

# Executive Summary

## Introduction

This report presents the findings of the route options assessment work undertaken for the orbital link between Bray-UCD-Donnybrook Core Bus Corridor (CBC) and Dun Laoghaire 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. A bus corridor is proposed to connect the following two radial bus corridors:

- Dun Laoghaire to City Centre corridor; and
- Bray – UCD – Donnybrook corridor.

This connecting bus corridor will run from Ballsbridge to a terminus in UCD campus.

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 objectives were established to identify the best bus corridor / switching point for connecting the Dun Laoghaire to City Centre bus corridor to the Bray – UCD – Donnybrook corridor:

- Deliver the on street infrastructure necessary to provide continuous priority for bus movements along this 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 Ballsbridge to UCD bus connection, 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 Ballsbridge (south of the River Dodder) and to the south by UCD.

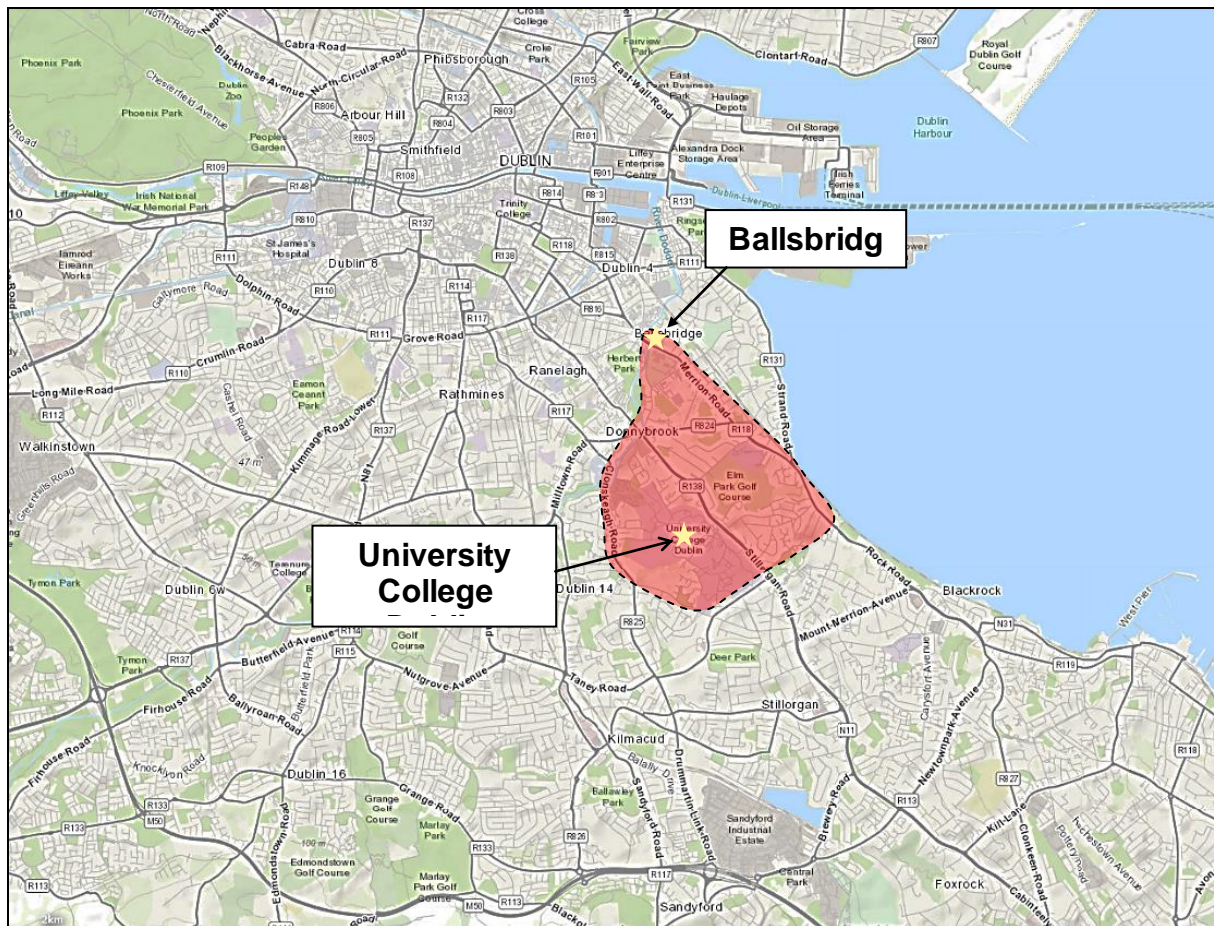


Figure 1: Study Area

## Assessment Process

An initial “spider’s web” of potential route sections that could possibly accommodate the bus connection between Ballsbridge and UCD was identified for the Study Area.

This “spider’s web” of route sections was chosen in order to meet the scheme objectives.

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:

- Planned CBC route from Dun Laoghaire to City Centre;
