

Executive Summary

Introduction

This report presents the findings of the route options assessment work undertaken for the UCD to City Centre Core Bus Corridor (CBC) and a recommendation on the emerging preferred option is made. The study was commissioned by the National Transport Authority (NTA) and undertaken by AECOM Roughan and O'Donovan (ROD) Consulting Engineers.

Core Bus Network

The Transport Strategy for the Greater Dublin Area 2016 – 2035 identified a Core Bus Network for the Greater Dublin Area (GDA). This core network represents the most important bus routes in the region, which 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 a number of radial, orbital and regional bus corridors. The UCD to City Centre corridor represents one of the radial bus corridors (Core Bus Corridors) forming the Core Bus Network.

The GDA Transport Strategy includes objectives to develop the Core Bus network to achieve, as far as practicable, continuous priority for bus movement on the sections of the Core Bus Network within the Metropolitan Area, with the goal of making the overall bus system more efficient and attractive to users.

Scheme Objectives

The following specific objectives have been set for the proposed 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

Arising from the transport policy context and scheme objectives set for the UCD to City Centre CBC, the broad Study Area identified for the proposed scheme is illustrated in red in **Figure 1**.

The Study Area is generally bounded to the north by the Grand Canal and to the south by Booterstown and Goatstown.

Only a single direct route can be established between the Grand Canal and St. Stephen's Green, i.e. along Leeson Street.

Therefore the area surrounding the corridor section between the Grand Canal and St. Stephen's Green has not been included in the Study Area.

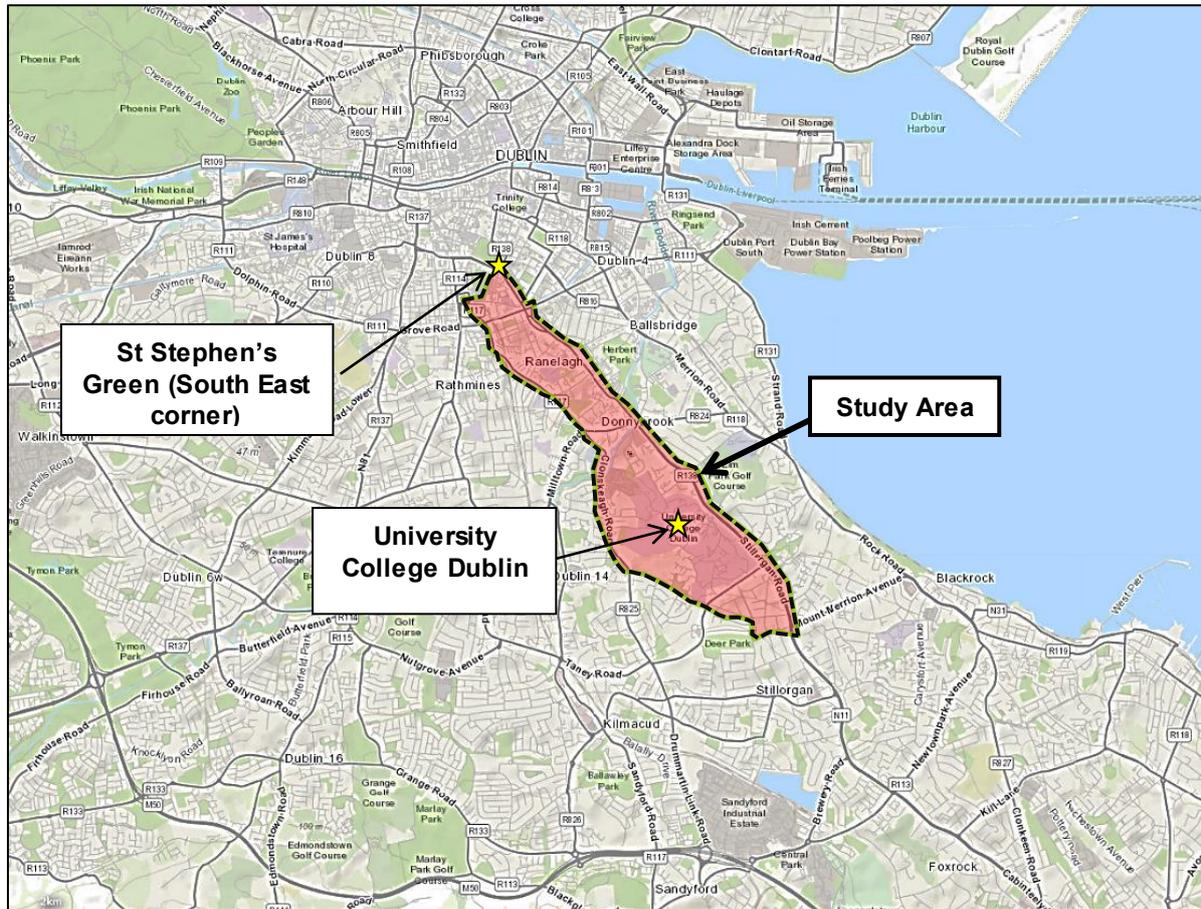


Figure 1: Study Area

Assessment Process

An initial 'spiders-web' of potential route sections that could accommodate a CBC was identified within the Study Area. This 'spiders-web' of route sections was chosen with reference to the CBC characteristics and in order to meet the scheme objectives as listed above.

Initial route sections identified also took cognisance of the physical constraints and opportunities present and the ability to integrate with other public transport modes and routes, including:

- Luas Cross City and Green Luas Line at St Stephen's Green;
- DART services in proximity to southern section of the corridor;
- Other CBC routes; and
- Existing Dublin Bus services at numerous locations along the route.

Of particular 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 lane priority.

The resulting spiders-web of route sections identified in the Study Area is presented in **Figure 2** below.

