound Bus lane starting at Dublin Business School. In addition there is an advisory cycle lane northbound/outbound and also southbound/inbound on approach to Dublin Business School. There are small indented loading bays present along the route. The route is set in a commercial city centre environment. Dublin Bus services this route with the 9, 14, 14C, 15, 15A, 15B, 16, 16C, 44, 65, 65B, 68, 68A, 83, 83A, 122, 140 and 142.

SW83: Aungier Street; Between Longford Street Great and St. Stephens Street Upper

3.2.95 This is a carriageway road (approx. 9.0-10.3 including cycle lanes) with 2 lanes with footways and advisory cycle lanes on both sides of the carriageway. There are no bus lanes on this section of road. The route is set in a commercial city centre environment. Dublin Bus services this route with the 9, 14, 14C, 15, 15A, 15B, 16, 16C, 44, 65, 65B, 68, 68A, 83, 83A, 122, 140 and 142.

SW84: Stephens Street Upper

3.2.96 This is a one-way street encompassing 2 lanes, with an advisory cycle lane Street (50m length) on approach to junction with Aungier (approx. 6.6-8.8m wide). There are no bus lanes on this section of road. The route is set in a mixed city centre environment. Dublin Bus does not service this route.

SW85: Longford Street Great

3.2.97 This is a one-way street between Aungier Street and Longford Lane, whilst it is two-way between Longford Lane and Stephen Street Upper. The carriageway width ranges from 6.0-6.5m which includes on-street parking. The route is set in

a mixed city centre environment. There are no cycle or bus facilities present. Dublin Bus does not service this route.

SW86: Georges Street Great South; Between Stephens Street Lower and Dame Street

3.2.98 This route has two general traffic lanes, one northbound bus lane and a southbound cycle lane (approx. 8.2-12.9m wide). Footways are available on both sides of the route. The route is set in a mixed city centre environment. Dublin Bus services this route with the 9, 14, 14C, 15, 15A, 15B, 16, 16C, 65, 65B, 68, 68A, 83, 83A, 122, 140 and 142.

SW87: Dame Street; Between Georges Street Great and Christchurch Place

3.2.99 This is a single carriageway road with 2 traffic lanes, footways and advisory cycle lanes on both sides of the carriageway (approx. 9.5 - 13.5m including cycle lanes). Amenities such as Temple Bar, the Olympia Theatre and Dublin Castle are adjacent to the route. The route is set in a mixed city centre environment. Dublin Bus services this route with the 13, 27, 40, 49, 54A, 56A, 69, 79, 79A, 123, 150, 151 and 747.

SW88: Lord Edward Street

3.2.100 This route encompasses (approx. 12m wide including cycle lanes) with 2 traffic lanes. There are also advisory cycle lanes and footways on both sides of the carriageway. The route is set in a mixed city centre environment. Dublin Castle is located adjacent to the route. Dublin Bus services this route with the 13, 27, 40, 49, 54A, 56A, 77A, 123, 150, 151 and 747.

SW89: Christchurch Place

3.2.101 This route has 4 general traffic lanes (approx. 14m wide including cycle lanes). There are advisory cycle lanes and footways on both sides of the carriageway.

The route is set in a mixed city centre environment. Christchurch Cathedral is located adjacent to the route. Dublin Bus services this route with the 13, 27, 40, 49, 54A, 56A, 77A, 123, 150, 151 and 747.

SW90: Nicholas Street/Patrick Street; Between Christchurch Place and Bull Alley Street

3.2.102 This route is a dual carriageway road approx. 16.0 - 24.0m wide including median & cycle lanes. The configuration ranges from 4-6 lanes with footways on both sides. There is a bus lane and advisory cycle lane available northbound/inbound between Bull Alley Street and Bride Street. A mandatory cycle lane is available northbound for the rest of the link and no bus lane.

3.2.103 An advisory cycle lane is also available in southbound/outbound direction. There is no bus lane provided in the southbound direction. The route is set in a mixed city centre environment. Dublin Bus services this route with the 27, 49, 54A, 56A, 77A, 123, 150 and 151.

SW91: Patrick Street; Between Bull Alley Street and Kevin Street Upper

3.2.104 The route encompasses a 4-lane configuration of one bus lane and a general traffic lane inbound and 2 general traffic lanes outbound (approx. 12.0 - 17.0m wide including median & cycle lanes) with footways on both sides. A narrow substandard cycle lane is provided adjacent to the bus lane northbound/inbound.

3.2.105 An advisory cycle lane is available southbound with no bus lane. The route is set in a mixed city centre environment. St. Patrick's Cathedral is adjacent to the route. Dublin Bus services this route with the 13, 27, 40, 49, 54A, 56A, 77A, 123, 150, 151 and 747.

SW92: Clanbrassil Street Lower, New Street South

3.2.106 This route encompasses 3-5 lane road between Kevin Street and Daniel Street with footways available on both sides (approx. 12.0-17.0m including median &

cycle lanes). There is a cycle lane available northbound/inbound for first 130m of link. The bus lane northbound starts at the Mace Shop, whilst the cycle lane northbound terminates in the vicinity of Lombard Street West.

3.2.107 There is an advisory cycle lane southbound with no bus lane. The route is set in a mixed city centre environment. Dublin Bus services this route with the 49 and 54A.

SW93: Werburgh Street; Between Christchurch Place and Castle Street

3.2.108 This is a one-way route (4.3-6.8m) 1 lane road from Christchurch Place to Werburgh Street (outbound) with footways on both sides on the route (4.3-6.8m). The route is set in a mixed city centre environment Dublin Bus services this route with the 27, 56A, 77A, 150 and 151.

SW94: Werburgh Street/Bride Street; Between Castle Street and Bull Alley Street

3.2.109 This is a one-way route between Castle Street and Bride Road, whilst it is a two-way between Bride Road and Bull Alley Street. There are footways on both sides on the route. There is a southbound mandatory cycle lane available for the entire link. Whilst there is a northbound mandatory cycle lane available between Bride Road and Bull Alley Street. A pinch point exists at the northern section of the link in the vicinity of Leo Burdock (Chip Shop) and the adjacent properties. The route is set in a mixed city centre environment. Dublin Bus services this route with the 27, 56A, 77A, 150 and 151.

SW95: Golden Lane

3.2.110 This is a single carriageway 2-way street with footways on both sides (9m-9.1m wide). There is on street car parking available on both the northern and southern side o the carriageway. There are no bus or cycle lanes present. The route is set in a mixed city centre environment. Dublin Bus does not service this route.

SW96: Bull Alley Street

3.2.111 This is a one-way (westbound) single carriageway street with a contra-flow cycle lane available along the northern side of the route. There are footways on both sides of the route and the route is approx. (10.2-10.3m wide). There are no bus lanes present along the route. The route is set in a mainly residential city centre environment. The route is adjacent to St. Patrick's Park. There is both vehicle and coach parking available along the southern edge of the route. Dublin Bus does not service this route.

SW97: Bride Street (between Bull Alley St and Kevin St Upper)

3.2.112 This route varies in width from approx. 9.4 - 13.4m (including cycle lane) and has footways on both sides. There is a bus lane available in the outbound/southbound direction and a mandatory cycle lane available inbound/northbound. The route is set in a mainly residential city centre environment. The route is adjacent to St. Patrick's Cathedral and Park and the National Archives of Ireland. Dublin Bus services this route with the 27, 56A, 77A, 150 and 151.

SW98: Kevin St Upper; Between Bride Street and Patrick Street

3.2.113 This route has two general traffic lanes and cycle lanes in both directions. Westbound, there are two lanes which splits into two routes for straight and left turning vehicles. There is also a westbound cycle lane which terminates for westbound cyclists however continues for southbound cyclists. There is a eastbound cycle lane provided along the entire length. There are footways on both sides of the carriageway and no bus lanes. The route is set in a mixed city centre environment. Dublin Bus services this route with the 27, 56A, 77A, 150 and 151.

3.3 Physical Constraints and Opportunities

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

- Marley Park;
- St. Enda's Park;
- River Dodder;
- Grand Canal (including protected structures);
- Luas Greenline;
- River Liffey;
- DIT Aungier Street;
- Existing and committed future development along the route, in particular in the City Centre, much of which has significant heritage value, including particular Architectural Conservation Areas;
- Rathfarnham Castle and grounds;
- Terenure Village Centre;
- Rathgar Village Centre;
- Rathmines Village Centre;
- Existing monuments along the route;
- Street trees and other natural features along the route;
- Existing urban and sub-urban roads and street network;
- Bridges at identified natural constraints;
- Availability of land in urban and suburban areas;
- Public Parks; and
- The need to maintain traffic flow for all modes during construction.

3.3.2 The aforementioned constraints will be examined and addressed through the route option assessment process detailed later in this report.

3.4 Integration with Existing and Proposed Public Transport Network

3.4.1 One of the objectives of the proposed scheme is to enhance interchange between the various modes of public transport operating in the city, both now and in the future. Route options within the study area have therefore been developed with this in mind and, in so far as possible, provide for interchange with existing and planned future transport services, including:

- Luas Greenline and Luas Cross City;
- The proposed Lucan Luas Line;
- The proposed Clongriffin to Tallaght and Blanchardstown to UCD BRT/Swiftway routes;
- The proposed inner and outer orbital bus routes; and
- Existing Dublin Bus services at numerous locations along the route.

3.4.2 The Clongriffin – Tallaght BRT is of particular relevance to the Rathfarnham CBC route. The CBC route should complement the BRT service but should not duplicate the potential routing of the Clongriffin – Tallaght BRT route which is prossibly via Harold's Cross as per the Transport Strategy for the GDA (2016 – 2035) and as illustrated in Figure 1.2 of this report. This will be discussed further in Section 6.1 of this report.

3.5 Compatibility with Other Road Users

3.5.1 A key objective of the proposed scheme is to improve pedestrian and cyclist facilities along the route. In general, segregated facilities will be proposed for these modes along the Primary Cycle Network. The scheme will provide for cycle facilities along the routes that are required under the Greater Dublin Area Cycle Network Plan (published by the NTA, 2013) to the target Quality of Service(s) specified therein.

3.5.2 Where it is considered impractical to construct pedestrian or cycle facilities along a particular section of the CBC route (and it is considered inappropriate to reroute the bus), such facilities will need to be provided along a suitable alternative route.

3.5.3 There may be locations where segregated cycle facilities cannot be provided along the CBC route and there is no suitable rerouting alternative. In this

instance, it may be possible for cyclists to share with vehicles in the bus lane. However, such proposals need careful consideration and design to ensure the safety of cyclists, with additional mitigation measures, such as speed restrictions for vehicles in bus lanes being applied.

3.5.4 General traffic will be maintained along the CBC corridor although it is inevitable that there will be impacts on traffic capacity along the route associated with the reallocation of road space to the bus lanes and the introduction of turning movement restrictions. Reductions in traffic carrying capacity of the road network need however to be considered in the context of the overall significant increase in efficiency and reliability of the bus services that will be achieved.

4.0 ROUTE OPTION ASSESSMENT STRUCTURE & METHODOLOGY

4.1 Assessment Process

4.1.1 This section of the report presents the structure and methodology used for the assessment of route options within the study area. A two-stage assessment was adopted:

- An initial 'Stage 1' high-level route options assessment or 'sifting' process which appraised routes in terms of ability to achieve scheme objectives (as outlined in Section 2.11) and whether they could be practically delivered; and
- Routes which passed this initial stage were taken forward to a more detailed 'Stage 2' multi criteria assessment.

4.1.2 As outlined in Section 3 above and illustrated in Figure 3.2, the study area has been divided into 3 sub sections to simplify the assessment process:-

- **Section 1** – Marley Park to Dodder River Crossing
- **Section 2** – Between the Dodder River and Grand Canal crossings; and
- **Section 3** – Grand Canal to Christchurch Place.

4.1.3 The northern extent of the study area has been assumed as being the junction between Nicholas Street/Christchurch Place/High Street.

4.1.4 The assessment process is illustrated Figure 4.1 below.

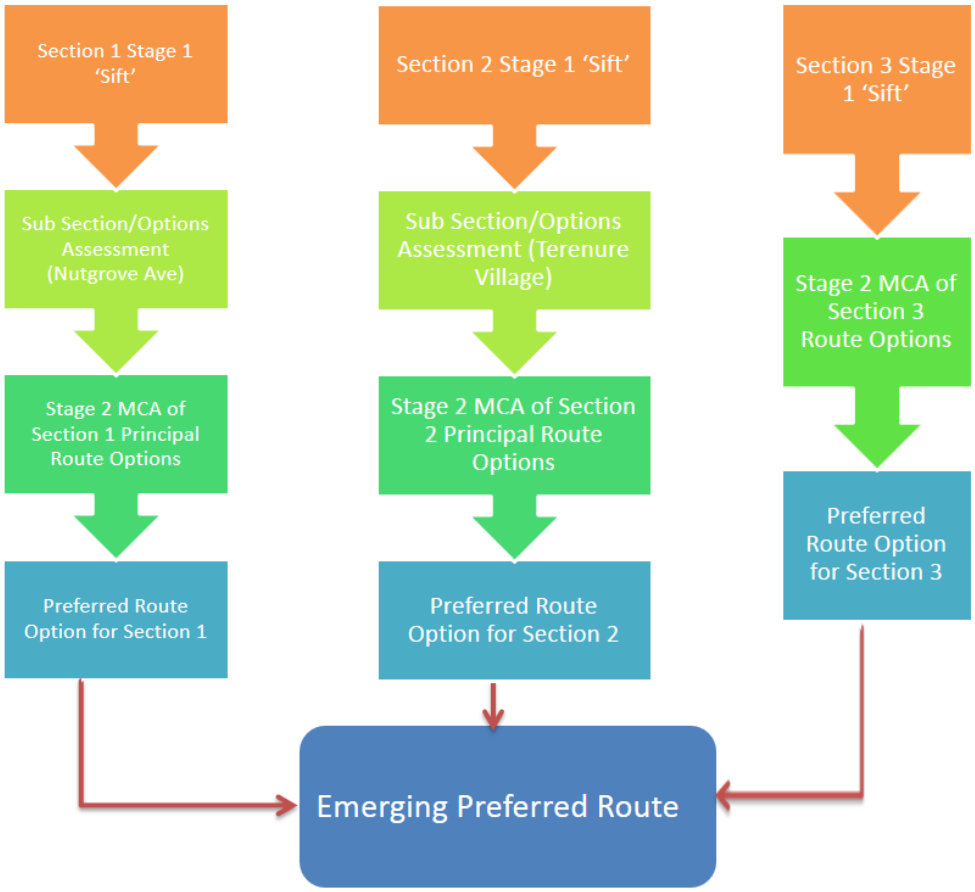


Figure 4.1: Route Options Assessment Process

4.2 Assessment Structure

4.2.1 The assessment of the route options is structured in a manner whereby the Stage 1 and Stage 2 option assessment are conducted for each Section of the Study area before proceeding to the assessment for the following section. The sections are addressed in a south - north direction from Grange Road with this direction taken to be 'inbound' and the opposite direction classified as 'outbound'.

4.2.2 As there are a large number of potential 'end-to-end' routes within the study area, these routes have been subdivided into shorter links/sections for the purposes of the 'Stage 1' route options sifting process. Following the initial route sifting process, the remaining routes have been combined to form longer routes/connections where possible.

4.2.3 The 'Stage 1' route options sifting process assesses potential route options within the study area at a high level against the appraisal criteria described in the following sections. **Figure 4.2** below presents the initial range of potential route options or 'Spiders Web' of route connections identified for the study area.

4.3 Route Option Assessment Methodology Stage 1: Sifting

4.3.1 Within the study area, several corridors exist which could potentially deliver the primary scheme objectives. A 'Spiders - Web' (**Figure 4.2**) illustrating these potential corridors was developed to enable a sifting exercise to be undertaken on the individual links within the study area to determine: -

(i) If they could meet the identified schemes objectives; and

(ii) if bus priority could be reasonably delivered along them. Bus prioirity would take the form of segregated facilities or where this may not be achieveable due to physical constraints, ITS measures such as queue relocation or advanced signalling.

4.3.2 The identification of these initial route options took cognisance of the physical constraints and opportunities present and the ability to integrate with other public transport modes (Section 4.4). Of relevance in developing the spiders-web was the potential for the road or route sections to facilitate fast and reliable journey times and thereby be able to practically accommodate bus priority.

4.3.3 At the Stage 1 'sifting' stage, the initial 'spiders-web' of route options was narrowed down using a high level qualitative method based on professional judgement and a general appreciation for existing physical conditions/constraints within the study area from available survey information and site visits. This exercise identified route options that would either not achieve the scheme objectives or would be subject to significant cost and/or impact to achieve these objectives (e.g. excessive land-take).

4.3.4 Conversely, some route options may fail the Stage 1 assessment as a result of not satisfying the scheme objectives in relation to bus services but may be considered at a later stage to provide for diversion of traffic or cycle facilities in conjunction with bus services on an alternative route. Further to this, some routes

not identified as part of the 'Spiders Web' within or outside the study area may be used alternative routes for cyclists in conjunction with bus services along a different route.

4.3.5 This assessment stage focused on engineering constraints, as identified by the findings of both the desktop study and site audits, thereby considering: -

- Technical feasibility;
- Transport planning implications; and
- Environmental issues.

4.3.6 Within the cohesive route options, there are a number of scheme options which have been considered owing to the generally constrained nature of sections of the routes. The majority of scheme options considered are concentrated in the vicinity of the following sections:

- Nutgrove Avenue
- Terenure Cross
- Pearse Bridge at the River Dodder Crossing
- Rathgar & Rathmines

4.3.7 The resulting study areas spiders-web of potential stage 1 route options is presented in **Figure 4.2**. These adopted routes are discussed in further detail in section 5, 6 and 7 of this report.

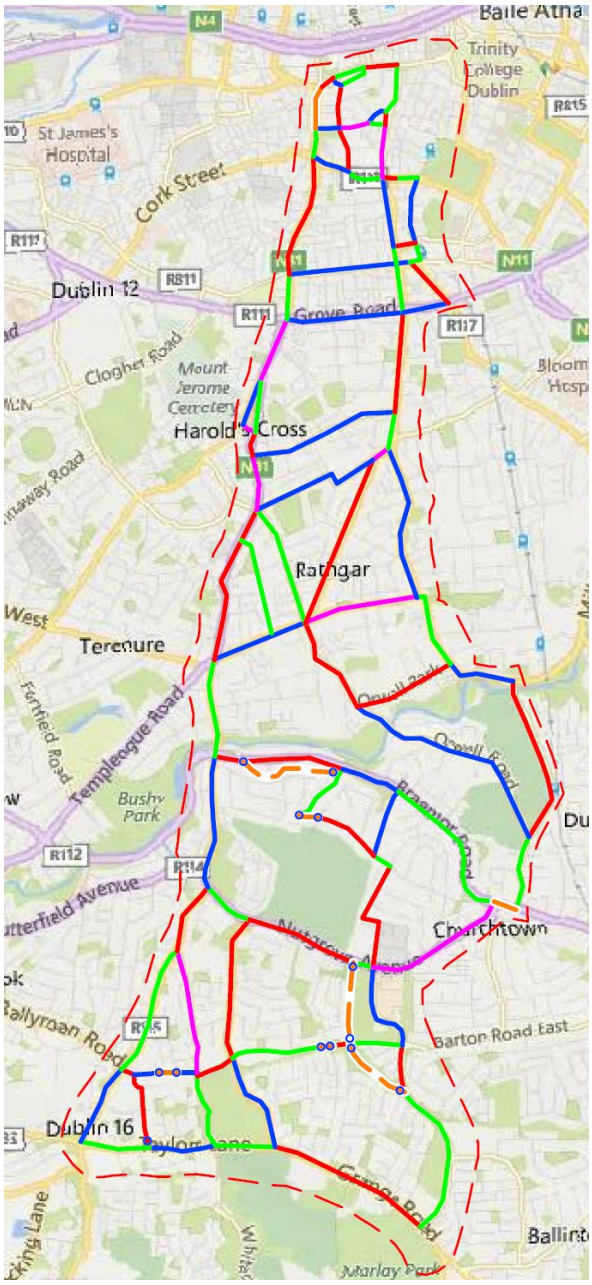


Figure 4.2: Spiders Web of Route Options

4.4 Stage 2: Route Options Assessment – Detailed Assessment

4.4.1 Following completion of the 'Stage 1' assessment, the remaining routes have been combined to form cohesive 'end to end' routes where possible and progressed to Stage 2 of the assessment process. It should be noted that certain route options which pass the Stage 1 assessment may not taken forward to the Stage 2 assessment as they may be isolated links which do not combine with other route options to form cohesive routes.

4.4.2 This stage comprised a more detailed qualitative and quantitative assessment, using criteria established to compare route options.

4.4.3 The 'Guidelines on a Common Appraisal Framework for Transport Projects and Programmes' published by the Department of Transport, Tourism, and Sport (DTTAS), March 2016, requires schemes to undergo a 'Multi-Criteria Analysis' (MCA) under the following criteria: -

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

4.4.4 An appreciation of constraints and opportunities within the study area as well as the defined project objectives, led to the establishment of project-specific route options assessment criteria.

4.4.5 These were tailored to have commonality to the Common Appraisal Framework guidelines where practical.

4.4.6 The physical activity criterion, added recently to the Common Appraisal Framework, relates to the health benefits derived from using different transport modes. The subject scheme options under consideration relate to the same mode of travel (bus). As such, this criterion will not produce any relative differences

between the options. Therefore, this criterion will not be applied in the multi – criteria assessment for the subject scheme.

4.4.7 The physical benefits associated with the scheme will be quantified as part of a future Cost – Benefit Analysis.

4.4.8 **Table 4.1** presents a summary of the assessment criteria and sub criteria used as part of the 'Stage 2' detailed route options assessment process.

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

Table 4.1: Assessment Criteria

4.4.9 In applying these criteria to the assessment process, it is clearly recognised that for different sections of the study area corridor, greater emphasis may need to be applied to some criterion over others in terms of their significance and influence on the route selection process. In some instances, certain criteria such as Residential & Employment catchments, will be identical between route options. As such, these will not be specifically assessed in such cases.

1. Economy

a. Capital Cost

4.4.10 Capital cost estimates consist of both the indicative infrastructure cost estimate and land acquisition costs. The methodology used in determining these costs, standardised to per-kilometre rates, is described below.

i. Indicative Infrastructure Cost Estimate

4.4.11 This sub-criterion is established to assess route options for their likely capital infrastructure cost. Each route option has been assessed relative to the nature and extent of infrastructure requirements to deliver the scheme objectives. In order to evaluate route options, a degree of initial outline design has been undertaken for some routes to inform infrastructure requirements. Infrastructure costs include:-

- **Carriageway:** whether potential re-alignment (i.e. re-alignment of the carriageway) is necessary and the extent of new or existing pavement reconstruction works required;
- **Drainage:** the extent to which additional drainage works, or modification of existing drainage networks is required;
- **Services/Utilities:** the extent of utility service protection or relocation works required;
- **Lighting:** whether existing public lighting would need to be replaced or a new public lighting system required along a particular route option;
- **Structures:** whether the introduction of the proposed scheme on a route would require existing structures to be modified or replaced and consideration of any new structures to be provided;
- **Construction traffic management:** an assessment of the extent of the likely traffic management measures (e.g. potential diversion of traffic away from the route) required to construct the proposed scheme along routes; and

- **Cycle route infrastructure:** The practicality and extent of works required to accommodate cycle route infrastructure along route options.

4.4.12 For the purposes of the route options assessment, a high-level cost estimate has been prepared for each type of construction i.e. upgrade to existing bus lanes within existing reservation, widening of existing reservation including boundary treatment and/or land acquisition etc.

ii. Land Acquisition Cost Estimate

4.4.13 This criterion evaluates the likely costs associated with land acquisition and associated boundary/accommodation works for each route option. The assessment takes consideration of: -

- The number of adjacent public/commercial/residential/industrial properties, from which land acquisition would be required as well as the extent (area) of land acquisition likely to be necessary; and
- The costs associated with boundary/accommodation works.

4.4.14 For the purposes of route options comparison and assessment, the extent of land acquisition required for each route option is calculated by developing an outline design for each option based on ordnance survey mapping available, and applying the following assumed typical scheme characteristics: -

- 3.0 m wide Bus lane;
- 3.0 m wide Traffic Lane in areas with posted speed limit less than 60 km/h;
- 3.25 m wide Traffic Lane in areas with posted speed limit greater than 60 km/h;
- 2.0 m Footpath;
- 2.0 m Cycle Track (1 way) where such a provision is required for a Primary Route based on the GDA Cycle Network Plan;
- 1.75m Cycle Track (1 way) where such a provision is required for a Secondary Route based on the GDA Cycle Network Plan; and

- 3.5m Cycle Track (2 way).
- Shared running between cyclists and motorists where vehicular speeds and volumes permit such a regime as per the National Cycle Manual guidance.

4.4.15 Outline designs prepared for some route options also considered any specific constraints and tailored the above assumptions where appropriate to practically minimise land-take without compromising on the overall scheme objectives to maximise bus priority. It should be noted that where the lane provisions above are not achievable in both directions alternative routing for cyclists and/or separation of inbound/outbound bus and traffic lanes have been designed.

4.4.16 The areas of land-take required are presented as being either public land or private land. For the purposes of comparing route options, public land is generally defined as the space between physical boundaries on either side of a road (e.g. property boundary wall to property boundary wall). Areas outside the road reservation are assumed to be private land except where it is clear that it is owned by a public entity (e.g. a public park). Any private land that may be located within the road reservation, but are not clearly private land, are considered as public areas as part of this methodology. This exercise has been based on a combination of available Ordnance Survey mapping, topographical survey and site measurements.

4.4.17 The methodology typically adopted in calculating the land acquisition costs is very site specific (value of the property, costs of acquiring and moving to a new property etc.). However, for the purpose of this assessment, a high-level assessment methodology has been used to develop a cost per square metre (sqm) for private land acquisition based on valuations carried out by TII (RPA) for other public transport projects. Using this information, a rate of €1,500/sqm has been applied to route options to derive an indicative cost for private land-take for all route options.

4.4.18 For the purposes of this assessment, no cost has been assumed for public land acquisition.

b. Transport Reliability and Quality of Service

4.4.19 This criterion assesses route options in terms of the degree to which transport reliability and quality of service is likely to be achieved, with associated economic benefits. The assessment considers the following attributes: -

i. Journey Time

4.4.20 The extent to which journey time savings, and associated economic benefits, for public transport services, including the CBC, can be achieved on a route. This would be practically achieved through the extent to which any or all of the following measures can be implemented:-

- Enhancement of existing bus and / or provision of new bus priority along road links;
- Provision of bus priority through junctions (preferably through signal controlled junctions);
- Local upgrading of road sections to provide more carriageway space and therefore, additional capacity;
- Use of traffic signals to provide virtual priority where fully segregated facilities are not practically achievable (e.g. bus priority signalling);
- Removal of 'pinch points' for bus services and traffic along the route; and
- Rationalisation of existing bus stops in terms of location, indentation (i.e. ability to provide laybys to avoid blockage of bus lanes) and spacing.

4.4.21 Journey times for each route option have been calculated by comparing the time required by a bus to travel between common start and end points on each route. Where both the start and end points are not the same for each route option (e.g. at the start/end of the route/the scheme terminus), the journey time is calculated between one common point and the end of the route. The following assumptions have been made in calculating the comparative journey times along route options:-

- Operational speed (free-flow) of 50 kph in suburban areas and 30 kph in City Centre areas;

- Dwell time of 20 seconds per stop on average (assumes introduction of cashless fares as part of the CBC/Bus Service upgrade programme in the Greater Dublin Area); and
- Delay of 15 seconds per junction on average (assumes buses stop at every second junction i.e. 30 second delay at every second junction).

4.4.22 These assumptions assume dedicated bus priority infrastructure or free-flowing traffic conditions along a route section by direction of travel. Where the indicative scheme determined for a route suggests that this is not practically achievable, modified speeds and delay assumption are applied as appropriate. These additional delays are estimated based on available queue length information, automatic vehicle location information from Dublin Bus and estimates of the impact of traffic management measures (such as bus priority signalling). Delays at junctions and stops include delays associated with deceleration /acceleration to/from a stationary position.

ii. Number of Signalised Junctions

4.4.23 The number of signalised junctions along each route have been compared. Regardless of the level of practical or feasible bus priority provided at signalised junctions, there will always be an element of delay to buses associated with signalised junctions, even with the most efficient signalling system being provided. While it is impossible to completely avoid signalised junctions on any route option, this risk of potential delay has been considered when comparing route options. This feeds into the overall journey time calculations as indicated above.

c. Level of Bus Priority Provision

4.4.24 The level of bus priority achievable along route options has been considered and compared. The level of priority is predominantly concerned with the degree to which road space can practically be allocated to buses, the amount of protection afforded to this priority (i.e. segregation) and the provision at junctions such as

bus lanes at the stop line. This feeds into the overall journey time calculations as indicated above.

2. Integration

a. Land-Use Policy

4.4.25 This criterion identifies the extent to which a route would encourage or support planned development and provide for economic opportunities; whether particular route options offer synergies with other urban enhancement proposals and whether route options afford the potential to regenerate particular streets or quarters.

4.4.26 The interaction of routes with Local Area Plans (LAPs), masterplans or specific objectives in the County Development Plans are also considered under this criterion where they propose specific transport related objectives or policies.

b. Residential Population and Employment Catchments

i. Residential Population Catchments

4.4.27 This criterion compares the existing residential populations within 5 and 10 minute walk catchments from existing bus stops on routes and is representative of the number of potential users for a particular route option. The assessment does not quantitatively assess the future populations of zoned, but yet undeveloped residential development lands along route options. The analysis involved extracting 2011 population statistics from the Central Statistics Office (CSO) 'small areas' dataset. GeoDirectory was used to assist in calculating the proportional figures for the population within the specific contour bands for each of the routes. This information was subsequently used to calculate the population living within the contours.

ii. Employment Population Catchments

4.4.28 This criterion compares the existing employment populations within a 10 minute walk catchment. The analysis involved extracting information from the 2011 POWSCAR (Place of Work, School, or College - Census of Anonymised Records)

data, which contains data on employment and school goers within specific areas. The areas used for the analysis were taken from the NTA's multi-modal transport model of the Greater Dublin Area and correspond to the zones defined in the model. These zones are effectively modified Central Statistics Office (CSO) boundaries. GeoDirectory was used to assist in calculating the proportional figures for the employment units within the specific contour bands for each of the routes. This information was subsequently used to calculate the number of people working within the contours. As with the residential population catchments, the assessment does not quantitatively assess the future populations of zoned, but yet undeveloped commercial development lands along route options.

4.4.29 It should be noted that in the case of route options which converge with other CBC, BRT or other public transport corridors the residential and employment population served by these different corridors have been deducted to avoid duplication of population figures.

c. Transport Network Integration

4.4.30 This criterion identifies the extent to which route options would maximise wider public transport usage and reach in terms of facilitating efficient interchange between transport modes (e.g. Luas, DART, rail stations, public (other CBC) and private bus operators & Dublinbikes). Linked to this, is the availability of space at potential interchange locations for facilities such as cycle parking areas, covered interchange areas, safe walking areas to and from stops, kiss-and-ride etc.

d. Cycle Network Integration

4.4.31 This criterion is established to assess route options for the practicality of achieving cycle track segregation and their potential to integrate high quality cycle facilities. The assessment considers the following: -

i. *Compatibility with the GDA Cycle Network Plan*

4.4.32 This criterion considers whether a route option forms part of the GDA Cycle Network Plan, with routes where CBC and designated Cycle Routes overlap given a higher designation in terms of benefits arising where cycle infrastructure can be provided as part of the proposed scheme. In some instances, however it may be more appropriate to provide a parallel cycle track off the CBC route. Consideration is also given to cycle routes intersecting with the CBC route.

ii. Quality of Infrastructure for Cyclists

4.4.33 The quality of cycle provision practically achievable on route options has been assessed. For comparison purposes, the highest level of practical cycle provision achievable on each route has been determined and compared between route options.

e. Traffic Network Integration

4.4.34 A comparative assessment of the expected traffic impact of each option has been undertaken for routes formed by combining route options which remain from the previous assessment stages. This assessment was undertaken based on professional judgement and an understanding of traffic conditions in the Study Area established following traffic surveys undertaken.

4.4.35 This represents a high-level assessment of the traffic impact of the route options considered in the Stage 2 Multi – Criteria Analysis (MCA). The anticipated traffic impact expected to be incurred by motorists using private vehicles as a result of the different route options will be assessed. The dis-benefit experienced by motorists in respect of reduced junction capacity and restricted movements will be considered. To this end, data gathered, such as traffic count surveys, is also used to establish the likely traffic impacts.

3. Accessibility and Social Inclusion

a. Key Trip Attractors

4.4.36 This assessment criterion identifies key trip attractors located within approximate 15 minute walk catchments which would generate significant demand for the CBC service but would not be otherwise picked up by either the employment or residential catchment analysis. For the purposes of this assessment the following land-uses have been considered as key trip attractors:

- Education (schools and universities);
- Commercial centres (shopping centres, town centres etc.);
- Healthcare (hospitals);
- Employment (business parks, large office developments etc.); and
- Leisure (parks, sports grounds etc.)

b. Deprived Geographic Areas

4.4.37 The possible impact of the route options on deprived areas including RAPID (Revitalising Areas by Planning, Investment and Development) areas according to the Pobal Deprivation Index was investigated.

4. Safety

a. Road Safety

4.4.38 Generally, the introduction of CBC will result in a reduction in road incidents due to people switching from private car to public transport. However, the reduction in incidents is unlikely to differ between various route options, particularly over the short sections being investigated as part of this assessment.

4.4.39 Therefore, for the purposes of comparing route options, the number of junctions along the route has been used as a proxy for road safety. The number of junctions is effectively a measure of the number of potential conflicts on the route and therefore a measure of the potential for a collision.

4.4.40 The type of movement required by the bus at junctions on the route is also considered with routes where turning movements (either left or right) are required being assigned a lower ranking in terms of safety.

b. Pedestrian Safety

4.4.41 This criterion assesses the safety of passengers accessing the stops along the route. This is predominantly concerned with the proximity of bus stops to crossing facilities and the presence of footpaths along desire lines to bus stops.

5. Environmental

4.4.42 The scope and methodology for the environmental assessment was established by considering what environmental aspects are likely to be impacted and are therefore of importance in evaluating the route options. A list of the environmental topics considered is outlined in **Table 4.2** overleaf.

Aspect	Rationale
Included in Environmental Assessment	
5.a./5.b. Archaeological, Architectural and Cultural Heritage	The provision of CBC infrastructure has the potential to impact on the archaeological, architectural and cultural heritage environment. At this stage of the assessment process, a conservative approach has been adopted in assessing the potential for impact and this is further described below.
5.c. Flora and Fauna	The provision of CBC infrastructure has the potential to impact on flora and fauna.
5.d. Soils, Geology & Hydrology	The provision of CBC infrastructure has the potential to impact on soil and geology as a result of land-take and possible ground excavation (including potential to encounter ground contamination). In relation to Hydrology, the provision of CBC infrastructure has the potential to impact on surface water bodies as a result of land-take (with particular emphasis on floodplains and flood zones).
5.e. Landscape and Visual	The provision of CBC infrastructure has the potential to impact the townscape/streetscape along the CBC route.
5.f Air Quality	The provision of CBC infrastructure has the potential to impact the air quality along the CBC route.
5.g. Noise & Vibration	The provision of CBC infrastructure has the potential to impact the noise environment along the CBC route.
5.h. Land Use Character	The provision of CBC infrastructure has the potential to impact on land use character through land-take, severance or reduction of viability which prevents or reduces it from being used for its intended use.
Scoped out of Environmental Assessment	
Agronomy	Given the urban/suburban nature of the proposed scheme and the assumption that the CBC will run on predominantly existing road infrastructure this aspect is not considered to be relevant to the assessment.
Hydrogeology	Hydrogeology is not considered to be a determining factor in the selection of the preferred route option. Also at this stage of the design process it is not possible to determine the quality, type or duration of these impacts, particularly as the location and type of structures e.g. underpasses, bridges etc. is unknown.
Property/Land Acquisition	This aspect has been considered separately as part of the Economy criterion in the overall multi-criteria analysis commensurate with the information available at the route option assessment stage.
Socio-economics	Elements of socio-economics such as journey times, catchment analysis, transport integration, quality of service for cyclists etc. are assessed under other non-environmental criteria and will be considered as part of the multi-criteria analysis.

Table 4.2: Environmental Aspects Considered

4.4.43 When preparing the Environmental Impact Assessment Report (EIAR) for the preferred route and scheme design, the environmental topics which have been

scoped out (and others that are not considered relevant for the route options assessment), will be reviewed and incorporated into the EIS as appropriate.

a/b. Archaeological, Architectural and Cultural Heritage

4.4.44 As mentioned previously a conservative approach has initially been adopted in undertaking the route options assessment in relation to the archaeological, architectural and cultural heritage environment. The constraints comprise Recorded Monuments and Protected Structures (RMPs) within 50m of each CBC route section, extending to 250m in greenfield areas. Sites of archaeological and cultural heritage merit and sites of architectural heritage merit which are directly intersected by the CBC route sections are also included within the scope of this assessment.

4.4.45 As a result, the assessment effectively evaluates the potential for impact on architectural heritage from façade to façade which provides for a comparative and qualitative evaluation of Protected Structures along route sections, in particular along heavily developed sections such as those identified within the City Centre.

4.4.46 Whilst the CBC route will primarily travel on existing established road networks, the City Centre, Rathgar and Rathmines areas of the study area have greater potential that adjacent structures and buildings will be impacted by the proposed scheme (while acknowledging that the designation of, and protection afforded to a Protected Structure is not restricted to the structure itself but to all elements within its curtilage, e.g. coal cellars and boundary elements). An architectural heritage desktop study was undertaken to investigate the feasibility of developing the CBC route from Rathfarnham to Rathmines. The selection of a viable route options in these areas will involve the running of the CBC service in the vicinity of numerous Protected Structures irrespective of which route section is preferred (archaeological, architectural and cultural heritage is only one of the criteria being considered as part of the MCA analysis). The detailed design of the proposed scheme will seek to avoid and minimise impacts on architectural heritage.

c. Flora & Fauna

4.4.47 The provision of bus priority infrastructure has the potential to impact on flora & fauna.

4.4.48 A broad assessment of the likely impacts of each of the route options on the key ecological receptors was undertaken, with an indication as to which, if any, of these were likely to be significant, and at what geographical level. The impacts were compared to allow an order of preference to be determined.

4.4.49 Features considered included the following:

- Records of rare or protected plant species;
- Records of protected fauna;
- Identified designated ecological areas and other areas of ecological importance including ecological corridors and areas of green infrastructure; and
- Watercourses and fisheries waters.

d. Soils, Geology & Hydrology

4.4.50 The provision of bus priority infrastructure has the potential to impact on soil and geology as a result of land-take and possible ground excavation (including potential to encounter ground contamination).

4.4.51 Attributes (and impacts) assessed for each route option included the following (where relevant):

- Historic land use and potential contamination;
- Geology / Areas of Geological Significance;
- Soil quality, drainage characteristics and range of agricultural uses of soil along each route corridor; and
- Potential implications for existing quarry or mining activities and future extractable reserves.

4.4.52 The impact at each geographic level was compared to allow an order of preference to be determined. The provision of bus priority infrastructure has the potential to impact on surface water bodies as a result of land-take (with

particular emphasis on floodplains and flood zones). Attributes (and impacts) assessed for each route option included the following (where relevant):

- watercourses crossed by each route corridor and potential impact on water quality arising from re-alignment works;
- discharge to receiving waters and drainage network;
- aquatic ecological sites close to and downstream of water crossings;
- surface water abstraction close to and downstream of water crossings;
- established amenity value of surface waters traversed by each route corridor, and
- potential increase (or reduction) in flood risk to existing properties.

4.4.53 The impact at each geographic level was compared to allow an order of preference to be determined.

e. Landscape & Visual

4.4.54 The provision of bus priority infrastructure has the potential to impact the townscape/streetscape along the route.

4.4.55 The assessment comprised the compilation of a desktop understanding of:

- the landscape/townscape, its character and features;
- the visual environment, including the location of residential and other properties and views over the landscape;
- the landscape planning context, including landscape designations, open spaces, identified views and prospects, etc.; and
- relationship with protected structures, conservation areas, national monuments etc.

4.4.56 The impact at each geographic level was compared to allow an order of preference to be determined.

f. Air Quality

4.4.57 The provision of bus priority infrastructure has the potential to impact the air quality along the route. The assessment considered each route section, in terms of sensitive receptors and density of development in order to identify the most suitable route from an air quality perspective.

4.4.58 The TII guidelines define sensitive receptor locations as: residential housing, schools, hospitals, places of worship, sports centres and shopping areas, i.e. locations where members of the public are likely to be regularly present.

4.4.59 The impacts associated with each route option were compared to allow an order of preference to be determined.

4.4.60 It is important to note that the proposed route will primarily travel on existing established road networks. For the purposes of this assessment, air quality impact is quantified based on whether the road is moving closer to sensitive receptors i.e. road widening. However, any road widening would result in only marginal impacts to air quality at sensitive receptors and therefore the severity of any air quality impact would be minimal.

g. Noise & Vibration

4.4.61 The provision of bus priority infrastructure has the potential to impact the noise environment along the route. The assessment considered each route section, in terms of sensitive receptors and density of development in order to identify the most suitable route from an air quality perspective.

4.4.62 The TII guidelines define sensitive receptor locations as: residential housing, schools, hospitals, places of worship, sports centres and shopping areas, i.e. locations where members of the public are likely to be regularly present.

4.4.63 The impacts associated with each route option were compared to allow an order of preference to be determined.

4.4.64 Similar to air quality, noise & vibration impact is quantified based on whether the road is moving closer to sensitive receptors i.e. road widening. However, any

road widening would result in only marginal impacts to air quality at sensitive receptors and therefore the severity of any air quality impact would be minimal.

h. Land Use Character

4.4.65 The provision of bus priority infrastructure has the potential to impact on land use character through land-take, severance or reduction of viability which prevents or reduces it from being used for its intended use.

4.5 Route Options Summary Table

4.5.1 For each study area section, a route options summary table in Project Appraisal Balance Sheet (PABS) format has been prepared which collates and summarises the appraisal of route options under each of the assessment criterion.

4.5.2 The route options summary table for each study area section is presented in **Appendix A, B & C**, for Sections 2 and 3, respectively.

4.5.3 For each individual assessment criterion considered, routes have been relatively compared against each other based on a five-point scale, ranging from having significant advantages to having significant disadvantages over other route options. For illustrative purposes, this five-point scale is colour coded as presented in **Table 4.3**, with advantageous routes graded to 'dark green' and disadvantaged routes graded to 'dark 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

Table 4.3: Route Options Colour Coded Ranking Scale

4.5.4 The extent of reporting may vary between each study area section and the route options being assessed, depending on the significance attached to specific criterion in terms of route differentiation.

4.5.5 At the end of each individual route options assessment, an overall Multi Criterion Appraisal (MCA) table is provided, bringing together each of the individual criterion assessments.

4.5.6 This is then summarised for each study area section under the main assessment criterion as set out in **Table 4.1**.

4.5.7 A qualitative appraisal of the conclusions from the route options assessment is then provided, highlighting the key issues considered in determining recommended route options ('preferred' and in some instances, where applicable, 'next preferred'). It should be noted that a balanced approach is taken when assessing the preferred routes. All criteria are considered in undertaking the assessment and a lower ranking on one criterion, for example, will not necessarily mean that the route is not suitable.

5.0 SECTION 1 ROUTE OPTION ASSESSMENT

5.1 Section 1 – Introduction

5.1.1 When assessing route options for Section 1 of the study area, generally there are three principal routes between Marley Park and the Dodder crossing namely via Stone Mason's Way, Grange Road and Ballyboden Road as illustrated in Figure 5.1 below. Each of these routes currently carry less frequent bus services which converge at Nutgrove Avenue in the vicinity of the junction with Grange Road.

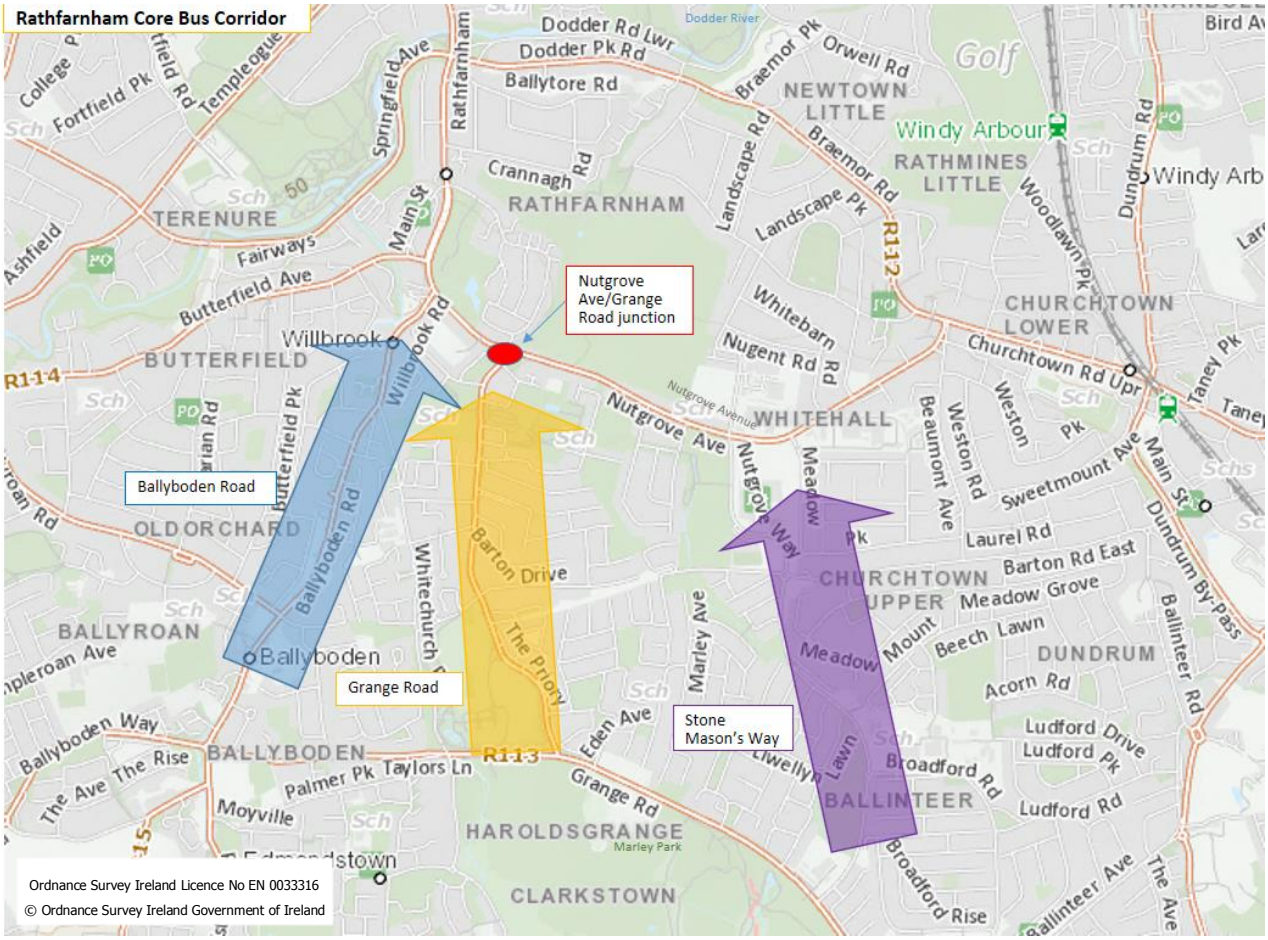


Figure 5.1: Principal Routes for Section 1

5.1.2 The Core Bus Network, as defined in the 'Transport Strategy for the Greater Dublin Area 2016 – 2035', is characterised by routes with a high frequency of bus services, high passenger volumes and with significant trip attractors along the route. It is along these routes where the demand for travel necessitates and

justifies a greater level of infrastructural investment in order to minimise delays to these services.

5.1.3 Therefore, the junction between Nutgrove Avenue & Grange Road represents a natural starting point at southern extent of the Rathfarnham to City Centre CBC as the anticipated travel demand between this point and the City Centre would justify the level of infrastructure proposed as part of the Transport Strategy for the GDA.

5.1.4 In addition to the principles of the Core Bus Network as set out above, the Strategy also states that the Core Network corridors, such as Rathfarnham to City Centre, shall be 'supplemented by other bus services operating on lower frequency routes' with multiple origins such as the routes via Stone Mason's Way, Grange Road & Ballyboden Road. There are also several options between these 3 routes which primarily serve the residential catchments of the villages of Ballyboden, Rathfarnham and Nutgrove (SW 1 – 23). These route options have not been taken forward to the Stage 1 assessment as a result.

5.1.5 Whilst these routes form part of the Study Area they will not be considered to form part of the Rathfarnham to City Centre CBC proposals as the level of infrastructural investment required could not be justified in terms of travel demand at present.

5.1.6 The assessment process for Section 1 has been outlined in Section 4 of this report. In this Section of the report it is proposed to set out the two-stage assessment procedure and the results for the section of the study area between Grange Road/Nutrove Avenue & the Dodder Crossing. Route options which passed the initial Stage 1 Assessment were progressed to the Stage 2 Assessment.

5.1.7 However, before undertaking a full Stage 2 multi- criteria assessment of route options there are a number of scheme options which have been considered owing to the generally constrained nature of certain sections of the study area. A number of scheme options have been subjected to an initial comparative assessment. The preferred scheme option emerging from this initial assessment

is taken forward to form part of the route options considered as part of the Stage 2 multi – criteria assessment as illustrated in the Figure 5.2 below.

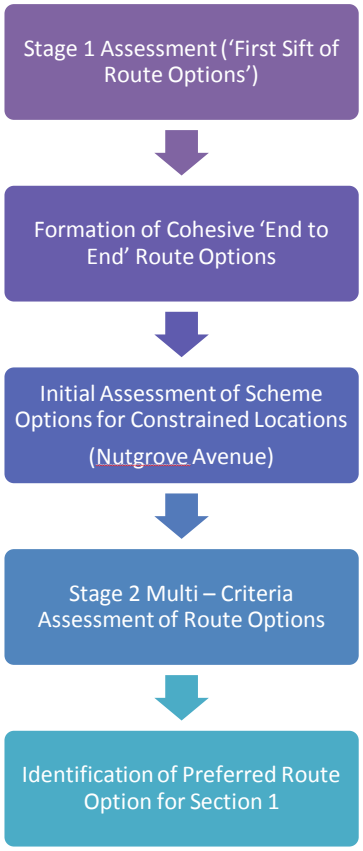


Figure 5.2: Route Option Assessment Stages

5.1.8 The assessment of the options for Section 1 is discussed further in Sections 5.2 & 5.3 below.

5.2 Section 1: Stage 1 - Route Option Assessment

5.2.1 Each of the route options considered as part of the Stage 1 route option assessment for Section 1 are illustrated in **Figure 5.3** below.

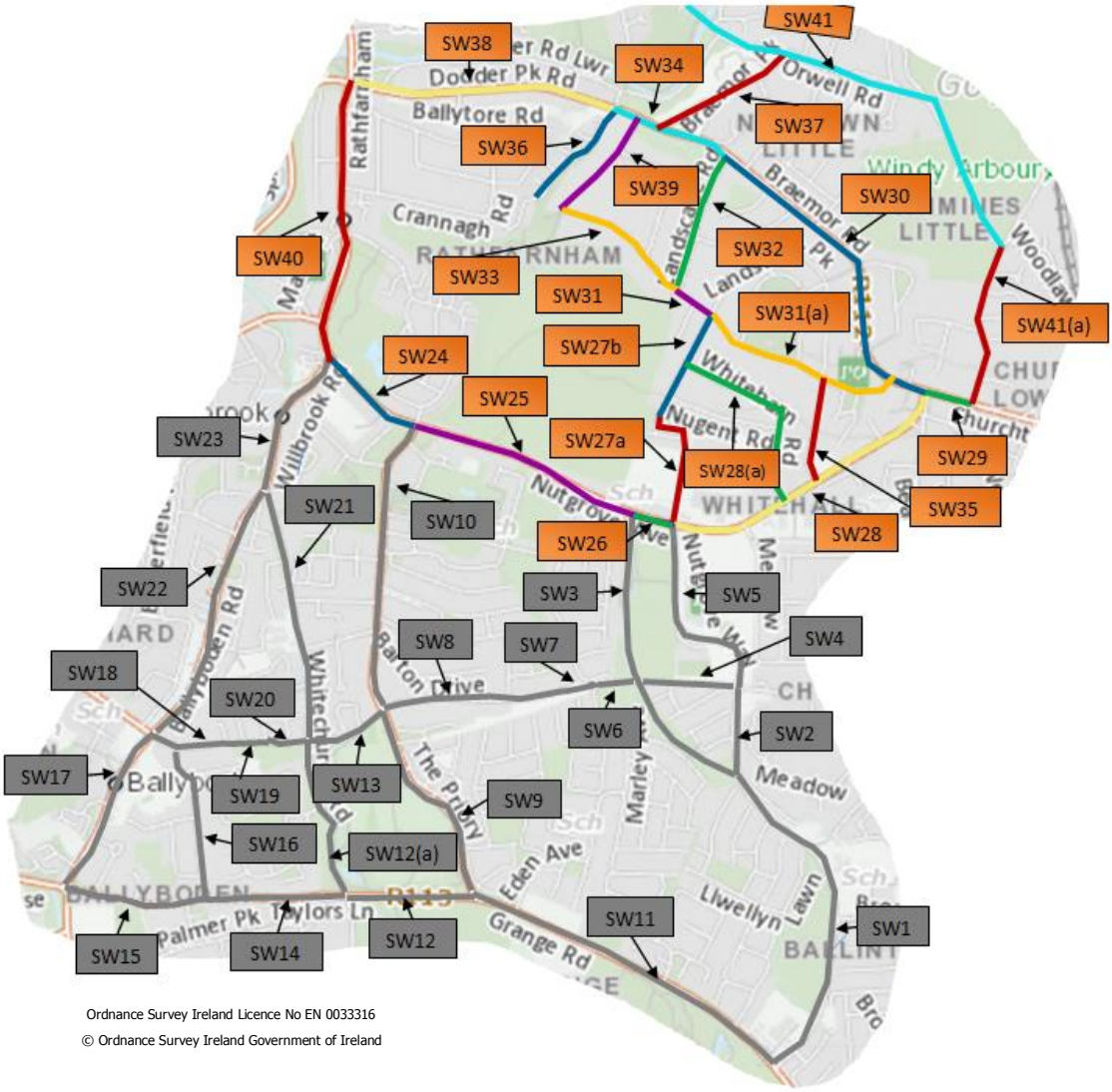


Figure 5.3: Route Options within Section 1 of Study Area

5.2.2 **Table 5.1** below presents a summary of the 'Stage 1' route options sifting process for Section 1.

Table 5.1: Route Option Sifting (Stage 1) Summary – Section 1				
Route Option	**Name / Section**	**Area Characteristics**	**Comments**	**Pass/ Fail**
SW24	Grange Road (between Willbrook Rd & Nutgrove Avenue)	• Suburban • Off road cycle track outbound • St Mary's Boys National School • Mature Trees (Rathfarnham Castle) • Secondary cycle route (GDA CNP No. S04)	This route is a single carriageway 3 lane road (2GT & 1BL) (approx. 8.6-10.6m wide carriageway). There is currently a bus lane travelling in the inbound direction. Full bus priority and segregated cycle facilities may be achievable in the outbound dirction by widening the carriageway mainly on the northern sides. However, this would include encroachment into Rathfarnham Castle Grounds (max width 4.7m, over length of 220m) and would also result in a loss of up to 2-5m from the back gardens from the residential properties on the northern side of Grange Rd (Rathfarnham Wood House No.10,11,12). Full bus priority may be achievable as such this section will be carried forward to the Stage 2 Assessment.	Pass
SW25	Nutgrove Avenue (between Grange Road & Loreto Row)	• Suburban • Off road cycle track • Commercial/Retail • Young Trees • On street parking for residents & customers • Secondary cycle route (GDA CNP No. S04)	This route is a single carriageway 3 lane road (2GT & 1BL) (approx. 9 - 13m wide carriageway). There is currently a bus lane travelling inbound direction. Provision of bus priority outbound (eastbound) from Grange Rd junction would result in a loss of up to 4.6m from the front gardens/driveways of the residential properties on the southern side (even house No. 12-50A & 54-92). A number of commercial properties are on the footpath edge on the northern side of the road. Land take would be necessary from the Rathfarnham Scout Den and the brownfield site adjacent to provide fully segregated bus and cycle facilities. The brownfield site is the subject of an approved planning application for a filling station. On-street parking on the northern side of the carriageway for Nutgrove Court will be eliminated. On-street parking for consumers at the shops would also be removed, customers can park in on-street parking places at the green area/sports pitches or new parking area could be provided behind Loreto Court. The reallocation of traffic lanes to bus lanes will be needed to ensure bus priority at junctions for the northbound (inbound) direction which may create capacity constraints. Full bus priority may be achievable as such this section will be carried forward to the Stage 2 Assessment.	Pass

Table 5.1: Route Option Sifting (Stage 1) Summary – Section 1				
Route Option	**Name / Section**	**Area Characteristics**	**Comments**	**Pass/ Fail**
SW26	Nutgrove Avenue (between Loreto Row & Nutgrove Way)	• Suburban • Off road cycle track • Commercial/Retail • Green area (Loreto Park) • Early Mature trees • Secondary cycle route (GDA CNP No. S04)	This route is a single carriageway 3 lane road (2GT & 1BL) (approx. 9.2m wide carriageway). There is currently a bus lane travelling in the inbound direction. Provision of bus priority outbound/eastbound (20m) from Loreto Row junction would require of up to 4m of landtake from Loreto Park for its entire length of 120m. Bus priority (without cycle lanes 16m) would result in no land take on Loreto Park. Full bus priority may be achievable as such this section will be carried forward to the Stage 2 Assessment.	Pass
SW27 (a)	Whitehall Road	• Suburban • Advisory Cycle lanes • Good Shepherd National School • Commercial/Retail • Feeder cycle route (GDA CNP)	Single carriageway road (10.0-10.2m) including advisory cycle lane) in residential suburban area. Full bus priority is achievable however, possible encroachment into Hazel Brook Square or Good Shepherd National School. School bus layby may need to be reallocated. Full bus priority may be achievable as such this section will be carried forward to the Stage 2 Assessment.	Pass
SW27 (b)	Whitehall Road	• Suburban • No Cycle lanes • Good Shepherd National School • Feeder cycle route (GDA CNP)	Single carriageway road 2 lane road (approx. 5.8-8.0m wide carriageway), residential suburban area. Limited potential to widen road over much of its length. Full bus priority cannot be achievabled due to the close proximity to the protected structure "The bottle tower" (5m from footpath edge). Due to the constraints along the route and the route being circuitous; it is not a feasible option and will not be carried forward to the Stage 2 Assessment. However, this route option may be considered appropriate for traffic diversions and/or cycle routes as part of subsequent schemes progressed to the Stage 2 Assessment	Fail
SW28	Nutgrove Avenue	• Suburban • Off road cycle track in both directions • Church of the Good Shepherd • Young – Early Mature Trees • Retail • Secondary cycle route (GDA CNP No. S04)	Single carriageway 3 lane (2 general traffic, 1 bus lane) (approx. 9.3-9.4m wide carriageway). Bus lane start in either direction at the Church of the Good Sheppard in this suburban area with residential and retail uses. Full bus priority in both directions is achievable, provision of full bus priority (including on-road mandatory cycle lane) in both directions would result in a loss of up to 4m from residential properties. A number of the residential buildings are some 5.6m from the footpath, therefore land take will be required from both sides of the carriageway. Full bus priority may be achievable as such this section will be carried forward to the Stage 2 Assessment.	Pass
SW28(a)	Whitebarn Road	• Suburban • No cycle lanes • Residential • Young Trees • No provision for cycle route (GDA CNP)	This road is a single carriageway 2 lane road (approx. 4.9-6.3m wide carriageway), with footways available on either side. Residents generally have parking within property boundaries. Bus priority will require tree removal along half of the route. The road is residential in nature and the alignment is not suitable for a CBC, as a result, it is not a feasible option and will not be carried forward to the Stage 2 Assessment.	Fail

Table 5.1: Route Option Sifting (Stage 1) Summary – Section 1				
Route Option	**Name / Section**	**Area Characteristics**	**Comments**	**Pass/ Fail**
SW29	Churchtown Rd Upper	• Urban • Off road cycle track in both directions • Retail • Secondary cycle route (GDA CNP No. SO4)	This is a four lane carriageway approximately 15m wide (2 lanes in each direction), raised adjacent cycle track and footway available on both sides. Bus priority may be achievable by reducing the width of the general traffic lanes and widening the carriageway however this would also include encroachment into residential driveway/front gardens. Reallocation of traffic lanes from general traffic to buses may be needed to ensure priority at junctions. Full bus priority may be achievable as such this section will be carried forward to the Stage 2 Assessment.	Pass
SW30	Braemor Road (between Nutgrove Avenue & Whitehall Rd)	• Suburban • Off road cycle track in both directions • Retail • Young Trees in verge along route. Mature Tress in open green area. • Secondary cycle route (GDA CNP No. SO4)	Braemor Road is a single carriageway 2 lane road, ranging from 7.5-8m in width, with raised adjacent cycle tracks and footways available on either side. Footpath separated from the carriageway by grassed verge. Bus priority may be achievable in both directions by reducing the width of the general traffic and utilising the verges (removal of young trees) on the corridor. Full bus priority may be achievable as such this section will be carried forward to the Stage 2 Assessment.	Pass
SW31	Churchtown Road Upper (between Whitehall Rd & Landscape Rd)	• Suburban • Residential • No cycle lanes • Young trees • Feeder cycle route (GDA CNP)	This route is a single carriageway 2 lane road (9-9.2m wide carriageway), with footways available on either side. Footpath separated from the carriageway by grassed verge. Bus priority may be achievable in both directions by reducing the width of the general traffic and widening into the verges (removal of semi/mature trees) on the corridor. Bus priority will require young tree removal and relocating of overhead power supply, but it is a feasible option and will be carried forward to the Stage 2 Assessment.	Pass
SW31(a)	Churchtown Road Upper (between Braemor Road and Landscape Park)	• Suburban • Residential • No cycle lanes • Semi/mature trees No provision for cycle route (GDA CNP)	This Route is a single carriageway 2 lane road (approx. 8.7-9.5m wide carriageway), with footways available on either side. Footpath separated from the carriageway by grassed verge. Bus priority may be achievable in both directions by reducing the width of the general traffic and widening into the verges (removal of semi/mature trees) on the corridor. Bus priority may be achieved, as such this route will be carried forward to the Stage 2 Assessment.	Pass
SW32	Landscape Road	• Suburban • Retail Commercial • No cycle lanes • Semi/mature trees • Feeder cycle route (GDA CNP)	This Route is a single carriageway 2 lane road (approx. 8.3-8.6m wide carriageway), footways either side, suburban residential area. Bus priority may be achievable in both directions by reducing the width of the general traffic and widening the carriageway however this would include encroachment into residential driveway/front gardens and the removal of a number of on-street parking for commercial properties. Some houses have steps to entrance directly from road level, which would present difficulties for widening and land acquisition. As a result, it is not a feasible option and will not be carried forward to the Stage 2 Assessment.	Fail
SW33	Hillside Drive (between Whitehall Rd & Castle Golf Club)	• Suburban • Residential • No cycle lanes • Semi/mature trees Feeder cycle route (GDA CNP)	This road is a single carriageway 2 lane road (approx. 9.0-9.2m wide carriageway), with footways available on either side. Footpath separated from the carriageway by grassed verge. Residents generally have parking within property boundaries. Bus priority will require tree removal. The road is residential in nature and the alignment is not suitable for a CBC. As a result, it is not a feasible option and will be carried forward to the Stage 2 Assessment.	Fail

Table 5.1: Route Option Sifting (Stage 1) Summary – Section 1				
Route Option	**Name / Section**	**Area Characteristics**	**Comments**	**Pass/ Fail**
SW34	Braemor Road (between Whitehall Rd & Woodside)	• Suburban • Off road cycle lanes • Young – Mature Trees • Secondary cycle route (GDA CNP No. SO4) •	Braemor Road is a single carriageway 2 lane road (approx. 9.1-9.3m wide carriageway), with off road cycle tracks and footways available on either side. Bus priority may be achievable in both directions by reducing the width of the general traffic and widening into footpaths on both sides of the carriageway. Full bus priority may be achievable as such this section will be carried forward to the Stage 2 Assessment.	Pass
SW35	Oakdown Road	• Suburban • Residential • No cycle lanes • Young Trees • Church No provision for cycle route (GDA CNP)	This road is a single carriageway 2 lane road (approx. 4.9-6.3m wide carriageway), with footways available on either side. Residents generally have parking within property boundaries. Bus priority will require land acquisition from The Church of Good Sheppard and removal of trees along the route. The road is residential in nature and the alignment is not suitable for a CBC. Due to the aforementioned constraints, this route will not be carried forward to the Stage 2 Assessment.	Fail
SW36	Woodside	• Suburban • Residential • No cycle lanes • Semi/mature trees • No provision for cycle route (GDA CNP)	This Route is a single carriageway 2 lane road, approx.9m in width, with footways available on either side in a Suburban residential area. Residents generally have parking within property boundaries. There is a level difference of over 10m between the route links and there are a number of environmental issues through the green area (removal of trees), as a result it is not a feasible option and will not be carried forward to the Stage 2 Assessment.	Fail
SW37	Braemor Park	• Suburban • Residential • No cycle lanes • No provision for cycle route (GDA CNP)	This road is a single carriageway 2 lane road (approx. 6.5-7.8m wide carriageway), with narrow footways. Bus priority may not be achievable due to the proximity to the adjacent properties (a pinch point of 8.8m exists between Mount Carmel Hospital Boundary Wall and house boundary lines on opposite sides of the carriageway). Provision of one-way bus priority (including cycle lanes) could result in a loss of up to 8m from the residential properties on the eastern side of Braemor Park, leaving the remaining gardens/driveways with only approximately 2-5m between the building line and the roadside boundary. Continuous one-way bus priority would not be feasible along this section due to the excessive land acquisition of residents. Full bus priority will be difficult to achieve as such this section will not be carried forward to the Stage 2 Assessment.	Fail
SW38	Dodder Park Road (between Woodside Rd & Rathfarnham Rd)	• Suburban • Advisory Cycle lane • Mature trees • No provision for cycle route (GDA CNP No. S04)	Dodder Park Road is a single carriageway 2 lane road (9.0-9.2m wide carriageway including advisory cycle lane), footways available on either side. Footpath separated from the carriageway by grassed verge. Bus priority may be achievable in both directions by reducing the width of the general traffic and utilising the verges (removal of semi-mature trees)/green areas on the corridor. Full bus priority may be achievable as such this section will be carried forward to the Stage 2 Assessment.	Pass

Table 5.1: Route Option Sifting (Stage 1) Summary – Section 1				
Route Option	**Name / Section**	**Area Characteristics**	**Comments**	**Pass/ Fail**
SW39	Hillside Drive (between Whitehall Rd & Castle Golf Club)	• Suburban • Residential • No cycle lanes • Young and Semi-Mature trees • Feeder cycle route (GDA CNP)	Suburban residential area. This Route is a single carriageway 2 lane road (6.0-6.2m wide carriageway), with footways available on either side. Footpath separated from the carriageway by grassed verge. Residents generally have parking within property boundaries. Provision of bus priority will require tree removal. The road is residential in nature and the alignment is not suitable for a CBC. As a result, it is not a feasible option and will be carried forward to the Stage 2 Assessment.	Fail
SW40	Rathfarnham Rd	• Suburban • On-road Mandatory cycle lanes • Retail (Rathfarnham Village) • Secondary cycle route (GDA CNP No. 10)	This route ranges in carriageway width from 14m (2 GT lanes including cycle lane) to 17m (2GT & 2 Bus lanes no cycle lanes). Bus priority may be achieved for majority of the link. Necessary removal of on-street car parking at shops/Yellow House pub. Reallocation of traffic lanes from general traffic to buses may be needed to ensure bus priority at junctions (both at Yellow House and entrance to Rathfarnham Village). Bus priority may be achievable; route is therefore carried forward to the Stage 2 Assessment.	Pass
SW41	Orwell Road (between Churchtown Rd & Orwell Park)	• Suburban • No cycle lanes • Milltown Golf Course • Secondary cycle route (GDA CNP No. 11B)	This Route is a single carriageway 2 lane road (approx. 6.6-12.6m wide carriageway), has footways on either side of the carriageway except for section from Churchtown Road through Milltown Golf Course which has footpath on the eastern side only. Bus priority in both directions may be achievable, however land acquisition would be necessary. Encroachment into Milltown Golf Course (max width 4.7m, over length of 450m). Land take from a number of residential front gardens/driveways would be required (c 6-12 residential properties max 3m). Widening of the bridge over the Dodder (3.5m) is required. Bus priority may be achievable; therefore, carried forward to the Stage 2 Assessment.	Pass
SW41(a)	Churchtown Rd Lower (Churchtown Rd Upper between Whitechurch Rd and Orwell Rd)	• Suburban • Residential • Windy Arbour Luas • No cycle lanes • Secondary cycle route (GDA CNP No. 11B)	This is a single carriageway 2 lane road (approx. 5.0-8.0m wide carriageway). At the start of link there is room for only one footpath on the Eastern side of the carriageway. Provision of full bus lanes may not be achievable due to the proximity to the adjacent properties, a pinch point of 7.75m exists between the boundary lines of properties on opposite sides of the carriageway. Due to the aforementioned constraints along this route, it has not been carried forward to the Stage 2 Assessment.	Fail
SW42	Churchtown Rd Lower (between Orwell Rd & Milltown Rd)	• Suburban • No cycle lanes • Milltown Golf Course Secondary cycle route (GDA CNP No. 11B)	The route is a single carriageway road (approx. 9-9.2m wide carriageway). Full bus priority may be achievable in both directions by widening the carriageway in the western direction however this would include encroachment into Milltown Golf Course (width ranging from 7-9m, over length of 1km). Bus priority may not be achievable at the end of the link due to a pinch point of 10.5m (bridge width) on Classon Bridge (by The Dropping Well Pub). Widening of Classon bridge is not feasible as it is a listed structure. Due to the extent of land acquisition required and widening of the bridge being unachievable, it is not a feasible option, as such it has not been carried forward to the Stage 2 Assessment.	Fail

Table 6.1: Route Option Sifting (Stage 1) Summary – Section 1

5.2.3 Of these twenty-three options considered for Section 1, thirteen (SW 24, 25, 26, 27 (a), 28, 29, 30, 31, 34, 38, 40, 41 & 31(a) were progressed to the next assessment stage. These route options are presented in **Figure 4.4** below.

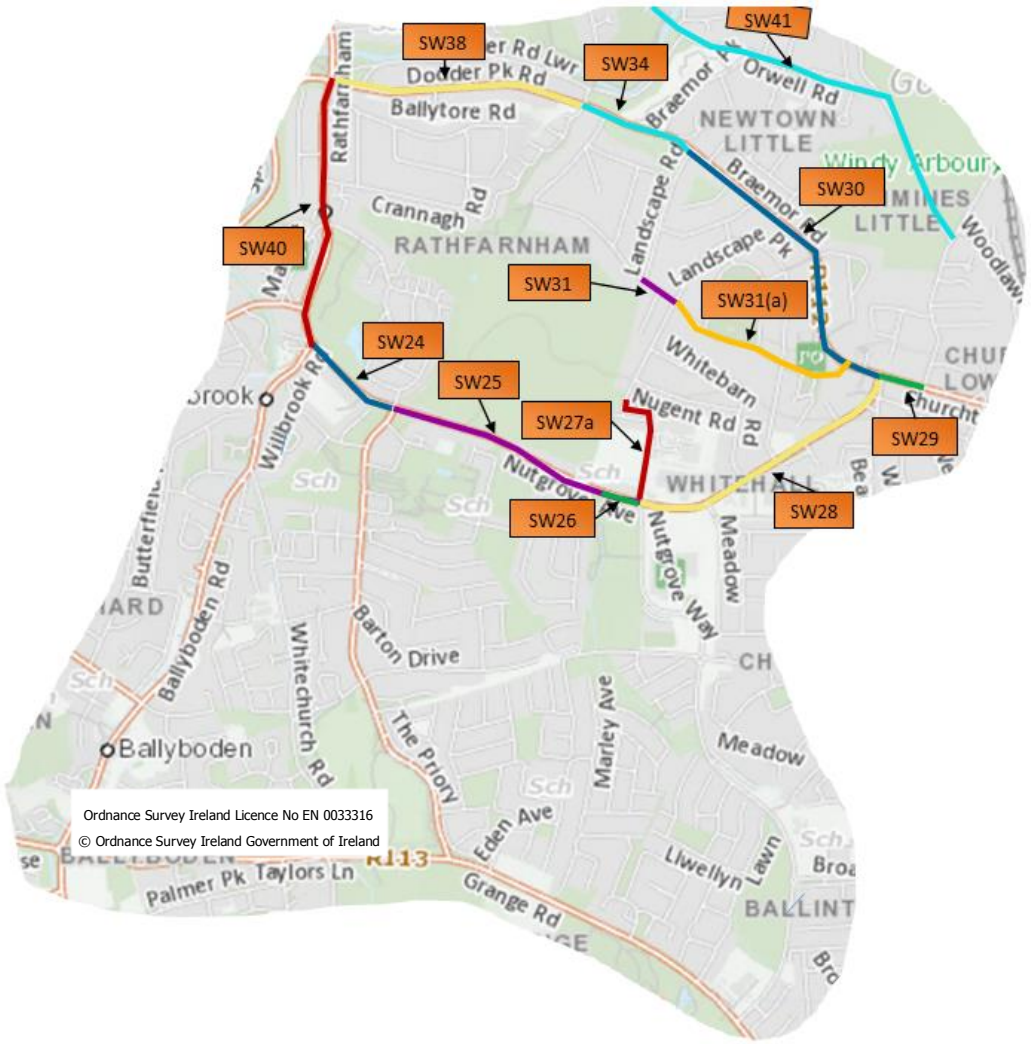


Figure 5.4: Route Options passing Stage 1 'Sift' in Section 1

5.3 Section 1: Stage 2 – Options Assessment

Introduction

5.3.1 Following the 'Stage 1' sift for the Section 1 study area, the remaining 13 route options were combined to form three cohesive route options (SA1, SA2 &SB1) between Grange Road/Nutgrove Avenue junction and the Dodder River crossing as shown in **Figure 5.5** below. It should be noted that certain route options which pass the Stage 1 assessment were not taken forward to the Stage 2 assessment as they were isolated links which do not combine with other route options to form cohesive routes.

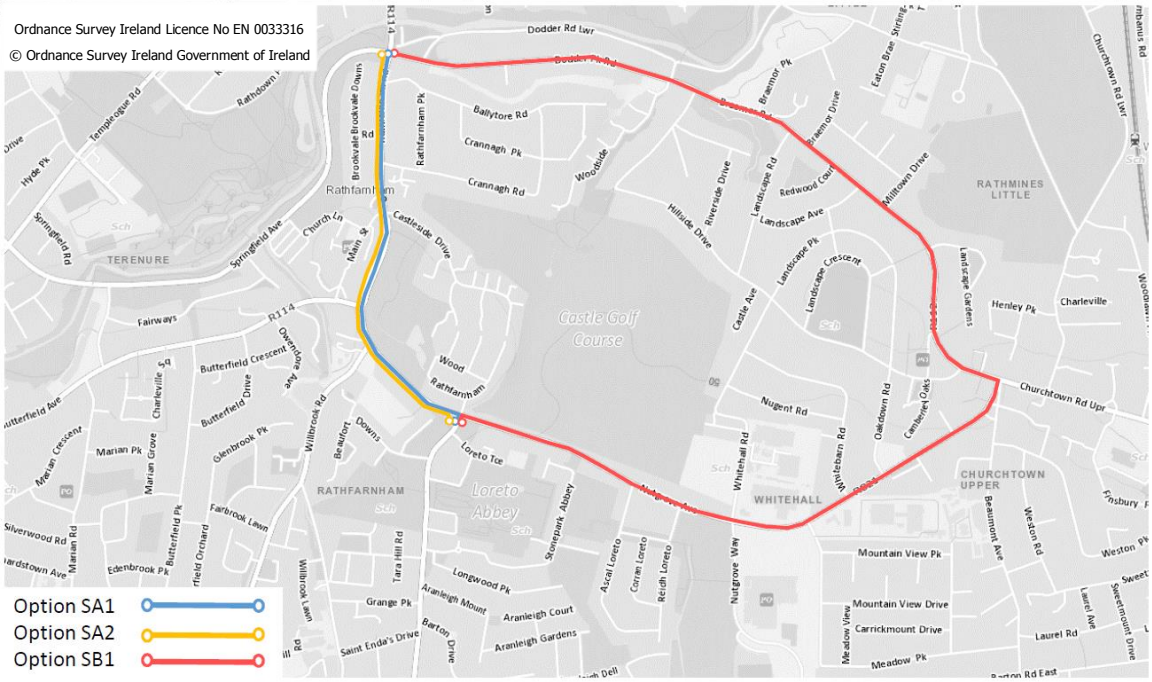


Figure 5.5: Section 1 Cohesive Route Options

5.3.2 The following three route options, as identified above, were taken forward:

- Option SA1 via Grange Road, Rathfarnham Road;
- Option SA2 via Grange Road, Rathfarnham Road (Parallel cycle route via Rathfarnham Wood, Castleside Drive); and
- Option SB1 via Nutgrove Avenue, Nutgrove Way, Braemor Road, Dodder Park Road;

5.3.3 Within the aforementioned route options, there are two constrained locations which require specific consideration. These scheme options have been brought through an initial assessment to determine the optimum layout for these areas to be included in the principle route options listed above. These sub-options are presented in **Figure 5.6** below:

- Sub-option NAR - Nutgrove Avenue from Grange Road junction travelling southeast (inbound) bound towards Nutgrove Shopping Centre; and
- Sub-option NAC - Nutgrove Avenue travelling northeast (inbound) bound towards Churchtown from Nutgrove Way junction.

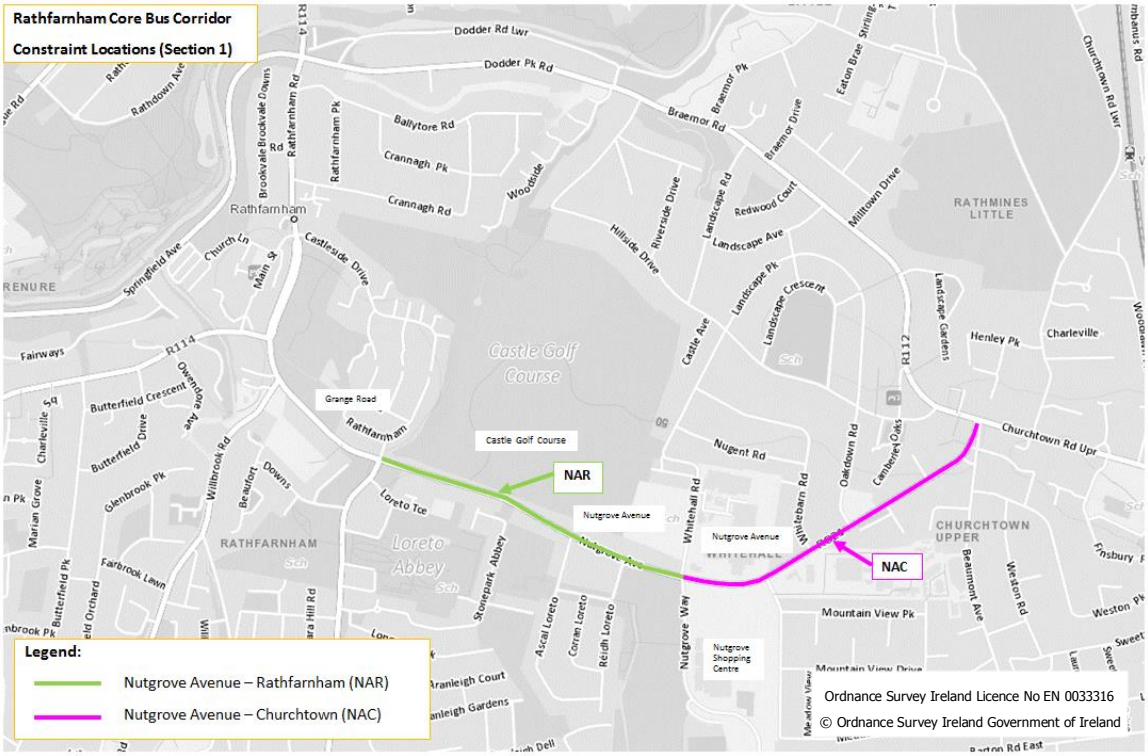


Figure 5.6: Section 1 Subsection Locations

5.3.4 Multi-criteria assessment will be utilised to assess these sub options to determine the optimum layout to be included in the principle route options considered for Section 1. The initial assessment of these constrained locations is outlined below.

Sub-Option NAC – Churchtown

5.3.5 There are two scheme options (NAC1 & NAC2) considered for the section along Nutgrove Avenue between Nutgrove Way and Braemor Road/Churchtown Road Upper which are discussed below. It should be noted that a number of additional variants to the scheme options were considered initially, but were not progressed to the scheme assessment stage as they were not feasible or were less effective than the scheme options taken forward.

Route Option NAC1: Bus lane in both directions & separate cycle route on Whitehall Road, Landscape Park and Landscape Ave.

5.3.6 The route option NAC1, for the section of Nutgrove Ave between the Nutgrove Way junction and the Churchtown Road Upper/Nutgrove Ave junction is presented in **Figure 5.7**. Cyclists will be catered for via a separate cycle route via Whitehall Road, Landscape Park and Landscape Avenue before connecting to cycle facilities on Braemor Road, see **Figure 5.8**.

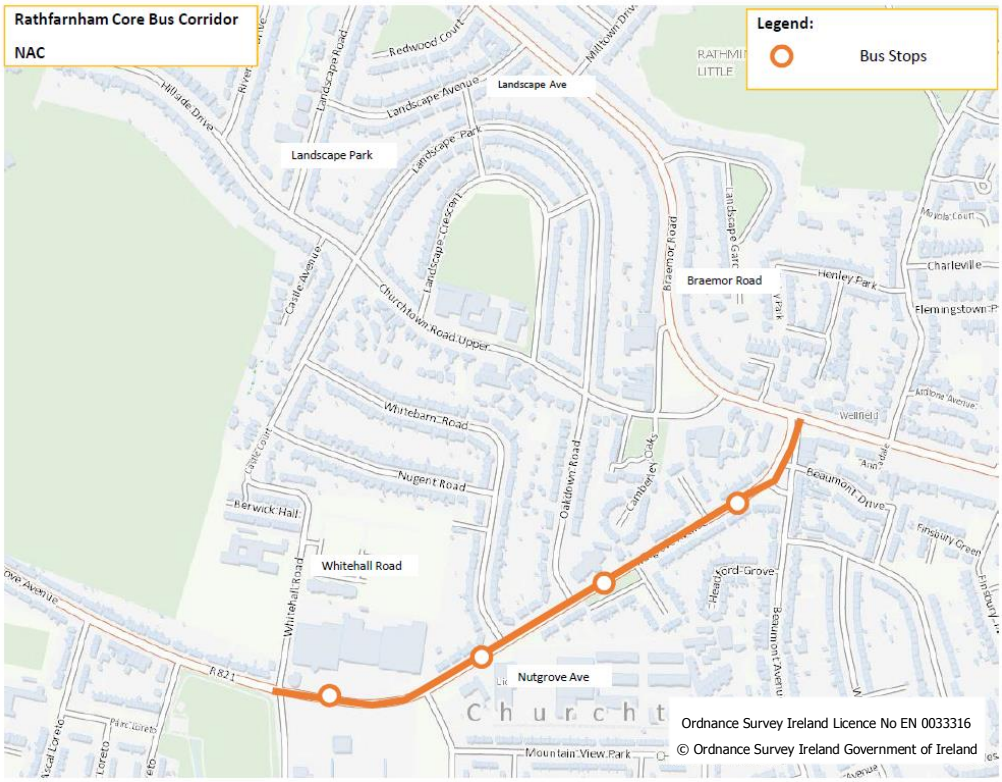


Figure 5.7: Route Option NAC Nutgrove Avenue - Churchtown

5.3.7 **Inbound (Northbound):** The CBC service will proceed in a north westerly direction along the Nutgrove Avenue between Nutgrove Avenue and Churchtown Road, segregated bus lane provided.

5.3.8 **Outbound (Southbound):** The southbound option follows the same route as northbound, segregated bus lane provided.

5.3.9 **Stops:** The number of stops is similar to the existing provision which is illustrated in **Figure 5.7** above.

5.3.10 The journey time for this route option from the Nutgrove Way Junction to the Churchtown Road junction is 4 minutes over a distance of approximately 925m.

5.3.11 With reference to Figure 5.8, the route option proposals include for the provision of segregated bus facilities in conjunction with two-way traffic for the entire length of Nutgrove Avenue. This will require the removal of the existing sub-standard two-way cycle facilities, as well as a level of residential land acquisition (approximately 80 sqm i.e. 1m take for 80m length) from residential properties on the southern side of the road.

5.3.12 Segregated cycle facilities will be provided by way of a separate route for cyclists via Whitehall Road connecting to cycle facilities on Braemor Road (with the exception of Landscape Park and Landscape Avenue). The creation of this link will require some land residential land acquisition on Whitehall Road, however not to the same extent as the land take that would be required to provide segregated cycle facilities on Nutgrove Avenue as identified for Secondary route S04 in the GDA Cycle Network Plan. Due to width constraints along Landscape Park and Landscape Avenue, segregated cycle facilities are not feasible. Nonetheless, due to the nature of these residential roads with low traffic volumes and vehicle speeds, mixed or shared street cycle facilities are feasible.

5.3.13 There are three signal controlled junctions along this section of Nutgrove Avenue and 3 signalised pedestrian crossing provided (two crossings between Nutgrove Retail and Office Park and Nutgrove Shopping Centre, and one crossing at the Church of the Good Shepherd).

5.3.14 The option NAC1 proposals are presented in **Figure 5.8**, whilst sample cross sections are presented in **Figure 5.9** below.

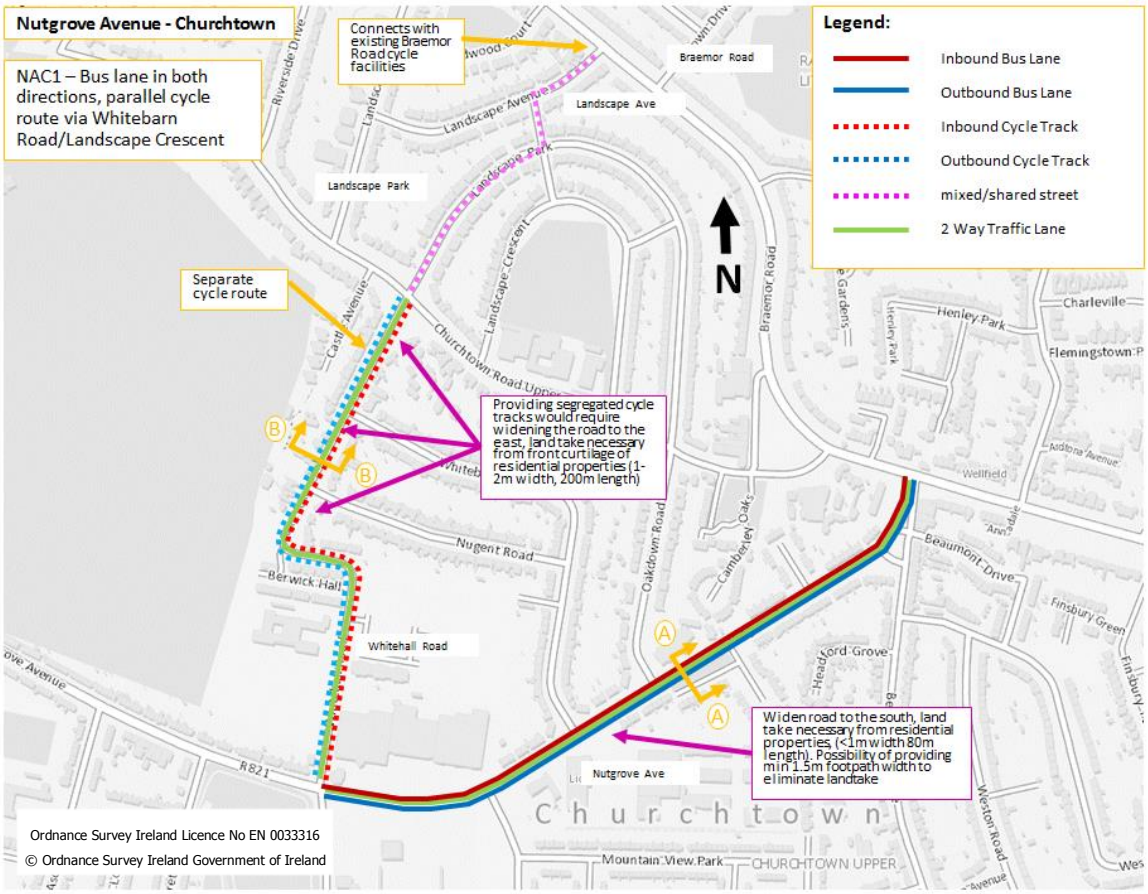


Figure 5.8 Route Option NAC1 Proposal: Nutgrove Avenue - Churchtown

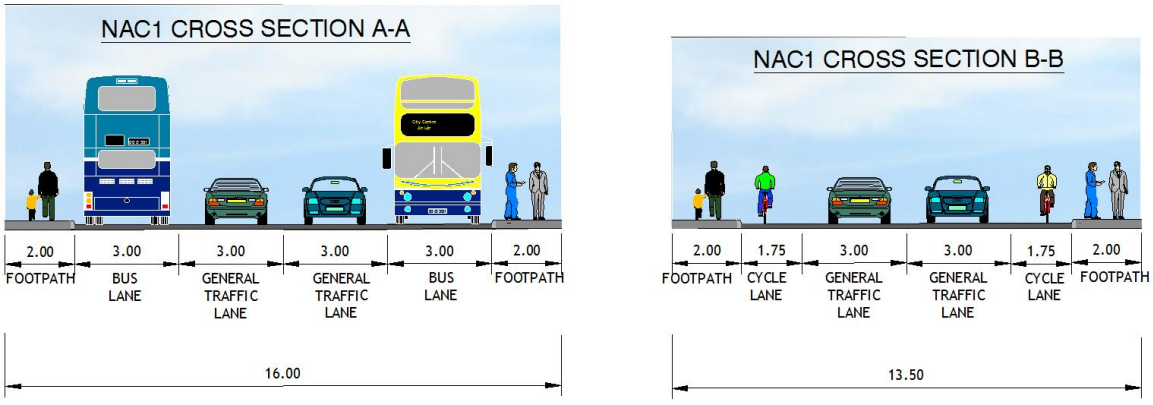


Figure 5.9: Route Option NAC1: Proposed Cross Section of Nutgrove Avenue - Churchtown

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

- The provision of a cycle route via Whitehall Road does not align with cycle route S09 of the GDA CNP along Nutgrove Avenue. Whitehall Road has been identified as a feeder route however in the CNP.

5.3.16 It is anticipated that this option would cost approximately €4.0 million (€3.3 million infrastructure costs, €0.7 million land acquisition costs).