- Planned regional Bray – UCD – Donnybrook bus corridor; and
- Existing Dublin Bus services 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.

One cohesive route option between Ballsbridge and UCD was identified using the remaining routes sections – see **Figure 3**.



Figure 2: Route Option connecting Ballsbridge to UCD

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 developing different scheme options for Route 1.

The scheme options developed for 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
<b>1. Economy</b>	1.a. Capital Cost
	1.b. Transport Reliability and Quality (Journey Time)
<b>2. Integration</b>	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
<b>3. Accessibility &amp; Social Inclusion</b>	3.a. Key Trip Attractors (Education/Health/Commercial/Employment)
	3.b. Deprived Geographic Areas
<b>4. Safety</b>	4.a. Road User Safety
<b>5. Environment</b>	5.a. Archaeology and Cultural Heritage
	5.b. Architectural Heritage
	5.c. Flora & Fauna



MCA criteria	Assessment Sub-Criteria
	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 scheme option which achieved the highest average score overall formed part of the overall preferred route for the bus corridor connecting Bray-UCD-Donnybrook CBC and Dun Laoghaire to City Centre CBC.

### The Preferred CBC Route

Based on the conclusions from the route options assessment process, the recommended emerging preferred route for the proposed scheme is presented in **Figure 3**.

Refer to **Appendix H** for concept drawings and staging diagrams of key junctions.