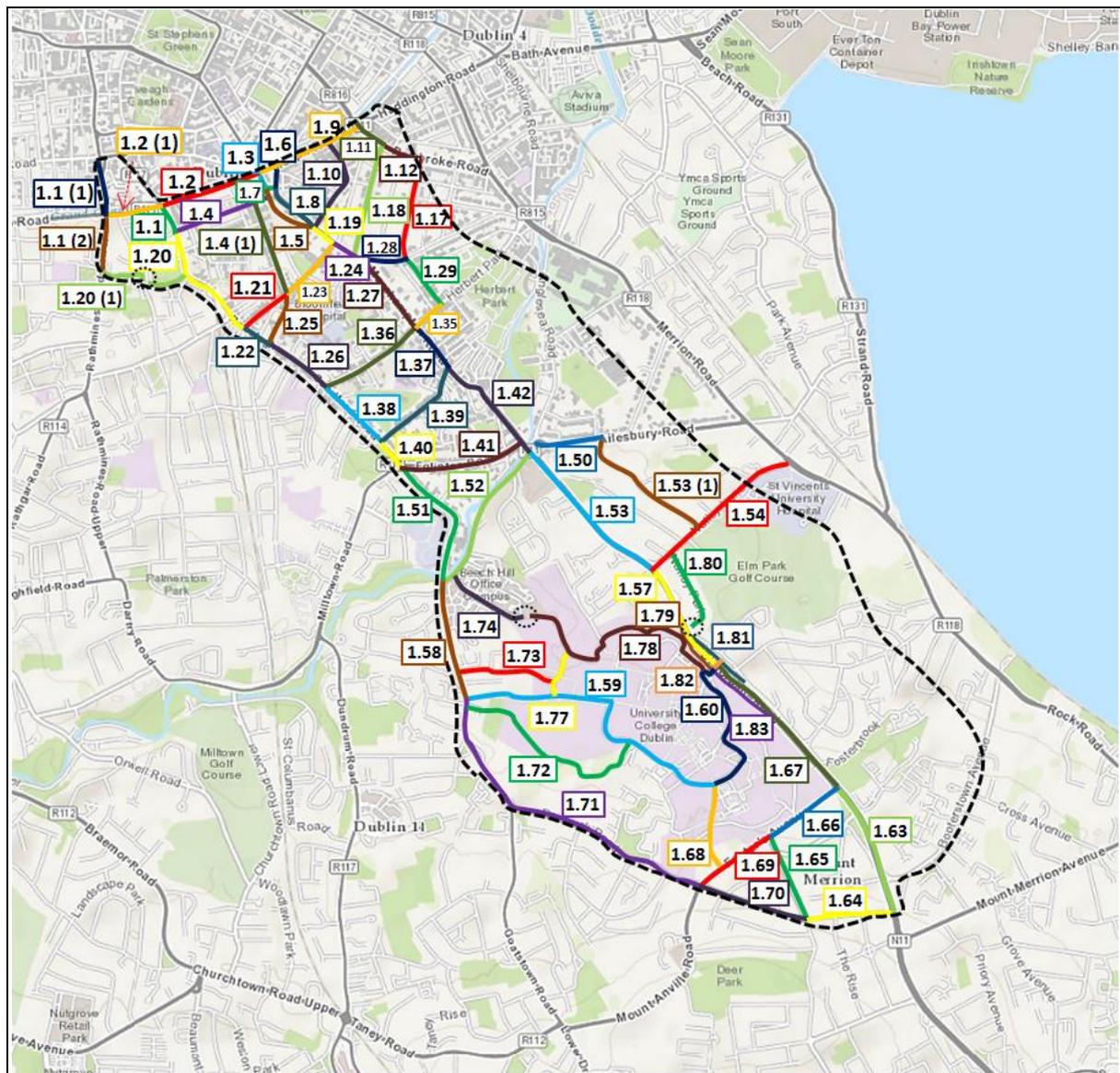


Figure 2: Study Area Route Sections

A two-stage assessment of the 'spiders-web' route sections was adopted:

Stage 1

At the Stage 1 'sifting' stage, the initial 'spiders-web' of route sections were 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 sections 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).

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

Stage 2

Following completion of the 'Stage 1' assessment, the remaining potentially feasible route sections were progressed to Stage 2 of the assessment process which comprised a more detailed qualitative and quantitative assessment.

The first step in the Stage 2 assessment involved combining shorter route sections which passed the Stage 1 assessment to form longer end-to-end potential routes within the Study Area.

Following the Stage 1 sift, the remaining 30 route sections were combined to form one cohesive route option (Route 1) as shown in **Figure 3**.

