

Client:

South Dublin County Council



Project:

Tallaght to Clondalkin Cycle Scheme

Report:

Draft Options Assessment Report – Rapid Build



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1. INTRODUCTION

Purpose

The purpose of this report is to assess the proposed options for the provision of a quick-build cycle track/lane in the form of light segregation between Tallaght and Clondalkin in accordance with NTA Rapid Build Active Travel Note Rev 1 Feb 2023. Several cross-section options have been developed for each section, and each option has been assessed relative to one another with a draft preferred option recommended.

Background

South Dublin County Council has appointed Barry Transportation Ltd. as multi-disciplinary Technical Consultant for the design and delivery of the Tallaght to Clondalkin Cycle Scheme which forms part of the National Transport Authority Greater Dublin Area Cycle Network Route S05 and is also an important cycle route in the Cycle South Dublin Programme. The proposed cycle route will run from Tallaght Village to Clondalkin Village via Belgard Rd, Cookstown Rd and New Road. The Scheme is located within the townlands of Tallaght and Clondalkin.

The proposed scheme seeks the delivery of a high-quality cycle route that provides high-quality linkage between residential areas and the key trip attractors (e.g., schools/colleges, sports clubs, Shopping Centres, Tallaght Town Centre, Clondalkin Village, Redcow and other planned and existing cycle and walking routes). This will improve the cycling facilities and encourage modal shift to cycle as a safe and convenience means of making local trips (work, school/college, recreational trips, etc).

As there are currently no dedicated mandatory or segregated cycle tracks on a large section of the route i.e. Belgard Rd, Cookstown Road, Airton Rd and New Road, Fonthill Road; and some substandard dedicated cycle facilities along a very short section of Belgard Rd in the Town Centre, and some junctions with very little to no facilities for pedestrians and cyclists, the intention of the proposed scheme is to significantly improve safety for pedestrians and cyclists to minimum Level of Service IV in accordance with the NTA Cycle Manual. The target of the scheme is to provide a cycle route that offers improved service to both pedestrians and cyclists. The finished scheme must provide a safe, coherent, and attractive route with a high Quality of Service that will form part of the wider strategic cycle network in the South Dublin Area.

A Site Location Map for the scheme is presented in Figure 1 below.