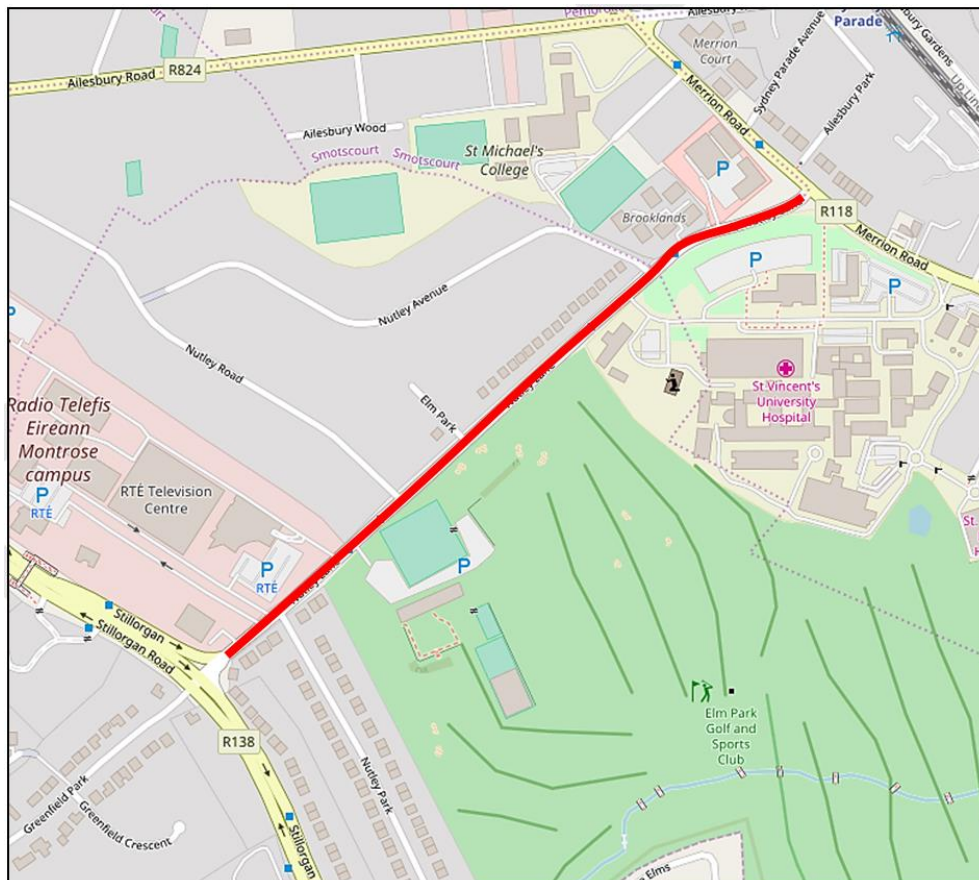


Figure 3: Emerging preferred route

The emerging preferred scheme option will provide a single traffic lane, bus lane and cycle lane in each direction along the entire route, as illustrated in **Figure 4** and **Figure 5**.

Both directions of Nutley Lane align with a secondary cycle route, as identified in the GDA Cycle Network Plan, which connects two primary cycle corridors i.e. Merrion Road and Stillorgan Road.

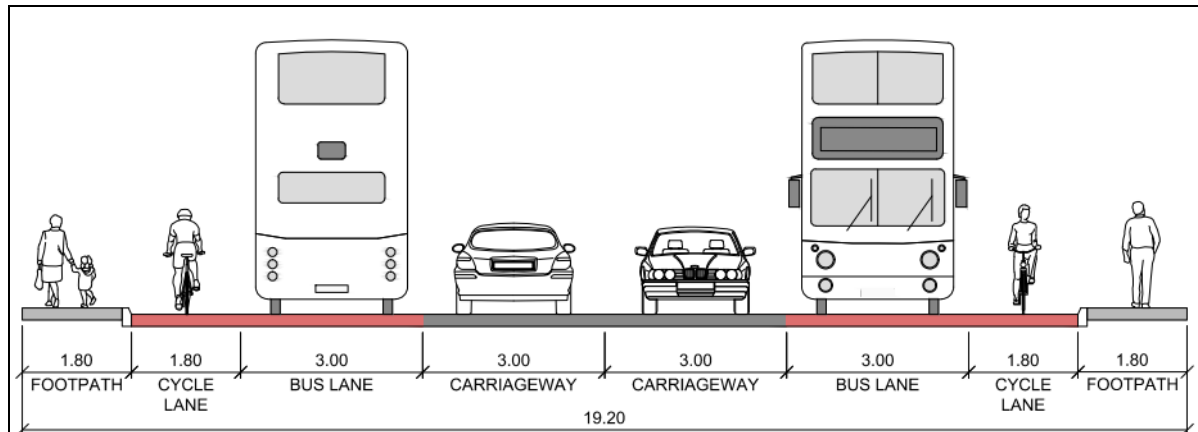


Figure 4: Scheme Option 1A – Typical Cross-section

Nutley Lane will facilitate the interchange between two proposed Core Bus Corridors i.e. Dun Laoghaire to City Centre CBC and UCD to City Centre CBC.

The provision of this scheme option will require third party land take at various locations along the route.

On-street parking spaces and trees would also be removed to facilitate the proposed works. This is to provide continuous bus priority along the route which will ensure increased reliability and faster journey times.