Route Option NAC2: Inbound traffic lane only on Nutgrove Avenue, with two-way bus and cycle facilities

5.3.17 The route option NAC2, for the section of Nutgrove Avenue between the Nutgrove Way junction and the Churchtown Road Upper/Nutgrove Avenue junction. This runs along the same route as NAC1 as illustrated above in Figure 5.7. This option comprises two-way bus and cycle facilities with north-east bound traffic only catered for on Nutgrove Avenue. The existing sub-standard two-way cycle facilities on Nutgrove Way will be upgraded and connected with Braemor Road cycle facilities, as presented in **Figure 5.10**.

5.3.18 **Inbound (Northbound)**: The CBC service will proceed in a north westerly direction along the Nutgrove Avenue between Nutgrove Avenue and Churchtown Road, segregated bus lane provided.

5.3.19 **Outbound (Southbound):** The southbound option follows the same route as northbound, segregated bus lane provided.

5.3.20 **Stops:** The number of stops is similar to the existing provision which is illustrated in **Figure 5.7** above.

5.3.21 The journey time for this route option from the Nutgrove Way Junction to the Churchtown Road junction is 4 minutes over a distance of approximately 925m.

5.3.22 The route option proposals include the provision of segregated bus facilities in conjunction with one-way traffic for the entire length of Nutgrove Avenue. This will require the upgrading of the existing sub-standard two-way cycle facilities as

well as a larger level of land acquisition (approximately 525sqm i.e. 1.5m take for 350m length) from residential properties on the southern side of the road.

5.3.23 Segregated cycle facilities will be provided on Nutgrove Avenue as identified for Secondary route S04 in the GDA Cycle Network Plan.

5.3.24 There are three signal controlled junctions along this section of Nutgrove Avenue and 3 signalised pedestrian crossing provided (two crossings between Nutgrove Retail and office Park and Nutgrove Shopping Centre and one crossing at the Church of the Good Shepherd). The proposals would create additional traffic routes/volumes amongst the residential estate roads between Braemor Road and Nutgrove Avenue.

5.3.25 The option NAC2 proposals are presented in **Figure 5.10** while a sample cross section is presented in **Figure 5.11** below.

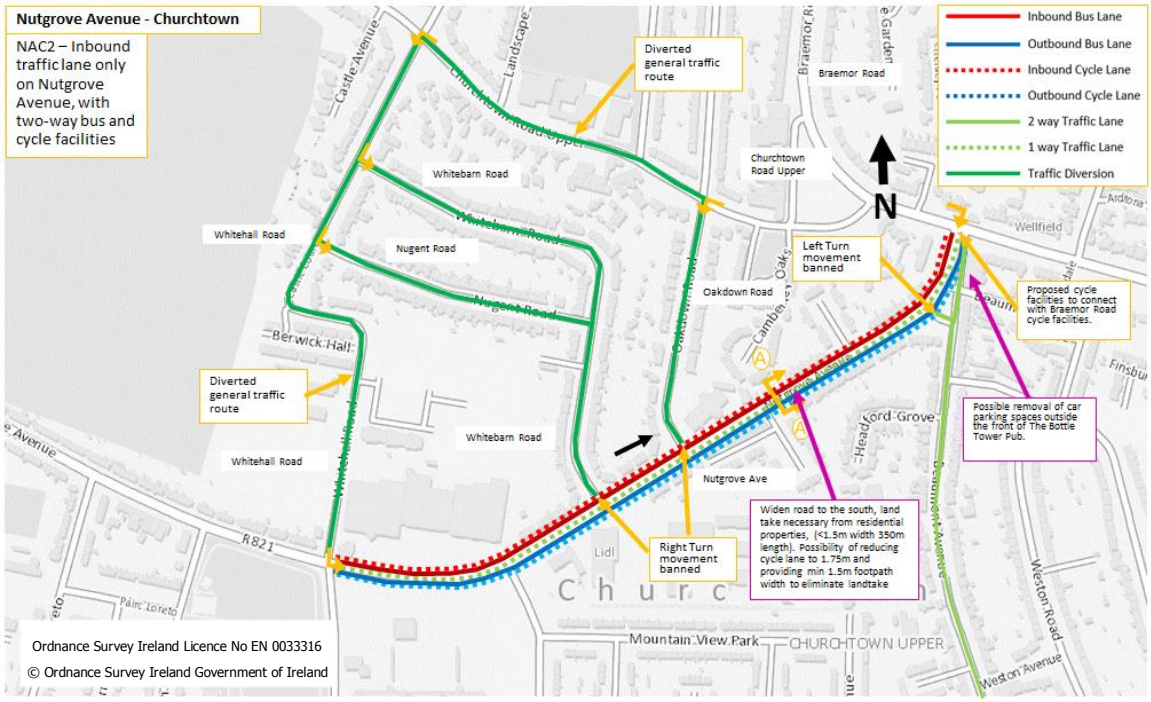


Figure 5.10: Route Option NAC2 Proposal: Nutgrove Avenue – Churchtown.

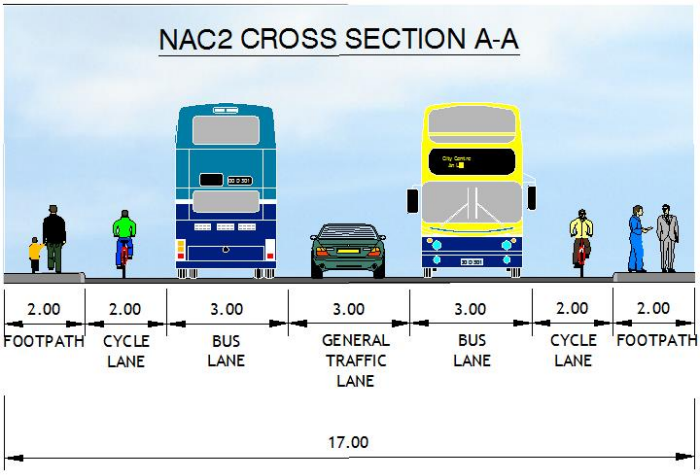


Figure 5.11: Route Option NAC2: Proposed Cross Section of Nutgrove Avenue – Churchtown.

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

- The introduction of a one-way traffic regime on Nutgrove Avenue would move traffic onto less suitable residential roads and would require upgrades to these roads.

5.3.27 It is anticipated that this option would cost approximately €3.5 million (€2.6 million infrastructure costs, €0.9 million land acquisition costs).

Sub-Option NAC: Scheme Assessment

5.3.28 The 'Initial' route options assessment summary tables for Sub Section NAC are presented in Table 1 of Appendix A. The relative ranking of route options against the scheme assessment sub-criteria are summarised in **Table 5.2** overleaf. Criterion and sub-criterion that produce relatively little differences between the options (Neutral compared to other options in the five-point scale) have not been included in the Scheme options Assessment Summary Tables.

Section NAC Summary (sub criteria) Nutgrove Ave - Churchtown			
Appraisal Criteria	**Sub-Criteria**	**Option NAC1** **Bus lane in both directions & separate cycle route on Whitehall Road, Landscape Park and Landscape Ave.**	**Option NAC2** **Inbound traffic lane only on Nutgrove Avenue, with two-way bus and cycle facilities.**
1 Economy	**1A Capital Cost**		
2 Integration	**2D Cycle Network Integration**		
	2E Traffic Network Integration		
5 Environment	**5E Landscape and Visual**		
	5F Air Quality		
	5G Noise & Vibration		
	5H Land Use Character		

Table 5.2: Section NAC Scheme Options Assessment Summary (Sub-Criteria

5.3.29 In terms of 'Economy', a differentiator between route options is the capital cost. Route option NAC1 would cost marginally more than NAC2, largely due to the infrastructure costs for the parallel cycle route.

5.3.30 In terms of 'Integration', Option NAC2 ranks higher in terms of cycle network integration as it provides segregated cycle facilities in both directions which aligns entirely with Secondary Route SO4 identified in the GDA Cycle Network Plan. Option NAC1 provides a separate alternative cycle route, which does not align with Route 9B. In terms of 'traffic impact', a differentiator between route options would be that option NAC2 which provides for inbound traffic only and would result in a significant traffic impact in terms of movement restrictions and increased traffic/congestion on Nutgrove Avenue. Due to the traffic diversions, there will be an increased level of traffic on the nearby residential roads (Whitehall Road, Whitebarn Road, Churchtown Road Upper, Oakdown Road). The traffic impacts in terms of movement restrictions and increased

traffic/congestion on Nutgrove Avenue (NAC2) will have a greater impact than the impacts on cyclist as a result of a separate alternative cycle route (NAC1).

5.3.31 In terms of 'Environment', route option NAC2 is generally considered to be less attractive in terms of potential for environmental impacts in relation to Landscape & Visual, Air Quality and Noise and Vibration due to the increased traffic on residential roads (Whitehall Road, Whitebarn Road, Churchtown Road Upper, Oakdown Road) resulting from the traffic diversions. Restricted access to the retail parks and residential properties due to the provision of one-way traffic on Nutgrove Avenue, has a large impact on Land Use Character.

5.3.32 A summary of the assessment and relative ranking of route options against the five main assessment criteria is presented in **Table 5.3** below.

Section NAC Summary Nutgrove Ave - Churchtown		
Appraisal Criteria	**Option NAC1** **Bus lane in both directions & separate cycle route on Whitehall Road, Landscape Park, and Landscape Ave.**	**Option NAC2** **Inbound traffic lane only on Nutgrove Avenue, with two-way bus and cycle facilities.**
1 Economy		
2 Integration		
5 Environment		

Table 5.3: Section NAC Scheme Options Assessment Summary (Main Criteria)

5.3.33 Based on the assessment undertaken, option NAC1 appears to offer more benefits over NAC2. NAC1 is therefore preferred for Nutgrove Ave – Churchtown section of the study area for the following reasons:

- It requires less private land-take and lower number of residential properties are affected.
- It has lower traffic impact, option NAC2 which provides for inbound traffic only would have a significant traffic impact in terms of movement restrictions and increased traffic/congestion on Nutgrove Avenue

- It has a lower landscape and visual, air quality and noise & vibration impact when compared to NAC2.
- It has significantly less impact on land-use character.

5.3.34 Option NAC1 will therefore form part of the principle route options.

Sub-Option NAR - Nutgrove Avenue/Grange Road – Rathfarnham

5.3.35 There are two scheme options (NAR1 & NAR2) considered for the section along Nutgrove Avenue between Grange Road and Nutgrove Way, which are options are discussed below. It should be noted that a number of additional variants to the scheme options were considered initially but were not progressed to the scheme assessment stage as they were not feasible or were less effective than the scheme options taken forward.

Route Option NAR1: Bus lane in both directions & separate cycle route through the Castle Golf Course and The Good Shepherd National School grounds.

5.3.36 The route option NAR1, which comprises a section of Nutgrove Ave between the Nutgrove Way junction and the Grange Road/Nutgrove Ave junction is presented in **Figure 5.12**. Cyclists will be catered for via the provision of a parallel segregated cycle route through the Castle Golf Club & the Good Shepherd school lands as illustrated in **Figure 5.13**.

Figure 5.12: Route Option NAR1 Nutgrove Avenue - Rathfarnham

5.3.37 **Inbound:** The CBC service will proceed in an easterly direction along Nutgrove Avenue between Grange Road and Nutgrove Way, with a segregated bus lane provided.

5.3.38 **Outbound:** The outbound option follows the same route as inbound, with segregated bus lane provided.

5.3.39 **Stops:** It is anticipated that the existing number of stops along these routes will be preserved as illustrated in **Figure 5.12**.

5.3.40 The journey time for this route option from Nutgrove Way to the Grange Road junction is 3 minutes over a distance of approximately 860m.

5.3.41 This section of Nutgrove Avenue is a single carriageway road at present with an inbound bus lane and 2-way cycle facilities provided for the entire length. It is proposed as part of option NAR1 to provide continuous bus priority in both directions. Segregated cycle facilities will be provided via parallel route through the Castle Golf Club & the Good Shepherd school lands as part of Secondary Cycle route SO4. However the proposed removal of inbound segregated cycle facilities on Grange Road does not align strictly with the GDA Cycle Network Plan proposal to provide these facilities on Nutgrove Avenue.

5.3.42 This option would require the land acquisition from the Castle Golf Club & the Good Shepherd school as well as a portion of land from the commercial properties along the northern side of Nutgrove Avenue near Grange Road. In addition the removal of dedicated on street parking for the duplex units adjacent to these properties will be required. This may require the provision of a replacement off street parking area. Possible location for the off-street parking area is an adjacent brownfield site. However, planning permission has been granted on this site for the provision of new filling station (SD15A/0293).

5.3.43 There are three signal controlled junctions and 1 signalised pedestrian crossing provided along this section of Nutgrove Avenue.

5.3.44 The option NAR1 proposals are presented in **Figure 5.13** while a sample cross section is presented in **Figure 5.14** below.

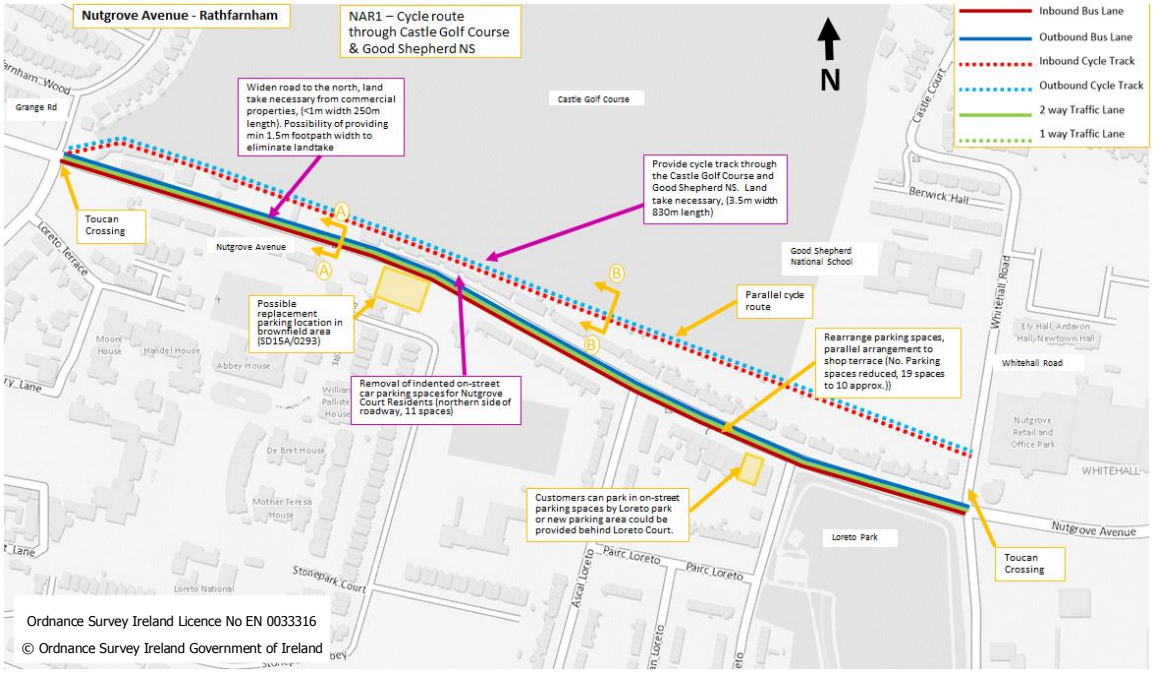


Figure 5.13: Route Option NAR1 Proposal: Nutgrove Avenue – Rathfarnham.

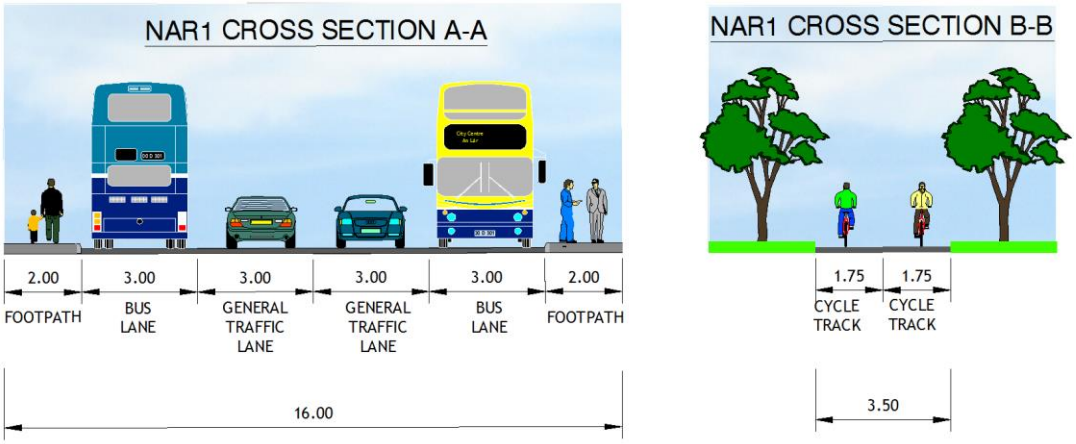


Figure 5.14: Route Option NAR1: Proposed Cross Section of Nutgrove Avenue – Rathfarnham.

5.3.45 It is anticipated that this option would cost approximately €11.3 million (€6.5 million infrastructure costs, €4.8 million land acquisition costs).

Route Option NAR2: Bus lane in both directions & separate cycle route on Rathfarnham Wood, The Castlelands and Castleside Drive.

The route option NAR2, which comprises a section of Nutgrove Ave between Grange Road junction and Nutgrove Way junction, runs along the same route as NAR1 as illustrated in **Figure 5.12**. Cycle facilities will be provided in the form of a separate mixed/shared street cycle route via Rathfarnham Wood, The Castlelands and Castleside Drive before connecting to cycle facilities on Rathfarnham Road as presented in **Figure 5.15**.

5.3.46 **Inbound:** The CBC service will proceed in an easterly direction along Nutgrove Avenue between Nutgrove Way and Grange Road, with a segregated bus lane provided.

5.3.47 **Outbound:** The outbound option follows the same route as inbound, with a segregated bus lane also provided.

5.3.48 **Stops:** It is anticipated that the existing number of stops along these routes will be preserved as illustrated in **Figure 5.12**.

5.3.49 The journey time for this route option from Nutgrove Way to the Grange Road junction is 3 minutes over a distance of approximately 860m.

5.3.50 This section of Nutgrove Avenue is a single carriageway road at present with an inbound bus lane and 2-way cycle facilities available for the entire length. It is proposed as part of option NAR2 to provide continuous bus priority in both directions. Segregated cycle facilities will be provided for cyclists via Rathfarnham Wood, The Castlelands and Castleside Drive before connecting to the proposed cycle facilities on Rathfarnham Road. The creation of this link will require some residential land acquisition (residential parking) on The Castlelands (2.0-3.8m width, 50m length).

5.3.51 This option would require land acquisition from commercial properties along the northern side of Nutgrove Avenue near Grange Road. In addition to the removal of dedicated on street parking for the duplex units adjacent to these properties. This may require the provision of a replacement off street parking area. The possible location for the off-street parking area is an adjacent brownfield site.

However, planning permission has been granted on this site for the provision of new filling station (SD15A/0293).

5.3.52 There are three signal controlled junctions and 1 signalised pedestrian crossing provided along this section of Nutgrove Avenue.

5.3.53 The option NAR2 proposals are presented in **Figure 5.15** while a sample cross section is presented in **Figure 5.16** below.

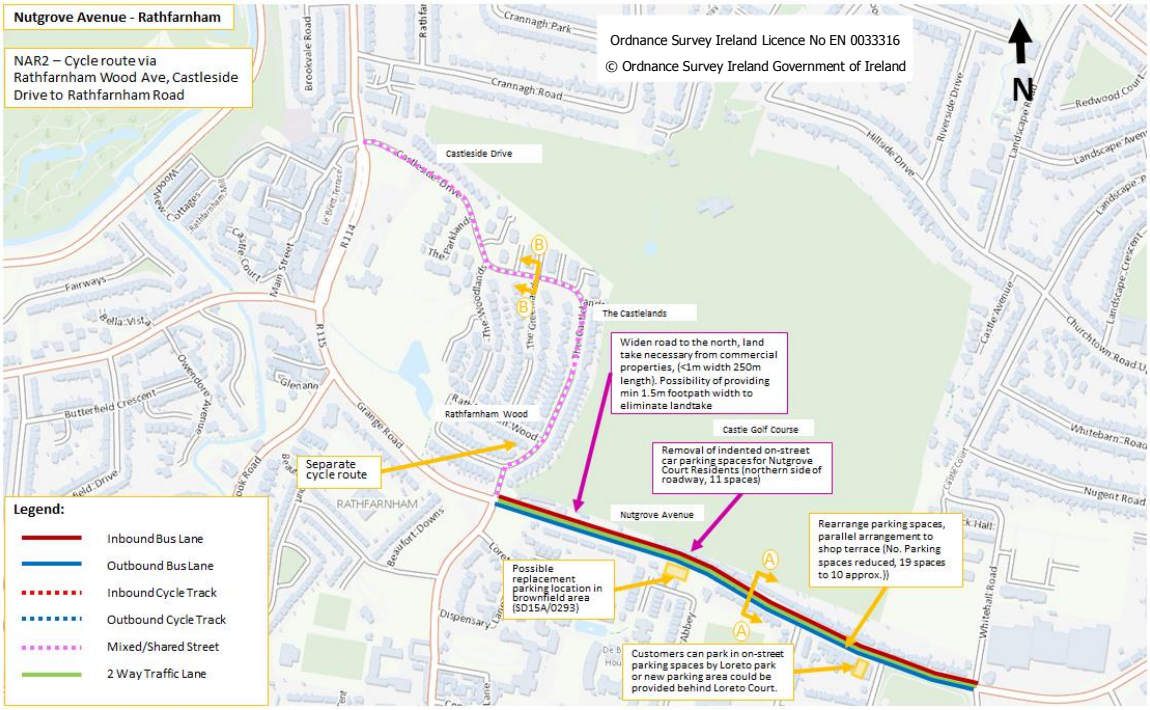


Figure 5.15: Route Option NAR2 Proposals: Nutgrove Avenue – Rathfarnham

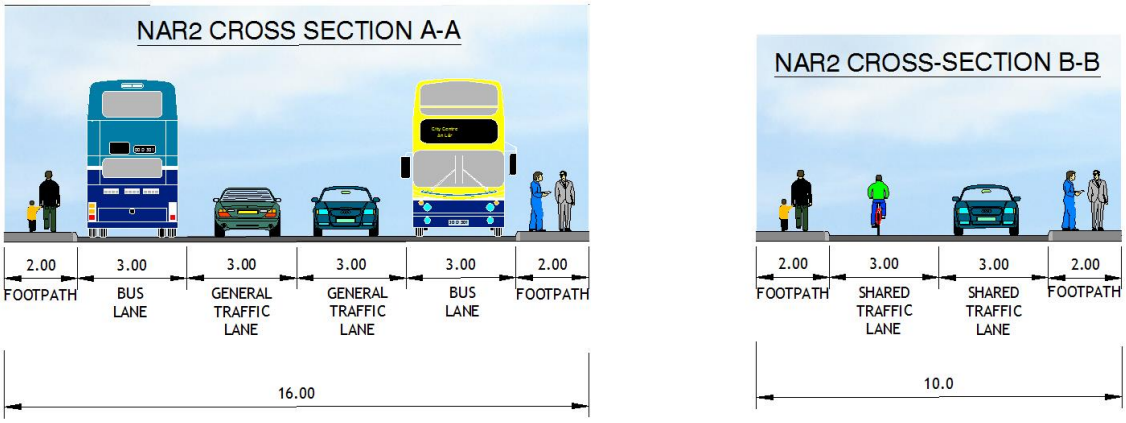


Figure 5.16: Route Option NAR2: Proposed Cross Section of Nutgrove Avenue – Rathfarnham

5.3.54 It is anticipated that this option would cost approximately €4.0 million (€3.3 million infrastructure costs, €0.7 million land acquisition costs).

Sub-option NAR: Scheme Assessment

5.3.55 The 'Initial' route options assessment summary tables for Section NAR are presented in Table 2 of Appendix A. The relative ranking of route options against the scheme assessment sub-criteria are summarised in **Table 5.4** below. Criterion and sub-criterion that produce relatively little differences between the options (Neutral compared to other options in the five-point scale) have not been included in the Scheme options Assessment Summary Tables.

Section NAR Summary (sub – criteria) Nutgrove Ave - Rathfarnham			
Appraisal Criteria	**Sub-Criteria**	**Option NAR1** **Bus lane in both directions & separate cycle route through the Castle Golf Course and The Good Shepherd National School grounds.**	**Option NAR2** **Bus lane in both directions & separate cycle route via Rathfarnham Wood, The Castlelands and Castleside Drive.**
1 Economy	**1A Capital Cost**		
2 Integration	**2D Cycle Network Integration**		
5 Environment	**5C Flora & Fauna**		
	5E Landscape and Visual		
	5H Land Use Character		

Table 5.4: Section NAR Scheme Options Assessment Summary (Sub-Criteria)

5.3.56 In terms of 'Economy', a primary differentiator between route options is the level of land acquisition that would be required through The Castle Golf Course to provide a segregated cycle route for option NAR1.

5.3.57 Option NAR2 provides a separate alternative cycle route along Rathfarnham Wood, The Castlelands, Castleside Drive and connects to Rathfarnham Road, which does not align with Route SO4. However option NAR1 provides a parallel

segregated cycle facility through the Castle Golf course which again does not strictly align with the GDA Cycle Network Plan proposal for route SO4, but provides the most direct/segregated route which general follows the direction of the proposed CBC.

5.3.58 In terms of 'traffic impact', both options rank similarly with bus lanes provided in both directions for this entire section of Nutgrove Ave. Neither option would be more restrictive than the other in terms of traffic movements.

5.3.59 In terms of 'Environment', route option NAR1 is generally considered to be less attractive in terms of potential for environmental impacts in relation to Flora & Fauna and Landscape & Visual, due to the land acquisition of Castle Golf Course with the possible removal of a number of trees (however these could potentially be replaced).

5.3.60 A summary of the assessment and relative ranking of route options against the five main assessment criteria is presented in **Table 5.5** below.

Section NAR Summary (main criteria) Nutgrove Ave - Rathfarnham		
Appraisal Criteria	Option NAR1 Bus lane in both directions & separate cycle route through the Castle Golf Course and The Good Shepherd National School grounds.	Option NAR2 Bus lane in both directions & separate cycle route via Rathfarnham Wood, The Castlelands and Castleside Drive.
1 Economy		
2 Integration		
5 Environment		

Table 5.5: Section NAR Scheme Options Assessment Summary (Main Criteria)

5.3.61 Based on the assessment undertaken, option NAR2 appears to offer more benefits over NAR1. NAR2 is therefore preferred scheme option for the Nutgrove Avenue – Rathfarnham section (sub-option NAR) for the following reasons:-

- It has a comparatively lower Capital Cost;
- It requires less private land-take;
- It has a lower landscape and visual impact when compared to NAR1;
- It has a lower flora and fauna impact; and
- It has a similar impact on land-use character, particularly public amenity.

5.3.62 NAR2 will therefore form part of the principal route options.

5.4 Stage 2 Assessment of Principal Route Options

Introduction

5.4.1 As previously mentioned, there are three principal route options considered for section 1 of the study area between the Grange Road/Nutgrove Avenue junction and the Dodder River crossing at Pearse Bridge. These options are discussed below in the following paragraphs.

Principal Route Option SA1: Grange Road – Rathfarnham

5.4.2 Route option SA1 (Figure 5.17), will provide segregated bus lanes between Grange Road/Nutgrove Avenue junction to the Dodder River crossing at Pearse Bridge. Segregated cycle facilities are provided along the CBC route on Grange Road and Rathfarnham Road to just north of the Rathfarham Main Street junction. A parallel cycle route is provided via Brookvale Downs as illustrated in Figure 5.18.

Figure 5.17: Principle Route Option SA1 (Grange Road – Rathfarnham Road)

5.4.3 **Inbound (Northbound):** The CBC service will proceed along Grange Road before turning left at the Nutgrove Avenue junction, continuing towards Rathfarnham Village and along Rathfarnham Road to the crossing of the Dodder at Pearse Bridge. A segregated bus lane will be provided for the entire route.

5.4.4 **Outbound (Southbound):** The outbound CBC follows the same route as THE inbound CBC. A segregated bus lane will be provided for the entire route.

5.4.5 **Stops:** There has been rationalisation of bus stops which are in close proximity to one another (less than 300m) such as the bus stop at Brookvale Road as shown in **Figure 5.17**.

5.4.6 The journey time for this route option is 5 minutes over a distance of approximately 1.3km.

5.4.1 Cyclists will be catered for via segregated cycle facilities along the majority of the CBC route, aligning with the GDA Cycle Network Plan proposal for Primary/Secondary Route 10. Due to width constraints and to limit the level of land acquisition required on Rathfarnham Road, a parallel cycle route via Brookvale Downs is also proposed.

5.4.2 There are five signal controlled junctions and one pedestrian crossings along this route.

5.4.3 The option SA1 proposals are presented in **Figure 5.18** while a sample cross section is presented in **Figure 5.19** below.

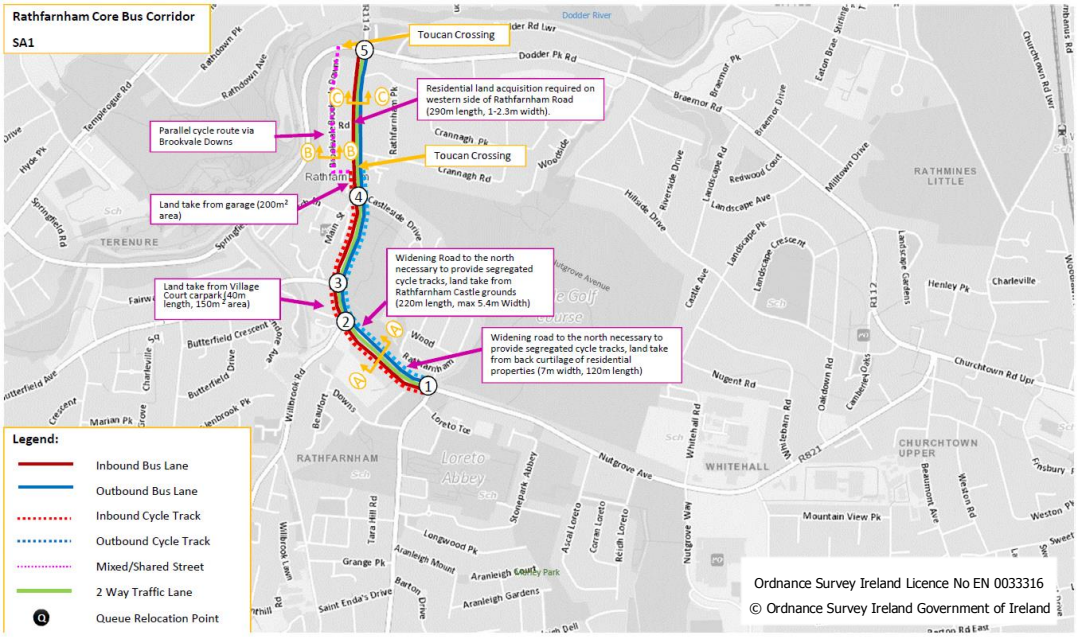
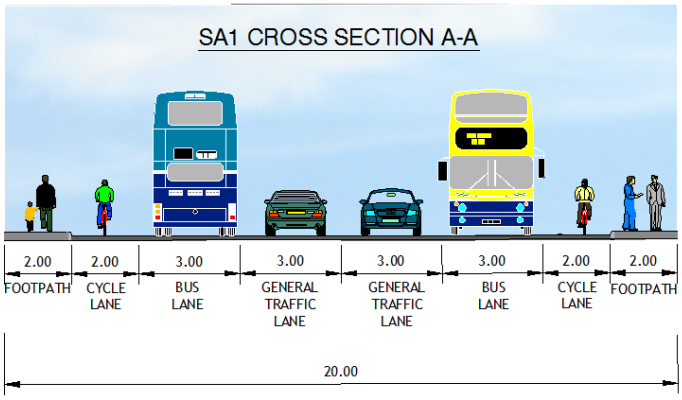
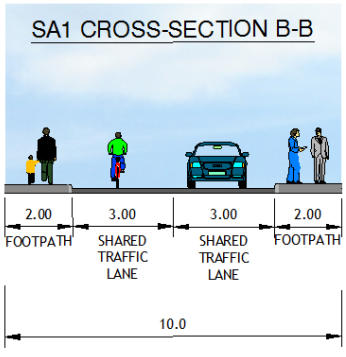


Figure 5.18: Principal route Option SA1 Proposal.





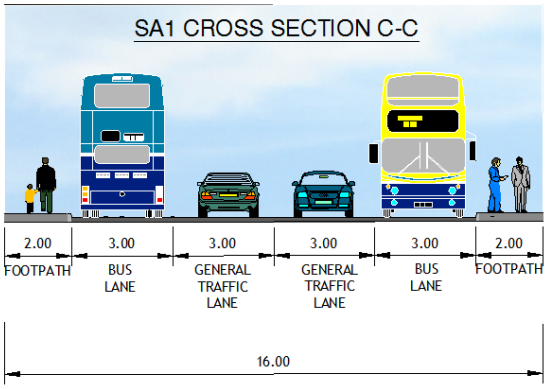


Figure 5.19: Principal route Option SA1 Proposed Cross Section.

Junctions:

5.4.4 There are 5 signalised junctions along this route option, some of which would require upgrading to facilitate bus priority. The location of these junctions are presented in **Figure 5.18** and discussed below:-

1. Grange Road/Nutgrove Avenue: Left turning vehicles from Nutgrove Ave to Grange Road will have to yield for buses and cyclists in the nearside lane before entering a left turn pocket. Left turning vehicles from Grange Road to Rathfanham Wood will have to yield for buses and cyclists in the nearside lane. A new left slip lane will be provided on Grange Road for inbound bus only traffic. There will be a requirement to relocate/provide new traffic signal equipment;

2. Grange Road/Willbrook Road: Adjustments to the existing junction layout would be required to facilitate bus lanes on approach to the junction. In the inbound direction, the left turn lane onto Willbrook Road will be reallocated to a bus lane to ensure bus priority up to the stop line at the junction with Grange Road. The straight-ahead lane will be replaced by a combined straight & left lane. Left turning vehicles will have to yield for buses and cyclists in the nearside lanes. In the outbound direction, the straight-ahead lane will be reallocated to a bus lane and the right turn lane onto Willbrook Road will be replaced by a combined straight & right lane. There will be a possible requirement to relocate/provide new traffic signal equipment;

3. Butterfield Avenue/Rathfarnham Road: Adjustments to junction layout would be required to facilitate bus lanes on approach to the junction. In the inbound direction, the left turning vehicles from Grange Road to Butterfield Avenue will have to yield for buses and cyclists in the nearside lane before entering a left turn pocket. In the outbound direction, the nearside straight-ahead lane on Rathfarnham Road will be reallocated to a bus lane to provide bus priority up to the stop line at the junction. There will be a requirement to relocate/provide new signal equipment;

4. Rathfarnham Road/Main Street/Castleside Drive: Adjustments to the junction layout are required to facilitate bus lanes on approach to the junction. Left turning vehicles from Rathfarnham Road Ave to Main Street and from Rathfarnham Road to Castleside Drive will have to yield for buses and cyclists in the nearside lane. There will be a requirement to relocate/provide new signal equipment; and

5. Rathfarnham Road/Dodder Park Road: Adjustments to junction layout would be required to facilitate bus lanes in both directions on approach to the junction. In the inbound direction, left turning vehicles from Rathfarnham Road to Springfield Avenue will have to yield for buses in the nearside lane. In the outbound direction, the straight-ahead lane will be replaced by a combined straight & left lane. Left turning vehicles on Rathfarnham Road to Dodder Park Road will have to yield for buses in the inside lane. Removal of existing outbound cycle lane will be required. A shared pedestrian/cycle facility will be provided to the west of the junction, to create a link to the proposed two-way cycle bridge on the western side of Pearse Bridge. There will be a requirement to relocate/provide new signal equipment.

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

- Segregated cycle facilities are not provided along a section of Rathfarnham Road, which is identified as Primary Route 10 within the GDA CNP.

5.4.6 It is anticipated that this option would cost approximately €9.6 million (€5.7 million infrastructure costs, €3.9 million land acquisition costs.

Principal Route Option SA2: Grange Road – Rathfarnham

5.4.7 Route option SA2 (Figure 5.20), will provide segregated bus lanes between Grange Road/Nutgrove Avenue junction to the Dodder River crossing at Pearse Bridge. Segregated cycle facilities along the CBC route on Grange Road and Rathfarnham Road to just north of the Rathfarnham Main Street junction. A parallel cycle route is provided via Rathfarnham Wood, Castleside Drive and Brookvale Downs as illustrated in Figure 5.21.

Figure 5.20: Principal route Option SA2 Proposed Cross Section.

5.4.8 **Inbound (Northbound):** The CBC service will proceed along Grange Road before turning left at the Nutgrove Avenue junction, continues towards Rathfarnham Village and along Rathfarnham Road to the crossing of the Dodder at Pearse Bridge. A segregated bus lane will be provided for the entire route.

5.4.9 **Outbound (Southbound):** The southbound option follows the same route as northbound. Segregated bus lane will be provided for the entire route.

5.4.10 **Stops:** There has been rationalisation of bus stops which are in close proximity to one another (less than 300m) such as the bus stop at Brookvale Road as shown in **Figure 5.20**.

5.4.11 The journey time for this route option is 5 minutes over a distance of approximately 1.3km.

5.4.12 Due to width constraints and to limit the level of land acquisition required on Rathfarnham Road, a parallel cycle route (shared/mixed street) via Rathfarnham Wood, Castleside Drive and Brookvale Downs is proposed, which does not align with the GDA Cycle Network Plan proposal for Primary/Secondary Route 10.

5.4.13 There are five controlled junctions and one pedestrian crossings along this route.

5.4.14 The option SA2 proposals are presented in Figure 5.21 while a sample cross section is presented in Figure 5.22 below.

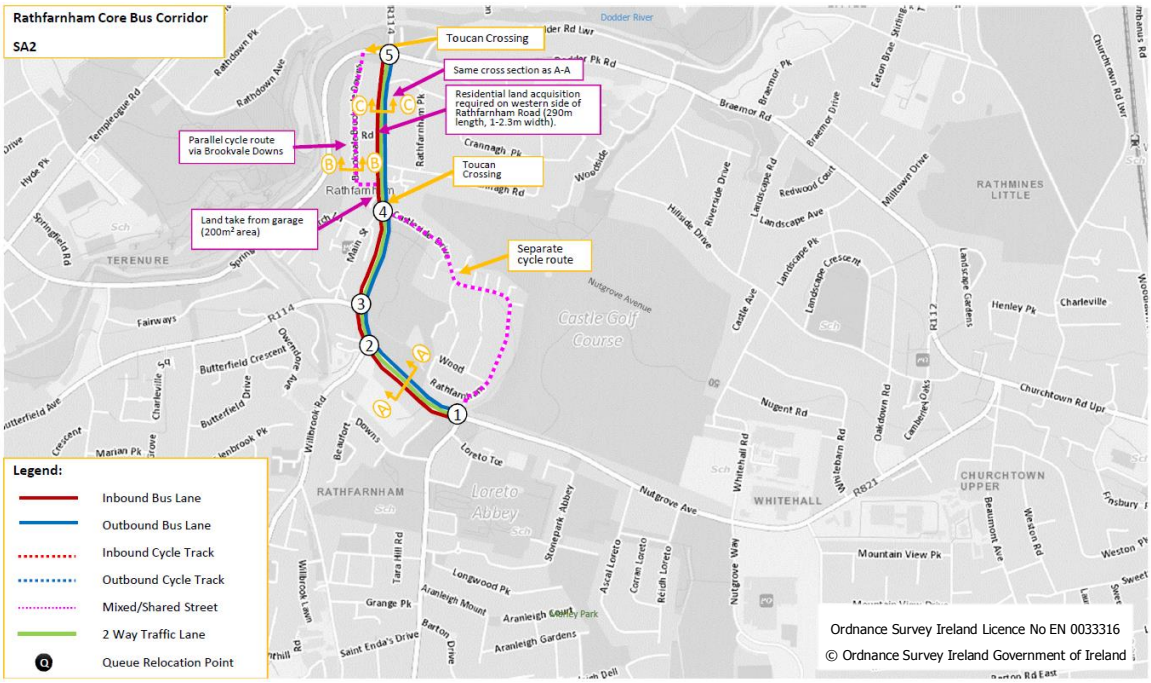


Figure 5.21: Principal Route Option SA2 Proposal.

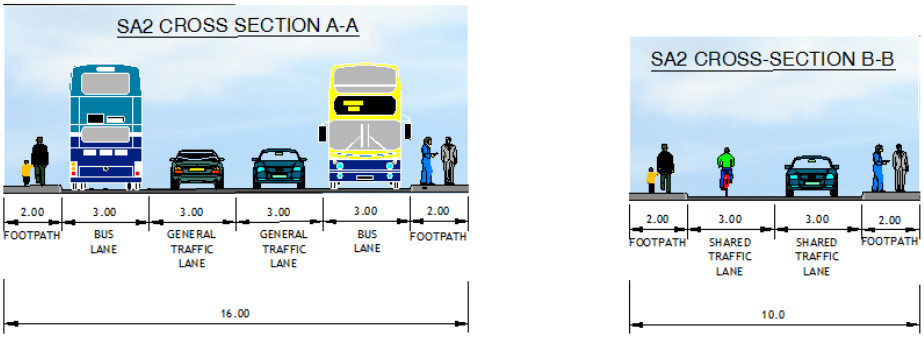


Figure 5.22: Principal Route Option SA2 Proposed Cross Section.

Junctions:

5.4.15 There are 5 signalised junctions along this route option, some of which would require upgrading to facilitate bus priority. The location of these junctions are presented in Figure 5.21 and discussed below:-

1. Grange Road/Nutgrove Avenue: Adjustments to the junction layout arerequired to facilitate bus lanes on approach to the junction. Left turning vehicles from Nutgrove Ave to Grange Road will have to yield for buses and cyclists in the nearside lane before entering a left turn pocket. Left turning vehicles from Grange Road to Rathfanham Wood will have to yield for buses and cyclists in the nearside lane. A new left slip lane will be provided on Grange Road for inbound bus only traffic. There will be a requirement to relocate/provide new traffic signal equipment;

2. Grange Road/Willbrook Road: Adjustments to the existing junction layout would be required to facilitate bus lanes on approach to the junction. In the inbound direction, the left turning lane onto Willbrook Road will be reallocated to a bus lane to provide a bus lane up to the stop line the junction on Grange Road. The straight-ahead lane will be replaced by a combined straight & left lane. Left turning vehicles will have to yield for buses and cyclists in the nearside lanes. In the outbound direction, the straight-ahead lane will be reallocated to a bus lane and the right turning lane onto Willbrook Road will be replaced by a combined straight & right lane. There will be a possible requirement to relocate/provide new signal equipment;

3. Butterfield Avenue/Rathfarnham Road: Adjustments to junction layout would be required to facilitate bus lanes on approach to the junction. In the inbound direction, the left turning vehicles on Grange Road to Butterfield Avenue will have to yield for buses and cyclists in the inside lane before entering a left turn pocket. In the outbound direction, the inside straight-ahead lane on Rathfarnham Road will be reallocated to a bus lane

to provide a bus priority up to the stop line at the junction. There will be a requirement to relocate/provide new signal equipment;

4. Rathfarnham Road/Main Street/Castleside Drive: Adjustments to the junction layout are required to facilitate bus lanes on approach to the junction. Left turning vehicles from Rathfarnham Road Ave to Main Street and from Rathfarnham Road to Castleside Drive will have to yield for buses and cyclists in the nearside lane. There will be a requirement to relocate/provide new signal equipment; and

5. Rathfarnham Road/Dodder Park Road: Adjustments to junction layout would be required to facilitate bus lanes in both directions on approach to the junction. In the inbound direction, left turning vehicles from Rathfarnham Road to Springfield Avenue will have to yield for buses in the nearside lane. In the outbound direction, the straight-ahead lane will be replaced by a combined straight & left lane. Left turning vehicles from Rathfarnham Road to Dodder Park Road will have to yield for buses in the nearside lane. Removal of existing outbound cycle lane will be required. A shared pedestrian/cycle facility will be provided to the west of the junction to create a link to the proposed two-way cycle bridge on the western side of Pearse Bridge. There will be a requirement to relocate/provide new signal equipment.

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

- Segregated cycle facilities are not provided along the CBC route on Grange Road and Rathfarnham Road, which is identified as the Primary Route 10 of the GDA CNP.

5.4.17 It is anticipated that this option would cost approximately €5.3 million (€4.2 million infrastructure costs, €1.1 million land acquisition costs.

Principal route Option SB1: Grange Road – Rathfarnham via Churchtown

5.4.18 Route option SB1 (Figure 5.23), will provide segregated bus lanes between Grange Road/Nutgrove Avenue junction to Dodder Park Road/Rathfarnham Road junction via Churchtown. Segregated parallel cycle routes provided along Rathfarnham Wood/Castleside Drive and via Whitehall Road/Landscape Park and is illustrated in Figure 5.24 (as per NAR2 & NAC1).

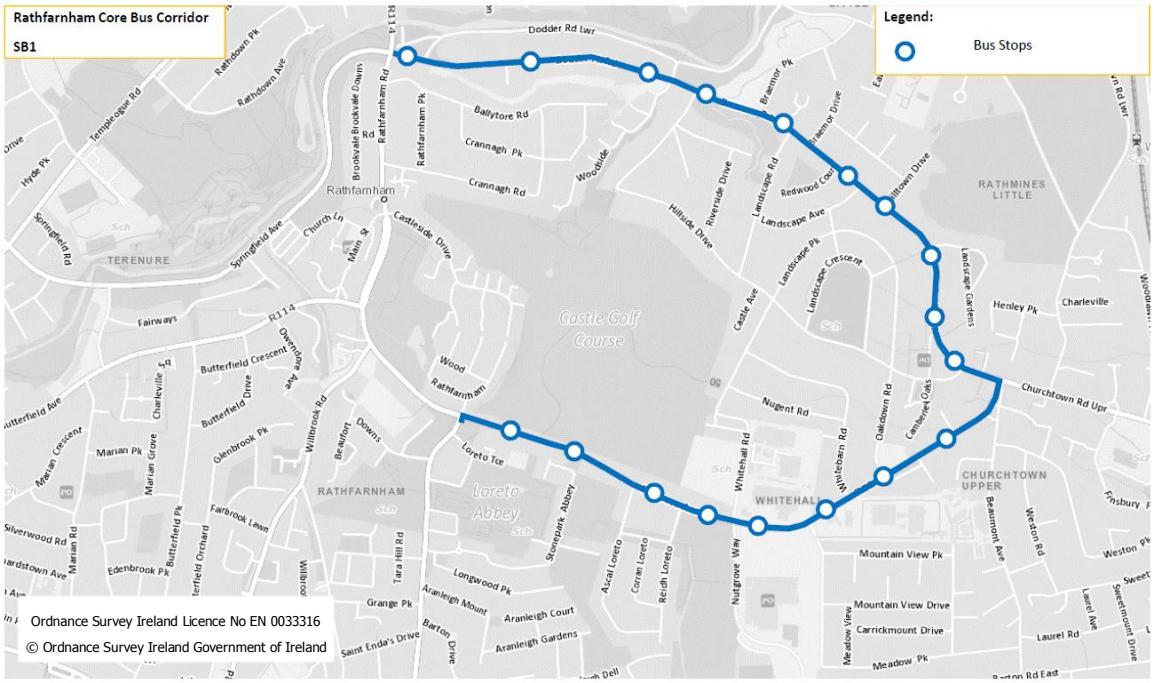


Figure 5.23: Principle Route Option SB1 (Grange Road – Churchtown via Nutgrove)

5.4.19 **Inbound (Northbound):** The CBC service will proceed along Grange Road before turning right at the Grange Road/Nutgrove Avenue junction. The CBC service then continues eastbound towards Churchtown via Nutgrove Avenue, turning left onto Braemor Road, and then proceeding onto Dodder Park Road towards Pearse Bridge. A segregated bus lane will be provided for the entire route.

5.4.20 **Outbound (Southbound):** The southbound option follows the same route as northbound. A segregated bus lane will be provided for the entire route.

5.4.21 **Stops:** It is anticipated that the existing number of stops will be preserved along the route as shown in Figure 5.23.

5.4.22 The journey time for this route option is 13 minutes over a distance of approximately 4.1km.

5.4.23 It is proposed to provide continuous bus priority in both directions along the entire route.

5.4.24 As illustrated in Figure 5.24 (as per NAR2 & NAC1), cyclists will be catered for via parallel segregated cycle facilities via Rathfarnham Wood/Castleside Drive and Whitehall Road/Landscape Park, to limit the level of land acquisition required on Nutgrove Avenue. Mixed or shared street cycle facilities are only feasible along Landscape Park and Landscape Avenue due to the width constraints and the low traffic volumes & vehicle speed These segregated cycle routes do not align with the GDA Cycle Network Plan proposal for Secondary Route S04 along Nutgrove Avenue and Braemor Road.

5.4.25 There are 8 controlled junctions and 8 pedestrian crossings along this route.

5.4.26 The option SB1 proposals are presented in Figure 5.24 while a sample cross section is presented in Figure 5.25 below.

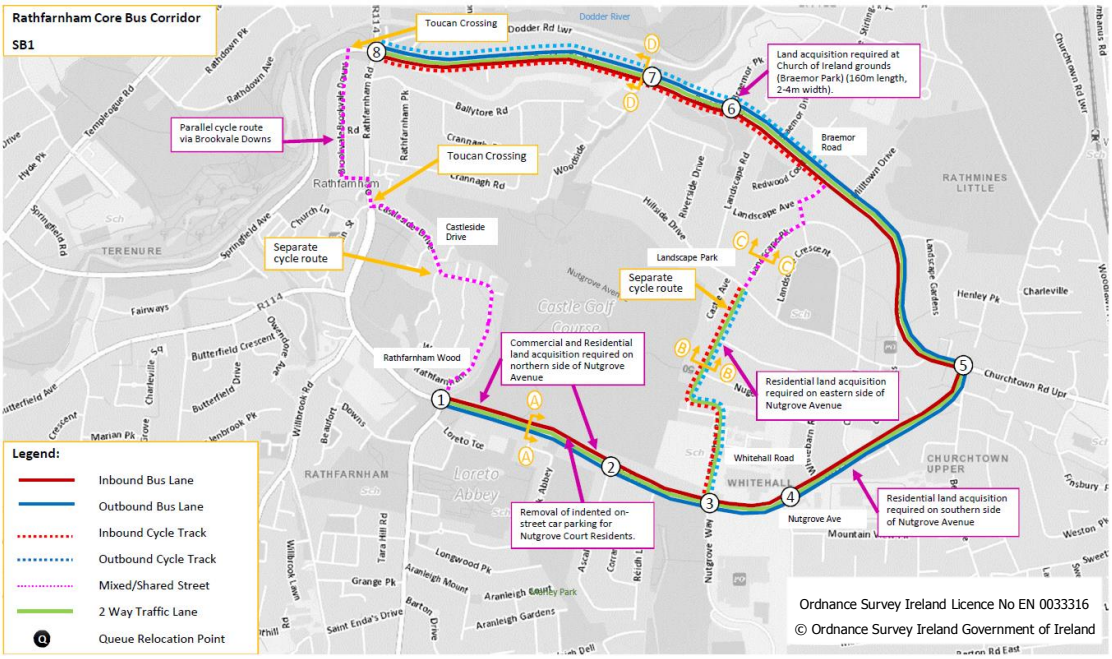


Figure 5.24: Principal Route Option SB1 Proposal

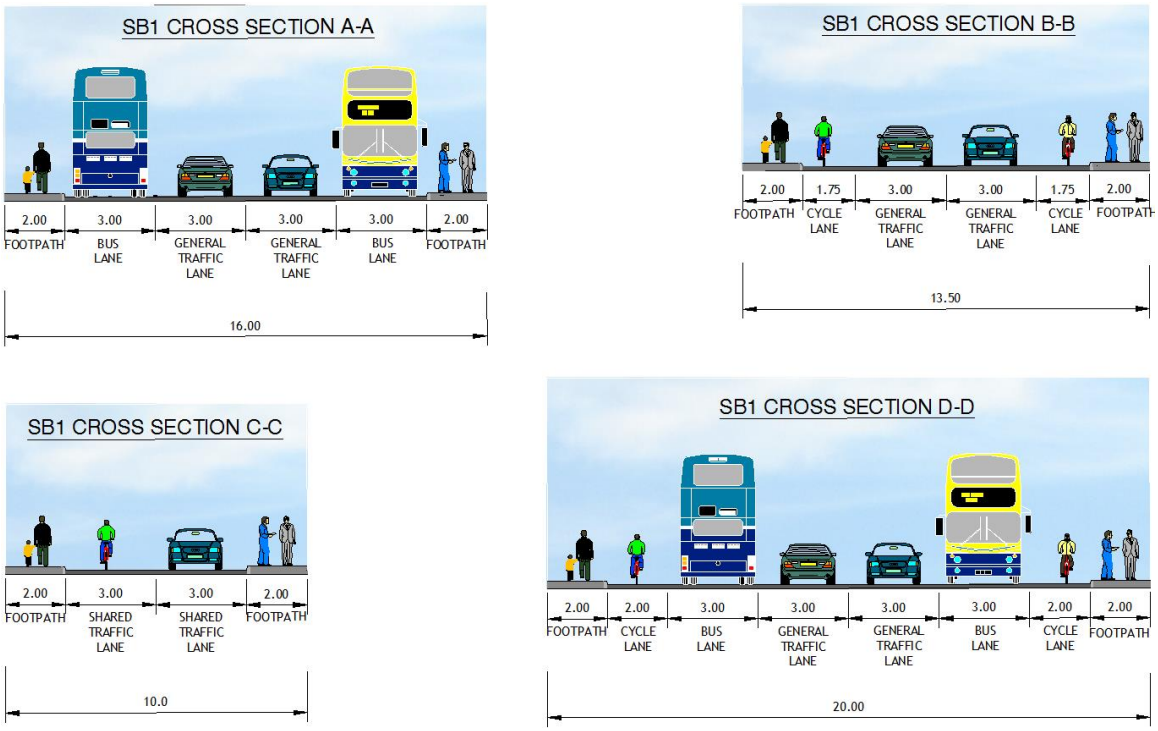


Figure 5.25: Principal Route Option SB1 Proposed Cross Section.

Junctions:

5.4.27 There are 8 signalised junctions along this route option, some of which would require upgrading to facilitate bus priority. The location of these junctions are presented in Figure 5.23 and discussed below: -

1. Grange Road/Nutgrove Avenue: Adjustments to the junction layout are required to facilitate bus lanes on approach to the junction. Left turning vehicles from Nutgrove Ave to Grange Road will have to yield for buses and cyclists in the nearside lane before entering the left lane. Advanced signals will be provided for buses at the junction. There will be a requirement to relocate/provide new signal equipment;

2. Nutgrove Avenue/Loreto Avenue: Adjustments to junction layout would be required to facilitate bus lanes on approach to the junction. In the outbound direction, the left turning vehicles from Nutgrove Avenue to Loreto Avenue will have to yield for buses in the nearside lane. In the inbound direction, the straight-ahead lane on Rathfarnham Road will be reallocated to a bus lane to provide a bus priority lane to the stop line at

the junction. The right turn lane will be replaced by a straight & right lane. Advanced signals will be provided for buses at the junction. Removal of the existing off-road cycle track is required in both directions. There will be a requirement to relocate/provide new signal equipment;

3. Nutgrove Avenue/Nutgrove Way: Adjustments to junction layout would be required to facilitate bus lanes on approach to the junction. In the inbound direction, the left turning vehicles from Nutgrove Avenue to Whitehall Road will have to yield for buses in the nearside lane. The straight-ahead lane will be replaced with a combined straight & right lane. The existing right turn lane will be maintained. In the outbound direction, the nearside straight-ahead lane on Nutgrove Avenue will be reallocated to a bus lane to provide bus priority to the stop line on approach to the junction. Advanced signals will be provided for buses at the junction. Removal of the existing off-road cycle track will be required in both directions. There will be a possible requirement to relocate/provide new signal equipment;

4. Nutgrove Avenue/Meadow Park Avenue: Adjustments to junction layout would be required to facilitate bus lanes on approach to the junction. In the inbound direction, the left turning vehicles from Nutgrove Avenue to Nutgrove Retail and Office Park will have to yield for buses in the nearside lane before entering the left lane. The right turning lane onto Meadow Park Avenue will be replaced with a combined straight & Right lane. Advanced signals will be provided for buses at the junction. The removal of the off-road cycle track will be required in both directions. There will be a possible requirement to relocate/provide new signal equipment;

5. Nutgrove Avenue/Braemor Road: Adjustments to junction layout would be required to facilitate bus lanes in both directions on approach to the junction. In the inbound direction, left turning vehicles from Nutgrove Avenue to Braemor Road will have to yield for buses in the inside lane (left turn only lane removed). In the outbound, possible reallocation of the nearside straight-ahead lane to bus lane, will be required to provide bus

priority to the stop line at the junction. Advanced signals will be provided for buses at the junction. Removal of the existing off-road cycle track in both directions will be required. There will be a possible requirement to relocate/provide new signal equipment;

6. Braemor Road/Braemor Park: Adjustments to junction layout would be required to facilitate bus lanes and cycle lanes in both directions on approach to the junction. In the outbound direction, left turning vehicles from Braemor Road to Braemor Park will have to yield for buses and cyclist in the nearside lane. In the inbound direction, right turning vehicles from Braemor Road to Braemor Park will share the straight-ahead lane. There will be a possible requirement to relocate/provide new signal equipment;

7. Braemor Road/Dodder Park Road: Adjustments to junction layout would be required to facilitate bus lanes and cycle lanes in both directions on approach to the junction. Advanced signals will be provided for buses at the junction. There will be a possible requirement to relocate/provide new signal equipment; and

8. Dodder Park Road/Rathfarnham Road: Adjustments to junction layout would be required to facilitate bus lanes and cycle lanes in both directions on approach to the junction. Advanced signals will be provided for buses at the junction. There will be a possible requirement to relocate/provide new signal equipment.

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

- There are no segregated cycle facilities provided along Nutgrove Avenue and a section of Braemor Road, which is identified as secondary Route S04 of the GDA CNP.

5.4.29 It is anticipated that this option would cost approximately €14.6 million (€12.3 million infrastructure costs, €2.3 million land acquisition costs).

Stage 2 Route Options Multi-Criteria Analysis

5.4.30 The 'Stage 2' route options assessment summary tables for the Principle Route Options for Section 1 are presented in Table 3 of Appendix A. The relative ranking of route options against the scheme assessment sub-criteria are summarised in **Table 5.6** below.

Section 1 Summary Sub Criteria Grange Road/Nutgrove Avenue junction to Dodder River Crossing				
Appraisal Criteria	**Sub-Criteria**	**Route Option SA1 Grange Road - Rathfarnham**	**Route Option SA2 Grange Road – Rathfarnham (Parallel cycle route via Rathfarnham Wood/Castleside Drive)**	**Route Option SB1 Grange Road – Rathfarnham via Churchtown**
1 Economy	1A Capital Cost			
	1B Transport Quality & Reliability			
2 Integration	2A Land Use Policy			
	2B Residential Population and Employment Catchments			
	2C Transport Network Integration			
	2D Cycle Network Integration			
	2E Traffic Network Integration			
3 Accessibility & Social Inclusion	3A Key Trip Attractors			
	3B Deprived Geographic Areas			
4 Safety	4A Road Safety			
	4B Pedestrians Safety			
5 Environment	5A Archaeology & Cultural Heritage			
	5B Architectural Heritage			
	5C Flora & Fauna			
	5D Soils, Geology & Hydrology			
	5E Landscape and Visual			
	5F Air Quality			
	5G Noise & Vibration			
	5H Land Use Character			

Table 5.6: Section 1 Options MCA Summary (Sub-Criteria)

5.4.31 In terms of 'Economy', the primary differentiator between route options is the length of the routes which have an impact on the Capital Cost and the projected journey times between Grange Road/Nutgrove Ave junction and the Dodder Crossing.

5.4.32 In terms of 'Integration', SB1 extend west towards the existing residential areas of Nutgrove & Churchtown which increase the residential and employment catchments. Route option SA1 scores highest in terms of Cycle Network Integration as it includes segregated cycle facilities along the majority of the CBC route (Primary/Secondary Route 01 GDA CNP) while SA2 and SB1 provide separate segregated cycle routes.

5.4.33 Route option SB1 ranks higher under the 'Accessibility and Social Inclusion' criterion as the route generally serves more trip attractors along its lengthier route.

5.4.34 Under 'Safety' there is relatively little to differentiate, with SA1 & SA2 having a requirement for less right turning movements.

5.4.35 In terms of 'Environment', route options SA1 & SB1 are generally considered to be less attractive compared to SA2. In terms of Flora & Fauna and Landscape & Visual, SA1 is less attractive due to the land take at Rathfarnham Castle Grounds (max 4m width, 80m length), while SB1 is less attractive due to the removal of trees on both sides of Braemor Road (large quantity of young trees) and Dodder Park Road (large quantity of mature trees) and the Land take of residential & commercial properties on northern side of Nutgrove Avenue. In terms of Air Quality and Noise & Vibration, SA1 and SB1 are less attractive due to the increased in proximity of vehicles to houses and gardens if bus lanes and cycles installed on Grange Road/Rathfarnham Road and Braemor Road. In terms of Land Use Character, SB1 is less attractive due to the level of land take required on Nutgrove Ave (between Grange Road & Nutgrove Way) which would affect the viability of commercial properties from being used for their intended uses.

5.4.36 A summary of the assessment and relative ranking of route options against the six main assessment criteria is presented in Table 5.7 below.

Section 1 Summary Sub Criteria Grange Road/Nutgrove Avenue junction to Dodder River Crossing			
Appraisal Criteria	**Route Option SA1 Grange Road - Rathfarnham**	**Route Option SA2 Grange Road – Rathfarnham (Parallel cycle route via Rathfarnham Wood/Castleside Drive)**	**Route Option SB1 Grange Road – Rathfarnham via Churchtown**
1 Economy			
2 Integration			
3 Accessibility & Social Inclusion			
4 Safety			
5 Environment			

Table 5.7: Section 1 Options MCA Summary (Main Criteria)

5.4.37 Based on the assessment undertaken, route option SA1 & SA2 offer overall similar benefits over option SB1 primarily because of their directness and economic benefits. However, SA1 achieves more of the Scheme objectives by providing cycle facilities along the majority of the CBC route which are Primary and Secondary Routes (S04 & 10) under the Greater Dublin Area Cycle Network Plan.

Therefore SA1, is the preferred route option for the Southern Section for the following reasons:

- It has a comparatively lower Capital Cost;
- It will provide shorter journey times;
- It provides for segregated bus facilities for the entire route; and
- It provides segregated cycle facilities along the majority of the CBC route.

5.4.38 Based on the multi-criteria assessment undertaken option SA1 is identified as the preferred route option for Section 1 of the study area between Grange Road/Nutgrove Avenue junction and the Dodder Crossing. Therefore, SA1 will form part of the emerging preferred route.

5.4.39 The benefits (of the preferred route SA1) for Section 1 of the study are can be summarised as follows:

i. Continuous bus priority in both directions for the entire 1.3km route. The directness of the route lends itself to shorter journey times;

ii. Grange Road is one of the poorest performing sections of the existing Quality Bus Network. The proposed interventions at the Nutgrove Avenue junction will deliver enhanced bus services for this catchment area which includes residential, leisure, commercial and educational land uses, which are heavily reliant on the bus to service its public transport needs.

iii. The scheme will generally provide segregated bus facilities in addition to the existing general traffic lanes.

iv. The CBC proposals avoid impacting on protected structures/properties which reduces planning risk, scheme costs and construction disruption.

6.0 SECTION 2 ROUTE OPTION ASSESSMENT

6.1 Section 2 – Introduction

6.1.1 When assessing route options for Section 2 of the study area, generally there are two principal routes which converge/diverge at Terenure Cross, namely via Harold's Cross and via Rathgar/Rathmines as illustrated in Figure 6.1 below.

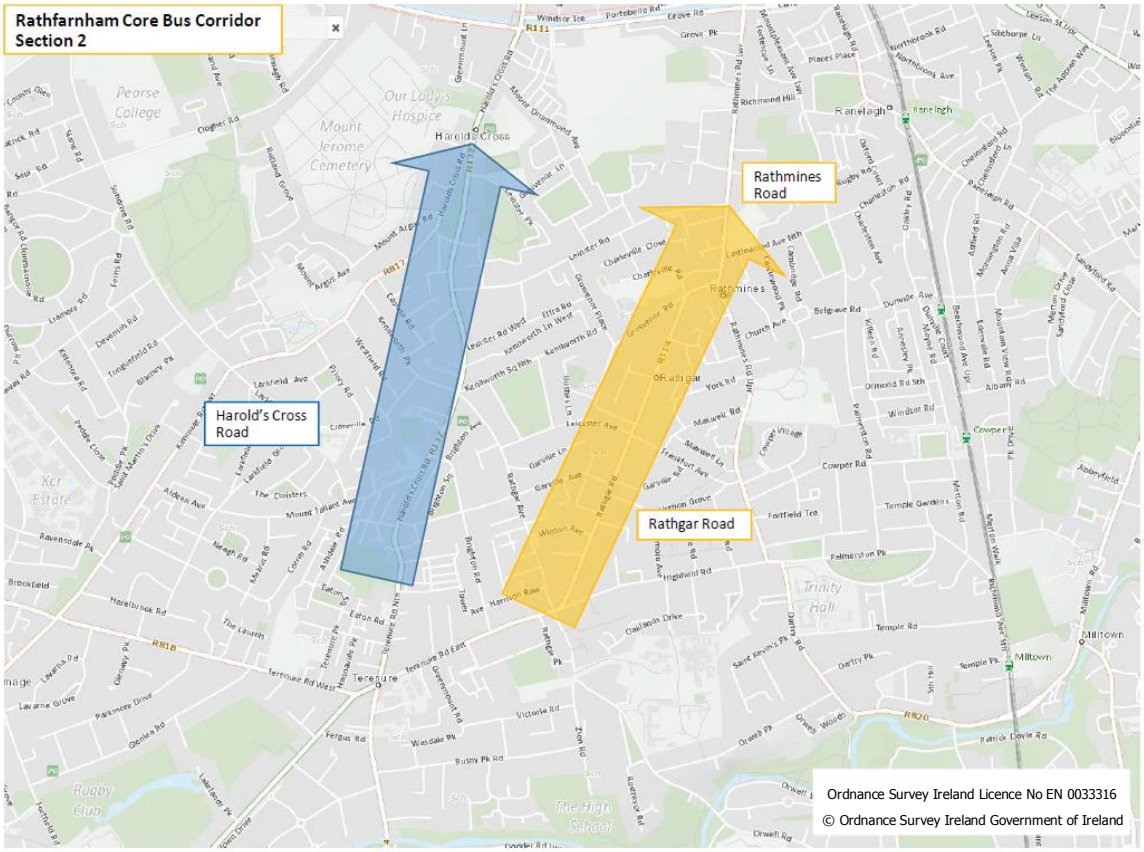


Figure 6.1: Principal Routes for section 1

6.1.2 There are several route options between these 2 principal routes which primarily serve the residential catchments of the villages of Terenure, Rathgar & Rathmines.

6.1.3 The Clongriffin – Tallaght BRT is of particular relevance to section 2 of the Rathfarnham CBC route. The CBC route should complement the BRT service but should not duplicate the potential routing of the Clongriffin – Tallaght BRT route, which is likely to travel via the Harold's Cross corridor as per the Transport Strategy for the GDA (2016 – 2035) and identified in Figure 1.2 of this report.

6.1.4 The Core Bus Network, as defined in the 'Transport Strategy for the Greater Dublin Area 2016 – 2035', identifies 'Marlay Park – Rathmines' as one of the Core Radial Corridors.

6.1.5 Therefore, the subject CBC route should serve Rathmines Village as this is a primary trip attractor on the CBC network. The anticipated travel demand between this point and the City Centre would justify the level of infrastructure proposed as part of the Transport Strategy for the GDA.

6.1.6 The assessment process for Section 2 has been outlined in Section 4 of this report. In this Section of the report it is proposed to set out the two-stage assessment procedure and results for the section of the study area between the Dodder Crossing and the Grand Canal. Route options which passed the initial Stage 1 Assessment, with the exception of the 'lower frequency' routes outlined above and those along the potential BRT corridor, were progressed to the Stage 2 Assessment.

6.1.7 However, before undertaking a full Stage 2 multi- criteria assessment of route options there are a number of scheme options which have been considered owing to the generally constrained nature of certain sections of the study area. A number of scheme options have been subjected to an initial comparative assessment. An initial assessment of cycle routes options is necessary to determine the optimum option for cycle facilities in conjunction with segregated bus facilities via Rathmines, as it will be difficult to achieve segregated cycle facilities along the same route in Section 2. The preferred scheme option emerging from this initial assessment is taken forward to form part of the route options considered as part of the Stage 2 multi – criteria assessment as illustrated in the Figure 6.2 below.

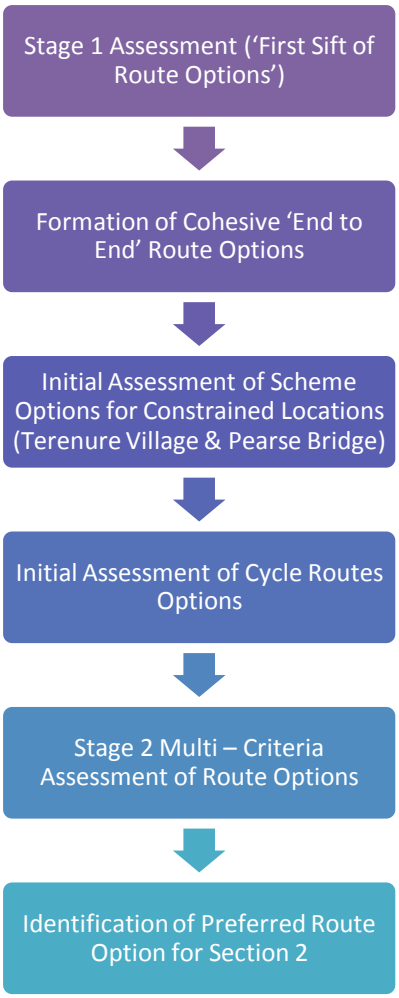


Figure 6.2: Route Option Assessment Stages

6.1.8 The assessment of the options for Section 2 is discussed further in Sections 6.2 & 6.3 below.

6.2 Stage 1: Route Option Assessment

6.2.1 Each of the route options considered as part of the Stage 1 route option assessment for Section 2 are illustrated in **Figure 6.3** below.

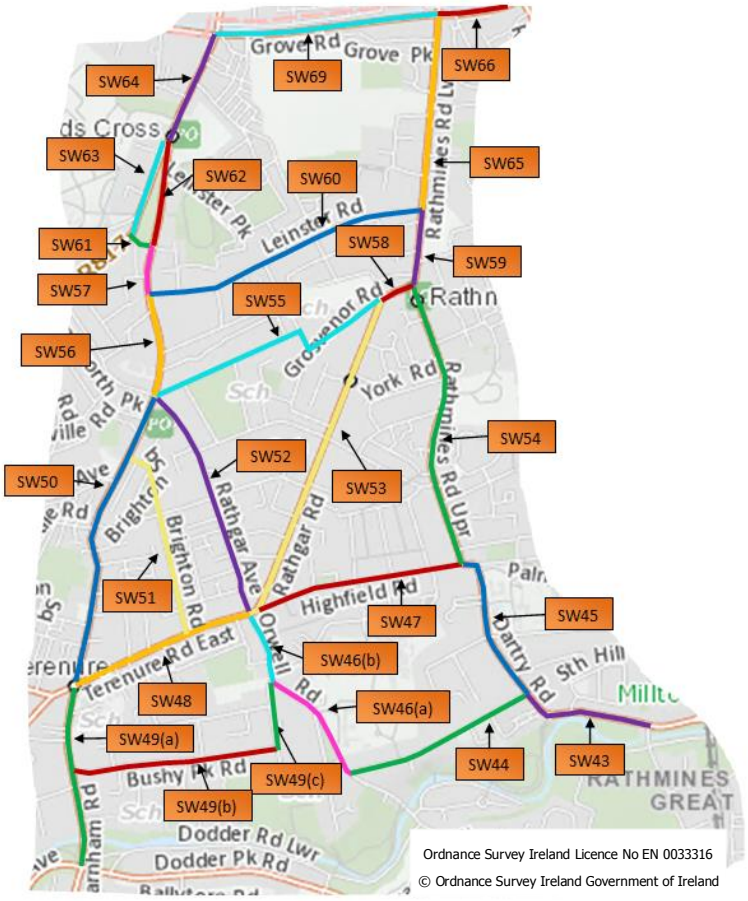


Figure 6.3: Route Options within Section 2 of Study Area

6.2.2 **Table 6.1** below presents a summary of the 'Stage 1' route options sifting process for Section 2.

Table 6.1: Route Option Sifting (Stage 1) Summary – Section 2				
Route Option	**Name / Section**	**Area Characteristics**	**Comments**	**Pass/ Fail**
SW43	Miltown Road (between Churchtown Rd & Dartry Rd)	• Suburban • No cycle lanes • Trees • Secondary cycle route (GDA CNP No. S03)	The route is a single carriageway 2 lane road (approx. 7.2-11.4m wide carriageway). Bus priority may be achieved by widening into the green area on the southern side, however this would include encroachment into Dodder Park (max width 1.7m, over length of 30m). Land acquisition from residential houses (northern side of the carriageway) may also be required. Possible issues with level differences on each side of the carriageway, which would present difficulties for land acquisition. Bus priority may be achievable in one direction from The Dropping Well Pub to the start of Dartry Road by widening the carriageway mainly on the southern side however this would include encroachment into Dodder Park (max width 5m, over length of 250m). Bus priority may not be achieved at the end of the link due to a pinch point between the building lines of properties on opposite sides of the carriageway. As such it has not been carried forward to the Stage 2 Assessment.	Fail
SW44	Milltown/Dartry Road	• Suburban • Residential • No cycle lanes • Trees • Secondary cycle route (GDA CNP No. S03)	The route is a single carriageway 2 lane road (approx. 6.3 - 8.1m wide carriageway). Bus priority in both directions may not be achievable due to the proximity to the adjacent properties, 10 - 14m exists between the property boundaries on opposite sides of the carriageway. Limited potential to widen road over much of its length. Bus priority will require tree removal, costly land take on both sides of carriageway and relocating of street furniture. It is also a circuitous route; as a result, it is not a feasible option and it has not been carried forward to the Stage 2 Assessment.	Fail
SW45	Dartry Road	• Suburban • Residential • Student Accommodation • No cycle lanes • Trees • Secondary cycle route (GDA CNP No. S03)	Dartry Road is a single carriageway 2 lane road (approx. 8.5-10.5m wide carriageway), with footways available on both sides. Bus priority may be achievable in both directions by reducing the width of the general traffic lanes and widening into footpaths on both sides of the carriageway. However, this would include encroachment into residential front gardens/driveways on one side of the carriageway (6m width and 180m length) and into the green area (removal of mature Trees) of Trinity College Halls Accommodation. Bus priority may be achievable; it is therefore carried forward to the Stage 2 Assessment.	Pass
SW46 (a)	Orwell Road (between Orwell Park and Zion Road)	• Suburban • No cycle lanes • Retail (Rathgar Village) • Stratford College • Mature Trees • Secondary cycle route (GDA CNP No. S03)	The route is a single carriageway 2 lane road (approx. 6.25-11.2m wide carriageway). Bus priority may be achievable in both directions by reducing the width of the general traffic lanes and widening into footpaths on both sides of the carriageway. However, this would include encroachment into residential front gardens/driveways (5-9m width and 150m length), and into the green area (removal of mature Trees) between Orwell Road and Rostrevor Road. Due to excessive land take & removal of mature trees required, it has not been carried forward to the Stage 2 Assessment. This route may be considered for traffic diversion or cycle route as part of subsequent schemes developed for the Stage 2 Assessment.	Fail

Table 6.1: Route Option Sifting (Stage 1) Summary – Section 2				
Route Option	**Name / Section**	**Area Characteristics**	**Comments**	**Pass/ Fail**
SW46(b)	Orwell Road (between Zion Park and Rathgar Village)	• Suburban • No cycle lanes • Retail (Rathgar Village) • Stratford College • Mature Trees • Secondary cycle route (GDA CNP No. S03)	The route is a single carriageway 2 lane road (approx. 9-9.3m wide carriageway). Bus priority in both direction may not be achievable due to the proximity to the adjacent retail/commercial properties i.e. approx. 13.6m exists between the building lines of properties on opposite sides of the carriageway. However, bus priority in one direction is achievable. Bus priority is achievable in one-direction for the entire link, as such will be carried forward to the Stage 2 Assessment.	Pass
SW47	Highfield Road	• Suburban • No cycle lanes • Retail (Rathgar Village) • Christ Church • Trees • Secondary cycle route (GDA CNP Mo. S03)	The route is a single carriageway 2 lane road (approx. 5.65-7.0m wide carriageway). Bus priority may not be achievable due to the proximity to the adjacent properties i.e. 14.0-14.3m exists between the boundary lines of properties on opposite sides of the carriageway. To achieve full bus priority extensive land take from private residential is required along one side of the carriageway for the complete route (max 6m wide strip for a length of 650m, certain locations 3m from either side). Bus priority will require major land acquisition (including removal of trees) and relocating of lamp posts. As a result, it is not a feasible option and is therefore it has not carried forward to the Stage 2 Assessment.	Fail
SW48	Terenure Road East	• Suburban • Advisory cycle lanes • St Joseph's DNS School • St Joseph's Church • Retail (Terenure Village & Rathgar Village) • On Street Parking • Secondary cycle route (GDA CNP No. S10/S03)	Carriageway ranges from 2 lanes to 4 lanes (2GT and 1 BL) with carriageway width of 7.8-12.0m. There are bus lanes for part of the link in either directions. By Brighton Road, bus lanes start/terminate for inbound and outbound direction respectively. At the junction with Orwell Road bus lanes both start/terminate for outbound and inbound direction respectively. Advisory cycle lanes are provided along sections of the route with no bus lane. Two-way bus priority and segregated cycle facilities along the entire route may be achievable by reducing the width of the general traffic lanes and widening into footpaths on both sides of the carriageway. However, this would include encroachment into residential front gardens/driveways (max 7.5m width and 615m length) and possibly includes land take of 1.5m from the Synagogue grounds. Bus priority approaching Terenure Cross junction may not be achievable due to the proximity to the adjacent properties, approx. 13.6m exists between the building lines of commercial properties on opposite sides of the carriageway. On-street parking at Rathgar village will have to be removed, however alternative pay and display parking is provided by Rathgar Tennis Club. Bus priority is achievable over the majority of the link, as such will be carried forward to the Stage 2 Assessment.	Pass

Table 6.1: Route Option Sifting (Stage 1) Summary – Section 2

Route Option	Name / Section	Area Characteristics	Comments	Pass/ Fail
SW49	Rathfarnham Road	• Urban • Advisory cycle lanes • Pearse Bridge • Synagogue • Secondary cycle route (GDA CNP No. 10)	Single carriageway 3 lane road for most of the route (2GT and 1BL) (10.6-11.6m wide carriageway). There is a bus lane for majority of the link travelling inbound directions (bus lane terminates on approach to junctions). To achieve full bus priority and segregated cycle facilities, land take from private residential houses one side of the road is required along the complete route (max 6m wide and length 650m, 3m each side of the road at certain locations). Bus priority may not be achieved at the end of the link due to a pinch point at Pearse Bridge entering Rathfarnham. Widening of the bridge is not feasible as it is a listed structure. The reallocation of traffic lanes from general traffic to buses may be needed to ensure bus priority from the bridge entering the junction. Bus priority is achievable over the majority of the link; therefore, it will be carried forward to the Stage 2 Assessment.	Pass
SW50	Harold's Cross Road	• Urban • Advisory and mandatory cycle lanes • Schools • Commercial, Retail (Terenure Village) • Secondary cycle route (GDA CNP No. 9B)	Single carriageway 3 lane road for most of the route (2GT and 1BL) (10.6-11.6m wide carriageway). This link has been separated into 3 sections. The first section of link has an advisory cycle lane northbound and bus lane southbound starting at Mick Dowling's shop and terminating at the bus stop entering Terenure village. Second section, from Mick Dowling's shop to signalised crossing at Ashdale Road has an advisory cycle lane both sides of road. The third section to the north of Ashdale Road includes on-road mandatory cycle lane both sides of the road briefly before changing to bus lane northbound and advisory cycle lane southbound to/from Harold's Cross/Rathgar Rd junction. Two-way bus lanes along the entire route may be achievable by reducing the width of the general traffic lanes and widening into footpaths on both sides of the carriageway. However, this would include removal of on-street parking at Terenure Village and encroachment into residential front gardens/driveways (max 6m width and 300-400m length) and encroachment into a number of commercial properties. Pinch point exists after Tesco Metro shop heading inbound, proximity to the adjacent properties approx. 12m. Bus priority may not be achieved at this location. Bus priority is achievable over the majority of the link, therefore will be carried forward to the Stage 2 Assessment.	Pass

Table 6.1: Route Option Sifting (Stage 1) Summary – Section 2

Route Option	Name / Section	Area Characteristics	Comments	Pass/ Fail
SW51	Brighton Rd	• Suburban • Residential • No cycle lane • On-street parking • Semi-mature trees • Rathgar Methodist Church • No designation for cycle route (GDA CNP)	The route is a single carriageway 2 lane road (approx. 6.0 - 8.5m wide carriageway), with residential frontage and dedicated parking provided on the street for the residents. The provision of bus priority would result in the removal of dedicated on-street parking on both sides of the road for the entire route (600m), with no alternative parking location available for residents. It would also result in the removal of a number of semi-mature trees. Due to the aforementioned constraints and limited potential to widen road over much of its length; this option is not feasible, therefore will not be carried forward to the Stage 2 Assessment. This route may be considered for traffic diversion or cycle route as part of subsequent schemes developed for the Stage 2 Assessment.	Fail
SW52	Rathgar Avenue	• Suburban • Residential • No cycle lane • Rathgar National School • On-street parking • Commercial Retail (Rathgar Village) • Feeder cycle route (GDA CNP)	This route is a narrow single carriageway 2 lane road (approx. 5.7-8.5m wide carriageway). Bus priority may not be achievable due to the proximity of adjacent properties. The distance between building lines of properties on opposite sides of the carriageway is 7.7-14.2m, with 7.7m distance between commercial properties exiting Rathgar Village (e.g. between Coman's pub and The 108 pub). Limited potential to widen road over much of its length; as a result, it is not a feasible option, and therefore will not be carried forward to the Stage 2 Assessment. This route may be considered for traffic diversion or cycle route as part of subsequent schemes developed for the Stage 2 Assessment.	Fail
SW53	Rathgar Road	• Urban • On-road mandatory cycle lane • Church • Indented 'on-street' parking • Commercial Retail (Rathgar Village & Rathmines) • Primary cycle route (GDA CNP No. S10)	This road is a single carriageway 3 lane (2GT & 1 BL) road (approx. 10.0-11.3m wide carriageway). There is a bus lane for majority of the link travelling in the northbound directions (bus lane terminates on some 80m before Grosvenor Road junction). Bus priority in both directions (including cycle lanes) is not achievable due to the proximity of the adjacent properties i.e. 16.1-17.7m exists between the building lines of properties on opposite sides of the carriageway. Bus priority would require land acquisition for the entire route (approx. 3.5m wide). Bus priority without cycle lanes is achievable by reducing width of general traffic lanes, utilising cycle lanes and widening onto the footpaths on both sides of the corridor. The reallocation of traffic lanes from general traffic to buses may be required to ensure bus priority at junctions for northbound direction, which it may create junction capacity constraints. The majority of residential properties along Rathgar Road are designated as protected structures. (DCC Development Plan 2026-2022). Bus priority is achievable, therefore option carried forward to Stage 2 Assessment.	Pass

Table 6.1: Route Option Sifting (Stage 1) Summary – Section 2				
Route Option	**Name / Section**	**Area Characteristics**	**Comments**	**Pass/ Fail**
SW54	Rathmines Road Upper	• Urban • No cycle lane • Green area Park • Indented 'on-street' parking • Commercial Retail • Secondary cycle route (GDA CNP No. 10E)	The route is a single carriageway 3 lane (2GT & 1BL) road (approx. 8.0-10.6m wide carriageway). Bus priority in both directions may not be achievable due to the proximity to the adjacent properties i.e. 12.7-15.5m exists between the building lines of properties on opposite sides of the carriageway. Bus priority may be achievable in one direction (including cycle lane in other direction) by widening the carriageway. However, this would include encroachment into greenfield site in the vicinity of No.1 Palmerston Vilas (max width 2.3m, over length of 53m) and No.1 Fortfield Terrace (max width 2.3m, over length of 34m). The majority of residential properties along Rathmines Road Lower are designated as protected structures. (DCC Development Plan 2026-2022). Bus priority may be achievable, as such this section will be carried forward to the Stage 2 Assessment.	Pass
SW55	Kenilworth Square, Kenilworth Rd, Grosvenor Rd	• Suburban • No cycle lanes • Residential • Green area (playing pitches) • Baptist Church • On-street parking • Trees • Secondary cycle route (GDA CNP No. S02)	The route is a single carriageway 2 lane road (approx. 8.0-9.5m wide carriageway). Bus priority in both directions may not be achievable due to the proximity to the adjacent properties i.e. 13.6-14.45m exists between the boundary lines of properties on opposite sides of the carriageway. Bus priority would result in the removal of the on-street parking either side of the road for the entire route, which would be difficult to replace within the curtilage of properties, resulting in a number of residents with no alternative parking location. Full bus priority is not feasible. As such this section, will not be carried forward to the Stage 2 Assessment. This route may be considered for traffic diversion or cycle route as part of subsequent schemes developed for the Stage 2 Assessment.	Fail
SW56	Harold's Cross Road (between Kenilworth Square north & Leinster Road)	• Urban • Advisory cycle lane outbound • Church • Indented 'on-street' parking • Early Mature – Mature Trees • Secondary cycle route (GDA CNP No. 9B)	The route is a single carriageway 3 lane (2GT and 1BL) road for half the route (approx. 8.0-9.5m wide carriageway). There is a bus lane for approximately half the link travelling in the northbound directions (bus lane terminates some 140m before Leinster Road junction). Bus priority including cycle lanes in both directions is not achievable due to the proximity to the adjacent properties i.e. 16m exists between the building lines of properties on opposite sides of the carriageway. Bus priority excluding cycle lanes (alternative route for cyclists) is achievable. The reallocation of traffic lanes from general traffic to buses may be needed to ensure bus priority at junctions for the northbound direction, however it may create capacity constraints. Pinch point at the end of the route approaching junction with Leinster Road, however bus priority is achievable over the majority of the route, therefore brought forward to Stage 2 Assessment.	Pass
SW57	Harold's Cross Road (between Leinster Road & Harold's Cross Park)	• Urban • Commercial Retail • Advisory cycle lane • Indented 'on-street' parking • Secondary cycle route (GDA CNP No. 9B)	Single carriageway 2-3 lanes along route (approx. 9.0-12.6m carriageway). There is a bus lane for half the link travelling inbound (bus lane starts some 80m before Leinster Rd junction). There is a pinch point approaching and exiting the junction with Leinster Road (13.8m). Bus priority is achievable with the exception of the section of the road in the vicinity of the Church of Our Lady of the Rosary, therefore option carried forward to Stage 2 Assessment.	Pass

Table 6.1: Route Option Sifting (Stage 1) Summary – Section 2				
Route Option	**Name / Section**	**Area Characteristics**	**Comments**	**Pass/ Fail**
SW58	Rathgar Road (between Walkinstown Rd & Robinhood Rd)	• Urban • Commercial Retail • Advisory cycle lane • Rathmines Village • Primary cycle route (GDA CNP No. 10)	The route is a single carriageway 4 lane road (approx. 16.5m wide carriageway). Bus priority (including cycle lanes) in both directions may not be achievable due to the proximity to the adjacent properties. Bus priority (excluding cycle lanes) can be achieved by reallocation of a traffic lane from general traffic to bus lane and removal of the advisory cycle lanes. Bus priority in one direction (including advisory cycle lane other direction) may be achieved by reallocating a traffic lane to bus lane, reducing width of traffic lanes, widening onto the footpaths on both sides of the corridor. Therefore, option carried forward to Stage 2 Assessment.	Pass
SW59	Rathgar Road (between Rathmines Rd Upper & Leinster Rd)	• Urban • Advisory cycle lane • Commercial Retail • Rathmines Village • Primary cycle route (GDA CNP No. 10)	The route is a single carriageway 2-3 lane (2GT & 1BL) road (approx. 10.5m wide carriageway). There is a bus lane for half of the route inbound direction (bus lane starts some 50m after Castlewood Avenue junction). Advisory cycle lane southbound and prior to start of bus lane northbound. The majority of residential properties and commercial properties along Rathmines Road are designated as protected structures. (DCC Development Plan 2026-2022). Bus priority is not achievable at the pinch point before junction with Castlewood Avenue North. Bus priority in both directions (excluding cycle lanes) is the only option achievable due to the proximity to the adjacent properties i.e. 16.5m exists between the building lines of properties on opposite sides of the carriageway. Bus priority can be achieved as such this route will be carried forward to the Stage 2 Assessment.	Pass
SW60	Leinster Road	• Suburban • Residential • Advisory cycle lane • Rathmines Village • Feeder cycle route (GDA CNP)	Single carriageway route (9.5-11.5m wide carriageway), with footways available along both sides. Two-way bus priority along this route would require 1.0-1.5m land take from the residential properties along one side of the carriageway. Residents have large driveways (min 10.2m), therefore land take would not result in the loss of parking facility. Full bus priority may not be feasible due to the number and volume of residential land take (50 houses, length 500m) which are mostly protected structures. A number of residents do not have parking within property boundaries and full bus priority would result in the loss of dedicated on-street parking which would be difficult to replace the parking within the curtilage of properties. Due to the constraints along the route, land take required and the route being circuitous; it is not a feasible option and will not be carried forward to the Stage 2 Assessment.	Fail
SW61	Harold's Cross Road (Southern side of Harold's Cross Park)	• Urban • Harold's Cross Park • On-street parking • No provision for cycle route (GDA CNP)	The route is a single carriageway 2 lane road (approx. 8.5m-10.3 wide carriageway including on-street parking). Bus priority in both directions may not be achievable due to the proximity of the adjacent properties i.e. 15.2-15.4m exists between the building lines of properties on opposite sides of the carriageway. Route option carried forward to the Stage 2 Assessment.	Pass

Table 6.1: Route Option Sifting (Stage 1) Summary – Section 2				
Route Option	**Name / Section**	**Area Characteristics**	**Comments**	**Pass/ Fail**
SW62	Harold's Cross Road (Eastern side of Harold's Cross Park)	• Urban • Harold's Cross park • Advisory cycle lane outbound • Indented 'on-street' parking • Secondary cycle route (GDA CNP No. 9B)	The route is a single carriageway which changes from 4 lanes (2GT & 2BL) to 3 lanes (2GT to 1BL) road (approx. 8.5-10.3m wide carriageway). No footpath on the eastern side of roadway along the park. Advisory cycle lane (140m) is provided outbound and terminates on approach to bus lane. Bus priority (including cycle lanes) in both directions is achievable by removing a general traffic lane and providing a new southbound Bus Lane. Full bus priority is achievable, as such this section will be carried forward to the Stage 2 Assessment.	Pass
SW63	Kimmagh Road/Harold's Cross Rd	• Urban • Harold's Cross Park • Indented 'on-street' parking • Feeder cycle route (GDA CNP)	The route is a single carriageway 2 lane road, which widens to 3 lanes (2GT and 1BL inbound) on approach to junction at Harold's Cross (20m) (approx. 6.8-8.3m wide carriageway, including advisory cycle lanes). Advisory cycle lane both sides of carriageway. The extension of the existing northbound bus lane may not be achievable due to the proximity to the adjacent properties i.e. 10.7-16.1m exists between the boundary lines of the residential properties and Harold's Cross Park on opposite sides of the carriageway. All houses on the western side of the carriageway after St Clares Ave inbound are protected buildings, and Harold's Cross Park is located on the eastern side. A large proportion of land take from Harold's Cross Park would not be achievable due to the small size of the park. Therefore, route option will not be carried forward to the Stage 2 Assessment. This route may be considered for traffic diversion or cycle route as part of subsequent schemes developed for the Stage 2 Assessment.	Fail
SW64	Harold's Cross Road (between Our Lady's Hospice & Parnell Road)	• Urban • School • Office Blocks • Residential Apartment Blocks • Hospice • Early Mature – Mature Trees • Secondary cycle route (GDA CNP No. 9B)	The route is a single carriageway 4 lane road for the majority of the route (approx. 9.7-13.6m wide carriageway). There are existing bus lanes in both directions, both southbound and northbound bus lane terminates at St. Clare's Primary School and 60m before Parnell Rd junction. Advisory cycle lanes commence where bus lanes terminate. Bus priority (excluding cycle lanes) may be achieved across the entire section by reducing the width of the general traffic lanes, widening the carriageway into the footpaths. Full bus priority is achievable, as such this section will be carried forward to the Stage 2 Assessment.	Pass
SW65	Rathmines Rd (between Leinster Rd & Grove/Canal Rd)	• Urban • Advisory Cycle lane outbound • School • Rathmines Village, commercial retail • Primary cycle route (GDA CNP No. 10)	The route is a single carriageway 3 lane (2GT & 1BL) road (approx. 10.2m wide carriageway). There is an existing bus lane in northbound direction (terminates on approach to junctions). Bus priority in both directions may be achieved by reducing the width of the general traffic lanes, widening the carriageway into the footpaths/advisory cycle lane. Provision of bus and segregated cycle lanes is not feasible due to the close proximity of adjacent commercial retail properties e.g. 16.3m. The option may require an alternative segregated cycle route. Full bus priority is achievable, as such this section will not be carried forward to the Stage 2 Assessment.	Pass

Table 6.1: Route Option Sifting (Stage 1) Summary – Section 2				
Route Option	**Name / Section**	**Area Characteristics**	**Comments**	**Pass/ Fail**
SW66	Canal Road	• Urban • Residential • Retail & Office • Advisory Cycle lanes • Some houses have steps to entrance from road level • Secondary cycle route (GDA CNP No. S01)	Single carriageway route with a flared approach to junctions at both ends of link (2GT lane to 3GT lanes at junction) (9m-15.3m wide carriageway). There are footways and mandatory cycle lanes available along both sides. Bus priority cannot be achieved due to commercial and residential properties being within 1-2m back of the footpath, a pinch point of 13.0m exists between the building lines of properties and the footpath edge/Grand Canal on the opposite sides of the carriageway. Due to the aforementioned constraints between the properties and canal and being a circuitous route, it has not been carried forward to the Stage 2 Assessment.	Fail
SW67	Charlemont Street	• City Centre • Office • Commercial Retail • Mandatory cycle lanes • Indented 'on-street' parking • Primary cycle route (GDA CNP No. 11)	Single carriageway (12.5-15.0m) 3 lane road (2GT & 1BL). This route has a northbound bus lane as well as footways & mandatory cycle lanes both sides of the carriageway (12.5-15.0m wide carriageway). Bus priority (including cycle lanes) is achievable in both directions by reducing the width of the general traffic lanes, widening the carriageway into the footpaths and the removal of young trees. A number of parking spaces on pavement will have to removed. Bus priority is achieved, therefore route carried forward to Stage 2 Assessment.	Pass
SW68	Richmond Street South	• City Centre • Mandatory cycle lanes • Commercial/Retail • Portobello College • Primary cycle route (GDA CNP No. 10)	Existing route has been split into two sections. Section 1 (Portobello bridge to Richmond Street) - Mandatory cycle lane travelling northbound, advisory cycle lane southbound. Section 2 (Richmond Street to Harrington St) – One-way single carriageway with two general traffic lanes, contra-flow bus/cycle lane travelling southbound. Bus priority (including cycle lanes) can be achieved for the first section for 160m before an existing pinch point after junction with Lennox St (13.0-13.5m width). Bus priority inbound in section 2 can only be achieved by reallocation of a traffic lane from general traffic to a bus lane to ensure priority at junctions. Bus priority is achievable, therefore carried forward to the Stage 2 Assessment.	Pass
SW69	Grove Road	• City Centre • Mandatory cycle lanes • Along Grand Canal • Young Trees • Primary cycle route (GDA CNP No. S01)	Single carriageway route with footways and mandatory cycle lanes provided along both sides of the route (8.9m-10.6m wide carriageway). Bus priority cannot be achieved due to a large number of commercial and residential properties being within 1-3m back of the footpath. A pinch point of 11.8m exists between the building lines of properties and the footpath edge/Grand Canal on the opposite sides of the carriageway. Due to the aforementioned constraints and environmental constraints (Grand Canal) along this route, it will not be carried forward to the Stage 2 Assessment. This route may be considered for traffic diversion or cycle route as part of subsequent schemes developed for the Stage 2 Assessment.	Fail

Table 6.1: Route Option Sifting (Stage 1) Summary – Section 2				
Route Option	**Name / Section**	**Area Characteristics**	**Comments**	**Pass/ Fail**
SW102	Bushy Park Road	• Suburban • Residential • No cycle lane • Trees • Zion Parish School • Zion Court (Church) • The Church of Jesus Christ of Latter-day Saints • High School • No designation for cycle route (GDA CNP)	The route is a single carriageway road 2 lane road (approx. 6.8-9.2m wide carriageway). Bus priority in both direction may not be achievable due to the proximity to the adjacent residential properties i.e. approx. 10-13.2m exists between the boundary lines of properties on opposite sides of the carriageway. To achieve one-way bus priority, land take from private residential is required along one side of the carriageway for the entire route (for a length of 270m, max 3m wide strip). Bus priority is achievable in one-direction for the entire link, as such will be carried forward to the Stage 2 Assessment.	Pass
SW103	Zion Road	• Suburban • Residential • No cycle lane • Zion Court (Church) • Stratford College • No designation for cycle route (GDA CNP)	The route is a single carriageway road 2 lane road (approx. 6.2-7.7m wide carriageway). Bus priority in both directions may not be achievable due to the proximity to the adjacent residential properties, approx. 12.3-13m exists between the boundary lines of properties on opposite sides of the carriageway. To achieve one-way bus priority, land take from private residential is required along one side of the carriageway for the entire route (for a length of 100m, max 0.7m wide strip). Bus priority is achievable in one-direction for the entire link, as such will be carried forward to the Stage 2 Assessment.	Pass

Table 6.1: Route Option Sifting (Stage 1) Summary – Section 2

6.2.3 Of these thirty options considered for Section 2, nineteen (SW 45, 46(b), 48, 49, 50, 53, 54, 56, 57, 58, 59, 61, 62, 64, 65, 67, 68, 102 & 103) were progressed to the next assessment stage. These route options are presented in **Figure 6.4** below.