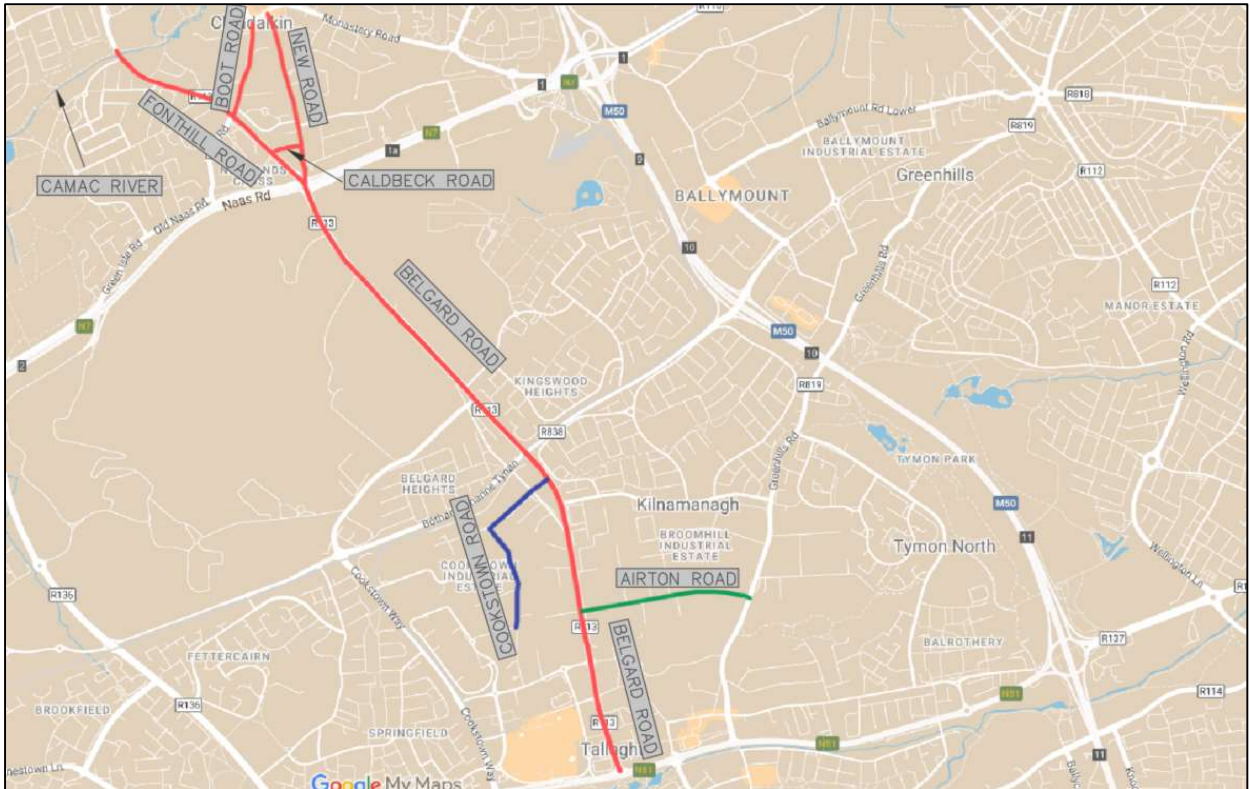


Figure 1 – Site Location Map

2. POLICY CONTEXT, PROJECT NEED & OBJECTIVES

Policy Context

National Policy

This scheme will support the objectives set out in the following national policies:

- Project Ireland - National Development Plan 2021 - 2030;
- National Planning Framework – Project Ireland 2040: Policy Objective 27: ‘Ensure the integration of safe and convenient alternatives to the car into the design of our communities, by prioritising walking and cycling accessibility to both existing and proposed developments and integrating physical activity facilities for all ages.
- Climate Action Plan 2023 and Climate Action and Low Carbon Development (Amendment) Bill 2021;
- Strategic Investment Framework for Land Transport (SIFLT) 2015 and National Investment Framework for Transport in Ireland (NIFTI);
- Smarter Travel – A New Transport Policy for Ireland 2009 – 2020: This document sets out the transport policy for Ireland and was last updated in July 2020. It identifies a target for reducing work-related commuting by cars from its current modal share of 65% to 45% by 2020. The document acknowledges that the targets were ambitious and may need to be adjusted in light of improving knowledge and changing trends.
- Road Safety Authority Road Safety Strategy 2021 - 2030;
- National Cycle Policy Framework: The National Cycle Policy Framework outlines the national policy for cycling, in order to create a stronger cycling society, and a friendlier environment for cycling. The policy document sets a target of 10% of all trips by bicycle and equally recognises the need of promoting and integrating cycle networks.
- Building for Everyone: A Universal Design Approach – Planning and Policy, 2012: The Building for Everyone: A Universal design approach provides extensive practical guidance in relation to the universal design of buildings, places, and facilities in accordance with the Barcelona Declaration.

Regional Policy

This scheme will support the objectives of the Greater Dublin Area (GDA) Cycle Network Plan (2013), the GDA Cycle Network Plan (2022), the draft National Cycle Network Plan (2022) and the NTA Transport Strategy for the Greater Dublin Area 2022-2042. Belgard Road, Fonthill Road and Boot Road form part of the core cycle network, as shown in the figure below.