The scheme will reduce commuting time for public transport; the estimated bus travel time along Nutley Lane will be 3 minutes in each direction, using the segregated bus lanes.

Considerable benefits for pedestrian accessibility and bus priority will be provided through reconfiguration of existing junctions, making the bus routes more attractive.

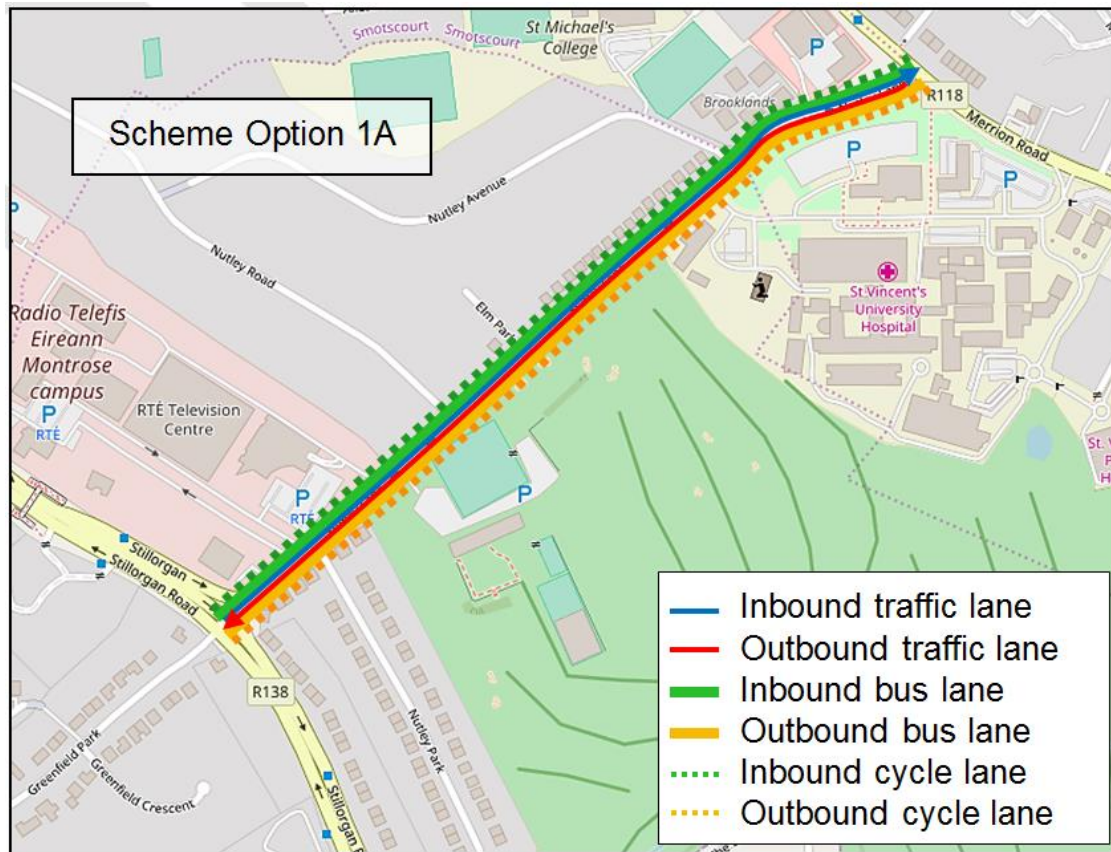


Figure 5: Emerging preferred scheme option bus and cycle facilities

### 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	€ 2.93M
Land Acquisition	€0.37M
<b>Total</b>	<b>€3.30M</b>



## 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;
- 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 Ballsbridge to UCD bus connection (Nutley Lane);
- 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 CBC and UCD to City Centre CBC;
- Interchange with the proposed Orbital Bus Network (GDA Transport Strategy) at UCD i.e. Dundrum / UCD – Tallaght orbital route; 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 Ballsbridge to UCD bus connection 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 Ballsbridge to UCD bus connection 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.