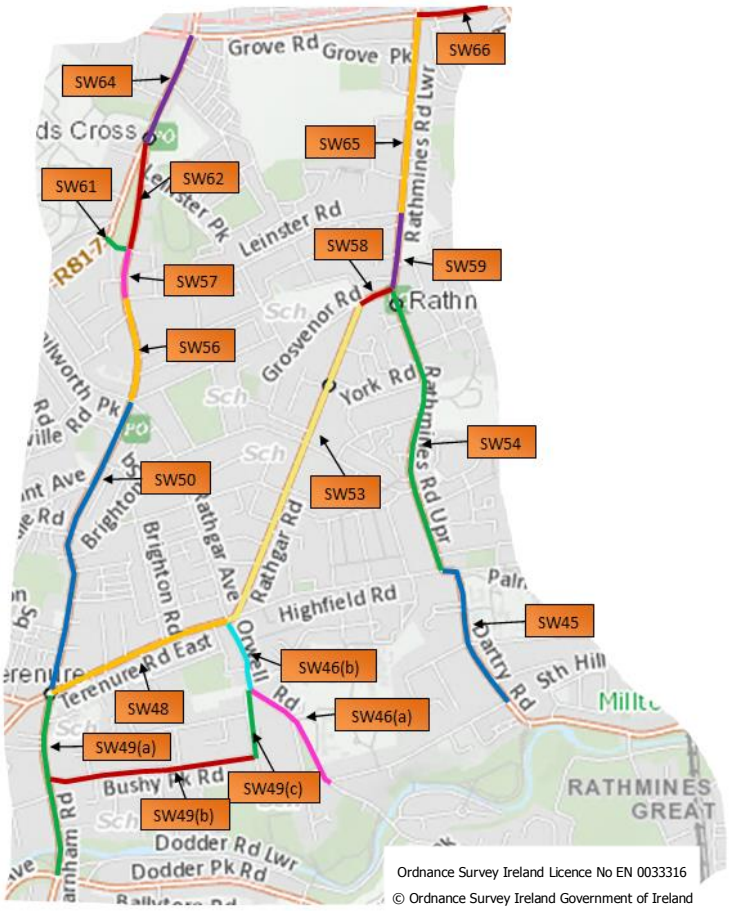


Figure 6.4: Route Options passing Stage 1 'Sift' in Section 2

6.3 Stage 2: Section 2 – Option Assessment

Introduction

6.3.1 Following the 'Stage 1' sift for the Section 2 study area, the remaining 19 (12 excluding Harold's Cross Route) route options were combined to form 7 cohesive route options between the Dodder River and La Touche Bridge (via Rathmines Village) as shown in **Figure 6.5** below. It should be noted that certain route options which pass the Stage 1 assessment were not taken forward to the Stage 2 assessment as they were isolated links which do not combine with other route options to form cohesive routes (SW45, SW66). The route options which run through Harold's Cross Road (SW50, SW56, SW57, SW62, SW61, SW64) were also discounted as the Rathfarnham to City Centre CBC is to serve Rathmines for the reasons outlined in Section 6.1.

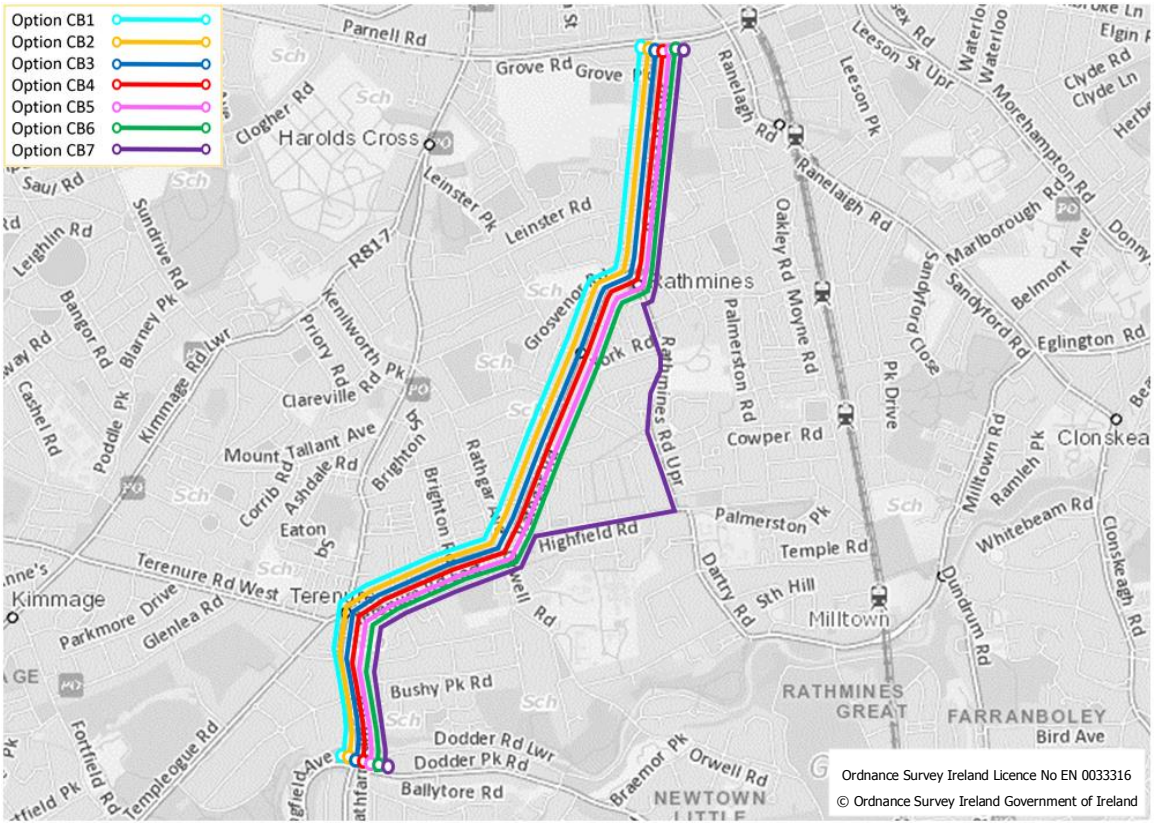


Figure 6.5: Section 2 Cohesive Route Options

6.3.2 The following seven route options as identified above, were taken forward:

- Option CB1 - A route option via Rathfarnham Road, Terenure Road East, Rathgar Road, Rathmines Road Lower (Inbound traffic only on Rathgar Road, Outbound traffic only Rathmines Road);
- Option CB2 - A route option via Rathfarnham Road, Terenure Road East, Rathgar Road, Rathmines Road Lower (Inbound traffic only on Rathgar and Rathmines Road);
- Option CB3 - A route option via Rathfarnham Road, Terenure Road East, Rathgar Road, Rathmines Road Lower (Outbound traffic only on Rathgar and Rathmines Road);
- Option CB4 - A route option via Rathfarnham Road, Terenure Road East, Rathgar Road, Rathmines Road Lower (Parallel cycle route via Charleville Road, Grosvenor Lodge and Cathal Brugha Barracks);
- Option CB5 - A route option via Rathfarnham Road, Terenure Road East, Rathgar Road, Rathmines Road Lower (Inbound bus lane provided on Rathmines Road Lower from Rathmines Road Upper to Military road junction and outbound bus lane provided from Grove Road to Military Road junction);
- Option CB6 - A route option via Rathfarnham Road, Terenure Road East, Rathgar Road, Rathmines Road Lower (Outbound traffic only on Rathmines Road Lower); and
- Option CB7 - A route option via Rathfarnham Road, Terenure Road East, Rathgar Road, Rathmines Road Lower (Bus lanes via Highfield Road/Rathmines Road Upper) (Parallel cycle route).

6.3.3 Within the aforementioned route options, there are two constrained locations which require specific consideration. These constrained locations have been brought through an initial assessment to determine the optimum layout for these areas to be included in the principle route options listed above. These constrained locations are as follows: -

- Terenure Village to Rathgar Village – TVR, as indicated on Figure 6.6 below;

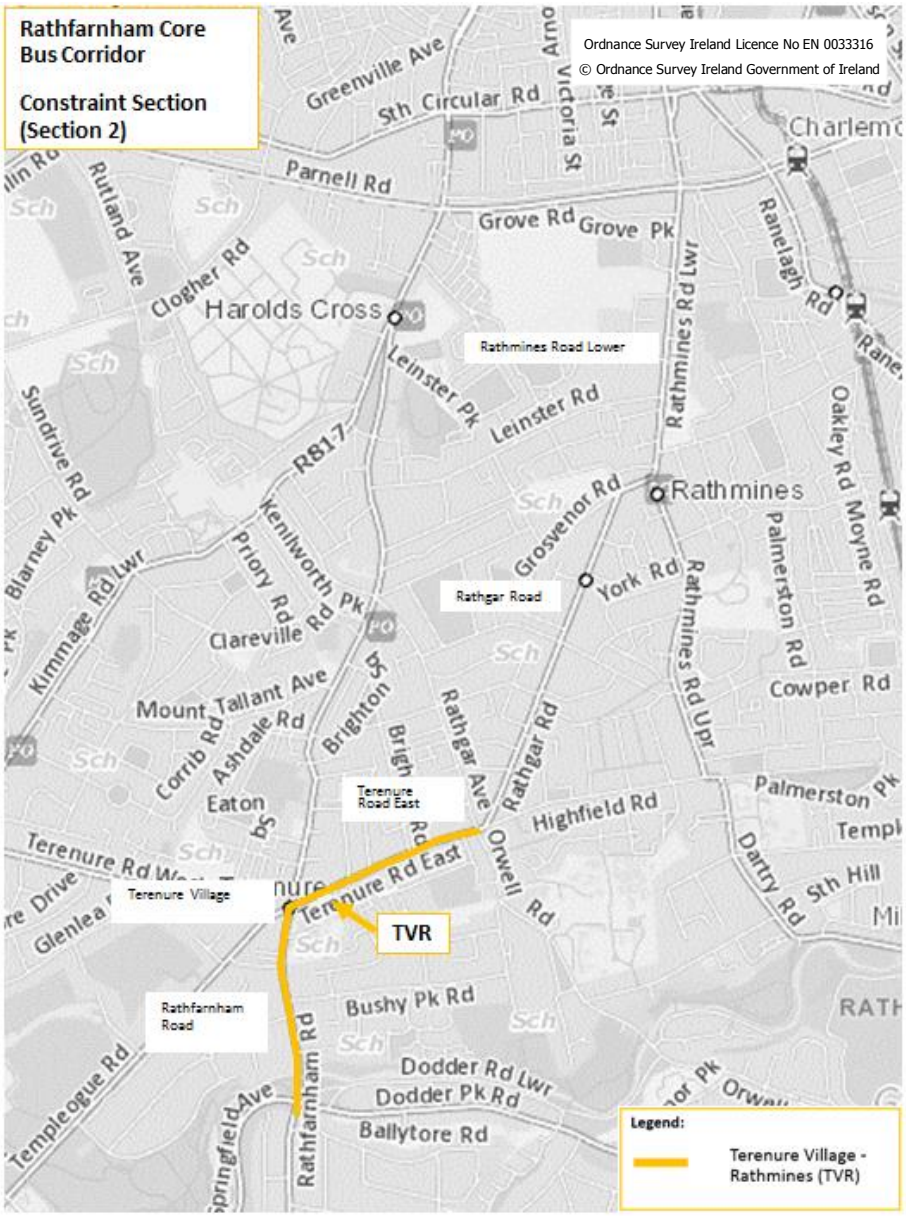


Figure 6.6: Section 2 - Subsection Location (TVR)

- Cycle Route options between Bushy Park Road junction and Grand Canal – as indicated on Figure 6.7 below.

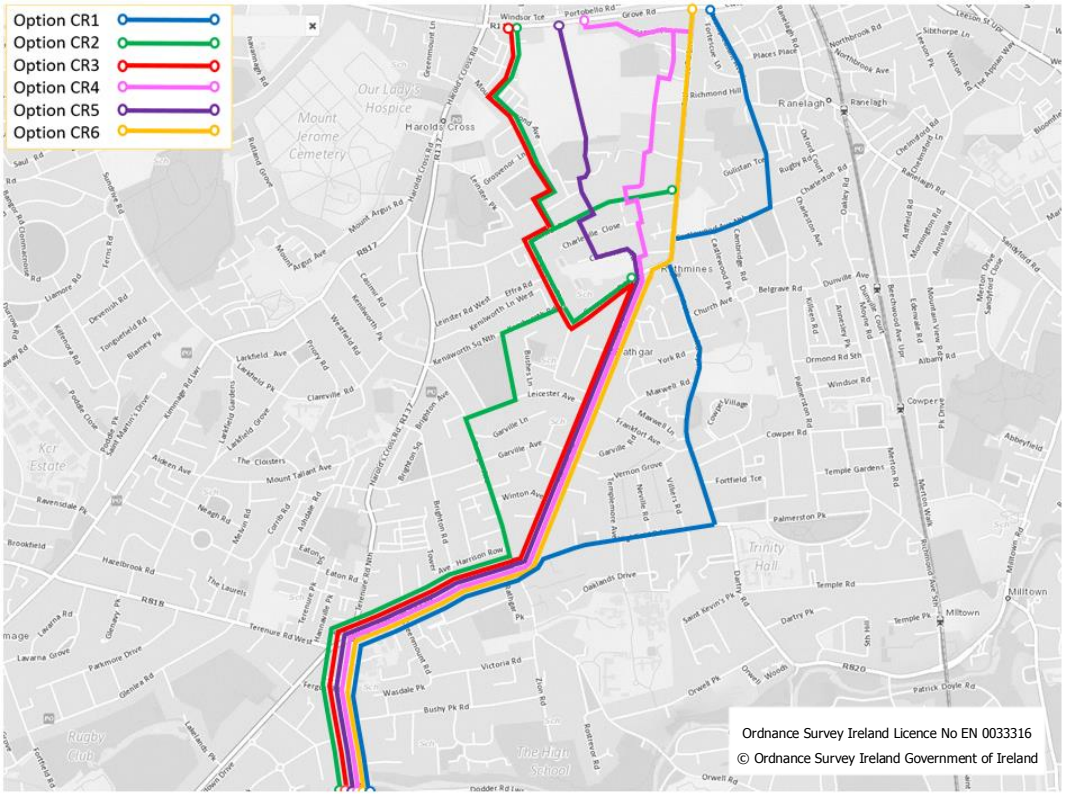


Figure 6.7: Section 2 - Parallel Cycle Route Options between the Dodder Crossing and the Grand Canal

6.3.4 Multi-criteria assessment will be utilised to assess these sub-options to determine the optimum layout to be included in the principle route options considered for Section 2. The initial assessment of these constrained locations is outlined below in section 6.4.

6.4 Initial Assessment of Scheme Options/Subsections

Terenure Village – Rathmines (TVR)

6.4.1 There are eight potential scheme options (TVR1, TVR2, TVR3, TVR4, TVR5, TVR6, TVR7 & TVR8) considered for this section along Rathfarnham Road and Terenure Road East to Rathgar Village. It should be noted that a number of additional variants to the scheme options were considered initially such as "No through traffic lane on Terenure Road East – Bus Gate (Local Access only)" and "Inbound Bus Lane Terenure Road East & Outbound Bus Lane Bushy Park Road", however these were not progressed to the scheme assessment stage as they were not feasible or were less effective than the scheme options taken forward.

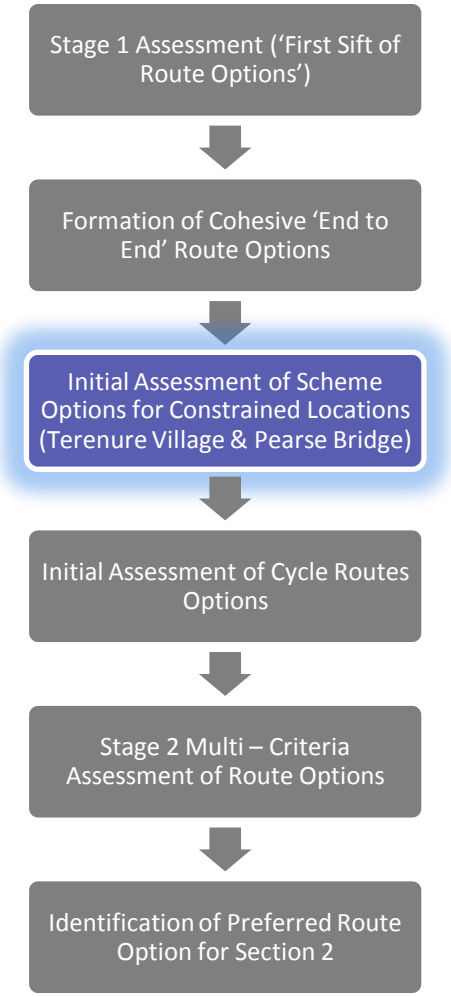


Figure 6.8: Section2 Route Option Assessment Stages

6.4.2 Currently there are a large numbers of cyclists converging at Terenure Cross from Templeogue Road in the AM peak and from Terenure Road East in the PM peak. Terenure Road East is identified as Primary Route 10 within the GDA CNP and is currently the busiest radial cycle route in Dublin. Therefore, the provision of segregated cycle facilities on Rathfarnham Road and particularly on Terenure Road East will be a key factor is the assessment of the following options.

6.4.3 The following seven potential scheme options (TVR1, TVR2, TVR3, TVR4, TVR5, TVR6 & TVR7) follow the same CBC route as presented in Figure 6.8 and defore have the same following description/attributes:

6.4.4 The Route options, provides for segregated bus facilities along Rathfarnham Road and Terenure Road East. The CBC route is presented in **Figure 6.9**.

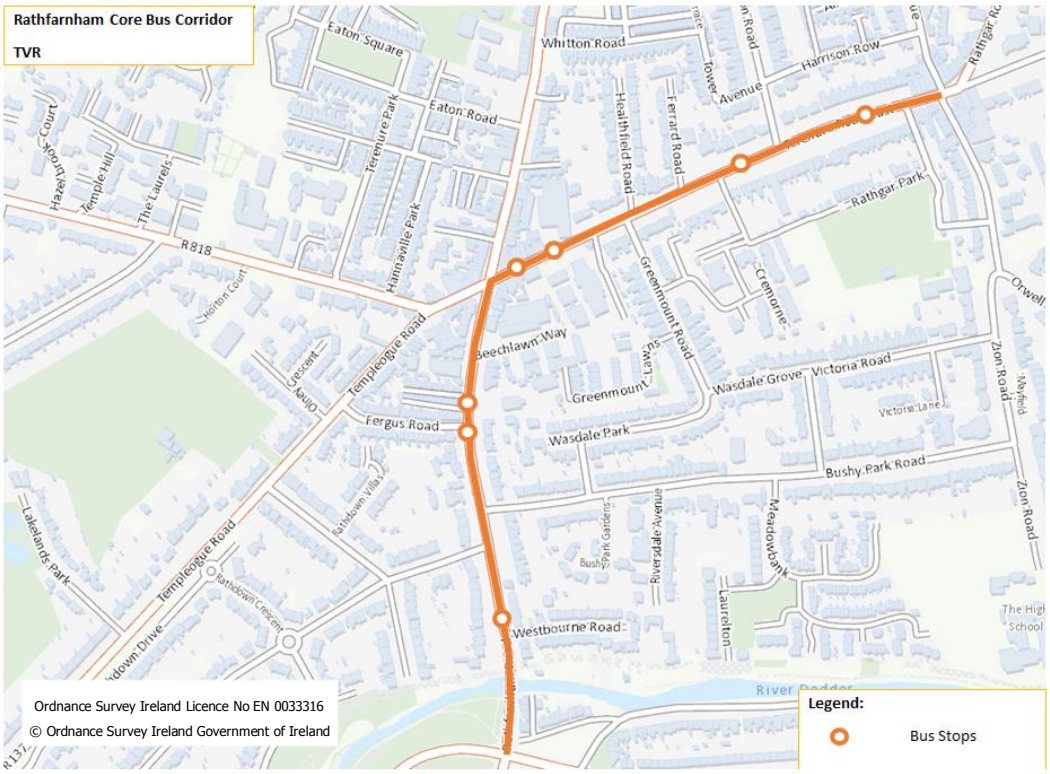


Figure 6.9: Route Options Terenure Village – Rathmines

6.4.5 **Inbound (Northbound):** The CBC service will proceed along a segregated bus lane in a northerly direction along Rathfarnham Road from Pearse Bridge before turning right at Terenure Cross and proceeding eastwards along Terenure Road East to Rathgar.

6.4.6 **Outbound (Southbound):** The southbound option follows the same route as northbound, with a segregated bus lane provided.

6.4.7 **Stops:** The number of stops is illustrated in **Figure 6.9**. There has been rationalistion of bus stops which are in close proximity to other bus stops such as the bus stops on Pearse Bridge.

6.4.8 At present, the section of the Rathfarnham Road between Westbourne Road to Terenure Cross is a single carriageway road with a northbound bus lane available for most of the length. Terenure Road East is a single carriageway road with bus lanes in both directions between Brighton Road and Rathgar Avenue.

6.4.9 There are signal controlled junctions at the beginning of this section at Rathdown Park, Bushy Park Road as well as the junctions of Terenure Cross and Rathgar Avenue/Orwell Road. The existing arrangement at Terenure Cross would have to be altered to permit right turns for buses only from Rathfarnham Road to Terenure Road East. In addition, there is 1 signalised pedestrian crossing at the Church on Terenure Road East.

6.4.10 The only option for this intial assessement that does not that follow the same CBC route is TVR8 as presented in **Figure 6.9**.

Route Option TVR1: Bus lane in both directions, parallel cycle route via Bushy Park Road

6.4.11 Route option TVR1, provides for segregated bus facilities along Rathfarnham Road and Terenure Road East (with the exception of a 100m section at Terenure Cross). The CBC route is presented in **Figure 6.9**.

6.4.12 The journey time for this route option is 5 minutes in both directions over a distance of approximately 1.1km.

6.4.13 It is proposed as part of option TVR1 to provide continuous bus priority in both directions with the exception of the section on Rathfarnham Road between Pearse Bridge and Bushy Park Road junction, where bus priority signalling is proposed for the outbound direction at this pinch point. There is also a 100m section of Terenure Road East at Terenure Cross where an inbound bus lane will

not be provided owing to the close proximity of protected commercial properties at this location.

6.4.14 Segregated cycle facilities will be provided on Bushy Park Road and Orwell Road which however does not align with Primary Route 10/SO3 on Terenure Road East. This would require residential land acquisition on Bushy Park Road and Orwell Road as identified in **Figure 6.10** below. Land acquisition and removal of on street parking would be required on the western side of Rathfarnham Road between Fergus Road and Terenure Cross.

6.4.15 The option TVR1 proposals are presented in **Figure 6.10** while a sample cross sections are presented in **Figure 6.11** below.

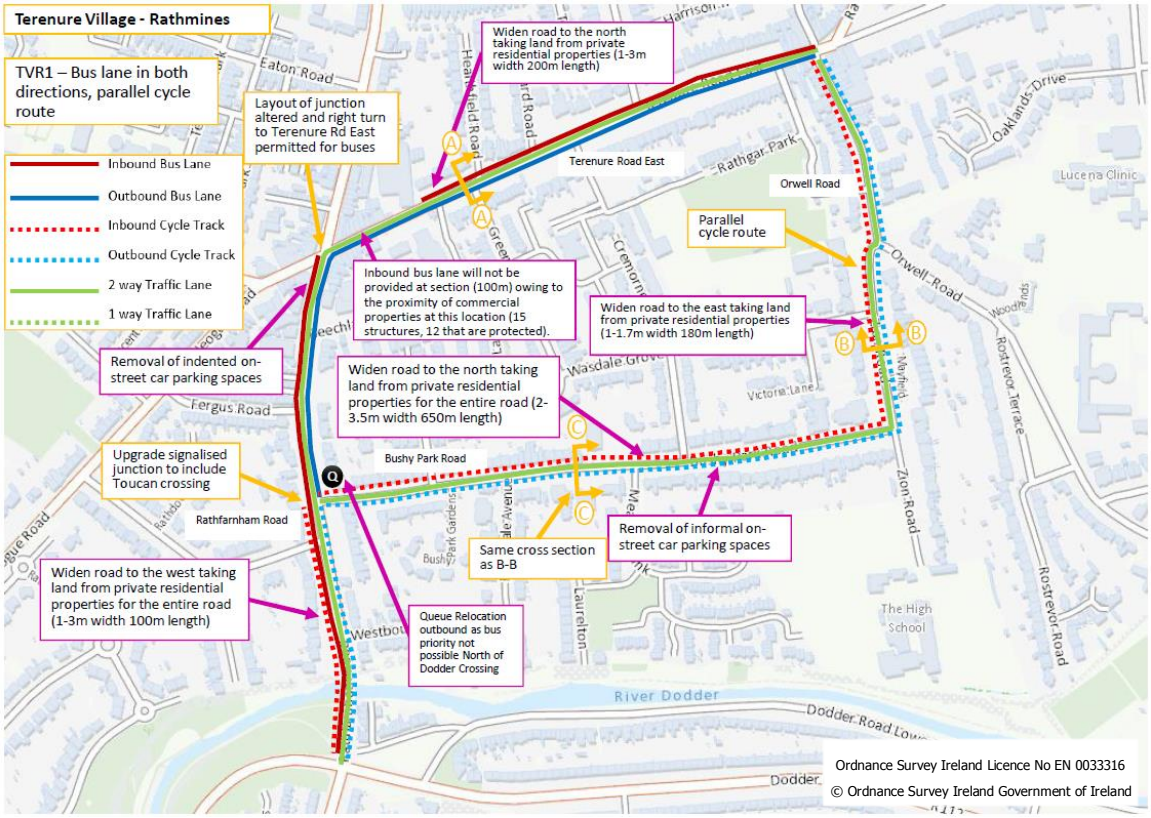


Figure 6.10: Route Option TVR1 Proposal: Terenure Village – Rathgar/Rathmines.

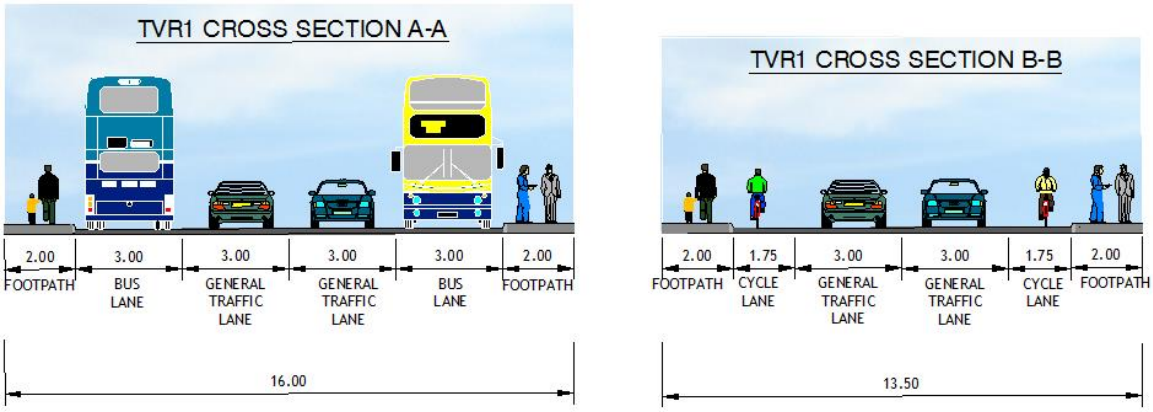


Figure 6.11: Route Option TVR1: Proposed Cross Section of Terenure Village – Rathgar/Rathmines.

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

- No cycle facilities are provided on Terenure Road East;
- Alteration to the Terenure Cross junction to facilitate right turning buses from Rathfarnham Road; and
- Outbound bus priority signalling and no bus lane between Bushy Park Road and Pearse Bridge, leading to increased journey times compared to continuous bus priority provision.

6.4.17 It is anticipated that this option would cost approximately €10.1 million (€6.6 million infrastructure costs, €3.5 million land acquisition costs).

Route Option TVR2: Inbound Traffic Lane on Terenure Road East.

6.4.18 Route option TVR2, provides segregated bus facilities along Rathfarnham Road and Terenure Road East. This would require the removal of one lane of the general traffic lanes in the outbound direction to eliminate the requirement for land acquisition on Terenure Road East. The CBC runs along the same route as TVR1 as illustrated in **figure 6.9**.

6.4.19 The journey time for this route option from Pearse Bridge to the Rathgar Avenue junction is 4 minutes in both directions over a distance of approximately 1.2km.

6.4.20 It is proposed as part of option TVR2 to provide continuous bus priority in both directions. This would require the removal of one general traffic lane of traffic in the outbound direction to eliminate the requirement for land acquisition on Terenure Road East.

6.4.21 In order to overcome the pinch point at Pearse Bridge and to provide continuous bus facilities in conjunction with cycle facilities, a 3m wide two-way cycle bridge is proposed on the western side of the bridge.

6.4.22 Segregated cycle facilities will be provided on Bushy Park Road and Orwell Road which does not align with Primary Route 10/SO3 on Terenure Road East. This would require residential land acquisition on Bushy Park Road and Orwell Road as identified in **Figure 6.12** below. Land acquisition and removal of on street parking would be required on the western side of Rathfarnham Road between Fergus Road and Terenure Cross.

6.4.23 The option TVR2 proposals are presented in **Figure 6.12** while a sample cross section is presented in **Figure 6.13** below.

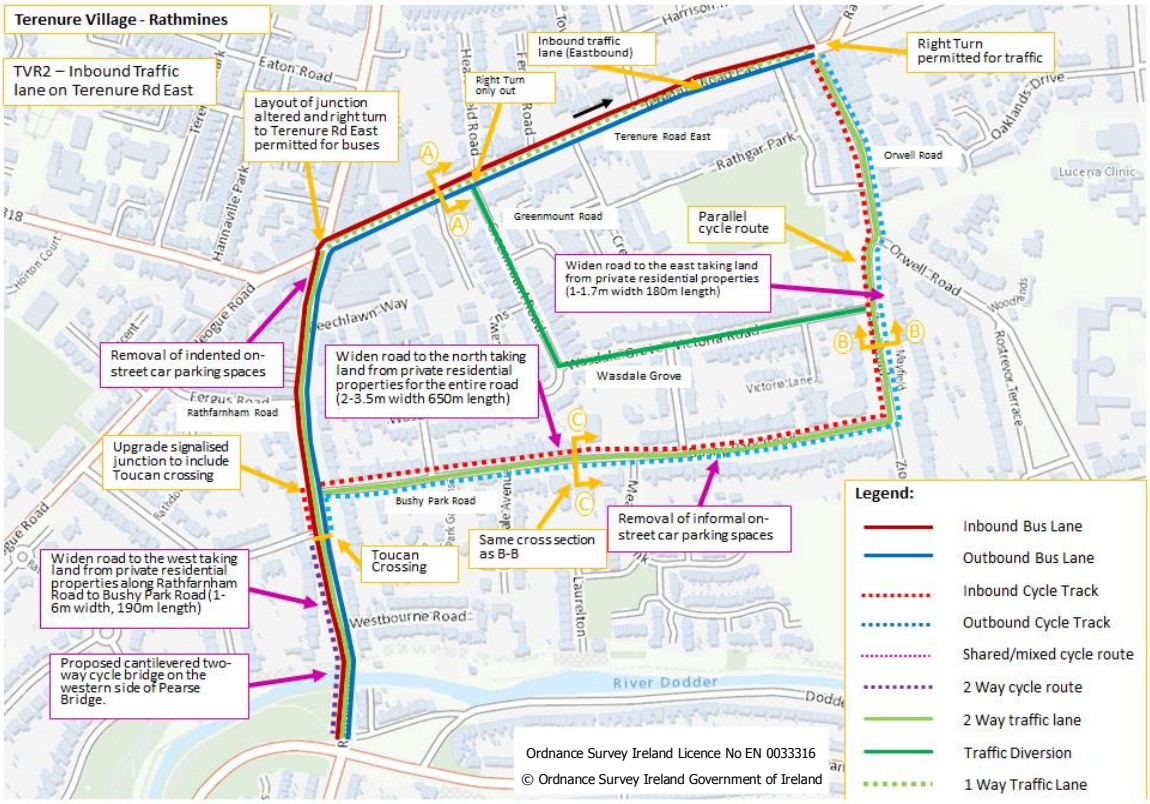


Figure 6.12: Route Option TVR2 Proposal: Terenure Village - Rathmines

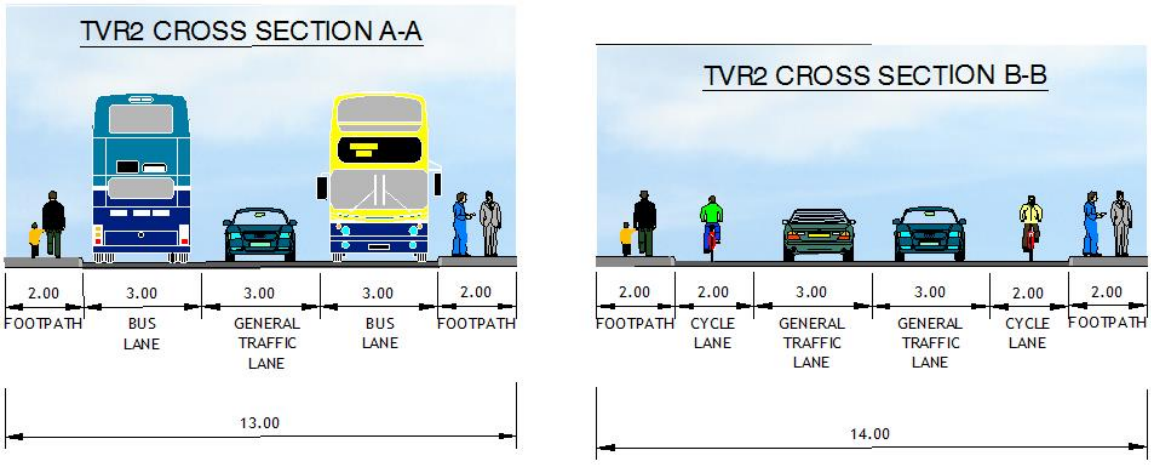


Figure 6.13: Route Option TVR2: Proposed Cross Section of Terenure Village - Rathmines

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

- There are no cycle facilities on Terenure Road East;
- Alterations to the Terenure Cross junction is required to facilitate right turning buses from Rathfarnham Road; and
- Traffic management is required on Terenure Road East which would involve traffic being rerouted onto less suitable roads such as Wasdale Grove/Greenmount Road.

6.4.25 It is anticipated that this option would cost approximately €10.4 million (€6.8 million infrastructure costs, €3.6 million land acquisition costs).

Route Option TVR3: Bus and Cycle lane in both directions on Terenure Road East.

6.4.26 Route option TVR3 provides segregated bus and cycle facilities along Rathfarnham Road and Terenure Road East (with the exception of a 100m section at Terenure Cross). The CBC runs along the same route as TVR1 as illustrated in **figure 6.9**.

6.4.27 The journey time for this route option from Pearse Bridge to the Rathgar Avenue junction is 5 minutes in the inbound direction and 4 minutes in the outbound direction over a distance of approximately 1.2km.

6.4.28 It is proposed as part of option TVR3 to provide continuous bus priority in both directions with the exception of a 100m section of Terenure Road East at Terenure Cross where an inbound bus lane will not be provided owing to the close proximity of protected commercial properties at this location.

6.4.29 Segregated cycle facilities will be provided along the CBC route on Rathfarnham Road and Terenure Road East (with the exception of a 270m section from Terenure Cross to Farrard Road and a small section east of Rathgar Village (20m), owing to conservation issues), which aligns with Primary Route 10/SO3 on Terenure Road East. This would require land acquisition from protected residential properties on Terenure Road East (1-7.5m width for 615m) as identified in Figure 6.14 below.

6.4.30 The option TVR3 proposals are presented in **Figure 6.14** while a sample cross section is presented in **Figure 6.15** below.

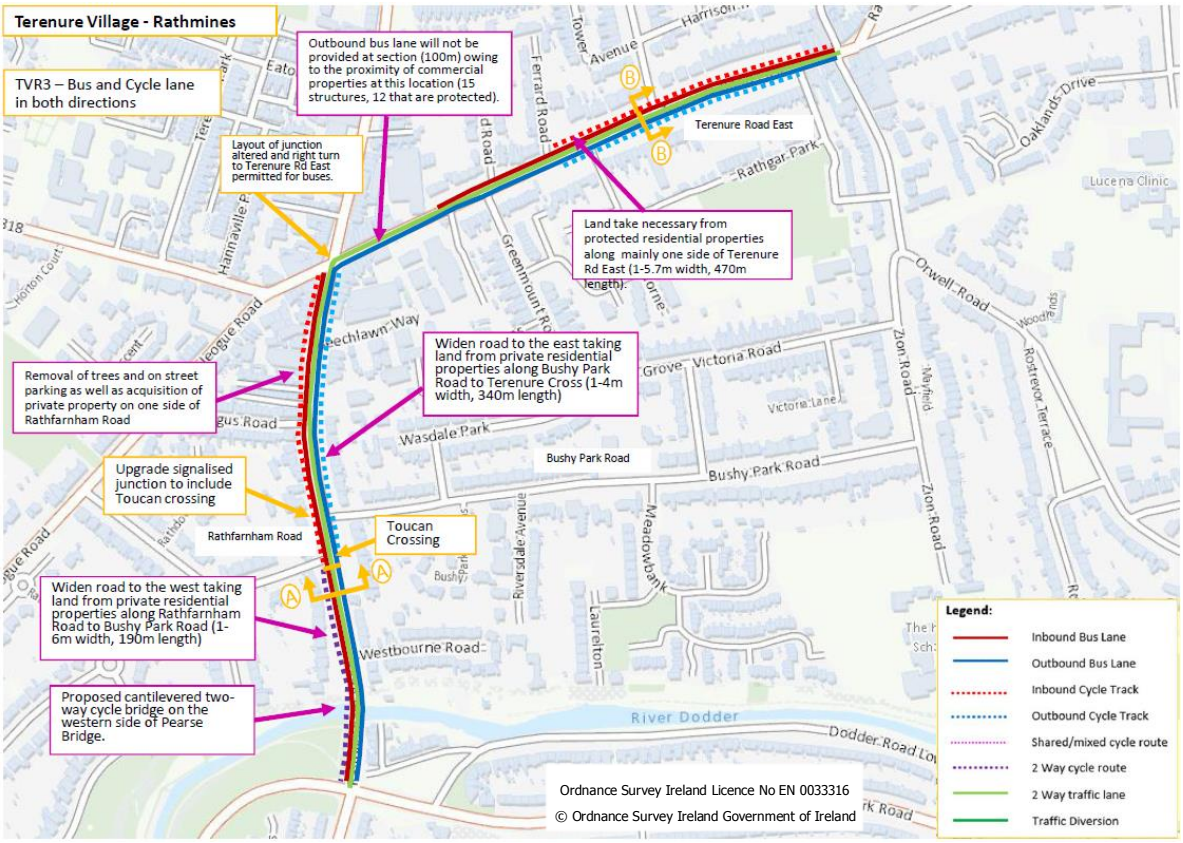


Figure 6.14: Route Option TVR3 Proposal: Terenure Village - Rathmines

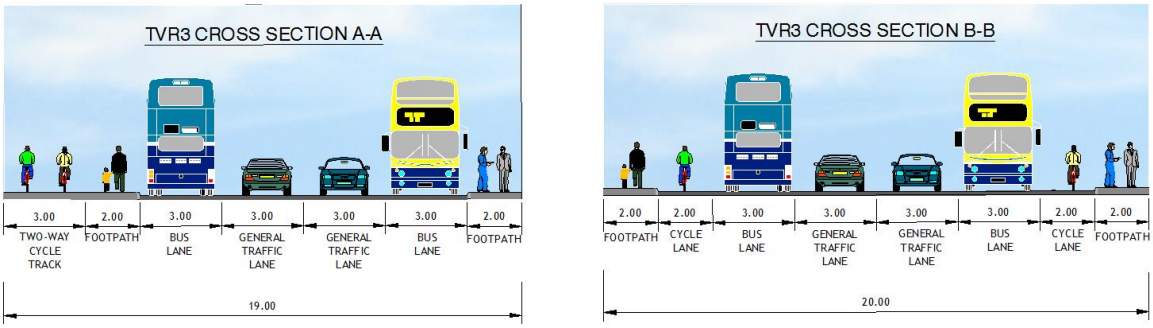


Figure 6.15: Route Option TVR3: Proposed Cross Section of Terenure Village - Rathmines

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

- Alteration is required to the Terenure Cross junction to facilitate right turning buses from Rathfarnham Road; and

- There are no cycle facilities provided for half of Terenure Road East.

6.4.32 It is anticipated that this option would cost approximately €11.3 million (€6.8 million infrastructure costs, €4.5 million land acquisition costs).

Route Option TVR4: Cycle route via Rathdown Park.

6.4.33 TVR4 CBC route provides segregated bus facilities along Rathfarnham Road and Terenure Road East (with the exception of a 100m section at Terenure Cross). Cyclists will be catered for via a parallel cycle route on Rathdown Park, Bushy Park Road, Zion Road and Orwell Road to Rathgar Village. The cycle route will include a 150m long spiral ramp and a 60m long cycle bridge crossing over the River Dodder, to the west of Pearse Bridge. The CBC runs along the same route as TVR1 as illustrated in **figure 6.9**.

6.4.34 The journey time for this route option from Pearse Bridge to the Rathgar Avenue junction is 5 minutes in the inbound direction and 4 minutes in the outbound direction over a distance of approximately 1.2km.

6.4.35 It is proposed as part of option TVR4 to provide continuous bus priority in both directions with the exception of a 100m section of Terenure Road East at Terenure Cross where an inbound bus lane will not be provided owing to the close proximity of protected commercial properties at this location.

6.4.36 A cycle bridge across the River Dodder (to the west of Pearse Bridge) is proposed, to provide a parallel cycle route from Brookvale Downs to Rathdown Park. The Removal of the cycle facilities on Rathfarnham Road and the provision of an alternative parallel cycle route via Rathdown Park, creates the additional space necessary to provide bus lanes in both directions on Rathfarnham Road/Pearse Bridge (existing pinch point of 16m on Pearse Bridge) without the need for land acquisition. There is a large level difference between the bank of the River Dodder and Rathdown Park. Therefore, the bridge requires a 150m long spiral ramp (inner radius 8m, outer radius 12m, 2.5 complete circumferences, 7% gradient with transitions every 20m for 3m sections) to connect with the 60m span bridge crossing.

6.4.37 Cyclist will be catered for on a parallel cycle route via Rathdown Park, Bushy Park Road, Zion Road and Orwell Road to Rathgar Village. Segregated cycle facilities will be provided in both directions on Bushy Park Road, Zion Road and Orwell Road. This would require residential land acquisition on Bushy Park and Orwell Roads as identified in **Figure 6.16** below.

6.4.38 The option TVR4 proposals are presented in **Figure 6.16** while a sample cross section is presented in **Figure 6.17** below.

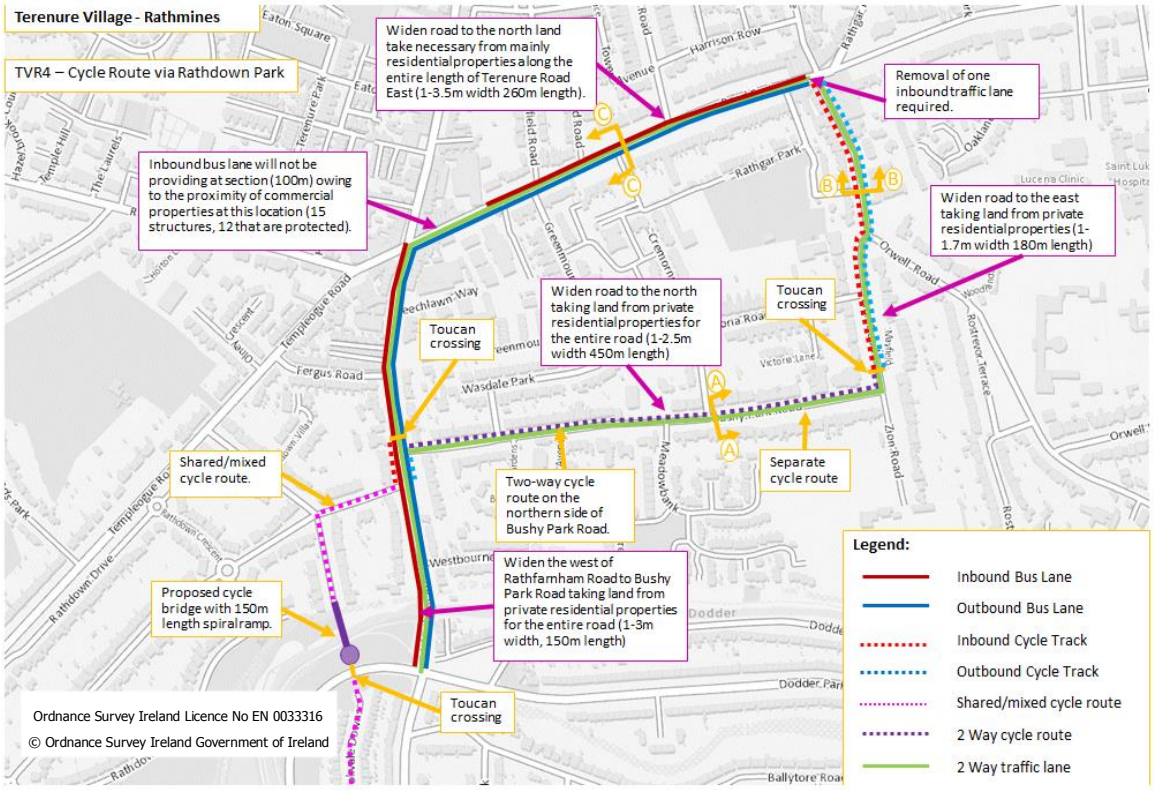


Figure 6.16: Route Option TVR4 Proposal: Terenure Village - Rathmines

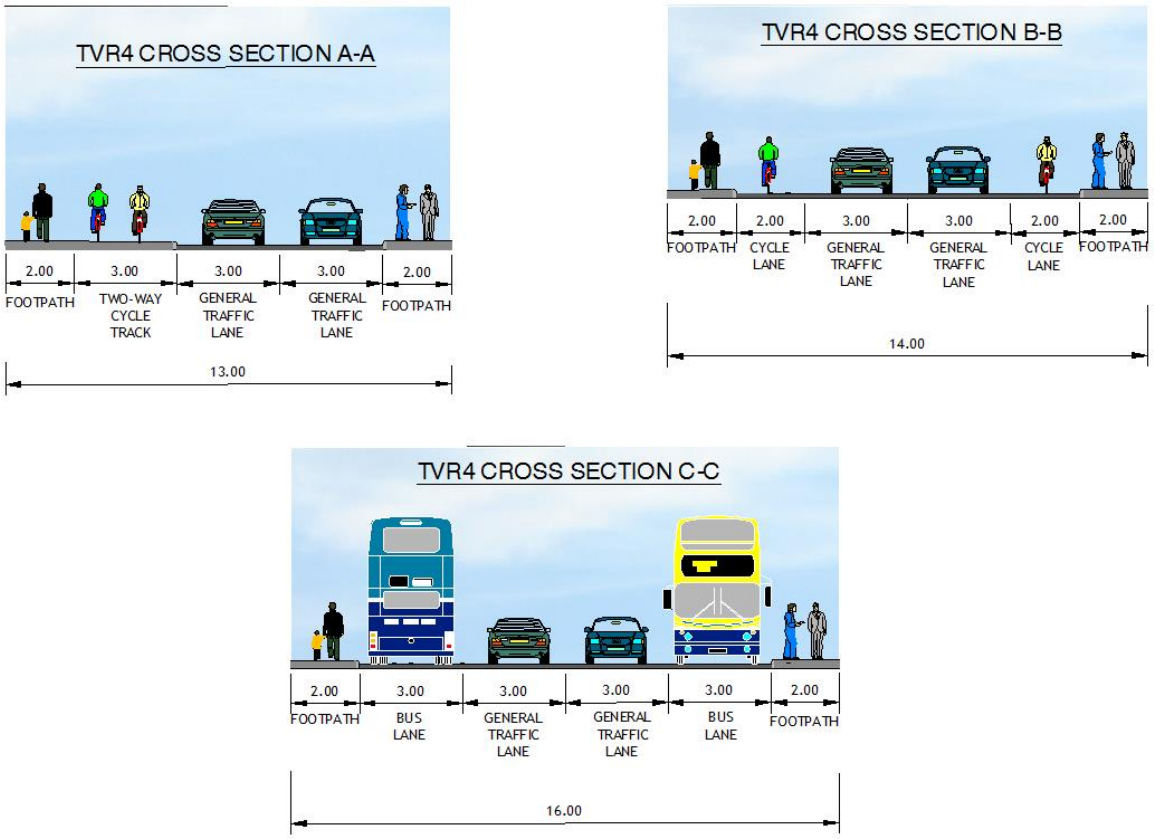


Figure 6.17: Route Option TVR4: Proposed Cross Section of Terenure Village - Rathmines

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

- There are no cycle facilities provided on Rathfarnham Road or Terenure Road East (Primary Route 10/S03 in the GDA CNP);
- There is a split between cycle & bus facilities;
- The removal of a number of trees is required to provide the cycle bridge (60m span) and ramp; and
- Alteration to Terenure Cross junction is required to facilitate right turning buses from Rathfarnham Road.

6.4.40 It is anticipated that this option would cost approximately €10.6 million (€7.8 million infrastructure costs, €2.8 million land acquisition costs).

Route Option TVR5: Cycle route via Riversdale Avenue

6.4.41 Route option TVR5 CBC route provides segregated bus facilities along Rathfarnham Road and Terenure Road East (with the exception of a 100m section at Terenure Cross). Cyclists will be catered for on a parallel cycle route via Riversdale Avenue, Bushy Park Road, Zion Road and Orwell Road to Rathgar Village. The cycle route will include a 150m spiral ramp and a 60m cycle bridge to the east of Pearse Bridge. The CBC runs along the same route as TVR1 as illustrated in **figure 6.9**.

6.4.42 The journey time for this route option from Pearse Bridge to the Rathgar Avenue junction is 5 minutes in the inbound direction and 4 minutes in the outbound direction over a distance of approximately 1.2km.

6.4.43 It is proposed as part of option TVR5 to provide continuous bus priority in both directions with the exception of a 100m section of Terenure Road East at Terenure Cross where an inbound bus lane will not be provided owing to the close proximity of protected commercial properties at this location.

6.4.44 A cycle bridge across the River Dodder (to the east of Pearse Bridge) is proposed to provide a parallel cycle route from the Dodder Greenway to Riversdale Avenue. Removal of the cycle facilities on Rathfarnham Road and the provision of a parallel cycle route via Riversdale Avenue, creates the additional space necessary to provide bus lanes in both directions on Rathfarnham Road/Pearse Bridge (existing pinch point of 16m on Pearse Bridge), without the need for land acquisition. There is a large level difference between the bank of the River Dodder and Riversdale. Therefore, the bridge requires a 150m spiral ramp (inner radius 8m, outer radius 12m, 2.5 complete circumferences, 7% gradient with transitions every 20m for 3m sections) to connect with the 60m bridge crossing.

6.4.45 Cyclists will be catered for along a parallel cycle route via The Dodder Greenway, Riversdale Avenue, Bushy Park Road, Zion Road and Orwell Road to Rathgar Village. Two-way segregated cycle facilities will be provided on Bushy Park Road, Zion Road and Orwell Road. This would require residential land acquisition on Bushy Park and Orwell Road as identified in **Figure 6.18** below.

6.4.46 The option TVR5 proposals are presented in **Figure 6.18** while a sample cross section is presented in **Figure 6.19** below

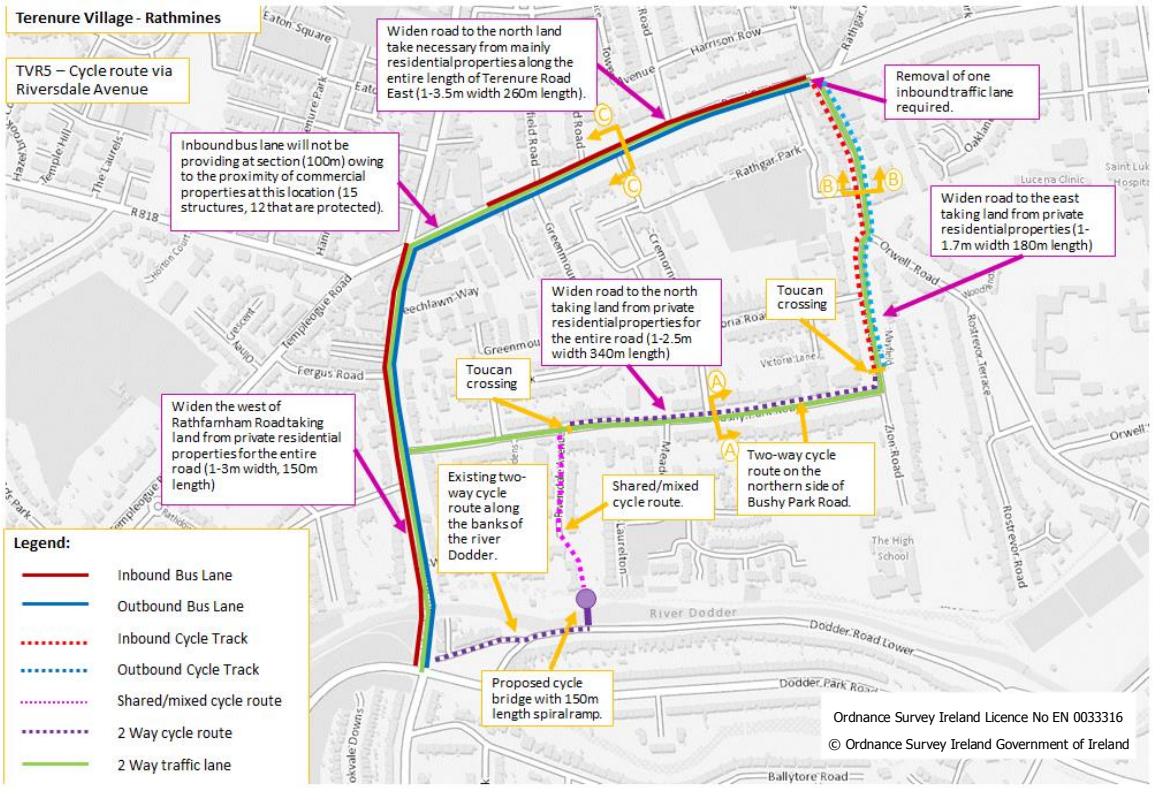


Figure 6.18: Route Option TVR5 Proposal: Terenure Village - Rathmines

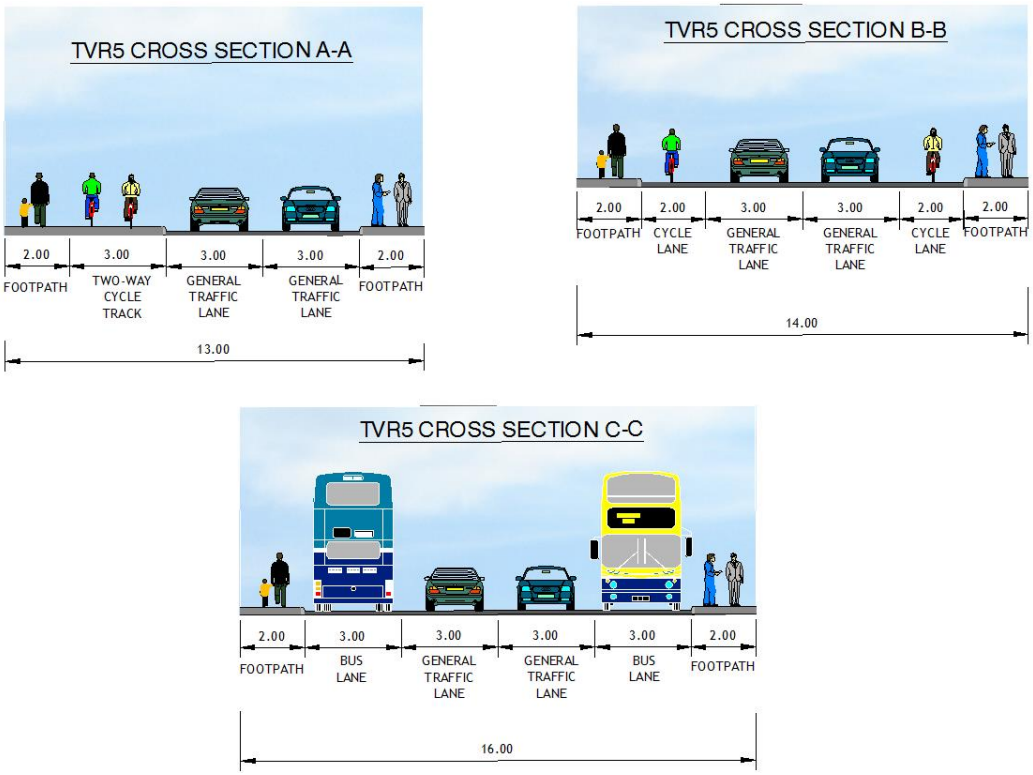


Figure 6.19: Route Option TVR5: Proposed Cross Section of Terenure Village – Rathmines

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

- There is a split between cycle & bus facilities. No cycle facilities are provided on Rathfarnham Road or Terenure Road East (Primary Route 10/S03 in the GDA CNP);
- The removal of a number of trees is required to provide the cycle bridge (60m span) and ramp; and
- There are shared cycle facilities on Riversdale Avenue.

6.4.48 It is anticipated that this option would cost approximately €10.5 million (€7.3 million infrastructure costs, €3.2 million land acquisition costs).

Route Option TVR6: Cycle route via Laurelton/Meadowbank

6.4.49 Route option TVR6 CBC route provides segregated bus facilities along Rathfarnham Road and Terenure Road East (with the exception of a 100m section at Terenure Cross). Cyclists will be catered for along a parallel cycle route via Laurelton, Meadowbank, Bushy Park Road, Zion Road and Orwell Road to Rathgar Village. The cycle route will include a 150m long spiral ramp and a 60m long cycle bridge to the east of Pearse Bridge. The CBC runs along the same route as TVR1 as illustrated in **figure 6.9**.

6.4.50 The journey time for this route option from Pearse Bridge to the Rathgar Avenue junction is 5 minutes in the inbound direction and 4 minutes in the outbound direction over a distance of approximately 1.2km.

6.4.51 It is proposed as part of option TVR6 to provide continuous bus priority in both directions with the exception of a 100m section of Terenure Road East at Terenure Cross where an inbound bus lane will not be provided owing to the close proximity of protected commercial properties at this location.

6.4.52 A cycle bridge across the River Dodder (to the east of Pearse Bridge) is proposed to provide a parallel cycle route from the Dodder Greenway to Laurelton. Removal of the cycle facilities on Rathfarnham Road and the provision of a parallel cycle route via Laurelton, creates the additional space necessary to provide bus lanes in both directions on Rathfarnham Road/Pearse Bridge (existing pinch point of 16m on Pearse Bridge). There is a large level difference between the bank of the River Dodder and Laurelton. Therefore, the bridge requires a 150m spiral ramp (inner radius 8m, outer radius 12m, 2.5 complete circumferences, 7% gradient with transitions every 20m for 3m sections) to connect with the 60m bridge crossing.

6.4.53 Cyclist will be catered for along a parallel cycle route via Laurelton, Meadowbank, Bushy Park Road, Zion Road and Orwell Road to Rathgar Village. Segregated cycle facilities will be provided in both direction on Bushy Park Road, Zion Road and Orwell Road. This would require residential land acquisition on Bushy Park and Orwell Roads as identified in **Figure 6.20** below.

6.4.54 The option TVR6 proposals are presented in **Figure 6.20** while a sample cross section is presented in **Figure 6.21** below.

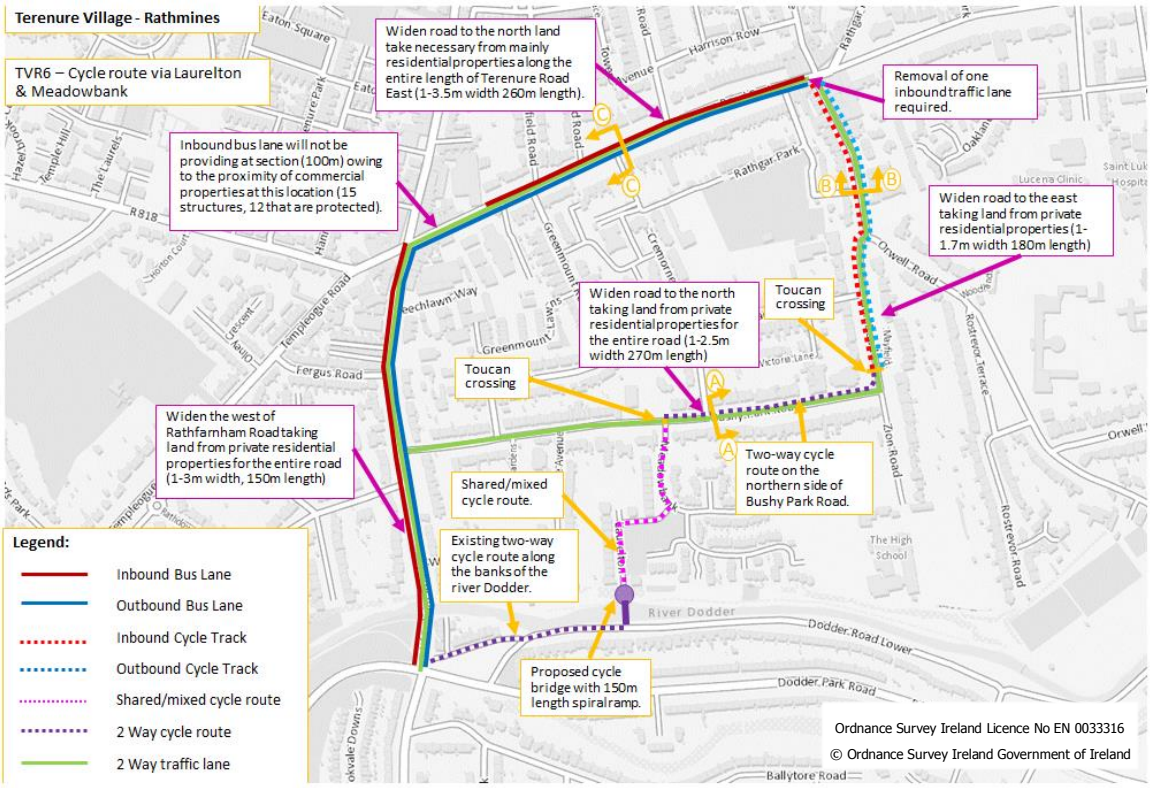


Figure 6.20: Route Option TVR6 Proposal: Terenure Village - Rathmines

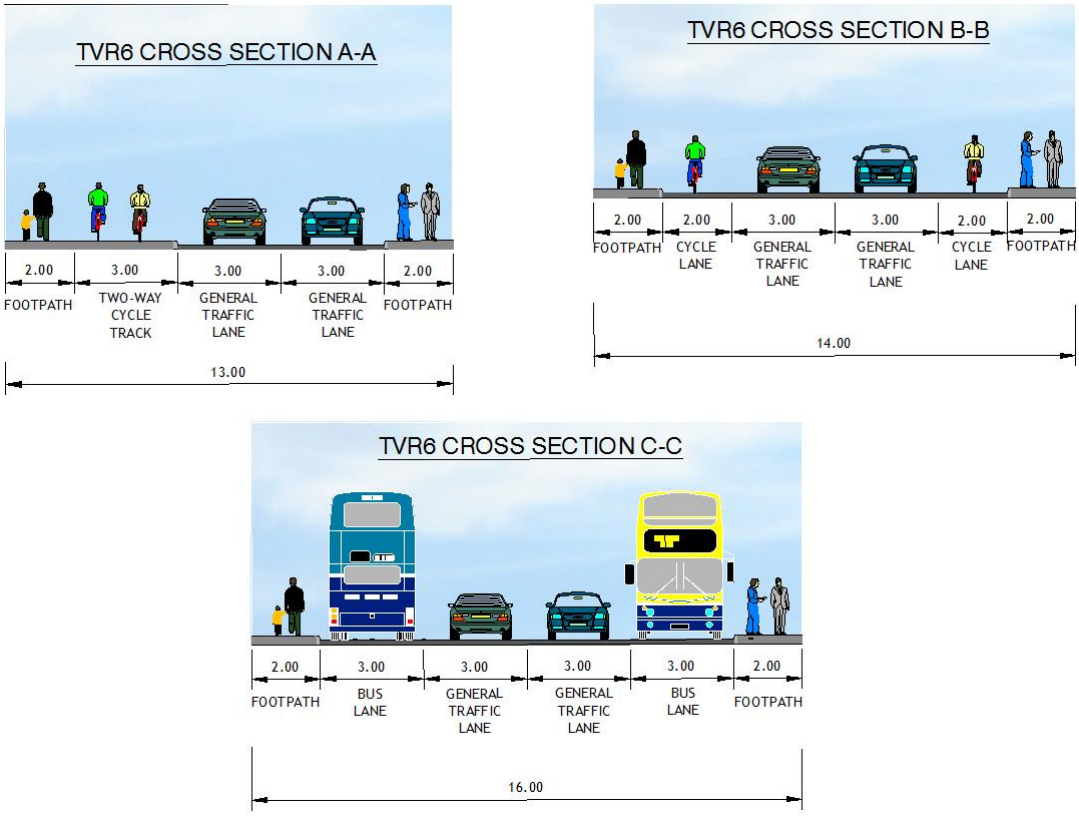


Figure 6.21: Route Option TVR6: Proposed Cross Section of Terenure Village - Rathmines.

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

- There are split cycle & bus facilities. There are no cycle facilities on Rathfarnham Road or Terenure Road East (Primary Route 10/S03 in the GDA CNP);
- The removal of a number of trees are required to provide the cycle bridge and the spiral ramp on the northern banks of the River Dodder;
- The removal of a general traffic lane is required on Orwell Road approaching Rathgar Village junction; and
- There are shared cycle facilities on Laurelton and Meadowbank.

6.4.56 It is anticipated that this option would cost approximately €10.0 million (€7.0 million infrastructure costs, €3.0 million land acquisition costs).

Route Option TVR7: Cycle Route via The Dodder Greenway and Orwell Road

6.4.57 Route option TVR7 CBC route provides segregated bus facilities along Rathfarnham Road and Terenure Road East (with the exception of a 100m section at Terenure Cross). Cyclists will be catered for via the Dodder Greenway, through Orwell Park and along Orwell Road to Rathgar Village. The CBC runs along the same route as TVR1 as illustrated in **figure 6.9**.

6.4.58 The journey time for this route option from Pearse Bridge to the Rathgar Avenue junction is 5 minutes in the inbound direction and 4 minutes in the outbound direction over a distance of approximately 1.2km.

6.4.59 It is proposed as part of option TVR7 to provide continuous bus priority in both directions with the exception of a 100m section of Terenure Road East at Terenure Cross where an inbound bus lane will not be provided owing to the close proximity of protected commercial properties at this location.

6.4.60 Cyclists will be catered for along a parallel cycle route via the Dodder Greenway, through Orwell Park and along Orwell Road (which is secondary route SO3 in the GDA CNP) to Rathgar Village. Segregated cycle facilities will be provided along the entire route. This would require residential land acquisition on Orwell Road as identified in **Figure 6.22** below.

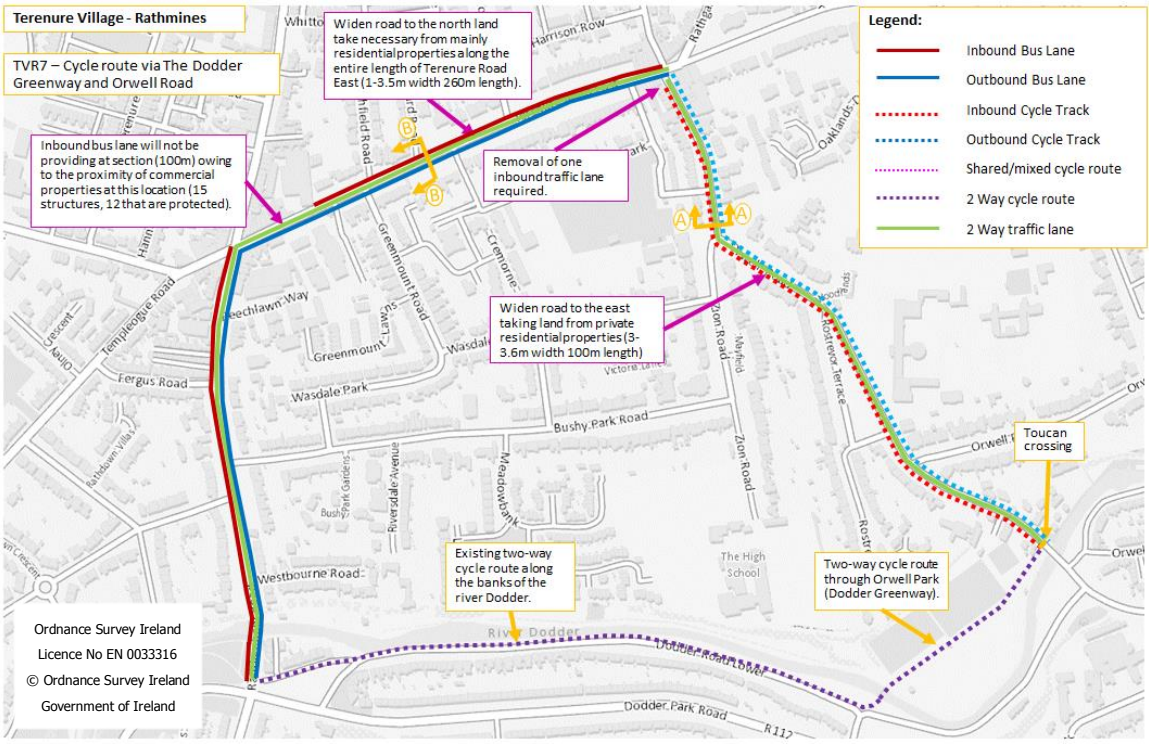


Figure 6.22: Route Option TVR7 Proposal: Terenure Village - Rathmines.

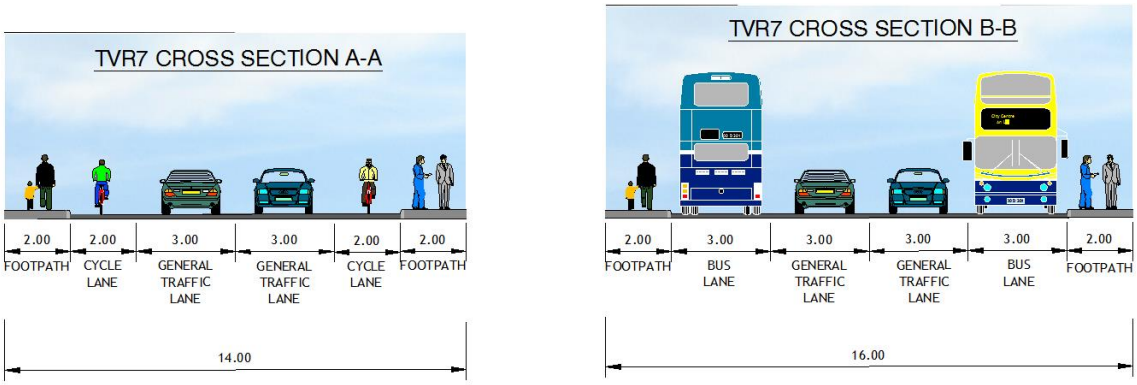


Figure 6.23: Route Option TVR7: Proposed Cross Section of Terenure Village - Rathmines.

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

- There is a split between cycle & bus facilities. There are no cycle facilities on Rathfarnham Road or Terenure Road East (Primary Route 10/S03 in the GDA CNP);

- Removal of a general traffic lane on Orwell Road, approaching the Rathgar Village junction.
- The total length of the cycle route is 2.1km which may prove unattractive to cyclists; and
- The provision of a circuitous cycle route which does not align with the CBC.

6.4.62 It is anticipated that this option would cost approximately €8.8 million (€6.7 million infrastructure costs, €2.1 million land acquisition costs).

Route Option TVR8: Inbound bus lane Bushy Park Rd & Outbound bus lane Terenure Rd East.

6.4.63 Route option TVR8, provides for a segregated inbound CBC route via Rathfarnham Road, Bushy Park Road, Orwell Road. The CBC Outbound route is via Rathfarnham Road and Terenure Road East. Segregated cycle facilities will also be split in terms of direction. These facilities will be provided in the opposite direction to the bus facilities on Bushy Park Road/Terenure Road East as presented in **Figure 6.24.**

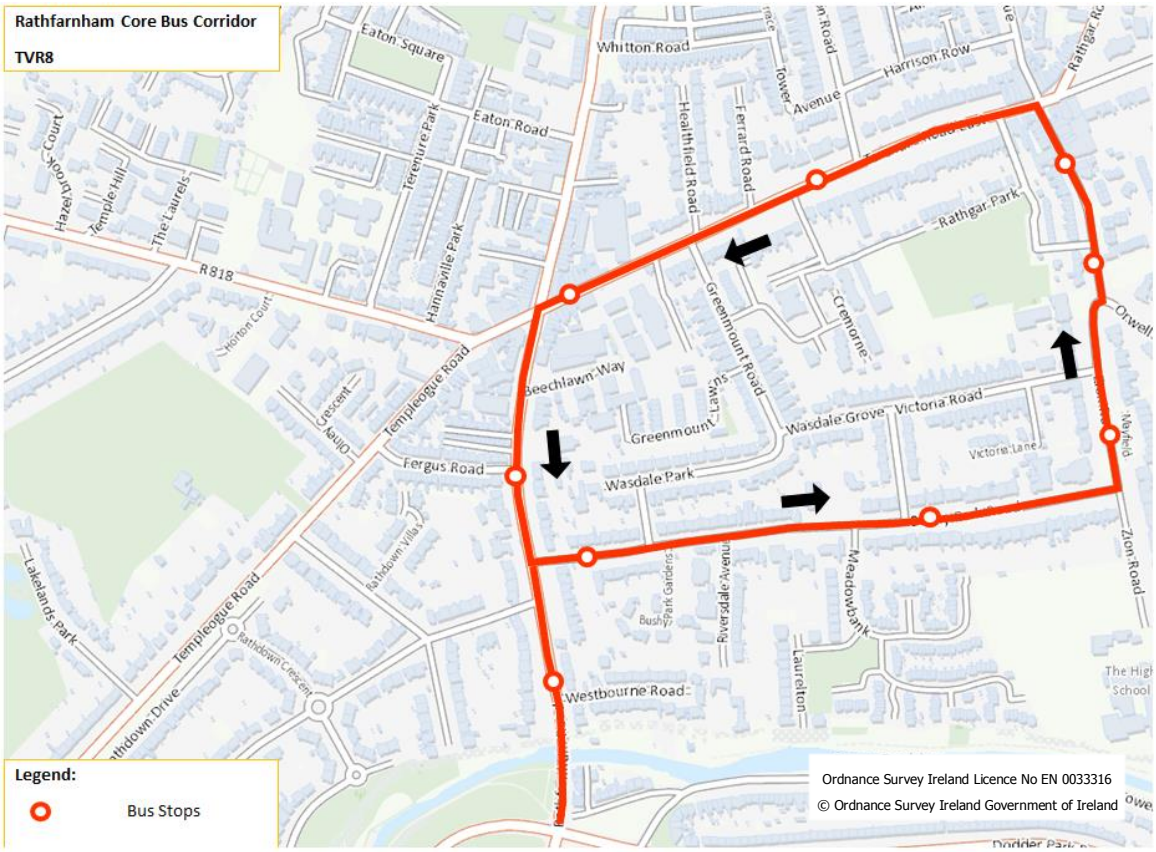


Figure 6.24 TVR8: Inbound bus lane Bushy Park Rd & Outbound bus lane Terenure Rd East

6.4.64 **Inbound (Northbound):** The CBC service will proceed in a North-Eastern direction via Bushy Park Road & Orwell Road, with a segregated bus lane provided.

6.4.65 **Outbound (Southbound):** The southbound option will proceed via Terenure Road East & Rathfarnham Road, with a segregated bus lane provided.

6.4.66 **Stops:** The number of stops is illustrated in **Figure 6.24**. There has been rationalistion of bus stops which are in close proximity such as the bus stops on Pearse Bridge.

6.4.67 The journey time for this route option in the southbound direction is 5 minutes over a distance of approximately 1.2km. Whilst, the journey time for this route option in the northbound direction is 5 minutes over a distance of approximately 1.5km.

6.4.68 It is proposed as part of option TVR8 to provide continuous bus priority in both directions but with different routes for the northbound (Bushy Park Road/Orwell Road) and southbound (Terenure Road/Rathfarnham Road), with the exception of the section on Rathfarnham Road from Westbourne Road junction to Bushy Park Road junction where bus priority signalling is proposed in the outbound direction at this pinch point.

6.4.69 Segregated cycle facilities will also be split in terms of direction. These facilities will be provided in the opposite direction to the bus facilities on Bushy Park Road/Terenure Road East, which does not strictly align with Primary Route 10/SO3 proposals for two-way facilities on Terenure Road East. There is also a 100m section of Terenure Road East at Terenure Cross where the inbound cycle lane will not be provided, owing to the close proximity of the commercial properties at this location.

6.4.70 This proposal would require residential land acquisition on Bushy Park Road and Orwell Road as identified in **Figure 6.25** below. Removal of on street parking would be required on the western side of Rathfarnham Road between Fergus Road and Terenure Cross.

6.4.71 There are signal controlled junctions at the beginning of this section at Rathdown Park, Bushy Park Road as well as the junctions of Terenure Cross and Rathgar Avenue/Orwell Road. In addition, there is 1 signalised pedestrian crossing at the Church on Terenure Road East.

6.4.72 The option TVR8 proposals are presented in **Figure 6.25** while a sample cross section is presented in **Figure 6.26** below.

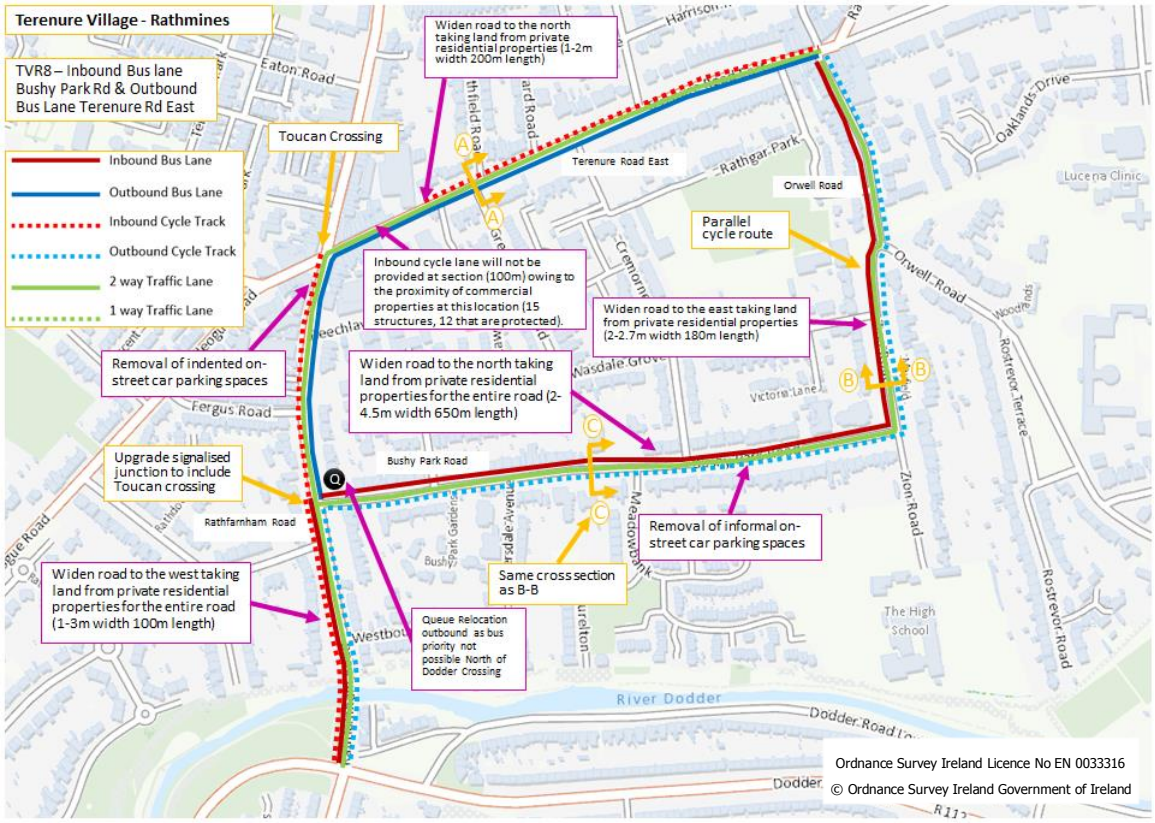


Figure 6.25: Route Option TVR8 Proposal: Terenure Village - Rathmines

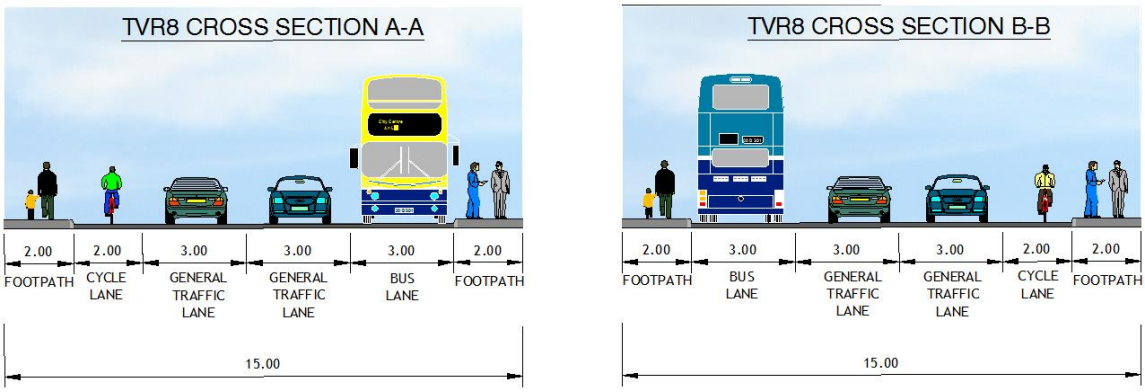


Figure 6.26: Route Option TVR8: Proposed Cross Section of Terenure Village - Rathmines

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

- The provision of split cycle & bus facilities
- The provision of outbound bus priority signalling between Bushy Park Road and Westbourne Road leading to increased journey times compared to continuous bus priority provision.

6.4.74 It is anticipated that this option would cost approximately €11.0 million (€6.6 million infrastructure costs, €4.4 million land acquisition costs).

Sub-option TVR: Scheme Assessment

6.4.75 The 'Initial' route options assessment summary tables for subsection TVR are presented in Table 1 of Appendix B. The relative ranking of route options against the scheme assessment sub-criteria are summarised in **Table 6.2** below. Criterion and sub-criterion that produce relatively little differences between the options (Neutral compared to other options in the five-point scale) have not been included in the Scheme options Assessment Summary Tables, such as Residential Population and Employment Catchments, and Transport Network Integration.