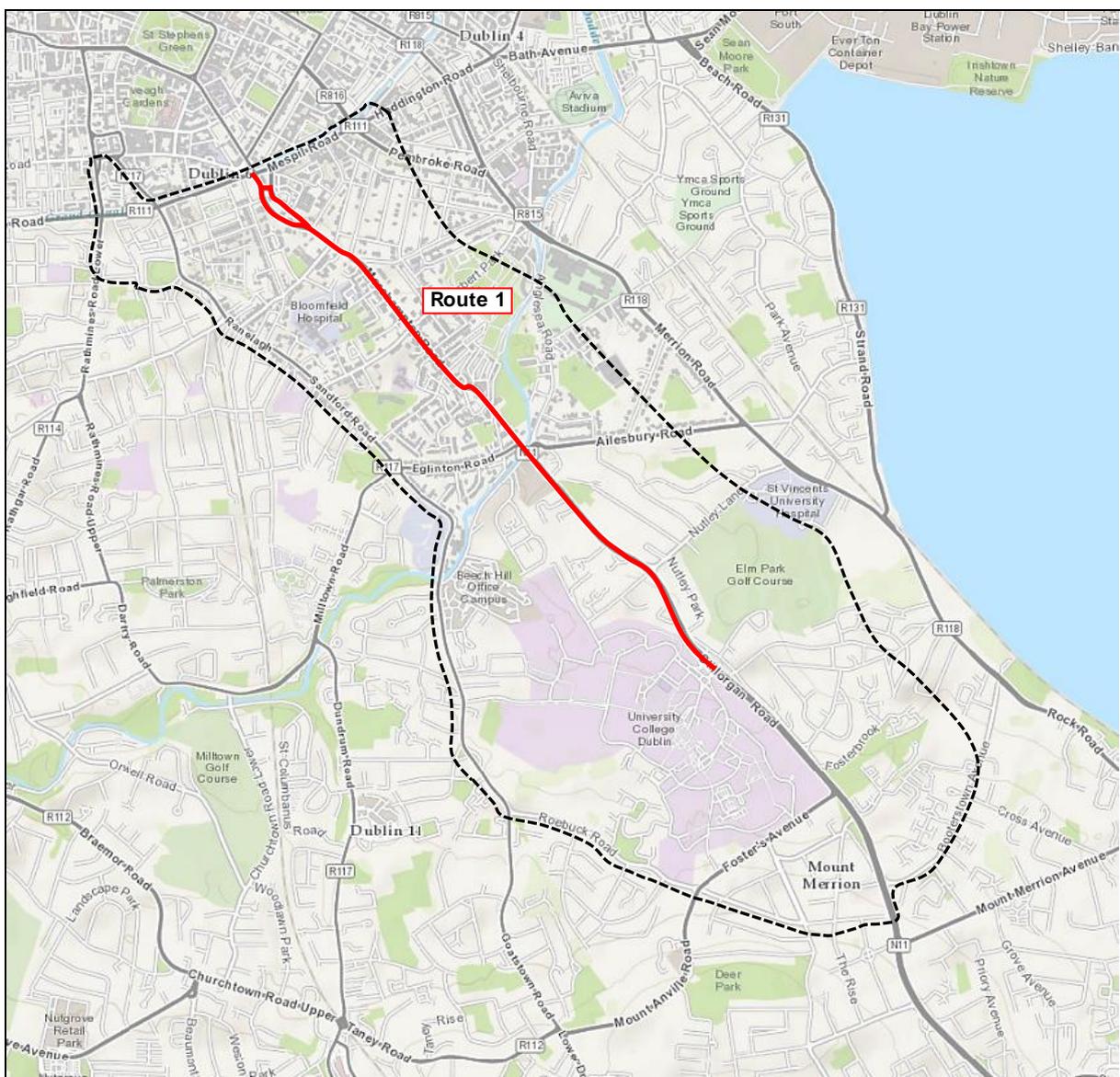


Figure 3: Study Area Route Options

The route option (Route 1) was explored using different design concepts to identify the degree of facility provision and necessary infrastructure requirements. This process involved dividing Route 1 into different Segments (see **Figure 4**) and developing different scheme options for each Segment.

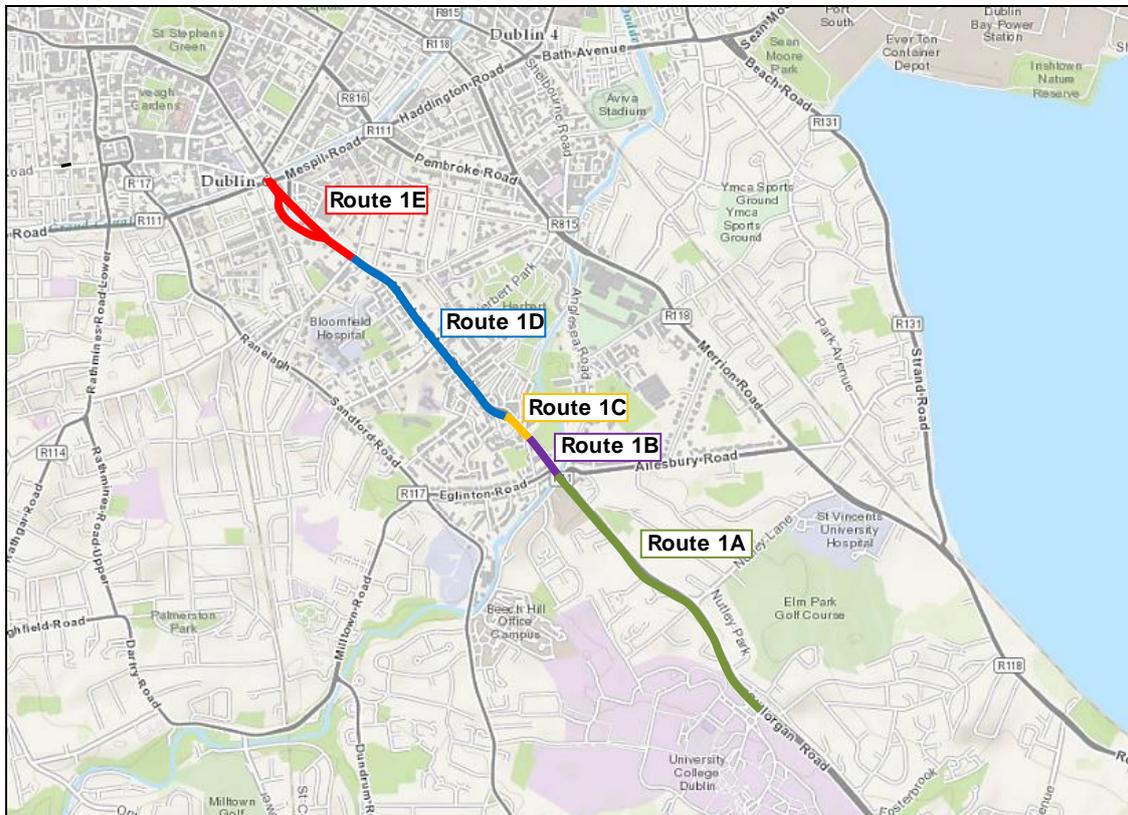


Figure 4: Route 1 Segments

The scheme options developed for each Segment along Route 1 were then progressed to a multi-criteria analysis.

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

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

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 MCA criteria.

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

MCA assessment

Table (i) presents a summary of the MCA criteria and sub-criteria used as part of the 'Stage 2' detailed route options assessment process.

Table (i) MCA criteria

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

Each sub-criterion in the MCA table is evenly weighted and the highest scoring scheme option along each Segment of Route 1 formed part of the overall preferred route for the UCD to City Centre CBC.

The Preferred CBC Route

The following scheme options scored highest for each Segment:

Segment 1A Scheme Option 2

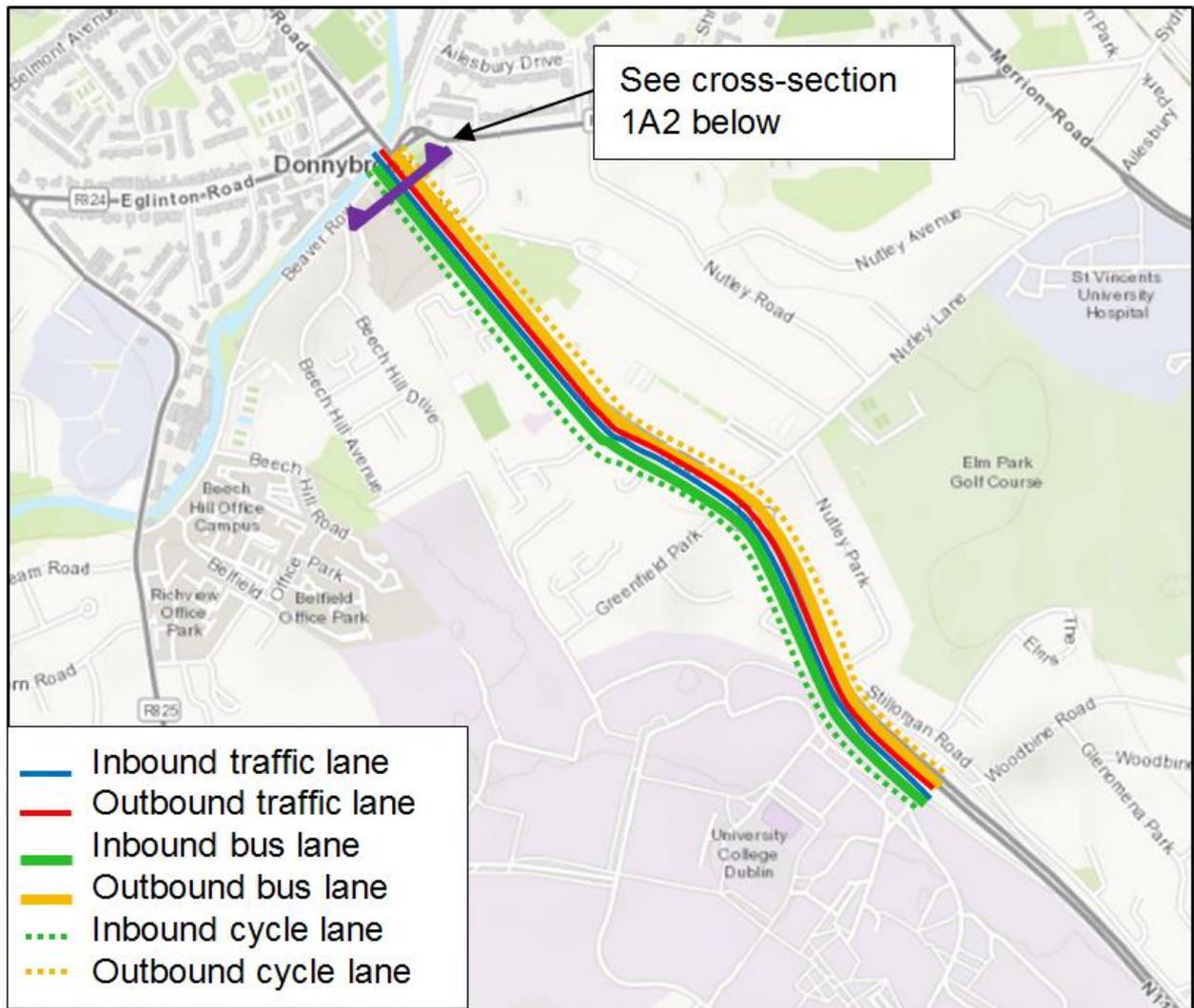


Figure 5: Scheme Option 1A2 bus and cycle facilities

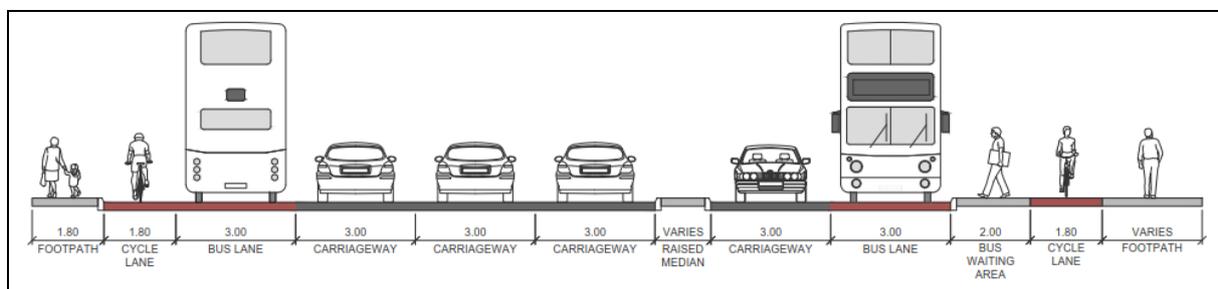


Figure 6: Scheme Option 1A2 – Cross-section at Donnybrook Church

This scheme option will provide a new streetscape which will increase pedestrian facilities by widening the northern footpath in front of Donnybrook Parish Church, whilst maintaining full bus and cyclist facilities.

This will be achieved by extending the outbound one lane configuration by approximately 110m past the Stillorgan Road/Beaver Row/Anglesea Road junction before widening to two lanes.