Section TVR Summary (sub – criteria) Terenure Village- Rathmines									
Appraisal Criteria	**Sub-Criteria**	**Option TVR1** **Bus lane in both directions, parallel cycle route**	**Option TVR2** **Inbound Traffic Lane on Terenure Rd East**	**Option TVR3** **Bus lane and Cycle lane in both directions**	**Option TVR4** **Cycle Route via Rathdown Park**	**Option TVR5** **Cycle Route via Riversdale Avenue**	**Option TVR6** **Cycle Route via Laurelton/Meadowbank**	**Option TVR7** **Cycle Route via The Dodder Greenway and Orwell Road**	**Option TVR8** **Inbound bus lane Bushy Park Rd & Outbound bus lane Terenure Rd East**
1 Economy	**1A Capital Cost**								
	1B Transport Quality & Reliability								
2 Integration	**2B Residential Population & Employment Catchments**								
	2D Cycle Network Integration								
	2E Traffic Network Integration								
3 Accessibility & Social Inclusion	**3A Key Trip Attractors**								
4 Safety	**4A Road Safety**								
5 Environment	**5B Architectural Heritage**								
	5C Flora and Fauna								
	5E Landscape and Visual								
	5F Air Quality								
	5G Noise & Vibration								
	5H Land Use Character								

Table 6.2: Section TVR Scheme Options Assessment Summary (Sub-Criteria)

6.4.76 In terms of 'Economy', the primary differentiator between the route options is the level of residential land acquisition (TVR3) and the additional infrastructure costs to split the bus routes (TVR8). However, there is very little cost differentiation between these and the other options due to the additional infrastructure costs associated with the construction of the proposed cycle bridges for options (TVR2-TVR7). The differential between the route options projected journey times is due the bus priority signalling/no segregated outbound bus lane between the signalised junctions of Dodder Park Road (R112) and Bushy Park Road along, the Rathfarnham Road and along a 100m section of Terenure Road East at Terenure Cross where bus lanes will not be provided owing to the close proximity of commercial properties at this location. Therefore, the most economical route is TVR7.

6.4.77 In terms of 'traffic impact', a differentiator between route options would be that option TVR2 which provides for inbound traffic only, would have a significant traffic impact in terms of movement restrictions and increased traffic/congestion on Terenure Road East. Due to the traffic diversions, there will be increased traffic on residential roads (Victoria Road, Wasdale Grove, Greenmount Road). Option TVR7 ranks highest in terms of cycle network integration as it provides segregated cycle facilities in both directions along Terenure Road East which aligns with the Primary Route 10/S03 as identified in the GDA Cycle Network Plan and is one of the busiest radial cycle routes in Dublin. Option TVR7 provides a separate alternative cycle route along the proposed Dodder Greenway which results in a very long and circuitous route, which does not align with the CBC route. Option TVR8 ranks lowest in terms of Catchments due to the fact that the CBC has been split into separate inbound and outbound routes and the provision of CBC facilties in both directions is provided for a smaller catchment area compared to the other options.

6.4.78 Increase in catchment area, due to the provision of inbound bus lane on Bushy Park Road & Orwell Road. However, splitting the inbound & outbound bus routes and not providing an inbound bus route through Terenure Village would decrease the attractiveness of the option and affect patronage.

6.4.79 Under 'Accessibility', option TVR8 serves additional educational facilities above the other options (High School and Stratford college) due to the proposed inbound bus lane on Bushy Park and Orwell Road, however Terenure Village will be bypassed in the inbound direction, which could impact negatively on the attractiveness of the CBC service.

6.4.80 Under 'Safety' a primary differentiator between route options is the provision of priority bus lanes. TVR3 – TVR7 provide full bus priority in both directions for the majority of the route, while TVR1 & TVR8 only provide an inbound bus lane between the Bushy Park junction and Pearse Bridge due to width constraints. Also, the inbound CBC route for TVR8 has two turning movements while the other options only have one.

6.4.81 In terms of 'Environment', route option TVR3 is considered to be less attractive in terms of potential for environmental impacts in relation to Architectural Heritage. The majority of residential properties along Terenure Road are protected structures. For option TVR3 land take from 29 protected residential properties on Terenure Road East is required along an approximate 470m section (maximum 5.7m width from front curtilages), whereas options TVR1 and TVR8 require Land take from 13 protected residential properties within 200m section, max width 1.5m width front curtilages. Land acquisition of protected structures under TVR3 will involve relocation of boundary walls or railings. There will be no impact on the protected buildings themselves.

6.4.82 In terms of 'Landscape and Visual', options TVR4-TVR6 are considered the least attractive options. These options involve the constructing a cycle bridge and 150m long spiral ramp which would require the removal of a large number of trees on the northern bank of the River Dodder to facilitate the ramp.

6.4.83 In terms of 'Air Quality' and 'Noise & Vibration', options TVR8 & TVR2 are considered the least attractive options. Option TVR8 results in negative impacts

due to increased levels of vehicle traffic on Bushy Park Road and increased proximity of vehicles to houses (and gardens), if the inbound bus lane is installed on Bushy Park Road. With regard to option TVR2, the benefits gained from the reduced vehicle trafficking associated with replacing the existing outbound traffic lane on Terenure Road East will be exceeded by the negative impact due to the increased traffic on less suitable residential roads (Victoria Road, Wasdale Grove, Greenmount Road).

6.4.84 In terms of 'Environment", route option TVR2 is generally considered to be less attractive in terms of potential for environmental impacts in relation to 'Air Quality' and 'Noise and Vibration' due to the increased traffic on residential roads (Victoria Road, Wasdale Grove, Greenmount Road) because of the traffic diversions. Restricted access to the commercial amenities (Terenure & Rathgar Village) and residential properties due to the provision of one-way traffic on Terenure Road East would have a large impact on Land Use Character.

6.4.85 A summary of the assessment and relative ranking of route options against the five main assessment criteria is presented in **Table 6.3** below.

Section TVR Summary (main criteria) Terenure Village- Rathmines								
Appraisal Criteria	Option TVR1 Bus lane in both directions, parallel cycle route	Option TVR2 Inbound Traffic Lane on Terenure Rd East	Option TVR3 Bus lane and Cycle lane in both directions	Option TVR4 Cycle Route via Rathdown Park	Option TVR5 Cycle Route via Riversdale Avenue	Option TVR6 Cycle Route via Laurelton/ Meadowbank	Option TVR7 Cycle Route via The Dodder Greenway and Orwell Road	Option TVR8 Inbound bus lane Bushy Park Rd & Outbound bus lane Terenure Rd East
1 Economy								
2 Integration								
3 Accessibility & Social Inclusion								
4 Safety								
5 Environment								

Table 6.3: Section TVR Options Assessment Summary (Main Criteria)

6.4.86 Based on the assessment undertaken, route option TVR3 & TVR4 offer overall similar benefits above the other options primarily because of their integration and economic benefits. However, TVR3 achieves more of the Scheme objectives by providing cycle facilities along the CBC route which are identified as Primary routes (10/S03) within the Greater Dublin Area Cycle Network Plan.

6.4.87 Therefore TVR3, is the preferred route option for the Terenure Village - Rathmines Section for the following reasons:

- Provides inbound and outbound bus facilities through Terenure Village which is a principal trip attractor for the CBC;
- It is the only option that provides inbound and outbound segregated cycle facilities on Terenure Road East, through Terenure Village which aligns with the Primary Route 10/S03 as identified in the GDA Cycle Network Plan, which is one of the busiest radial cycle route in Dublin.
- It has a lower landscape and visual impact when compared to TVR4-TVR7; and
- It has less impact on land-use character than TVR2.

6.4.88 Based on the initial assessment undertaken for this section of the study area, option TVR3 is identified as the preferred Terenure Village - Rathmines section. Therefore, TVR3 will of the form part of the principal route options.

6.5 Initial Assessment of Cycle Routes

6.5.1 After completing the initial Assessment of the Terenure Village & Pearse Bridge sub section and prior to the assessment of the principle route options for Section 2, an assessment of cycle routes options is necessary to determine the optimum option for cycle facilities in conjunction with segregated bus facilities via Rathmines, as it will be difficult to achieve segregated cycle facilities along the same route as the CBC in Section 2. A number of alternative options for the provision of cycle routes have been considered in tandem with the CBC serving Rathgar and Rathmines Village. The Cycle Route option emerging from this initial assessment will be taken forward to form part of the route options considered as part of the Stage 2 multi – criteria assessment

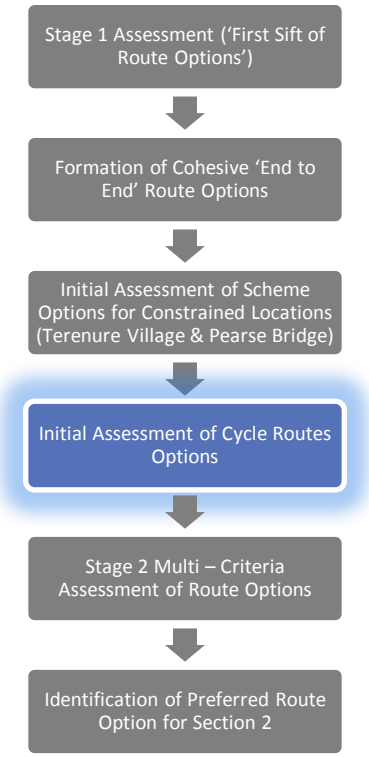


Figure 6.27: Section 2 Route Option Assessment Stages

6.5.2 There are six cycle route options considered for this section between the Bushy Park junction on Rathfarnham Road to the Grand Canal Crossing via Rathmines Village. These six options are discussed in the following paragraphs.

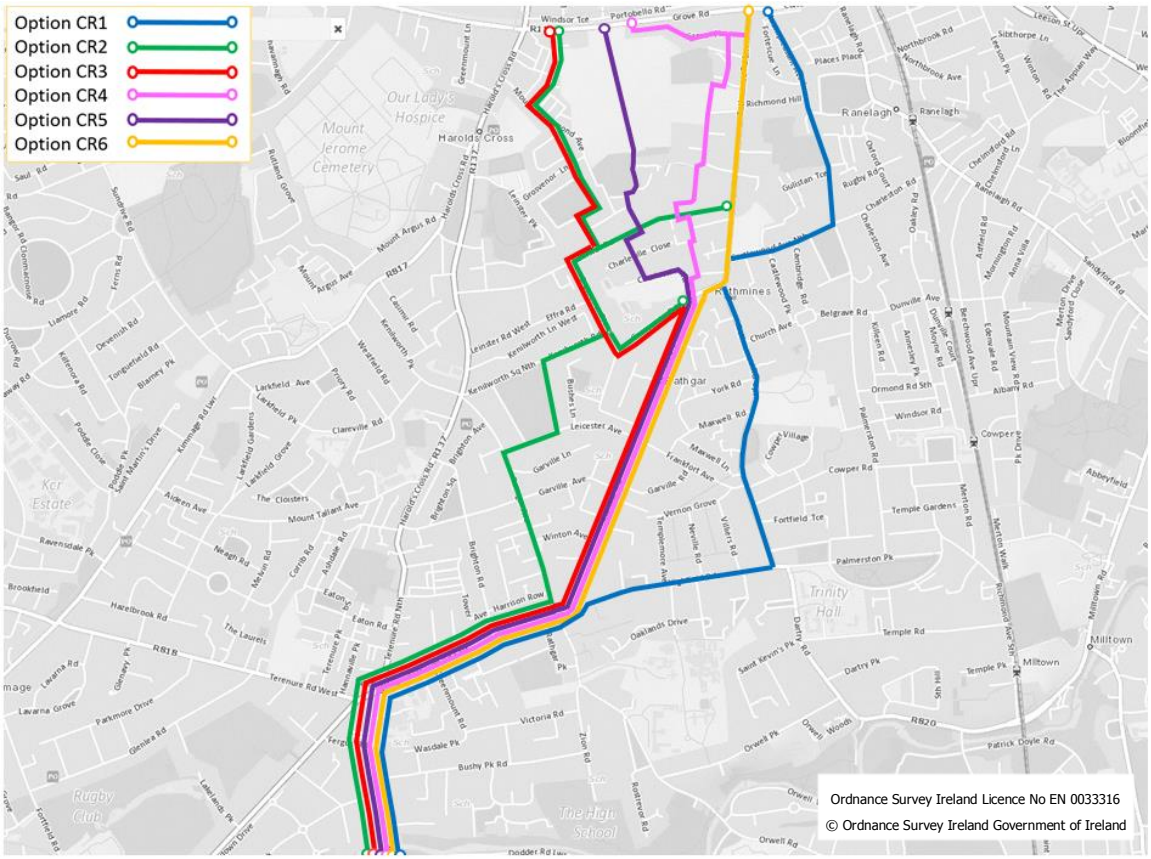


Figure 6.28: Section 2 Cycle Route Options

- CR1 - Cycle Route via Rathfarnham Road, Terenure Road East, Highfield Road, Rathmines Road Upper, Castlewood Avenue and Mount Pleasant Avenue. The route also includes a new cycle bridge crossing the Grand Canal;
- CR2 - Cycle route via Rathfarnham Road, Terenure Road East, Rathgar Avenue, Kenilworth Square, Grosvenor Square, Mount Drummond Avenue, and O'Hara Avenue. The route also includes a new cycle bridge crossing the Grand Canal;
- CR3 - Cycle Route via Rathfarnham Road, Terenure Road East, Rathgar Road, Grosvenor Road, Grosvenor Square, Mount Drummond Avenue, and O'Hara Avenue. The route also includes a new cycle bridge crossing the Grand Canal;
- CR4 - Cycle Route via Terenure Road East, Rathgar Road, Charleville Road, Wynnefield Road, Prince Arthur Terrace, Leinster Square, Louis Lane, Ardee

Road, Lissenfield, and Grove Park. The route also includes a new cycle bridge crossing the Grand Canal;

- CR5 - Cycle Route via Terenure Road East, Rathgar Road, Charleville Road, Grosvenor Lodge and Cathal Brugha Barracks. The route also includes a new cycle bridge crossing the Grand Canal; and
- CR6 - Cycle Route via Terenure Road East, Rathgar Road and Rathmines Road Lower. Due to width constraints on La Touche Bridge a new cycle bridge is proposed to the west of the bridge, connecting with Martin Street.

Cycle Route Option CR1: Cycle Route via Rathfarnham Road, Terenure Road East, Highfield Road, Rathmines Road Upper, Castlewood Avenue and Mountpleasant Avenue.

6.5.3 Cycle route option CR1 proposes to provide segregated cycle facilities along the CBC on Rathfarnham Road and Terenure Road East. A Parallel segregated cycle route is proposed via Highfield Road and Rathmines Road Upper to Rathmines Village turning right onto Castlewood Avenue and Mountpleasant Avenue. Mixed or shared street cycle facilities are only feasible along Mountpleasant Avenue due to width constraints and low traffic volumes & vehicle speeds. A 30km/h zone is proposed along Rathmines Road Lower between Grosvenor Road and Grove Road to provide a safer environment for cyclists who choose to use the bus lanes on Rathmines Road Lower instead of the segregated parallel cycle route. Option CR1 proposes to provide a new cycle bridge crossing the Grand Canal. The route is presented in **Figure 6.29**.

Figure 6.29: Cycle Route Option CR1

6.5.4 **Inbound (Northbound):** The cycle route will proceed from Rathfarnham Road, Terenure Road East, Highfield Road, Rathmines Road Upper to Rathmines Village before turning right onto Castlewood Avenue and connecting with Canal Road via Mountpleasant Avenue.

6.5.5 **Outbound (Southbound):** The southbound option follows the same route as northbound, a segregated cycle lane is provided along the majority of the route.

6.5.6 This segregated cycle route does not align with the GDA Cycle Network Plan proposal for Primary Route SO3/10, which runs along Terenure Road East, Rathgar Road and Rathmines Road. A 30km/h zone is proposed along Rathmines Road Lower between Grosvenor Road and Grove Road to provide a safer environment for cyclists who choose to use the bus lanes on Rathmines Road Lower instead of the segregated parallel cycle route.

6.5.7 There are nine controlled junctions and three pedestrian crossings along this route.

6.5.8 The option CR1 proposals are presented in **Figure 6.30** while a sample cross section is presented in **Figure 6.31** below.

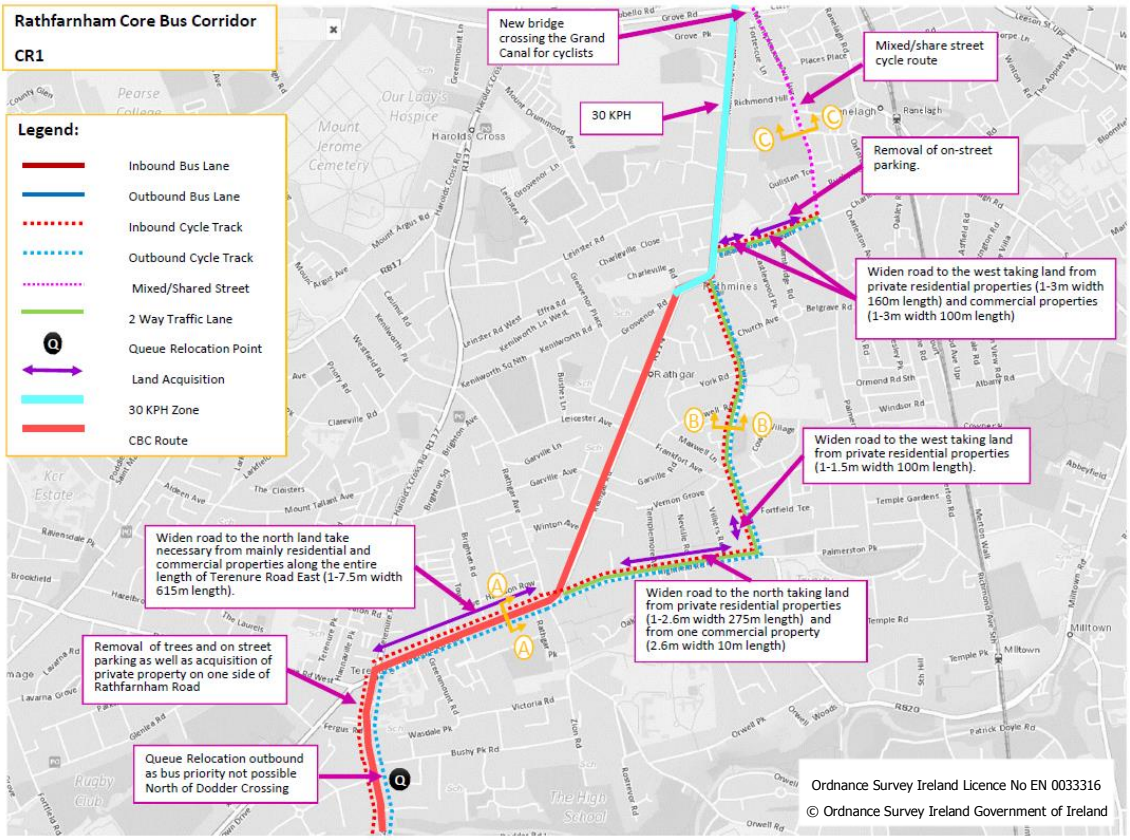


Figure 6.30: Route Option CR1 Proposal.

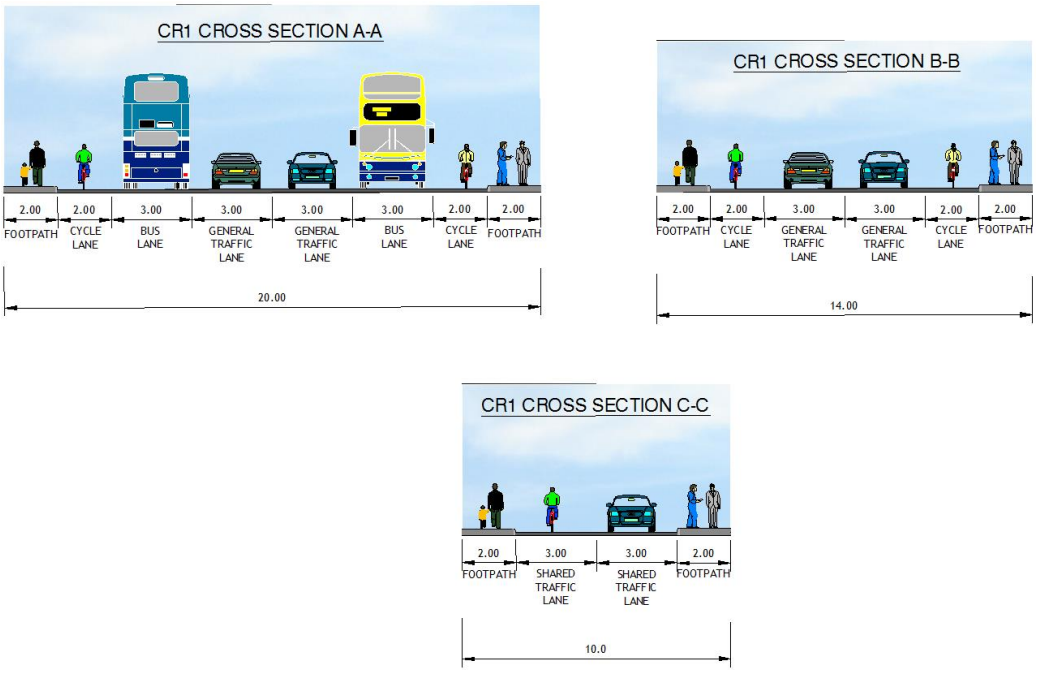


Figure 6.31: Route Option CR1 Proposed Cross Section.

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

- There are no segregated cycle facilities provided along Rathgar Road and Rathmines Road Lower, which is identified as Primary Route 10 within the GDA CNP and is one of the busiest radial cycle routes in Dublin.
- Share/mixed cycle facilities provided on Mountpleasant Avenue due to width constraints.

6.5.10 It is anticipated that this option would cost approximately €20.2 million (inclusive of associated bus facilities) (€13.9 million infrastructure costs, €6.3 million land acquisition costs.

Cycle Route Option CR2: Cycle route via Rathfarnham Road, Terenure Road East, Rathgar Avenue, Kenilworth Square, Grosvenor Square, Mount Drummond Avenue, and O'Hara Avenue.

6.5.11 Cycle route option CR2 proposes to provide segregated cycle facilities along the CBC on Rathfarnham Road and Terenure Road East. A parallel segregated cycle route is proposed via Rathgar Avenue, Kenilworth Square, Grosvenor Road, Leinster Road. Mixed or shared street cycle facilities are only feasible along Grosvenor Square, Mount Drummond Avenue and O'Hara Avenue due to width constraints and low traffic volumes & vehicle speeds. A 30km/h zone is proposed along Rathmines Road Lower between Grosvenor Road and Grove Road to provide a safer environment for cyclists who choose to use the bus lanes on Rathmines Road Lower instead of the segregated parallel cycle route. Option CR2 proposes to provide a new cycle bridge crossing the Grand Canal. The route is presented in **Figure 6.32**.

Figure 6.32: Cycle Route Option CR2

6.5.12 **Inbound (Northbound):** The cycle route will proceed from Rathfarnham Road, Terenure Road East, Rathgar Avenue, Kenilworth Square, Grosvenor Road, Leinster Road, Grosvenor Square, Mount Drummond Avenue and O'Hara Avenue, segregated cycle track will be provided for the majority of the route. A

6.5.13 **Outbound (Southbound):** The southbound option follows the same route as northbound, a segregated cycle track provided for the majority of the route.

6.5.14 This cycle route does not align with the GDA Cycle Network Plan proposal for Primary Route SO3/10 which runs along Terenure Road East, Rathgar Road and Rathmines Road. A 30km/h zone is proposed along Rathmines Road Lower between Grosvenor Road and Grove Road to provide a safer environment for cyclists who choose to use the bus lanes on Rathmines Road Lower instead of the segregated parallel cycle route.

6.5.15 There are thirteen controlled junctions and one pedestrian crossing along this route.

6.5.16 The option CR2 proposals are presented in **Figure 6.33** while sample cross sections are presented in **Figure 6.34** below.

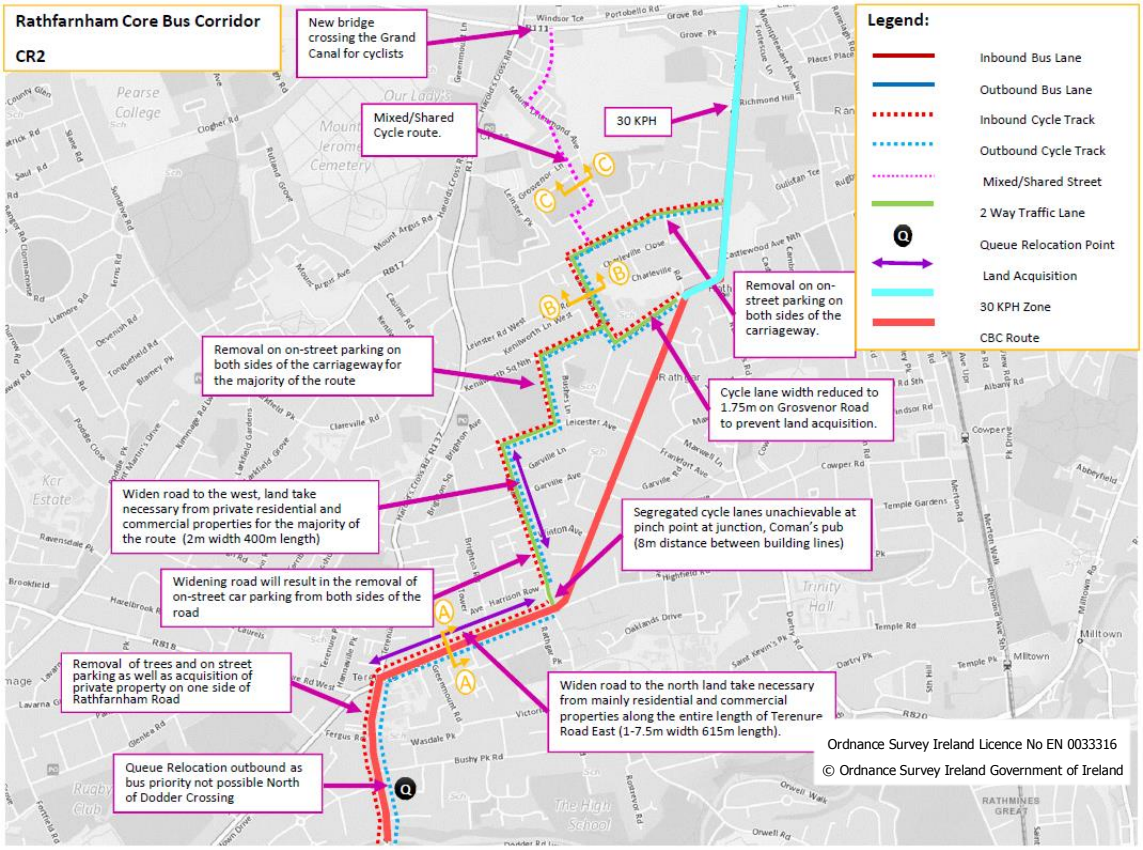


Figure 6.33: Route Option CR2 Proposal.

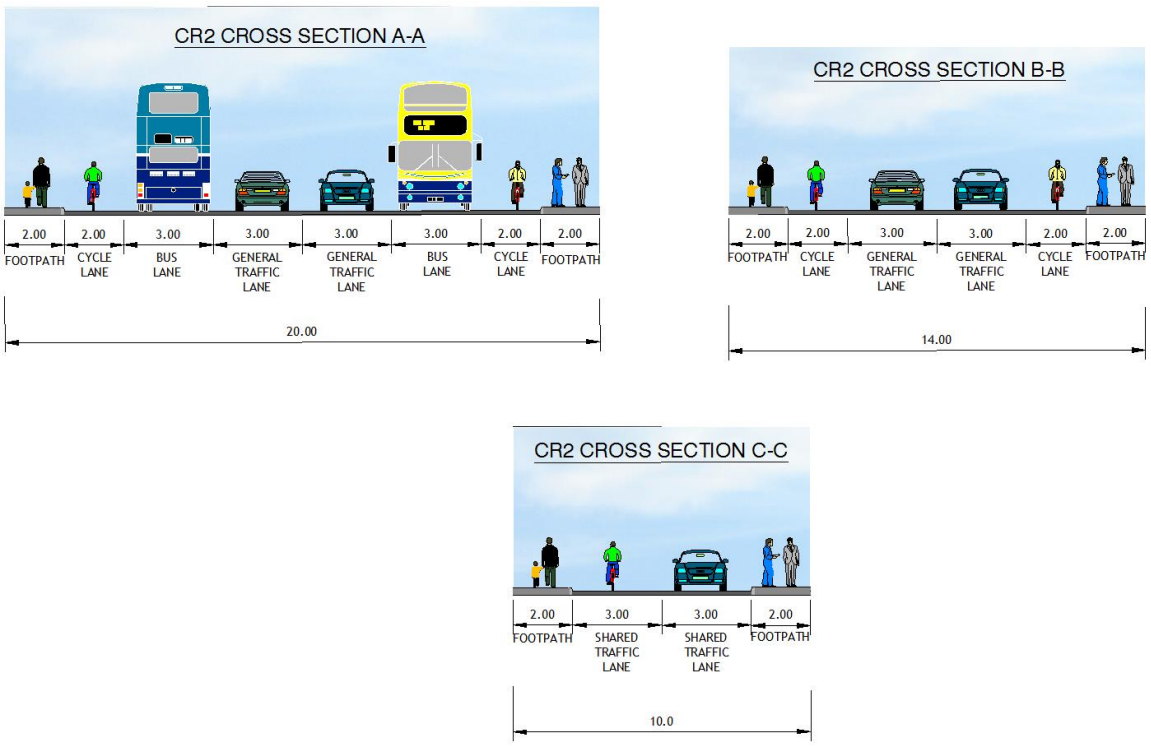


Figure 6.34: Route Option CR2 Proposed Cross Section.

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

- There are no segregated cycle facilities provided along Terenure Road East, Rathgar Road and Rathmines Road Lower, which is identified as Primary Route 10 within the GDA CNP and one of the busiest radial cycle routes in Dublin.
- Shared/mixed cycle facilities are provided along Grosvenor Square, Mount Drummond Avenue and O'Hara Avenue due to width constraints and low traffic volumes & vehicle speeds.

6.5.18 It is anticipated that this option would cost approximately €18.8 million (€13.7 million infrastructure costs, €5.1 million land acquisition costs.

Cycle Route Option CR3: Cycle Route via Rathfarnham Road, Terenure Road East, Rathgar Road, Grosvenor Road, Grosvenor Square, Mount Drummond Avenue, and O'Hara Avenue.

6.5.19 Cycle route option CR3 proposes to provide segregated cycle facilities along the CBC on Rathfarnham Road, Terenure Road East, and Rathgar Road. A parallel cycle route is proposed via Grosvenor Road, Grosvenor Place, Grosvenor Square, Mount Drummond Ave and O'Hara Avenue. Mixed or shared street cycle facilities are only feasible along Grosvenor Square, Mount Drummond Avenue and O'Hara Avenue due to width constraints, low traffic volumes & vehicle speeds. A 30km/h zone is proposed along Rathmines Road Lower between Grosvenor Road and Grove Road to provide a safer environment for cyclists who choose to use the bus lanes on Rathmines Road Lower instead of the segregated parallel cycle route. Option CR3 proposes to provide a new cycle bridge crossing the Grand Canal. The route is presented in **Figure 6.35**.

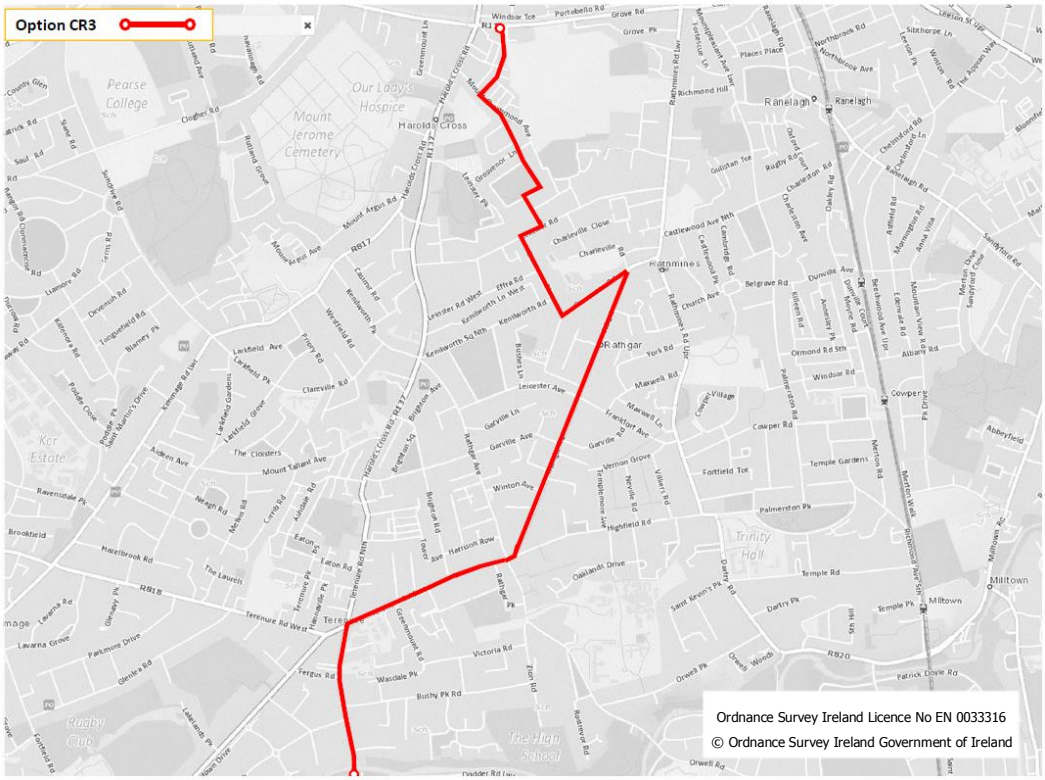


Figure 6.35: Cycle Route Option CR3

6.5.20 **Inbound (Northbound):** The cycle route will proceed from Rathfarnham Road, Terenure Road East, Rathgar Road, Grosvenor Road, Leinster Road, Grosvenor Square, Mount Drummond Avenue and O'Hara Avenue, with a segregated cycle track provided for the majority of the route.

6.5.21 **Outbound (Southbound):** The southbound option follows the same route as northbound, a segregated cycle track is provided for the majority of the route.

6.5.22 This cycle route does not align strictly with the GDA Cycle Network Plan proposal for Primary Route SO3/10 which runs along Terenure Road East, Rathgar Road and Rathmines Road. A 30km/h zone is proposed along Rathmines Road Lower between Grosvenor Road and Grove Road to provide a safer environment for cyclists who choose to use the bus lanes on Rathmines Road Lower instead of the segregated parallel cycle route.

6.5.23 There are eleven controlled junctions and one pedestrian crossing along this route.

6.5.24 The option CR3 proposals are presented in **Figure 6.36** while sample cross section is presented in **Figure 6.37** below.

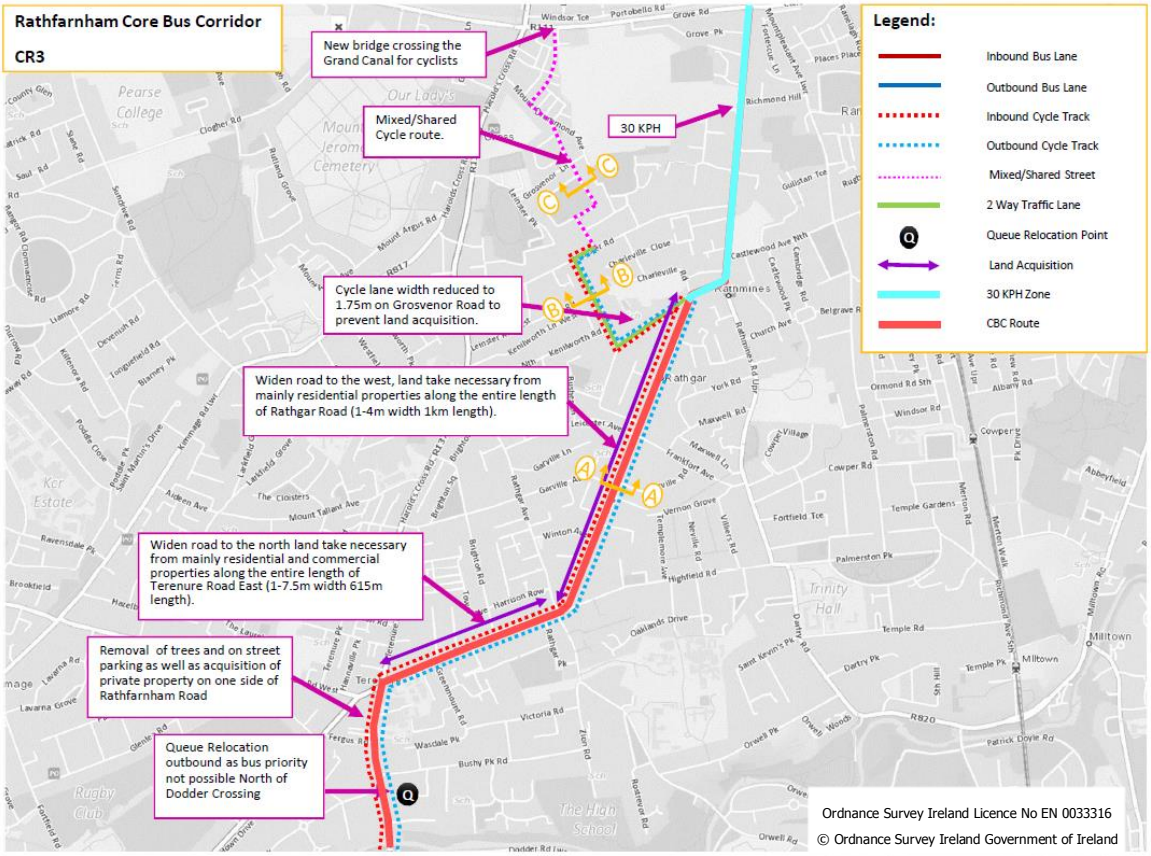


Figure 6.36 Route Option CR3 Proposal.

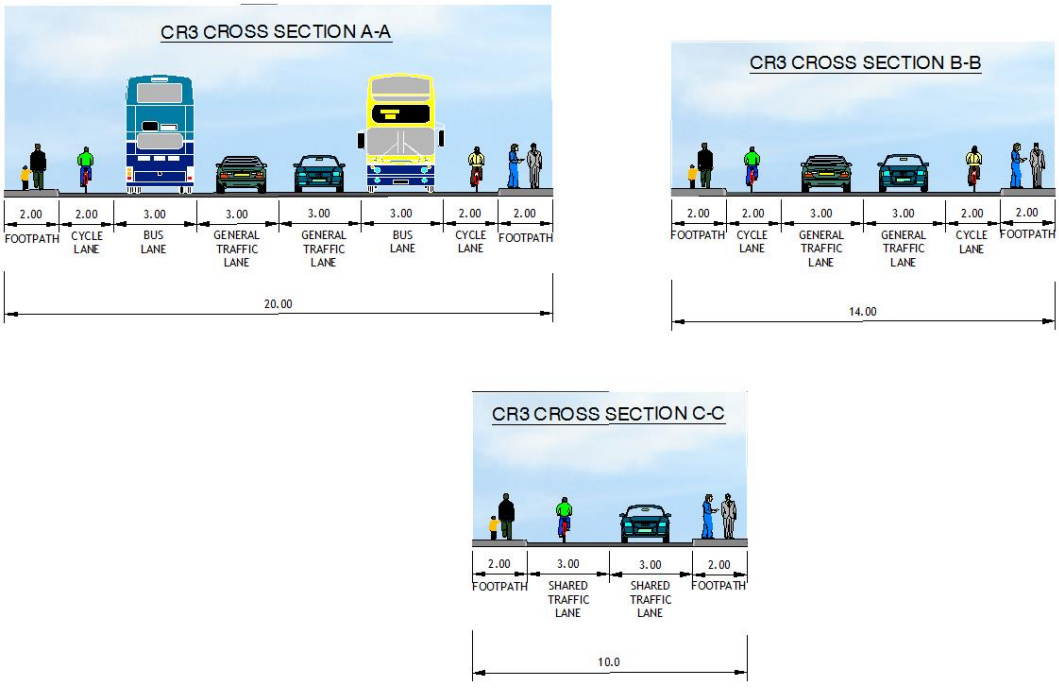


Figure 6.37: Route Option CR3 Proposed Cross Section.

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

- There are no segregated cycle facilities provided along Terenure Road East and Rathmines Road Lower, which is identified as Primary Route 10 within the GDA CNP and currently one of the busiest radial cycle route in Dublin; and
- Shared/mixed cycle facilities provided are along Grosvenor Square, Mount Drummond Avenue and O'Hara Avenue due to width constraints and low traffic volumes & vehicle speeds.

6.5.26 It is anticipated that this option would cost approximately €21.9 million (inclusive of associated bus facilities) (€13.2 million infrastructure costs, €8.7 million land acquisition costs.

Cycle Route Option CR4: Cycle Route via Rathfarnham Road, Terenure Road East, Rathgar Road, Charleville Road, Wynnefield Road, Prince Arthur Terrace, Leinster Square, Louis Lane, Ardee Road, Lissenfield, and Grove Park.

6.5.27 Cycle route option CR4 proposes to provide segregated cycle facilities along the CBC on Rathfarnham Road, Terenure Road East and Rathgar Road. A parallel cycle route is proposed via Charleville Road, Wynnefield Road, Prince Arthur Terrace, Leinster Square, Louis Lane, Ardee Road, Lissenfield, and Grove Park. Mixed or shared street cycle facilities are only feasible along Wynnefield Road, Prince Arthur Terrace, Leinster Square, Louis Lane, Lissenfield, and Grove Park due to width constraints and low traffic volumes & vehicle speeds. Land acquisition is required from Wynnefield carpark, St. Mary's College (protected structure), St. Louis Primary School, Lissenfield and 2 brownfield sites (link from Lissenfield to Grove Park) to provide a parallel cycle route to Rathmines Road Lower. A 30km/h zone is proposed along Rathmines Road Lower between Grosvenor Road and Grove Road to provide a safer environment for cyclists who

choose to use the bus lanes on Rathmines Road Lower instead of the segregated parallel cycle route. Option CR4 proposes to provide a new cycle bridge crossing the Grand Canal. The route is presented in Figure **6.38.**

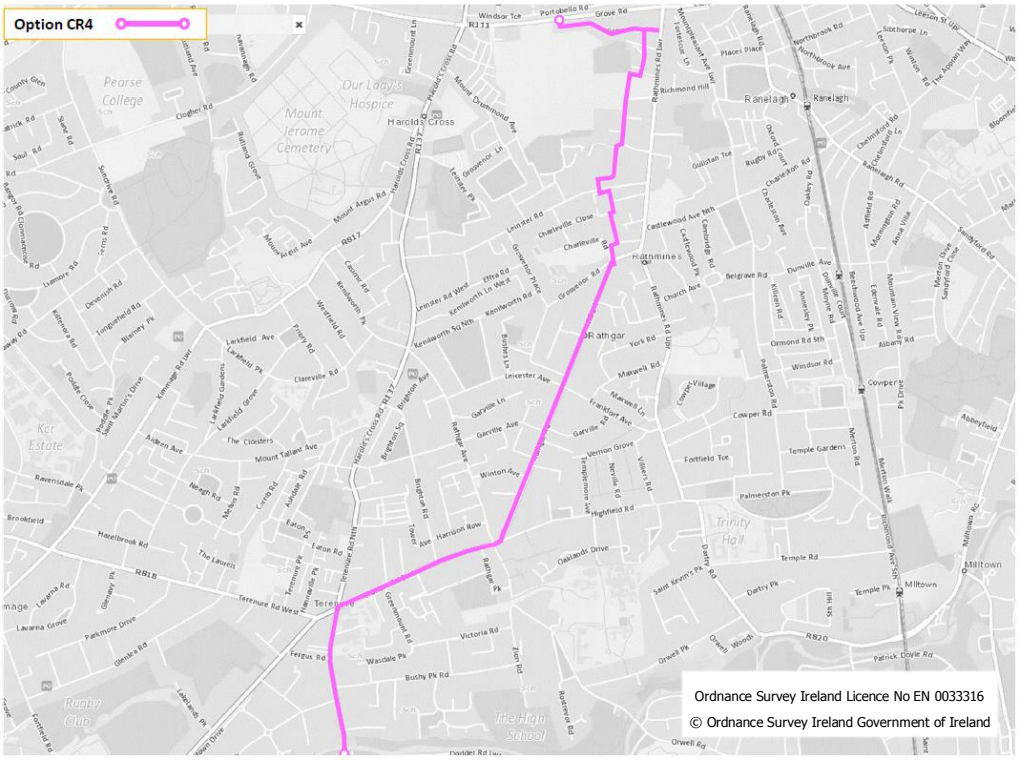


Figure 6.38: Cycle Route Option CR4

6.5.28 **Inbound (Northbound):** The cycle route will proceed from Rathfarnham Road, Terenure Road East, Rathgar Road, Charleville Road, Wynnefield Road, Prince Arthur Terrace, Leinster Square, Louis Lane, Ardee Road, Lissenfield, and Grove Park, segregated cycle track provided for the majority of the route.

6.5.29 **Outbound (Southbound):** The southbound option follows the same route as northbound, segregated cycle track provided for the majority of the route.

6.5.30 This cycle route does not align strictly with the GDA Cycle Network Plan proposal for Primary Route SO3/10 which runs along Terenure Road East, Rathgar Road and Rathmines Road. A 30km/h zone is proposed along Rathmines Road Lower between Grosvenor Road and Grove Road to provide a safer environment for cyclists who choose to use the bus lanes on Rathmines Road Lower instead of the segregated parallel cycle route.

6.5.31 There are eleven controlled junctions and one pedestrian crossing along this route.

6.5.32 The option CR4 proposals are presented in **Figure 6.39** while a sample cross section is presented in **Figure 6.40** below.

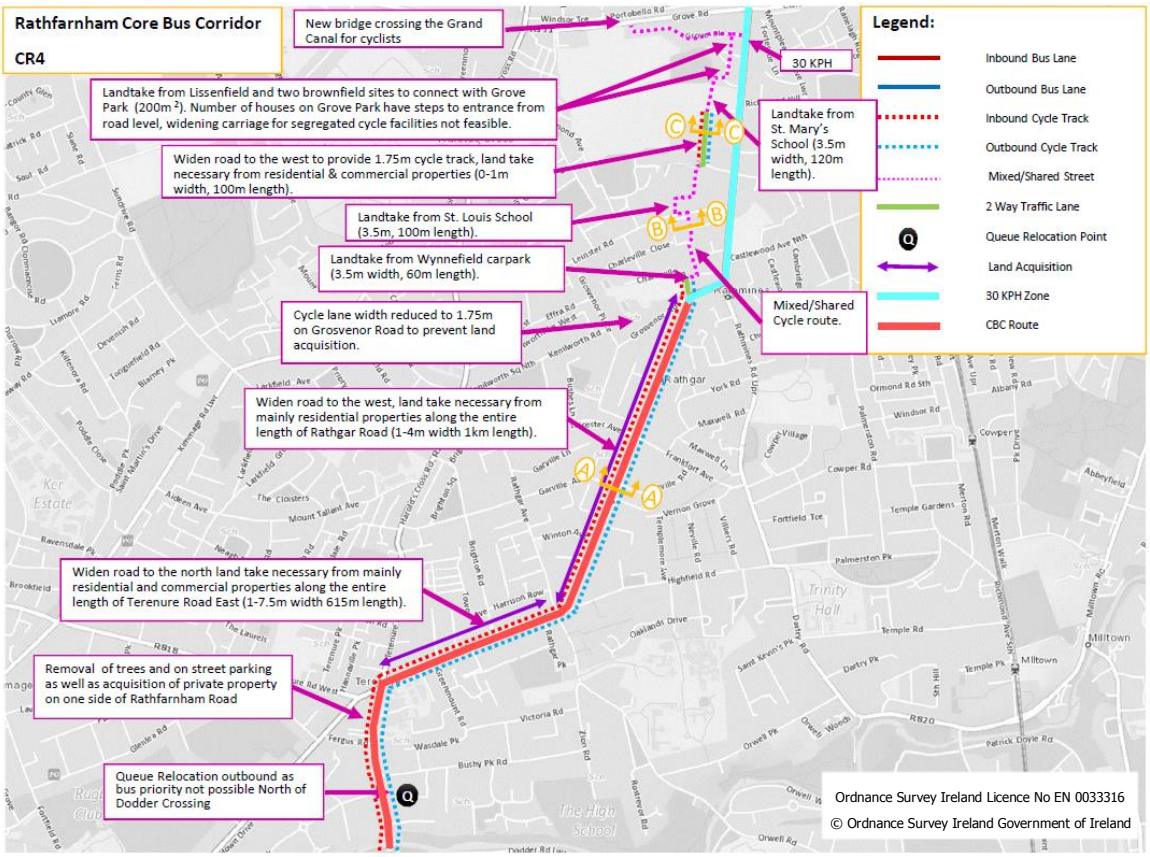


Figure 6.39: Route Option CR4 Proposal.

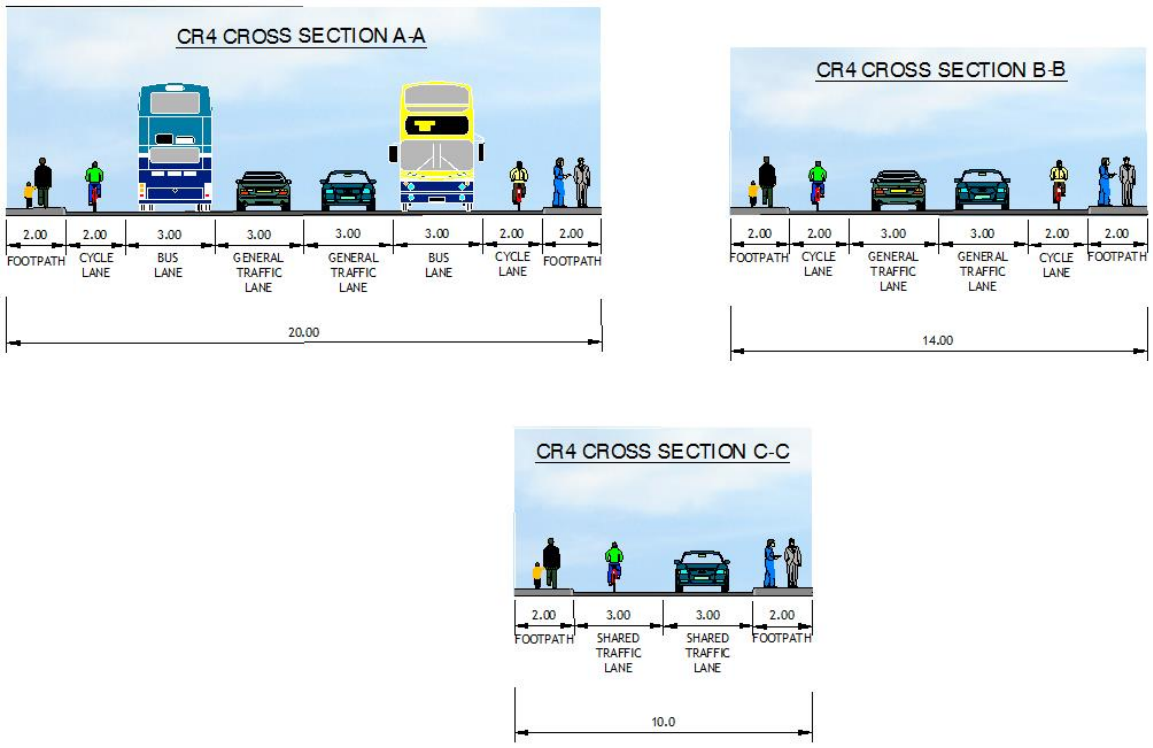


Figure 6.40: Route Option CR4 Proposed Cross Section.

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

- There are no segregated cycle facilities provided along Terenure Road East and Rathmines Road Lower, which is identified as Primary Route 10 within the GDA CNP and is one of the busiest radial cycle route in Dublin.
- Shared/mixed cycle facilities are provided along Wynnefield Road, Prince Arthur Terrace, Leinster Square, Louis Lane, Lissenfield, and Grove Park due to width constraints, low traffic volumes & vehicle speeds.

6.5.34 It is anticipated that this option would cost approximately €25.2 million (inclusive of associated bus facilities) (€11.0 million infrastructure costs, €14.2 million land acquisition costs.

Cycle Route Option CR5: Cycle Route via Rathfarnham Road, Terenure Road East, Rathgar Road, Charleville Road, Grosvenor Lodge and Cathal Brugha Barracks.

6.5.35 Cycle route option CR5 proposes to provide segregated cycle facilities along the CBC on Rathfarnham Road and Terenure Road East and Rathgar Road. Cyclists will also be catered for via parallel cycle routes via Charleville Road, Grosvenor Lodge and Cathal Brugha Barracks. Mixed or shared street cycle facilities only feasible along Charleville Place and Grosvenor Lodge due to width constraints and low traffic volumes & vehicle speeds. Option CR5 requires land acquisition from the edge/perimeter of Cathal Brugha Barracks Football pitch. The proposed cycle route will travel through Cathal Brugha Barracks along an existing internal roadway (10m width at pinch point), however there will be no requirement for land acquisition of buildings which would compromise architectural heritage. Permissive access will need to be arranged through the barracks however. A 30km/h zone is proposed along Rathmines Road Lower between Grosvenor Road and Grove Road to provide a safer environment for cyclists who choose to use the bus lanes on Rathmines Road Lower instead of the segregated parallel cycle route. Option CR5 proposes to provide a new cycle bridge crossing the Grand Canal. The route is presented in **Figure 6.41**.

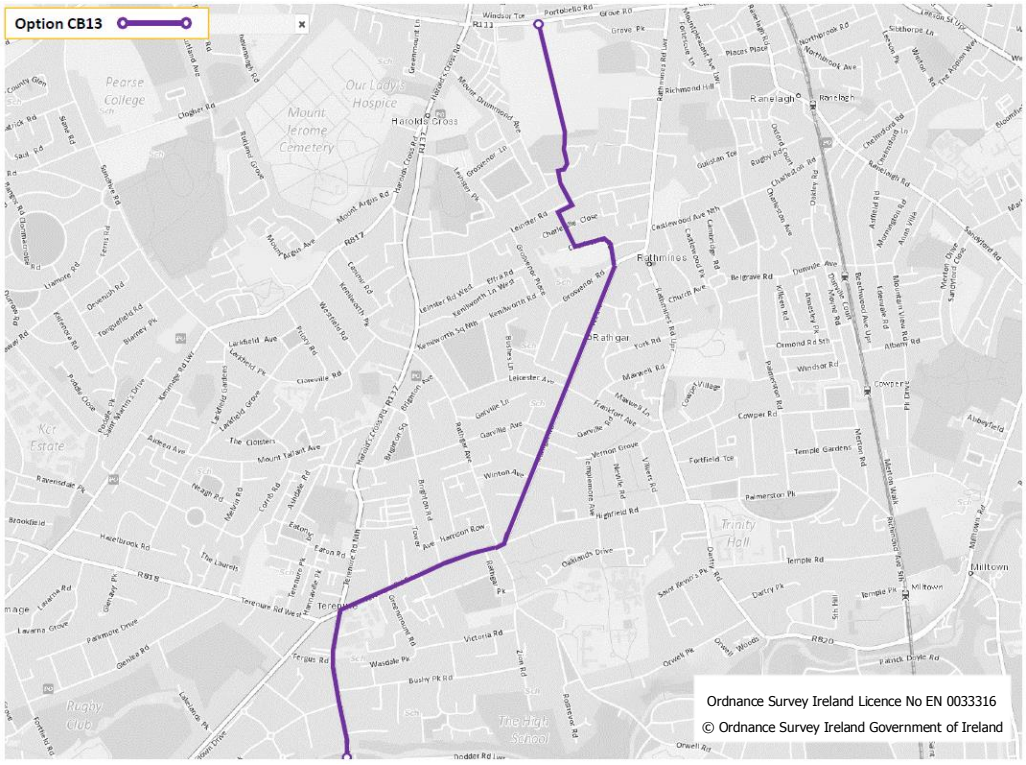


Figure 6.41: Cycle Route Option CR5

6.5.36 **Inbound (Northbound):** The cycle route will proceed from Rathfarnham Road, Terenure Road East, Rathgar Road, Charleville Road, Grosvenor Lodge and Cathal Brugha Barracks, with a segregated cycle track provided for the majority of the route.

6.5.37 **Outbound (Southbound):** The southbound option follows the same route as northbound, with a segregated cycle track provided for the majority of the route.

6.5.38 This cycle route option does not align strictly with the GDA Cycle Network Plan proposal for Primary Route SO3/10 which runs along Terenure Road East, Rathgar Road and Rathmines Road. A 30km/h zone is proposed along Rathmines Road Lower between Grosvenor Road and Grove Road to provide a safer environment for cyclists who choose to use the bus lanes on Rathmines Road Lower instead of the segregated parallel cycle route.

6.5.39 There are eleven controlled junctions and one pedestrian crossing along this route.

6.5.40 The option CR5 proposals are presented in **Figure 6.42** while a sample cross section is presented in **Figure 6.43** below.

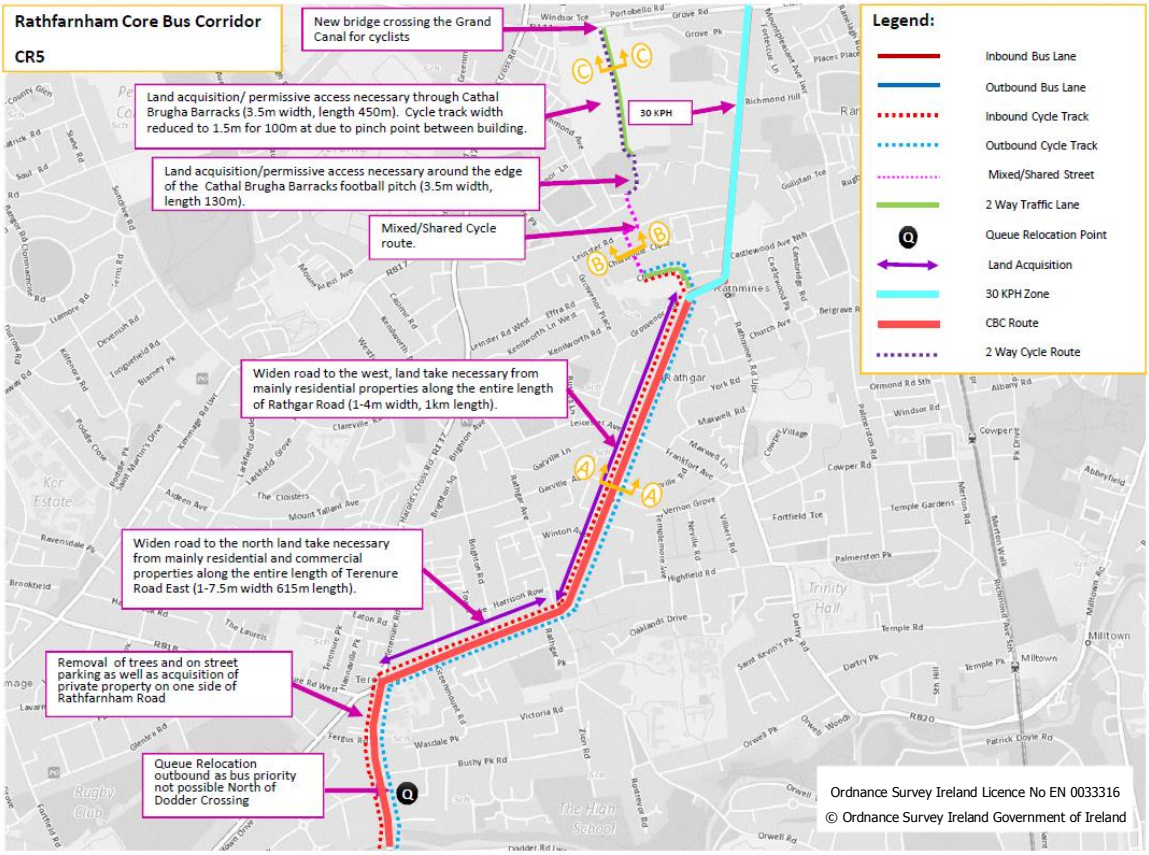


Figure 6.42: Route Option CR5 Proposal.

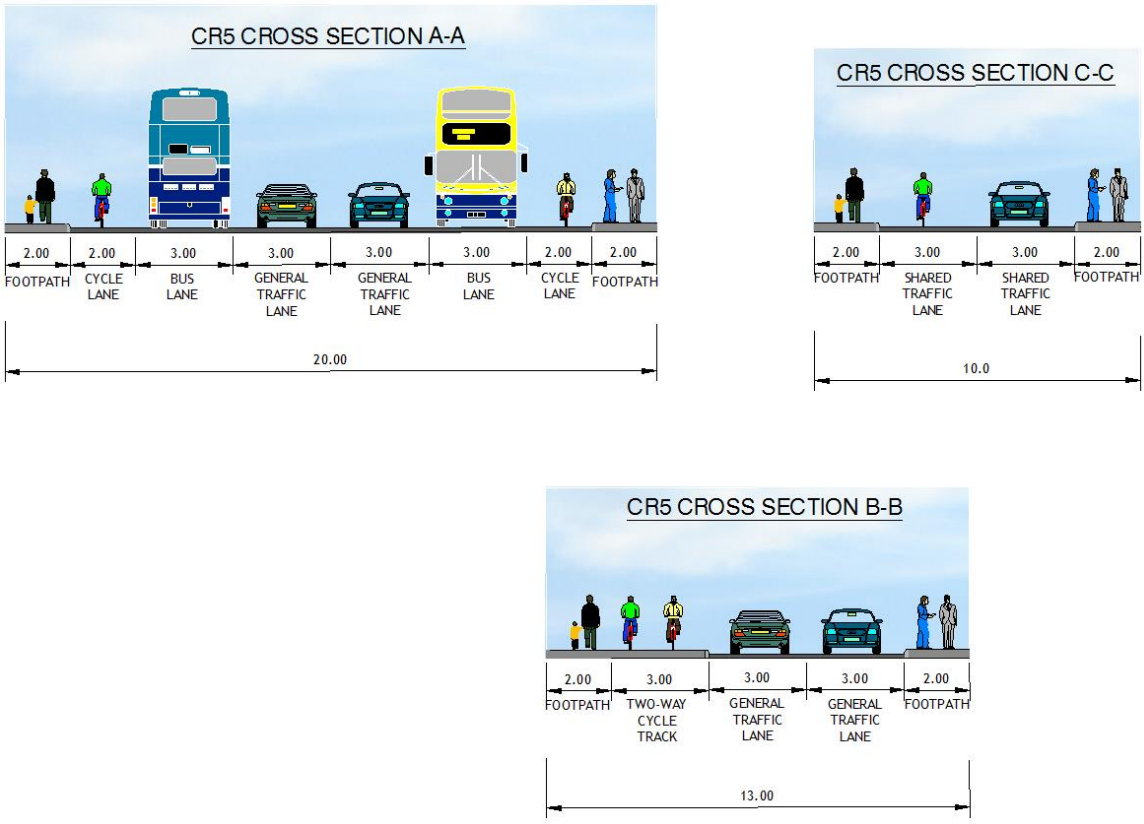


Figure 6.43: Route Option CR5 Proposed Cross Section.

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

- There are no segregated cycle facilities provided along Terenure Road East and Rathmines Road Lower, which is identified as Primary Route 10 within the GDA CNP and one of the busiest radial cycle route in Dublin; and
- Shared/mixed cycle facilities are provided along Charleville Place and Grosvenor Lodge due to width constraints, low traffic volumes & vehicle speeds.

6.5.42 It is anticipated that this option would cost approximately €26.8 million (inclusive of associated bus facilities) (€14.3 million infrastructure costs, €12.5 million land acquisition costs.

Cycle Route Option CR6: Cycle Route via Rathfarnham Road, Terenure Road East, Rathgar Road and Rathmines Road Lower.

Cycle route option CR6 proposes to provide segregated cycle lanes in both directions along the CBC via Rathfarnham Road, Terenure Road East, Rathgar Road and Rathmines Road Lower. The route is presented in **Figure 6.44**.

Figure 6.44: Cycle Route Option CR6

6.5.43 **Inbound (Northbound):** The cycle route will proceed from Rathfarnham Road before turning right at Terenure Village onto Terenure Road East and continue onto Rathgar Village, Rathgar Road, Rathmines Village and Rathmines Road to La Touche Bridge.

6.5.44 **Outbound (Southbound):** The southbound option follows the same route as northbound, segregated cycle track provided for the entire route.

6.5.45 It is proposed to provide segregated cycle lanes in both directions along the CBC via Rathfarnham Road, Terenure Road East, Rathgar Road and Rathmines Road Lower. This cycle route aligns with the GDA Cycle Network Plan proposal for

Primary Route SO3/10 which runs along Terenure Road East, Rathgar Road and Rathmines Road.

6.5.46 There are eleven controlled junctions and four pedestrian crossings along this route.

6.5.47 The option CR6 proposals are presented in **Figure 6.45** while a sample cross section is presented in **Figure 6.46** below.

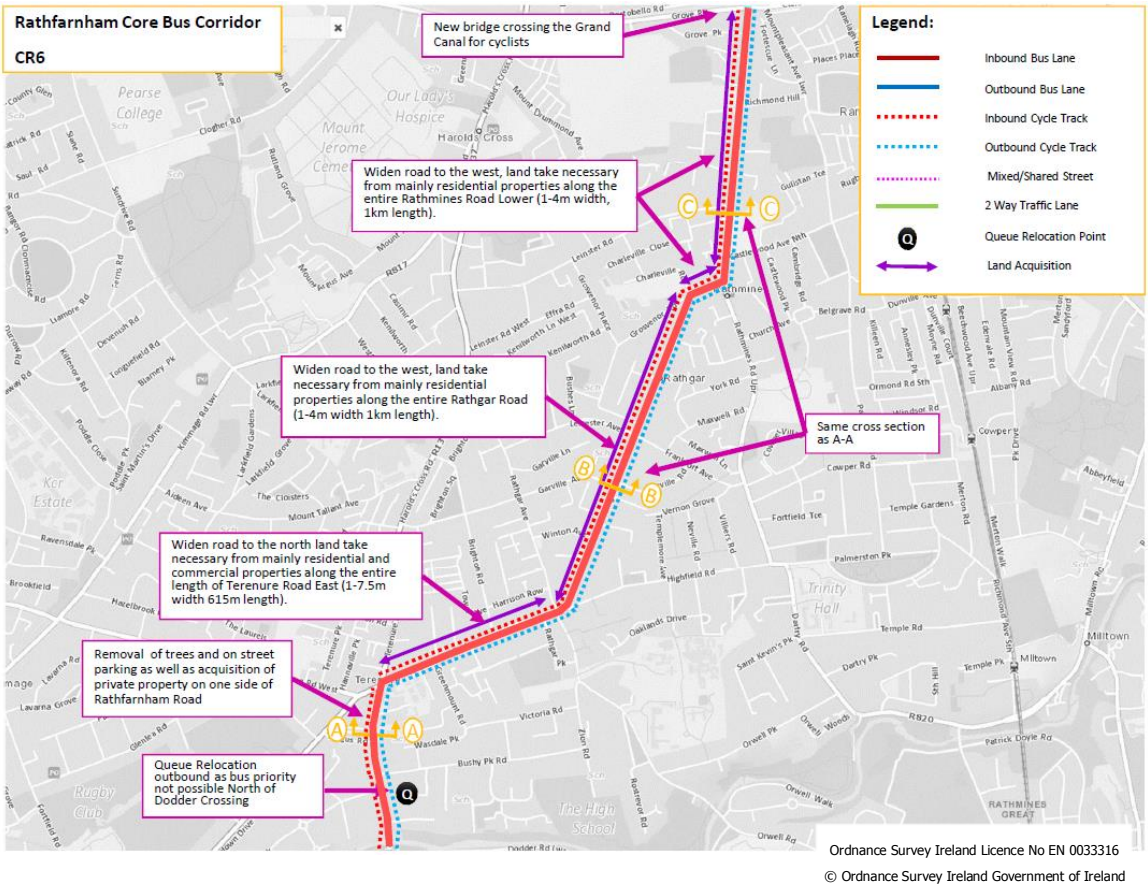


Figure 6.45: Route Option CR6 Proposal.

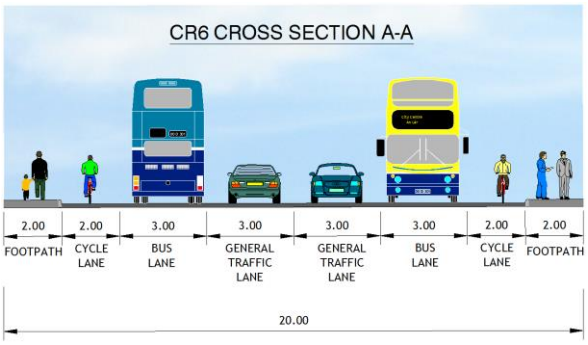


Figure 6.46: Route Option CR6 Proposed Cross Section.

6.5.48 It is anticipated that this option would cost approximately €28.4 million (inclusive of associated bus facilities) (€14.6 million infrastructure costs, €13.8 million land acquisition costs).

Section 2: Cycle Route: Scheme Assessment

6.5.49 A specific set of criteria have been used to assess the relative merits of each of the cycle routes outlined above. The 'Five Needs of a Cyclist' outlined in the National Cycle Manual Guidelines along with Capital Cost and Environmental Impacts were the criteria used to compare the cycle routes. The cycle routes were assessed using the following criteria: -

1. Capital Cost;
2. Road Safety;
3. Coherence;
4. Directness;
5. Attractiveness
6. Comfort; and
7. Environment.

6.5.50 Table 1 within Appendix D presents a summary of the assessment criteria and rationale used as part of the detailed cycle route options assessment process.

6.5.51 The 'Initial' route options assessment summary tables for this section are presented in Table 2 within Appendix B. The relative ranking of route options against the scheme assessment sub-criteria are summarised in **Table 6.4** below.

Section 2 Summary Main Criteria Cycle Routes – Rathfarnham to Rathmines						
Appraisal Criteria	Route Option CR1 Cycle Route via Rathfarnham Road, Terenure Road East, Highfield Road, Rathmines Road Upper, Castlewood Avenue and Mount Pleasant Avenue.	Route Option CR2 Cycle route via Rathfarnham Road, Terenure Road East, Rathgar Avenue, Kenilworth Square, Grosvenor Square, Mount Drummond Avenue and O'Hara Avenue.	Route Option CR3 Cycle Route via Rathfarnham Road, Terenure Road East, Rathgar Road, Grosvenor Road, Grosvenor Square, Mount Drummond Avenue and O'Hara Avenue.	Route Option CR4 Cycle Route via Rathfarnham Road, Charleville Road, Wynnefield Road, Prince Arthur Terrace, Leinster Square, Louis Lane, Ardee Road, Lissenfield, and Grove Park.	Route Option CR5 Cycle Route via Rathfarnham Road, Terenure Road East, Rathgar Road Charleville Road, Grosvenor Lodge, and Cathal Brugha Barracks.	Route Option CR6 Cycle Route via Rathfarnham Road, Terenure Road East, Rathgar Road and Rathmines Road Lower.
1 Capital Cost						
2 Road Safety						
3 Coherence						
4 Directness						
5 Attractiveness						
6 Comfort						
7 Environmental						

Table 6.4: Section 2 Cycle Route Options Assessment Summary (Sub-Criteria)

6.5.52 In terms of 'Capital Cost', the primary differentiator between route options is the Land acquisition. Option CR6 has the largest land acquisition cost due to the additional land take being required costs along Rathmines Road Lower. Route option CR4 requires land acquisition from Wynnefield carpark, St. Mary's College (protected structure), Lissenfield and 2 brownfield sites (link from Lissenfield to Grove Park) to provide a parallel cycle route to Rathmines Road Lower. Cycle route option CR5 may require land take from the edge/perimeter of Cathal Brugha Barracks Football pitch. The proposed cycle route will travel through Cathal Brugha Barracks along an existing internal roadway (10m width at pinch point), however there will be no requirement for land acquisition of buildings which would compromise architectural heritage. Permissive access will need to be arranged through the barracks however.

6.5.53 In terms of 'Road Safety', a differentiator between route options would be the number of turning movements and the quality of cycle provision practically achievable. Option CR6, has the lowest number of turning movements and the cycle route is segregated along the entire CBC route, which aligns with the GDA Cycle Network Plan proposal for the Primary Route SO3/10 and Primary Route 10.

6.5.54 In terms of 'Coherence and Directness', CR1 and CR2 are considered the least attractive options because they are parallel cycle routes which divert furthest from the CBC route and the Primary Cycle Route 10 (GDA Cycle Network Plan proposal) along Rathgar Road and Rathmines Road Lower. Option CR6 is the most direct route with segregated cycle facilities along the entire CBC route, it is 1km shorter in length than CR1. Options CR4 and CR5 are more direct routes than CR3 and require less of a detour from the CBC.

6.5.55 In terms of 'Attractiveness', CR5 and CR6 are considered the most attractive options because they have segregated cycle tracks provided for the majority of their routes, CR5 has only 300m mixed/shared cycle route. The cycling environment along the routes are both pleasant and interesting.

6.5.56 In terms of 'Environment', route option CR4, CR5 and CR6 are considered less attractive than the other options. Option CR6, requires additional land take from

45 protected properties on Rathmines Road Upper (majority of the land take required from front curtilage of residential properties). Option CR5 requires land take from the edge/perimeter of Cathal Brugha Barracks Football pitch and the provision of permissive access through the barracks to facilitate the provision of a segregated cycle route. The segregated cycle route will not require any land acquisition of buildings or compromise the architectural heritage of the buildings. Option CR4 requires land acquisition from Wynnefield carpark, St. Mary's College (protected structure), Lissenfield and 2 brownfield sites (to link Lissenfield to Grove Park) to provide a parallel cycle route to Rathmines Road Lower. Permissive access/agreements will need to be established with the educational institutions (St. Louis School Primary School, St. Mary's College) in which the route passes through.

6.5.57 Based on the assessment undertaken, route option CR5 appears to offer more benefits over CR3 primarily due to the quality of its cycle provision i.e. its directness and attractiveness. CR5 is less attractive in term of Environmental impact compared to CR1, CR2 & CR3, this is due to the encroachment into Cathal Brugha Barracks and the requirement for permissive access, however there will be no requirement for land acquisition of buildings that could compromise the architectural heritage of the barracks.

6.5.58 CR5 is therefore the preferred cycle route for Section 2 for the following reasons:

- It offers a more direct route compared to CR1, CR2, CR3;
- It is more attractive and comfortable compared to CR1, CR2, CR3 and CR4;
- It is safer in terms of personal safety (combination of the 'number of turning movements' and 'degree of segregation') compared to CR1, CR2 and CR4.
- It has less environmental impacts and it is more cost effective compared to CR6.

6.5.59 Based on the multi-criteria assessment undertaken for this section of the study area, option CR5 is identified as the preferred cycle route option for Section 2 between Dodder River Crossing and the Grand Canal Crossing. Therefore, the CR5 cycle route will form one of the principal route options.

6.5.60 The benefits of the preferred cycle route CR5 can be summarised as follows:

i. Enhanced cycle facilities in both directions for the route delivering a safer, more comfortable and attractive cycle route.

ii. Provides segregated cycle facilities in both directions on Terenure Road East, Rathgar Road which aligns with the GDA Cycle Network Plan proposal for the Primary Cycle Route 10.

iii. The proposed interventions will deliver significantly enhanced cycle facilities for this catchment area which includes Terenure Village, Rathgar Village and Rathmines Village all of which are heavily used by cyclists.

iv. Avoids impacting on protected structures/properties on Rathmines Road Lower which reduces planning risk, scheme costs and construction disruption.

6.6 Stage 2 Assessment of Principal Route Options for Section 2

Introduction

6.6.1 There are Seven principal route options considered for Section 2 between the Dodder River Crossing and the Grand Canal:

- CB1 - Rathfarnham Road –Rathmines Road (Inbound traffic only on Rathgar Road, Outbound traffic only Rathmines Road);
- CB2 - Rathfarnham Road – Rathmines Road (Inbound traffic only on Rathgar and Rathmines Road);
- CB3 - Rathfarnham Road – Rathmines Road (Outbound traffic only on Rathgar and Rathmines Road);
- CB4 - Rathfarnham Road – Rathmines Road Lower (Parallel cycle route via Charleville Road, Grosvenor Lodge and Cathal Brugha Barracks);
- CB5 - Rathfarnham Road – Rathmines Road Lower A route option via Rathfarnham Road, Terenure Road East, Rathgar Road, Rathmines Road Lower (Inbound bus lane provided on Rathmines Road Lower from Rathmines Road Upper to Military road junction and outbound bus lane provided from Grove Road to Military Road junction);
- CB6 - Rathfarnham Road – Rathmines Road Lower (Outbound traffic only on Rathmines Road); and
- CB7 - Rathfarnham Road – Rathmines Road Lower (Bus lanes via Highfield Road/Rathmines Road Upper) Parallel cycle route via Rathgar Road Charleville Road, Grosvenor Lodge and Cathal Brugha Barracks.

6.6.2 The specific features of the route options are discussed in the following paragraphs.

Principal Route Option CB1: Rathfarnham Road – Rathmines Road (Inbound traffic only on Rathgar Road, Outbound traffic only Rathmines Road)

6.6.3 As part of route option CB1, segregated bus facilties will be provided between the Dodder River crossing at Pearse Bridge and the Grand Canal crossing at La Touche Bridge (with exception of 100m section at Terenure Cross and 70m section along Rathmines Road Lower between Rathmines Road Upper and Castlewood Avenue). Outbound traffic will be removed from Rathgar Road and, inbound traffic will be removed from Rathmines Road. Segregated cycle facilities provided along the entire CBC route. Route option CB1 is presented in **Figure 6.47** below.

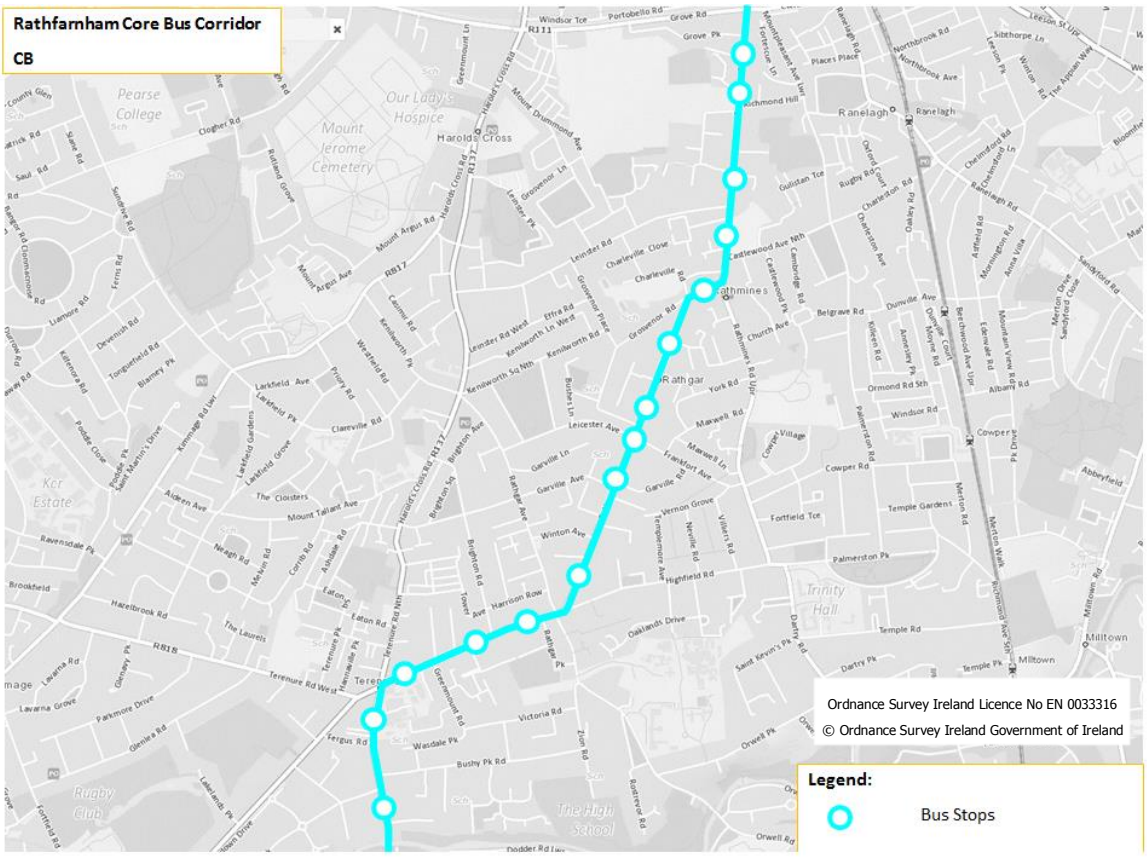


Figure 6.47: Route Option CB1 Rathfarnham Road - Rathmines

6.6.4 **Inbound (Northbound):** The CBC service will proceed from Rathfarnham Road before turning right at Terenure Village and proceeding towards Rathmines Village to the crossing of the Grand Canal at La Touche Bridge. Segregated bus lanes will be provided for the majority of the route, except at the section of Rathmines Road Lower between Rathmines Road Upper and Castlewood Avenue (existing traffic lane layout retained) where a queue relocation is proposed.

6.6.5 **Outbound (Southbound):** The southbound option follows the same route as northbound, segregated bus lanes provide for the majority of the route, except at the section of Rathmines Road Lower between Rathmines Road Upper and Castlewood Avenue (existing traffic lane layout retained) where a queue relocation is proposed.

6.6.6 **Stops:** The number of stops is illustrated in **Figure 6.47**. There has been rationalistion of bus stops which are in close proximity such as the bus stops on Pearse Bridge and at the Military Road junction.

6.6.7 The journey time for this route option from the Dodder Park Road/Rathfarnham Road junction to the Rathmines Road/Grove Road/Canal Road junction at the Grand Canal crossing is 13 minutes inbound, and 15 minutes outbound, over a distance of approximately 3.4km.

6.6.8 Rathgar Road forms part of Primary Cycle route 10, however it is not possible to provide segregated cycle facilities in conjunction with the proposed bus facilities whilst maintaining two-way traffic, without land acquisition from protected properties which line the route. Therefore, it is proposed as part of option CB1 to remove outbound traffic from Rathgar Road between Rathgar Village and Rathmines Road Upper junction, as shown in **Figure 6.48** below, whilst providing two-way bus and cycle facilities. This would require outbound traffic to use alternative routes such as Palmerston Road, Cowper Road, Rathmines Road Upper and Frankfort Avenue.

6.6.9 Rathmines Road also forms part of Primary Cycle route 10, however it is not possible to provide segregated cycle facilities in conjunction with the proposed bus facilities whilst maintaining two-way traffic without land acquisition from

protected properties which line the route. Therefore, it is proposed to remove general traffic in the northbound (inbound) direction between Castlewood Avenue and Grove Road as identified in **Figure 6.48** below. Two-way traffic will be maintained between Rathmines Road Upper junction and Castlwood Avenue junction. Northbound traffic would use Grosvenor Road, Kenilworth Road, Leinster Road and the adjoining roads. In addition, it is proposed to provide segregated cycle facilities on Rathgar/Rathmines Road between Castlewood Avenue and Grove Road also. Land acquisition from protected residential properties would be required in the vicinity of Blackberry Lane as identified in **Figure 6.48** (200m length, <1m width).

6.6.10 It is proposed to provide continuous bus priority in both directions along the route with the exception of along Rathmines Road Lower between Rathmines Road Upper and Castlewood Avenue (existing traffic lane layout retained), where queue relocation for buses is proposed in both directions to maintain 2-way traffic between junctions 7 & 8. There is also a 100m section of Terenure Road East at Terenure Cross where inbound bus lanes will not be provided owing to the close proximity of commercial properties at this location.

6.6.11 There are 10 controlled junctions and four pedestrian crossings along this route.

6.6.12 The option CB1 proposals are presented in **Figure 6.48** while a sample cross section is presented in **Figure 6.49** below.

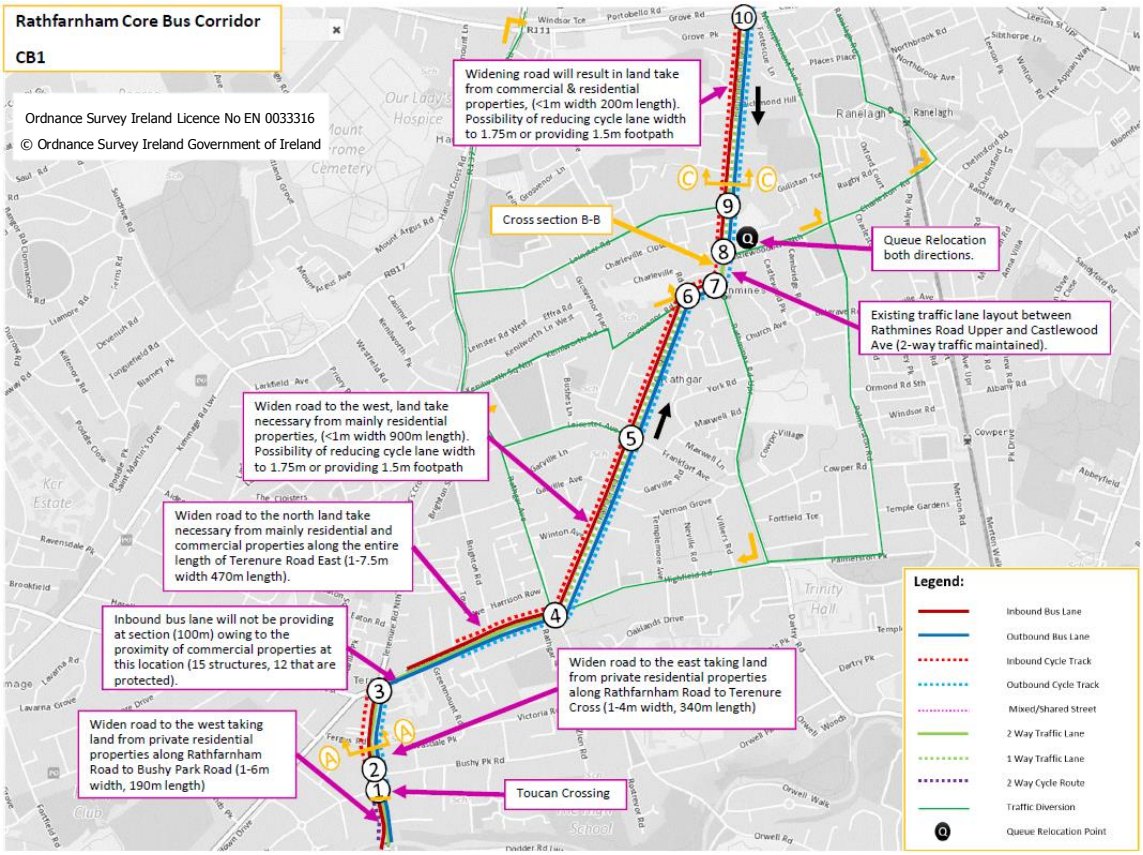


Figure 6.48: Route Option CB1 Proposal

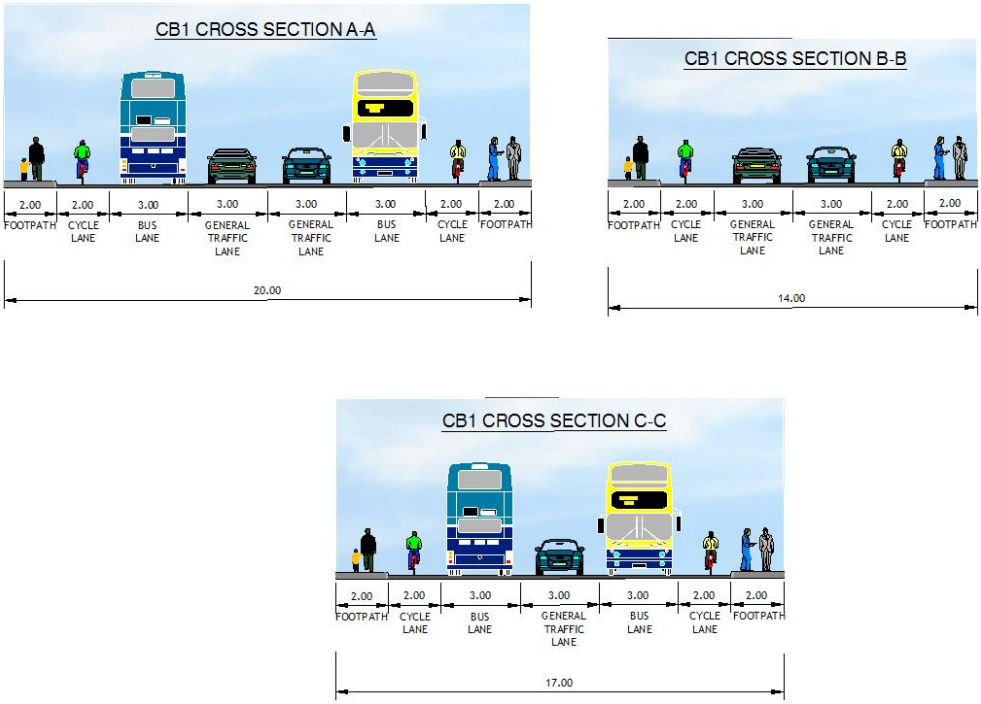


Figure 6.49: Route Option CB1 Proposed Cross Sections

Junctions:

6.6.13 There are 10 signalised junctions (excluding the queue relocation for buses section) along this route option, some of which would require upgrading to facilitate bus priority. The locations of these junctions are presented in **Figure 6.49** and discussed below.

1. Rathfarnham Road/Rathdown Park: Left turning vehicles from Rathfarnham Road Ave to Rathdown Park will have to yield for buses in the nearside lane. Adjustments to the junction layout are required to facilitate the inbound bus lane on approach to the junction. There will also be a possible requirement to relocate/provide new signal equipment;

2. Rathfarnham Road/Bushy Park Road: Adjustments to the junction layout are required to facilitate the inbound bus lane on approach to the junction. In the outbound direction, the straight-ahead general traffic lane will be reallocated to a bus lane to provide a bus lane up to the stop line at the Rathdown Park junction. The right turn lane onto Rathdown Park will need to be replaced by a combined straight & right lane. There will also be a possible requirement to relocate/provide existing/new signal equipment;

3. Rathfarnham Road/Terenure North/Terenure Road East: Adjustments to the existing junction layout would be required to facilitate bus lanes on approach to the junction and to facilitate the right turn for buses onto Terenure Road East (offside bus lane provided in the inbound direction). It will not be possible to accommodate an inbound bus lane for the first 100m of Terenure Road East due to the close proximity of adjacent protected properties and as such, the bus may need to share the route with general traffic.

4. Terenure Road East/Rathgar Avenue/Orwell Road: Adjustments to the junction layout would be required to facilitate bus lanes on approach to the junction and the removal of the outbound general traffic lane on Rathgar Road is also required. To provide a bus lane up to the Terenure Road East stop line, the left turn lane will have to be removed (due to the close proximity of adjacent properties) and as such, left turning vehicles

will now need to yield for buses and cyclists in the nearside lane. Bus priority signalling will be provided for buses at the junction. Removal of on-street parking is necessary on Terenure Road East to provide for the outbound bus lane.

5. Rathgar Road/Leicester Avenue/Frankfort Avenue: This junction would need to be upgraded to accommodate bus lanes and cycle lanes through the junction and the removal of the outbound traffic lane on Rathgar Road is a required. To provide a bus lane up to the stop line on Rathgar Road, the nearside general traffic lane will be reallocated to a bus lane (due to the close proximity of adjacent properties) and as such, left turning vehicles will now need to yield for buses and cyclists in the nearside lane. Bus priority signalling will be provided for buses at the junction.

6. Rathgar Road/Grosvenor Road/Charleville Road: Adjustments to the junction layout would be required to facilitate bus lanes on approach to the junction and the removal of the outbound general traffic lane is required on Rathgar Road. There will also be a possible requirement to relocate/provide new/existing signal equipment;

7. Rathmines Road Upper/Rathgar Road/Rathmines Road Lower: Adjustments to the junction layout would be required to facilitate bus lanes on approach to the junction and the removal of the inbound general traffic lane is required on Rathgar Road. There is a possible requirement to relocate/provide new signal equipment on Rathgar Road. The left turn lane on Rathmines Road Upper will need to be removed, due to the outbound traffic ban on Rathgar Road.

8. Rathmines Road Lower/Castlewood Avenue: No changes to the existing layout are possible due to the close proximity of adjacent buildings and the high volume of right turning traffic from Rathmines Road Lower onto Castlewood Avenue. Queue relocation will be provided in both directions to improve movement of buses through the junction;

9. Rathmines Road Lower/Leinster Road: This junction would need to be upgraded to accommodate bus lanes and cycle lanes through the

junction and the removal of the inbound traffic lane on Rathmines Road Lower is required. In the outbound direction, the right turning lane onto Leinster Road will need to be replaced by a straight & right lane to provide a bus lane up to the stop line on Rathmines Road Lower. Bus priority signalling will be provided for buses at the junction.

10. Rathmines Road Lower/Grove Road/Richmond Street: This junction would need to be upgraded to accommodate bus lanes and cycle lanes through the junction and the removal of the inbound traffic lane on Rathmines Road Lower is required.

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

- The alteration of the Terenure Cross junction to facilitate right turning buses from Rathfarnham Road;
- The increased journey time as a result of the queue relocation facilities, when compared with continuous bus priority;
- The removal of outbound traffic on Rathgar Road and resultant increase of traffic on less suitable roads such as Rathmines Road Upper, Grosvenor Road and Rathgar Avenue;
- The removal of inbound traffic on Rathmines Road and resultant increase of traffic on less suitable roads such as Castlewood Avenue North, Mountpleasant Avenue Upper and Charleston Road;
- No northbound traffic on Rathmines Road would have an impact on the accessibility to the amenities of Rathmines Village; and
- No southbound traffic on Rathgar Road would would have an impact on the accessibility to the amenities ofRathgar Village.

6.6.15 It is anticipated that this option would cost approximately €21.5 million (€16.0 million infrastructure costs, €5.5 million land acquisition costs).

Principal Route Option CB2: Rathfarnham Road – Rathmines Road (Inbound traffic only on Rathgar and Rathmines Road)

6.6.16 The CBC option CB2 will provide segregated bus facilities between the Dodder River crossing at Pearse Bridge and the Grand Canal crossing at La Touche Bridge (with exception of 100m section at Terenure Cross and 70m section along Rathmines Road Lower between Rathmines Road Upper and Castlewood Avenue). Outbound traffic will be removed from Rathgar Road and Rathmines Road. Segregated cycle facilities will be provided along Bushy Park Road and along the CBC route. Route option CB2 is presented in **Figure 6.50**.

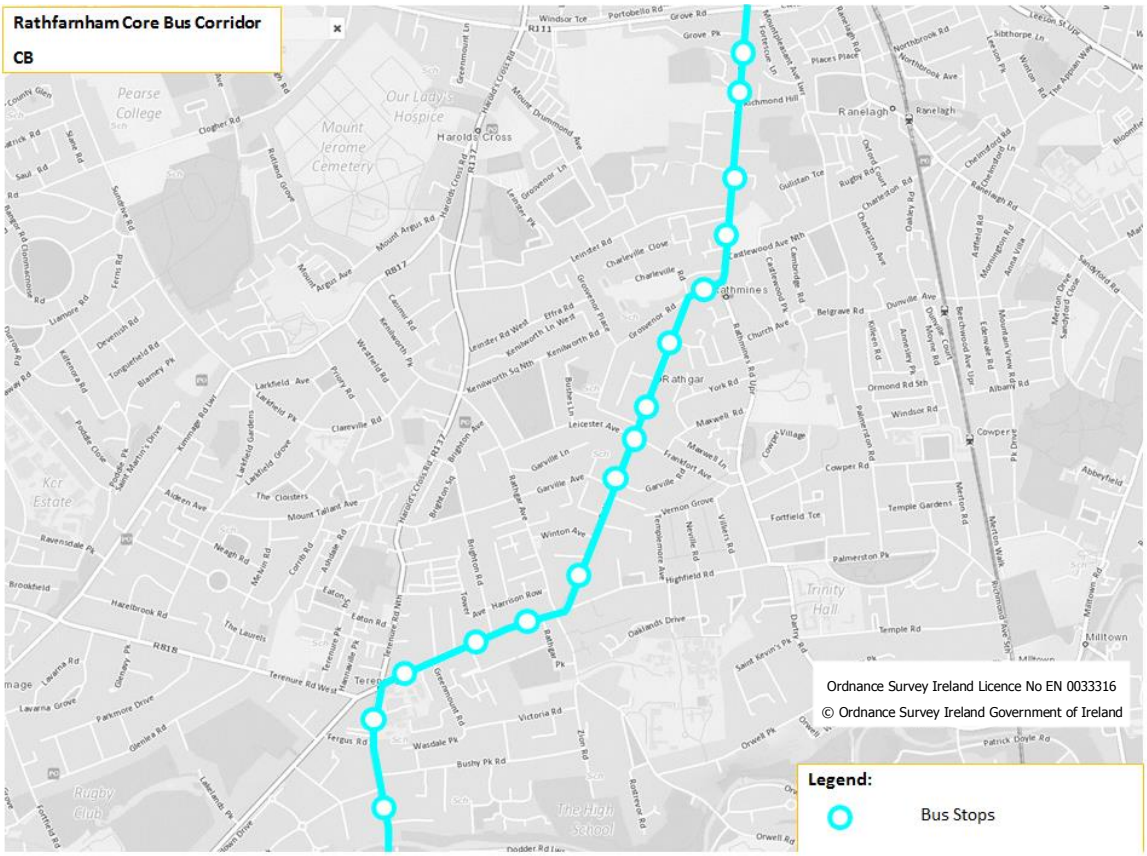


Figure 6.50: Route Option CB2 Rathfarnham Road - Rathmines

6.6.17 **Inbound (Northbound):** The CBC service will proceed from Rathfarnham Road before turning right at Terenure Village and proceeding travel Rathmines Village to the crossing of the Grand Canal at La Touche Bridge. Segregated bus lanes provide will be for the majority of the route, except at the section of Rathmines

Road Lower between Rathmines Road Upper and Castlewood Avenue (existing traffic lane layout retained) where a queue relocation is proposed.

6.6.18 **Outbound (Southbound):** The southbound option follows the same route as northbound, with segregated bus lanes provided for the majority of the route, except at the section of Rathmines Road Lower between Rathmines Road Upper and Castlewood Avenue (existing traffic lane layout retained) where a queue relocation is proposed.

6.6.19 **Stops**: The number of stops is illustrated in **Figure 6.50**. There has been rationalistion of bus stops which are in close proximity such as, bus stops on Pearse Bridge and at the Military Road junction.

6.6.20 The journey time for this route option from the Dodder Park Road/Rathfarnham Road junction to the Rathmines Road/Grove Road/Canal Road junction at the Grand Canal crossing is 13 minutes inbound, and 15 minutes outbound, over a distance of approximately 3.4km.

6.6.21 Rathgar Road forms part of Primary Cycle route 10, however it is not possible to provide segregated cycle facilities in conjunction with the proposed bus facilities whilst maintaining two-way traffic without land acquisition from protected properties which line the route. Therefore, it is proposed as part of option CB2 to remove outbound traffic from Rathgar Road in **Figure 6.51** below whilst providing two-way bus and cycle facilities. This would require outbound traffic to use alternative routes such as Palmerston Road, Cowper Road, Rathmines Road Upper and Frankfort Avenue as shown in **Figure 6.51**.

6.6.1 Rathmines Road also forms part of Primary Cycle route 10, however it is not possible to provide segregated cycle facilities in conjunction with the proposed bus facilities whilst maintaining two-way traffic, without land acquisition from protected properties which line the route. Therefore, it is proposed to remove traffic in the southbound (outbound) direction between Castlewood Avenue and Grove Road as identified in **Figure 6.51** below. Two-way traffic will be maintained between Rathmines Road Upper junction and Castlwood Avenue junction. Southbound traffic would use Mountpleassant Avenue, Ranelagh Rd, Castlewood Ave, Harold's Cross Road, Leinster Road and adjoining roads. It is

proposed to provide segregated cycle facilities on Rathgar Road/Rathmines Road between Castlewood Avenue and Grove Road also. Land acquisition from protected residential properties would be required in the vicinity of Blackberry Lane, as identified in **Figure 6.51**.

6.6.2 It is proposed to provide continuous bus priority in both directions along the route with the exception of along Rathmines Road Lower between Rathmines Road Upper and Castlewood Avenue (existing traffic lane layout retained), where bus priority signalling is proposed in both directions in order to maintain 2-way traffic between junctions 7 & 8. There is also a 100m section of Terenure Road East at Terenure Cross where inbound bus lanes will not be provided owing to the close proximity of commercial properties at this location.

6.6.3 There are ten controlled junctions and four pedestrian crossings along this route.

6.6.4 The option CB2 proposals are presented in **Figure 6.51** while sample cross sections are presented in **Figure 6.52** below.

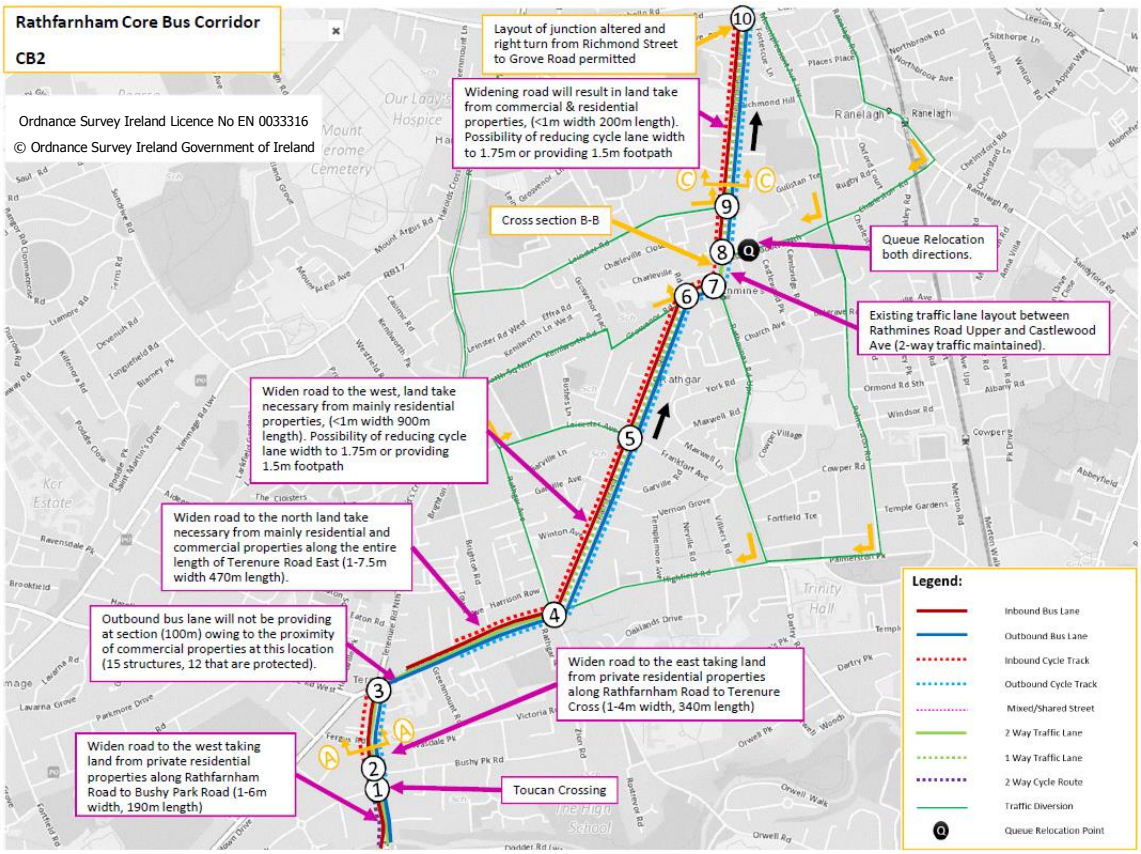


Figure 6.51: Route Option CB2 Proposal

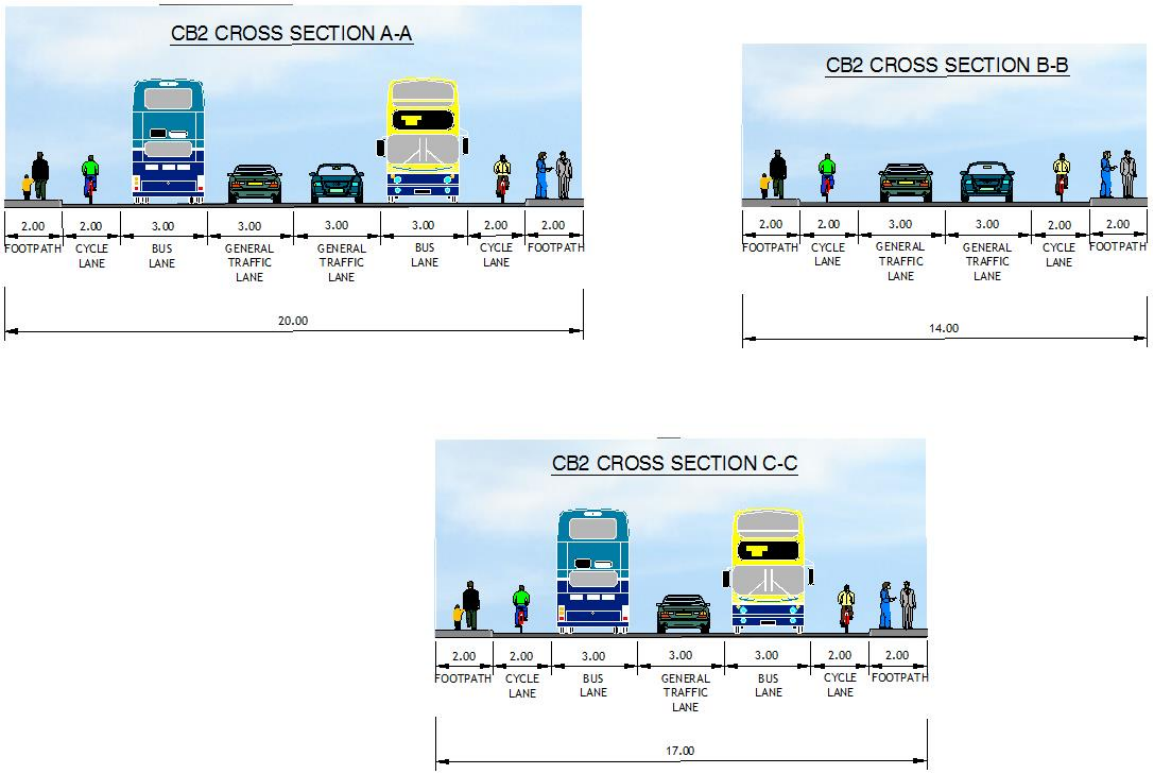


Figure 6.52: Route Option CB2 Proposed Cross Section

Junctions:

6.6.5 There are ten signalised junctions (excluding the queue relocation) along this route option, some of which would require upgrading to facilitate bus priority. The locations of these junctions are presented in **Figure 6.51** and discussed below.

1. Rathfarnham Road/Rathdown Park: Left turning vehicles from Rathfarnham Road Ave to Rathdown Park will have to yield for buses in the nearside lane. Adjustments to the junction layout are required to facilitate the inbound bus lane on approach to the junction. There will also be a possible requirement to relocate/provide new/existing signal equipment;

2. Rathfarnham Road/Bushy Park Road: Adjustments to the junction layout are required to facilitate the inbound bus lane on approach to the junction. In the outbound direction, the straight-ahead traffic lane will be reallocated to a bus lane to provide a bus lane up to the stop line at the

junction at Rathdown Park. The right turning lane onto Rathdown Park will need to be replaced by a combined straight & right lane. There will also be a possible requirement to relocate/provide new/existing signal equipment;

3. Rathfarnham Road/Terenure North/Terenure Road East: Adjustments to the existing junction layout would be required to facilitate bus lanes on approach to the junction and to facilitate the right turn for buses onto Terenure Road East (offside bus lane provided in the inbound direction). It will not be possible to accommodate an inbound bus lane for the first 100m of Terenure Road East due to the close proximity of adjacent protected properties and as such, the bus may need to share the route with general traffic.

4. Terenure Road East/Rathgar Avenue/Orwell Road: Adjustments to the junction layout would be required to facilitate bus lanes on approach to the junction and the removal of the outbound traffic lane on Rathgar Road is also provided. To provide a bus lane up to Terenure Road East, the left turn lane will have to be removed (due to the proximity of adjacent properties) and as such, left turning vehicles will now need to yield for buses and cyclists in the nearside lane. Bus priority signalling will be provided for buses at the junction. Removal of on-street parking is necessary on Terenure Road East to provide for the outbound bus lane.

5. Rathgar Road/Leicester Avenue/Frankfort Avenue: This junction would need to be upgraded to accommodate bus lanes and cycle lanes through the junction and the removal of the outbound traffic lane on Rathgar Road is also required. To provide a bus lane to the stop line on approach to the junction on Rathgar Road, the nearside traffic lane will be reallocated to a bus lane (due to the proximity of adjacent properties) and as such, left turning vehicles will now need to yield for buses and cyclists in the nearside lane. Advanced signals will be provided for buses and cyclists at the junction.

6. Rathgar Road/Grosvenor Road/Charleville Road: Adjustments to junction layout would be required to facilitate bus lanes on approach to the

junction and the removal of outbound traffic lane on Rathgar Road is also required. There will also be a possible requirement to relocate/provide existing/new signal equipment;

7. Rathmines Road Upper/Rathgar Road/Rathmines Road Lower: Adjustments to the junction layout would be required to facilitate bus lanes on approach to the junction and the removal of the outbound traffic lane on Rathgar Road is also required. There will also be the possible requirement to relocate/provide new signal equipment. The Left turn lane on Rathmines Road Upper will need to be removed due to the outbound traffic ban on Rathgar Road.

8. Rathmines Road Lower/Castlewood Avenue: No major changes are required to the existing layout due to the close proximity of adjacent buildings and the high volume of right turning traffic from Rathmines Road Lower onto Castlewood Avenue. Bus priority signalling will be provided in both directions to improve movement of buses through the junction;

9. Rathmines Road Lower/Leinster Road: This junction would need to be upgraded to accommodate bus lanes and cycle lanes through the junction and the removal of the outbound traffic lane on Rathmines Road Lower is also required. To provide a bus lane up to the Rathmines Road Lower stop line, the left turn lane will have to be removed (due to the proximity of adjacent properties), and as such, left turning vehicles will now need to yield for buses and cyclists in the nearside lane. Bus priority signalling will be provided for buses at the junction.

10. Rathmines Road Lower/Grove Road/Richmond Street: This junction would need to be upgraded to accommodate bus lanes and cycle lanes through the junction and the removal of outbound traffic lane on Rathmines Road Lower. To provide a bus lane up to the Rathmines Road Lower stop line, the straight & left turning lane will have to be removed (due to the proximity of adjacent properties), and as such, left turning vehicles will now need to yield for buses and cyclists in the nearside lane. Bus priority signalling will be provided for buses at the junction. The layout

of the junction will be altered to provide a right turn from Richmond Street to Grove Road.

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

- Alteration to Terenure Cross junction to facilitate right turning buses from Rathfarnham Road;
- Increased journey time as a result of the queue relocation when compared with continuous bus priority.
- The removal of the outbound general traffic on Rathgar Road and the resultant increase of traffic on less suitable roads such as Rathmines Road Upper, Grosvenor Road and Rathgar Avenue.
- The removal of the outbound general traffic on Rathmines Road and the resultant increase of traffic on less suitable roads such as Mountpleasant Avenue Upper, Leinster Road and Castlewood Avenue North;
- No southbound traffic on Rathmines Road would would have an impact on the accessibility to the amenities of Rathmines Village; and
- No southbound traffic on Rathgar Road would would have an impact on the accessibility to the amenities of Rathgar Village.

6.6.7 It is anticipated that this option would cost approximately €21.5 million (€16.0 million infrastructure costs, €5.5 million land acquisition costs).

Principal Route Option CB3: Rathfarnham Road – Rathmines Road (Outbound traffic only on Rathgar and Rathmines Road)

6.6.8 The CBC route option CB3 will provide segregated bus facilties between the Dodder River crossing at Pearse Bridge and the Grand Canal crossing at La Touche Bridge (with exception of 100m section at Terenure Cross and 70m section along Rathmines Road Lower between Rathmines Road Upper and Castlewood Avenue). Inbound traffic will be removed from Rathgar Road and Rathmines Road. Segregated cycle facilities will be provided along Bushy Park Road and along the CBC route. Route option CB3 is presented in **Figure 6.53.**

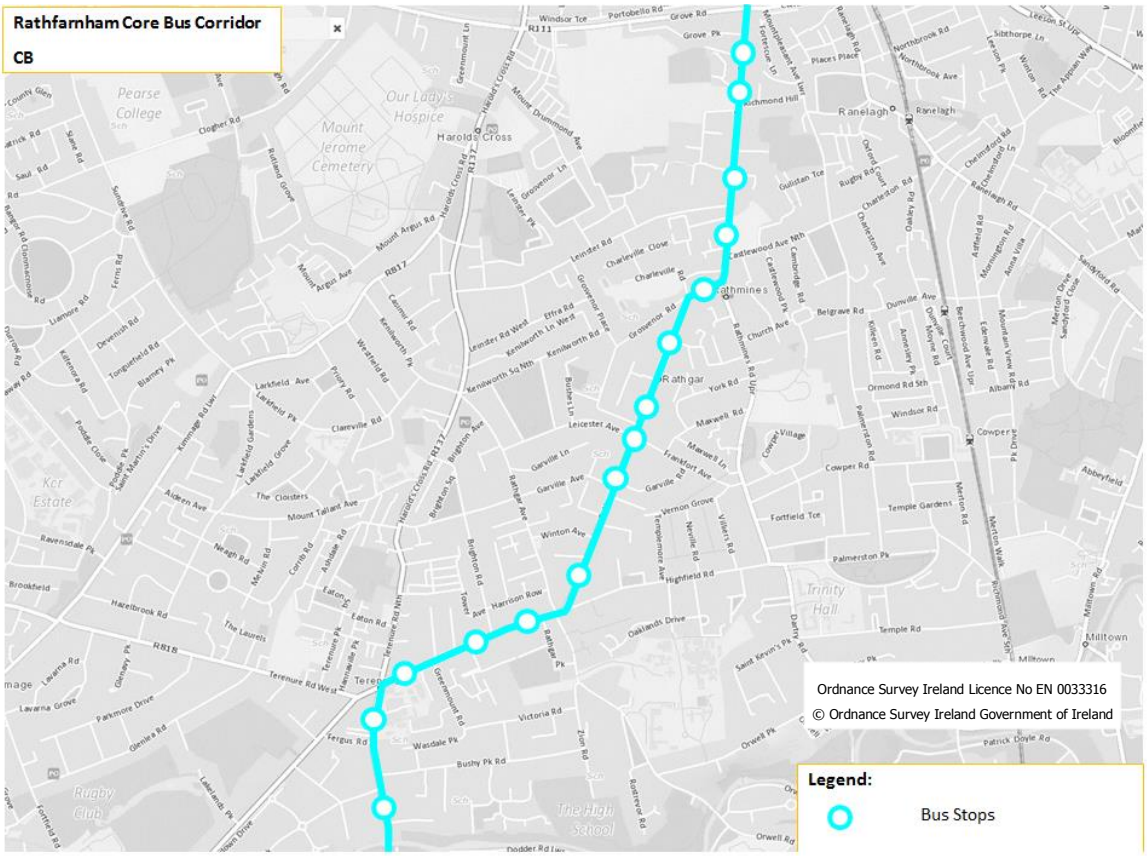


Figure 6.53: Route Option CB3 Rathfarnham Road - Rathmines

6.6.9 **Inbound (Northbound):** The CBC service will proceed from Rathfarnham Road before turning right at Terenure Village and travelling towards Rathmines Village to the crossing of the Grand Canal at La Touche Bridge. Segregated bus lanes will be provided for the majority of the route, except at the section of Rathmines

Road Lower between Rathmines Road Upper and Castlewood Avenue (existing traffic lane layout retained) where a queue relocation is proposed.

6.6.10 **Outbound (Southbound):** The southbound option follows the same route as northbound, segregated bus lanes provide for the majority of the route, except at the section of Rathmines Road Lower between Rathmines Road Upper and Castlewood Avenue (existing traffic lane layout retained) where a queue relocation is proposed.

6.6.11 **Stops:** The number of stops is illustrated in **Figure 6.53**. There has been rationalistion of bus stops which are in close proximity such as, the bus stops on Pearse Bridge and in the vicinity of the Military Road junction.

6.6.12 The journey time for this route option from the Dodder Park Road/Rathfarnham Road junction to the Rathmines Road/Grove Road/Canal Road junction at the Grand Canal crossing is 13 minutes inbound, and 15 minutes outbound, over a distance of approximately 3.4km.

6.6.13 Rathgar Road forms part of Primary Cycle route 10, however it is not possible to provide segregated cycle facilities in conjunction with the proposed bus facilities whilst maintaining two-way traffic without land acquisition from protected properties which line the route. Therefore, it is proposed as part of option CB3 to remove inbound traffic from Rathgar Road (Figure 6.53 below) whilst providing two-way bus and cycle facilities. This would require inbound traffic to use alternative routes such as Palmerston Road, Rathgar Avenue, Rathmines Road Upper and Frankfort Avenue as shown in **Figure 6.53**.

6.6.14 Rathmines Road also forms part of Primary Cycle route 10, however it is not possible to provide segregated cycle facilities in conjunction with the proposed bus facilities whilst maintaining two-way traffic without land acquisition from protected properties which line the route. Therefore, it is proposed to remove traffic in the northbound (inbound) direction between Castlewood Avenue and Grove Road, as identified in **Figure 6.54** below. Two-way traffic will be maintained between Rathmines Road Upper junction and Castlwood Avenue junction. Northbound traffic would use Mountpleassant Avenue, Ranelagh Rd, Castlewood Ave, Harold's Cross Road, Leinster Road and adjoining roads. In

addition, it is proposed to provide segregated cycle facilities on Rathgar Road/Rathmines Road between Castlewood Avenue and Grove Road. Land acquisition from protected residential buildings would be required in the vicinity of Blackberry Lane as identified in **Figure 6.54**.

6.6.15 It is proposed to provide continuous bus priority in both directions along the route with the exception of along Rathmines Road Lower between Rathmines Road Upper and Castlewood Avenue (existing traffic lane layout retained), where bus priority signalling is proposed in both directions in order to maintain 2-way traffic between junctions 7 & 8. There is also a 100m section of Terenure Road East at Terenure Cross where inbound bus lanes will not be provided owing to the close proximity of commercial properties at this location.

6.6.16 There are ten controlled junctions and four pedestrian crossings along this route.

6.6.17 The option CB3 proposals are presented in **Figure 6.54** while sample cross sections are presented in **Figure 6.55** below.

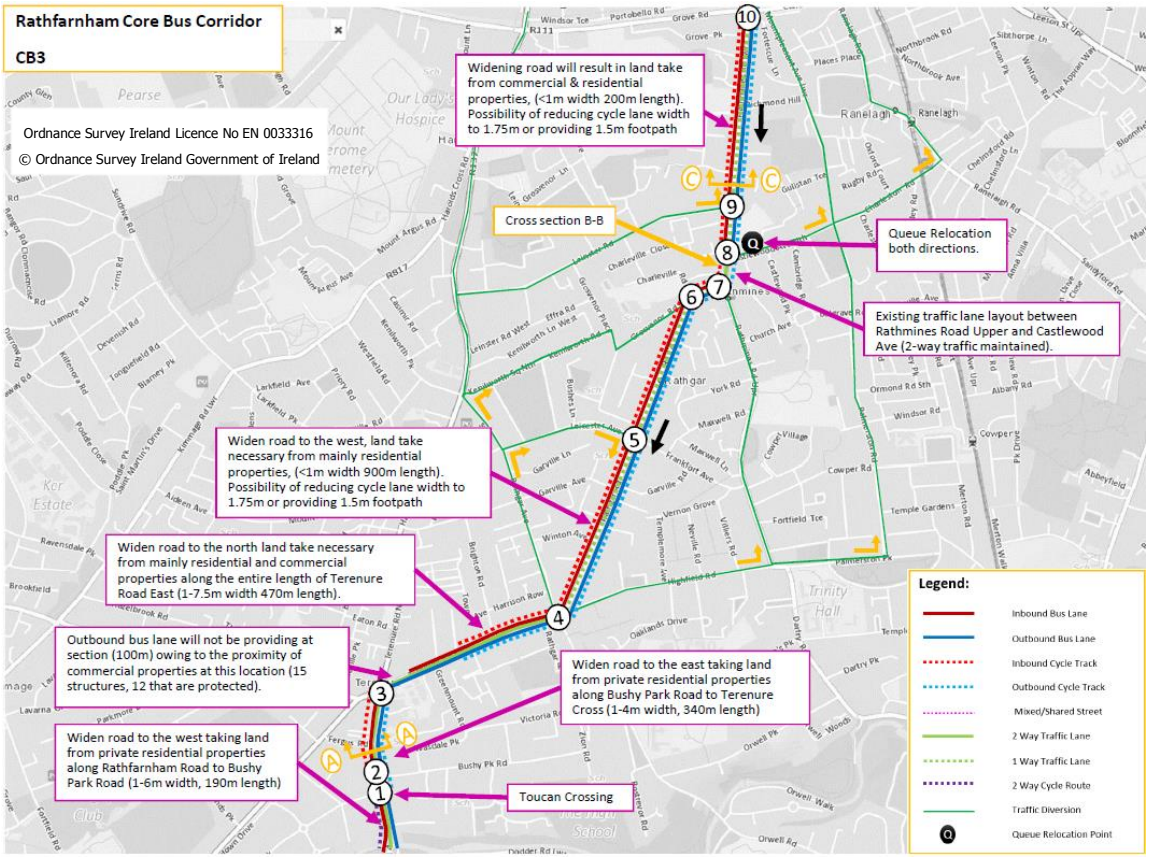


Figure 6.54: Route Option CB3 Proposal

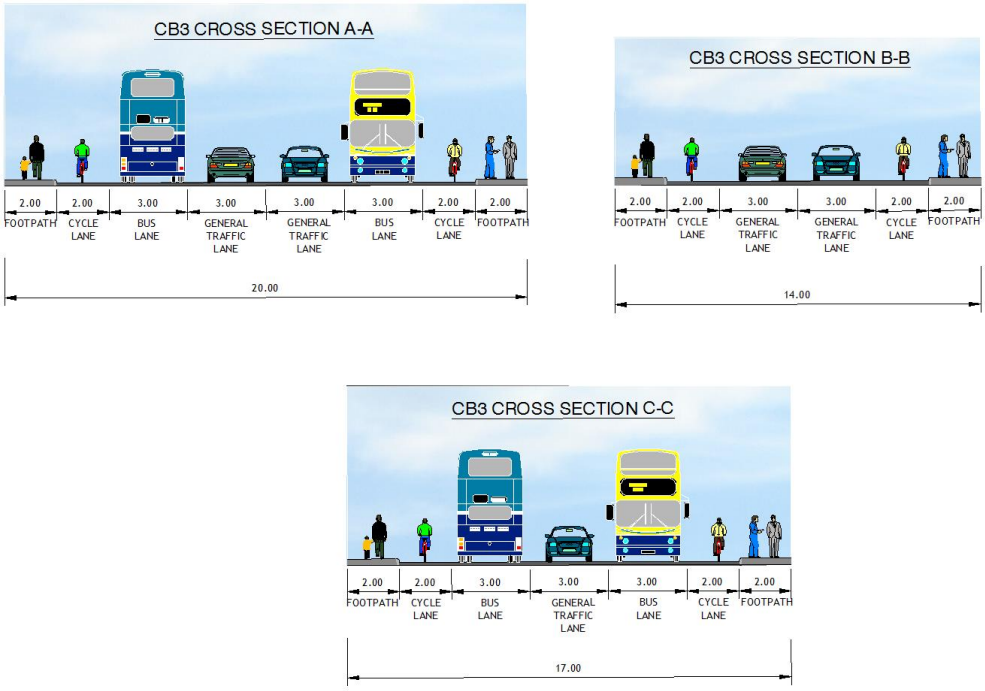


Figure 6.55: Route Option CB3 Proposed Cross Sections

Junctions:

6.6.18 There are ten signalised junctions along this route option (excluding the queue relocation), some of which would require upgrading to facilitate bus priority. The locations of these junctions are presented in **Figure 6.54** and are discussed in further detail below.

1. Rathfarnham Road/Rathdown Park: Left turning vehicles from Rathfarnham Road Ave to Rathdown Park will have to yield for buses in the nearside lane. Adjustments to the junction layout are required to facilitate the inbound bus lane on the approach to the junction. There will also be a possible requirement to relocate/provide existing/new signal equipment;

2. Rathfarnham Road/Bushy Park Road: Adjustments to the junction layout are required to facilitate an inbound bus lane on approach to the junction. In the outbound direction, the straight-ahead traffic lane will be reallocated to a bus lane to provide a bus lane up to the Rathdown Park stop line. The right turning lane onto Rathdown Park will need to be replaced by a combined straight & right lane. There will also be a possible requirement to relocate/provide existing/new signal equipment;

3. Rathfarnham Road/Terenure North/Terenure Road East: Adjustments to the existing junction layout would be required to facilitate bus lanes on approach to the junction and to facilitate the right turn for buses onto Terenure Road East (offside bus lane provided in the inbound direction). It will not be possible to accommodate an inbound bus lane for the first 100m of Terenure Road East due to the close proximity of adjacent protected properties and as such the bus lane may need to share with general traffic.

4. Terenure Road East/Rathgar Avenue/Orwell Road: Adjustments to the junction layout would be required to facilitate bus lanes on approach to the junction and the removal of the inbound traffic lane on Rathgar Road is also required. To provide a bus lane up to the Terenure Road East stop line, the left turn lane will have to be removed, (due to the proximity of adjacent properties) and as such, left turning vehicles will now need to yield for buses and cyclists in the nearside lane. Removal of on-street parking on Terenure Road East is required to provide for the outbound bus lane.

5. Rathgar Road/Leicester Avenue/Frankfort Avenue: This junction would need to be upgraded to accommodate bus lanes and cycle lanes through the junction. The removal of the inbound traffic lane on Rathgar Road is also required.

6. Rathgar Road/Grosvenor Road/Charleville Road: Adjustments to the junction layout would be required to facilitate bus lanes on approach to the junction and the removal of the inbound traffic lane on Rathgar Road is also required. The outbound left turn lane onto Rathgar Road would be reallocated to a bus lane. There will also be a possible requirement to relocate/provide existing/new signal equipment;

7. Rathmines Road Upper/Rathgar Road/Rathmines Road Lower: Adjustments to junction layout would be required to facilitate bus lanes on the approach to the junction and the removal of the inbound traffic lane on

Rathgar Road is also required. There will be a possible requirement to relocate/provide existing/new signal equipment).

8. Rathmines Road Lower/Castlewood Avenue: No major changes are possible to the existing layout due to the close proximity of adjacent buildings and the high volume of right turning traffic from Rathmines Road Lower onto Castlewood Avenue. Bus priority signalling is provided in both directions to improve movement of buses through the junction;

9. Rathmines Road Lower/Leinster Road: This junction would need to be upgraded to accommodate bus lanes and cycle lanes through the junction and the removal of inbound traffic lane on Rathmines Road Lower is also required. In the outbound direction, the right turn lane onto Leinster Road will need to be replaced by a straight & right lane in order to provide a bus lane up to the Rathmines Road Lower stop line.

10. Rathmines Road Lower/Grove Road/Richmond Street: This junction would need to be upgraded to accommodate bus lanes and cycle lanes through the junction. The removal of the inbound traffic lane on Rathmines Road Lower is also required.

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

- Alteration to the Terenure Cross junction to facilitate right turning buses from Rathfarnham Road;
- Increased journey time as a result of the queue relocation when compared with continuous bus priority;
- The removal of inbound traffic on Rathgar Road and the resultant increase of traffic on less suitable roads such as Rathmines Road Upper, Grosvenor Road and Rathgar Avenue;
- The removal of inbound traffic on Rathmines Road and resultant increase of traffic on less suitable roads such as MountPleasant Avenue Upper, Leinster Road and Castlewood Avenue North;

- No northbound traffic on Rathmines Road would have an impact on the accessibility to the amenities of Rathmines Village; and
- No northbound traffic on Rathgar Road would have an impact on the accessibility to the amenities of Rathgar Village.

6.6.20 It is anticipated that this option would cost approximately €21.5 million (€16.0 million infrastructure costs, €5.5 million land acquisition costs).

Principal Route Option CB4: Rathfarnham Road – Rathmines Road Lower (Parallel cycle route via Charleville Road, Grosvenor Lodge and Cathal Brugha Barracks)

6.6.21 The route options CB4 will provide segregated bus facilities between the Dodder River crossing at Pearse Bridge and the Grand Canal crossing at La Touche Bridge (with exception of 100m section at Terenure Cross). It is proposed to provide segregated cycle facilities on Rathfarnham Road, Terenure Road East and Rathgar Road. Cyclists will be catered for via a parallel cycle route along Charleville Road, Grosvenor Lodge and Cathal Brugha Barracks as per cycle route option (CR5). A 30km/h zone is proposed along Rathmines Road Lower between Grosvenor Road and Grove Road to provide a safer environment for cyclists who choose to use the bus lanes on Rathmines Road Lower instead of the segregated parallel cycle route. Route option CB4 is presented in **Figure 6.56**.

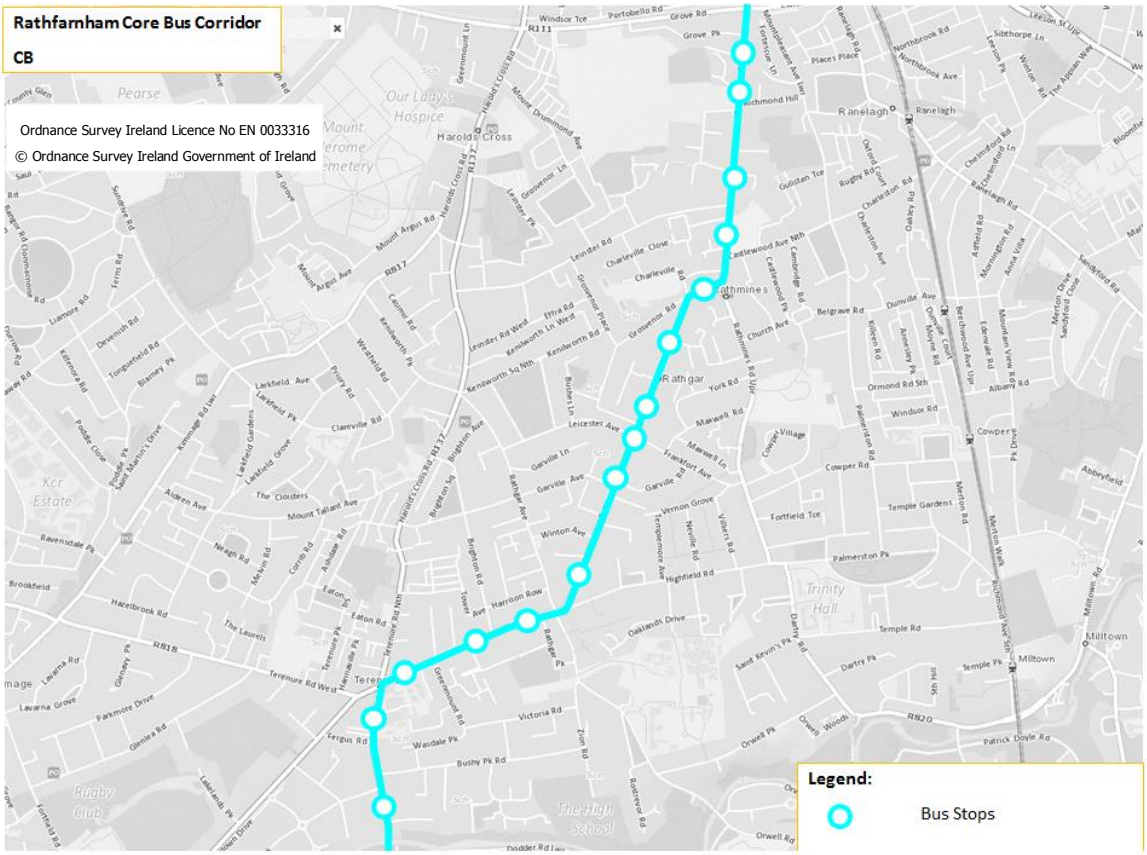


Figure 6.56: Route Option CB4 Rathfarnham Road - Rathmines

6.6.22 **Inbound (Northbound):** The CBC service will proceed from Rathfarnham Road before turning right at Terenure Village and proceeding towards Rathmines Village to the crossing of the Grand Canal at La Touche Bridge. Segregated bus lane will be provided for the majority of the route.

6.6.23 **Outbound (Southbound):** The southbound option follows the same route as northbound, segregated bus lane provided for the majority of the route.

6.6.24 **Stops:** The number of stops is illustrated in **Figure 6.56**. There has been rationalistion of bus stops which are in close proximity such as, bus stops on Pearse Bridge and by Military Road junction.

6.6.25 The journey time for this route option from the Dodder Park Road/Rathfarnham Road junction to the Rathmines Road/Grove Road/Canal Road junction at the Grand Canal crossing is 13 minutes Inbound, and 14 minutes Outbound, over a distance of approximately 3.4km.

6.6.26 It is proposed to provide continuous bus priority in both directions along the route with the exception of a 100m section of Terenure Road East at Terenure Cross where bus lanes will not be provided owing to the close proximity of commercial properties at this location.

6.6.27 It is proposed to provide segregated cycle facilities on Rathfarnham Road, Terenure Road East (with the exception of a 270m section from Terenure Cross to Farrard Road and a small section east of Rathgar Village (20m), owing to conservation issues) and Rathgar Road. Cyclists will also be catered for via parallel cycle routes along Charleville Road, Grosvenor Lodge and Cathal Brugha Barracks. A 30km/h zone is proposed along Rathmines Road Lower between Grosvenor Road and Grove Road to provide a safer environment for cyclists who choose to use the bus lanes on Rathmines Road Lower instead of the segregated parallel cycle route. This cycle route does not align strictly with the GDA Cycle Network Plan proposal for Primary Route SO3/10 which runs along Terenure Road East, Rathgar Road and Rathmines Road.

6.6.28 There are ten controlled junctions and four pedestrian crossings along this route.

6.6.29 The option CB4 proposals are presented in **Figure 6.57** while a sample cross sections are presented in **Figure 6.58** below.

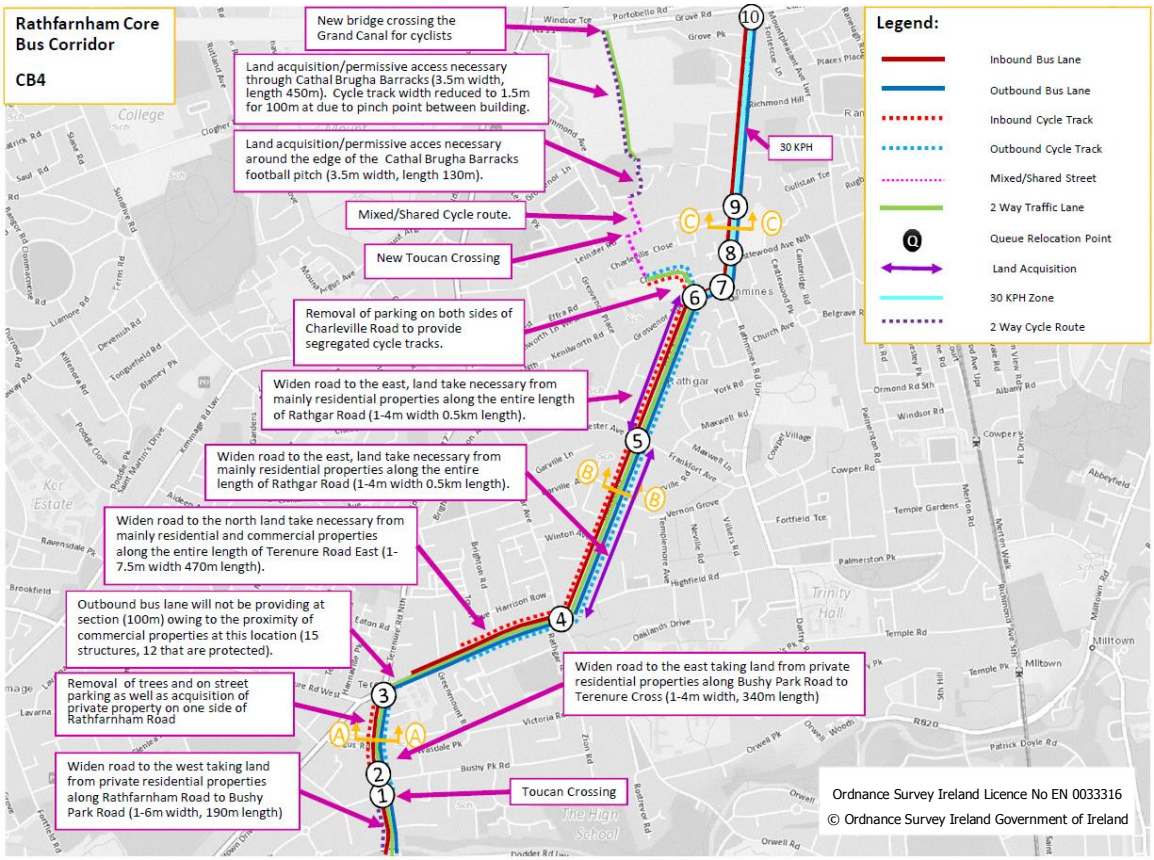


Figure 6.57: Route Option CB4 Proposal

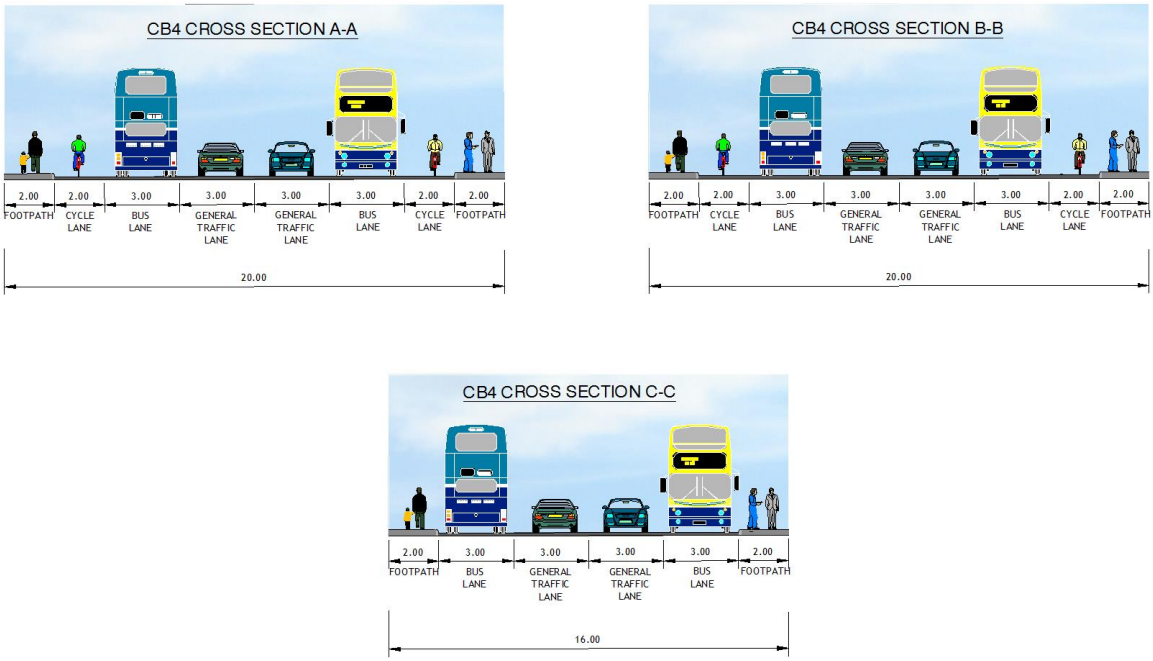


Figure 6.58: Route Option CB4 Proposed Cross Section

Junctions:

6.6.30 There are ten signalised junctions along this route option, some of which would require upgrading to facilitate bus priority. The locations of these junctions are presented in **Figure 6.57** and discussed below.

1. Rathfarnham Road/Rathdown Park: Left turning vehicles from Rathfarnham Road Ave to Rathdown Park will have to yield for buses in the nearside lane. Adjustments to the junction layout are required to facilitate inbound bus lane on approach to the junction. There will also be a possible requirement to relocate/provide existing/new signal equipment;

2. Rathfarnham Road/Bushy Park Road: Adjustments to the junction layout are required to facilitate the inbound bus lane on approach to the junction. In the outbound direction, the straight-ahead traffic lane will be reallocated to a bus lane to provide a bus lane up to the stop line on approach to the Rathdown Park junction. The right turn lane onto Rathdown Park will need to be replaced by a combined straight & right

lane. There will also be a possible requirement to relocate/provide existing/new signal equipment;

3. Rathfarnham Road/Terenure North/Terenure Road East: Adjustments to the existing junction layout would be required to facilitate bus lanes on approach to the junction and to facilitate the right turn for buses onto Terenure Road East (offside bus lane provided in the inbound direction). It will not be possible to accommodate an inbound bus lane for the first 100m of Terenure Road East due to the close proximity of the adjacent protected properties and as such buses lane may need to share with general traffic;

4. Terenure Road East/Rathgar Avenue/Orwell Road: Adjustments to the junction layout would be required to facilitate bus lanes on approach to the junction. To provide a bus lane up to the stop lines on Terenure Road East and Rathgar Road, the left turning lane will have to be removed (due to the proximity of adjacent properties), and as such, left turning vehicles will now need to yield for buses and cyclists in the nearside lane. Removal of on-street parking is necessary on Terenure Road East to provide for the outbound bus lane;

5. Rathgar Road/Leicester Avenue/Frankfort Avenue: This junction would need to be upgraded to accommodate bus lanes and cycle lanes through the junction. In the inbound direction, in order to provide a bus lane up to the Rathgar Road stop line, the nearside traffic lane will be reallocated to a bus lane (due to the proximity of adjacent properties), and as such, left turning vehicles will now need to yield for buses and cyclists in the nearside lane. Bus priority signalling will be provided for buses at the junction;

6. Rathgar Road/Grosvenor Road/Charleville Road: Adjustments to the junction layout would be required to facilitate bus lanes and cycle lanes in both directions on approach to the junction. There will also be a possible requirement to relocate/provide existing/new signal equipment;

7. Rathmines Road Upper/Rathgar Road/Rathmines Road Lower: Adjustments to the junction layout would be required to facilitate bus lanes in both directions on approach to the junction. There will be a possible requirement to relocate/provide existing/new signal equipment;

8. Rathmines Road Lower/Castlewood Avenue: Adjustments to the junction layout would be required to facilitate bus lanes in both directions on approach to the junction. In the inbound direction, the right turning lane onto Castlewood Avenue will need to be replaced by a straight & right lane to provide a bus lane up to the Rathmines Road Lower stop line. There will be a possible requirement to relocate/provide existing/new signal equipment;

9. Rathmines Road Lower/Leinster Road: This junction would need to be upgraded to accommodate bus lanes through the junction. To provide a bus lane up to the Rathmines Road Lower stop line in the inbound direction, the left turning lane will have to be removed (due to the proximity of adjacent properties), and as such, left turning vehicles will now need to yield for buses and cyclists in the nearside lane. Bus priority signalling will be provided for buses at the junction. In the outbound direction, the right turn lane onto Leinster Road will need to be replaced by a straight & right lane to provide a bus lane up to the Rathmines Road Lower stop line; and

10. Rathmines Road Lower/Grove Road/Richmond Street: This junction would need to be upgraded to accommodate bus lanes through the junction. To provide a bus lane up to the stop line on Rathmines Road Lower, the straight & left turn lane will have to be removed (due to the proximity of adjacent properties), and as such, left turning vehicles will now need to yield for buses and cyclists in the nearside lane. Bus priority signalling will be provided for buses at the junction.

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

- Alteration to Terenure Cross junction will be required to facilitate right turning buses from Rathfarnham Road;

- There are no segregated cycle facilities provided along Rathmines Road Lower, which is Primary Route 10 of the GDA CNP;
- The reallocation of general traffic lanes to bus lanes at busy junctions; and

6.6.32 It is anticipated that this option would cost approximately €26.7 million (€16.8 million infrastructure costs, €9.9 million land acquisition costs.

Principal Route Option CB5: Rathfarnham Road – Rathmines Road Lower (Inbound bus lane provided on Rathmines Road Lower from Rathmines Road Upper to Military Road junction and outbound bus lane provided from Grove Road to Military Road junction)

6.6.33 The CBC route option will provide segregated bus facilties between the Dodder River crossing at Pearse Bridge and Rathmines Village (with exception of 100m section at Terenure Cross). An inbound bus lane will be provided on Rathmines Road Lower from Rathmines Road Upper to the Military Road junction, whilst an outbound bus lane provided from Grove Road to the Military Road junction. Segregated cycle facilities will be provided along the entire CBC route. Route option CB5 is presented in **Figure 6.59**.

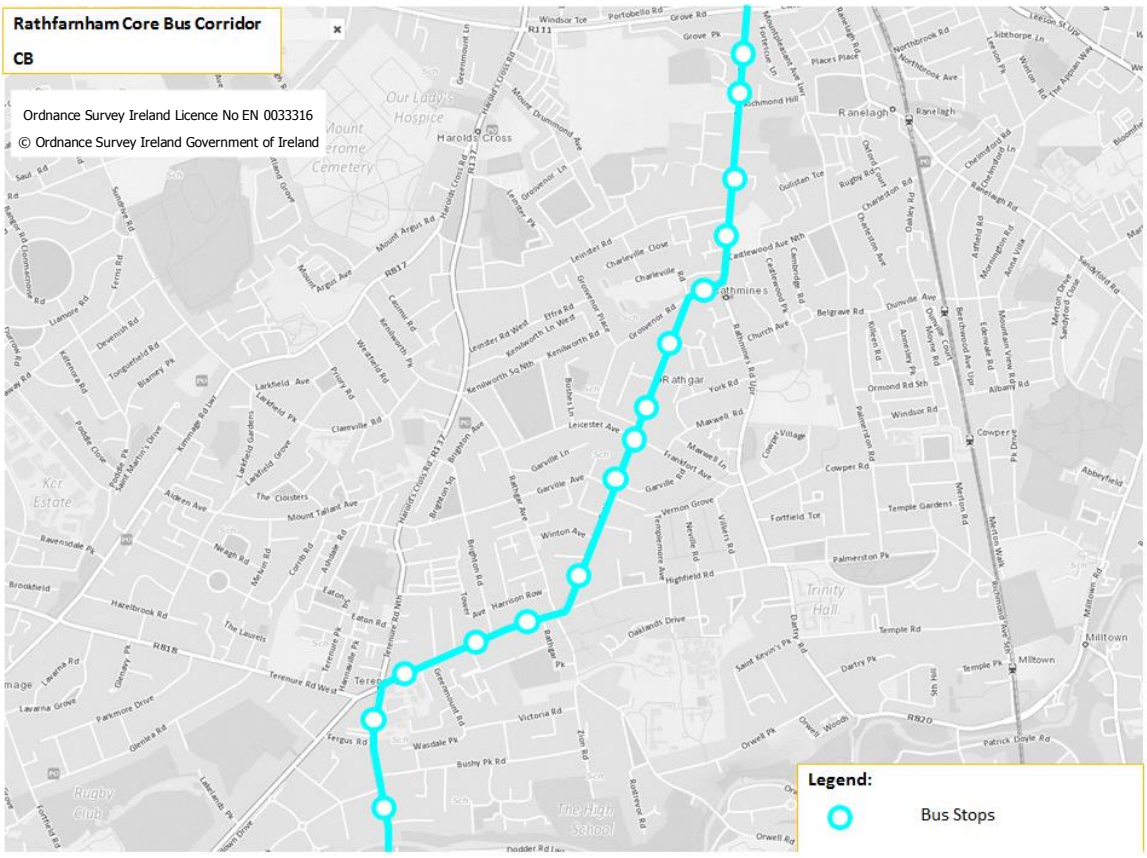


Figure 6.59: Route Option CB5 Rathfarnham Road - Rathmines

6.6.34 **Inbound (Northbound):** The CBC service will proceed from Rathfarnham Road before turning right at Terenure Village and continuing towards Rathmines Village

to the crossing of the Grand Canal at La Touche Bridge. A segregated bus lane will be provided for the majority of the route. A bus lane will be provided on Rathmines Road Lower from Rathmines Road Upper to the Military Road junction.

6.6.35 **Outbound (Southbound):** The southbound option follows the same route as northbound, with a segregated bus lane provided for the majority of the route. A Bus lane will be provided from Grove Road to the Military Road junction.

6.6.36 **Stops:** The number of stops is illustrated in **Figure 6.59**. There has been rationalistion of bus stops which are in close proximity such as, the bus stops on Pearse Bridge and in the vicinity of Military Road junction.

6.6.37 The journey time for this route option from Dodder Park Road/Rathfarnham Road junction to Rathmines Road/Grove Road/Canal Road junction at the Grand Canal crossing is 15 minutes Inbound, and 19 minutes Outbound, over approximately 3.4km.

6.6.38 There is a 100m section of Terenure Road East at Terenure Cross where bus lanes will not be provided owing to the proximity of commercial properties at this location.

6.6.39 It is proposed to provide segregated cycle facilities along the entire CBC (with the exception of a 270m section from Terenure Cross to Farrard Road and a small section east of Rathgar Village (20m), owing to conservation issues). This cycle route aligns with the GDA Cycle Network Plan proposal for Primary Route SO3/10 which runs along Terenure Road East, Rathgar Road and Rathmines Road Lower.

6.6.40 There are 11 controlled junctions and four pedestrian crossings along this route.

6.6.41 The option CB5 proposals are presented in **Figure 6.60** while a sample cross section is presented in **Figure 6.61** below.

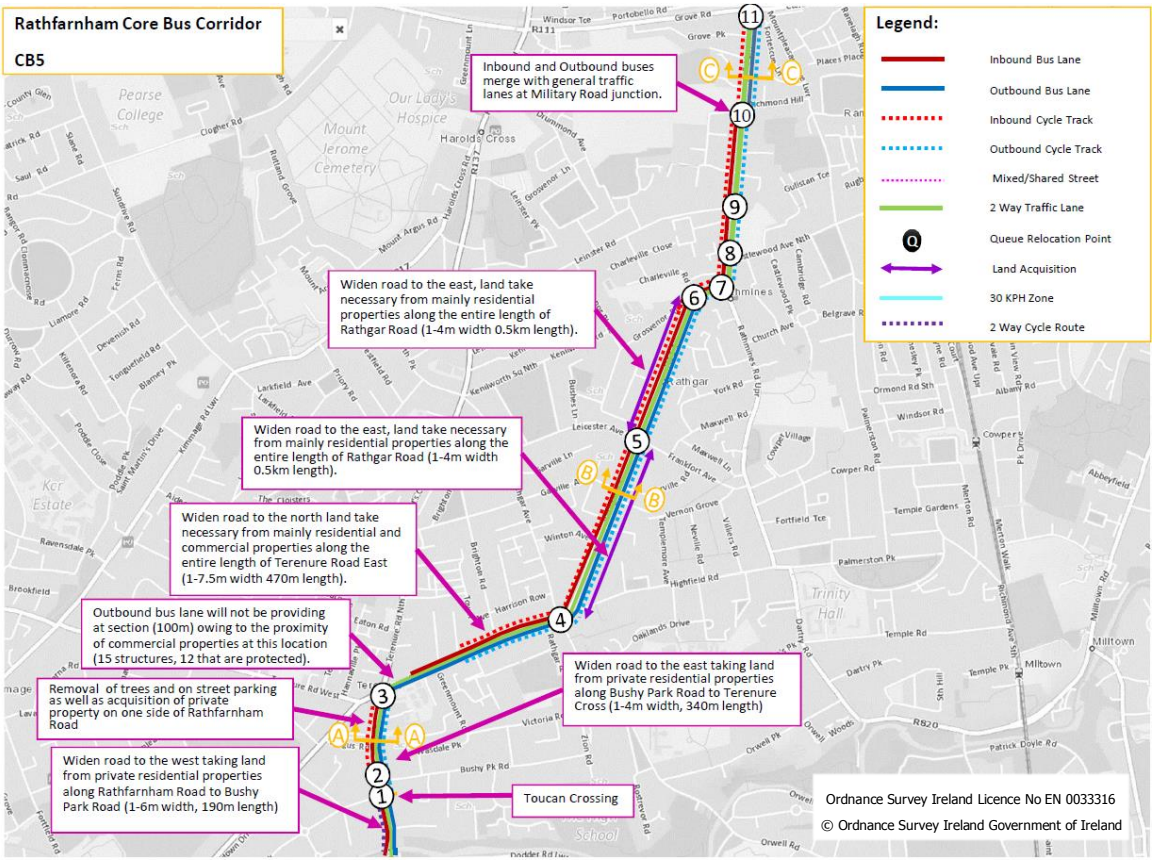
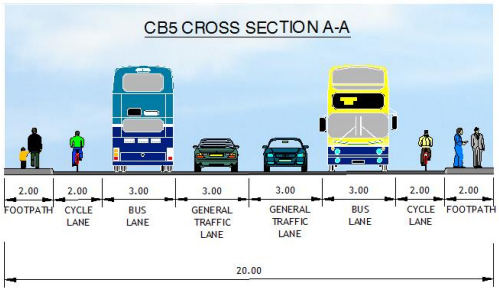
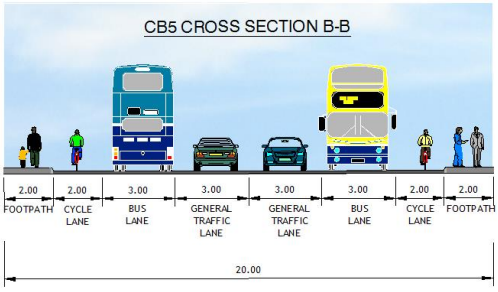


Figure 6.60: Route Option CB5 Proposal.





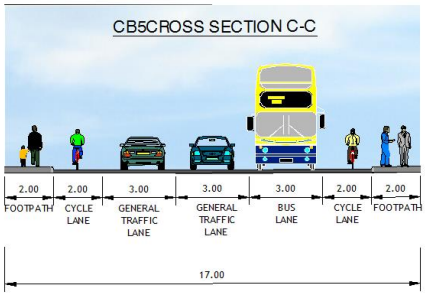


Figure 6.61: Route Option CB5 Proposed Cross Section.

Junctions:

6.6.42 There are 11 signalised junctions along this route option, some of which would require upgrading to facilitate bus priority. The locations of these junctions are presented in **Figure 6.60** and discussed in further detail below: -

1. Rathfarnham Road/Rathdown Park: Left turning vehicles from Rathfarnham Road Ave to Rathdown Park will have to yield for buses in the nearside lane. Adjustments to the junction layout are required to facilitate the inbound bus lane on approach to the junction. There will also be a possible requirement to relocate/provide existing/new signal equipment;

2. Rathfarnham Road/Bushy Park Road: Adjustments to the junction layout are required to facilitate the inbound bus lane on approach to the junction. In the outbound direction, the straight-ahead traffic lane will be reallocated to a bus lane to provide bus priority to the Rathdown Park junction stop line. The right turn lane onto Rathdown Park will need to be replaced by a combined straight & right lane. There will also be a possible requirement to relocate/provide existing/new signal equipment;

3. Rathfarnham Road/Terenure North/Terenure Road East: Adjustments to the existing junction layout would be required to facilitate bus lanes on approach to the junction and to facilitate the right turn for buses onto Terenure Road East (offside bus lane provided in the inbound direction). It will not be possible to accommodate an inbound bus lane for the first 100m of Terenure Road East due to the close proximity of adjacent protected properties and as such the buses may need to share with general traffic;

4. Terenure Road East/Rathgar Avenue/Orwell Road: Adjustments to the junction layout would be required to facilitate bus lanes on approach to the junction. To provide a bus lane up to the stop lines on Terenure Road East and Rathgar Road, the left turn lanes will have to be removed (due to the proximity of adjacent properties), and as such, left turning vehicles will now need to yield for buses and cyclists in the nearside lane.

Removal of on-street parking necessary on Terenure Road East to provide for outbound bus lane;

5. Rathgar Road/Leicester Avenue/Frankfort Avenue: This junction would need to be upgraded to accommodate bus lanes and cycle lanes through the junction. In the inbound direction, to provide a bus lane up to the stop line on Rathgar Road, the nearside traffic lane will be reallocated to a bus lane (due to the proximity of adjacent properties) and as such, left turning vehicles will now need to yield for buses and cyclists in the nearside lane. Bus priority signalling will be provided for buses at the junction;

6. Rathgar Road/Grosvenor Road/Charleville Road: Adjustments to the junction layout would be required to facilitate bus lanes and cycle lanes in both directions on approach to the junction. There will be a requirement to relocate/provide existing/new signal equipment;

7. Rathmines Road Upper/Rathgar Road/Rathmines Road Lower: Adjustments to junction layout would be required to facilitate bus lanes in the inbound direction on approach to the junction. There will be a requirement to relocate/provide existing/new signal equipment;

8. Rathmines Road Lower/Castlewood Avenue: Adjustments to the junction layout would be required to facilitate a bus lane in the inbound direction on approach to the junction. There will be a requirement to relocate/provide existing/new signal equipment;

9. Rathmines Road Lower/Leinster Road: This junction would need to be upgraded to accommodate an inbound bus lane through the junction. To provide a bus lane up to the Rathmines Road Lower at the junction in the inbound direction, the left turning lane will have to be removed (due to the proximity of adjacent properties), and as such, left turning vehicles will now need to yield for buses and cyclists in the nearside lane. Advanced signals will be provided for buses at the junction;

10. Rathmines Road Lower/Military Road: This junction would need to be upgraded to a signal controlled junction to accommodate inbound

and outbound buses merging with general traffic lanes. Bus priority signalling will be provided for buses at the junction; and

11. Rathmines Road Lower/Grove Road/Richmond Street: This junction would need to be upgraded to accommodate outbound bus lanes from the junction. Bus priority signalling will be provided for buses at the junction.

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

- The alteration of the Terenure Cross junction to facilitate right turning buses from Rathfarnham Road;
- No inbound bus lane is provided on Rathmines Road Lower from Military Road to Grove Road and no outbound bus lane provided from Military Road to Rathmines Road Upper junction; and

6.6.44 It is anticipated that this option would cost approximately €26.8 million (€17.0 million infrastructure costs, €9.8 million land acquisition costs.

Principal Route Option CB6: Rathfarnham Road – Rathmines Road Lower (Outbound traffic only on Rathmines Road Lower)

The CBC route option CB6 will provide segregated bus facilties between the Dodder River crossing at Pearse Bridge and the Grand Canal crossing at La Touche Bridge (with exception of 100m section at Terenure Cross). It is proposed to remove general traffic in the northbound (inbound) direction along Rathmines Road Lower between Castlewood Avenue and Grove Road. It is also proposed to provide segregated cycle facilities along the entire CBC. Route option CB6 is presented in **Figure 6.62**.

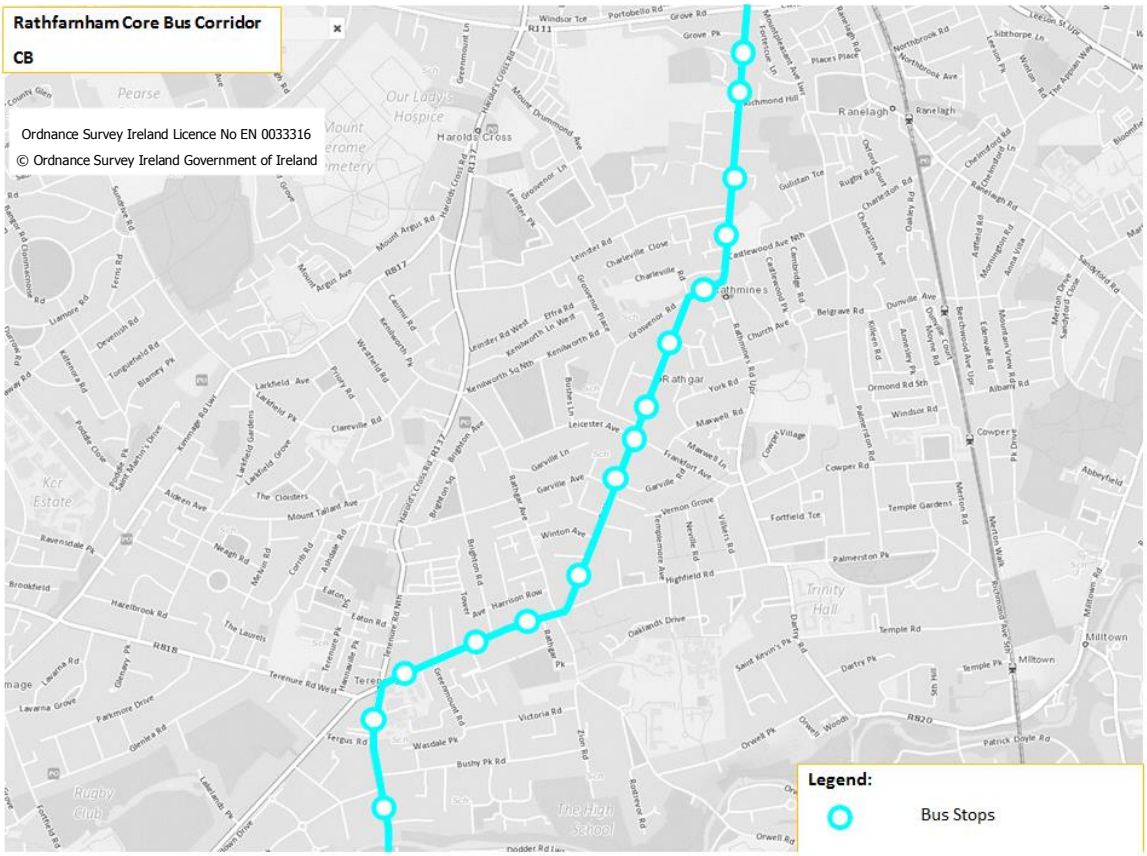


Figure 6.62: Route Option CB6 Rathfarnham Road - Rathmines

6.6.45 **Inbound (Northbound):** The CBC service will proceed from Rathfarnham Road before turning right at Terenure Village and proceeding towards Rathmines Village to the crossing of the Grand Canal at La Touche Bridge. A segregated bus lane will be provided for the majority of the route.

6.6.46 **Outbound (Southbound):** The southbound option follows the same route as northbound, with a segregated bus lane provided for the majority of the route.

6.6.47 **Stops:** The number of stops is illustrated in **Figure 6.62**. There has been rationalistion of bus stops which are in close proximity such as the bus stops on Pearse Bridge and in the vicinity of Military Road junction.

6.6.48 The journey time for this route option from Dodder Park Road/Rathfarnham Road junction to Rathmines Road/Grove Road/Canal Road junction at the Grand Canal crossing is 13 minutes Inbound, and 14 minutes Outbound, over approximately 3.4km.

6.6.49 It is proposed to provide continuous bus priority in both directions along the route with the exception of a 100m section of Terenure Road East at Terenure Cross, where bus lanes will not be provided owing to the close proximity of commercial properties at this location.

6.6.50 It is proposed to provide segregated cycle facilities along the entire CBC (with the exception of a 270m section from Terenure Cross to Farrard Road and a small section east of Rathgar Village (20m), owing to conservation issues). This cycle route aligns with the GDA Cycle Network Plan proposal for Primary Route SO3/10 which runs along Terenure Road East, Rathgar Road and Rathmines Road Lower. However, it is not possible to provide segregated cycle facilities in conjunction with the proposed bus facilities whilst maintaining two-way traffic on Rathmines Road Lower, without land acquisition of protected buildings which line the route. Therefore, it is proposed to remove traffic in the northbound (inbound) direction between Castlewood Avenue and Grove Road as identified in **Figure 6.63** below. Northbound traffic would use Mountpleassant Avenue, Ranelagh Rd, Castlewood Ave, Harold's Cross Road, Leinster Road and the adjoining roads. It is also proposed to provide segregated cycle facilities on Rathgar Road/Rathmines Road between Castlewood Avenue and Grove Road. Land acquisition of protected residential properties would be required in the vicinity of Blackberry Lane as identified in **Figure 6.63**.

6.6.51 There are ten controlled junctions and four pedestrian crossings along this route.

6.6.52 The option CB6 proposals are presented in **Figure 6.63** while sample cross sections are presented in **Figure 6.64** below.

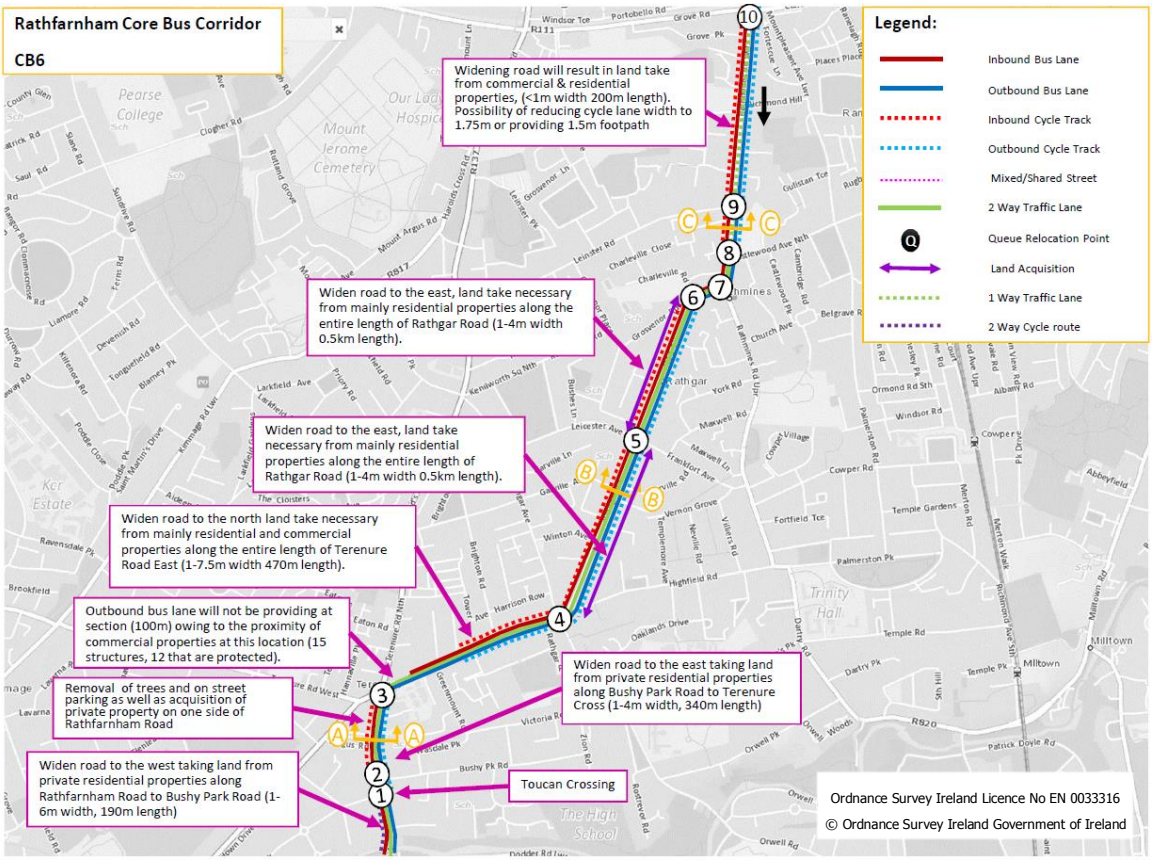


Figure 6.63: Route Option CB6 Proposal

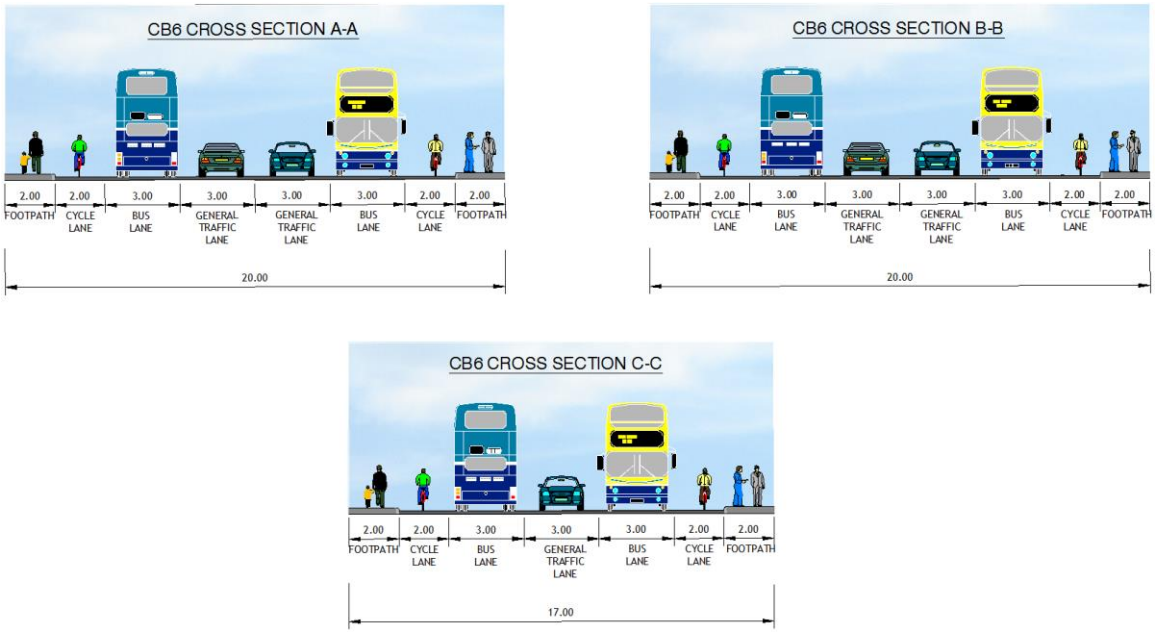


Figure 6.64: Route Option CB6 Proposed Cross Section

Junctions:

6.6.53 There are ten signalised junctions along this route option, some of which would require upgrading to facilitate bus priority. The locations of these junctions are presented in **Figure 6.63** and discussed in further detail below.

1. Rathfarnham Road/Rathdown Park: Left turning vehicles from Rathfarnham Road Ave to Rathdown Park will have to yield for buses in the nearside lane. Adjustments to the junction layout are required to facilitate inbound bus lane on approach to the junction. There will also be a possible requirement to relocate/provide existing/new signal equipment;

2. Rathfarnham Road/Bushy Park Road: Adjustments to the junction layout are required to facilitate inbound bus lane on approach to the junction. In the outbound direction, the straight-ahead traffic lane will be reallocated to a bus lane to provide a bus priority to the stop line on approach to Rathdown Park the junction. The right turn lane onto Rathdown Park will need to be replaced by a combined straight & right lane. There will also be a possible requirement to relocate/provide existing/new signal equipment;

3. Rathfarnham Road/Terenure North/Terenure Road East: Adjustments to the existing junction layout would be required to facilitate bus lanes on approach to the junction and to facilitate the right turn for buses onto Terenure Road East (offside bus lane provided in the inbound direction). It will not be possible to accommodate an inbound bus lane for the first 100m of Terenure Road East, due to the close proximity of adjacent protected properties and as such the bus lane may need to share the traffic lane with general traffic;

4. Terenure Road East/Rathgar Avenue/Orwell Road: Adjustments to the junction layout would be required to facilitate bus lanes on approach to the junction. To provide a bus lane up to the stop line on approach to the junction on Terenure Road East and Rathgar Road, the left turn lane will have to be removed (due to the proximity of adjacent properties) and as such, left turning vehicles will now need to yield for buses and cyclists in the nearside lane. Removal of on-street parking is necessary on Terenure Road East to provide for outbound bus lane;

5. Rathgar Road/Leicester Avenue/Frankfort Avenue: This junction would need to be upgraded to accommodate bus lanes and cycle lanes through the junction. In the inbound direction, to provide a bus lane up to the Rathgar Road stop line of the junction, the nearside traffic lane will be reallocated to a bus lane (due to the proximity of adjacent properties), and as such, left turning vehicles will now need to yield for buses and cyclists in the nearside lane. Bus priority signalling will be provided for buses at the junction;

6. Rathgar Road/Grosvenor Road/Charleville Road: Adjustments to the junction layout would be required to facilitate bus lanes and cycle lanes in both directions on approach to the junction. There will also be a possible requirement to relocate/provide existing/new signal equipment;

7. Rathmines Road Upper/Rathgar Road/Rathmines Road Lower: Adjustments to the junction layout would be required to facilitate bus lanes on approach to the junction. The removal of the inbound traffic lane on

Rathgar Road will also be required. There is a possible requirement to relocate/provide existing/new signal equipment. The left turn lane on Rathmines Road Upper will need to be removed due to outbound traffic ban on Rathgar Road;

8. Rathmines Road Lower/Castlewood Avenue: Adjustments to the junction layout would be required to facilitate bus lanes in both directions on approach to the junction. In addition, southbound only traffic will be permitted on Rathmines Road Lower. There will be a requirement to relocate/provide existing/new signal equipment;

9. Rathmines Road Lower/Leinster Road: This junction would need to be upgraded to accommodate bus lanes and cycle lanes through the junction. The removal of the inbound traffic lane on Rathmines Road Lower will also be required. In the outbound direction, the right turn lane onto Leinster Road will need to be replaced by a straight & right lane to provide a bus lane up to the Rathmines Road Lower junction. Advanced signals will be provided for buses at the junction; and

10. Rathmines Road Lower/Grove Road/Richmond Street: This junction would need to be upgraded to accommodate bus lanes and cycle lanes through the junction. The removal of the inbound traffic lane on Rathmines Road Lower will also be required.

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

- The alteration of the Terenure Cross junction to facilitate right turning buses from Rathfarnham Road;
- The removal of inbound traffic on Rathmines Road and the resultant increase of traffic on less suitable roads such as Castlewood Avenue North, Mountpleasant Avenue Upper and Charleston Road; and
- No inbound (northbound) traffic on Rathmines Road would have an impact on the accessibility to the amenities of Rathmines Village.

6.6.55 It is anticipated that this option would cost approximately €26.8 million (€17.0 million infrastructure costs, €9.8 million land acquisition costs.

Principal Route Option CB7: Rathfarnham Road – Rathmines Road Lower via Highfield Road/Rathmines Road Upper. (Parallel cycle route via Rathgar Road, Charleville Road, Grosvenor Lodge and Cathal Brugha Barracks as per CR5).

6.6.56 The CBC route option CB7 will provide segregated bus facilties between the Dodder River crossing at Pearse Bridge and the Grand Canal crossing at La Touche Bridge (with exception of 100m section at Terenure Cross). It is proposed to provide segregated cycle facilities along Rathfarnham Road and Terenure Road East. Cyclists will also be catered for via parallel cycle routes via Rathgar Road, Charleville Road, Grosvenor Lodge and Cathal Brugha Barracks. A 30km/h zone is proposed along Rathmines Road Lower between Grosvenor Road and Grove Road, to provide a safer environment for cyclists who choose to use the bus lanes on Rathmines Road Lower instead of the segregated parallel cycle route. Route option CB7 is presented in **Figure 6.65** below.

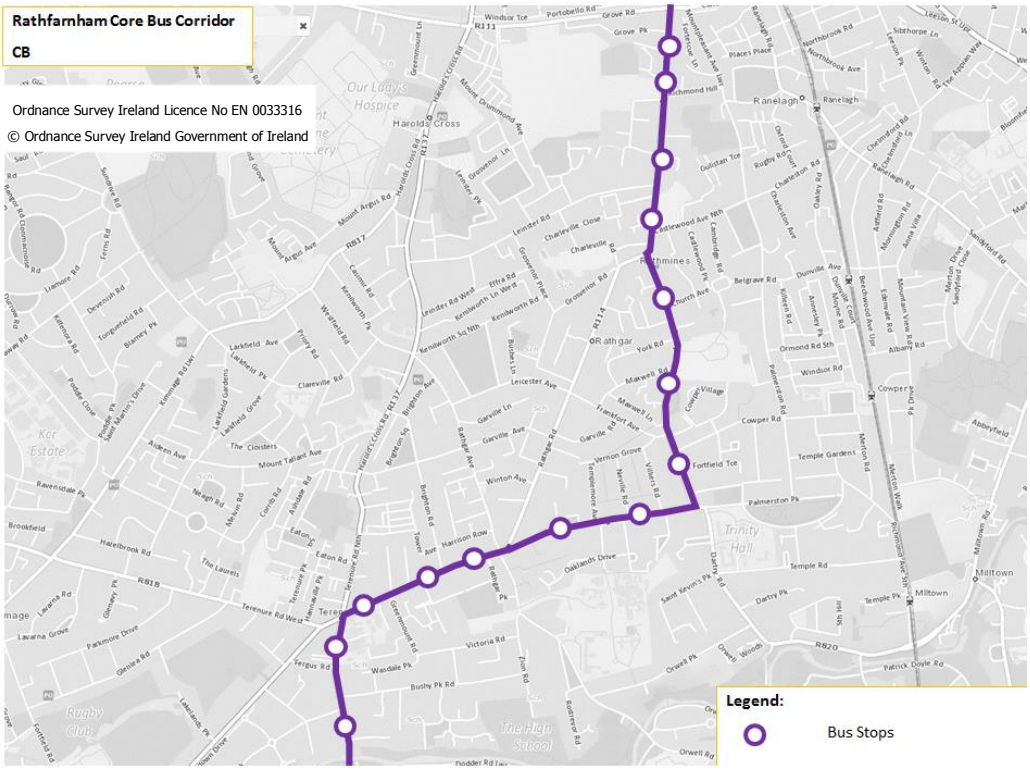


Figure 6.65: Route Option CB Rathfarnham Road - Rathmines

6.6.57 **Inbound (Northbound):** The CBC service will proceed from Rathfarnham Road before turning right at Terenure Village and continuing towards Rathmines Village via Highfield Road & Rathmines Road Upper, then crossing the Grand Canal at La Touche Bridge. A segregated bus lane will be provided for the majority of the route.

6.6.58 **Outbound (Southbound):** The southbound option follows the same route as northbound, with a segregated bus lane provided for the majority of the route.

6.6.59 **Stops:** The number of stops is illustrated in **Figure 6.65**. There has been rationalistion of bus stops which are in close proximity such as, bus stops on Pearse Bridge. Two additional bus stops will be provided in both directions on Highfield Road.

6.6.60 The journey time for this route option from Dodder Park Road/Rathfarnham Road junction to Rathmines Road/Grove Road/Canal Road junction at the Grand Canal

crossing is 14 minutes Inbound, and 18 minutes Outbound, over approximately 3.9km.

6.6.61 It is proposed to provide continuous bus priority in both directions along the route with the exception of the section of Pearse Bridge at the Dodder Road/Rathfarnham Road junction where bus priority signalling is proposed in the outbound direction at this pinch point. There is also a 100m section of Terenure Road East at Terenure Cross where bus lanes will not be provided owing to the close proximity of commercial properties at this location.

6.6.62 It is proposed to provide segregated cycle facilities on Rathfarnham Road and Terenure Road East (with the exception of a 270m section from Terenure Cross to Farrard Road and a small section east of Rathgar Village (20m), owing to conservation issues). Cyclists will also be catered for along parallel cycle routes via Rathgar Road, Charleville Road, Grosvenor Lodge and Cathal Brugha Barracks. A 30km/h zone is proposed along Rathmines Road Lower between Grosvenor Road and Grove Road to provide a safer environment for cyclists who choose to use the bus lanes on Rathmines Road Lower instead of the segregated parallel cycle route. This cycle route does not align strictly with the GDA Cycle Network Plan proposal for Primary Route SO3/10 which runs along Terenure Road East, Rathgar Road and Rathmines Road.

6.6.63 There are ten controlled junctions and four pedestrian crossings along this route.

6.6.64 The option CB7 proposals are presented in **Figure 6.66** while sample cross sections are presented in **Figure 6.67** below.