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

Segment 1B Scheme Option 3

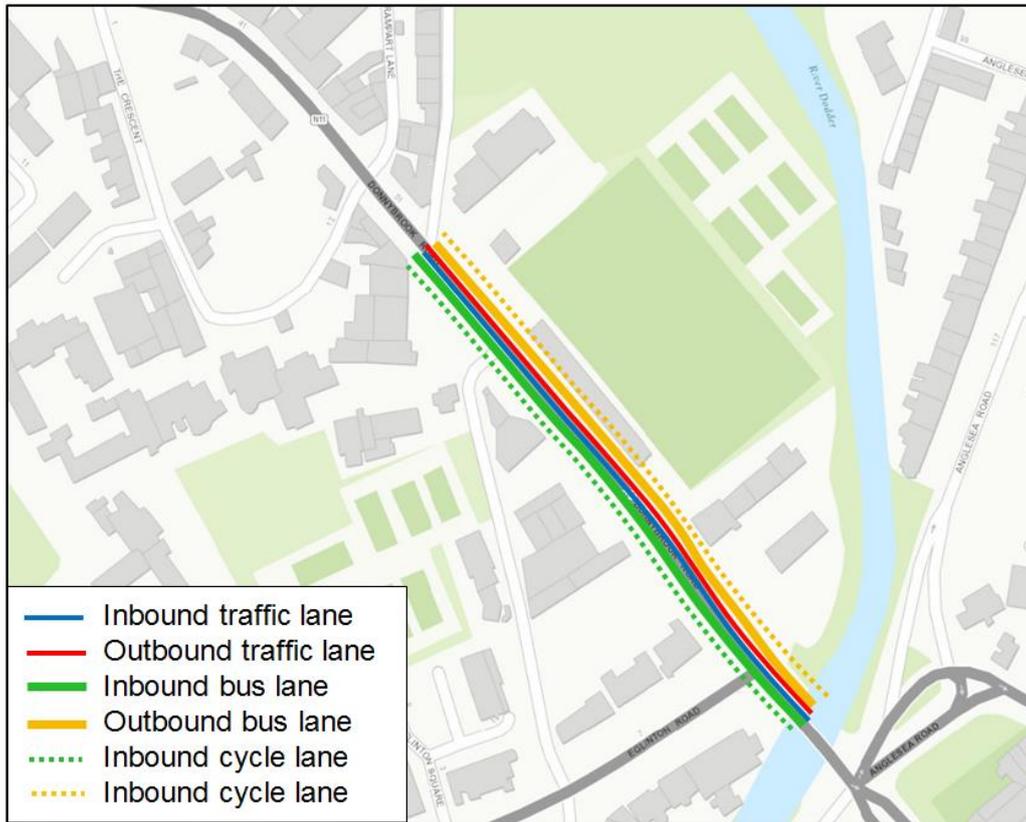


Figure 7: Scheme Option 1B3 bus and cycle facilities

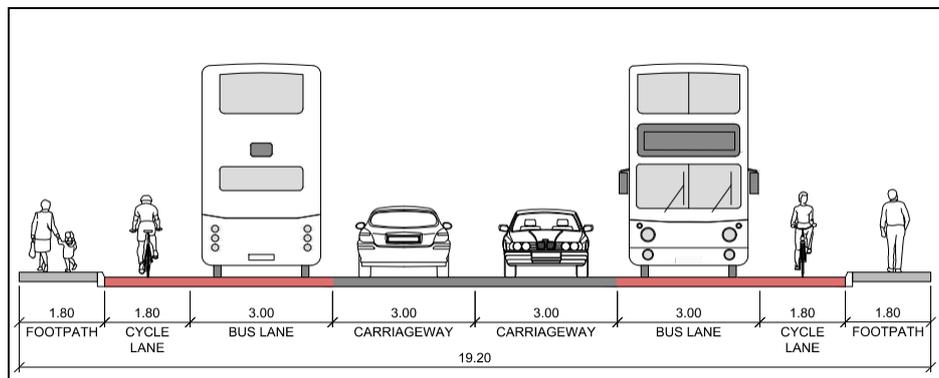


Figure 8: Scheme Option 1B3 – Typical Cross-section

Scheme Option 1B3 will include segregated cyclist and bus facilities inbound and outbound.

The provision of the exclusive lanes will require land-take and a reduction in the number of outbound traffic lanes from two to one.

There are no on-street parking spaces identified in this section which will be affected by the proposed works.

One on-street loading bay will require relocation and some loss of adjacent parking.

Segment 1C Scheme Option 1

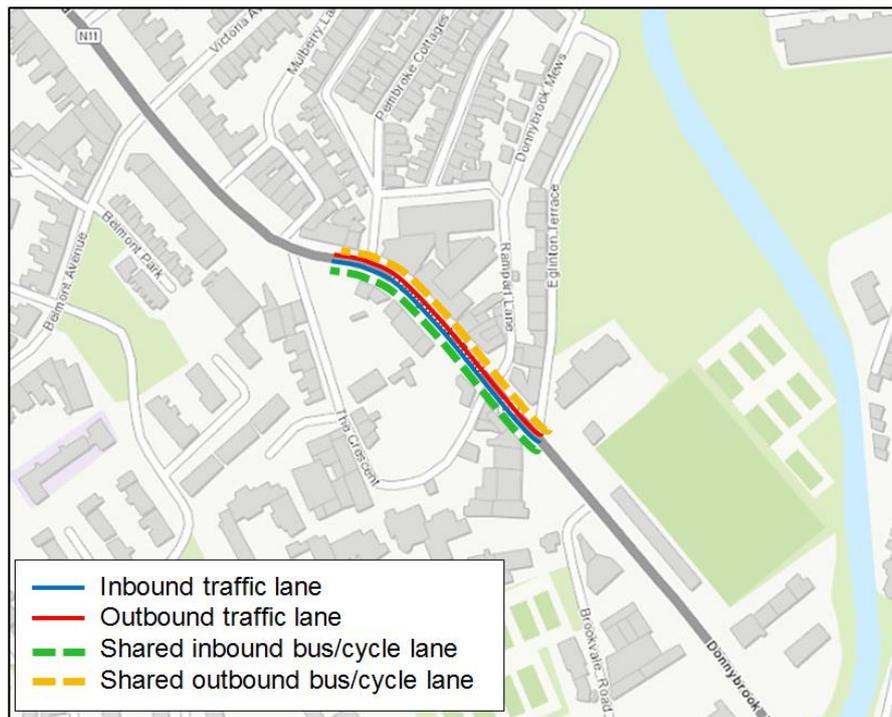


Figure 9: Scheme Option 1C1 bus and cycle facilities

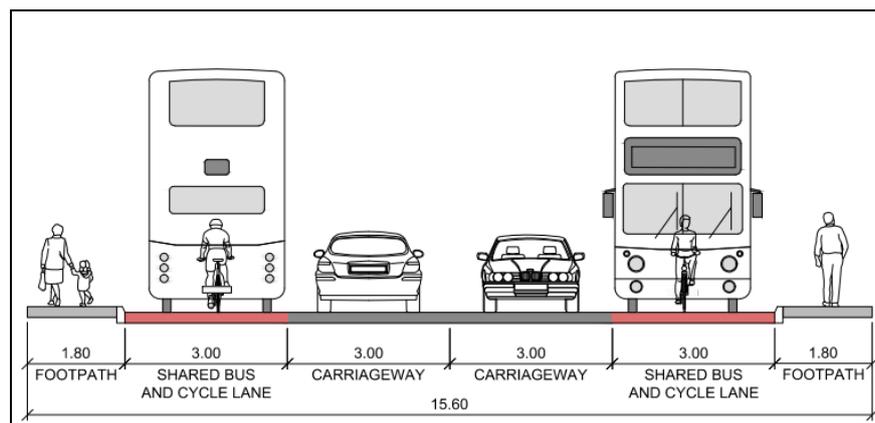


Figure 10: Scheme Option 1C1 – Typical Cross-section

To preserve the existing village streetscape, Scheme Option 1C1 will provide adequate bus and cycle facilities albeit within a reduced carriageway design width. This scheme option will avoid the demolition of existing buildings and footpaths along with the ancillary works associated with demolition (i.e. the relocation of services etc.) by providing one traffic lane and one exclusive shared bus and cycle lane on both the inbound and outbound carriageways.