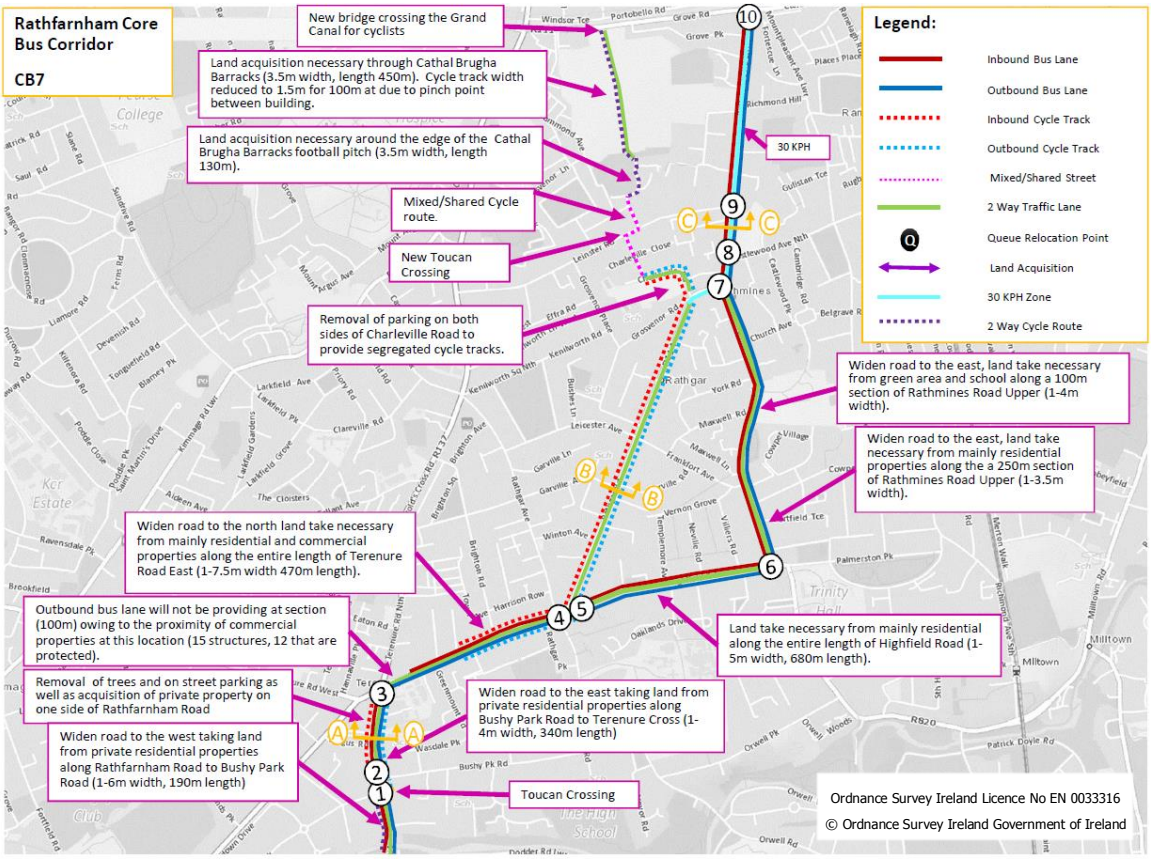


Figure 6.66: Route Option CB7 Proposal

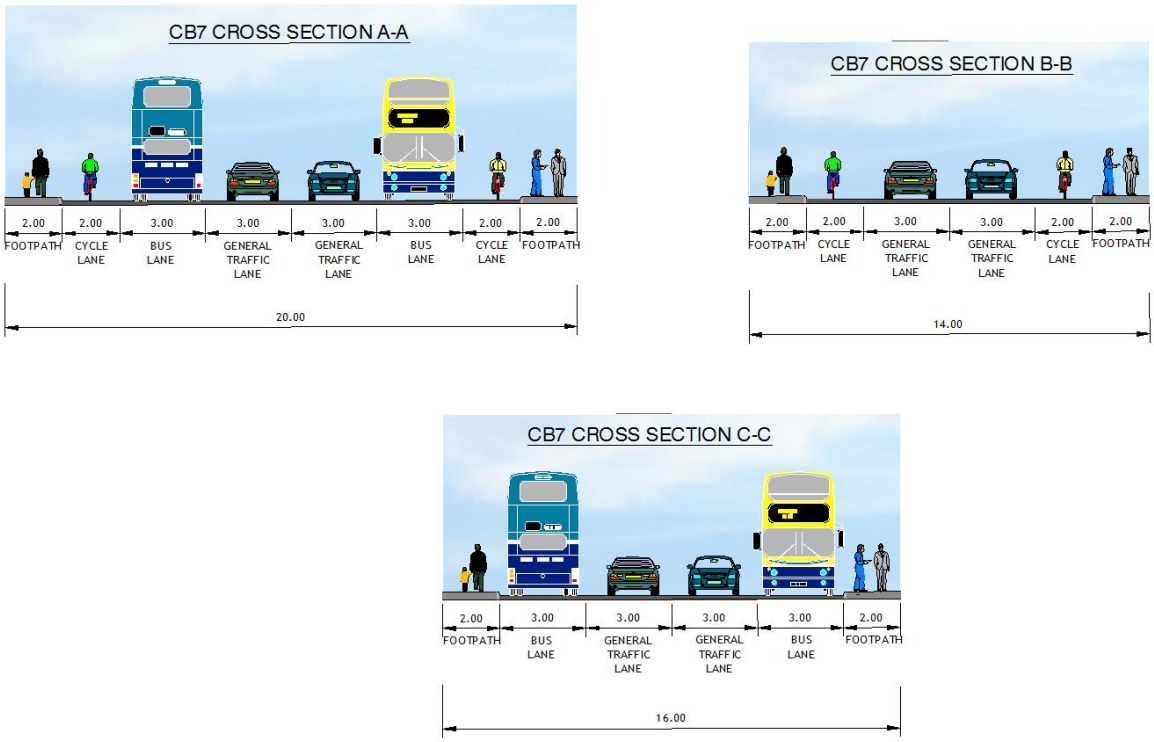


Figure 6.67: Route Option CB7 Proposed Cross Section

6.6.65 **Junctions:**

6.6.66 There are 10 signalised junctions along this route option, some of which would require upgrading to facilitate bus priority. The locations of these junctions are presented in **Figure 6.66** and discussed in further detail below: -

1. Rathfarnham Road/Rathdown Park: Left turning vehicles from Rathfarnham Road Ave to Rathdown Park will have to yield for buses in the nearside lane. Adjustments to the junction layout are required to facilitate the inbound bus lane on approach to the junction. There will also be a possible requirement to relocate/provide existing/new signal equipment;

2. Rathfarnham Road/Bushy Park Road: Adjustments to the junction layout are required to facilitate the inbound bus lane on approach to the junction. In the outbound direction, the straight-ahead traffic lane will be reallocated to a bus lane to provide bus priority to the stop line at Rathdown Park. The right turn lane onto Rathdown Park will need to be replaced by

a combined straight & right lane. There will also be a possible requirement to relocate/provide existing/new signal equipment;

3. Rathfarnham Road/Terenure North/Terenure Road East: Adjustments to the existing junction layout would be required to facilitate bus lanes on approach to the junction and to facilitate the right turn for buses onto Terenure Road East (offside bus lane provided in the inbound direction). It will not be possible to accommodate an inbound bus lane bus lane for the first 100m of Terenure Road East due to the close proximity of adjacent protected properties and as such the buses lane may need to share with general traffic.

4. Terenure Road East/Rathgar Avenue/Orwell Road: Adjustments to the junction layout would be required to facilitate bus lanes on approach to the junction. To provide a bus lane up to the stop lines on Terenure Road East and Rathgar Road, the left turn lanes will have to be removed (due to the proximity of adjacent properties) and as such, left turning vehicles will now need to yield for buses and cyclists in the nearside lane. Removal of on-street parking is necessary on Terenure Road East to provide for outbound bus lane.

5. Rathgar Road/Highfield Road: This junction would need to be upgraded to a signal controlled junction to accommodate right turning buses onto Highfield Road;

6. Highfield Road/Rathmines Road Upper: Adjustments to the existing junction layout would be required to facilitate bus lanes on approach to the junction and to facilitate the right turn for buses only travelling outbound from Rathmines Road Upper to Highfield Road. There will be a requirement to relocate/provide existing/new signal equipment;

7. Rathmines Road Upper/Rathgar Road/Rathmines Road Lower: Adjustments to junction layout would be required to facilitate bus lanes in both directions on approach to the junction. There will be a requirement to relocate/provide existing/new signal equipment;

8. Rathmines Road Lower/Castlewood Avenue: Adjustments to junction layout would be required to facilitate bus lanes in both directions on approach to the junction. There will be a requirement to relocate/provide existing/new signal equipment;

9. Rathmines Road Lower/Leinster Road: This junction would need to be upgraded to accommodate bus lanes through the junction. To provide a bus lane up to the stop line at the Rathmines Road Lower junction in the inbound direction, the left turn lane will have to be removed (due to the proximity of adjacent properties) and as such, left turning vehicles will now need to yield for buses and cyclists in the nearside lane. Bus priority signalling will be provided for buses at the junction. In the outbound direction, the right turn lane onto Leinster Road will need to be replaced by a straight & right lane to provide a bus lane to the Rathmines Road Lower stop line;

10. Rathmines Road Lower/Grove Road/Richmond Street: This junction would need to be upgraded to accommodate bus lanes through the junction. To provide a bus lane up to the Rathmines Road Lower stop line, the straight & left turn lane will have to be removed (due to the proximity of adjacent properties) and as such, left turning vehicles will now need to yield for buses and cyclists in the nearside lane. Bus priority signalling will be provided for buses at the junction.

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

- The alteration of the Terenure Cross junction to facilitate right turning buses from Rathfarnham Road;
- The increased journey time as a result of the queue relocation when compared with continuous bus priority; and
- There are no segregated cycle facilities provided along Rathmines Road Lower, which is identified as Primary Route 10 of the GDA CNP.

6.6.68 It is anticipated that this option would cost approximately €28.7 million (€17.4 million infrastructure costs, €11.3 million land acquisition costs.

Stage 2 Route Options Multi-Criteria Analysis

6.6.69 The 'Stage 2' route options assessment summary tables for the Principle Route Options for Section 2 are presented in Table 3 of Appendix B. The relative ranking of route options against the scheme assessment sub-criteria are summarised in **Table 6.5** below.

Section 2 Summary Dodder River to Grand Canal Crossing								
Appraisal Criteria	**Sub-Criteria**	**Route Option CB1 Rathfarnham Road – Rathmines Road Lower (Inbound traffic only on Rathgar Road, Outbound traffic only Rathmines Road)**	**Route Option CB2 Rathfarnham Road – Rathmines Road Lower (Inbound traffic only on Rathgar and Rathmines Road)**	**Route Option CB3 Rathfarnham Road – Rathmines Road Lower (Outbound traffic only on Rathgar and Rathmines Road)**	**Route Option CB4 Rathfarnham Road – Rathmines Road Lower (Parallel cycle route via Charleville Road, Grosvenor Lodge and Cathal Brugha Barracks.)**	**Route Option CB5 Rathfarnham Road – Rathmines Road Lower (Half Inbound & Half Outbound Bus Lanes on Rathmines Road Lower)**	**Route Option CB6 Rathfarnham Road – Rathmines Road Lower (Outbound traffic only on Rathmines Road Lower)**	**Route Option CB7 Rathfarnham Road – Rathmines Road Lower (Bus lanes via Highfield Road/Rathmines Road Upper) Parallel cycle route via Charleville Road, Grosvenor Lodge and Cathal Brugha Barracks).**
1 Economy	**1A Capital Cost**							
	1B Transport Quality & Reliability							
2 Integration	**2A Land Use Policy**							
	2B Residential Population and Employment Catchments							
	2C Transport Network Integration							
	2D Cycle Network Integration							
	2E Traffic Network Integration							
3 Accessibility & Social Inclusion	**3A Key Trip Attractors**							
	3B Deprived Geographic Areas							
4 Safety	**4A Road Safety**							
	4B Pedestrians Safety							
5 Environment	**5A Archaeology and Cultural Heritage**							
	5B Architectural Heritage							
	5C Flora & Fauna							
	5D Soils, Geology & Hydrology							
	5E Landscape and Visual							
	5F Air Quality							
	5G Noise & Vibration							
	5H Land Use Character							

Table 6.5: Section 2 Options MCA Summary (Sub-Criteria)

6.6.70 In terms of 'Economy', the primary differentiator between route options is the land acquisition, which will have an impact on the Capital Cost. Option CB4 has the largest land acquisition cost due to the land take required along Rathgar Road and from the edge/perimeter of Cathal Brugha Barracks Football pitch. Route option CB7 requires land acquisition from Highfield Road, the southern end of Rathmines Road Upper and from the edge/perimeter of Cathal Brugha Barracks Football pitch. The proposed parallel cycle route for CB4 and CB7 is proposed through Cathal Brugha Barracks along an existing internal roadway (10m width at pinch point), however there will be no requirement for land acquisition of buildings which would compromise architectural heritage.

6.6.71 In terms of journey times, CB5 and CB7 perform the worst over the other options. Option CB5 has no inbound bus lane provided on Rathmines Road Lower between Military Road and Grove Road, and no outbound bus lane provided between Military Road and the Rathmines Road Upper junction. In addition, option CB7 is 500m longer than the other options with a total length of 3.9km.

6.6.1 In terms of 'Integration', a differentiator between route options would be that option CB1, CB2 & CB3 provide for only one-way traffic on Rathmines Road and Rathgar Road which would have a significant traffic impact in terms of movement restrictions and increased traffic/congestion Rathmines Road. Due to the traffic diversions, there will be increased traffic on residential roads e.g. in option CB2 to commute outbound from La Touche Bridge to Rathgar Village, motorists would have to take a lengthy detour via Mountpleasant Avenue, Palmerstown Road/Rathmines Road Lower and Highfield Road, or from the west via Harold's Cross Road and Rathgar Avenue. This outbound diversion route is considered overly long. However, option CB1, has one-way traffic in opposite directions on Rathgar Road and Rathmines Road. This, along with the short two-way section of road at Castlewood Avenue reduces the length of the detour route.

6.6.2 In terms of 'Cycle Network Integration', options CB1, CB2, CB3 and CB6 perform the best because they provide segregated cycle facilities along the entire CBC. These cycle routes align with the GDA Cycle Network Plan proposal for Primary Route SO3/10 which runs along Terenure Road East, Rathgar Road and Rathmines Road Lower. In terms of 'Residential Population and Employment Catchments', CB7 extends east along Highfield Road and Rathmines Road Upper which increases the residential and employment catchment (commercial properties and Trinity Halls Student Accommodations).

6.6.3 In terms of 'Accessibility & Social Inclusion', route option CB7 is considered to be the most attractive option. There are a number of commercial properties and educational buildings (e.g. Kildare Place School) on Rathmines Road Lower. Trinity Halls student accommodation is also very close to Highfield Road by Dartry Road.

6.6.4 In terms of 'Road Safety', a differentiator between route options would be that option CB7 has an additional turning movement compared to the other options and furthermore options CB4 & CB6 have less junctions.

6.6.5 In terms of 'Environment', route options CB4, CB5 and CB6 are generally considered to be less attractive in terms of potential for environmental impacts in relation to Architectural Heritage. The majority of residential properties along Rathgar Road are protected structures. Options CB4, CB5 and CB6 require land take of up to 4.5m width along one side of Rathgar Road (max width 4.5m, 1km length), whereas for options CB1, CB2 and CB3 require land take of 1.5m width is required along the one side of Rathgar Road (1km length). Land acquisition of protected structures involves relocation of boundary walls or railings. There will be no impact on the protected buildings themselves. The proposed parallel cycle route for CB4 and CB7 is proposed to travel through Cathal Brugha Barracks along an existing internal roadway (10m width at pinch point), however there will be no requirement for land acquisition of buildings which would compromise architectural heritage.

6.6.6 In terms of 'Flora & Fauna', route option CB7 is considered to be less attractive than the other options. Options CB7 requires the removal of a number of trees

on Highfield Road and Rathmines Road Lower in the vicinity of Kildare Place School to provide bus lanes in both directions. Options CB4, CB5 & CB6, require the removal of a number of trees from residential front curtilages on Rathgar Road due carriageway widening, compared to that of options CB1, CB2 & CB3.

6.6.7 In terms of 'Landscape and Visual', options CB4, CB5, CB6 & CB7 are considered the least attractive options. Options CB4, CB5 & CB6 involve the possible land acquisition of 4.5m (max) width along one side of Rathgar Road. This would involve the relocating of protected residential boundary walls & railing and the removal of trees along one side of the entire road. Options CB7 requires the removal of a number of trees on Highfield Road and Rathmines Road Lower in the vicinity of Kildare Place School to provide bus lanes in both directions. Furthermore, also there is potential negative impacts associated with the re-engineering of Highfield Road to provide bus lanes.

6.6.8 In terms of 'Land Use Character', options CB1, CB2 & CB3 are considered the least attractive options. Options CB1, CB2 & CB3 restrict access to commercial amenities (Rathgar Village and Rathmines Village) and residential properties due to the provision of one-way traffic along Rathgar Road and Rathmines Road. Option CB6 has restricted access to commercial amenities (Rathmines Village) and residential properties due to the provision of one-way traffic on Rathmines Road. Option CB7, has potential negative impacts associated with the re-engineering of mature roads (Highfield Road) to provide for bus lanes, in addition there are negative impacts associated with removing of on-street parking for residents on both sides of the road at the southern end of Rathmines Road Lower. As mentioned previously, options CB4 & CB7 are proposed to travel through Cathal Brugha Barracks along an existing internal roadway (10m width at pinch point), however there will be no requirement for land acquisition of buildings which would compromise their intended use.

6.6.9 A summary of the assessment and relative ranking of route options against the six main assessment criteria is presented in Table 6.6 below.

Section 2 Summary (main criteria) Dodder River to Grand Canal Crossing							
Appraisal Criteria	Route Option CB1 Rathfarnham Road – Rathmines Road Lower (Inbound traffic only on Rathgar Road, Outbound traffic only Rathmines Road)	Route Option CB2 Rathfarnham Road – Rathmines Road Lower (Inbound traffic only on Rathgar and Rathmines Road	Route Option CB3 Rathfarnham Road – Rathmines Road Lower (Outbound traffic only on Rathgar and Rathmines Road)	Route Option CB4 Rathfarnham Road – Rathmines Road Lower (Parallel cycle route via Charleville Road, Grosvenor Lodge and Cathal Brugha Barracks.)	Route Option CB5 Rathfarnham Road – Rathmines Road Lower (Half Inbound & Half Outbound Bus Lanes on Rathmines Road Lower)	Route Option CB6 Rathfarnham Road – Rathmines Road Lower (Outbound traffic only on Rathmines Road)	Route Option CB7 Rathfarnham Road – Rathmines Road Lower via Highfield Road/Rathmines Road Upper. Parallel cycle route via Charleville Road, Grosvenor Lodge and Cathal Brugha Barracks).
1 Economy							
2 Integration							
3 Accessibility & Social Inclusion							
4 Safety							
5 Environment							

Table 6.6: Section 2 Options MCA Summary (Main Criteria)

6.6.10 Based on the assessment undertaken, route option CB4 offers more benefits over CB1, CB2 & CB3 which includes maintaining two-way traffic traffic on Rathgar Road and Rathmines Road. CB4 is therefore preferred for Section 2 for the following reasons:

- It will provide the shortest inbound and outbound journey times for bus services;
- It is ranked one of the highest in terms of Road Safety (No. of turning movements & junctions);
- It provides segregated bus facilities for the majority of an existing bus corridor;
- It provides segregated cycle facilities for the majority of its route, this includes parallel segregated cycle facilities; and
- Two-way general traffic maintained on Rathgar Road and Rathmines Road Lower.

6.6.11 Based on the multi-criteria assessment undertaken for this section of the study area, option CB4 is identified as the preferred route option for Section 2 between Dodder River Crossing and The Grand Canal Crossing. Therefore, CB4 will form part of the emerging preferred route.

6.6.12 The benefits of Section 2 of the preferred route CB4 can be summarised as follows: -

i. Enhanced bus priority is provided in both directions for the route delivering increased reliability and shorter journey times;

ii. The proposed interventions will deliver significantly enhanced bus services for this catchment area which includes Rathgar Village and Rathmines Village which are heavily reliant on the bus to service its public transport needs; and

iii. Provides segregated cycle facilities in both directions on Terenure Road East and Rathgar Road which aligns with the GDA Cycle Network Plan proposal for the Primary Cycle Route 10.

7.0 SECTION 3 ROUTE OPTION ASSESSMENT

7.1 Section 3 – Introduction

7.1.1 When assessing route options for Section 3 of the study area, generally there is one crossing of the Grand Canal via Rathmines Road Lower (at La Touche Bridge). There are several route options available from the approach route (La Touche Bridge) which primarily serve different areas of the city centre as illustrated in **Figure 7.1** below.

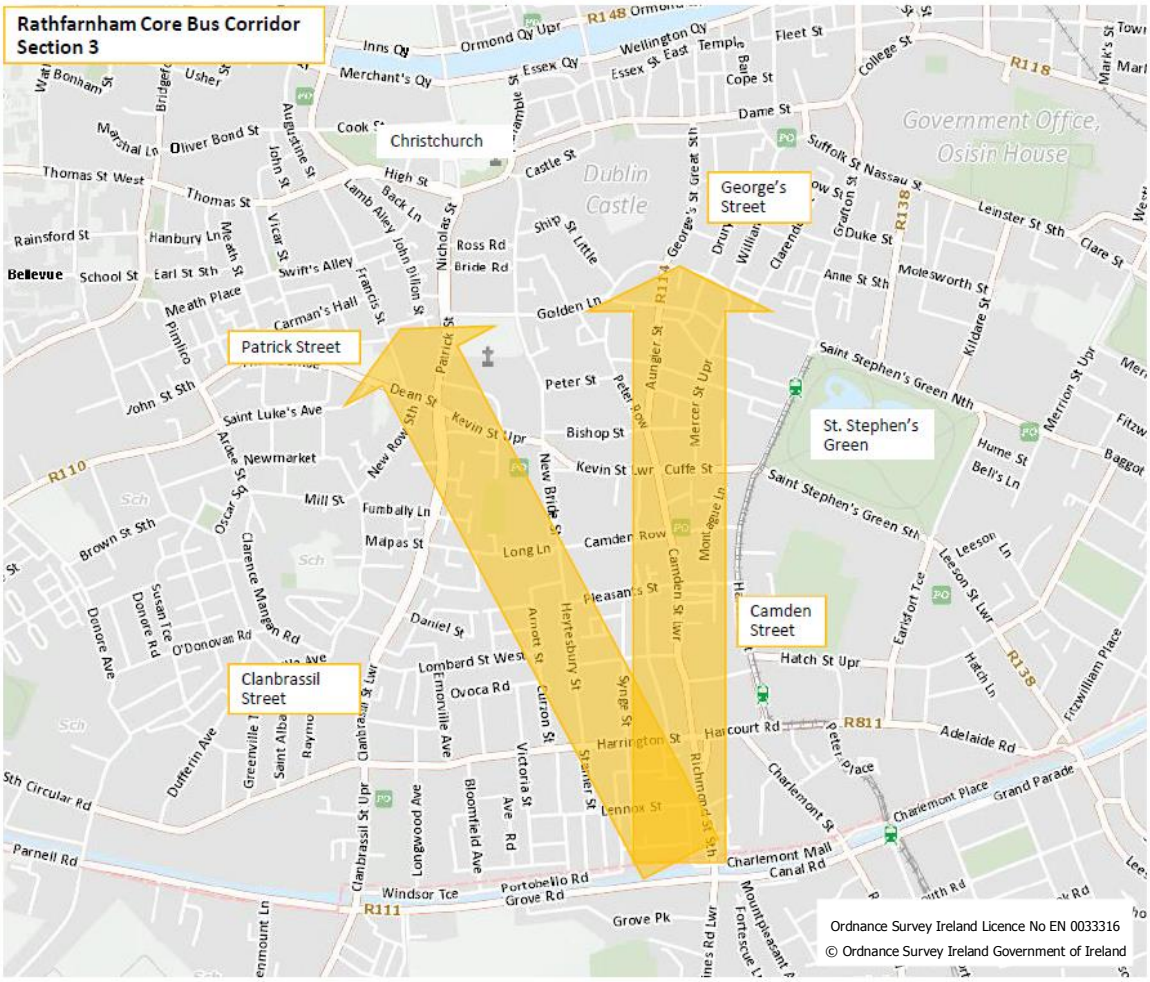


Figure 7.1: Principal Routes for Section 3 of Study Area

7.1.2 The route options serve catchments at Leonards Corner, St. Patricks Street, Kevin Street, Harcourt Street, Camden Street, Georges Street, and Christchurch with both routes ending at Christchurch.

7.1.3 The assessment process for Section 3 has been outlined in Section 4 of this report. In this Section of the report it is proposed to set out the two-stage assessment procedure and results for the section of the study area between the Grand Canal and the northern extent of the study area (section 3). Route options which passed the initial Stage 1 Assessment were progressed to the Stage 2 Assessment, as illustrated in the Figure 7.2 below.

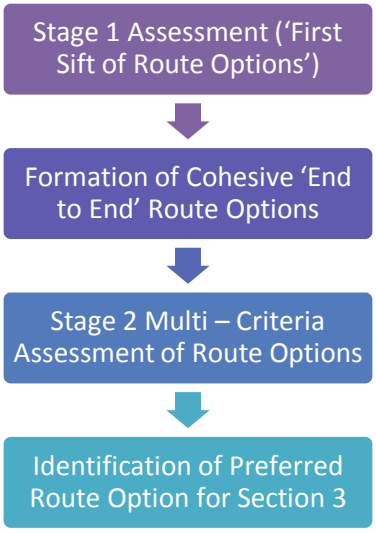


Figure 7.2: Route Option Assessment Stages

7.1.4 The City Centre area north of the Kevin Street/Cuffe Street junction combines a number of multi-modal transportation objectives and proposals such as the College Green scheme and other CBC/BRT corridors. Therefore, the junction of Kevin Street/Cuffe Street/Wexford Street has been taken to be the natural northern terminus for the Rathfarnham to City Centre Core Bus Corridor Scheme. The assessment if the options for section 3 is discussed further in the following sections.

7.2 Section 3: Stage 1 Route Option Assessment

7.2.1 Each of the route options considered as part of the Stage 1 route option assessment for Section 3 are illustrated in **Figure 7.3** below.

Figure 7.3: Route Options within Section 2 of Study Area

7.2.2 **Table 7.1** below presents a summary of the 'Stage 1' route options sifting process for Section 3.

Table 7.1: Route Option Sifting (Stage 1) Summary – Section 3				
Route Option	**Name / Section**	**Area Characteristics**	**Comments**	**Pass/ Fail**
SW67	Charlemont Street	• City Centre • Office • Commercial Retail • Mandatory cycle lanes • Indented 'on-street' parking • Primary cycle route (GDA CNP No. 11)	Single carriageway (12.5-15.0m) 3 lane road (2GT & 1BL). This route has a northbound bus lane as well as footways & mandatory cycle lanes both sides of the carriageway (12.5-15.0m wide carriageway). Bus priority (including cycle lanes) is achievable in both directions by reducing the width of the general traffic lanes, widening carriageway into footpaths & removal of young trees. A number of parking spaces on the pavement will have to removed. Bus priority is achievable, therefore route carried forward to Stage 2 Assessment.	Pass
SW68	Richmond Street South	• City Centre • Mandatory cycle lanes • Commercial/Retail • Portobello College • Primary cycle route (GDA CNP No. 10)	Existing route has been divided into two sections. Section 1 (Portobello bridge to Richmond Street) - Mandatory cycle lane travelling northbound, advisory cycle lane southbound. Section 2 (Richmond Street to Harrington St) – One-way single carriageway with two general traffic lanes, contra-flow bus/cycle lane travelling southbound. Bus priority (including cycle lanes) can be achieved for the first section for 160m before pinch point after the junction with Lennox St (13.0-13.5m width). Bus priority inbound in section 2 can only be achieved by reallocation of a traffic lane from general traffic to bus lane to ensure priority at junctions. Bus priority is achievable, therefore carried forward to the Stage 2 Assessment.	Pass
SW70	Clanbrassil Street Upper	• City Centre • Advisory cycle lanes in both directions • Commercial/Retail • Indented 'on-street' parking • Secondary cycle route (GDA CNP No. 9B)	Single carriageway 2-3 lane road with bus lane for 75m inbound direction (10.8m-15.4m wide carriageway). Bus priority can be achieved by reallocation of a general traffic lane to a bus lane to ensure priority at junctions, however this may create capacity constraints. The Robert Emmet Bridge and the Limestone walls on the northern side of the bridge are protected structures. Two-way bus priority with cycle facilities are not achievable at the bridge. Full bus priority may be achievable except for the bridge and the immediate approaches as such this section will be carried forward to the Stage 2 Assessment.	Pass
SW71	South Circular Road (between Clanbrassil Street Upper & Richmond Street South)	• City Centre • Commercial/Retail • On-street parking • Semi-mature trees • Secondary cycle route (GDA CNP No. C7)	Single carriageway 3 lane (2GT & 1BL) road (9.0m-13.5m). Bus Lanes begin in opposite directions at the junction between Emor St and South Circular Rd. There are footpaths on both sides of the road, however no cycle lane provided. Extension of the bus lanes in both directions can be achieved by reducing the width of the general traffic lanes, widening the carriageway into footpaths (and removing semi-mature trees) and removing on-street parking (excluding cycle facilities). There are protected buildings along both sides of the carriageway for the first 250m from Clanbrassil Street Upper. The route may require alternative segregated cycle route. Full bus priority may be achievable as such this section will be carried forward to the Stage 2 Assessment.	Pass

Table 7.1: Route Option Sifting (Stage 1) Summary – Section 3				
Route Option	**Name / Section**	**Area Characteristics**	**Comments**	**Pass/ Fail**
SW72	Harcourt Road (between Richmond Street South & Charlemont Street)	• City Centre • No cycle lanes • Commercial/Retail • Secondary cycle route (GDA CNP No. C7)	One-way 3-4 lane single carriageway road (10.7-14.2m wide carriageway). Bus priority (including cycle lane) could only be achieved by reallocating one traffic lane to buses, however this may lead to capacity constraints. Bus priority may be achievable as such this section will be carried forward to the Stage 2 Assessment.	Pass
SW73	Camden Street Upper (between Harcourt Rd and Charlotte Way)	• City Centre • Commercial/Retail • Some houses/hostels have steps to entrance from road level • Primary cycle route (GDA CNP No. 10)	Single carriageway, 4 lanes (3GT & 1BL) road (approx. 13.8-14.4m wide carriageway). One-way carriageway northbound with mandatory cycle lane with contra flow bus and cycle lane southbound. Currently there is only one general traffic lane on this link travelling northbound towards Wexford St into the City Centre. 18.9-21.3m distance available exists between the building lines of properties on opposite sides of the carriageway. Bus priority in both directions may be achievable if the northbound mandatory cycle lane is removed and cyclists share the bus lane. Bus priority may be achievable as such this section will be carried forward to the Stage 2 Assessment.	Pass
SW74	Harcourt Street (between Charlotte Way & Harcourt Rd)	• City Centre • No cycle lanes • Commercial/Retail • Offices • Primary cycle route (GDA CNP No. 11)	One-way carriageway with two southbound general traffic lanes (approx. 6m wide carriageway) and two-way tram lanes with Tram station (Harcourt Station). Bus priority may not be achievable due to the close proximity to the adjacent properties, 9.0-9.1m exists between the building lines and the Luas track. Bus priority could only be achieved by reallocating one of traffic lanes from general traffic to buses, which will lead to capacity constraints.	Fail
SW75	Charlotte Way (between Camden Street and Harcourt Street)	• City Centre • No cycle lanes • Commercial/Retail • Offices • Secondary cycle route (GDA CNP No. 10/11)	One-way carriageway (approx. 11-12.6m wide) eastbound with mandatory cycle lane, with 3 lanes which flare to 4 lanes approaching the junction. Bus priority may be achievable by reallocating a general traffic lane to buses for the eastbound direction, as such this section will be carried forward to the Stage 2 Assessment.	Pass

Table 7.1: Route Option Sifting (Stage 1) Summary – Section 3

Route Option	Name / Section	Area Characteristics	Comments	Pass/ Fail
SW76	Camden Street/Wexford Street	• City Centre • Advisory cycle lanes • Commercial/Retail • Indented 'on-street' parking • Loading Bays • Secondary cycle route (GDA CNP No. 10)	Bus lane travelling northbound starts at Grantham Street junction and terminates at Camden Row Junction (BoBo's restaurant). Advisory cycle lane at the beginning of link. Bus lane travelling southbound commences after Camden Place Junction (Anseo Pub) and terminates at the junction with Charlotte Way. Bus priority southbound between Montague St and Camden Place junctions can be achieved by reducing the width of the general traffic lanes and widening the carriageway into the eastern footpath. Due to the encroachment into footpath, the four indented car parking spaces and cycle parking stands will have to be removed. Bus priority from Montague St to Kevin St/Cuffe St may not be achievable due to the proximity to the adjacent properties, a pinch point of 15.9m exists between the building lines of properties on opposite sides of the carriageway. One-way bus priority (including cycle lane in opposite direction) is achievable by reducing the width of the general traffic lanes and widening into the footpath/loading bays/indented on-street parking. Loading could be permitted in the bus lanes during off-peak hours. Bus priority may be achievable along the route as such this section will be carried forward to the Stage 2 Assessment.	Pass
SW77	Harcourt Street	• City Centre • Advisory cycle lanes • Commercial/Retail • Indented 'on-street' parking • Majority of houses and nightclubs have steps to entrance from road level • Primary cycle route (GDA CNP No. 11)	One-way single carriageway with a single general traffic lane travelling northbound, with advisory cycle lane (5.6-7.5m wide carriageway). The route has a two-way tram lane (Harcourt Street to St. Stephen's Green Stop) and one-way general traffic lane and advisory cycle lane. There are a large number of parked cars adjacent to the Garda Station. Due to the close proximity between the property lines (approx. 8.6m) and the Luas line (approx. 8.6m), there is little potential to widen road over much of its length. One-way bus priority (including cycle lane) would result in encroachment into a number of protected residential and privately-owned properties and steps/entrances preventing access into the buildings. The reallocation of traffic lanes to bus lanes will not be possible as there is only one general traffic lane at present and access to the Garda Station and commercial units need to be maintained. Due to the aforementioned constraints and the need to have continued access for residents, commercial properties and An Garda Síochána, this section will not be carried forward to the Stage 2 Assessment.	Fail
SW78	Castle Street	• City Centre • No cycle lanes • Dublin Castle • No provision for cycle route (GDA CNP)	One-way single carriageway 1 lane road (5.3-7.6m wide carriageway including on-street parking). On- street car parking and coach parking alternating either side of carriageway. Bus priority may not be achievable due to the close proximity to the adjacent protected properties, approx. 9.5m exists between the building lines. Due to the aforementioned constraints and this route is not considered appropriate for CBC, it will not be carried forward to the Stage 2 Assessment.	Fail

Table 7.1: Route Option Sifting (Stage 1) Summary – Section 3				
Route Option	**Name / Section**	**Area Characteristics**	**Comments**	**Pass/ Fail**
SW80	Cuffe St (between Harcourt St & Mercer Street Upper)	• City Centre • Advisory cycle lanes • Adjacent to Luas • Semi-mature trees • Secondary cycle route (GDA CNP No. 12)	Single carriageway with 4 lanes and a median (approx. 16.7m wide including median). Full bus priority in both directions may be achievable by reducing the width of the general traffic lanes, removing central island/semi-mature trees and widening into the footpath (also removing trees). Full bus priority may be achievable as such this section will be carried forward to the Stage 2 Assessment.	Pass
SW81	Cuffe St (between Mercer Street Upper & Wexford St)	• City Centre • Advisory cycle lanes • Adjacent to Luas • Semi-mature trees • Feeder cycle route (GDA CNP)	Single carriageway with 4 general traffic lanes and a median (approx. 16.7m including median). Full bus priority in both directions may be achievable by reducing the width of the general traffic lanes, removing central island/trees and widening into the footpath (also removing trees). Left turning general traffic heading southbound onto Wexford Street will have to merge into the bus lane at junction. Full bus priority may be achievable as such this section will be carried forward to the Stage 2 Assessment.	Pass
SW92	Clanbrassil Street Lower, New St. S	• City Centre • Commercial Retail • Advisory cycle lanes southbound • Protected Lamp Posts • Secondary cycle route (GDA CNP No. 9B)	Dual carriageway 3-5 lane two-way road between Kevin Street and Daniel Street (approx. 12.0-17.0m including median & cycle lanes). Cycle lane northbound for first 130m of link. Bus lane northbound starts at the Mace Shop, cycle lane terminates in the vicinity of Lombard Street West. Advisory cycle lane southbound with no bus lane. Reallocation of one traffic lane from general traffic to buses may be needed to ensure bus priority in the southbound direction. Additional southbound bus lane may be introduced, this would include encroachment into the eastern side footpath and certain locations on the western side or reclaiming of the median. Bus priority may be achievable as such this section will be carried forward to the Stage 2 Assessment.	Pass
SW98	Kevin St Upper (between Bride St and Patrick St)	• City Centre • Advisory cycle lanes • Residential • Commercial/Retail • Protected monument in splitter island • No designated cycle route (GDA CNP)	This route has two general traffic lanes and a cycle lane in both directions. Westbound lanes split between straight and left turning vehicles (2 lanes each direction) with cycle lane (cycle lane terminated westbound) on approach to junction with Patrick Street. The provision of bus priority would not be achievable (retaining same no. general traffic lanes) due to the width constraints between the building lines of the properties on both sides of the road, with as little as 20m available along the majority of the route. The reallocation of a general traffic lane to a bus lane in both directions and possible encroachment into the green area on the splitter island at the Patrick Street junction (with protected monument) would be needed to provide bus priority for the route. However, bus priority is achievable, as such this route will be carried forward to the Stage 2 Assessment.	Pass

Table 7.1: Route Option Sifting (Stage 1) Summary – Section 3

7.2.3 Of these 15 options considered for Section 3, 13 (SW 67, 68, 70, 71, 72, 73, 75, 76, 80, 81, 83, 92 & 98) were progressed to the next assessment stage. These route options are presented in **Figure 7.4** below.

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Figure 7.4: Route Options passing Stage 1 'Sift' in Section 3

7.3 Section 3: Stage 2 – Option Assessment

Introduction

7.3.1 Following the 'Stage 1' sift for Section 3 of the study area, the remaining route options were combined to form 2 cohesive route options between the Grand Canal Crossing and Kevin Street as shown in **Figure 7.5** below. It should be noted that certain route options which pass the Stage 1 assessment were not taken forward to the Stage 2 assessment as they were isolated links which do not combine with other route options to form cohesive routes e.g. Charlemont Street (SW67), Charlotte Way (SW75) and Cuffe Street (SW80 & SW81).

7.3.2 The two principle route options, as identified above which were taken forward are as follows:

- Option CC1- A route option via Richmond Street, Camden Street and Wexford Street; and
- Option CC2 - A route option via Richmond Street, South Circular Road, Clanbrassil Street and New Street South.

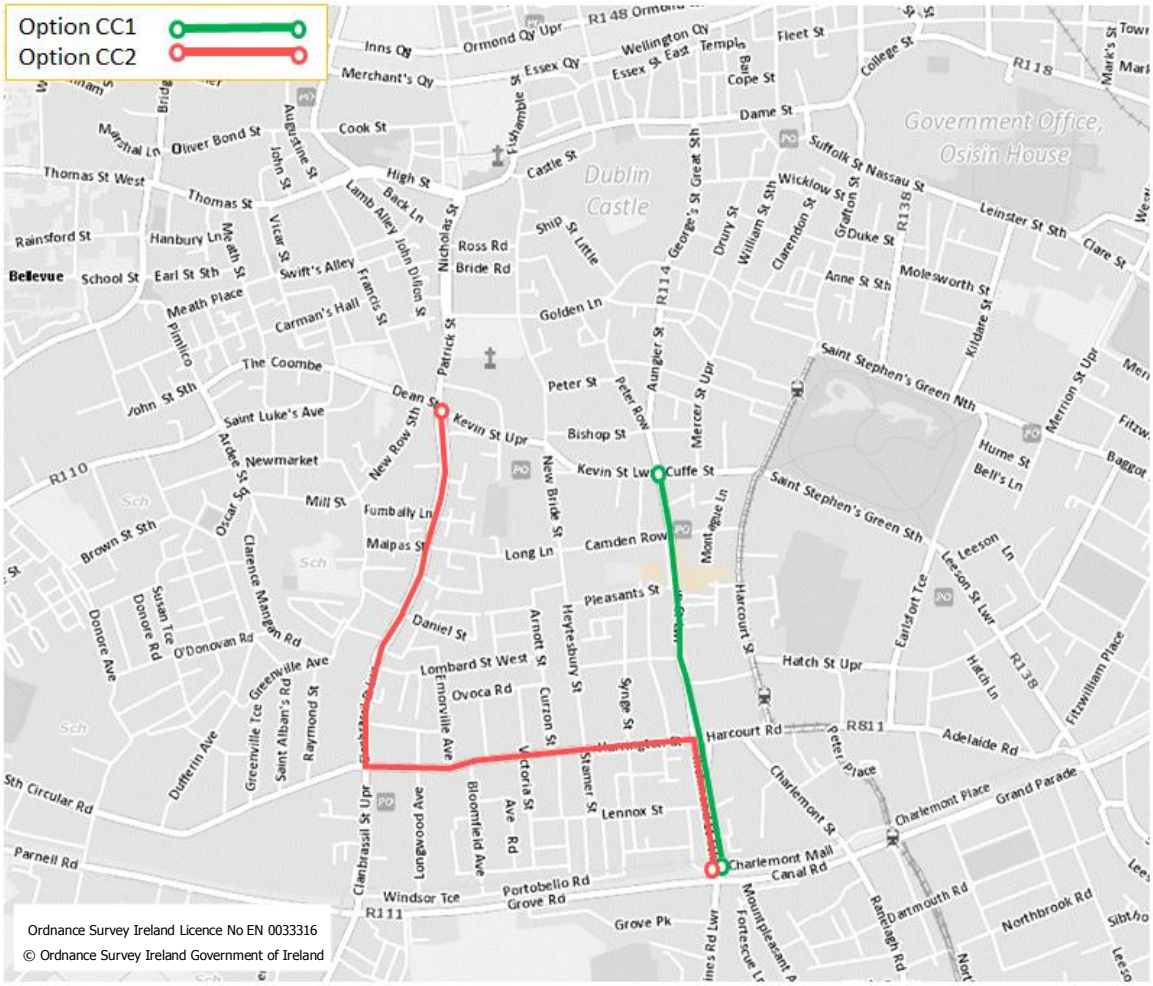

Figure 7.5: Section 3 Principal Route Options

Route Option CC1: Richmond St – Camden St – Wexford St

7.3.3 Route option CC1 will provide segregated bus facilties between La Touche Bridge/Richmond Street South and Wexford Street/Kevin Street Lower junction (with the exception of 75m section of Richmond Street and 60m section of Wexford Street). The CBC route is presented in **Figure 7.6** below. Cyclists will be catered for via a parallel cycle route along Martin Street/Heytesbury Street/Bride Street as illustrated in **Figure 7.7**, which is identified as Primary Route 9 within the GDA CNP.

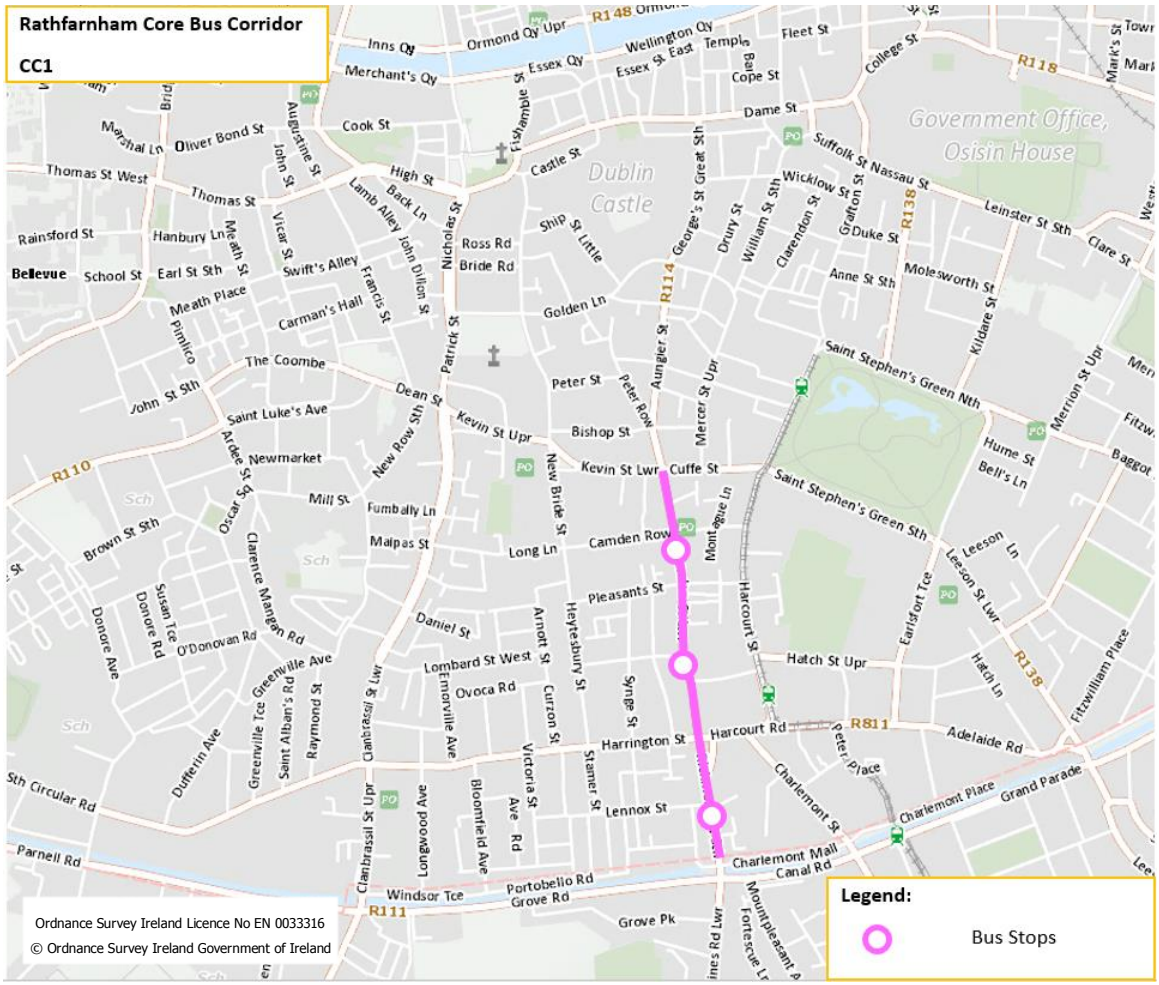

Figure 7.6: Route Option CC1 Richmond Street -Camden St – Dame St - Christchurch

7.3.4 **Inbound:** The CBC service will proceed in a northerly direction from Richmond Street, to Camden Street and along Wexford Street. A segregated bus lane provided for the entire route.

7.3.5 **Outbound:** The southbound option follows the same route as northbound with a segregated bus lane provided for majority of the route, with the exception of a 75m section of Richmond Street and 60m section of Wexford Street, where segregated bus priority (in the southbound direction) is not achievable and buses will share with general traffic. The existing contra-flow bus lane on Richmond Street will continue to be retained.

7.3.6 **Stops:** The number of stops is illustrated in **Figure 7.6**. There has been rationalistion of bus stops which are in close proximity such as, the bus stops at Camden Street/Grantham Street (bus stop no. 1352).

7.3.7 The journey time for this route option from the Rathmines Road/Grove Road/Canal Road junction to Christchurch is 5 minutes (in both directions), over a distance of approximately 0.9km.

7.3.8 It is proposed to provide continuous bus priority in both directions along the route with the exception of a 75m section of Richmond and 60m section of Wexford Street where segregated bus priority in the southbound direction is not achievable.

7.3.9 This route option comprises Secondary Cycle Route 10 along Camden Street/George's Street, Primary Route 7 along Dame Street and Primary Route 9 along Heytesbury Street as identified within the GDA Cycle Network Plan. The removal of the GDA CNP proposed cycle facilities along the CBC route does not align with the GDA Cycle Network Plan proposal for Route 10. However, cyclists will be catered for via a parallel cycle route along Martin Street/Heytesbury Street/Bride Street. Due to width constraints, a mixed or shared street arrangement will only feasible along the Martin Street. The proposed construction of a parallel cycle route on Heytesbury Street/Bride Street aligns entirely with Primary Route 9 and will connect with the new bridge proposed in Section 2 of the CBC study area. Segregated cycle facilities are also proposed on Harrington

Street to link the 'Clonskeagh to City Centre' cycle scheme with the parallel cycle route.

7.3.10 There are four controlled junctions and three pedestrian crossings along this route.

7.3.11 The option CC1 proposals are presented in **Figure 7.7** while sample cross sections are presented in **Figure 7.8** below.

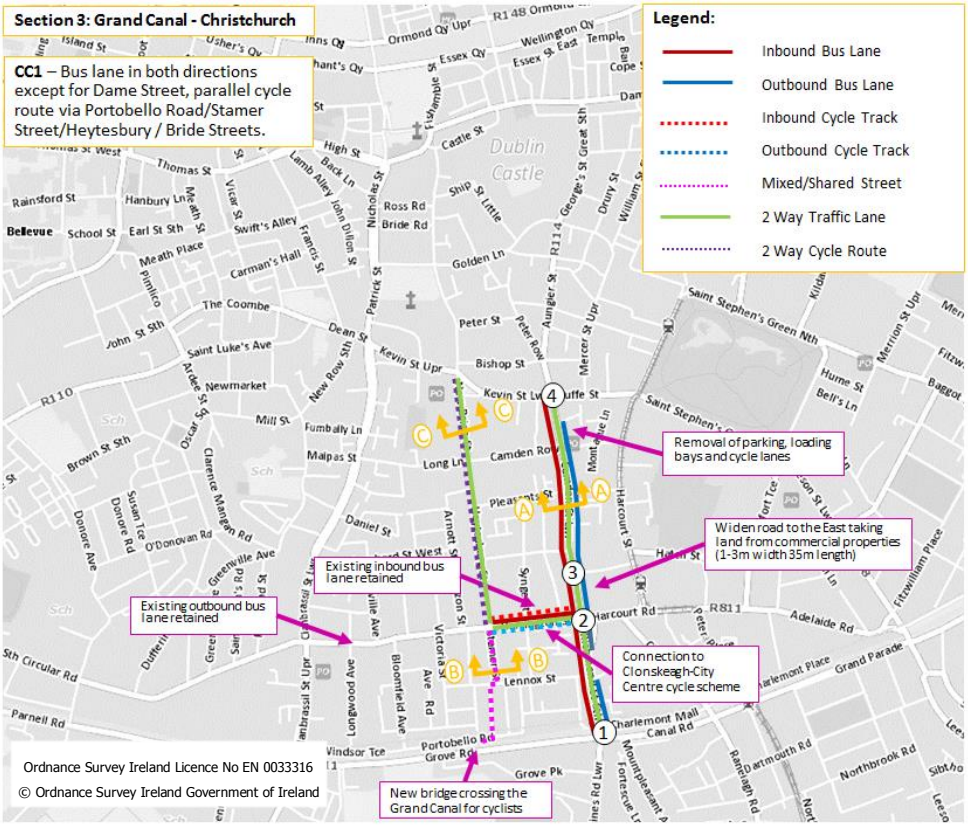

Figure 7.7: Route Option CC1 Proposal

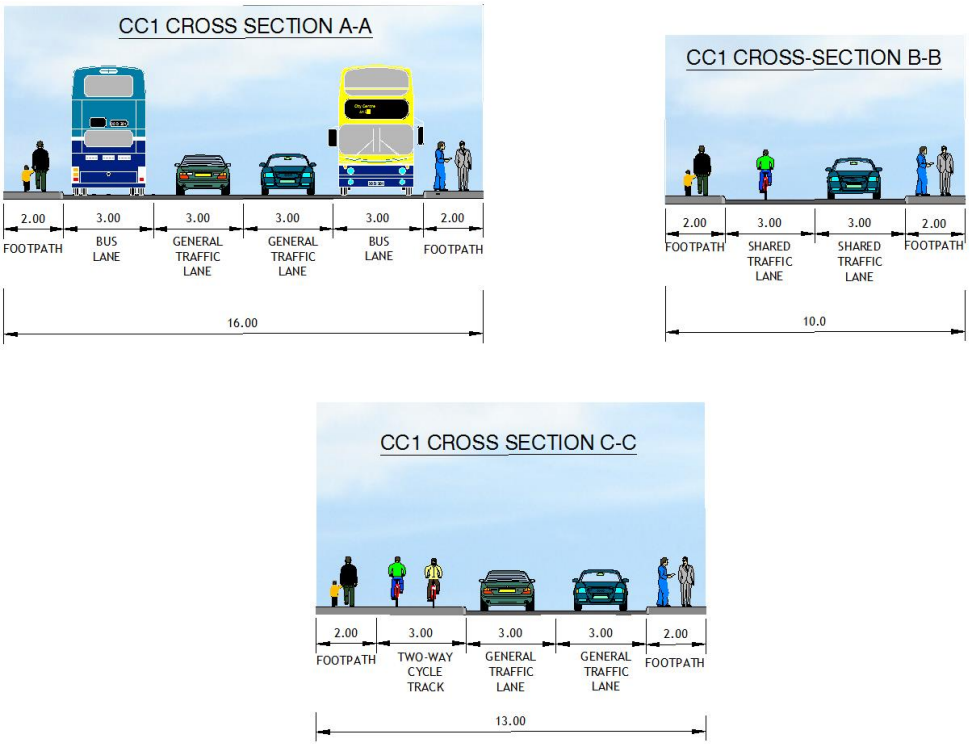

Figure 7.8: Route Option CC1: Proposed Cross Section

Junctions:

7.3.12 There are four signalised junctions along this route option, some of which would require upgrading to facilitate bus priority. The locations of these junctions are presented in Figure 7.7 and discussed in further detail below: -

1. Rathmines Road Lower/Richmond Street South/Grove Road: This junction would need to be upgraded to accommodate bus lanes through the junction. To provide a bus lane up to the Richmond Street South stop line, the straight & left turn lane onto Canal Road will have to be removed (due to width constraint of La Touche Bridge) and as such, left turning vehicles will now need to yield for buses and cyclists in the nearside lane. Bus priority signalling will be provided for buses at the junction

2. Richmond Street South/Harrington Street/Camden Street Upper: Adjustments to the existing junction layout would be required to facilitate bus lanes on approach to the junction. Removal of the inbound cycle lane to provide an inbound bus lane on Richmond Street South is also required. Cycle facilities will be provided through the junction to link the

proposed parallel cycle route with the Clonskeagh Cycle Scheme. The existing offside right turn lane (westbound) on Harcourt Road will be removed to provide an eastbound traffic lane. There is also a possible requirement to relocate/provide existing/new signal equipment;

3. Camden Street Upper/Charlotte Way: Adjustments to the junction layout would be required to facilitate bus lanes on approach to the junction. Removal of the inbound cycle lane to provide for an inbound bus lane on Camden Street Upper is also required. There is also a possible requirement to relocate/provide new signal equipment; and

4. Wexford Street/Kevin Street Lower: This junction would need to be upgraded to accommodate bus lanes through the junction northbound. Widening the carriageway into the footpaths is necessary along with the removal of the existing advisory cycle lanes (due to the close proximity of adjacent properties). Left turning vehicles will need to yield for buses in the nearside lane. Bus priority signalling will be provided for buses at the junction. There is also a possible requirement to relocate/provide existing/new signal equipment;

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

- The removal of cycle lanes and a number of parking and loading bays on Wexford Street & Camden Street;
- There are no segregated cycle facilities provided along the CBC route along Richmond Street, Camden Street and Wexford Street, which is identified as Secondary Route 10 of the GDA CNP; and
- Due to the width constraints, a mixed or shared street arrangement is only feasible along Martin Street and Stamer Street.

7.3.14 It is anticipated that this option would cost approximately €3.1 million (€3.1 million infrastructure costs. There are no land acquisition costs along this section.

Route Option CC2: Richmond Street – South Circular Road - Clanbrassil Street – Patrick Street – Nicholas Street – Christchurch

7.3.15 Route option CC1 will provide segregated bus facilties between La Touche Bridge/Richmond Street South and New Street South/Kevin Street Upper junction (with the exception of 75m section of Richmond Street). The CBC route is presented in **Figure 7.9**. Cyclists will be catered for via a parallel cycle route along Grove Road (existing cycle facilities)/Longwood Avenue/Emorville Avenue and will reconnect with the CBC route at Lombard Street West.

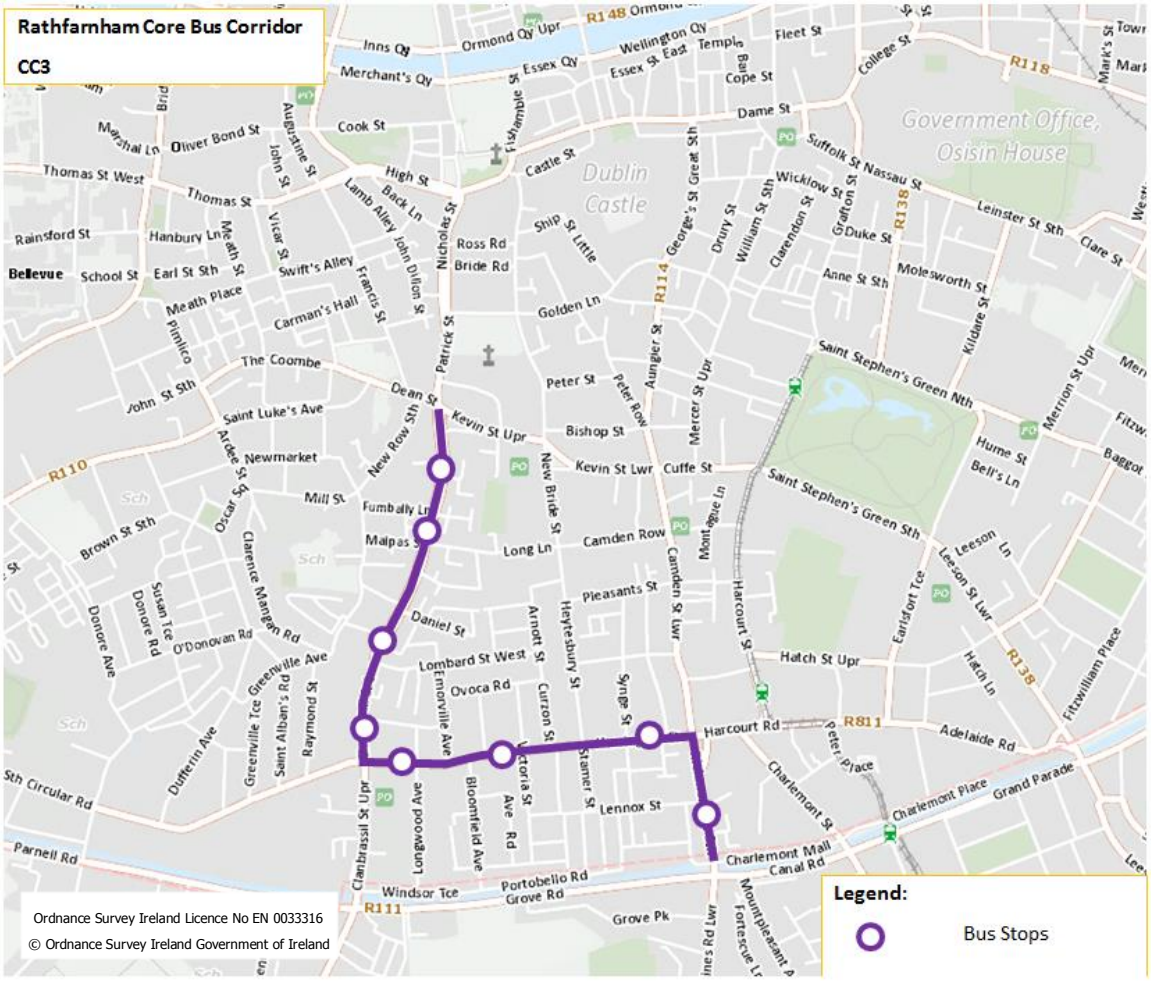

Figure 7.9: Route Option CC2 Richmond Street - South Circular Road - Clanbrassil Street – New Street South

7.3.16 **Inbound (Northbound):** The CBC service will proceed from Richmond Street, turning left at Harrington St/Camden Street junction continues towards South Circular Road before turning right at Leonards Corner and proceeding onto Clanbrassil Street and onto New Street South. A segregated bus lane will be provided for the entire route.

7.3.17 **Outbound (Southbound):** The southbound option follows the same route as northbound with a segregated bus lane provided for the entire route.

7.3.18 **Stops:** It is anticipated that the existing number of stops will be retained as shown in **Figure 7.9**.

7.3.19 The journey time for this route option from the Rathmines Road/Grove Road/Canal Road junction to Christchurch is 9 minutes, over a distance of approximately 1.8km.

7.3.20 It is proposed to provide continuous bus priority in both directions along the entire route.

7.3.21 This route option includes a section of Secondary Orbital Route C7 along South Circular Road as identified within the GDA Cycle Network Plan. The proposed removal of cycle facilities along Richmond Street does not align with the GDA Cycle Network Plan proposal for route 10. The proposed construction of a parallel cycle route on Longwood Avenue/Emorville Avenue does not align with Secondary Route 9B along Clanbrassil Street. Due to width constraints, a mixed or shared street arrangement is only feasible along the parallel cycle route. The remaining section of the route on Clanbrassil Street/New Street South does align with Secondary Route 9B of the GDA Cycle Network Plan, as segregated cycle facilities are proposed in conjunction with the proposed bus facilities.

7.3.22 The provision of bus lanes in both directions on Clanbrassil Street Lower can be facilitated within the existing road reservation however, it will require the removal of on street parking to the south of Lombard Street West. The acquisition of a site for replacement parking near the South Circular Road junction (Leonard's Corner) has been proposed.

7.3.23 There are seven signal controlled junctions and four pedestrian crossings along this route.

7.3.24 The option CC2 proposals are presented in **Figure 7.10** while sample cross sections are presented in **Figure 7.11** below.

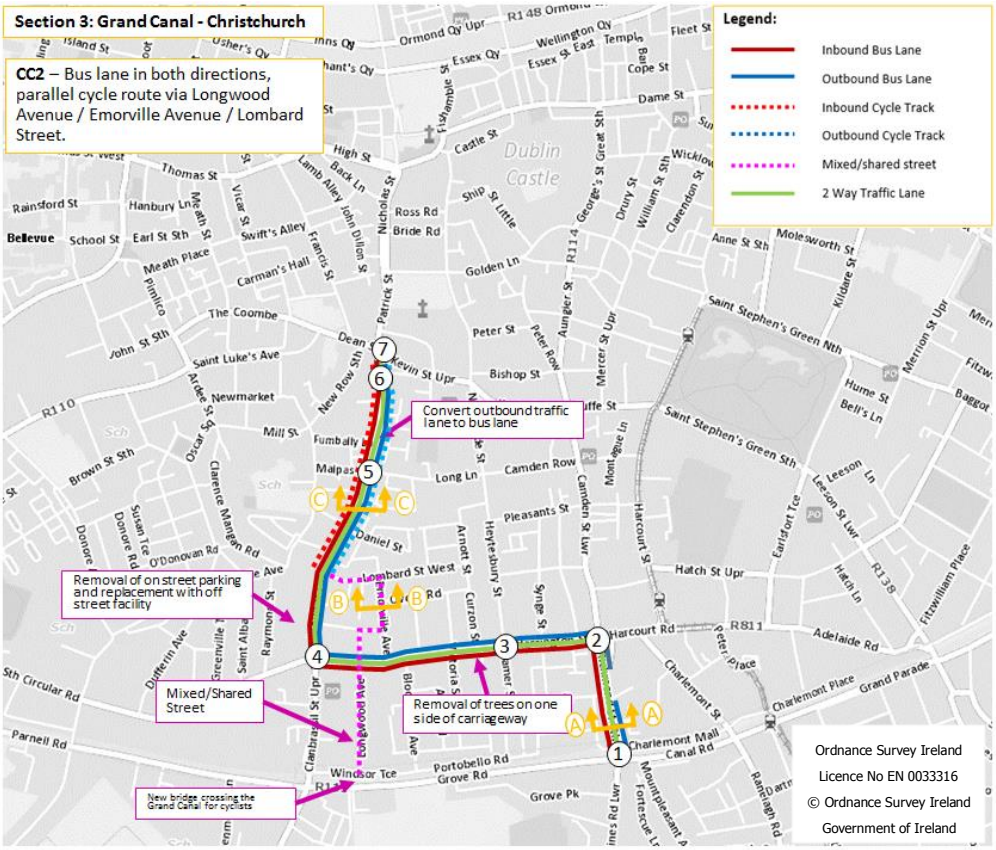

Figure 7.10: Route Option CC2 Proposal

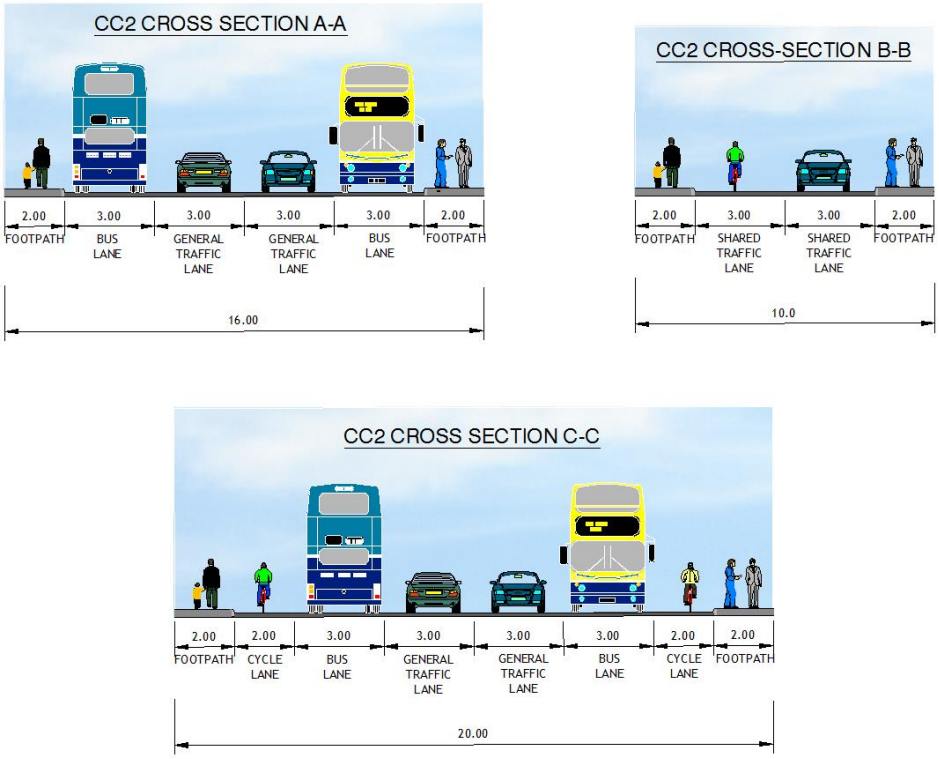

Figure 7.11: Route Option CC2: Proposed Cross Section

Junctions:

7.3.25 There are 7 signalised junctions along this route option, some of which would require upgrading to facilitate bus priority. The locations of these junctions are presented in **Figure 7.10** and discussed in further detail below: -

1. Rathmines Road Lower/Richmond Street South/Grove Road: This junction would need to be upgraded to accommodate bus lanes through the junction. To provide a bus lane up to the Richmond Street South stop line, the straight & left turning lane onto Canal Road will have to be removed (due to width constraint of La Touche Bridge) and as such, left turning vehicles will now need to yield for buses and cyclists in the nearside lane. Bus priority signalling will be provided for buses at the junction.

2. Richmond Street South/Harrington Street/Camden Street Upper: Adjustments to the existing junction layout would be required to facilitate bus lanes on approach to the junction, and also to facilitate the

right turn for buses onto Richmond Street South. The removal of the inbound cycle lane to facilitate an inbound bus lane on Richmond Street South from Harrington Street is also required. Cycle facilities will be provided through the junction to link the proposed parallel cycle route with the Clonskeagh Cycle Scheme. The existing offside right turn lane (westbound) on Harcourt Road will be removed to provide an eastbound general traffic lane. Bus priority signalling will be provided for buses at the junction. There is also a possible requirement to relocate/provide new signal equipment;

3. Harrington Street/Heytesbury Street: Adjustments to junction layout would be required to facilitate bus lanes on approach to the junction. The nearside straight & left lane on Harrington Street will be reallocated to a bus lane. Bus priority signalling will be provided for buses at the junction. There is also a possible requirement to relocate/provide existing/new signal equipment;

4. South Circular Road/Clanbrassil Street: Adjustments to the existing junction layout would be required to facilitate bus lanes on approach to the junction and to facilitate the right turn for buses onto Clanbrassil Street Lower. Bus priority signalling will be provided for buses at the junction. There is also a possible requirement to relocate/provide existing/new signal equipment;

5. Clanbrassil Street Lower/Malpas Street/Long Lane: This junction would need to be upgraded to accommodate bus lanes through the junction. While the proposals would involve the reallocation of an outbound general traffic lane to a bus lane, the existing road reservation (including medians) may facilitate the creation of additional general traffic lanes at the junction. Bus priority signalling will be provided for buses at the junction. There is also a possible requirement to relocate/provide existing/new signal equipment;

6. Kevin Street Upper/New Street South: Adjustments to junction layout would be required to facilitate bus lanes on approach to the junction.

The nearside ahead lane (in both directions) will be reallocated to a bus lane to provide bus priority up to the stop line at the junction; and

7. Kevin Street Upper/New Street South/Patrick Street: Adjustments to the junction layout would be required to facilitate bus lanes on approach to the junction. The northbound nearside combined straight & left lane on New Street South will be reallocated to a bus lane to provide bus priority up to the stop line at the junction. The nearside straight lane in the outbound direction will reallocated to a bus lane. Bus priority signalling will be provided for buses at the junction. There is also a possible requirement to relocate/provide existing/new signal equipment;

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

- The alteration of the Harrington Street/Richmond Street South junction to facilitate right turning buses from Harrington Street;
- There are no segregated cycle facilities provided along the CBC route via Harrington Street and South Circular Road, which is identified as Secondary Route C7 within the GDA CNP; and
- Due to width constraints, mixed or shared street cycle facility only feasible along parallel cycle route via Longwood Avenue/Emorville Avenue.

7.3.27 It is anticipated that this option would cost approximately €6.1 million (€4.5 million infrastructure costs, €1.6 million land acquisition costs (replacement car park)).

Stage 2 Route Options Multi-Criteria Analysis

7.3.28 The 'Stage 2' route options assessment summary tables for Section 3 are presented in Table 1 of Appendix C. The relative ranking of route options against the scheme assessment sub-criteria are summarised in **Table 7.2** below

Section 3 (sub – criteria) Grand Canal to City Centre			
Appraisal Criteria	**Sub-Criteria**	**Route Option CC1** **Richmond St – Camden St – Wexford St**	**Route Option CC2** **Richmond Street – South Circular Road - Clanbrassil Street – New Street South**
1 Economy	**1A Capital Cost**		
	1B Transport Quality & Reliability		
2 Integration	**2A Land Use Policy**		
	2B Residential Population and Employment Catchments		
	2C Transport Integration		
	2D Cycle Network Integration		
	2E Traffic Network Integration		
3 Accessibility & Social Inclusion	**3A Key Trip Attractors**		
	3B Deprived Geographic Areas		
4 Safety	**4A Road Safety**		
	4B Pedestrians Safety		
5 Environment	**5A Archaeology & Cultural Heritage**		
	5B Architectural Heritage		
	5C Flora & Fauna		
	5D Soils, Geology & Hydrology		
	5E Landscape and Visual		
	5F Air Quality		
	5G Noise & Vibration		
	5H Land Use Character		

Table 7.2: Section 3 Options MCA Summary (Sub-Criteria)

7.3.29 In terms of 'Economy', a primary differentiator between the two route options is route directness & route length (which influences cost) transport quality & reliability and the level of land acquisition that would be required. Option CC2 proposes to provide a replacement parking site near the South Circular Road junction (Leonard's Corner).

7.3.30 In terms of 'Integration', Route option CC1 travels adjacent to large business districts such as Harcourt Street and Charlemont Street etc, with high employment catchments. Option CC2 provides cycle facilities along over 50% of the CBC route, which aligns with Route 9B. In comparison, option CC1 provide a separate cycle facility along the Heytesbury which aligns with Primary route 9. Option CC1 is ranked lower in terms of 'Traffic Integration' due to the removal of on street parking and loading bays along the entire Camden Street/Wexford Street/George's Street route.

7.3.31 Route option CC1 is ranked higher under the 'Accessibility and Social Inclusion' because it generally serves more trip attractors along its route, while CC2 route option serves areas identified as Disadvantaged to Affluent means from the Pobal Deprivation Index.

7.3.32 The main differentiator in terms of Road Safety is that option CC1 has fewer junctions and turning movements compared to option CC2.

7.3.33 In terms of 'Environment', route option CC2 is generally considered to be less attractive in terms of the potential for environmental impacts due to a combination of Flora & Fauna and Landscape & Visual. Option CC2 is ranked lower in terms of Flora & Fauna as it could result in the removal of trees along the median on Clanbrassil Street Lower (between the Daniel Street junction and the Long Lane junction), and the removal of existing trees along one side of the South Circular Road.

7.3.34 A summary of the assessment and relative ranking of route options against the six main assessment criteria is presented in **Table 7.3** below.

Section 3 (main criteria) Grand Canal to City Centre		
Appraisal Criteria	Route Option CC1 Richmond St – Camden St – Wexford St -– George's Street – Dame Street – Christchurch	Route Option CC2 Richmond St – South Circular Road - Clanbrassil Street – Patrick Street –Christchurch
1 Economy		
2 Integration		
3 Accessibility & Social Inclusion		
4 Safety		
5 Environment		

Table 7.3: Section 3 Options MCA Summary (Main Criteria)

7.3.35 Based on the assessment undertaken, route option CC1 appears to offer more benefits over the other options. CC1 is therefore preferred route for Section 3 for the following reasons:

- It is the most economic, direct, and reliable route;
- It serves more trip attractors along its route;
- It is the safest route;
- It does not have impacts on protected structures; and
- Low environmental impact, it has no appreciable impact on Landscape or Flora and Fauna.

7.3.36 Based on the multi-criteria assessment undertaken for this section of the study area, option CC1 is identified as the preferred route option for Section 3 between Grand Canal crossing to Christchurch. Therefore, CC1 will form part of the emerging preferred route.

Benefits

7.3.37 The benefits of Section 3 of the study area of the likely emerging preferred CC1 route can be summarised as follows: -

i. Continuous bus priority in both directions for the 0.9km route delivering increased reliability and shorter journey times. The directness of the route also lending itself to shorter journey times to the destination of the Christchurch area;

ii. The route avoids impacting on protected structures/properties which reduces planning risk, scheme costs and construction disruption;

iii. The environmental impact of delivering the scheme would be minimal as the proposals could generally be delivered within the existing road reservation; and

iv. The proposal provides parallel segregated cycle facilities on Heytesbury Street which aligns with the GDA Cycle Network Plan proposal for the Primary Cycle Route 9.

8.0 EMERGING PREFERRED ROUTE

8.1 Introduction

8.1.1 This section of the report presents the final conclusions from the assessment process for the end-to-end route options considered and recommends a preferred route. A description of the preferred route is given together with ancillary measures required on other streets and key issues to be addressed through the scheme design development.

8.1.2 It was established early during the initial assessment process (Ref. Chapter 5), that the Core Bus Network, as defined in the 'Transport Strategy for the Greater Dublin Area 2016 – 2035', is characterised by routes with a high frequency of bus services, high passenger volumes and with significant trip attractors along the route. It is along these routes where the demand for travel necessitates and justifies a greater level of infrastructural investment in order to minimise delays to these services.

8.1.3 Therefore, the junction between Nutgrove Avenue & Grange Road represents a natural starting point at southern extent of the Rathfarnham to City Centre CBC, as the anticipated travel demand between this point and the City Centre would justify the level of infrastructure proposed as part of the Transport Strategy for the GDA.

8.1.4 Chapters 5,6 and 7 of this report presented an appraisal to each of the potential route options for Sections 1, 2 and 3 of the study area respectively. Where a potential route was identified within each section, they have been assessed in accordance with the methodology set out in Chapter 4 of this report. This assessment process included Multicriteria Analysis under the headings of Economy, Integration, Accessibility & Social Inclusion, Safety and Environment. Following the undertaking of the Multi Criteria Analysis, the emerging preferred routes for each of the study area sections were combined to create an end to end emerging preferred route for the entire study area.

8.2 Recommended Preferred Route

8.2.1 The preferred route for the proposed scheme is presented in **Figure 8.1** below and described in the following paragraphs.

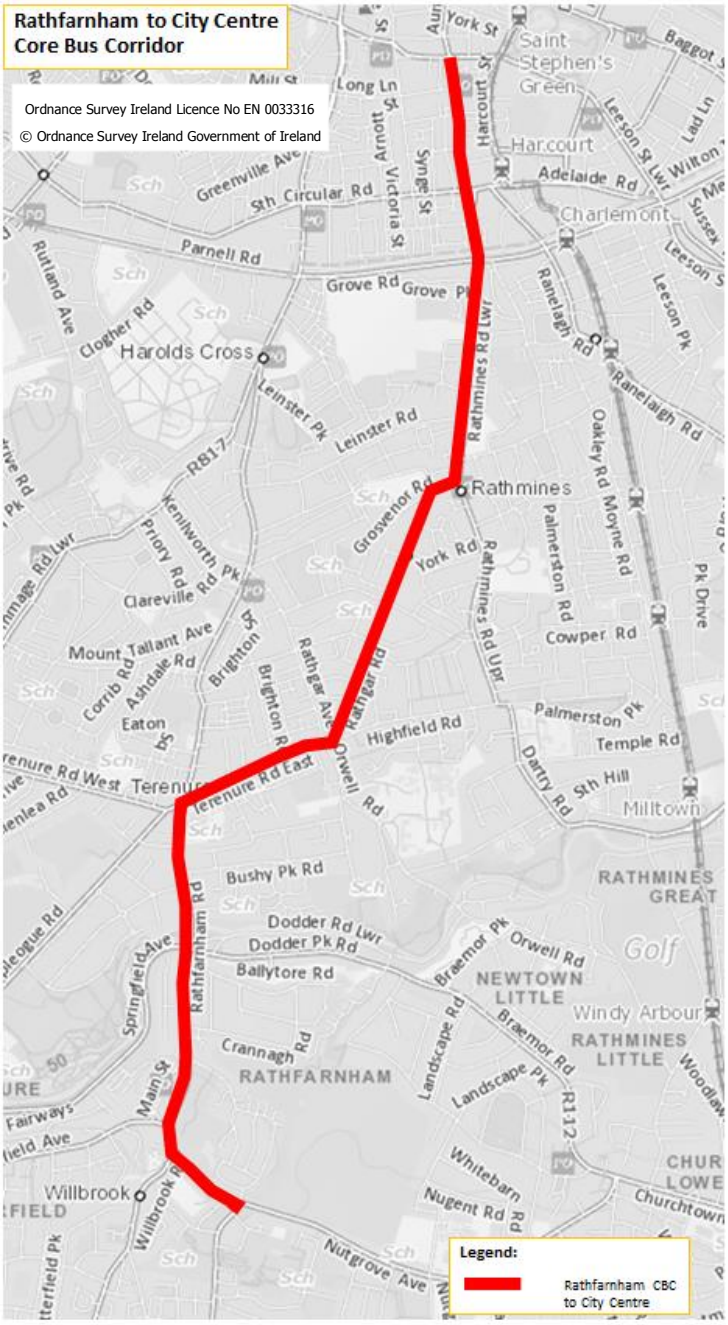

Figure 8.1: Rathfarnham to City Centre Core Bus Corridor Emerging Preferred Route

8.2.2 The emerging preferred CBC scheme commences/terminates on Grange Road at Loreto Terrace to the south of Grange Road/Nutgrove Avenue junction and will provide segregated bus lanes between Grange Road/Nutgrove Avenue junction and the Dodder River crossing at Pearse Bridge.

8.2.3 The preferred route will then run between the crossing at Pearse Bridge and the Grand Canal crossing at La Touche Bridge (via Rathgar Village and Rathmines Village).

8.2.4 The preferred CBC Route will run between La Touche Bridge/Richmond Street South and Wexford Street/Kevin Street Lower junction.

8.3 Concept Scheme Design

Section 1: Grange Road/Nutgrove Avenue junction to Dodder Park Road/Rathfarnham Road junction (Pearse Bridge) (Sheet 01 to Sheet 04, Volume II Concept Scheme Drawings)

Length of Scheme Section: 1.3km

Indicative Infrastructure Cost: €6.0 - 8.0 million

Indicative Land Acquisition Cost: €3.9 million

Total Indicative Cost of Scheme Section: €9.9 – 11.9 million

8.3.1 **Inbound:** The emerging preferred CBC scheme commences on Grange Road at Loreto Terrace to the south of Grange Road/Nutgrove Avenue junction. The route continues in a northwest to north direction along Grange Road to Rathfarnham Road and on to the R1112/Dodder Park junction (Pearse Bridge).

8.3.2 **Outbound:** The outbound service follows the same route as the inbound.

8.3.3 **Stops:** There has been rationalisation of bus stops which are in close proximity to one another (less than 300m) such as the bus stop at Brookvale Road (bus stop no. 1333).

8.3.1 The journey time for this route option from Grange Road/Nutgrove Avenue junction to Rathfarnham Road/Dodder Road (Pearse Bridge) is 5 minutes (in both directions) over a distance of approximately 1.3km.

8.3.2 To facilitate bus priority (in both directions) a new left slip lane will be provided at the Grange Road/Nutgrove Avenue direction for inbound bus only traffic travelling from Loreto Terrace.

8.3.3 The provision of bus lanes and cycle lanes on Grange Road (between Nutgrove Avenue junction and Willbrook Road junction) will require carriageway widening to the north into Rathfarnham Castle grounds.

8.3.4 Adjustments to the Grange Road/Willbrook Road junction layout would be required to facilitate bus lanes on approach to the junction. In the inbound direction, the left turn lane onto Willbrook Road will be reallocated to a bus lane to provide bus priority up to the stop line. The straight-ahead lane will be replaced

by a combined straight & left lane. In the outbound direction, the straight-ahead lane will be reallocated to a bus lane and the right turn lane onto Willbrook Road will be replaced by a combined straight & right lane. Cycle tracks (in both directions) will also be provided between these two signal controlled junctions aligning with Secondary route 10B/SO4 as identified in the CNP.

8.3.5 Continuous bus priority in both directions will be facilitated along Grange Road between the Willbrook Road/Grange Road junction and the Butterfield Avenue/Rathfarnham Road junction. In the outbound direction, the nearside straight-ahead lane on Rathfarnham Road will be reallocated to a bus lane to provide bus priority up to the stop line at the junction. Cycle lanes (in both directions) will also be provided between these two signal controlled junctions, aligning with Primary Route 10 as identified in the CNP.

8.3.6 Continuous bus priority in both directions will be facilitated along Rathfarnham Road between the Butterfield Avenue/Rathfarnham Road junction and the Rathfarnham Road/Main Street/Castleside Drive junction. Cycle lanes (in both directions) will also be provided between these two signal controlled junctions aligning with Primary Route 10 as identified in the CNP. The CBC proposals along this section can be achieved within the existing road reservation.

8.3.7 Segregated bus facilities on Rathfarnham Road between Main Street and Dodder Park Road will require land acquisition from the front gardens of residential properties along the eastern side of the road. It is proposed to provide a parallel cycle route (mixed/shared street) via Brookvale Downs to connect with the Dodder Greenway.

8.3.8 Upgrades to the Dodder Park Road/Rathfarnham Road junction are required in the outbound direction and the straight-ahead lane will be replaced by a combined straight & left lane. Left turning vehicles from Rathfarnham Road to Dodder Park Road will have to yield for buses in the nearside lane. The existing outbound cycle lane will be removed. A shared pedestrian/cycle facility will be provided to the west of the junction, to create a link to the proposed two-way cycle bridge on the western side of Pearse Bridge.

Section 2 – Rathfarnham Road/Dodder Park Road/R112 junction (Pearse Bridge) to Rathmines Road Lower/Grove Road (La Touche Bridge) (Sheet 04 to Sheet 14 & Sheets 17 to 19, Volume II Concept Scheme Drawings)

Length of Scheme Section: 3.4km

Indicative Infrastructure Cost: €16.8 – 21.0million

Indicative Land Acquisition Cost: €9.9 million

Total Indicative Cost of Scheme Section: €26.7 – 30.9 million

8.3.9 **Inbound:** The CBC service will proceed northbound along Rathfarnham Road from the Dodder Park/Rathfarnham Road/R112 junction to the Terenure Road East/Rathfarnham Road (Terenure Village). From Terenure Road East, the CBC will continue towards Rathmines Village via Rathgar Village, and proceed to the crossing of the Grand Canal at La Touche Bridge.

8.3.10 **Outbound:** The outbound service follows the same route as the inbound.

8.3.11 **Stops:** There has been rationalistion of bus stops which are in close proximity such as, the bus stops on Pearse Bridge (bus stop no. 1334), on Terenure Road East (bus stop no. 1082) and in the vicinity of Military Road junction (bus stop no. 1019).

8.3.12 The journey time for this route option from Rathfarnham Road/Dodder Road (Pearse Bridge) to Rathmines Road Lower/Grove Road junction is 13 minutes in the inbound direction and 14 minutes in the outbound direction over a distance of approximately 3.4km.

8.3.13 In order to overcome the pinch point at Pearse Bridge and to provide continuous bus facilities in conjunction with cycle facilities, a 3m two-way cycle bridge on the western side of the bridge is proposed. To maintain the same cross section (which includes bus lanes and cycle lanes – 19m), to the north of Pearse Bridge land acquisition will be required from the front curtilages of a number of residential properties.

8.3.14 The CBC will run along Rathfarnham Road between the Dodder Park/Rathfarnham Road/R112 junction and continue towards Rathmines Village to the crossing of the Grand Canal at La Touche Bridge. It is proposed to provide segregated cycle facilities on Rathfarnham Road, Terenure Road East and Rathgar Road. Cyclists will also be catered for via parallel cycle routes along Charleville Road, Grosvenor Lodge and Cathal Brugha Barracks. A 30km/h zone is proposed along Rathmines Road Lower between Grosvenor Road and Grove Road to provide a safer environment for cyclists who choose to use the bus lanes on Rathmines Road Lower instead of the segregated parallel cycle route.

8.3.15 Continuous bus priority (in both directions) will be facilitated along Rathfarnham Road between the Dodder Park Road/Rathfarnham Road junction and Terenure Road East/Rathfarnham Road (Terenure Village).

8.3.16 Adjustments to the Rathfarnham Road/Bushy Park Road junction layout are required to facilitate the inbound bus lane on approach to the junction. In the outbound direction, the straight-ahead traffic lane will be reallocated to a bus lane to provide a bus lane to the stop line on approach to the junction at Rathdown Park. The right turn lane onto Rathdown Park will need to be replaced by a combined straight & right lane.

8.3.17 Adjustments to the Rathfarnham Road/Terenure North/Terenure Road East junction layout would be required to facilitate bus lanes on approach to the junction and to facilitate the right turn for buses onto Terenure Road East. It will not be possible to accommodate an inbound bus lane for the first 100m of Terenure Road East due to the close proximity of adjacent protected properties and as such buses may need to share the traffic lane with general traffic.

8.3.18 Cycle facilities will also be provided along the Rathfarnham Road route to align with Primary Route 10 as identified within the CNP.

8.3.19 Continuous bus priority in both directions will be facilitated along the remainder of Terenure Road East, Rathgar Road and Rathmines Road Lower. The following junctions:

- Rathgar Road/Leicester Avenue/Frankfort Avenue junction;

- Rathmines Road Lower/Castlewood Avenue junction;
- Rathmines Road Lower/Leinster Road junction and;
- Rathmines Road Lower/Grove Road/Richmond Street junction

will all need nearside traffic lanes to be reallocated to bus lanes (due to the close proximity of adjacent properties) and as such, left turning vehicles will now need to yield for buses in the nearside lane.

8.3.20 Cycle facilities will also be provided along the Terenure Road East and Rathgar Road CBC route to align with Primary Route 10/SO3 as identified within the CNP.

8.3.21 Through Rathmines Village, cyclists will be catered for via a parallel cycle route via Charleville Road, Grosvenor Lodge and Cathal Brugha Barracks. A Mixed or shared street arrangement is only feasible along Charleville Place and Grosvenor Lodge due to width constraints and the low traffic volumes & vehicle speeds. This cycle route option requires land acquisition from the edge/perimeter of Cathal Brugha Barracks Football pitch. The proposed cycle route will travel through Cathal Brugha Barracks along an existing internal roadway (10m width at pinch point), however there will be no requirement for land acquisition of buildings which would compromise architectural heritage. Permissive access will need to be arranged through the Barracks however. A 30km/h zone is proposed along Rathmines Road Lower between Grosvenor Road and Grove Road to provide a safer environment for cyclists who choose to use the bus lanes on Rathmines Road Lower instead of the segregated parallel cycle route. A new cycle bridge is also proposed, crossing the Grand Canal to Martin Street.

Section 3 – Richmond Street (La Touche Bridge) to Wexford Street/Cuffe Street/Kevin Street Lower junction. (Sheet 14 to Sheet 16 & Sheets 19 to 21, Volume II Concept Scheme Drawings)

Length of Scheme Section: 0.9km

Indicative Infrastructure Cost: €3.1 – 5.0 million

Indicative Land Acquisition Cost: €0.0 million

Total Indicative Cost of Scheme Section: €3.1 – 5.0 million

8.3.22 **Inbound:** The CBC service will proceed northbound along Richmond Street from Richmond Street/Rathmines Road Lower junction to Wexford Street/Cuffe Street/Kevin Street Lower junction.

8.3.23 **Outbound:** The outbound service follows the same route as the inbound.

8.3.24 **Stops:** There has been rationalistion of bus stops which are in close proximity such as, the bus stops at Camden Street/Grantham Street (bus stop no. 1352).

8.3.25 The journey time for this route option from Rathmines Road Lower/Grove Road/Canal Road junction to Wexord Street/Cuffe Street is 5 minutes (in both directions) over a distance of approximately 0.9km.

8.3.26 It is proposed to provide continuous bus priority in both directions along the route with the exception of a 75m section of Richmond Street South and 60m section of Wexford Street, where segregated bus priority in the southbound direction is not achievable. The existing contra-flow bus lane on Richmond Street will be retained.

8.3.27 This route comprises of Secondary Cycle Route 10 along Camden Street/George's Street, Primary Route 7 along Dame Street and Primary Route 9 along Heytesbury Street as identified within the GDA Cycle Network Plan. The proposed removal of cycle facilities along the CBC route does not align with the GDA Cycle Network Plan proposal for Route 10. However, cyclists will be catered for via a parallel cycle route along Martin Street, Heytesbury Street, Bride Street. Due to width constraints, a mixed or shared street arrangement will only be feasible along Martin Street. The proposed construction of a parallel cycle route on Heytesbury

Street/Bride Street aligns entirely with Primary Route 9 and will connect with the new bridge proposed in Section 2. Segregated cycle facilities are also proposed on Harrington Street to link with the Clonskeagh to City Centre cycle scheme.

8.4 Concept Scheme Design Summary

Cost Estimate

A high-level cost estimate has been prepared based on the concept scheme design and a number of assumptions regarding the scheme details. As such the proposed Rathfarnham to City Centre Core Bus Corridor scheme is anticipated to cost in the region of €40-48 million excluding VAT.

Journey Time Benefits

8.4.1 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. A review of the available comparable journey time data along the route demonstrates that issues currently being experienced by buses could be addressed by the proposed scheme.

8.4.2 The following graphs present the existing journey time and speed data from an amalgamation of Dublin bus service numbers 15 (Ballycullen Rd. towards Clongriffin) and 16 (Ballinteer towards Dublin Airport).

8.4.3 To enable a journey time comparison to be undertaken, information has been obtained from the most recent Automatic Vehicle Location (AVL) data for these bus routes.

8.4.4 For the purposes of this journey time comparison, the section of the 16 bus route under consideration is from the existing inbound bus stop 1329 'St. Mary's Boys School' (on Grange Road) to bus stop 1336 'Fergus Road' (on Rathfarnham Road). Similarly, the section of the 15 bus route under consideration is from the existing inbound bus stop 1163 'Olney Crescent' (on Terenure Place) to bus stop 1354 'Peter Row'. In the outbound direction, the section of the 15 bus route under consideration is from the existing bus stop 7579 'Cuffe Street' to bus stop 1299 'Terenure Library' (on Terenure Place). Similarly, in the outbound direction the section of the 16 bus route under consideration is from the existing bus stop

1299 'Fergus Road' (on Rathfarnham Road) to bus stop 1305 'Willbrook Road'. Figure 8.2 and Figure 8.3 present the average journey time per half hour over the course of a normal weekday for the inbound and outbound directions respectively.

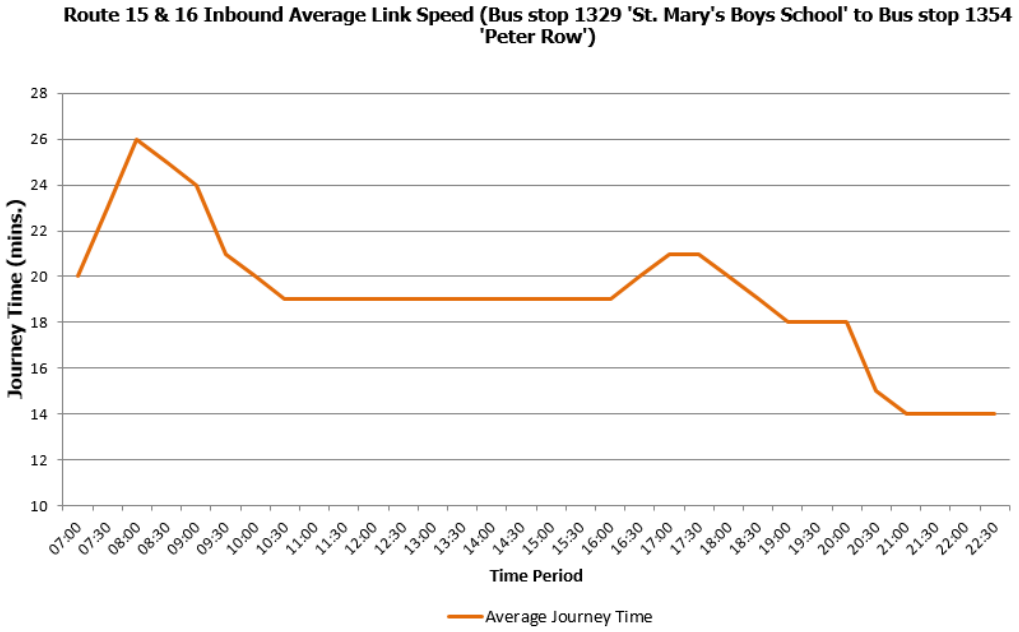

Figure 8.2: Existing Inbound Journey Times between Grange Road/Nutgrove Avenue junction and Wexford Street/Cuffe Street junction.

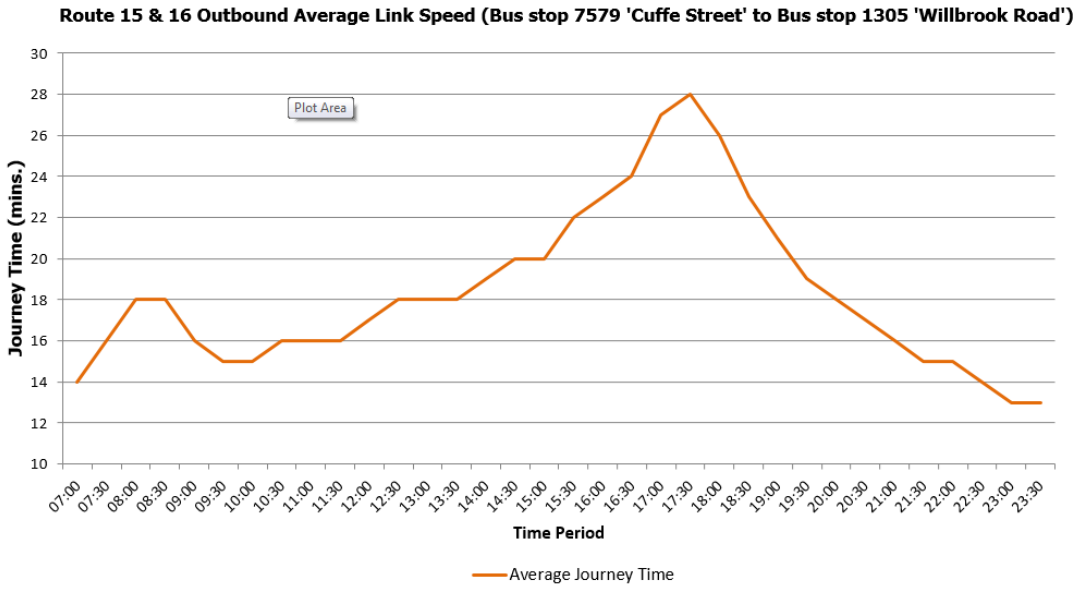

Figure 8.3: Existing Outbound Journey Times between Wexford Street/Cuffe Street junction and Grange Road/Nutgrove Avenue junction.

8.4.5 The graphs presented in Figure 8.2 and Figure 8.3 clearly illustrate the current issues with journey time reliability along the route.

8.4.6 Journey times during the core hours of bus operation (07:00 – 19:00) are observed to vary between 18 minutes and 26 minutes in the inbound direction and 14 minutes and 28 minutes in the outbound direction. The variation in journey times is most likely due to the lack of bus priority on large sections of the route and subsequent turbulence caused by traffic congestion, as well as passenger boarding times at stops which are high due to requirements for driver interaction.

8.4.7 As such, the journey times outside of these hours, when traffic volumes and passenger volumes are lower, are more reflective of the journey times which could be achieved through a combination of the proposed bus priority infrastructure improvements, better enforcement of bus lanes and the introduction of cashless fares. In other words, the proposed infrastructure would effectively create an uncongested network for buses.

8.4.8 After 19:00 in the evening, the inbound journey time is observed to reduce to between 14 minutes and 18 minutes. Similarly, outbound journey times are seen to reduce to between 13 minutes and 21 minutes. For both inbound and outbound journey times after 19:00, the overall journey time is seen to drop by up to 8 minutes in the inbound direction and 7 in the outbound, with the variance between the upper and lower limits halved for each direction.

8.4.9 The benefits can also be seen by comparing the existing average link speeds along the route in the morning peak hour with the late evening. Figure 8.4 and Figure 8.5 present this information for the inbound and outbound direction respectively.

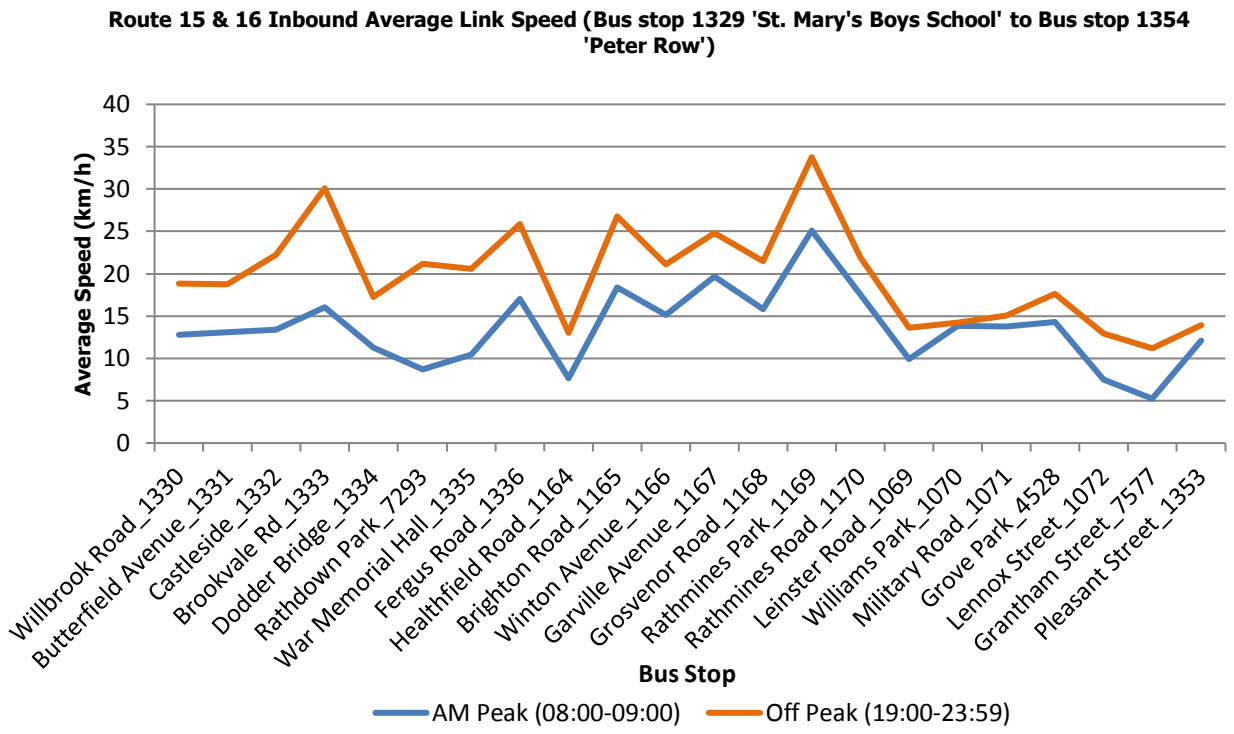

Figure 8.4: Existing Inbound Average Link Speed

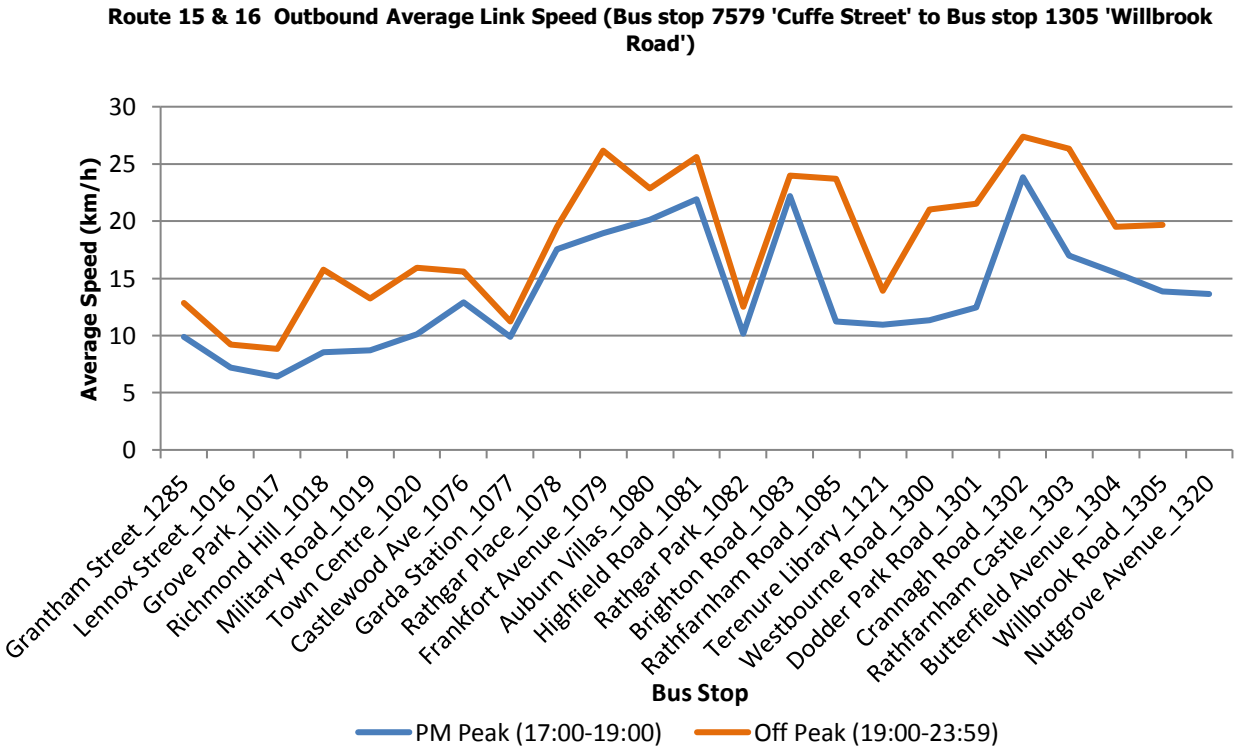

Figure 8.5: Existing Outbound Average Link Speed

8.4.10 Reviewing both the inbound and outbound data, it can be seen that the average speed for buses along the route is consistently higher at night, in uncongested conditions at night, compared to the morning peak hour where congestion slows the progression of buses. This further illustrates the benefits improved bus priority will bring to buses operating along the proposed route.

8.4.11 The data and graphs **(Figure 8.4 & 8.5)** reveal that for both inbound and outbound bus services the delays (slower speeds) are being experienced at/on approaches to the following junctions: -

- Terenure Road East/Rathfarnham Road junction (Terenure Village);
- Leinster Road/Rathmines Road Lower junction;
- Camden Street Upper/Charlotte Way junction;
- Rathgar Road/Grosvenor Road/Rathmines Road Lower junction (Rathmines Garda Station); and
- Terenure Road East/Rathgar Road/Orwell Road junction (Rathgar Village);

8.4.12 The CBC proposals at these aforementioned junctions include the provision of new/extended bus lanes up to the stop lines, in addition to a reduction in the length of the lanes where buses must share the traffic lane with general vehicular traffic.

8.4.13 In conclusion, the provision of new and extended bus lanes, with improved bus priority along the proposed CBC route, in addition to the introduction of cashless fares, would enable buses to travel with improved journey times and greater journey time reliability.

9.0 NEXT STEPS

9.1.1 This report has identified an emerging preferred route for the bus infrastructure along this Core Bus Corridor for which a concept design has been developed.

9.1.2 The next project stage (The development of a Preliminary Design) will further refine and update the initial concept design along the route. Further account will be taken of likely public transport service levels, particularly the bus service patterns and any changes to the overall bus network which may arise from the separate bus network review process. The proposals will be amended, if and as required, to integrate any resultant changes. The Preliminary Design will define the final practically achievable scheme for the CBC, taking into account more detailed studies of constraints, impacts and environmental assessment required at a local level.

9.1.3 Prior to finalisation of the CBC scheme design, a public consultation process will be undertaken, with inputs and feedback received incorporated where practical and appropriate to do so.

9.1.4 This Preliminary Design will form the basis of the planning consent process for the scheme, which will require a development consent application to be made directly to An Bord Pleanala, due to the nature and extent of the proposed works.

APPENDIX A – Section 1 Route Options Assessment

Table 1

Section 1 Nutgrove Avenue - Churchtown			
Appraisal Criteria	**Sub-Criteria**	**Option NAC1** **Bus lane in both directions & separate cycle route on Whitehall Road, Landscape Park and Landscape Ave.**	**Option NAC2** **Inbound traffic lane only on Nutgrove Avenue, with two-way bus and cycle facilities.**
1 Economy	1A Capital Cost	**€4,020,000.00** *Indicative Infrastructure costs €3,300,000.00 include:* • Bus lanes in both directions provided along entire route. • Separate cycle route proposed along Whitehall Road, Landscape Park connecting to Braemor Road via Landscape Avenue. • Due to width constraints along Landscape Park and Landscape Avenue, mixed or shared street cycle facilities only feasible. *Land Acquisition Costs €720,000.00* • 480 sqm Private Land • 45 sqm Public Land • 26 residential properties affected	**€3,485,000.00** *Indicative Infrastructure costs €2,600,000.00 include:* • Bus lanes and cycle tracks in both directions along entire section. • Removal of outbound general traffic lane on Nutgrove Avenue *Land Acquisition Costs €858,000.00* • 572 sqm Private Land • 129 sqm Public Land • 34 residential properties affected
	Rank		
	1B Transport Quality & Reliability	Approximate Length: 925m Journey Time: 4mins No. of Junctions: 3 No. of Pedestrian Crossings: 3 Full priority in both directions are provided along route, good journey time reliability for Bus services.	Approximate Length: 925m Journey Time: 4mins No. of Junctions: 3 No. of Pedestrian Crossings: 3 Full priority in both directions are provided along route, good journey time reliability for Bus services.
	Rank		
2 Integration	2A Land Use Policy	No appreciable benefit.	No appreciable benefit.
	Rank		
	2B Residential Population and Employment	Residential Population Catchments - Identical Catchment served Employment catchments - Identical Catchment served	Residential Population Catchments - Identical Catchment served Employment catchments - Identical Catchment served
	Rank		
	2C Transport Network	Potential for interchange with local bus services. Potential for interchange with CBC bus service running along the Finglas/Dundrum Core Orbital Corridor along the Dodder River.	Potential for interchange with local bus services. Potential for interchange with CBC bus service running along the Finglas/Dundrum Core Orbital Corridor along the Dodder River.
	Rank		
	2D Cycling Integration	This route option is identified as secondary route SO4 in the GDA Cycle Network Plan. The proposed removal of segregated cycle facilities on Nutgorve Avenue does not align with the GDA Cycle Network Plan proposal for route SO4, however, a separate cycle route is proposed along Whitehall Road, Landscape Park and connecting to Braemor Road via Landscape Avenue. Due to width constraints along Landscape Park and Landscape Avenue, mixed or shared street cycle facilities only feasible.	This route option is identified as Primary routes SO4 in the GDA Cycle Network Plan. Existing cycle facilities would be enhanced and full segregation achieved for the entire route.
	Rank		

Section 1 Nutgrove Avenue - Churchtown			
Appraisal Criteria	**Sub-Criteria**	**Option NAC1 Bus lane in both directions & separate cycle route on Whitehall Road, Landscape Park and Landscape Ave.**	**Option NAC2 Inbound traffic lane only on Nutgrove Avenue, with two-way bus and cycle facilities.**
2 Integration	2E Traffic Network Integration	Two-way traffic maintained, segregated bus lane provided in both directions. As such, the traffic impact, in terms of congestion and movement restrictions of this option will be low.	It is considered that Option NAC2 which provides for inbound traffic only would have a significant traffic impact in terms of movement restrictions and increased traffic/congestion on Nutgrove Avenue. Due to the traffic diversions, there will be increased traffic on residential roads (Whitehall Road, Whitebarn Road, Churchtown Road Upper, Oakdown Road).
	Rank		
3 Accessibility & Social Inclusion	3A Key Trip Attractors	*Education* Identical Facilities served *Retail / Leisure* Identical Facilities served *Employment* Identical Facilities served	*Education* Identical Facilities served *Retail / Leisure* Identical Facilities served *Employment* Identical Facilities served
	Rank		
	3B Deprived Geographi	Similar catchment served.	Similar catchment served.
	Rank		
4 Safety	4A Road Safety	No. of Junctions: 3 0 turn movements required Fully segregated bus lanes in both directions for the entire section.	No. of Junctions: 3 0 turn movements required. Fully segregated bus lanes in both directions for the entire section.
	Rank		
	4B Pedestrian Safety	Footpaths provided both sides of Nutgrove Avenue. Three signalised pedestrian crossings are provided on this section of Nutgrove Ave. Two pedestrian crossing are located between Nutgrove Shopping Centre and the retail park (Harvey Norman, Aldi etc) on the northern side of Nutgrove Ave. The third pedestrian crossing is located at the Church of the Good Shepard.	Footpaths provided both sides of Nutgrove Avenue. Three signalised pedestrian crossings are provided on this section of Nutgrove Ave. Two pedestrian crossing are located between Nutgrove Shopping Centre and the retail park (Harvey Norman, Aldi etc) on the northern side of Nutgrove Ave. The third pedestrian crossing is located at the Church of the Good Shepard.
	Rank		
5 Environment	5A Archaeology and Cultural	1 Recorded Monument identified within the assessment area, the Bottle Tower on Whitehall Road. As this option does not involve land take at this monument, this will have no impact.	No Recorded Monuments identified within the assessment area.
	Rank		
	5B Architectural Heritage	There are no other protected structures identified within the assessment area.	There are no protected structures identified within the assessment area.
	Rank		
	5C Flora and Fauna	Possible removal of a small amount of verge on Nutgrove Avenue. No appreciable impact.	Possible removal of a small amount of verge on Nutgrove Avenue. No significant impact.
	Rank		
	5D Soils, Geology & Hydrology	No appreciable impacts	No appreciable impacts
	Rank		

Section 1 Nutgrove Avenue - Churchtown			
Appraisal Criteria	**Sub-Criteria**	**Option NAC1 Bus lane in both directions & separate cycle route on Whitehall Road, Landscape Park and Landscape Ave.**	**Option NAC2 Inbound traffic lane only on Nutgrove Avenue, with two-way bus and cycle facilities.**
5 Environment	5E Landscape and Visual	Potential negative impacts associated with the re-engineering of mature housing estate roads (Whitehall Road). Land take of residential properties on Eastern side of Whitehall Road and the Southern side of Nutgrove Ave.	Potential negative impacts associated with the re-engineering of mature. Land take of residential properties on the Southern side of Nutgrove Ave.
	Rank		
	5F Air Quality	Possible impacts due to increased trafficking of road networks and increased proximity of vehicles to residential premises, houses and gardens if bus lane installed. Existing route carries bus traffic already so potential for impacts is not as great.	The positive impact due to reduced trafficking by replacing the existing outbound traffic lane on Nutgrove Avenue could be exceeded by the negative impact due to the increased traffic on less suitable residential roads (Whitehall Road, Whitebarn Road, Churchtown Road Upper, Oakdown Road) due to the traffic diversions.
	Rank		
	5G Noise & Vibration	Possible impacts due to increased trafficking of road networks and increased proximity of vehicles to residential premises, houses and gardens if bus lane installed. Existing route carries bus traffic already so potential for impacts is not as great.	The positive impact due to reduced trafficking by replacing the existing outbound traffic lane on Nutgrove Avenue could be exceeded by the negative impact due to the increased traffic on less suitable residential roads (Whitehall Road, Whitebarn Road, Churchtown Road Upper, Oakdown Road) due to the traffic diversions.
	Rank		
	5H Land Use Character	The level of land take required on Nutgrove Ave and Whitehall Road would not affect the viability of residential properties from being used for its intended use. (less than 1m width over length of 80m)	The level of land take required on Nutgrove Ave would not affect the viability of residential properties from being used for its intended use. (less than 1.5m width over length of 350m) Restricted access to the retail parks and residential properties due to the provision of one-way traffic on Nutgrove Avenue which would affect the viability of the facilities.
	Rank		

Table 2

Section 1 Nutgrove Avenue - Rathfarnham			
Appraisal Criteria	**Sub-Criteria**	**Option NAR1** **Bus lane in both directions & separate cycle route through the Castle Golf Course and The Good Shepherd National School grounds.**	**Option NAR2** **Bus lane in both directions & separate cycle route on Whitehall Road, Landscape Park and Landscape Ave.**
1 Economy	1A Capital Cost	**€11,294,000.00** *Indicative Infrastructure costs €6,500,000.00 include:* • Bus lanes in both directions provided along entire route. • Separate segregated cycle route proposed through the Castle Golf Club and The Good Shepard National School grounds. *Land Acquisition Costs €4,794,000.00* • 3196 sqm Private Land • 0 sqm Public Land • 13 residential properties affected • 7 commercial properties affected	**€4,026,000.00** *Indicative Infrastructure costs €3,300,000.00 include:* • Bus lanes in both directions provided along entire route. • Separate segregated cycle route proposed along Rathfarnham Wood, The Castlelands, Castleside Drive before connecting with Rathfarnham Road. *Land Acquisition Costs €726,000.00* • 484 sqm Private Land • 0 sqm Public Land • 19 residential properties affected • 6 commercial properties affected
	Rank		
	1B Transport Quality & Reliability	Approximate Length: 860m Journey Time: 3mins No. of Junctions: 3 No. of Pedestrian Crossings: 1 Full priority in both directions are provided along route, good journey time reliability for Bus services.	Approximate Length: 860m Journey Time: 3mins No. of Junctions: 3 No. of Pedestrian Crossings: 1 Full priority in both directions are provided along route, good journey time reliability for Bus services.
	Rank		
2 Integration	2A Land Use	No Appreciable benefits.	No Appreciable benefits.
	Rank		
	2B Residential Population and Employment Catchments	Residential Population Catchments - Identical Catchment served Employment catchments - Identical Catchment served	Residential Population Catchments - Identical Catchment served Employment catchments - Identical Catchment served
	Rank		
	2C Transport Network	Potential for interchange with local bus services.	Potential for interchange with local bus services.
	Rank		
2 Integration	2D Cycling Integration	This route option is identified as secondary route SO4 in the GDA Cycle Network Plan. The proposed removal of segregated cycle facilities on Nutgrove Avenue does not strictly align with the GDA Cycle Network Plan proposal for route SO4, however, a parallel separate cycle route is proposed through the Castle Golf Club and The Good Shepard National School grounds. NAR1 provides the most direct/segregated route which general follows the direction of the proposed CBC.	This route option is identified as Primary routes SO4 in the GDA Cycle Network Plan. The proposed removal of segregated cycle facilities on Nutgrove Avenue does not align with the GDA Cycle Network Plan proposal for route SO4, however, a separate cycle route is proposed along Rathfarnham Wood, The Castlelands, Castleside Drive and connecting to Rathfarnham Road (Primary Route 10).
	Rank		

Section 1 Nutgrove Avenue - Rathfarnham			
Appraisal Criteria	**Sub-Criteria**	**Option NAR1** **Bus lane in both directions & separate cycle route through the Castle Golf Course and The Good Shepherd National School grounds.**	**Option NAR2** **Bus lane in both directions & separate cycle route on Whitehall Road, Landscape Park and Landscape Ave.**
2 Integration	2E Traffic Network Integration	Two-way traffic maintained, segregated bus lane provided in both directions. As such, the traffic impact, in terms of congestion and movement restrictions of this option will be low.	Two-way traffic maintained, segregated bus lane provided in both directions. As such, the traffic impact, in terms of congestion and movement restrictions of this option will be low.
	Rank		
3 Accessibility and Social Inclusion	3A Key Trip Attractors	*Education* Identical Facilities served *Retail / Leisure* Identical Facilities served *Employment* Identical Facilities served	*Education* Identical Facilities served *Retail / Leisure* Identical Facilities served *Employment* Identical Facilities served
	Rank		
	3B Deprived Geographic Areas	No appreciable impacts.	No appreciable impacts.
	Rank		
4 Safety	4A Road Safety	No. of Junctions: 3 0 turn movements required Fully segregated bus lanes in both directions for the entire section.	No. of Junctions: 3 0 turn movements required. Fully segregated bus lanes in both directions for the entire section.
	Rank		
	4B Pedestrian Safety	Footpaths provided both sides of Nutgrove Avenue. One signalised pedestrian crossing is provided on this section of Nutgrove Ave, located by Nutgrove Court.	Footpaths provided both sides of Nutgrove Avenue. One signalised pedestrian crossing is provided on this section of Nutgrove Ave, located by Nutgrove Court.
	Rank		
5 Environment	5A Archaeology & Cultural Heritage	No Recorded Monuments identified within the assessment area.	1 Recorded Monument identified within the assessment area, the Bottle Tower on Whiehall Road. As this option does not involve land take at this monument, this will have no impact.
	Rank		
	5B Architectural Heritage	There are no other protected structures identified within the assessment area.	There are no protected structures identified within the assessment area.
	Rank		
	5C Flora & Fauna	Possible removal of several trees on the Castle Golf Course, however these can be replaced.	Possible removal of several trees along both sides of the proposed cycle route.
	Rank		
	5D Soils, Geology & Hydrology	No appreciable impacts	No appreciable impacts
	Rank		
5 Environment	5E Landscape & Visual	Potential negative impacts associated land take in the Castle Golf Course (removal of trees). Land take of residential & commercial properties on Northern side of Nutgrove Avenue.	Potential negative impacts associated with the re-engineering of mature housing estate roads (Rathfarnham Wood, The Castlelands, Castleside Drive). Land take of residential & commercial properties on Northern side of Nutgrove Avenue.
	Rank		

Section 1 Nutgrove Avenue - Rathfarnham			
Appraisal Criteria	Sub-Criteria	Option NAR1 Bus lane in both directions & separate cycle route through the Castle Golf Course and The Good Shepherd National School grounds.	Option NAR2 Bus lane in both directions & separate cycle route on Whitehall Road, Landscape Park and Landscape Ave.
5 Environment	5F Air Quality	Possible impacts due to increased proximity of vehicles to residential premises, houses and gardens if bus lane installed. Existing route carries bus traffic already so potential for impacts is not as great.	Possible impacts due to increased proximity of vehicles to commercial premises, houses and gardens if bus lane installed. Existing route carries bus traffic already so potential for impacts is not as great.
	Rank		
	5G Noise & Vibration	Possible impacts due to increased proximity of vehicles to residential premises, houses and gardens if bus lane installed. Existing route carries bus traffic already so potential for impacts is not as great.	Possible impacts due to increased proximity of vehicles to commercial premises, houses and gardens if bus lane installed. Existing route carries bus traffic already so potential for impacts is not as great.
	Rank		
	5H Land Use Character	The level of land take required on Nutgrove Ave would affect the viability of commercial properties from being used for its intended use. The cycle route will be constructed in a sensitive manner and would affect the viability of the Golf course being used for its intended use.	The level of land take required on Nutgrove Ave would affect the viability of commercial properties from being used for its intended use.
	Rank		

Table 3

Section 1 Grange Road/Nutgrove Avenue junction to Dodder Crossing				
Appraisal Criteria	**Sub-Criteria**	**Route Option SA1 Grange Road - Rathfarnham**	**Route Option SA2 Grange Road – Rathfarnham (Parallel cycle route via Rathfarnham Wood/Castleside Drive)**	**Route Option SB1 Grange Road – Rathfarnham via Churchtown**
1 Economy	1A Capital Cost	**€9.6m** *Indicative Infrastructure costs €5.7m include:* • Bus lanes and cycle lanes in both directions on Grange Road from Nutgrove Ave junction to the filling station on Rathfarnham Road (100m past Main Street junction). • Bus lanes and cycle lanes in both directions on Grange Road between Nutgrove Avenue and Butterfield Avenue will require land acquisition from Rathfarnham Castle, residential properties in Rathfarnham Wood and from Village Court carpark. • Parallel cycle route on Brookvale Downs adjacent to Rathfarnham Road. Two-way bus facilities will require acquisition of a portion of front gardens/driveways on western side of Rathfarnham Road between filling station at Main Street junction and Dodder Park Road junction. *Land Acquisition Costs €3.8m* • 2,000 sqm Public Land • 2,516 sqm Private Land • 47 residential properties affected • 1 commercial property affected • Land take from Rathfarnham Castle (200m^2)	**€5.3m** *Indicative Infrastructure costs €4.2 include:* • Bus lanes in both directions on Grange Road from Nutgrove Ave junction to Dodder Park Road junction. • Two-way bus facilities will require acquisition of a portion of front gardens/driveways on western side of Rathfarnham Road between filling station at Main Street junction and Dodder Park Road junction. • Parallel cycle route via Rathfarnham Wood and Castleside Drive and connecting to Rathfarnham Road at Main Street/Castleside Drive junction. • Parallel cycle route via Brookvale Downs adjacent to Rathfarnham Road. *Land Acquisition Costs €1.0m* • 1,237 sqm Public Land • 689 sqm Private Land • 39 residential properties affected • 1 commercial property affected	**€14.6m** *Indicative Infrastructure costs €12.3m include:* • Bus lanes in both directions provided along entire route. • Separate segregated cycle route proposed along Rathfarnham Wood, The Castlelands, Castleside Drive before connecting with Rathfarnham Road. • Separate cycle route proposed along Whitehall Road, Landscape Park connecting to Braemor Road via Landscape Avenue. • Due to width constraints along Landscape Park and Landscape Avenue, mixed or shared street cycle facilities only feasible. *Land Acquisition Cost (€2.3m)* • 1,237 sqm Public Land • 1,546 sqm Private Land • 45 private properties affected • 6 commercial properties affected
	Rank			
	1B Transport Quality & Reliability	Journey Time: 5 mins Length: 1.3 km No. of Junctions: 5 No. of Pedestrian Crossings: 1 Full priority provided along most of the route with good journey time reliability for Bus services.	Journey Time: 5 mins Length: 1.3 km No. of Junctions: 5 No. of Pedestrian Crossings: 1 Full priority provided along route with good journey time reliability for Bus services.	Journey Time: 13 mins Length: 4.1 km No. of Junctions: 8 No. of Pedestrian Crossings: 8 Full priority provided along route with good journey time reliability for Bus services.
	Rank			
2 Integration	2A Land Use Policy	Serves Rathfarnham village which is zoned VC in the SDCC Development Plan 'to protect, improve, provide for the future development of Village Centres'.	Serves Rathfarnham village which is zoned VC in the SDCC Development Plan 'to protect, improve, provide for the future development of Village Centres'.	Serves Nutgrove Avenue which will serve areas zoned DC & E (Nutgrove Office Park) in the DLRCC Development Plan 'to protect, provide for improved mixed-use district centres' and to 'provide for economic development and employment'.
	Rank			
	2B Residential Population and Employment Catchments	Residential Population Catchments - 5 minute walk catchment of approximately 3,500 - 10 minute walk catchment of approximately 8,600 Employment catchments - 10 minute walk catchment of approximately 1,544	Residential Population Catchments - 5 minute walk catchment of approximately 3,500 - 10 minute walk catchment of approximately 8,600 Employment catchments - 10 minute walk catchment of approximately 1,544	Residential Population Catchments - 5 minute walk catchment of approximately 6,500 - 10 minute walk catchment of approximately 13,000 Employment catchments - 10 minute walk catchment of approximately 3,600
	Rank			

Section 1 Grange Road/Nutgrove Avenue junction to Dodder Crossing				
Appraisal Criteria	**Sub-Criteria**	**Route Option SA1 Grange Road - Rathfarnham**	**Route Option SA2 Grange Road – Rathfarnham (Parallel cycle route via Rathfarnham Wood/Castleside Drive)**	**Route Option SB1 Grange Road – Rathfarnham via Churchtown**
2 Integration	2C Transport Network Integration	Potential for interchange with local bus services. Potential for interchange with CBC bus service running along the Finglas/Dundrum Core Orbital Corridor along the Dodder River. Potential for interchange with both the Marley Park – Rathmines and the Tallaght – Rathfarnham - Terenure Core Radial Corridors. Potential for interchange with the Clongriffin – Tallaght BRT proposal.	Potential for interchange with local bus services. Potential for interchange with CBC bus service running along the Finglas/Dundrum Core Orbital Corridor along the Dodder River. Potential for interchange with both the Marley Park – Rathmines and the Tallaght – Rathfarnham - Terenure Core Radial Corridors. Potential for interchange with the Clongriffin – Tallaght BRT proposal.	Potential for interchange with local bus services. Potential for interchange with CBC bus service running along the Finglas/Dundrum Core Orbital Corridor along the Dodder River. Potential for interchange with both the Marley Park – Rathmines and the Tallaght – Rathfarnham - Terenure Core Radial Corridors. Potential for interchange with the Clongriffin – Tallaght BRT proposal.
	Rank			
	2D Cycling Integration	This route option comprises of Primary/Secondary route 10 in the GDA Cycle Network Plan which runs along the Grange Road and Rathfarnham Road. Segregated cycle facilities provided along the majority of the CBC route along Grange Road and Rathfarnham Road. The proposed removal of segregated cycle facilities after the Main Street junction on Rathfarnham Road to the Dodder River crossing does not align with the GDA Cycle Network Plan proposal for route 10, however, parallel cycle route is proposed on Brookvale Downs. Due to width constraints along Brookvale Downs, mixed or shared street cycle facilities only feasible.	This route option comprises of Primary/Secondary route 10 in the GDA Cycle Network Plan which runs along the Grange Road and Rathfarnham Road. The proposed removal of segregated cycle facilities on Grange Road does not align with the GDA Cycle Network Plan proposal for route 10, however, a parallel cycle route via Rathfarnham Wood, Castleside Drive and connecting to Rathfarnham Road at Main Street junction is proposed. The proposed removal of segregated cycle facilities after the Main Street junction on Rathfarnham Road to the Dodder River crossing does not align with the GDA Cycle Network Plan proposal for route 10, however, a parallel cycle route is proposed on Brookvale Downs. Due to width constraints along Rathfarnham Wood, Castleside Drive and Brookvale Downs, mixed or shared street cycle facilities only feasible.	The route aligns with Secondary route S04 as identified in the GDA Cycle Network Plan. The proposed removal of segregated cycle facilities on Nutgrove Avenue between Grange Road and Nutgrove Way does not align with the GDA Cycle Network Plan proposal for route S04, however, a parallel cycle route via Rathfarnham Wood, Castleside Drive and connecting to Rathfarnham Road at Main Street junction is proposed. The proposed removal of segregated cycle facilities on Nutgrove Avenue between Nutgrove Way and Braemor Road does not align with the GDA Cycle Network Plan proposal for route S04, however, a separate cycle route is proposed along Whitehall Road, Landscape Park connecting to Braemor Road via Landscape Avenue. Due to width constraints along Landscape Park and Landscape Avenue, mixed or shared street cycle facilities only feasible.
	Rank			
	2E Traffic Network Integration	There are existing bus lanes in one direction along the majority of the length of SA1. SA1 is effectively the existing Rathfarnham QBC and as such a high volume of buses currently share the route with traffic. Bus lanes would be provided for the entire length of SA1. Reallocation of traffic lanes to bus lanes may be necessary at junctions at the expense of private vehicular traffic capacity (may impact on left turning capacity at junctions). SA1 has a total of 5 junctions.	There are existing bus lanes in one direction along the majority of the length of SA2. SA2 is effectively the existing Rathfarnham QBC and as such a high volume of buses currently share the route with traffic. Bus lanes would be provided for the entire length of SA2. Reallocation of traffic lanes to bus lanes may be necessary at junctions at the expense of private vehicular traffic capacity (may impact on left turning capacity at junctions). SA2 has a total of 5 junctions.	There are existing bus lanes in one direction along half the length of SB1 (Nutgrove Avenue). Bus lanes would be provided for the entire length of SB1. Reallocation of traffic lanes to bus lanes may be necessary at junctions at the expense of private vehicular traffic capacity (may impact on left turning capacity at junctions). Option SB1 has a total of 8 junctions compare to options SA1 & SA2 which have 5 junctions.
	Rank			

Section 1 Grange Road/Nutgrove Avenue junction to Dodder Crossing				
Appraisal Criteria	**Sub-Criteria**	**Route Option SA1 Grange Road - Rathfarnham**	**Route Option SA2 Grange Road – Rathfarnham (Parallel cycle route via Rathfarnham Wood/Castleside Drive)**	**Route Option SB1 Grange Road – Rathfarnham via Churchtown**
3 Accessibility and Social Inclusion	3A Key Trip Attractors	***Education*** - Loreto Primary School - Loreto High School Beaufort - St. Mary's National School ***Retail / Leisure*** - Rathfarnham Village - Rathfarnham Castle - Rathfarnham Castle Park - Church of Annunciation ***Employment*** - Rathfarnham Village - Rathfarnham Castle - Loreto Primary School - Loreto High School Beaufort - St. Mary's National School	***Education*** - Loreto Primary School - Loreto High School Beaufort - St. Mary's National School ***Retail / Leisure*** - Rathfarnham Village - Rathfarnham Castle - Rathfarnham Castle Park - Church of Annunciation ***Employment*** - Rathfarnham Village - Rathfarnham Castle - Loreto Primary School - Loreto High School Beaufort - St. Mary's National School	***Education*** - De La Salle College Churchtown - The High School Dublin - Church of Ireland Theological College - St. Mary's National School - Loreto Primary School - Loreto High School Beaufort ***Retail / Leisure*** - Nutgrove Shopping Centre - Leicester Celtic FC Dublin - Loreto Park - Lidl, Aldi, Harvey Norman, Homebase etc. - Church of the Good Shepard - SuperValu & Local retail units. ***Employment*** - Lidl, Aldi, Harvey Norman & all retail units - Nutgrove Enterprise Park - Nutgrove Shopping Centre - Divine Word National School - De La Salle College Churchtown - The High School Dublin - Church of Ireland Theological College
	Rank			
	3B Deprived Geographic Areas	Route option serves area of Affluent means from the Pobal Deprivation Index.	Route option serves area of Affluent means from the Pobal Deprivation Index.	Route option serves area of Marginally below Average to Affluent means from the Pobal Deprivation Index.
	Rank			
4 Safety	4A Road Safety	No. of Junctions: 5 1 turn movements required for each direction (1 left turn inbound direction, 1 right turn outbound direction)	No. of Junctions: 5 1 turn movements required for each direction (1 left turn inbound direction, 1 right turn outbound direction)	No. of Junctions: 8 3 turn movements required for each direction (2 right turns and 1 left turn inbound direction, 2 left turns and 1 right turn in the outbound direction)
	Rank			
	4B Pedestrian Safety	Pedestrian crossings are not located within 50m of most stops, additional pedestrian crossing will be required along the majority of the route. Footpaths are provided on both sides of the road. Similar ratio of pedestrian crossing facilities to route length across the options.	Pedestrian crossings are not located within 50m of most stops, additional pedestrian crossing will be required along the majority of the route. Footpaths are provided on both sides of the road. Similar ratio of pedestrian crossing facilities to route length across the options.	Pedestrian crossings are not located within 50m of most stops, additional pedestrian crossing will be required along the majority of the route. Footpaths are provided on both sides of the road. Similar ratio of pedestrian crossing facilities to route length across the options.
	Rank			

Section 1 Grange Road/Nutgrove Avenue junction to Dodder Crossing				
Appraisal Criteria	**Sub-Criteria**	**Route Option SA1 Grange Road - Rathfarnham**	**Route Option SA2 Grange Road – Rathfarnham (Parallel cycle route via Rathfarnham Wood/Castleside Drive)**	**Route Option SB1 Grange Road – Rathfarnham via Churchtown**
5 Environment	5A Archaeology & Cultural Heritage	1 Recorded Monument or site of archaeological and cultural heritage merit was identified within the assessment area which is Pearse Bridge on Rathfarnham Road.	1 Recorded Monument or site of archaeological and cultural heritage merit was identified within the assessment area which is Pearse Bridge on Rathfarnham Road.	2 Recorded Monuments or site of archaeological and cultural heritage merit were identified within the assessment area which includes Pearse Bridge on Rathfarnham Road and The Bottle Tower on Whitehall Road (this is set back from the road carriageway however).
	Rank			
	5B Architectural Heritage	5 protected structures were identified within the assessment area. The Church of Annunciation, The Yellow House Pub and the Castle Lodge Rathfarnham Road are also protected structures of note.	5 protected structures were identified within the assessment area. The Church of Annunciation, The Yellow House Pub and the Castle Lodge Rathfarnham Road are also protected structures of note	1 protected structures were identified within the assessment area. The Gate Lodge on Braemor/Dodder Road is a protected structure of note.
	Rank			
	5C Flora & Fauna	Possible amount of land take at Rathfarnham Castle Grounds (mature trees) may impact on existing green areas which are the subject of OS zoning in SDCC Development Plan ('To preserve, provide for open space and recreational amenities') (max 4m width, 80m length). Possible removal of trees on both sides of Rathfanham Road (young-early mature) and Brookvale Road to provide for segregated cycle facilities.	Removal of trees on both sides of The Castlelands, Castleside Drive (large quantity of young-early mature) and Brookvale Road to provide for segregated cycle facilities.	Removal of trees on both sides of Braemor Road (large quantity of young trees) and Dodder Park Road (large quantity of mature trees).
	Rank			
	5D Soils, Geology & Hydrology	No appreciable impacts	No appreciable impacts	No appreciable impacts
	Rank			
	5E Landscape & Visual	Removal of existing trees within road reservation and land take from Rathfarnham Castle grounds would have adverse impacts (max 5.4m width, 220m length).	No appreciable impacts	Land take from residential & commercial properties on Northern side of Nutgrove Avenue. Potential negative impacts associated with the re-engineering of mature housing estate roads (Whitehall road). Land take of residential properties on Eastern side of Whitehall Road and the Southern side of Nutgrove Ave. Possible removal of trees on both sides of Braemor Road (large quantity of young trees) and Dodder Park Road (large quantity of mature trees).
	Rank			
	5F Air Quality	Possible impacts due to increased proximity of vehicles to houses and gardens if bus lanes and cycles installed on grange Road/Rathfarnham Road.	No appreciable impacts	Possible impacts due to increased trafficking of road networks and increased proximity of vehicles to houses and gardens on Braemor road if bus lanes & cycle lanes are installed.
	Rank			
	5G Noise & Vibration	Possible impacts due to increased proximity of vehicles to houses and gardens if bus lanes and cycles installed on grange Road/Rathfarnham Road.	No appreciable impacts	Possible impacts due to increased trafficking of road networks and increased proximity of vehicles to houses and gardens on Braemor road if bus lanes & cycle lanes are installed.
	Rank			

Section 1 Grange Road/Nutgrove Avenue junction to Dodder Crossing				
Appraisal Criteria	**Sub-Criteria**	**Route Option SA1 Grange Road - Rathfarnham**	**Route Option SA2 Grange Road – Rathfarnham (Parallel cycle route via Rathfarnham Wood/Castleside Drive)**	**Route Option SB1 Grange Road – Rathfarnham via Churchtown**
5 Environment	**5H Land Use Character**	The land use of Rathfarnham Castle may be impacted negatively due to the land acquisition (max 5.5m width, 220m length from boundary wall, revised entry required). Any reconfiguration of the existing mature landscaping would have an adverse impact on the character of the street. Possible removal of trees on both sides of Brookvale Road to provide for segregated cycle facilities.	Any reconfiguration of the existing mature landscaping would have an adverse impact on the character of the street.	The level of land take required on Nutgrove Ave (between Grange Road & Nutgrove Way) would affect the viability of commercial properties from being used for its intended use. The level of land take required on Nutgrove Ave (between Nutgrove Way and Churchtown) and Whitehall Road would not affect the viability of residential properties from being used for its intended use. (less than 1m width over length of 80m) Any reconfiguration of the existing mature landscaping would have an adverse impact on the character of the street. Possible removal of trees on both sides of The Castlelands, Castleside Drive, Dodder Park Road.
	Rank			

APPENDIX B – Section 2 Route Options Assessment

Section 2
Terenure Village - Rathmines

Appraisal Criteria	Sub-Criteria	Option TVR1 Bus lane in both directions, parallel cycle route via Bushy Park Road, Zion Road and Orwell Road.	Option TVR2 Inbound Traffic Lane on Terenure Rd East	Option TVR3 Bus and Cycle lane in both directions	Option TVR4 Cycle route via Rathdown Park
1 Economy	1A Capital Cost	**€10,059,000.00** *Indicative Infrastructure costs €6,600,000.00 include:* • Bus lanes will be provided in both directions along entire section, with the exception of the section on Rathfarnham Road from Westbourne Road junction to Bushy Park Road junction where bus priority signalling is proposed in the outbound direction at this pinch point. There is also a 100m section of Terenure Road East at Terenure Cross where the inbound bus lane will not be provided owing to the proximity of commercial properties (majority protected) at this location. • Separate segregated cycle route is proposed along Bushy Park Road and Orwell Road. *Land Acquisition Costs €3,459,000.00* • 2306 sqm Private Land • 0 sqm Public Land • 75 residential properties affected	**€10,422,500.00** *Indicative Infrastructure costs €6,8000,000.00 include:* • Bus lanes in both directions along entire section. • Removal of outbound general traffic lane on Terenure Road East. • Separate segregated outbound cycle route is proposed along Bushy Park Road & Orwell Road reconnecting the route at Rathgar Village. *Land Acquisition Costs €3,622,500.00* • 2415 sqm Private Land • 0 sqm Public Land • 48 residential properties affected	**€11,268,500.00** *Indicative Infrastructure costs €6,800,000.00 include:* • Bus lanes will be provided in both directions along entire section, with the exception of a 100m section of Terenure Road East at Terenure Cross where the inbound bus lane will not be provided owing to the proximity of commercial properties (majority protected) at this location. • Segregated cycle route is proposed along Rathfarnham Road and Terenure Road East with the exception of the 100m section of Terenure Road East at Terenure Cross where the cycle lane will not be provided. *Land Acquisition Costs €4,468,500.00* • 2979 sqm Private Land • 0 sqm Public Land • 80 residential properties affected	**€10,633,500.00** *Indicative Infrastructure costs €7,800,000.00 include:* • Bus lanes will be provided in both directions along the entire section, with the exception of a 100m section of Terenure Road East at Terenure Cross where the inbound bus lane will not be provided owing to the proximity of commercial properties (majority protected) at this location. • Segregated cycle route is proposed along Rathfarnham Road and Terenure Road East with the exception of the 100m section of Terenure Road East at Terenure Cross where the cycle lane will not be provided. • Mixed or shared street cycle facilities only feasible along Rathdown Park due to width constraints and low traffic volumes & speed. • The cycle route will include a 150m spiral ramp and a 60m cycle bridge to the west of Pearse Bridge. *Land Acquisition Costs €2,833,500.00* • 1889 sqm Private Land • 0 sqm Public Land • 69 residential properties affected
	Rank				
	1B Transport Quality & Reliability	Journey Time: 5mins Length: 1.2km No. of Junctions: 3 No. of Pedestrian Crossings: 1 Full priority provided along most the route in both directions (except at bus priority signalling), with good journey time reliability for Bus services. Delays could occur at junction at Terenure village as buses would be competing with traffic and other bus services.	Journey Time: 5mins (inbound) Journey Time: 4mins (outbound) Length:1.2km No. of Junctions: 3 No. of Pedestrian Crossings: 1 Full priority in both directions is provided along route, good journey time reliability for Bus services.	Journey Time: 5mins (inbound) Journey Time: 4mins (outbound) Length:1.2km No. of Junctions: 3 No. of Pedestrian Crossings: 1 Full priority provided along most the route in both directions. Delays could occur at junction at Terenure village as inbound buses would be competing with traffic and other bus services.	Journey Time: 5mins (inbound) Journey Time: 4mins (outbound) Length:1.2km No. of Junctions: 3 No. of Pedestrian Crossings: 1 Full priority provided along most the route in both directions. Delays could occur at junction at Terenure village as inbound buses would be competing with traffic and other bus services.
	Rank				
2 Integration	2A Land Use Policy	Integrates with existing residential, educational & leisure uses in this established area.	Integrates with existing residential, educational & leisure uses in this established area.	Integrates with existing residential, educational & leisure uses in this established area	Integrates with existing residential, educational & leisure uses in this established area
	Rank				

Appraisal Criteria	Sub-Criteria	Option TVR5 Cycle Route via Riversdale Avenue	Option TVR6 Cycle Route via Laurelton /Meadowbank	Option TVR7 Cycle Route via The Dodder Greenway and Orwell Road	Option TVR8 Inbound bus lane Bushy Park Rd & Outbound bus lane Terenure Rd East
1 Economy	1A Capital Cost	**€10,478,500.00** *Indicative Infrastructure costs €7,300,000.00 include:* • Bus lanes will be provided in both directions along the entire section, with the exception of a 100m section of Terenure Road East at Terenure Cross where the inbound bus lane will not be provided owing to the proximity of commercial properties (majority protected) at this location. • Segregated cycle route is proposed via Riversdale Avenue, Bushy Park Road, Zion Road and Orwell Road to Rathgar Village. • Mixed or shared street cycle facilities only feasible along Riversdale Avenue due to width constraints and low traffic volumes & speed. • The cycle route will include a 150m spiral ramp and a 60m cycle bridge to the east of Pearse Bridge. *Land Acquisition Costs €3,178,500.00* • 2119 sqm Private Land • 0 sqm Public Land • 64 residential properties affected	**€9,958,000.00** *Indicative Infrastructure costs €7,000,000.00 include:* • Bus lanes will be provided in both directions along the entire section, with the exception of a 100m section of Terenure Road East at Terenure Cross where the inbound bus lane will not be provided owing to the proximity of commercial properties (majority protected) at this location. • Segregated cycle route is proposed via Laurelton, Meadowbank, Bushy Park Road, Zion Road and Orwell Road to Rathgar Village. • Mixed or shared street cycle facilities only feasible along Laurelton and Meadowbank due to width constraints and low traffic volumes & speed. • The cycle route will include a 150m spiral ramp and a 60m cycle bridge to the east of Pearse Bridge. *Land Acquisition Costs €2,958,000.00* • 1972 sqm Private Land • 0 sqm Public Land • 61 residential properties affected	**€8,857,000.00** *Indicative Infrastructure costs €6,700,000.00 include:* • Bus lanes will be provided in both directions along the entire section, with the exception of a 100m section of Terenure Road East at Terenure Cross where the inbound bus lane will not be provided owing to the proximity of commercial properties (majority protected) at this location. • Segregated cycle route is proposed via the Dodder Greenway, through Orwell Park and along Orwell Road to Rathgar Village. • The cycle route will include widening of the existing pedestrian bridge. *Land Acquisition Costs €2,157,000.00* • 1438 sqm Private Land • 0 sqm Public Land • 42 residential properties affected	**€11,017,500.00** *Indicative Infrastructure costs €6,600,000.00 include:* • One-way Bus lane provided outbound on Rathfarnham Road & Terenure Road East with the exception of the section on Rathfarnham Road from Westbourne Road junction to Bushy Park Road junction where bus priority signalling is proposed in the outbound direction at this pinch point. • Inbound bus lane provided on Bushy Park Road & Orwell Road. • Inbound cycle lane provided on Rathfarnham Road & Terenure Road East & separate segregated outbound cycle route is proposed along Bushy Park Road & Orwell Road reconnecting the route at Rathgar Village. • There is a 100m section of Terenure Road East at Terenure Cross where the inbound cycle lane will not be providing owing to the proximity of commercial properties at this location. *Land Acquisition Costs €4,417,500.00* • 2945 sqm Private Land • 0 sqm Public Land 66 residential properties affected
	Rank				
	1B Transport Quality & Reliability	Journey Time: 5mins (inbound) Journey Time: 4mins (outbound) Length:1.2km No. of Junctions: 3 No. of Pedestrian Crossings: 1 Full priority provided along most the route in both directions. Delays could occur at junction at Terenure village as inbound buses would be competing with traffic and other bus services.	Journey Time: 5mins (inbound) Journey Time: 4mins (outbound) Length:1.2km No. of Junctions: 3 No. of Pedestrian Crossings: 1 Full priority provided along most the route in both directions. Delays could occur at junction at Terenure village as inbound buses would be competing with traffic and other bus services.	Journey Time: 5mins (inbound) Journey Time: 4mins (outbound) Length:1.2km No. of Junctions: 3 No. of Pedestrian Crossings: 1 Full priority provided along most the route in both directions. Delays could occur at junction at Terenure village as inbound buses would be competing with traffic and other bus services.	Journey Time: 4mins (inbound), 5mins (outbound) Length: 1.5km (inbound), 1.2km (outbound). No. of Junctions: 3 No. of Pedestrian Crossings: 1 Full priority provided along most the route in both directions (except at bus priority signallings), with good journey time reliability for Bus services. Outbound bus lane bypasses Terenure Village.
	Rank				
2 Integration	2A Land Use Policy	Integrates with existing residential, educational & leisure uses in this established area	Integrates with existing residential, educational & leisure uses in this established area	Integrates with existing residential, educational & leisure uses in this established area	Integrates with existing residential, educational & leisure uses in this established area.
	Rank				

Section 2
Terenure Village - Rathmines

Appraisal Criteria	Sub-Criteria	Option TVR1 Bus lane in both directions, parallel cycle route via Bushy Park Road, Zion Road and Orwell Road.	Option TVR2 Inbound Traffic Lane on Terenure Rd East	Option TVR3 Bus and Cycle lane in both directions	Option TVR4 Cycle route via Rathdown Park	Option TVR5 Cycle Route via Riversdale Avenue	Option TVR6 Cycle Route via Laurelton /Meadowbank	Option TVR7 Cycle Route via The Dodder Greenway and Orwell Road	Option TVR8 Inbound bus lane Bushy Park Rd & Outbound bus lane Terenure Rd East
2 Integration	2B Residential Population and Employment Catchments	Residential Population Catchments - 5 minute walk catchment of approximately 4,663 - 10 minute walk catchment of approximately 11,774 Employment catchments - 10 minute walk catchment of approximately 2,491	Residential Population Catchments - 5 minute walk catchment of approximately 4,663 - 10 minute walk catchment of approximately 11,774 Employment catchments - 10 minute walk catchment of approximately 2,491	Residential Population Catchments - 5 minute walk catchment of approximately 4,663 - 10 minute walk catchment of approximately 11,774 Employment catchments - 10 minute walk catchment of approximately 2,491	Residential Population Catchments - 5 minute walk catchment of approximately 4,663 - 10 minute walk catchment of approximately 11,774 Employment catchments - 10 minute walk catchment of approximately 2,491	Residential Population Catchments - 5 minute walk catchment of approximately 4,663 - 10 minute walk catchment of approximately 11,774 Employment catchments - 10 minute walk catchment of approximately 2,491	Residential Population Catchments - 5 minute walk catchment of approximately 4,663 - 10 minute walk catchment of approximately 11,774 Employment catchments - 10 minute walk catchment of approximately 2,491	Residential Population Catchments - 5 minute walk catchment of approximately 4,663 - 10 minute walk catchment of approximately 11,774 Employment catchments - 10 minute walk catchment of approximately 2,491	Residential Population Catchments - 5 minute walk catchment of approximately 2,484 - 10 minute walk catchment of approximately 10,001 Employment catchments - 10 minute walk catchment of approximately 2,310 (Catchments for CBC in both directions).
	Rank								
	2C Transport Network Integration	Potential for interchange with local bus services. Potential for interchange with the Clongriffin – Tallaght BRT along Rathfarnham Road to Terenure Village.	Potential for interchange with local bus services. Potential for interchange with the Clongriffin – Tallaght BRT along Rathfarnham Road to Terenure Village.	Potential for interchange with local bus services. Potential for interchange with the Clongriffin – Tallaght BRT along Rathfarnham Road to Terenure Village.	Potential for interchange with local bus services. Potential for interchange with the Clongriffin – Tallaght BRT along Rathfarnham Road to Terenure Village.	Potential for interchange with local bus services. Potential for interchange with the Clongriffin – Tallaght BRT along Rathfarnham Road to Terenure Village.	Potential for interchange with local bus services. Potential for interchange with the Clongriffin – Tallaght BRT along Rathfarnham Road to Terenure Village.	Potential for interchange with local bus services. Potential for interchange with the Clongriffin – Tallaght BRT along Rathfarnham Road to Terenure Village.	Potential for interchange with local bus services. Potential for interchange with the Clongriffin – Tallaght BRT along Rathfarnham Road to Terenure Village.
	Rank								
	2D Cycling Integration	This route option is identified as Primary route 10/S03 in the GDA Cycle Network Plan. The proposed removal of segregated cycle facilities on Rathfarnham Road and Terenure Road East does not align with the GDA Cycle Network Plan proposal for route 10/SO3, however, a separate segregated cycle route is proposed along Bushy Park Road & Orwell Road (Secondary route S03) reconnecting the route at Rathgar Village.	This route option is identified as Primary route 10/S03 in the GDA Cycle Network Plan. The proposed removal of segregated cycle facilities on Rathfarnham Road and Terenure Road East does not align with the GDA Cycle Network Plan proposal for route 10/SO3, however, a separate segregated cycle route is proposed along Bushy Park Road & Orwell Road (Secondary route S03) reconnecting the route at Rathgar Village.	This route option is identified as Primary route 10/S03 in the GDA Cycle Network Plan. Existing cycle facilities along Rathfarnham and Terenure Road East, will be enhanced and full segregation achievable in both directions. This cycle route aligns with the GDA Cycle Network Plan proposal for Primary route 10/SO3, which is the busiest radial cycle route carrying the road in Dublin	This route option is identified as Primary route 10/S03 in the GDA Cycle Network Plan. The proposed removal of segregated cycle facilities on Rathfarnham Road and Terenure Road East does not align with the GDA Cycle Network Plan proposal for route 10/SO3, however, a separate segregated cycle route is proposed along Rathdown Park, Bushy Park Road & Orwell Road (Secondary route S03) reconnecting the route at Rathgar Village.	This route option is identified as Primary route 10/S03 in the GDA Cycle Network Plan. The proposed removal of segregated cycle facilities on Rathfarnham Road and Terenure Road East does not align with the GDA Cycle Network Plan proposal for route 10/SO3, however, a separate segregated cycle route is proposed along Riversdale Avenue, Bushy Park Road & Orwell Road (Secondary route S03) reconnecting the route at Rathgar Village.	This route option is identified as Primary route 10/S03 in the GDA Cycle Network Plan. The proposed removal of segregated cycle facilities on Rathfarnham Road and Terenure Road East does not align with the GDA Cycle Network Plan proposal for route 10/SO3, however, a separate segregated cycle route is proposed along Laurelton, Meadowbank, Bushy Park Road & Orwell Road (Secondary route S03) reconnecting the route at Rathgar Village.	This route option is identified as Primary route 10/S03 in the GDA Cycle Network Plan. The proposed removal of segregated cycle facilities on Rathfarnham Road and Terenure Road East does not align with the GDA Cycle Network Plan proposal for route 10/SO3, however, a separate segregated cycle route is proposed along the Dodder Greenway & Orwell Road (Secondary route S03) reconnecting the route at Rathgar Village. However, the cycle route is very circuitous and does not align with the CBC (cycle route is 2.1km in length).	This route option is identified as Primary route 10/S03 in the GDA Cycle Network Plan. The proposed removal of outbound segregated cycle facilities on Rathfarnham Road and Terenure Road East does not align with the GDA Cycle Network Plan proposal for route 10/SO3, however, a separate segregated outbound cycle route is proposed along Bushy Park Road & Orwell Road (Secondary route S03) reconnecting the route at Rathgar Village.
	Rank								

Section 2
Terenure Village - Rathmines

Appraisal Criteria	Sub-Criteria	Option TVR1 Bus lane in both directions, parallel cycle route via Bushy Park Road, Zion Road and Orwell Road.	Option TVR2 Inbound Traffic Lane on Terenure Rd East	Option TVR3 Bus and Cycle lane in both directions	Option TVR4 Cycle route via Rathdown Park	Option TVR5 Cycle Route via Riversdale Avenue	Option TVR6 Cycle Route via Laurelton /Meadowbank	Option TVR7 Cycle Route via The Dodder Greenway and Orwell Road	Option TVR8 Inbound bus lane Bushy Park Rd & Outbound bus lane Terenure Rd East
2 Integration	2E Traffic Network Integration	Layout of Terenure Village junction to be altered and right turn to Terenure East from Rathfarnham Road permitted for Buses at the expense of private vehicular traffic capacity and movement. There is a 100m section of Terenure Road East at Terenure Cross where the inbound bus lane will not be providing owing to the proximity of commercial properties (majority protected) at this location. TVR1 includes one queue relocation, in the outbound direction from the signalised junction at Bushy Park Road and Dodder Park Road (R112) on the Rathfarnham Road to achieve bus priority at the expense of private vehicular traffic capacity and movement. Section between Bushy Park junction and Pearse Bridge where the outbound bus lane will not be provided due to width constraints.	Layout of Terenure Village junction to be altered and right turn to Terenure East from Rathfarnham Road permitted for Buses at the expense of private vehicular traffic capacity and movement. It is considered that Option TVR2 which provides for inbound traffic only would have a significant traffic impact in terms of movement restrictions and increased traffic/congestion on Orwell Road and Bushy Park road. Due to the traffic diversions, there will be an increased traffic on residential roads (Victoria Road, Wasdale Grove, Greenmount Road). Bus lanes in both directions will be provided for the entire length of TVR2.	Layout of Terenure Village junction to be altered and right turn to Terenure East from Rathfarnham Road permitted for Buses at the expense of private vehicular traffic capacity and movement. Bus lanes in both directions will be provided for the entire length of TVR3 (except for aforementioned Pinch Points).	Layout of Terenure Village junction to be altered and right turn to Terenure East from Rathfarnham Road permitted for Buses at the expense of private vehicular traffic capacity and movement. There is a 100m section of Terenure Road East at Terenure Cross where the inbound bus lane will not be providing owing to the proximity of commercial properties (majority protected) at this location. Bus lanes in both directions will be provided for the entire length of TVR4 (except for aforementioned Pinch Points). Require the removal of a traffic lane on Orwell Road approaching Rathgar Village junction.	Layout of Terenure Village junction to be altered and right turn to Terenure East from Rathfarnham Road permitted for Buses at the expense of private vehicular traffic capacity and movement. There is a 100m section of Terenure Road East at Terenure Cross where the inbound bus lane will not be providing owing to the proximity of commercial properties (majority protected) at this location. Bus lanes in both directions will be provided for the entire length of TVR5 (except for aforementioned Pinch Points). Require the removal of a traffic lane on Orwell Road approaching Rathgar Village junction.	Layout of Terenure Village junction to be altered and right turn to Terenure East from Rathfarnham Road permitted for Buses at the expense of private vehicular traffic capacity and movement. There is a 100m section of Terenure Road East at Terenure Cross where the inbound bus lane will not be providing owing to the proximity of commercial properties (majority protected) at this location. Bus lanes in both directions will be provided for the entire length of TVR6 (except for aforementioned Pinch Points). Require the removal of a traffic lane on Orwell Road approaching Rathgar Village junction.	Layout of Terenure Village junction to be altered and right turn to Terenure East from Rathfarnham Road permitted for Buses at the expense of private vehicular traffic capacity and movement. There is a 100m section of Terenure Road East at Terenure Cross where the inbound bus lane will not be providing owing to the proximity of commercial properties (majority protected) at this location. Bus lanes in both directions will be provided for the entire length of TVR7 (except for aforementioned Pinch Points). Require the removal of a traffic lane on Orwell Road approaching Rathgar Village junction.	TVR8 includes one bus priority signallings, in the outbound direction from the signalised junction at Bushy Park Road and Dodder Park Road (R112) on the Rathfarnham Road to achieve bus priority at the expense of private vehicular traffic capacity and movement. Section between Bushy Park junction and Pearse Bridge where the outbound bus lane will not be provided due to width constraints at the expense of private vehicular traffic capacity & journey time.
	Rank								
3 Accessibility and Social Inclusion	3A Key Trip Attractors	In terms of trip attractors, a differentiator between route options involves the provision of bus lanes in both directions through Terenure Village with all its amenities.	In terms of trip attractors, a differentiator between route options involves the provision of bus lanes in both directions through Terenure Village with all its amenities.	In terms of trip attractors, a differentiator between route options involves the provision of bus lanes in both directions through Terenure Village with all its amenities.	In terms of trip attractors, a differentiator between route options involves the provision of bus lanes in both directions through Terenure Village with all its amenities.	In terms of trip attractors, a differentiator between route options involves the provision of bus lanes in both directions through Terenure Village with all its amenities.	In terms of trip attractors, a differentiator between route options involves the provision of bus lanes in both directions through Terenure Village with all its amenities.	In terms of trip attractors, a differentiator between route options involves the provision of bus lanes in both directions through Terenure Village with all its amenities.	Additional educational facilities (High School and Stratford college) are catered for due to the proposed inbound bus lane on Bushy Park and Orwell Road, however Terenure Village will be bypassed.
	Rank								
	3B Deprived Geographic	Route option serves area of Marginally Above Average to Very Affluent means from the Pobal Deprivation Index.	Route option serves area of Marginally Above Average to Very Affluent means from the Pobal Deprivation Index.	Route option serves area of Marginally Above Average to Very Affluent means from the Pobal Deprivation Index.	Route option serves area of Marginally Above Average to Very Affluent means from the Pobal Deprivation Index.	Route option serves area of Marginally Above Average to Very Affluent means from the Pobal Deprivation Index.	Route option serves area of Marginally Above Average to Very Affluent means from the Pobal Deprivation Index.	Route option serves area of Marginally Above Average to Very Affluent means from the Pobal Deprivation Index.	Route option serves area of Marginally Above Average to Very Affluent means from the Pobal Deprivation Index.
	Rank								
4 Safety	4A Road Safety	No. of Junctions: 4 1 turn movements required 1 turn movement required (1 right turn inbound direction and 1 left turn in the outbound direction) Outbound bus lane will not be provided between Bushy Park junction and Pearse Bridge due to width constraints.	No. of Junctions: 4 1 turn movements required. 1 turn movement required (1 right turn inbound and 1 left turn in the outbound direction) Fully segregated bus lanes in both directions for majority of the section.	No. of Junctions: 4 1 turn movements required. 1 turn movement required (1 right turn inbound and 1 left turn in the outbound direction) Fully segregated bus lanes in both directions for majority of the section.	No. of Junctions: 4 1 turn movements required. 1 turn movement required (1 right turn inbound and 1 left turn in the outbound direction) Fully segregated bus lanes in both directions for majority of the section.	No. of Junctions: 4 1 turn movements required. 1 turn movement required (1 right turn inbound and 1 left turn in the outbound direction) Fully segregated bus lanes in both directions for majority of the section.	No. of Junctions: 4 1 turn movements required. 1 turn movement required (1 right turn inbound and 1 left turn in the outbound direction) Fully segregated bus lanes in both directions for majority of the section.	No. of Junctions: 4 1 turn movements required. 1 turn movement required (1 right turn inbound and 1 left turn in the outbound direction) Fully segregated bus lanes in both directions for majority of the section.	No. of Junctions: 4 2 turn movements required. 2 turn movement required (1 right turn and 1 left turn in the inbound direction) Outbound bus lane will not be provided between Bushy Park junction and Pearse Bridge due to width constraints.
	Rank								

Section 2

Terenure Village - Rathmines

Appraisal Criteria	Sub-Criteria	Option TVR1 Bus lane in both directions, parallel cycle route via Bushy Park Road, Zion Road and Orwell Road.	Option TVR2 Inbound Traffic Lane on Terenure Rd East	Option TVR3 Bus and Cycle lane in both directions	Option TVR4 Cycle route via Rathdown Park	Option TVR5 Cycle Route via Riversdale Avenue	Option TVR6 Cycle Route via Laurelton /Meadowbank	Option TVR7 Cycle Route via The Dodder Greenway and Orwell Road	Option TVR8 Inbound bus lane Bushy Park Rd & Outbound bus lane Terenure Rd East
4 Safety	4B Pedestrian Safety	Footpaths provided both sides of Rathfarnham Road and Terenure Road East. Signalised pedestrian crossing provided on Terenure Road East Grange Road by Aldi shopping centre.	Footpaths provided both sides of Rathfarnham Road and Terenure Road East. Signalised pedestrian crossing provided on Terenure Road East Grange Road by Aldi shopping centre.	Footpaths provided both sides of Rathfarnham Road and Terenure Road East. Signalised pedestrian crossing provided on Terenure Road East Grange Road by Aldi shopping centre.	Footpaths provided both sides of Rathfarnham Road and Terenure Road East. Signalised pedestrian crossing provided on Terenure Road East Grange Road by Aldi shopping centre.	Footpaths provided both sides of Rathfarnham Road and Terenure Road East. Signalised pedestrian crossing provided on Terenure Road East Grange Road by Aldi shopping centre.	Footpaths provided both sides of Rathfarnham Road and Terenure Road East. Signalised pedestrian crossing provided on Terenure Road East Grange Road by Aldi shopping centre.	Footpaths provided both sides of Rathfarnham Road and Terenure Road East. Signalised pedestrian crossing provided on Terenure Road East Grange Road by Aldi shopping centre.	Footpaths provided both sides of Rathfarnham Road and Terenure Road East. Signalised pedestrian crossing provided on Terenure Road East Grange Road by Aldi shopping centre.
	Rank								
5 Environment	5A Archaeology & Cultural Heritage	1 Recorded Monument identified within the assessment area on the eastern side of Orwell Road approaching Rathgar Village. As this option does not involve land take by this monument, this will have no impact.	1 Recorded Monument identified within the assessment area on the eastern side of Orwell Road approaching Rathgar Village. As this option does not involve land take by this monument, this will have no impact.	1 Recorded Monument identified within the assessment area on the eastern side of Orwell Road approaching Rathgar Village. As this option does not involve land take by this monument, this will have no impact.	1 Recorded Monument identified within the assessment area on the eastern side of Orwell Road approaching Rathgar Village. As this option does not involve land take by this monument, this will have no impact	1 Recorded Monument identified within the assessment area on the eastern side of Orwell Road approaching Rathgar Village. As this option does not involve land take by this monument, this will have no impact	1 Recorded Monument identified within the assessment area on the eastern side of Orwell Road approaching Rathgar Village. As this option does not involve land take by this monument, this will have no impact	1 Recorded Monument identified within the assessment area on the eastern side of Orwell Road approaching Rathgar Village. As this option does not involve land take by this monument, this will have no impact	1 Recorded Monument identified within the assessment area on the eastern side of Orwell Road approaching Rathgar Village. As this option does not involve land take by this monument, this will have no impact.
	Rank								
	5B Architectural Heritage	The majority of residential properties along Zion Road are designated as protected structures. Possible land acquisition from 7 protected residential properties on Zion Road within an approximate 180m section, max 1.7m width from front curtilage (DCC Development Plan 2016-2022). The majority of residential properties along Terenure Road East are designated as protected structures. Possible land acquisition from 13 protected residential properties on Terenure Road East within an approximate 200m section, max 3m width from front curtilage (DCC Development Plan 2016-2022).	The majority of residential properties along Zion Road are designated as protected structures. Possible land acquisition from 7 protected residential properties on Zion Road within an approximate 180m section, max 1.7m width from front curtilage (DCC Development Plan 2016-2022).	The majority of residential properties along Terenure Road East are designated as protected structures. Possible land acquisition from 29 protected residential properties on Terenure Road East within an approximate 470m section, max 5.7m width from front curtilage (DCC Development Plan 2016-2022)	The majority of residential properties along Zion Road are designated as protected structures. Possible land acquisition from 8 protected residential properties on Zion Road within an approximate 180m section, max 1.7m width from front curtilage (DCC Development Plan 2016-2022). The majority of residential properties along Terenure Road East are designated as protected structures. Possible land acquisition from 13 protected residential properties on Terenure Road East within an approximate 200m section, max 3m width from front curtilage (DCC Development Plan 2016-2022).	The majority of residential properties along Zion Road are designated as protected structures. Possible land acquisition from 8 protected residential properties on Zion Road within an approximate 180m section, max 1.7m width from front curtilage (DCC Development Plan 2016-2022). The majority of residential properties along Terenure Road East are designated as protected structures. Possible land acquisition from 13 protected residential properties on Terenure Road East within an approximate 200m section, max 3m width from front curtilage (DCC Development Plan 2016-2022).	The majority of residential properties along Zion Road are designated as protected structures. Possible land acquisition from 8 protected residential properties on Zion Road within an approximate 180m section, max 1.7m width from front curtilage (DCC Development Plan 2016-2022). The majority of residential properties along Terenure Road East are designated as protected structures. Possible land acquisition from 13 protected residential properties on Terenure Road East within an approximate 200m section, max 3m width from front curtilage (DCC Development Plan 2016-2022).	Possible land acquisition from 3 protected residential properties on Zion Road within an approximate 115m section, max 3.5m width from front curtilage (DCC Development Plan 2016-2022). The majority of residential properties along Terenure Road East are designated as protected structures. Possible land acquisition from 13 protected residential properties on Terenure Road East within an approximate 200m section, max 3m width from front curtilage (DCC Development Plan 2016-2022).	The majority of residential properties along Zion Road are designated as protected structures. Possible land acquisition from 8 protected residential properties on Zion Road within an approximate 180m section, max 2.7m width from front curtilage (DCC Development Plan 2016-2022). The majority of residential properties along Terenure Road East are designated as protected structures. Possible land acquisition from 13 protected residential properties on Terenure Road East within an approximate 200m section, max 2m width from front curtilage (DCC Development Plan 2016-2022).
	Rank								
	5C Flora & Fauna	Possible removal of 5-6 trees on Rathfarnham Road to provide bus lanes in both directions. Also, possible removal of trees both sides of Bushy Park Road to provide segregated cycle track (large quantity of young trees).	Possible removal of 5-6 trees on both sides of Rathfarnham Road to provide bus lanes in both directions. Also, possible removal of trees both sides of Bushy Park Road to provide segregated cycle track (large quantity of young trees).	Possible removal of 5-6 trees on both sides of Rathfarnham Road. Possible removal of a number of trees in residential front curtilages along Terenure Road East (small quantity of mature trees).	A number of large mature trees will need to be removed to provide the bridge crossing. Possible removal of 5-6 trees on both sides of Rathfarnham Road. Also, possible removal of trees both sides of Bushy Park Road to provide segregated cycle track (large quantity of young trees). Possible removal of a small number of trees in residential front curtilages along Terenure Road East.	Requires the removal of a large number of trees to provide 150m, 12m wide spiral ramp on the northern banks of the River Dodder (500 sqm). Possible removal of 5-6 trees on both sides of Rathfarnham Road. Also, possible removal of trees both sides of Bushy Park Road to provide segregated cycle track (large quantity of young trees). Possible removal of a small number of trees in residential front curtilages along Terenure Road East.	Requires the removal of a large number of trees to provide 150m, 12m wide spiral ramp on the northern banks of the River Dodder (500 sqm). Possible removal of 5-6 trees on both sides of Rathfarnham Road. Also, possible removal of trees both sides of Bushy Park Road to provide segregated cycle track (large quantity of young trees). Possible removal of a small number of trees in residential front curtilages along Terenure Road East.	Requires the removal of a number of trees to provide the cycle bridge and cycle track through Orwell Park. Possible removal of 5-6 trees on both sides of Rathfarnham Road.	Possible removal of trees on one side of Rathfarnham Road to provide bus lane in one direction and cycle lane in the opposite direction. Also, possible removal of trees both sides of Bushy Park Road to provide inbound bus lane and outbound segregated cycle track (large quantity of young trees).
	Rank								

Section 2
Terenure Village - Rathmines

Appraisal Criteria	Sub-Criteria	Option TVR1 Bus lane in both directions, parallel cycle route via Bushy Park Road, Zion Road and Orwell Road.	Option TVR2 Inbound Traffic Lane on Terenure Rd East	Option TVR3 Bus and Cycle lane in both directions	Option TVR4 Cycle route via Rathdown Park	Option TVR5 Cycle Route via Riversdale Avenue	Option TVR6 Cycle Route via Laurelton /Meadowbank	Option TVR7 Cycle Route via The Dodder Greenway and Orwell Road	Option TVR8 Inbound bus lane Bushy Park Rd & Outbound bus lane Terenure Rd East
5 Environment	5D Soils, Geology &	No appreciable impacts	No appreciable impacts	No appreciable impacts	No appreciable impacts	No appreciable impacts	No appreciable impacts	No appreciable impacts	No appreciable impacts
	Rank								
	5E Landscape & Visual	Potential negative impacts associated with the re-engineering of mature housing estate roads. Removal of existing trees within road reservation of Rathfarnham Road & Bushy Park Road and land take from Bushy Park Road would have adverse impacts. Possible land acquisition along one side of Bushy Park Road within an approximate 650m section, max 3.5m width. Possible land acquisition along one side of Zion Road within an approximate 180m section, max 1.7m width from front curtilage, which may include tree removal. Possible land acquisition along one side of Terenure Road East within an approximate 200m section, max 3m width from front curtilage, which may include tree removal.	Potential negative impacts associated with the re-engineering of mature housing estate roads. Removal of existing trees within road reservation of Rathfarnham Road & Bushy Park Road and land take from Bushy Park Road would have adverse impacts. Possible land acquisition along one side of Bushy Park Road within an approximate 650m section, max 3.5m width. Possible land acquisition along one side of Zion Road within an approximate 180m section, max 1.7m width from front curtilage, which may include tree removal.	Possible land acquisition along mainly one side of Terenure Road East within an approximate 470m section, max 5.7m width from front curtilage, which may include tree removal. Removal of existing trees within road reservation of Rathfarnham Road.	Potential negative impacts associated with constructing a cycle bridge (60m span) and 150m long spiral bridge through Bushy/Dodder Park. Potential negative impacts associated with the re-engineering of mature housing estate roads. Removal of existing trees within road reservation of Rathfarnham Road & Bushy Park Road and land take from Bushy Park Road would have adverse impacts. Possible land acquisition along one side of Bushy Park Road within an approximate 650m section, max 2.5m width. Possible land acquisition along one side of Zion Road within an approximate 180m section, max 1.7m width from front curtilage, which may include tree removal. Possible land acquisition along one side of Terenure Road East within an approximate 200m section, max 3m width from front curtilage, which may include tree removal.	Potential negative impacts associated with constructing a cycle bridge (60m span) and 150m long spiral bridge through Bushy/Dodder Park. Potential negative impacts associated with the re-engineering of mature housing estate roads. Removal of existing trees within road reservation of Rathfarnham Road & Bushy Park Road and land take from Bushy Park Road would have adverse impacts. Possible land acquisition along one side of Bushy Park Road within an approximate 650m section, max 2.5m width. Possible land acquisition along one side of Zion Road within an approximate 180m section, max 1.7m width from front curtilage, which may include tree removal. Possible land acquisition along one side of Terenure Road East within an approximate 200m section, max 3m width from front curtilage, which may include tree removal.	Potential negative impacts associated with constructing a cycle bridge (60m span) and 150m long spiral bridge through Bushy/Dodder Park. Potential negative impacts associated with the re-engineering of mature housing estate roads. Removal of existing trees within road reservation of Rathfarnham Road & Bushy Park Road and land take from Bushy Park Road would have adverse impacts. Possible land acquisition along one side of Bushy Park Road within an approximate 650m section, max 2.5m width. Possible land acquisition along one side of Zion Road within an approximate 180m section, max 1.7m width from front curtilage, which may include tree removal. Possible land acquisition along one side of Terenure Road East within an approximate 200m section, max 3m width from front curtilage, which may include tree removal.	Potential negative impacts associated with constructing a cycle bridge through Orwell Park. Possible land acquisition along one side of Terenure Road East within an approximate 200m section, max 3m width from front curtilage, which may include tree removal. Possible land acquisition along one side of Orwell Road within an approximate 100m section, max 3m width from front curtilage.	Potential negative impacts associated with the re-engineering of mature housing estate roads (greater land take required compared to TVR1 & TVR2). Removal of existing trees within road reservation and land take from Bushy Park Road would have adverse impacts. Possible land acquisition along one side of Bushy Park Road within an approximate 650m section, max 4.5m width. Possible land acquisition along one side of Zion Road within an approximate 180m section, max 2.7m width from front curtilage, which may include tree removal. Possible land acquisition along one side of Terenure Road East within an approximate 200m section, max 2m width from front curtilage, which may include tree removal.
	Rank								
	5F Air Quality	Possible impacts due to increased trafficking of road networks and increased proximity of vehicles to houses and gardens if bus lane installed on Rathfarnham Road and Terenure Road East. Existing QBC route which carries bus traffic already so potential for impacts is not as great.	The positive impact due to reduced trafficking by replacing the existing outbound traffic lane on Terenure Road East will be exceeded by the negative impact due to the increased traffic on residential roads (Victoria Road, Wasdale Grove, Greenmount Road). due to the traffic diversions.	Possible impacts due to increased trafficking of road networks and increased proximity of vehicles to houses and gardens if bus lanes and cycle lanes installed on Rathfarnham Road and Terenure Road East. Existing QBC route which carries bus traffic already so potential for impacts is not as great.	Possible impacts due to increased trafficking of road networks and increased proximity of vehicles to houses and gardens if bus lane installed on Rathfarnham Road and Terenure Road East. Existing QBC route which carries bus traffic already so potential for impacts is not as great.	Possible impacts due to increased trafficking of road networks and increased proximity of vehicles to houses and gardens if bus lane installed on Rathfarnham Road and Terenure Road East. Existing QBC route which carries bus traffic already so potential for impacts is not as great.	Possible impacts due to increased trafficking of road networks and increased proximity of vehicles to houses and gardens if bus lane installed on Rathfarnham Road and Terenure Road East. Existing QBC route which carries bus traffic already so potential for impacts is not as great.	Possible impacts due to increased trafficking of road networks and increased proximity of vehicles to houses and gardens if bus lane installed on Rathfarnham Road and Terenure Road East. Existing QBC route which carries bus traffic already so potential for impacts is not as great.	Possible impacts due to increased trafficking of road networks and increased proximity of vehicles to houses and gardens if bus lane installed on Bushy Park Road and Terenure Road East.
	Rank								

Section 2

Terenure Village - Rathmines

Appraisal Criteria	Sub-Criteria	Option TVR1 Bus lane in both directions, parallel cycle route via Bushy Park Road, Zion Road and Orwell Road.	Option TVR2 Inbound Traffic Lane on Terenure Rd East	Option TVR3 Bus and Cycle lane in both directions	Option TVR4 Cycle route via Rathdown Park	Option TVR5 Cycle Route via Riversdale Avenue	Option TVR6 Cycle Route via Laurelton /Meadowbank	Option TVR7 Cycle Route via The Dodder Greenway and Orwell Road	Option TVR8 Inbound bus lane Bushy Park Rd & Outbound bus lane Terenure Rd East
5 Environment	5G Noise & Vibration	Possible impacts due to increased trafficking of road networks and increased proximity of vehicles to houses and gardens if bus lane installed on Rathfarnham Road and Terenure Road East. Existing QBC route which carries bus traffic already so potential for impacts is not as great.	The positive impact due to reduced trafficking by replacing the existing outbound traffic lane on Terenure Road East will be exceeded by the negative impact due to the increased traffic on residential roads (Victoria Road, Wasdale Grove, Greenmount Road). due to the traffic diversions.	Possible impacts due to increased trafficking of road networks and increased proximity of vehicles to houses and gardens if bus lanes and cycle lanes installed on Rathfarnham Road and Terenure Road East. Existing QBC route which carries bus traffic already so potential for impacts is not as great.	Possible impacts due to increased trafficking of road networks and increased proximity of vehicles to houses and gardens if bus lane installed on Rathfarnham Road and Terenure Road East. Existing QBC route which carries bus traffic already so potential for impacts is not as great.	Possible impacts due to increased trafficking of road networks and increased proximity of vehicles to houses and gardens if bus lane installed on Rathfarnham Road and Terenure Road East. Existing QBC route which carries bus traffic already so potential for impacts is not as great.	Possible impacts due to increased trafficking of road networks and increased proximity of vehicles to houses and gardens if bus lane installed on Rathfarnham Road and Terenure Road East. Existing QBC route which carries bus traffic already so potential for impacts is not as great.	Possible impacts due to increased trafficking of road networks and increased proximity of vehicles to houses and gardens if bus lane installed on Rathfarnham Road and Terenure Road East. Existing QBC route which carries bus traffic already so potential for impacts is not as great.	Possible impacts due to increased trafficking of road networks and increased proximity of vehicles to houses and gardens if bus lane installed on Bushy Park Road and Terenure Road East.
	Rank								
	5H Land Use Character	The land take required on Terenure Road East and Bushy Park Road would not have great affect on the viability of the residential properties from being used for their intended use. Sufficient access and parking space will still be provided.	The small amount of land take required on Bushy Park Road would not have significant affect the viability of the residential properties from being used for their intended use. Restricted access to the commercial amenities (Terenure & Rathgar Village) and residential properties due to the provision of one-way traffic on Terenure Road East.	The land take required on Terenure Road East and Bushy Park Road would not have great affect on the viability of the residential properties from being used for their intended use. Sufficient access and parking space will still be provided.	The land take required on Terenure Road East and Bushy Park Road would not have great affect on the viability of the residential properties from being used for their intended use. Sufficient access and parking space will still be provided.	The land take required on Terenure Road East and Bushy Park Road would not have great affect on the viability of the residential properties from being used for their intended use. Sufficient access and parking space will still be provided.	The land take required on Terenure Road East and Bushy Park Road would not have great affect on the viability of the residential properties from being used for their intended use. Sufficient access and parking space will still be provided.	The land take required on Terenure Road East and Orwell Road would not have great affect on the viability of the residential properties from being used for their intended use. Sufficient access and parking space will still be provided.	The land take required on Terenure Road East and Bushy Park Road would not have great affect on the viability of the residential properties from being used for their intended use. Sufficient access and parking space will still be provided.
	Rank								

Table 2

Section 2 Cycle Routes – Rathfarnham to Rathmines						
Appraisal Criteria	**Route Option CR1** **Cycle Route via Rathfarnham Road, Terenure Road East, Highfield Road, Rathmines Road Upper, Castlewood Avenue and Mount Pleasant Avenue.**	**Route Option CR2** **Cycle route via Rathfarnham Road, Terenure Road East, Rathgar Avenue, Kenilworth Square, Grosvenor Square, Mount Drummond Avenue and O'Hara Avenue.**	**Route Option CR3** **Cycle Route via Rathfarnham Road, Terenure Road East, Rathgar Road, Grosvenor Road, Grosvenor Square, Mount Drummond Avenue, and O'Hara Avenue.**	**Route Option CR4** **Cycle Route via Terenure Road East, Rathgar Road , Charleville Road, Wynnefield Road, Prince Arthur Terrace, Leinster Square, Louis Lane, Ardee Road, Lissenfield, and Grove Park.**	**Route Option CR5** **Cycle Route via Terenure Road East, Rathgar Road, Charleville Road, Grosvenor Lodge and Cathal Brugha Barracks.**	**Route Option CR6** **Cycle Route via Terenure Road East, Rathgar Road and Rathmines Road Lower.**
Capital Cost	**€20.2m** *Indicative Infrastructure costs €13.9m include:* • Segregated cycle lanes provided in both directions via Rathfarnham Road, Terenure Road East, Highfield Road, Rathmines Road Upper and Castlewood Avenue. Due to width constraints along Mount Pleasant Avenue, mixed or shared street cycle facilities only feasible. • Proposed 30kph speed limit on Rathmines Road Lower. • Provision of new cycle bridge crossing the Grand Canal. Cost includes CBC infrastructure costs from Rathfarnham Road to the start of Rathgar Road. Total Length of cycle route: 4.4km *Land Acquisition Costs €6.3m* • 4,215 sqm Private Land • 0 sqm Public Land • 112 residential properties affected • 3 commercial properties affected	**€18.8m** *Indicative Infrastructure costs €13.7m include:* • Segregated cycle lanes provided in both directions via Rathfarnham Road, Terenure Road East, Rathgar Avenue, Kenilworth Square, Grosvenor Road, Leinster Road. Due to width constraints and low traffic volumes & speed along Grosvenor Square, Mount Drummond Avenue and O'Hara Avenue mixed or shared street cycle facilities only feasible. • Proposed 30kph speed limit on Rathmines Road Lower. • Provision of new cycle bridge crossing the Grand Canal. Cost includes CBC infrastructure costs from Rathfarnham Road to the start of Rathgar Road. Total Length of cycle route: 3.7km *Land Acquisition Costs €5.1m* • 3,411 sqm Private Land • 0 sqm Public Land • 74 residential properties affected	**€21.9m** *Indicative Infrastructure costs €13.2 include:* • Segregated cycle lanes provided in both directions via Rathfarnham Road, Terenure Road East, Rathgar Road, Grosvenor Road and Leinster Road. • Mixed or shared street cycle facilities only feasible along Grosvenor Square, Mount Drummond Avenue and O'Hara Avenue due to width constraints and low traffic volumes & speed. • Proposed 30kph speed limit on Rathmines Road Lower. • Provision of new cycle bridge crossing the Grand Canal. Cost includes CBC infrastructure costs from Rathfarnham Road to the start of Rathmines Road Lower. Total Length of cycle route: 4km *Land Acquisition Costs €8.7m* • 5,813 sqm Private Land • 0 sqm Public Land • 122 residential properties affected • 1 commercial properties affected	**€25.3m** *Indicative Infrastructure costs €14.2 include:* • Segregated cycle lanes provided in both directions via Rathfarnham Road, Terenure Road East, Rathgar Road and Charleville Road. • Mixed or shared street cycle facilities only feasible along Wynnefield Road, Prince Arthur Terrace, Leinster Square, Louis Lane, Ardee Road, Lissenfield, and Grove Park due to width constraints and low traffic volumes & speed. • Proposed 30kph speed limit on Rathmines Road Lower. • Provision of new cycle bridge crossing the Grand Canal. Cost includes CBC infrastructure costs from Rathfarnham Road to the start of Rathmines Road Lower. Total Length of cycle route: 3.9km *Land Acquisition Costs €11.1m* • 7,374 sqm Private Land • 0 sqm Public Land • 132 residential properties affected • 3 commercial properties affected	**€26.8m** *Indicative Infrastructure costs €14.3 include:* • Segregated cycle lanes provided in both directions via Rathfarnham Road, Terenure Road East, Rathgar Road, Grosvenor Road and Charleville Road. • Mixed or shared street cycle facilities only feasible along Charleville Road and Grosvenor Lodge due to width constraints and low traffic volumes & speed. • Proposed 30kph speed limit on Rathmines Road Lower. • Provision of new cycle bridge crossing the Grand Canal. Cost includes CBC infrastructure costs from Rathfarnham Road to the start of Rathmines Road Lower. Total Length of cycle route: 3.6km *Land Acquisition Costs €12.5m* • 8,347 sqm Private Land (2,081 sqm from Cathal Brugha Barracks) • 0 sqm Public Land • 123 residential properties affected • 1 commercial properties affected	**€28.4m** *Indicative Infrastructure costs €14.6 include:* • Segregated cycle lanes provided in both directions via Rathfarnham Road, Terenure Road East, Rathgar Road and Rathmines Road Lower. • Provision of new cycle bridge crossing the Grand Canal. Cost includes CBC infrastructure costs from Rathfarnham Road to the start of Rathmines Road Lower. Total Length of cycle route: 3.4km *Land Acquisition Costs €13.8m* • 9,232 sqm Private Land • 0 sqm Public Land • 163 residential properties affected • 45 commercial properties affected
Rank						
Road Safety	7 turn movements required (inbound - 4 right turns and 3 left turns, outbound - 3 right turns and 5 left turns) Segregated cycle route in both directions for 3.3km. Shared/mixed street cycle facilities for 1.1km. 75% of the total cycle route is segregated.	11 turn movements required (inbound - 6 right turns and 5 left turns, outbound - 5 right turns and 6 left turns) Parallel segregated cycle route in both directions for 2.8km. Shared/mixed street cycle facilities for 900m. 830m of segregated cycle lanes linking parallel cycle route to CBC route. 76% of the total cycle route is segregated.	8 turn movements required (inbound - 6 right turns and 4 left turns, outbound - 4 right turns and 6 left turns) Parallel segregated cycle route in both directions for directions for 3.1km. Shared/mixed street cycle facilities for 900m. 77% of the total cycle route is segregated.	9 turn movements required (inbound - 4 right turns and 5 left turns, outbound - 5 right turns and 4 left turns) Parallel segregated cycle route in both directions for directions for 2.65km. Shared/mixed street cycle facilities for 1.25km. 67% of the total cycle route is segregated.	6 turn movements required (inbound - 4 right turns and 2 left turns, outbound - 2 right turns and 4 left turns) Parallel segregated cycle route in both directions for directions for 3.3km. Shared/mixed street cycle facilities for 300m. 92% of the total cycle route is segregated.	1 turn movements required (inbound - 1 right turns and 0 left turns, outbound - 0 right turns and 1 left turns) Segregated cycle lanes in both directions along the entire CBC for 3.1km. The entire cycle route is segregated.
Rank						