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

Segment 1D Scheme Option 2

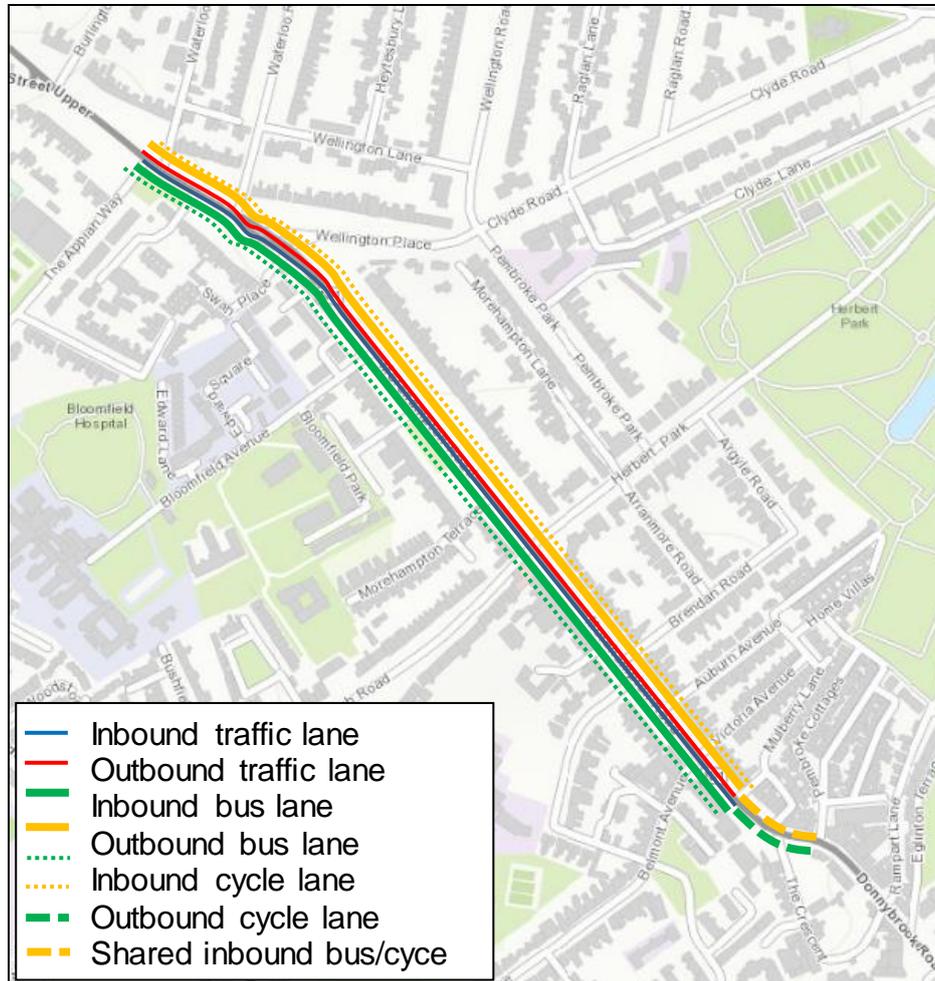


Figure 11: Scheme Option 1D2 bus and cycle facilities

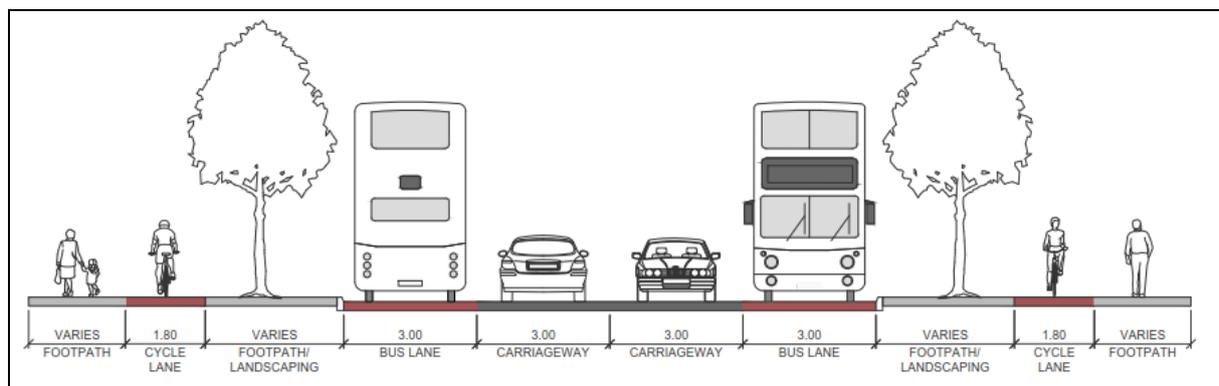


Figure 12: Scheme Option 1D2 – Typical Cross-section (when possible to maintain trees)

Scheme Option 1D2 will provide full bus and cycle facilities on both the inbound and outbound carriageways.

This scheme option will preserve trees (where possible), and thus most of the existing streetscape along the route, by altering the alignment of cycle lanes and configuration of bus stops.

Most of the on-street formal and informal car parking spaces will be removed to facilitate the proposed works.

The adjacent spaces in the car park located at the Crescent will not be affected by the proposed works.