Section 2 Cycle Routes – Rathfarnham to Rathmines						
Appraisal Criteria	**Route Option CR1** **Cycle Route via Rathfarnham Road, Terenure Road East, Highfield Road, Rathmines Road Upper, Castlewood Avenue and Mount Pleasant Avenue.**	**Route Option CR2** **Cycle route via** **Rathfarnham Road, Terenure Road East, Rathgar Avenue, Kenilworth Square, Grosvenor Square, Mount Drummond Avenue and O'Hara Avenue.**	**Route Option CR3** **Cycle Route via Rathfarnham Road, Terenure Road East, Rathgar Road, Grosvenor Road, Grosvenor Square, Mount Drummond Avenue, and O'Hara Avenue.**	**Route Option CR4** **Cycle Route via Terenure Road East, Rathgar Road , Charleville Road, Wynnefield Road, Prince Arthur Terrace, Leinster Square, Louis Lane, Ardee Road, Lissenfield, and Grove Park.**	**Route Option CR5** **Cycle Route via Terenure Road East, Rathgar Road, Charleville Road, Grosvenor Lodge and Cathal Brugha Barracks.**	**Route Option CR6** **Cycle Route via Terenure Road East, Rathgar Road and Rathmines Road Lower.**
Coherence	This route option comprises of Primary route 10 in the GDA Cycle Network Plan. The proposed removal of segregated cycle facilities on Rathgar Road & Rathmines Road does not align with the GDA Cycle Network Plan proposal for route 10, however Parallel segregated cycle route via Highfield Road, Rathmines Road Upper and Castlewood Avenue. Due to width constraints along Mount Pleasant Avenue, mixed or shared street cycle facilities only feasible. Cycle route connects with Rathgar Village and Rathmines Village but does not travel through Rathmines Village via Rathmines Road Lower.	This route option comprises of Primary route 10 in the GDA Cycle Network Plan. The proposed removal of segregated cycle facilities on Rathgar Road & Rathmines Road does not align with the GDA Cycle Network Plan proposal for route 10, however Parallel segregated cycle route via Rathgar Avenue, Kenilworth Square, Grosvenor Road, Leinster Road. Due to width constraints along Grosvenor Square, Mount Drummond Avenue and O'Hara Avenue mixed or shared street cycle facilities only feasible. Cycle route connects with Rathgar Village and Rathmines Village but does not travel through Rathmines Village via Rathmines Road Lower.	This route option comprises of Primary route 10 in the GDA Cycle Network Plan. The proposed removal of segregated cycle facilities on Rathmines Road does not align with the GDA Cycle Network Plan proposal for route 10, however Parallel segregated cycle route proposed via Grosvenor Road and Leinster Road. Due to width constraints along Grosvenor Square, Mount Drummond Avenue and O'Hara Avenue mixed or shared street cycle facilities only feasible. Cycle route connects with Rathgar Village and Rathmines Village but does not travel through Rathmines Village via Rathmines Road Lower. Cycle network travels along Rathgar Road which carries the majority of cycle traffic (in cycle-km terms).	This route option comprises of Primary route 10 in the GDA Cycle Network Plan. The proposed removal of segregated cycle facilities on Rathmines Road does not align with the GDA Cycle Network Plan proposal for route 10, however Parallel cycle route proposed via Charleville Road, Wynnefield Road, Prince Arthur Terrace, Leinster Square, Louis Lane, Ardee Road, Lissenfield, and Grove Park. Due to width constraints shared street cycle facilities for the majority of the route. Cycle route connects with Rathgar Village and Rathmines Village but does not travel through Rathmines Village via Rathmines Road Lower. Cycle network travels along Rathgar Road which carries the majority of cycle traffic (in cycle-km terms).	This route option comprises of Primary route 10 in the GDA Cycle Network Plan. The proposed removal of segregated cycle facilities on Rathmines Road does not align with the GDA Cycle Network Plan proposal for route 10, however Parallel cycle route proposed via Charleville Road, Grosvenor Lodge and Cathal Brugha Barracks. Cycle route connects with Rathgar Village and Rathmines Village but does not travel through Rathmines Village via Rathmines Road Lower. Cycle network travels along Rathgar Road which carries the majority of cycle traffic (in cycle-km terms).	This route option comprises of Primary route 10 in the GDA Cycle Network Plan. Existing cycle facilities along Terenure Road East, Rathgar Road and Rathmines Road would be enhanced and full segregation achievable in both directions. The proposed segregated cycle route is continuous and travels through Terenure Village, Rathgar Village and Rathmines Village.
Rank						
Directness	No. of Junctions: 9 Length: 4.4km 1.24km of the cycle route is on the CBC (Rathfarnham Road & Terenure Road East). Remainder of the cycle route (1km) is a separate parallel route - large detour from the CBC route.	No. of Junctions: 13 Length: 3.7km 1.24km of the cycle route is on the CBC (Rathfarnham Road & Terenure Road East). Remainder of the cycle route (900m) is a separate parallel route - large detour from the CBC route.	No. of Junctions: 11 Length: 4km 2.4km of the cycle route is on the CBC (Rathfarnham Road, Terenure Road East, Rathgar Road & Rathmines Road Lower). Separate parallel cycle route also provided via Grosvenor Road/Grosvenor Square/Mount Drummond Ave – medium detour from the CBC route.	No. of Junctions: 11 Length: 3.9km 2.65km of the cycle route is on the CBC (Rathfarnham Road, Terenure Road East, Rathgar Road & Rathmines Road Lower). Remainder of the cycle route (1.25km) is a separate parallel route – close proximity to the CBC.	No. of Junctions: 11 Length: 3.6km 3.3km of the cycle route is on the CBC (Rathfarnham Road, Terenure Road East, Rathgar Road & Rathmines Road Lower). Remainder of the cycle route is a separate parallel route (300m) – close proximity to the CBC.	No. of Junctions: 7 Length: 3.4km Cycle route is on the CBC for the entire section.
Rank						
Attractiveness	Parallel segregated cycle route in both directions for 3.3km. Shared/mixed street cycle facilities for 1.1km. Cycle route via Mount Pleasant Avenue is not considered a very interesting route for cyclists.	Parallel segregated cycle route in both directions for 2.8km. Shared/mixed street cycle facilities for 900m. 830m of segregated cycle lanes linking parallel cycle route to CBC route. Cycle route via Grosvenor Road, Rathgar Avenue and Mount Drummond Avenue is not considered a very interesting route for cyclists.	Parallel segregated cycle route in both directions for directions for 3.1km. Shared/mixed street cycle facilities for 900m. Cycle route via Mount Drummond Avenue is not considered a very interesting route for cyclists.	Parallel segregated cycle route in both directions for directions for 2.65km. Shared/mixed street cycle facilities for 1.25km. Cycle route via St. Mary's College and St. Louis School will be an interesting route for recreational cyclists.	Parallel segregated cycle route in both directions for directions for 3.3km. Shared/mixed street cycle facilities for 300m. Cycle route via Cathal Brugha Barracks will be an interesting route for cyclists.	Segregated cycle lanes in both directions along the CBC for 3.4km.
Rank						

Section 2 Cycle Routes – Rathfarnham to Rathmines						
Appraisal Criteria	**Route Option CR1** **Cycle Route via Rathfarnham Road, Terenure Road East, Highfield Road, Rathmines Road Upper, Castlewood Avenue and Mount Pleasant Avenue.**	**Route Option CR2** **Cycle route via** **Rathfarnham Road, Terenure Road East, Rathgar Avenue, Kenilworth Square, Grosvenor Square, Mount Drummond Avenue and O'Hara Avenue.**	**Route Option CR3** **Cycle Route via Rathfarnham Road, Terenure Road East, Rathgar Road, Grosvenor Road, Grosvenor Square, Mount Drummond Avenue, and O'Hara Avenue.**	**Route Option CR4** **Cycle Route via Terenure Road East, Rathgar Road , Charleville Road, Wynnefield Road, Prince Arthur Terrace, Leinster Square, Louis Lane, Ardee Road, Lissenfield, and Grove Park.**	**Route Option CR5** **Cycle Route via Terenure Road East, Rathgar Road, Charleville Road, Grosvenor Lodge and Cathal Brugha Barracks.**	**Route Option CR6** **Cycle Route via Terenure Road East, Rathgar Road and Rathmines Road Lower.**
Comfort	Parallel segregated cycle route in both directions for 3.3km. Shared/mixed street cycle facilities for 1.1km.	Parallel segregated cycle route in both directions for 2.8km. Shared/mixed street cycle facilities for 900m. 830m of segregated cycle lanes linking parallel cycle route to CBC route.	Parallel segregated cycle route in both directions for directions for 3.1km. Shared/mixed street cycle facilities for 900m.	Parallel segregated cycle route in both directions for directions for 2.65km. Shared/mixed street cycle facilities for 1.25km.	Parallel segregated cycle route in both directions for directions for 3.3km. Shared/mixed street cycle facilities for 300m.	Segregated cycle lanes in both directions along the CBC for 3.4km.
Rank						
Environmental	Land acquisition required from 32 protected residential properties on Terenure Road East, 20 protected residential properties on Highfield Road, 9 protected residential properties on Rathmines Road Upper and 18 protected residential properties on Castlewood Avenue (Draft DCC Development Plan 2016-2022). Potential negative impacts associated with the re-engineering of mature roads (Highfield Road, Rathmines Road Upper, Castlewood Avenue) to provide cycle route.	Land acquisition required from 32 protected residential properties on Terenure Road East, 4 protected properties on Rathgar Avenue (including a school) (Draft DCC Development Plan 2016-2022). Potential negative impacts associated with the re-engineering of mature roads (Rathgar Avenue, Kenilworth Square, Grosvenor Place) to provide cycle route.	Land acquisition required from 32 protected residential properties on Terenure Road East and 59 protected residential properties on Rathgar Road (Draft DCC Development Plan 2016-2022). The level of land take required on Rathgar Road would affect the viability of commercial properties (possible 10 properties) from being used for its intended use. Potential negative impacts associated with the re-engineering of mature roads (Grosvenor Road and Grosvenor Place) to provide cycle route.	Land acquisition required from 32 protected residential properties on Terenure Road East and 59 protected residential properties on Rathgar Road (Draft DCC Development Plan 2016-2022). The level of land take required on Rathgar Road would affect the viability of commercial properties (possible 10 properties) from being used for its intended use. Land acquisition required from Wynnefield Car Park, St. Mary's College (protected structure), Lissenfield and 2 brownfield sites (connecting Lissenfield to Grove Park) to provide parallel cycle route (Draft DCC Development Plan 2016-2022).	Land acquisition required from 32 protected residential properties on Terenure Road East and 59 proposed to be protected residential properties on Rathgar Road (Draft DCC Development Plan 2016-2022). The level of land take required on Rathgar would affect the viability of commercial properties (possible 10 properties) from being used for its intended use. Land acquisition maybe required from Cathal Brugha Barracks and football pitch to provide parallel cycle route, length of 580m (Permissive access required).	Land acquisition required from 32 protected residential properties and 7 protected commercial properties on Terenure Road East, 59 proposed protected residential properties on Rathgar Road and 45 protected properties on Rathmines Road Upper (Draft DCC Development Plan 2016-2022). The level of land take required on Terenure Road East, Rathgar Road and Rathmines Road would affect the viability of commercial properties (possible 35 properties) from being used for its intended use.
Rank						

Table 3

Section 2 Dodder River to Grand Canal Crossing								
Appraisal Criteria	**Sub-Criteria**	**Route Option CB1 Rathfarnham Road – Rathmines Road Lower (Inbound traffic only on Rathgar Road, Outbound traffic only Rathmines Road)**	**Route Option CB2 Rathfarnham Road – Rathmines Road Lower (Inbound traffic only on Rathgar and Rathmines Road)**	**Route Option CB3 Rathfarnham Road – Rathmines Road Lower (Outbound traffic only on Rathgar and Rathmines Road)**	**Route Option CB4 Rathfarnham Road – Rathmines Road Lower (Parallel cycle route via Charleville Road, Grosvenor Lodge and Cathal Brugha Barracks.)**	**Route Option CB5 Rathfarnham Road – Rathmines Road Lower (Half Inbound & Half Outbound Bus Lanes on Rathmines Road Lower)**	**Route Option CB6 Rathfarnham Road – Rathmines Road Lower (Outbound traffic only on Rathmines Road Lower)**	**Route Option CB7 Rathfarnham Road – Rathmines Road Lower (Bus lanes via Highfield Road/Rathmines Road Upper) Parallel cycle route via Rathgar Road, Charleville Road, Grosvenor Lodge and Cathal Brugha Barracks).**
1 Economy	**1A Capital Cost**	**€21.5m** *Indicative Infrastructure costs €16.0 include:* • Bus lanes provided in both directions along Rathfarnham Road, Terenure Road East, Rathgar Road and Rathmines Road Lower. There is a 100m section of Terenure Road East at Terenure Cross where the inbound bus lane will not be provided owing to the proximity of commercial properties (majority proposed protected) at this location. • Provision of new cycle bridge on the western side of Pearse Bridge. • Bus priority signalling in both direction from Rathmines Road Upper and Castlewood along the Rathmines Road Lower. • Removal of outbound general traffic lane on Rathgar Road between Highfield Road and Rathmines Road Upper. • 2-way traffic maintained on Rathmines Road Lower between Castlewood Ave and Rathmines Road Upper junction. • Rathmines Road Upper and Castlewood	**€21.5m** *Indicative Infrastructure costs €16.0 include:* • Bus lanes provided in both directions along Rathfarnham Road, Terenure Road East, Rathgar Road and Rathmines Road Lower. There is a 100m section of Terenure Road East at Terenure Cross where the inbound bus lane will not be provided owing to the proximity of commercial properties (majority proposed protected) at this location. • Provision of new cycle bridge on the western side of Pearse Bridge. • Removal of outbound general traffic lane on Rathgar Road between Highfield Road and Rathmines Road Upper. • Removal of outbound general traffic lane on Rathmines Road between Castlewood Ave North and Grove Road/Canal Road. • 2-way traffic maintained on Rathmines Road Lower between Castlewood Ave and Rathmines Road Upper junction. • Cycle facilities will be provided on	**€21.5m** *Indicative Infrastructure costs €16.0 include:* • Bus lanes provided in both directions along Rathfarnham Road, Terenure Road East, Rathgar Road and Rathmines Road Lower. There is a 100m section of Terenure Road East at Terenure Cross where the inbound bus lane will not be provided owing to the proximity of commercial properties (majority proposed protected) at this location. • Provision of new cycle bridge on the western side of Pearse Bridge. • Removal of inbound general traffic lane on Rathgar Road between Highfield Road and Rathmines Road Upper. • Removal of inbound general traffic lane on Rathmines Road between Castlewood Ave North and Grove Road/Canal Road. • 2-way traffic maintained on Rathmines Road Lower between Castlewood Ave and Rathmines Road Upper junction. • Cycle facilities will be provided on	**€26.7m** *Indicative Infrastructure costs €16.8 include:* • Bus lanes provided in both directions along Rathfarnham Road, Terenure Road East, Rathgar Road and Rathmines Road Lower. There is a 100m section of Terenure Road East at Terenure Cross where the inbound bus lane will not be provided owing to the proximity of commercial properties (majority proposed protected) at this location. • Provision of new cycle bridge on the western side of Pearse Bridge. • Segregated cycle lanes provided in both directions via Rathfarnham Road, Terenure Road East, Rathgar Road, Charleville Road, Grosvenor Lodge and Cathal Brugha Barracks. • Due to width constraints along Charleville Close and Grosvenor Lodge, mixed or shared street cycle facilities only feasible. • Proposed 30kph speed limit on Rathmines Road Lower.	**€26.8m** *Indicative Infrastructure costs €17.0 include:* • Bus lanes provided in both directions along Rathfarnham Road, Terenure Road East, Rathgar Road and Rathmines Road Lower. There is a 100m section of Terenure Road East at Terenure Cross where the inbound bus lane will not be provided owing to the proximity of commercial properties (majority proposed protected) at this location. • Provision of new cycle bridge on the western side of Pearse Bridge. • Inbound bus lane provided on Rathmines Road Lower from Rathmines Road Upper to Military road junction and outbound bus lane provided from Grove Road to Military Road junction. • Segregated cycle facilities will be provided on Rathfarnham Road, Terenure Road East, Rathgar Road and Rathmines Road Lower • Provision of new cycle bridge crossing the Grand Canal.	**€26.8m** *Indicative Infrastructure costs €17.0 include:* • Bus lanes provided in both directions along Rathfarnham Road, Terenure Road East, Rathgar Road and Rathmines Road Lower. There is a 100m section of Terenure Road East at Terenure Cross where the inbound bus lane will not be provided owing to the proximity of commercial properties (majority proposed protected) at this location. • Provision of new cycle bridge on the western side of Pearse Bridge. • Removal of inbound general traffic lane on Rathmines Road Lower between Castlewood Ave North and Grove Road/Canal Road. • 2-way traffic maintained on Rathmines Road Lower between Castlewood Ave and Rathmines Road Upper junction. • Segregated cycle facilities will be provided in both directions along entire section, with the exception of the section on Rathmines Road	**€26.7m** *Indicative Infrastructure costs €17.4 include:* • Bus lanes provided in both directions along Rathfarnham Road, Terenure Road East, Rathgar Road and Rathmines Road Lower. There is a 100m section of Terenure Road East at Terenure Cross where the inbound bus lane will not be provided owing to the proximity of commercial properties (majority proposed protected) at this location. • Provision of new cycle bridge on the western side of Pearse Bridge. • Segregated cycle facilities will be provided on Rathfarnham Road, Terenure Road East, Rathgar Road, Charleville Road, Grosvenor Lodge and Cathal Brugha Barracks. • Due to width constraints along Charleville Close and Grosvenor Lodge, mixed or shared street cycle facilities only feasible. • Proposed 30kph speed limit on Rathmines Road Lower.

Section 2

Dodder River to Grand Canal Crossing

Appraisal Criteria	Sub-Criteria	Route Option CB1 Rathfarnham Road – Rathmines Road Lower (Inbound traffic only on Rathgar Road, Outbound traffic only Rathmines Road)	Route Option CB2 Rathfarnham Road – Rathmines Road Lower (Inbound traffic only on Rathgar and Rathmines Road)	Route Option CB3 Rathfarnham Road – Rathmines Road Lower (Outbound traffic only on Rathgar and Rathmines Road)	Route Option CB4 Rathfarnham Road – Rathmines Road Lower (Parallel cycle route via Charleville Road, Grosvenor Lodge and Cathal Brugha Barracks.)	Route Option CB5 Rathfarnham Road – Rathmines Road Lower (Half Inbound & Half Outbound Bus Lanes on Rathmines Road Lower)	Route Option CB6 Rathfarnham Road – Rathmines Road Lower (Outbound traffic only on Rathmines Road Lower)	Route Option CB7 Rathfarnham Road – Rathmines Road Lower (Bus lanes via Highfield Road/Rathmines Road Upper) Parallel cycle route via Rathgar Road, Charleville Road, Grosvenor Lodge and Cathal Brugha Barracks).
1 Economy	1A Capital Cost	where bus priority signalling is proposed in the outbound direction and both directions respectively. • Removal of outbound general traffic lane on Rathgar Road between Highfield Road and Rathmines Road Upper. • Removal of inbound general traffic lane on Rathmines Road Lower between Castlewood Ave North and Grove Road/Canal Road. • Segregated cycle facilities will be provided on Rathfarnham Road, Terenure Road East, Rathgar Road and Rathmines Road Lower. • Provision of new cycle bridge crossing the Grand Canal. *Land Acquisition Costs €5.5m* • 3,673 sqm Private Land • 0 sqm Public Land • 144 residential properties affected • 12 commercial properties affected	Rathfarnham Road to Terenure Road junction. Cycle facilities will not be provided on Terenure Road East however a parallel cycle route is proposed via Bushy Park Road, Zion Road, Orwell Rd. • Segregated cycle track proposed on Rathgar Road and Rathmines Road. • Provision of new cycle bridge crossing the Grand Canal. *Land Acquisition Costs €5.5m* • 3,673 sqm Private Land • 0 sqm Public Land • 144 residential properties affected • 12 commercial properties affected	Rathfarnham Road to Terenure Road junction. Cycle facilities will not be provided on Terenure Road East however a parallel cycle route is proposed via Bushy Park Road, Zion Road, Orwell Rd. • Segregated cycle track proposed on Rathgar Road and Rathmines Road. • Provision of new cycle bridge crossing the Grand Canal. *Land Acquisition Costs €5.5m* • 3,673 sqm Private Land • 0 sqm Public Land • 144 residential properties affected • 12 commercial properties affected	• Mixed or shared street cycle facilities only feasible along Grosvenor Square, Mount Drummond Avenue and O'Hara Avenue due to width constraints and low traffic volumes & speed. • Provision of new cycle bridge crossing the Grand Canal. *Land Acquisition Costs €9.7m* • 8,347 sqm Private Land • 0 sqm Public Land • 112 residential properties affected • 1 commercial properties affected	*Land Acquisition Costs €9.8m* • 6,561 sqm Private Land • 0 sqm Public Land • 149 residential properties affected • 11 commercial properties affected	Lower from Rathgar Road to Castlewood Avenue where no cycle facilities cannot be provided due to width constraints. • Provision of new cycle bridge crossing the Grand Canal. *Land Acquisition Costs €9.8m* • 6,542 sqm Private Land • 0 sqm Public Land • 149 residential properties affected • 11 commercial properties affected	• Provision of new cycle bridge crossing the Grand Canal. *Land Acquisition Costs €11.3m* • 7,512 sqm Private Land • 0 sqm Public Land • 108 residential properties affected • 1 commercial properties affected
	Rank							
	1B Transport Quality & Reliability	Journey Time Inbound: 13 mins Journey Time Outbound: 15 mins Length: 3.4 km No. of Junctions: 11 No. of Pedestrian Crossings: 4 Full priority provided along most the route in both directions (except at bus priority signalling), with good journey time reliability for Bus services.	Journey Time Inbound: 13 mins Journey Time Outbound: 15 mins Length: 3.4 km No. of Junctions: 11 No. of Pedestrian Crossings: 4 Full priority provided along most the route in both directions (except at bus priority signalling), with good journey time reliability for Bus services.	Journey Time Inbound: 13 mins Journey Time Outbound: 15 mins Length: 3.4 km No. of Junctions: 11 No. of Pedestrian Crossings: 4 Full priority provided along most the route in both directions (except at bus priority signalling), with good journey time reliability for Bus services.	Journey Time Inbound: 13 mins Journey Time Outbound: 14 mins Length: 3.4 km No. of Junctions: 10 No. of Pedestrian Crossings: 4 Full priority provided along most the route in both directions, with good journey time reliability for Bus services.	Journey Time Inbound: 15 mins Journey Time Outbound: 19 mins Length: 3.4 km No. of Junctions: 12 No. of Pedestrian Crossings: 4 Full priority provided along most the route in both directions, with good journey time reliability for Bus services.	Journey Time Inbound: 13 mins Journey Time Outbound: 14 mins Length: 3.4 km No. of Junctions: 11 No. of Pedestrian Crossings: 4 Full priority provided along most the route in both directions, with good journey time reliability for Bus services.	Journey Time Inbound: 14 mins Journey Time Outbound: 16 mins Length: 3.9 km No. of Junctions: 11 No. of Pedestrian Crossings: 4 Full priority provided along most the route in both directions, with good journey time reliability for Bus services.
	Rank							
2 Integration	2A Land Use Policy	No applicable benefits.	No applicable benefits.	No applicable benefits.	No applicable benefits.	No applicable benefits.	No applicable benefits.	No applicable benefits.
	Rank							

Appraisal Criteria	Sub-Criteria	Route Option CB1 Rathfarnham Road – Rathmines Road Lower (Inbound traffic only on Rathgar Road, Outbound traffic only Rathmines Road)	Route Option CB2 Rathfarnham Road – Rathmines Road Lower (Inbound traffic only on Rathgar and Rathmines Road)	Route Option CB3 Rathfarnham Road – Rathmines Road Lower (Outbound traffic only on Rathgar and Rathmines Road)	Route Option CB4 Rathfarnham Road – Rathmines Road Lower (Parallel cycle route via Charleville Road, Grosvenor Lodge and Cathal Brugha Barracks.)	Route Option CB5 Rathfarnham Road – Rathmines Road Lower (Half Inbound & Half Outbound Bus Lanes on Rathmines Road Lower)	Route Option CB6 Rathfarnham Road – Rathmines Road Lower (Outbound traffic only on Rathmines Road Lower)	Route Option CB7 Rathfarnham Road – Rathmines Road Lower (Bus lanes via Highfield Road/Rathmines Road Upper) Parallel cycle route via Rathgar Road, Charleville Road, Grosvenor Lodge and Cathal Brugha Barracks).
Section 2 Dodder River to Grand Canal Crossing								
2 Integration	2B Residential Population and Employment Catchments	Residential Population Catchments - 5 minute walk catchment of approximately 16,200 - 15 minute walk catchment of approximately 55,600 Employment catchments - 10 minute walk catchment of approximately 19,900	Residential Population Catchments - 5 minute walk catchment of approximately 16,200 - 15 minute walk catchment of approximately 55,600 Employment catchments - 10 minute walk catchment of approximately 19,900	Residential Population Catchments - 5 minute walk catchment of approximately 16,200 - 15 minute walk catchment of approximately 55,600 Employment catchments - 10 minute walk catchment of approximately 19,900	Residential Population Catchments - 5 minute walk catchment of approximately 16,200 - 15 minute walk catchment of approximately 55,600 Employment catchments - 10 minute walk catchment of approximately 19,900	Residential Population Catchments - 5 minute walk catchment of approximately 16,200 - 15 minute walk catchment of approximately 55,600 Employment catchments - 10 minute walk catchment of approximately 19,900	Residential Population Catchments - 5 minute walk catchment of approximately 16,200 - 15 minute walk catchment of approximately 55,600 Employment catchments - 10 minute walk catchment of approximately 19,900	Residential Population Catchments - 5 minute walk catchment of approximately 17,000 - 15 minute walk catchment of approximately 57,100 Employment catchments - 10 minute walk catchment of approximately 20,900
	Rank							
	2C Transport Network Integration	Potential for interchange with local bus services. Potential to interchange with the Luas Green Line. Potential for interchange with Core Orbital Bus Corridor on the Rathmines Road Lower (Ranelagh – Drumcondra). Potential for interchange with the Clongriffin BRT along Rathfarnham Road to Terenure Village.	Potential for interchange with local bus services. Potential to interchange with the Luas Green Line. Potential for interchange with Core Orbital Bus Corridor on the Rathmines Road Lower (Ranelagh – Drumcondra). Potential for interchange with the Clongriffin BRT along Rathfarnham Road to Terenure Village.	Potential for interchange with local bus services. Potential to interchange with the Luas Green Line. Potential for interchange with Core Orbital Bus Corridor on the Rathmines Road Lower (Ranelagh – Drumcondra). Potential for interchange with the Clongriffin BRT along Rathfarnham Road to Terenure Village.	Potential for interchange with local bus services. Potential to interchange with the Luas Green Line. Potential for interchange with Core Orbital Bus Corridor on the Rathmines Road Lower (Ranelagh – Drumcondra). Potential for interchange with the Clongriffin BRT along Rathfarnham Road to Terenure Village.	Potential for interchange with local bus services. Potential to interchange with the Luas Green Line. Potential for interchange with Core Orbital Bus Corridor on the Rathmines Road Lower (Ranelagh – Drumcondra). Potential for interchange with the Clongriffin BRT along Rathfarnham Road to Terenure Village.	Potential for interchange with local bus services. Potential to interchange with the Luas Green Line. Potential for interchange with Core Orbital Bus Corridor on the Rathmines Road Lower (Ranelagh – Drumcondra). Potential for interchange with the Clongriffin BRT along Rathfarnham Road to Terenure Village.	Potential for interchange with local bus services. Potential to interchange with the Luas Green Line. Potential for interchange with Core Orbital Bus Corridor on the Rathmines Road Lower (Ranelagh – Drumcondra). Potential for interchange with the Clongriffin BRT along Rathfarnham Road to Terenure Village.
	Rank							

Section 2 Dodder River to Grand Canal Crossing								
Appraisal Criteria	**Sub-Criteria**	**Route Option CB1 Rathfarnham Road – Rathmines Road Lower (Inbound traffic only on Rathgar Road, Outbound traffic only Rathmines Road)**	**Route Option CB2 Rathfarnham Road – Rathmines Road Lower (Inbound traffic only on Rathgar and Rathmines Road)**	**Route Option CB3 Rathfarnham Road – Rathmines Road Lower (Outbound traffic only on Rathgar and Rathmines Road)**	**Route Option CB4 Rathfarnham Road – Rathmines Road Lower (Parallel cycle route via Charleville Road, Grosvenor Lodge and Cathal Brugha Barracks.)**	**Route Option CB5 Rathfarnham Road – Rathmines Road Lower (Half Inbound & Half Outbound Bus Lanes on Rathmines Road Lower)**	**Route Option CB6 Rathfarnham Road – Rathmines Road Lower (Outbound traffic only on Rathmines Road Lower)**	**Route Option CB7 Rathfarnham Road – Rathmines Road Lower (Bus lanes via Highfield Road/Rathmines Road Upper) Parallel cycle route via Rathgar Road, Charleville Road, Grosvenor Lodge and Cathal Brugha Barracks).**
2 Integration	**2D Cycling Integration**	This route option comprises of Primary route 10 in the GDA Cycle Network Plan. Existing cycle facilities along Rathfarnham Road, Terenure Road East, Rathgar Road and Rathmines Road will be enhanced and full segregation achievable in both directions.	This route option comprises of Primary route 10 in the GDA Cycle Network Plan. Existing cycle facilities along Rathfarnham Road, Terenure Road East, Rathgar Road and Rathmines Road will be enhanced and full segregation achievable in both directions.	This route option comprises of Primary route 10 in the GDA Cycle Network Plan. Existing cycle facilities along Rathfarnham Road, Terenure Road East, Rathgar Road and Rathmines Road will be enhanced and full segregation achievable in both directions	This route option comprises of Primary route 10 in the GDA Cycle Network Plan. Existing cycle facilities along Rathfarnham Road, Terenure Road East, and Rathgar Road would be enhanced and full segregation achievable in both directions. The proposed removal of segregated cycle facilities on Rathmines Road Lower does not align with the GDA Cycle Network Plan proposal for route 10, however Parallel cycle route proposed via Charleville Road, Grosvenor Lodge and Cathal Brugha Barracks. Cycle route connects with Rathgar Village and Rathmines Village but does not travel through Rathmines Village via Rathmines Road Lower. Proposed to create a 30km/h zone along Rathmines Road Lower to provide a safer environment for cyclists who choose to use the bus lanes on Rathmines Road Lower instead of the segregated parallel cycle route.	This route option comprises of Primary route 10 in the GDA Cycle Network Plan. Existing cycle facilities along Rathfarnham Road, Terenure Road East, Rathgar Road and Rathmines Road will be enhanced and full segregation achievable in both directions	This route option comprises of Primary route 10 in the GDA Cycle Network Plan. Existing cycle facilities along Rathfarnham Road, Terenure Road East, Rathgar Road and Rathmines Road will be enhanced and full segregation achievable in both directions with the exception of the section on Rathmines Road Lower from Rathgar Road to Castlewood Avenue where cycle facilities cannot be provided due to width constraints.	This route option comprises of Primary route 10 in the GDA Cycle Network Plan. Existing cycle facilities along Rathfarnham Road, Terenure Road East, Rathgar Road will be enhanced and full segregation achievable in both directions The proposed removal of segregated cycle facilities on Rathmines Road Lower does not align with the GDA Cycle Network Plan proposal for route 10, however Parallel cycle route proposed via Charleville Road, Grosvenor Lodge and Cathal Brugha Barracks. Cycle route connects with Rathgar Village and Rathmines Village but does not travel through Rathmines Village via Rathmines Road Lower. Proposed to create a 30km/h zone along Rathmines Road Lower to provide a safer environment for cyclists who choose to use the bus lanes on Rathmines Road Lower instead of the segregated parallel cycle route.
	Rank							

Section 2 Dodder River to Grand Canal Crossing								
Appraisal Criteria	**Sub-Criteria**	**Route Option CB1 Rathfarnham Road – Rathmines Road Lower (Inbound traffic only on Rathgar Road, Outbound traffic only Rathmines Road)**	**Route Option CB2 Rathfarnham Road – Rathmines Road Lower (Inbound traffic only on Rathgar and Rathmines Road)**	**Route Option CB3 Rathfarnham Road – Rathmines Road Lower (Outbound traffic only on Rathgar and Rathmines Road)**	**Route Option CB4 Rathfarnham Road – Rathmines Road Lower (Parallel cycle route via Charleville Road, Grosvenor Lodge and Cathal Brugha Barracks.)**	**Route Option CB5 Rathfarnham Road – Rathmines Road Lower (Half Inbound & Half Outbound Bus Lanes on Rathmines Road Lower)**	**Route Option CB6 Rathfarnham Road – Rathmines Road Lower (Outbound traffic only on Rathmines Road Lower)**	**Route Option CB7 Rathfarnham Road – Rathmines Road Lower (Bus lanes via Highfield Road/Rathmines Road Upper) Parallel cycle route via Rathgar Road, Charleville Road, Grosvenor Lodge and Cathal Brugha Barracks).**
2 Integration	**2E Traffic Network Integration**	There are existing bus lanes along the majority of the length of CB1 in one direction. Layout of Terenure Village junction to be altered and right turn to Terenure East from Rathfarnham Road permitted for Buses at the expense of private vehicular traffic capacity and movement. There is a 100m section of Terenure Road East at Terenure Cross where the inbound bus lane will not be providing owing to the proximity of commercial properties (majority protected) at this location. CB1 include bus priority signalling in both directions on Rathmines Road between Castlewood Ave and Rathmines Road Upper junction to achieve bus priority at the expense of private vehicular traffic capacity and movement. Bus lanes in both directions will be provided for the entire length of CB1 (except for aforementioned Pinch Points). It is considered that Option CB1 which provides for inbound	There are existing bus lanes along the majority of the length of CB2 in one direction. Layout of Terenure Village junction to be altered and right turn to Terenure East from Rathfarnham Road permitted for Buses at the expense of private vehicular traffic capacity and movement. There is a 100m section of Terenure Road East at Terenure Cross where the inbound bus lane will not be providing owing to the proximity of commercial properties (majority protected) at this location. CB1 include bus priority signalling in both directions on Rathmines Road between Castlewood Ave and Rathmines Road Upper junction to achieve bus priority at the expense of private vehicular traffic capacity and movement. Bus lanes in both directions will be provided for the entire length of CB2 (except for aforementioned Pinch Points). It is considered that Option CB2 which provides for inbound	There are existing bus lanes along the majority of the length of CB3 in one direction. Layout of Terenure Village junction to be altered and right turn to Terenure East from Rathfarnham Road permitted for Buses at the expense of private vehicular traffic capacity and movement. There is a 100m section of Terenure Road East at Terenure Cross where the inbound bus lane will not be providing owing to the proximity of commercial properties (majority protected) at this location. CB1 include bus priority signalling in both directions on Rathmines Road between Castlewood Ave and Rathmines Road Upper junction to achieve bus priority at the expense of private vehicular traffic capacity and movement. Bus lanes in both directions will be provided for the entire length of CB3 (except for aforementioned Pinch Points). It is considered that Option CB3 which provides for outbound	There are existing bus lanes along the majority of the length of CB4 in one direction. Layout of Terenure Village junction to be altered and right turn to Terenure East from Rathfarnham Road permitted for Buses at the expense of private vehicular traffic capacity and movement. There is a 100m section of Terenure Road East at Terenure Cross where the inbound bus lane will not be providing owing to the proximity of commercial properties (majority protected) at this location Bus lanes in both directions will be provided for the entire length of CR3 (except for aforementioned Pinch Points). Proposed to create a 30km/h zone along Rathmines Road Lower to provide a safer environment for cyclists who choose to use the bus lanes on Rathmines Road Lower (instead of the segregated parallel cycle route) at the expense of vehicular traffic speeds.	There are existing bus lanes along the majority of the length of CB5 in one direction. Layout of Terenure Village junction to be altered and right turn to Terenure East from Rathfarnham Road permitted for Buses at the expense of private vehicular traffic capacity and movement. There is a 100m section of Terenure Road East at Terenure Cross where the inbound bus lane will not be providing owing to the proximity of commercial properties (majority protected) at this location. Bus lanes in both directions will be provided from Rathfarnham Road to Rathmines Road/Grosvenor Road junction (except for aforementioned Pinch Points). On Rathmines Road Lower, inbound bus lane provided from Rathmines Road Upper to Military road junction and outbound bus lane provided from Grove Road to Military Road junction. On Rathmines Road Lower where bus	There are existing bus lanes along the majority of the length of CB6 in one direction. Layout of Terenure Village junction to be altered and right turn to Terenure East from Rathfarnham Road permitted for Buses at the expense of private vehicular traffic capacity and movement. There is a 100m section of Terenure Road East at Terenure Cross where the inbound bus lane will not be providing owing to the proximity of commercial properties (majority protected) at this location. Bus lanes in both directions will be provided for the entire length of CB6 (except for aforementioned Pinch Points). It is proposed to remove traffic in the inbound direction on Rathmines Road between Castlewood Avenue and Grove Road. Inbound traffic would use Mountpleasant Ave, Ranelagh Rd, Castlewood Ave, Harold's Cross Road, Leinster Road and adjoining roads.	There are existing bus lanes along Terenure Road East and Rathmines Road Lower in one direction. Layout of Terenure Village junction to be altered and right turn to Terenure East from Rathfarnham Road permitted for Buses at the expense of private vehicular traffic capacity and movement. There is a 100m section of Terenure Road East at Terenure Cross where the inbound bus lane will not be providing owing to the proximity of commercial properties (majority protected) at this location. Bus lanes in both directions will be provided for the entire length of CB7 (except for aforementioned Pinch Points). Proposed to create a 30km/h zone along Rathmines Road Lower to provide a safer environment for cyclists who choose to use the bus lanes on Rathmines Road Lower (instead of the segregated parallel cycle route) at the expense of vehicular traffic speeds.

Section 2 Dodder River to Grand Canal Crossing								
Appraisal Criteria	**Sub-Criteria**	**Route Option CB1 Rathfarnham Road – Rathmines Road Lower (Inbound traffic only on Rathgar Road, Outbound traffic only Rathmines Road)**	**Route Option CB2 Rathfarnham Road – Rathmines Road Lower (Inbound traffic only on Rathgar and Rathmines Road)**	**Route Option CB3 Rathfarnham Road – Rathmines Road Lower (Outbound traffic only on Rathgar and Rathmines Road)**	**Route Option CB4 Rathfarnham Road – Rathmines Road Lower (Parallel cycle route via Charleville Road, Grosvenor Lodge and Cathal Brugha Barracks.)**	**Route Option CB5 Rathfarnham Road – Rathmines Road Lower (Half Inbound & Half Outbound Bus Lanes on Rathmines Road Lower)**	**Route Option CB6 Rathfarnham Road – Rathmines Road Lower (Outbound traffic only on Rathmines Road Lower)**	**Route Option CB7 Rathfarnham Road – Rathmines Road Lower (Bus lanes via Highfield Road/Rathmines Road Upper) Parallel cycle route via Rathgar Road, Charleville Road, Grosvenor Lodge and Cathal Brugha Barracks).**
2 Integration	**2E Traffic Network Integration**	traffic only on Rathgar Road would have a significant traffic impact in terms of movement restrictions and increased traffic/congestion. This would require outbound traffic to use alternative routes such as Palmerston Road, Cowper Road, Rathmines Road Upper, Frankfort Avenue, Rathgar Ave and Leicester Ave. It is also proposed to remove traffic in the inbound direction on Rathmines Road between Castlewood Avenue and Grove Road. Inbound traffic would use Grosvenor Road, Kenilworth Road, Castelwood Ave, Mountpleasant Ave, Ranelagh Rd and adjoining roads. ` To commute inbound from Rathgar Village to La Touche Bridge, one would travel on Rathgar Road (CBC) and take a detour via Castlewood Avenue and MountPleasant Avenue. This diversion route is not considered overly long. To commute outbound from La Touche Bridge to Rathgar Village, one would travel on the Rathmines Road (CBC) and take a detour via Rathmines Road Lower and Highfield Road. This diversion route is not considered overly long.	traffic only on Rathgar Road would have a significant traffic impact in terms of movement restrictions and increased traffic/congestion. This would require outbound traffic to use alternative routes such as Palmerston Road, Cowper Road, Rathmines Road Upper, Frankfort Avenue, Rathgar Ave and Leicester Ave. It is also proposed to remove traffic in the outbound direction on Rathmines Road between Castlewood Avenue and Grove Road. Outbound traffic would use Mountpleasant Ave, Ranelagh Rd, Castlewood Ave, Harold's Cross Road, Leinster Road and adjoining roads. Increase in right turning vehicles from Rathmines Road onto Castlewood Ave, could create extensive queuing along Rathmines Lower Road and Rathgar Road. To commute inbound from Rathgar Village to La Touche Bridge, one would travel on Rathgar Road (CBC) and Rathmines Road Lower (CBC). No detour necessary. To commute outbound from La Touche Bridge to Rathgar Village, one would have to take a large detour via MountPleasant Avenue, Palmerstown Road/Rathmines Road Lower and Highfield Road or from the west Harold's Cross Road and Rathgar Avenue. This outbound diversion route is considered overly circuitous.	traffic only on Rathgar Road would have a significant traffic impact in terms of movement restrictions and increased traffic/congestion. This would require inbound traffic to use alternative routes such as Palmerston Road, Cowper Road, Rathmines Road Upper, Frankfort Avenue, Rathgar Ave and Leicester Ave. It is also proposed to remove traffic in the inbound direction on Rathmines Road between Castlewood Avenue and Grove Road. Inbound traffic would use Mountpleasant Ave, Ranelagh Rd, Castlewood Ave, Harold's Cross Road, Leinster Road and adjoining roads. To commute inbound from Rathgar Village to La Touche bridge, one would travel on Rathgar Road (CBC) and take a detour via Castlewood Avenue and MountPleasant Avenue. To commute outbound from La Touche bridge to Rathgar Village, one would travel on Rathmines Road Lower (CBC) and Rathgar Road (CBC). No detour necessary. To commute inbound from Rathgar Village to La Touche Bridge one would have to take a large detour via Rathgar Ave and Harold's Cross Road or Highfield Road Palmerstown Road/Rathmines Road Lower and MountPleasant Avenue. This inbound diversion route is considered overly circuitous.		priority is not achievable, buses will compete with traffic reducing private vehicular traffic capacity and movement.	To commute inbound from Rathgar Village to La Touche bridge, one would travel on Rathgar Road (CBC) and take a detour via Castlewood Avenue and MountPleasant Avenue. To commute outbound from La Touche bridge to Rathgar Village, one would travel on Rathmines Road Lower (CBC) and Rathgar Road (CBC). No detour necessary.	Right turn to Highfield Road from Rathmines Road Upper permitted for Buses at the expense of private vehicular traffic capacity and movement.
	Rank							

Section 2 Dodder River to Grand Canal Crossing								
Appraisal Criteria	Sub-Criteria	Route Option CB1 Rathfarnham Road – Rathmines Road Lower (Inbound traffic only on Rathgar Road, Outbound traffic only Rathmines Road)	Route Option CB2 Rathfarnham Road – Rathmines Road Lower (Inbound traffic only on Rathgar and Rathmines Road)	Route Option CB3 Rathfarnham Road – Rathmines Road Lower (Outbound traffic only on Rathgar and Rathmines Road)	Route Option CB4 Rathfarnham Road – Rathmines Road Lower (Parallel cycle route via Charleville Road, Grosvenor Lodge and Cathal Brugha Barracks.)	Route Option CB5 Rathfarnham Road – Rathmines Road Lower (Half Inbound & Half Outbound Bus Lanes on Rathmines Road Lower)	Route Option CB6 Rathfarnham Road – Rathmines Road Lower (Outbound traffic only on Rathmines Road Lower)	Route Option CB7 Rathfarnham Road – Rathmines Road Lower (Bus lanes via Highfield Road/Rathmines Road Upper) Parallel cycle route via Rathgar Road, Charleville Road, Grosvenor Lodge and Cathal Brugha Barracks).
3 Accessibility & Social Inclusion	3A Key Trip Attractors	***Education*** - St. Joseph's National School - Presentation Primary School - St. Michael's House School - St. Louis High School - St. Louis Senior Primary School - St. Louis Infant School - Rathmines College ***Retail / Leisure*** - Synagogue - Lidl/Aldi - Terenure Village - Saint Joseph's Church - Rathgar Village - Rathgar Tennis Club - Christ Church - Rathgar Church - Rathmines Village - Rathmines Library	***Education*** - St. Joseph's National School - Presentation Primary School - St. Michael's House School - St. Louis High School - St. Louis Senior Primary School - St. Louis Infant School - Rathmines College ***Retail / Leisure*** - Synagogue - Lidl/Aldi - Terenure Village - Saint Joseph's Church - Rathgar Village - Rathgar Tennis Club - Christ Church - Rathgar Church - Rathmines Village - Rathmines Library	***Education*** - St. Joseph's National School - Presentation Primary School - St. Michael's House School - St. Louis High School - St. Louis Senior Primary School - St. Louis Infant School - Rathmines College ***Retail / Leisure*** - Synagogue - Lidl/Aldi - Terenure Village - Saint Joseph's Church - Rathgar Village - Rathgar Tennis Club - Christ Church - Rathgar Church - Rathmines Village - Rathmines Library	***Education*** - St. Joseph's National School - Presentation Primary School - St. Michael's House School - St. Louis High School - St. Louis Senior Primary School - St. Louis Infant School - Rathmines College ***Retail / Leisure*** - Synagogue - Lidl/Aldi - Terenure Village - Saint Joseph's Church - Rathgar Village - Rathgar Tennis Club - Christ Church - Rathgar Church - Rathmines Village - Rathmines Library	***Education*** - St. Joseph's National School - Presentation Primary School - St. Michael's House School - St. Louis High School - St. Louis Senior Primary School - St. Louis Infant School - Rathmines College ***Retail / Leisure*** - Synagogue - Lidl/Aldi - Terenure Village - Saint Joseph's Church - Rathgar Village - Rathgar Tennis Club - Christ Church - Rathgar Church - Rathmines Village - Rathmines Library	***Education*** - St. Joseph's National School - Presentation Primary School - St. Michael's House School - St. Louis High School - St. Louis Senior Primary School - St. Louis Infant School - Rathmines College ***Retail / Leisure*** - Synagogue - Lidl/Aldi - Terenure Village - Saint Joseph's Church - Rathgar Village - Rathgar Tennis Club - Christ Church - Rathgar Church - Rathmines Village - Rathmines Library	***Education*** - St. Joseph's National School - Presentation Primary School - St. Michael's House School - St. Louis High School - St. Louis Senior Primary School - St. Louis Infant School - Rathmines College - Trinity Halls - Kildare Place School ***Retail / Leisure*** - Synagogue - Lidl/Aldi - Terenure Village - Saint Joseph's Church - Rathgar Village - Rathgar Tennis Club - Christ Church - Rathgar Church

3 Accessibility & Social Inclusion	**3A Key Trip Attractors**	- Leinster Cricket Club - Swan Shopping Centre - Swan Leisure - Leinster Cricket Club - Omniplex Cinema - Swan Leisure - Mary Immaculate of Sinners - Travelodge – Rathmines ***Employment*** - Lidl/Aldi - Dunnes Stores - Supervalu - Terenure Village - Rathgar Village - Rathmines Village - Swan Shopping Centre - Swan Leisure - Cathal Brugha Barracks - Omniplex Cinema - Travelodge - Rathmines - St. Joseph’s National School - Presentation Primary School - St. Michael’s House School	- Leinster Cricket Club - Swan Shopping Centre - Swan Leisure - Leinster Cricket Club - Omniplex Cinema - Swan Leisure - Mary Immaculate of Sinners - Travelodge – Rathmines ***Employment*** - Lidl/Aldi - Dunnes Stores - Supervalu - Terenure Village - Rathgar Village - Rathmines Village - Swan Shopping Centre - Swan Leisure - Cathal Brugha Barracks - Omniplex Cinema - Travelodge - Rathmines - St. Joseph’s National School - Presentation Primary School - St. Michael’s House School	- Leinster Cricket Club - Swan Shopping Centre - Swan Leisure - Leinster Cricket Club - Omniplex Cinema - Swan Leisure - Mary Immaculate of Sinners - Travelodge – Rathmines ***Employment*** - Lidl/Aldi - Dunnes Stores - Supervalu - Terenure Village - Rathgar Village - Rathmines Village - Swan Shopping Centre - Swan Leisure - Cathal Brugha Barracks - Omniplex Cinema - Travelodge - Rathmines - St. Joseph’s National School - Presentation Primary School - St. Michael’s House School	- Leinster Cricket Club - Swan Shopping Centre - Swan Leisure - Leinster Cricket Club - Omniplex Cinema - Swan Leisure - Mary Immaculate of Sinners - Travelodge – Rathmines ***Employment*** - Lidl/Aldi - Dunnes Stores - Supervalu - Terenure Village - Rathgar Village - Rathmines Village - Swan Shopping Centre - Swan Leisure - Cathal Brugha Barracks - Omniplex Cinema - Travelodge - Rathmines - St. Joseph’s National School - Presentation Primary School - St. Michael’s House School	- Leinster Cricket Club - Swan Shopping Centre - Swan Leisure - Leinster Cricket Club - Omniplex Cinema - Swan Leisure - Mary Immaculate of Sinners - Travelodge – Rathmines ***Employment*** - Lidl/Aldi - Dunnes Stores - Supervalu - Terenure Village - Rathgar Village - Rathmines Village - Swan Shopping Centre - Swan Leisure - Cathal Brugha Barracks - Omniplex Cinema - Travelodge - Rathmines - St. Joseph’s National School - Presentation Primary School - St. Michael’s House School	- Leinster Cricket Club - Swan Shopping Centre - Swan Leisure - Leinster Cricket Club - Omniplex Cinema - Swan Leisure - Mary Immaculate of Sinners - Travelodge – Rathmines ***Employment*** - Lidl/Aldi - Dunnes Stores - Supervalu - Terenure Village - Rathgar Village - Rathmines Village - Swan Shopping Centre - Swan Leisure - Cathal Brugha Barracks - Omniplex Cinema - Travelodge - Rathmines - St. Joseph’s National School - Presentation Primary School - St. Michael’s House School	- Rathmines Village - Rathmines Library - Leinster Cricket Club - Swan Shopping Centre - Swan Leisure - Leinster Cricket Club - Omniplex Cinema - Swan Leisure - Mary Immaculate of Sinners - Travelodge – Rathmines - Brockfield Times Club ***Employment*** - Lidl/Aldi - Dunnes Stores - Supervalu - Terenure Village - Rathgar Village - Rathmines Village - Swan Shopping Centre - Swan Leisure - Cathal Brugha Barracks - Omniplex Cinema - Travelodge - Rathmines - St. Joseph’s National School - Presentation Primary School - St. Michael’s - St. Luke’s Hospital - St. Michael’s House School
	Rank							
	3B Deprived Geographic Areas	Route option serves area of Marginally Above Average to Affluent means from the Pobal Deprivation Index.	Route option serves area of Marginally Above Average to Affluent means from the Pobal Deprivation Index.	Route option serves area of Marginally Above Average to Affluent means from the Pobal Deprivation Index.	Route option serves area of Marginally Above Average to Affluent means from the Pobal Deprivation Index.	Route option serves area of Marginally Above Average to Affluent means from the Pobal Deprivation Index.	Route option serves area of Marginally Above Average to Affluent means from the Pobal Deprivation Index.	Route option serves area of Marginally Above Average to Affluent means from the Pobal Deprivation Index.
	Rank							
4 Safety	**4A Road Safety**	No. of Junctions: 11 1 turn movement required (1 right turn northbound direction and 1 left turn in the southbound direction)	No. of Junctions: 11 1 turn movement required (1 right turn northbound direction and 1 left turn in the southbound direction)	No. of Junctions: 11 1 turn movement required (1 right turn northbound direction and 1 left turn in the southbound direction)	No. of Junctions: 10 1 turn movement required (1 right turn northbound direction and 1 left turn in the southbound direction)	No. of Junctions: 11 1 turn movement required (1 right turn northbound direction and 1 left turn in the southbound direction)	No. of Junctions: 10 1 turn movement required (1 right turn northbound direction and 1 left turn in the southbound direction)	No. of Junctions: 10 2 turning movement required (1 right turn & 1 left turn northbound direction and 1 left turn and 1 right turn in the southbound direction)
	Rank							

Appraisal Criteria	Sub-Criteria	Route Option CB1 Rathfarnham Road – Rathmines Road Lower (Inbound traffic only on Rathgar Road, Outbound traffic only Rathmines Road)	Route Option CB2 Rathfarnham Road – Rathmines Road Lower (Inbound traffic only on Rathgar and Rathmines Road)	Route Option CB3 Rathfarnham Road – Rathmines Road Lower (Outbound traffic only on Rathgar and Rathmines Road)	Route Option CB4 Rathfarnham Road – Rathmines Road Lower (Parallel cycle route via Charleville Road, Grosvenor Lodge and Cathal Brugha Barracks.)	Route Option CB5 Rathfarnham Road – Rathmines Road Lower (Half Inbound & Half Outbound Bus Lanes on Rathmines Road Lower)	Route Option CB6 Rathfarnham Road – Rathmines Road Lower (Outbound traffic only on Rathmines Road Lower)	Route Option CB7 Rathfarnham Road – Rathmines Road Lower (Bus lanes via Highfield Road/Rathmines Road Upper) Parallel cycle route via Rathgar Road, Charleville Road, Grosvenor Lodge and Cathal Brugha Barracks).
4 Safety	4B Pedestrian Safety	There are a number of pedestrian crossing provided through Rathmines Village, however additional pedestrian crossing will be required along the rest of the route. Footpaths are provided on both sides of the road.	There are a number of pedestrian crossing provided through Rathmines Village, however additional pedestrian crossing will be required along the rest of the route. Footpaths are provided on both sides of the road.	There are a number of pedestrian crossing provided through Rathmines Village, however additional pedestrian crossing will be required along the rest of the route. Footpaths are provided on both sides of the road.	There are a number of pedestrian crossing provided through Rathmines Village, however additional pedestrian crossing will be required along the rest of the route. Footpaths are provided on both sides of the road.	There are a number of pedestrian crossing provided through Rathmines Village, however additional pedestrian crossing will be required along the rest of the route. Footpaths are provided on both sides of the road.	There are a number of pedestrian crossing provided through Rathmines Village, however additional pedestrian crossing will be required along the rest of the route. Footpaths are provided on both sides of the road.	There are a number of pedestrian crossing provided through Rathmines Village, however additional pedestrian crossing will be required along the rest of the route. Footpaths are provided on both sides of the road.
	Rank							
5 Environment	5A Archaeology and Cultural Heritage	No appreciable impacts	No appreciable impacts	No appreciable impacts	No appreciable impacts	No appreciable impacts	No appreciable impacts	No appreciable impacts
	Rank							

Section 2 Dodder River to Grand Canal Crossing								
Appraisal Criteria	**Sub-Criteria**	**Route Option CB1 Rathfarnham Road – Rathmines Road Lower (Inbound traffic only on Rathgar Road, Outbound traffic only Rathmines Road)**	**Route Option CB2 Rathfarnham Road – Rathmines Road Lower (Inbound traffic only on Rathgar and Rathmines Road)**	**Route Option CB3 Rathfarnham Road – Rathmines Road Lower (Outbound traffic only on Rathgar and Rathmines Road)**	**Route Option CB4 Rathfarnham Road – Rathmines Road Lower (Parallel cycle route via Charleville Road, Grosvenor Lodge and Cathal Brugha Barracks.)**	**Route Option CB5 Rathfarnham Road – Rathmines Road Lower (Half Inbound & Half Outbound Bus Lanes on Rathmines Road Lower)**	**Route Option CB6 Rathfarnham Road – Rathmines Road Lower (Outbound traffic only on Rathmines Road Lower)**	**Route Option CB7 Rathfarnham Road – Rathmines Road Lower (Bus lanes via Highfield Road/Rathmines Road Upper) Parallel cycle route via Rathgar Road, Charleville Road, Grosvenor Lodge and Cathal Brugha Barracks).**
5 Environment	**5B Architectural Heritage**	The majority of all residential and some commercial properties along the entire route are designated as protected structures. It is also a stated objective of the DCC Development Plan (2016 – 2022) that the Rathmines District is designated as an Architectural Conservation Area (ACA). Possible land acquisition from 29 protected residential properties on Terenure Road East within an approximate 470m section, max 7.8m width from front curtilage (DCC Development Plan 2016-2022). The majority of residential properties along Rathgar Road are designated as protected structures. Land take of protected structures (front curtilage) required along one side of the entire Rathgar Road (max width 1.5m) (DCC Development Plan 2026-2022). The majority of properties along Rathmines Road Lower are designated as protected structures. Land take from front curtilage required from protected structures along the eastern side of Rathmines Road Lower approaching the Grand Canal (200m length, max 1.7m width) (DCC Development Plan 2026-2022). Land acquisition of protected structures involves relocation of boundary walls or railing. There will be no impact on the protected buildings themselves.	The majority of all residential and some commercial properties along the entire route are designated as protected structures. It is also a stated objective of the DCC Development Plan (2016 – 2022) that the Rathmines District is designated as an Architectural Conservation Area (ACA). Possible land acquisition from 29 protected residential properties on Terenure Road East within an approximate 470m section, max 7.8m width from front curtilage (DCC Development Plan 2016-2022). The majority of residential properties along Rathgar Road are protected structures. Land take required along the entire western side of Rathgar Road (max width 1.5m) (DCC Development Plan 2016-2022). The majority of properties along Rathmines Road Lower are designated as protected structures. Land take from front curtilage required from protected structures along the eastern side of Rathmines Road approaching the Grand Canal (200m length, max 1.7m width). Land acquisition of protected structures involves relocation of boundary walls or railing. There will be no impact on the protected buildings themselves.	The majority of all residential and some commercial properties along the entire route are designated as protected structures. It is also a stated objective of the DCC Development Plan (2016 – 2022) that the Rathmines District is designated as an Architectural Conservation Area (ACA). Possible land acquisition from 29 protected residential properties on Terenure Road East within an approximate 470m section, max 7.8m width from front curtilage (DCC Development Plan 2016-2022). The majority of residential properties along Rathgar Road are protected structures. Land take required along the entire western side of Rathgar Road (max width 4.5m) (DCC Development Plan 2016-2022). The majority of properties along Rathmines Road Lower are designated as protected structures. Land take from front curtilage required from protected structures along the eastern side of Rathmines Road approaching the Grand Canal (200m length, max 1.7m width). Land acquisition of protected structures involves relocation of boundary walls or railing. There will be no impact on the protected buildings themselves.	The majority of all residential and some commercial properties along the entire route are designated as protected structures. It is also a stated objective of the DCC Development Plan (2016 – 2022) that the Rathmines District is designated as an Architectural Conservation Area (ACA). Possible land acquisition from 29 protected residential properties on Terenure Road East within an approximate 470m section, max 7.8m width from front curtilage (DCC Development Plan 2016-2022). The majority of residential properties along Rathgar Road are protected structures. Land take required along the entire western side of Rathgar Road (max width 4.5m) (DCC Development Plan 2016-2022). Proposed cycle route through Cathal Brugha Barracks along an existing internal roadway (10m width at pinch point), however there will be no requirement for land acquisition of buildings which would compromise architectural heritage. Land acquisition of protected structures involves relocation of boundary walls or railing. There will be no impact on the protected buildings themselves.	The majority of all residential and some commercial properties along the entire route are designated as protected structures. It is also a stated objective of the DCC Development Plan (2016 – 2022) that the Rathmines District is designated as an Architectural Conservation Area (ACA). Possible land acquisition from 29 protected residential properties on Terenure Road East within an approximate 470m section, max 7.8m width from front curtilage (DCC Development Plan 2016-2022). The majority of residential properties along Rathgar Road are protected structures. Land take required along the entire western side of Rathgar Road (max width 4.5m) (DCC Development Plan 2016-2022). The majority of properties along Rathmines Road Lower are designated as protected structures. Land take from front curtilage required from protected structures along the eastern side of Rathmines Road Lower approaching the Grand Canal (200m length, max 1.7m width). Land acquisition of protected structures involves relocation of boundary walls or railing. There will be no impact on the protected buildings themselves.	The majority of all residential and some commercial properties along the entire route are designated as protected structures. It is also a stated objective of the DCC Development Plan (2016 – 2022) that the Rathmines District is designated as an Architectural Conservation Area (ACA). Possible land acquisition from 29 protected residential properties on Terenure Road East within an approximate 470m section, max 7.8m width from front curtilage (DCC Development Plan 2016-2022). The majority of residential properties along Rathgar Road are protected structures. Land take required along the entire western side of Rathgar Road (max width 4.5m) (DCC Development Plan 2016-2022). The majority of properties along Rathmines Road Lower are designated as protected structures. Land take from front curtilage required from protected structures along the eastern side of Rathmines Road Lower approaching the Grand Canal (200m length, max 1.7m width). Land acquisition of protected structures involves relocation of boundary walls or railing. There will be no impact on the protected buildings themselves.	The majority of all residential and some commercial properties along the entire route are designated as protected structures. It is also a stated objective of the DCC Development Plan (2016 – 2022) that the Rathmines District is designated as an Architectural Conservation Area (ACA). Possible land acquisition from 29 protected residential properties on Terenure Road East within an approximate 470m section, max 7.8m width from front curtilage (DCC Development Plan 2016-2022). The majority of properties along Highfield Road are designated as protected structures. Possible land acquisition from 31 protected residential properties on Highfield Road within an approximate 680m section, max 4.8m width from front curtilage (DCC Development Plan). Possible land acquisition from 10 protected residential properties, max 3.4m width from front curtilage (DCC Development Plan). Land acquisition of protected structures involves relocation of boundary walls or railing. There will be no impact on the protected buildings themselves.
	Rank							

Section 2 Dodder River to Grand Canal Crossing								
Appraisal Criteria	**Sub-Criteria**	**Route Option CB1 Rathfarnham Road – Rathmines Road Lower (Inbound traffic only on Rathgar Road, Outbound traffic only Rathmines Road)**	**Route Option CB2 Rathfarnham Road – Rathmines Road Lower (Inbound traffic only on Rathgar and Rathmines Road)**	**Route Option CB3 Rathfarnham Road – Rathmines Road Lower (Outbound traffic only on Rathgar and Rathmines Road)**	**Route Option CB4 Rathfarnham Road – Rathmines Road Lower (Parallel cycle route via Charleville Road, Grosvenor Lodge and Cathal Brugha Barracks.)**	**Route Option CB5 Rathfarnham Road – Rathmines Road Lower (Half Inbound & Half Outbound Bus Lanes on Rathmines Road Lower)**	**Route Option CB6 Rathfarnham Road – Rathmines Road Lower (Outbound traffic only on Rathmines Road Lower)**	**Route Option CB7 Rathfarnham Road – Rathmines Road Lower (Bus lanes via Highfield Road/Rathmines Road Upper) Parallel cycle route via Rathgar Road, Charleville Road, Grosvenor Lodge and Cathal Brugha Barracks).**
5 Environment	**5C Flora and Fauna**	Removal of a number of trees in residential front curtilages along Terenure Road East.	Removal of a number of trees in residential front curtilages along Terenure Road East.	Removal of a number of trees in residential front curtilages along Terenure Road East.	Removal of a number of trees in residential front curtilages along Terenure Road East and Rathgar Road.	Removal of a number of trees in residential front curtilages along Terenure Road East and Rathgar Road.	Removal of a number of trees in residential front curtilages along Terenure Road East and Rathgar Road.	Removal of a number of trees in the green area by Fairfield Park and in the front curtilages of Residential properties on the southern side of Highfield Road. Removal of a number of trees at the green area by Kildare Place School along Rathmines Road Upper.
	Rank							
	5D Soils, Geology & Hydrology	No appreciable impacts	No appreciable impacts	No appreciable impacts	No appreciable impacts	No appreciable impacts	No appreciable impacts	No appreciable impacts
	Rank							
	5E Landscape and Visual	Possible land acquisition along one side of Terenure Road East within an approximate 470m section, max 7.8m width from front curtilage, which may include tree removal. Possible land acquisition along one side of Rathgar Road, max 1.5m width from residential front curtilage along the entire road, which may include tree removal. Possible land acquisition along one side of Rathmines Road Lower approaching Grove Road junction, max 1.7m width from residential front curtilage for 200m.	Possible land acquisition along one side of Terenure Road East within an approximate 470m section, max 7.8m width from front curtilage, which may include tree removal. Possible land acquisition along one side of Rathgar Road, max 1.5m width from residential front curtilage along the entire road. Possible land acquisition along one side of Rathmines Road Lower approaching Grove Road junction, max 1.7m width from residential front curtilage for 200m.	Possible land acquisition along one side of Terenure Road East within an approximate 470m section, max 7.8m width from front curtilage, which may include tree removal. Possible land acquisition along one side of Rathgar Road, max 1.5m width from residential front curtilage along the entire road. Possible land acquisition along one side of Rathmines Road Lower approaching Grove Road junction, max 1.7m width from residential front curtilage for 200m.	Possible land acquisition along one side of Terenure Road East within an approximate 470m section, max 7.8m width from front curtilage, which may include tree removal. Possible land acquisition along one side of Rathgar Road, max 4.5m width from residential front curtilage along the entire road. Land acquisition required from Cathal Brugha Barracks and football pitch to provide parallel cycle route, length of 580m.	Possible land acquisition along one side of Terenure Road East within an approximate 470m section, max 7.8m width from front curtilage, which may include tree removal. Possible land acquisition along one side of Rathgar Road, max 4.5m width from residential front curtilage along the entire road. Possible land acquisition along one side of Rathmines Road Lower approaching Grove Road junction, max 1.7m width from residential front curtilage for 200m.	Possible land acquisition along one side of Terenure Road East within an approximate 470m section, max 7.8m width from front curtilage, which may include tree removal. Possible land acquisition along one side of Rathgar Road, max 4.5m width from residential front curtilage along the entire road. Possible land acquisition along one side of Rathmines Road Lower approaching Grove Road junction, max 1.7m width from residential front curtilage for 200m.	Possible land acquisition along one side of Terenure Road East within an approximate 470m section, max 7.8m width from front curtilage, which may include tree removal. Possible land acquisition along one side of Highfield Road, 5m max width along the entire road (680m length). Possible land acquisition along one side of Highfield Road, 4m max width 420m length. Land acquisition required from Cathal Brugha Barracks and football pitch to provide parallel cycle route, length of 580m. Removal of a number of trees in the green area by Fairfield Park along Highfield Road and by Kildare Place School along Rathmines Road Upper. Potential negative impacts associated with the re-engineering of Highfield Road to provide bus lanes.
	Rank							

Section 2 Dodder River to Grand Canal Crossing									
Appraisal Criteria	**Sub-Criteria**	**Route Option CB1 Rathfarnham Road – Rathmines Road Lower (Inbound traffic only on Rathgar Road, Outbound traffic only Rathmines Road)**	**Route Option CB2 Rathfarnham Road – Rathmines Road Lower (Inbound traffic only on Rathgar and Rathmines Road)**	**Route Option CB3 Rathfarnham Road – Rathmines Road Lower (Outbound traffic only on Rathgar and Rathmines Road)**	**Route Option CB4 Rathfarnham Road – Rathmines Road Lower (Parallel cycle route via Charleville Road, Grosvenor Lodge and Cathal Brugha Barracks.)**	**Route Option CB5 Rathfarnham Road – Rathmines Road Lower (Half Inbound & Half Outbound Bus Lanes on Rathmines Road Lower)**	**Route Option CB6 Rathfarnham Road – Rathmines Road Lower (Outbound traffic only on Rathmines Road Lower)**	**Route Option CB7 Rathfarnham Road – Rathmines Road Lower (Bus lanes via Highfield Road/Rathmines Road Upper) Parallel cycle route via Rathgar Road, Charleville Road, Grosvenor Lodge and Cathal Brugha Barracks).**
5 Environment	**5F Air Quality**	Possible impacts due to increased proximity of vehicles to houses and gardens if bus lanes and cycle tracks installed in both directions along Terenure Road East. The positive impact due to reduced trafficking by replacing the existing outbound traffic lane on Rathgar Road will be exceeded by the negative impact due to the increased traffic on local roads (Frankfort Ave, Highfield Road, Rathmines Road Upper) due to the traffic diversions. The positive impact due to reduced trafficking by replacing the existing inbound traffic lane on Rathmines Road Lower will be exceeded by the negative impact due to the increased traffic on local roads (Grosvenor Road, Kenilworth Road, Castelwood Ave, MountPleasant Ave, Ranelagh Rd) due to the traffic diversions.	Possible impacts due to increased proximity of vehicles to houses and gardens if bus lanes and cycle tracks installed in both directions along Terenure Road East. The positive impact due to reduced trafficking by replacing the existing outbound traffic lane on Rathmines Road Lower will be exceeded by the negative impact due to the increased traffic on local roads (Mountpleasant Ave, Ranelagh Rd, Castlewood Ave, Harold's Cross Road, Leinster) due to the traffic diversions. The positive impact due to reduced trafficking by replacing the existing outbound traffic lane on Rathgar Road will be exceeded by the negative impact due to the increased traffic on local roads (Palmerston Road, Cowper Road, Rathmines Road Upper, Frankfort Avenue, Rathgar Ave and Leicester Ave) due to the traffic diversions.	Possible impacts due to increased proximity of vehicles to houses and gardens if bus lanes and cycle tracks installed in both directions along Terenure Road East. The positive impact due to reduced trafficking by replacing the existing inbound traffic lane on Rathgar Road will be exceeded by the negative impact due to the increased traffic on local roads (Leicester Avenue, Highfield Road, Rathmines Road Upper) due to the traffic diversions. The positive impact due to reduced trafficking by replacing the existing inbound traffic lane on Rathmines Road Lower will be exceeded by the negative impact due to the increased traffic on local roads (Grosvenor Road, Kenilworth Road, Castelwood Ave, MountPleasant Ave, Ranelagh Rd) due to the traffic diversions.	Possible impacts due to increased proximity of vehicles to houses and gardens if bus lanes and cycle tracks installed in both directions along Terenure Road East and Rathgar Road.	Possible impacts due to increased proximity of vehicles to houses and gardens if bus lanes and cycle tracks installed in both directions along Terenure Road East and Rathgar Road.	Possible impacts due to increased proximity of vehicles to houses and gardens if bus lanes and cycle tracks installed in both directions along Terenure Road East and Rathgar Road.	Possible impacts due to increased proximity of vehicles to houses and gardens if bus lanes and cycle tracks installed in both directions along Terenure Road East. Possible impacts due to increased trafficking of road networks and increased proximity of vehicles to houses and gardens if bus lane installed on Highfield Road and Rathmines Road Upper. Highfield Road doesn't currently carry bus traffic so potential for impact is high.
	Rank								

Section 2 Dodder River to Grand Canal Crossing								
Appraisal Criteria	**Sub-Criteria**	**Route Option CB1 Rathfarnham Road – Rathmines Road Lower (Inbound traffic only on Rathgar Road, Outbound traffic only Rathmines Road)**	**Route Option CB2 Rathfarnham Road – Rathmines Road Lower (Inbound traffic only on Rathgar and Rathmines Road)**	**Route Option CB3 Rathfarnham Road – Rathmines Road Lower (Outbound traffic only on Rathgar and Rathmines Road)**	**Route Option CB4 Rathfarnham Road – Rathmines Road Lower (Parallel cycle route via Charleville Road, Grosvenor Lodge and Cathal Brugha Barracks.)**	**Route Option CB5 Rathfarnham Road – Rathmines Road Lower (Half Inbound & Half Outbound Bus Lanes on Rathmines Road Lower)**	**Route Option CB6 Rathfarnham Road – Rathmines Road Lower (Outbound traffic only on Rathmines Road Lower)**	**Route Option CB7 Rathfarnham Road – Rathmines Road Lower (Bus lanes via Highfield Road/Rathmines Road Upper) Parallel cycle route via Rathgar Road, Charleville Road, Grosvenor Lodge and Cathal Brugha Barracks).**
5 Environment	**5G Noise & Vibration**	Possible impacts due to increased proximity of vehicles to houses and gardens if bus lanes and cycle tracks installed in both directions along Terenure Road East. The positive impact due to reduced trafficking by replacing the existing outbound traffic lane on Rathgar Road will be exceeded by the negative impact due to the increased traffic on local roads (Frankfort Ave, Highfield Road, Rathmines Road Upper) due to the traffic diversions. The positive impact due to reduced trafficking by replacing the existing inbound traffic lane on Rathmines Road Lower will be exceeded by the negative impact due to the increased traffic on local roads (Grosvenor Road, Kenilworth Road, Castelwood Ave, MountPleasant Ave, Ranelagh Rd) due to the traffic diversions.	Possible impacts due to increased proximity of vehicles to houses and gardens if bus lanes and cycle tracks installed in both directions along Terenure Road East. The positive impact due to reduced trafficking by replacing the existing outbound traffic lane on Rathmines Road Lower will be exceeded by the negative impact due to the increased traffic on local roads (Mountpleasant Ave, Ranelagh Rd, Castlewood Ave, Harold's Cross Road, Leinster) due to the traffic diversions. The positive impact due to reduced trafficking by replacing the existing outbound traffic lane on Rathgar Road will be exceeded by the negative impact due to the increased traffic on local roads (Palmerston Road, Cowper Road, Rathmines Road Upper, Frankfort Avenue, Rathgar Ave and Leicester Ave) due to the traffic diversions.	Possible impacts due to increased proximity of vehicles to houses and gardens if bus lanes and cycle tracks installed in both directions along Terenure Road East. The positive impact due to reduced trafficking by replacing the existing inbound traffic lane on Rathgar Road will be exceeded by the negative impact due to the increased traffic on local roads (Leicester Avenue, Highfield Road, Rathmines Road Upper) due to the traffic diversions. The positive impact due to reduced trafficking by replacing the existing inbound traffic lane on Rathmines Road Lower will be exceeded by the negative impact due to the increased traffic on local roads (Grosvenor Road, Kenilworth Road, Castelwood Ave, MountPleasant Ave, Ranelagh Rd) due to the traffic diversions.	Possible impacts due to increased proximity of vehicles to houses and gardens if bus lanes and cycle tracks installed in both directions along Terenure Road East and Rathgar Road.	Possible impacts due to increased proximity of vehicles to houses and gardens if bus lanes and cycle tracks installed in both directions along Terenure Road East and Rathgar Road.	Possible impacts due to increased proximity of vehicles to houses and gardens if bus lanes and cycle tracks installed in both directions along Terenure Road East and Rathgar Road.	Possible impacts due to increased proximity of vehicles to houses and gardens if bus lanes and cycle tracks installed in both directions along Terenure Road East. Possible impacts due to increased trafficking of road networks and increased proximity of vehicles to houses and gardens if bus lane installed on Highfield Road and Rathmines Road Upper. Highfield Road doesn't currently carry bus traffic so potential for impact is high.
	Rank							

Section 2 Dodder River to Grand Canal Crossing								
Appraisal Criteria	**Sub-Criteria**	**Route Option CB1 Rathfarnham Road – Rathmines Road Lower (Inbound traffic only on Rathgar Road, Outbound traffic only Rathmines Road)**	**Route Option CB2 Rathfarnham Road – Rathmines Road Lower (Inbound traffic only on Rathgar and Rathmines Road)**	**Route Option CB3 Rathfarnham Road – Rathmines Road Lower (Outbound traffic only on Rathgar and Rathmines Road)**	**Route Option CB4 Rathfarnham Road – Rathmines Road Lower (Parallel cycle route via Charleville Road, Grosvenor Lodge and Cathal Brugha Barracks.)**	**Route Option CB5 Rathfarnham Road – Rathmines Road Lower (Half Inbound & Half Outbound Bus Lanes on Rathmines Road Lower)**	**Route Option CB6 Rathfarnham Road – Rathmines Road Lower (Outbound traffic only on Rathmines Road Lower)**	**Route Option CB7 Rathfarnham Road – Rathmines Road Lower (Bus lanes via Highfield Road/Rathmines Road Upper) Parallel cycle route via Rathgar Road, Charleville Road, Grosvenor Lodge and Cathal Brugha Barracks).**
5 Environment	**5H Land Use Character**	The level of land take required on Rathgar and Rathmines Road Lower would have an effect the viability of commercial properties (possible 8 properties) from being used for its intended use. Restricted access to the commercial amenities (Rathgar Village and Rathmines Village) and residential properties due to the provision of one-way traffic on Rathgar Road and Rathmines Road.	The level of land take required on Rathgar and Rathmines Road Lower would have an effect the viability of commercial properties (possible 8 properties) from being used for its intended use. Restricted access to the commercial amenities (Rathgar Village and Rathmines Village) and residential properties due to the provision of one-way traffic on Rathgar Road and Rathmines Road.	The level of land take required on Rathgar and Rathmines Road Lower would have an effect the viability of commercial properties (possible 8 properties) from being used for its intended use. Restricted access to the commercial amenities (Rathgar Village and Rathmines Village) and residential properties due to the provision of one-way traffic on Rathgar Road and Rathmines Road.	The level of land take required on Rathgar and Rathmines Road Lower would have an effect the viability of commercial properties (possible 5 properties) from being used for its intended use. Parallel cycle route proposed through Cathal Brugha Barracks along an existing internal roadway (10m width at pinch point), however there will be no requirement for land acquisition of buildings which would compromise their intended use.	The level of land take required on Rathgar and Rathmines Road Lower would have an effect the viability of commercial properties (possible 8 properties) from being used for its intended use.	The level of land take required on Rathgar and Rathmines Road Lower would have an effect the viability of commercial properties (possible 8 properties) from being used for its intended use. Restricted access to the commercial amenities (Rathmines Village) and residential properties due to the provision of one-way traffic on Rathmines Road.	The level of land take required on Highfield Road would have an effect the viability of one commercial property from being used for its intended use. Potential negative impacts associated with the re-engineering of mature roads (Highfield Road) to provide for bus lanes. Potential negative impacts associated with removing of on-street parking for residents on both sides of the road at the southern end of Rathmines Road Lower. Parallel cycle route proposed through Cathal Brugha Barracks along an existing internal roadway (10m width at pinch point), however there will be no requirement for land acquisition of buildings which would compromise their intended use.
	Rank							

APPENDIX C – Section 3 Route Options Assessment

Table 1

Section 3 Grand Canal to Christchurch			
Appraisal Criteria	**Sub-Criteria**	**Route Option CC1** **Richmond Street – Camden Street – Wexford Street**	**Route Option CC2** **Richmond Street – South Circular Road - Clanbrassil Street – New Street South**
1 Economy	**1A Capital Cost**	**€3.1m** *Indicative Infrastructure costs €3.1m include:* • Bus lanes in both directions between the canal crossing at La Touche Bridge to the junction of Cuffe Street/Kevin Street Lower. Reallocation of traffic lanes, reduction of footpath widths, removal of cycle lanes, on street parking and loading bays for the majority of the route. • Cycle facilities provided on parallel route via Portobello Road/Martin Street/Stamer Street/Harrington Street/Heytesbury Street/Bride Street along Primary Route 9 in the GDA CNP. *Land Acquisition Costs €0,000,000* • 0 sqm Public Land • 0 sqm Private Land • 0 private properties	**€6.1m** Indicative Infrastructure costs €4.5m include: • Bus lanes in both directions between the canal crossing at La Touche Bridge to the junction of Richmond Street/South Circular Road using existing bus lanes. • Bus lanes in both directions on South Circular Road requiring the removal of trees, reallocation of traffic lanes, reduction of footpath widths, removal of cycle lanes, on street parking and loading bays for the entire length. • Provision of bus lanes in both directions on Clanbrassil Street Lower which can be facilitated within the existing road reservation but will require the removal of on street parking to the south of Lombard Street West. The acquisition of a site for replacement parking near the South Circular Road junction (Leonard's Corner) may also be justified. • A continuation of the parallel cycle route from Section 2 is proposed via Longwood Ave, South Circular Road, Spencer Street South, Emorville Avenue, before joining Clanbrassil Street Lower at Lombard Street West and a new bridge crossing of the Grand Canal provided from O'Hara Avenue. • The existing inbound bus lanes on Clanbrassil Street Lower/New Street South would be supplemented with outbound bus lanes and cycle lanes in both directions within the existing road reservation by a combination of reassigning traffic lanes, reducing lane widths to 3.0m, reducing footpath widths & medians and potentially removal of on street parking *Land Acquisition Costs €1.6m* • 500 sqm Public Land • 1,078 sqm Private Land (Replacement Car Park) • 1 private properties
	Rank		
	1B Transport Quality & Reliability	Journey Time: 5 mins Length: 0.86 km No. of Junctions: 4 No. of Pedestrian Crossings: 3 Full priority provided along most the route with good journey time reliability for Bus services. Delays could occur at junctions at George's Street junction with Dame Street as buses would be competing with traffic and other bus services.	Journey Time: 9 mins Length: 1.8 km No. of Junctions: 7 No. of Pedestrian Crossings: 4 Full priority provided along most the route with good journey time reliability for Bus services. Delays could occur at junctions at either end of South Circular Road as buses would be competing with traffic and other bus services.
	Rank		

Section 3 Grand Canal to Christchurch			
Appraisal Criteria	**Sub-Criteria**	**Route Option CC1** **Richmond Street – Camden Street – Wexford Street**	**Route Option CC2** **Richmond Street – South Circular Road - Clanbrassil Street – New Street South**
2 Integration	**2A Land Use Policy**	Enhancement of Richmond Street which is a DCC objective within the six years' period of the development plan (2016-2022) subject to the availability of funding and environmental requirements (MT027).	Enhancement of Richmond Street which is a DCC objective within the six years' period of the development plan (2016-2022) subject to the availability of funding and environmental requirements (MT027).
	Rank		
	2B Residential Population and Employment Catchments	<u>Residential Population Catchments</u> - 5 minute walk catchment of approximately 8,595 - 10 minute walk catchment of approximately 21,415 <u>Employment catchments</u> - 10 minute walk catchment of approximately 33,178	<u>Residential Population Catchments</u> - 5 minute walk catchment of approximately 17,263 - 10 minute walk catchment of approximately 34,509 <u>Employment catchments</u> - 10 minute walk catchment of approximately 35,495
	Rank		
	2C Transport Network Integration	Potential for interchange with Luas Green Line/Cross City at Harcourt Street & Stephen's Green.	Potential for interchange with Luas Green Line/Cross City at Harcourt Street. Potential for interchange with CBC bus services running along the Clondalkin & Tallaght Core Radial Corridors on New Street South/Patrick Street junction.
	Rank		
	2D Cycling Integration	This route option comprises of Primary Route 7 & Primary/Secondary Route 10 in the GDA Cycle Network Plan. The proposed removal of cycle facilities along the route does not align with the GDA Cycle Network Plan proposal for route 10. The proposed construction of a parallel cycle route via Portobello Road/Martin Street/Stamer Street/Heytesbury Street/Bride Street aligns with Primary Route 9. Due to width constraints, mixed or shared street will only feasible along the Portobello Road/Martin Street and Stamer Street.	This route option comprises of Secondary Orbital Route C7 in the GDA Cycle Network Plan. The proposed removal of cycle facilities along the route does not align with the GDA Cycle Network Plan proposal for route C7. The proposed construction of a parallel cycle route via Longwood Avenue, Spencer Street South, Emorville Avenue does not align with Secondary Route 9B. Due to width constraints, mixed or shared street will only be feasible. The remaining section of the route on Clanbrassil Street and New Street South does align with Secondary Route 9B of the GDA Cycle Network Plan.
	Rank		

Section 3 Grand Canal to Christchurch			
Appraisal Criteria	**Sub-Criteria**	**Route Option CC1** **Richmond Street – Camden Street – Wexford Street**	**Route Option CC2** **Richmond Street – South Circular Road - Clanbrassil Street – New Street South**
2 Integration	**2E Traffic Network Integration**	Reallocation of traffic lanes to bus lanes will be necessary at junctions at the expense of private vehicular traffic capacity. The proposals will also require the removal of on street parking and loading along Camden Street and Wexford Street.	The majority of this link comprises of a high capacity dual carriageway road. While the proposals would involve the reallocation of an outbound traffic lane to a bus lane, the existing road reservation (including medians) may facilitate the creation of additional traffic lanes at junctions. The reallocation of traffic lanes to bus lanes will be necessary at junctions at the expense of private vehicular traffic capacity and will be more acutely felt on the South Circular Road Section.
	Rank		

Section 3 Grand Canal to Christchurch			
Appraisal Criteria	**Sub-Criteria**	**Route Option CC1** **Richmond Street – Camden Street – Wexford Street**	**Route Option CC2** **Richmond Street – South Circular Road - Clanbrassil Street – New Street South**
3 Accessibility & Social Inclusion	**3A Key Trip Attractors**	***Education*** - Portobello College - DIT Aungier Street - DIT Kevin Street - Dublin Business School - Liffey College - Royal College of Surgeons - Trinity College ***Retail / Leisure*** - Portobello - St. Stephens Green Shopping Centre - Grafton Street Quarter - Dublin Garden - City Hall - Chester Beatty Library - Gaiety Theatre - St. Stephens Green - Ivy Gardens - Harcourt Street - Olympia Theatre - National Concert Hall - Christchurch Cathedral ***Employment*** - Portobello College - DIT Aungier Street - DIT Kevin Street - Dublin Business School - Liffey College - Royal College of Surgeons - St. Stephens Green - Grafton Street Quarter - Local businesses on Camden Street Georges Street etc. - St. Stephens Green Shopping Centre - Trinity College - Garda Siochana Headquarters (Harcourt Street) - Dublin City Council - Harcourt Street Business District	***Education*** - Portobello Collage - Presentation Secondary School - Liberties College - St. Patrick's Cathedral Grammer School - Griffith College ***Retail / Leisure*** - Leonard's Corner - Blackpitts Mosque - Marsh's Library - St. Patrick's Cathedral - St. Patrick's Park - Christchurch Cathedral - Dublinia - Portobello ***Employment*** - The Meath Primary Care Centre - Leonard's Corner - Portobello Collage - Presentation Secondary School - Liberties College - St. Patrick's Cathedral Grammer School - Dublin City Council
	Rank		

Section 3 Grand Canal to Christchurch			
Appraisal Criteria	**Sub-Criteria**	**Route Option CC1** **Richmond Street – Camden Street – Wexford Street**	**Route Option CC2** **Richmond Street – South Circular Road - Clanbrassil Street – New Street South**
3 Accessibility & Social Inclusion	**3B Deprived Geographic Areas**	Route option serves area of Marginally Below Average to Affluent means from the Pobal Deprivation Index.	Route option serves area of Disadvantaged to Affluent means from the Pobal Deprivation Index
	Rank		
4 Safety	**4A Road Safety**	No. of Junctions: 4 0 turning movements	No. of Junctions: 7 2 turn movements required for each direction (1 right turn/ 1 Left turn in each direction)
	Rank		
	4B Pedestrian Safety	No. of Junctions: 4 No. of Pedestrian Crossings: 7 Length: 0.86 km Pedestrian crossings are not located within 50m of most stops, additional pedestrian crossing will be required along the majority of the route. Footpaths are provided on both sides of the road.	No. of Junctions: 7 No. of Pedestrian Crossings: 4 Length: 1.8 km Pedestrian crossings are not located within 50m of most stops, additional pedestrian crossing will be required along the majority of the route. Footpaths are provided on both sides of the road.
	Rank		
6 Environment	**5A Archaeology and Cultural Heritage**	4 Recorded Monument or site of archaeological and cultural heritage merit was identified within the assessment area which mainly consist of old houses and buildings. No land acquisition required at any Recorded Monuments.	6 Recorded Monument or site of archaeological and cultural heritage merit was identified within the assessment area which range from Houses, Mills to Cathedrals. No land acquisition required at any Recorded Monuments.
	Rank		
	5B Architectural Heritage	40 protected structures were identified along the CBC corridor. While 100 protected structures were identified on the proposed parallel cycle route along Heytesbury Street. No land acquisition required at any protected structure.	80 protected structures were identified within the assessment area. 65 of these structures (residential & commercial buildings) are located either side of South Circular Road approaching Clanbrassil Street Upper/South Circular Road junction. No land acquisition required at any protected structure.
	Rank		
	5C Flora and Fauna	No appreciable impacts	Possible removal of trees on median on Clanbrassil Street Lower between Daniel Street junction and Long Lane junction. The installation of bus lanes on South Circular Road would require the removal of existing trees on one side of the carriageway.
	Rank		
	5D Soils, Geology & Hydrology	No appreciable impacts	No appreciable impacts
	Rank		

Section 3 Grand Canal to Christchurch			
Appraisal Criteria	**Sub-Criteria**	**Route Option CC1** **Richmond Street – Camden Street – Wexford Street**	**Route Option CC2** **Richmond Street – South Circular Road - Clanbrassil Street – New Street South**
6 Environment	**5E Landscape and Visual**	No appreciable impacts	Possible removal of trees on median on Clanbrassil Street Lower between Daniel Street junction and Long Lane junction (100m). No significant impact, trees can be replanted. The installation of bus lanes on South Circular Road would require the removal of existing trees on one side of the carriageway
	Rank		
	5F Air Quality	No appreciable impacts	No appreciable impacts
	Rank		
	5G Noise & Vibration	No appreciable impacts	No appreciable impacts
	Rank		
	5H Land Use Character	No appreciable impacts	No appreciable impacts
	Rank		

APPENDIX D – Cycle Routes Assessment Criteria

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