Segment 1E Scheme Option 3

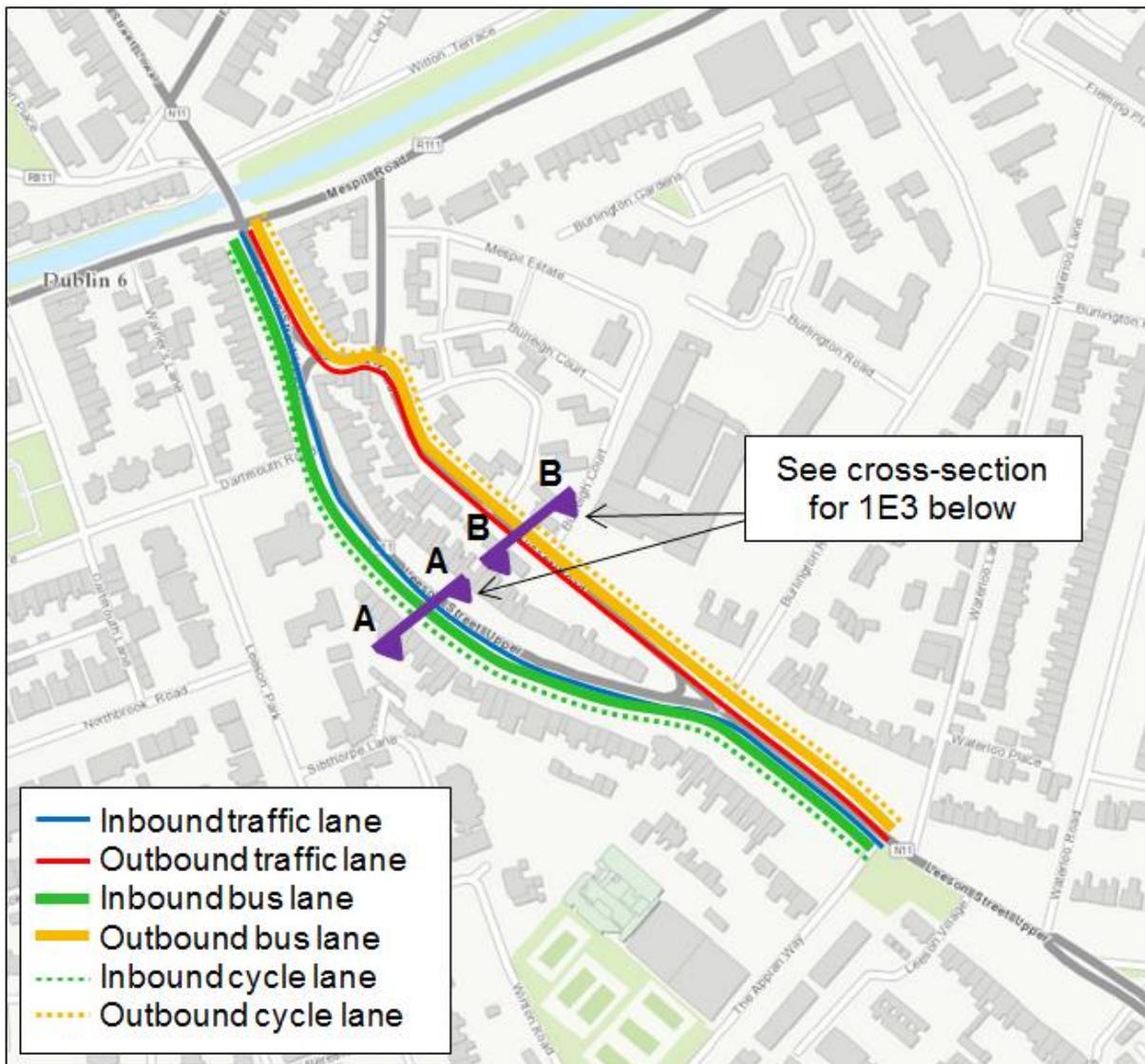


Figure 13: Scheme Option 1E3 bus and cycle facilities

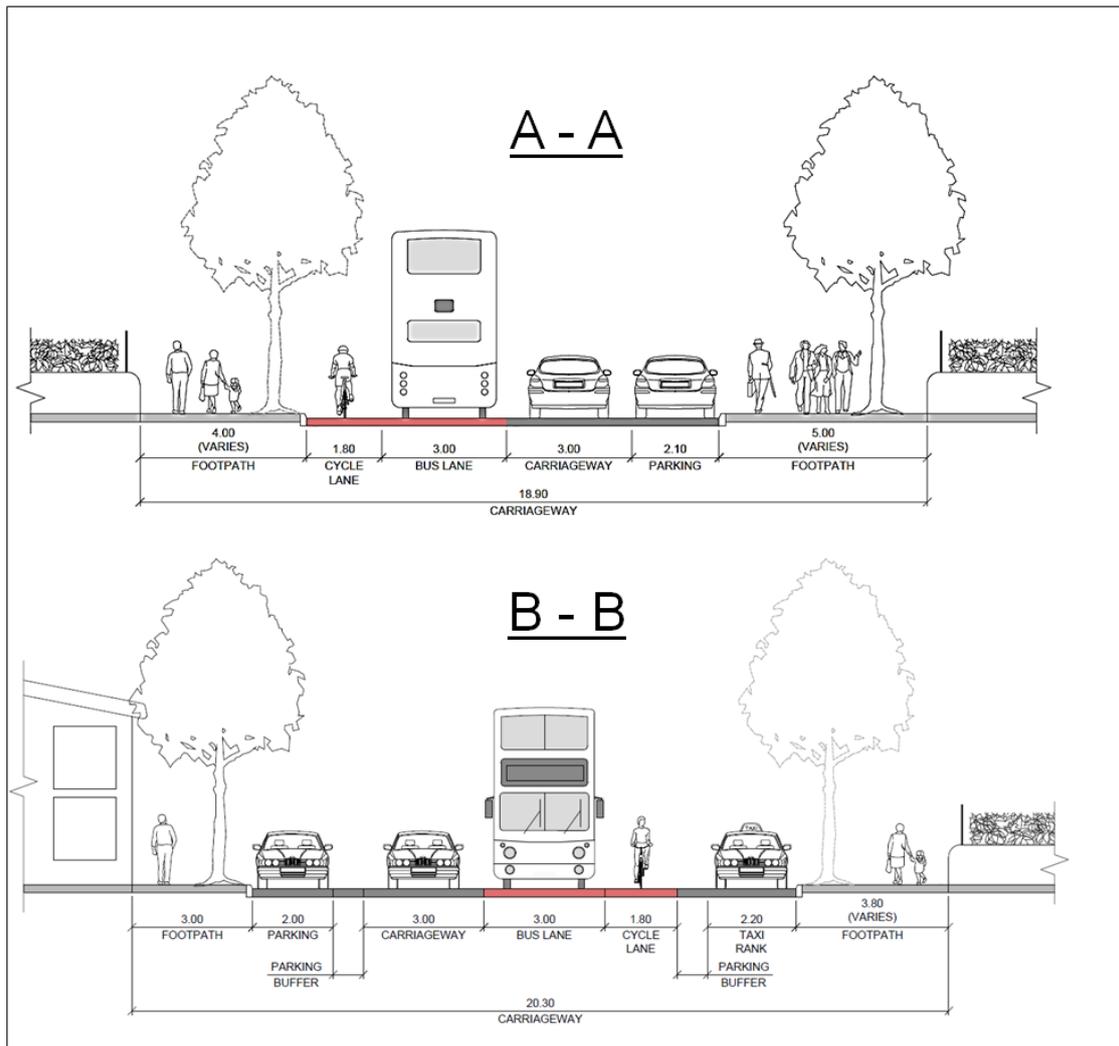


Figure 14: Scheme Option 1E3 – Cross-section

This scheme option will extend the one way traffic lane further on both the inbound and outbound sections before widening to two lanes (see **Appendix H** for scheme option design).

As a result, this option will have some impact upon the existing traffic flows. Resurfacing will be required along with the provision of segregated bus and cycle lanes both inbound and outbound.

Scheme Summary

The five Route Segments combine to form the overall emerging preferred scheme, illustrated in **Figure 15**.

With the exception of an approximately 155m section outbound and 175m section inbound, where buses mix with cyclists, segregated bus and cycle lanes are proposed in each direction along the entire route.

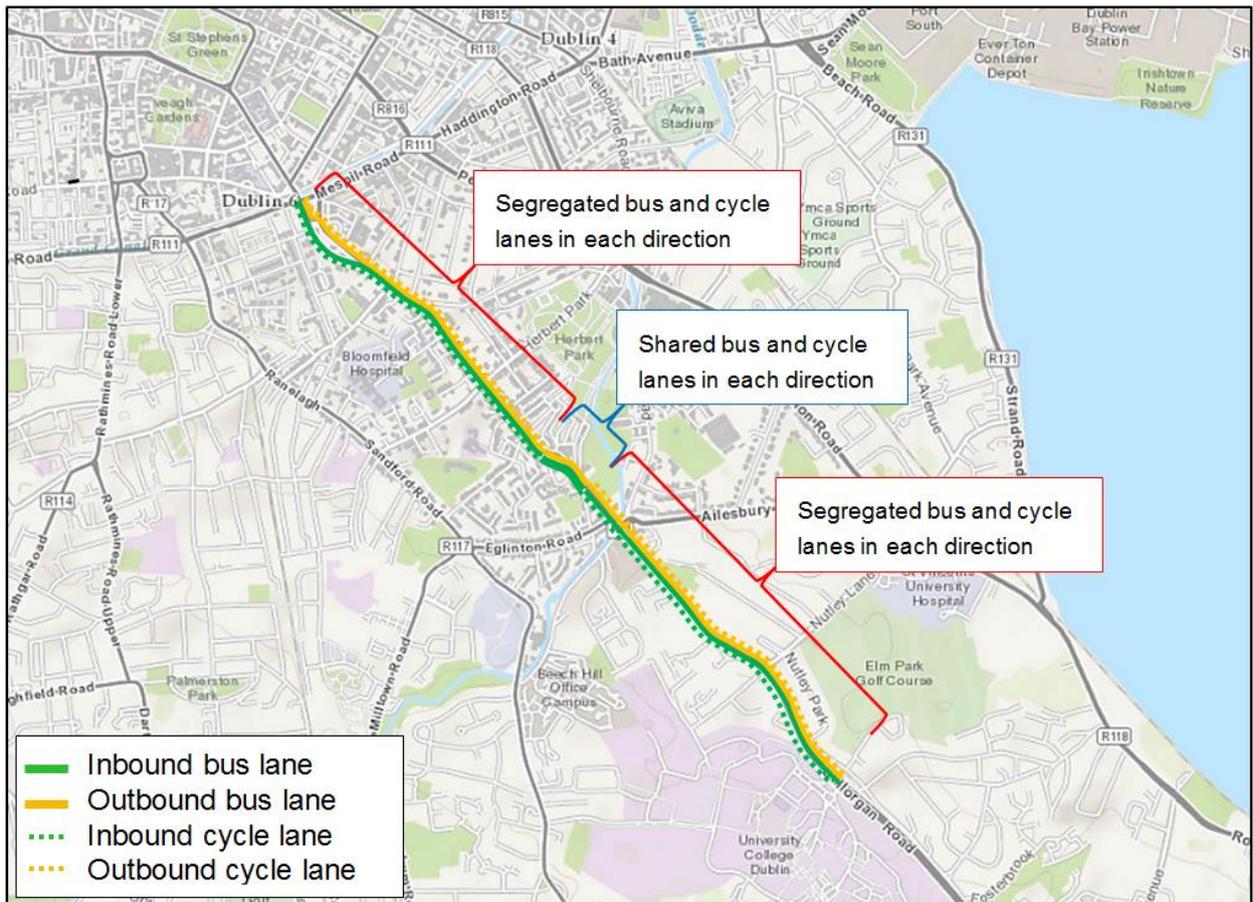


Figure 15: Overall Emerging Preferred Scheme

Feasibility Working Cost Estimate

A cost estimate has been developed for the scheme and is indicated in Table (ii) below. It was developed primarily based on standard rates that AECOM-ROD have available from similar types of projects in Dublin.

A detailed cost estimate and significant further work would be required to provide a more accurate cost at the subsequent stage of development. This detailed estimate would need to allow for Risk, Contingencies and future inflation etc.

Table (ii) Feasibility Working Cost Estimate for Emerging Preferred Scheme Option

Cost Type	Total Capital Cost Estimate
Infrastructural	€4.106M
Land Acquisition	€0.756M
Total	€4.862M

Emerging Preferred Scheme Benefits

In summary, the emerging preferred scheme option will have the following benefits:

- Increased reliability and faster journey times due to bus priority in the vast majority of locations;
- Reduction of commuting time for public transport;
- Reduction of car congestion and enhancement of attractiveness of urban centres;
- Provision of safe cycling facilities and the opportunity for more people to cycle along the UCD to City Centre (St. Stephen's Green) CBC;
- Reconfiguration of existing junctions, which will provide considerable benefits for pedestrian accessibility and bus priority, making the bus routes more attractive;
- Interchange with neighbouring CBC routes i.e. Dun Laoghaire to City Centre Corridor via Ballsbridge to UCD bus connection;
- Ability to extend bus services southwards; and
- Serving important trip attractors.

Next Stages of Design Development

This report has identified an emerging preferred scheme option for the bus infrastructure along this UCD to City Centre CBC (St. Stephen's Green) 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 BusConnects Plan proposals.

The proposal will be amended, if and as required, to integrate any resultant changes.

The Preliminary Design will define the final practically achievable scheme for the bus corridor, taking into account more detailed studies of constraints, impacts and environmental assessment required at a local level.

Prior to finalisation of the UCD to City Centre (St. Stephen's Green) CBC scheme design, a public consultation process will be undertaken, with inputs and feedback received incorporated where practical and appropriate to do so.

The 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 Pleanála, due to the nature and extent of the proposed works.