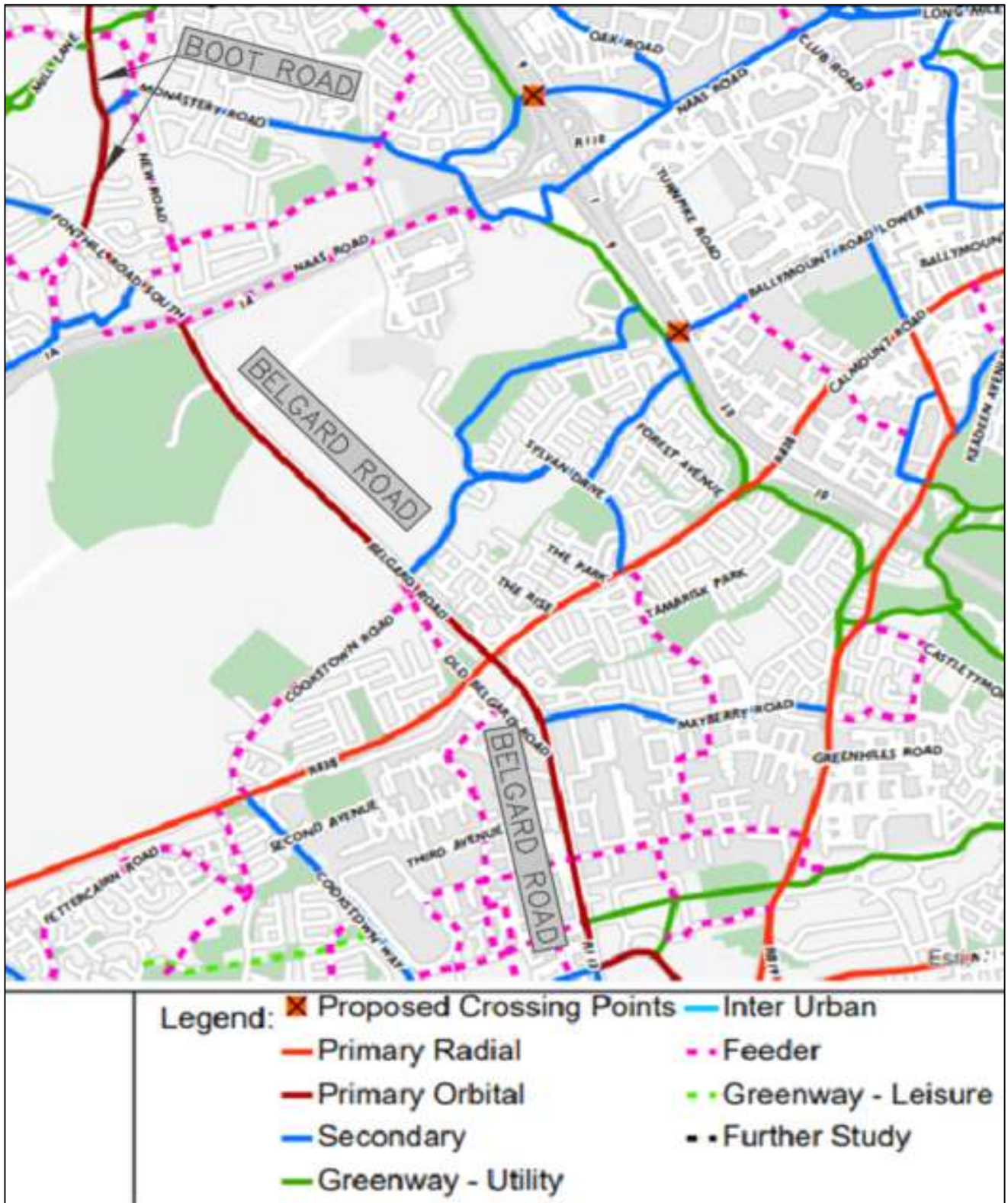


Figure 2 - Extract from Draft GDA CNP (2022)

Local Policy

The scheme will support the specific objectives of the South Dublin County Development Plan 2022-2028. The policies and objectives in this plan support the strategic vision and South Dublin's leading role in sustainable urban development which-

- Maximises the potential of the County to deliver a compact settlement form in line with National and Regional population targets, with a strong focus on regeneration and the redevelopment of brownfield over green field lands.
- Protects and enhances the key natural, cultural and built heritage assets which have shaped South Dublin County and continue to create a sense of place and local distinctiveness, including our diverse landscapes, our varied flora and fauna, our historic buildings and streetscapes, and our rich archaeological history, for current and future generations to appreciate and enjoy.
- Promotes the development of an integrated GI network for South Dublin working with and enhancing existing biodiversity and natural heritage, improving our resilience to climate change and enabling the role of GI in delivering sustainable communities to provide environmental, economic and social benefits.
- Promotes high quality urban design and healthy placemaking that delivers attractive, connected, vibrant and well-functioning places in which to live, work, visit, socialise and invest.
- Ensures the delivery of high quality and well-designed homes in sustainable communities to meet a diversity of housing needs within the County.
- Increases the number of people walking, cycling and using public transport and reduces the need for car journeys, resulting in a more active and healthy community, a more attractive public realm, safer streets, less congestion, reduced carbon emissions, better air quality, and a positive climate impact.
- Creates healthy, inclusive and sustainable communities where all generations have local access to social, community and recreational facilities, and parks and green spaces, to suit their needs.
- Facilitates the creation of a strong and resilient economic base providing expanded opportunities for employment and facilitating a good quality of life within vibrant and attractive places to live, work, visit and invest.
- Delivers a green society and circular economy adaptable to new technologies, a home and place of employment for people and industries striving towards reducing their carbon footprint.
- Creates an environment characterised by high quality infrastructure networks and environmental services to ensure the health and wellbeing of those who live and work in the County, securing also the economic future of the County.
- Sets out development standards and criteria that should be read alongside the policies and objectives contained within each of the chapters. It also includes a monitoring framework which categorises key policies in terms of their contribution towards the achievement of the Strategic Vision.

Project Need

The Tallaght to Clondalkin Cycle Scheme seeks the delivery of a high-quality cycle route that provides high quality linkage between residential areas and the key trip attractors (e.g. schools/colleges, sports clubs, Shopping Centres, Tallaght Town Centre, Clondalkin Village, Redcow and other planned and existing cycle and walking routes. This will improve the cycling facilities and encourage modal shift to cycle as a safe and convenience means of making local trips (work, school/college, recreational trips, etc). The scheme will provide a high-quality cycle route and is in accordance with the National, Regional and Local policies specifically mentioned above.

As there are currently no dedicated mandatory or segregated cycle tracks on a large section of the route i.e. Belgard Rd, Cookstown Road, Airton Rd and New Road, Fonthill Road; and some substandard dedicated cycle facilities along a very short section of Belgard Rd in the Town Centre, and some junctions with very little to no facilities for pedestrians and cyclists, the intention of the proposed scheme is to significantly improve safety for pedestrians and cyclists to minimum Level of Service IV in accordance with the NTA Cycle Manual. The target of the scheme is to provide a cycle route that offers the highest level of service to both pedestrians and cyclists. The finished scheme will provide a safe, coherent and attractive route with a high Quality of Service that will form part of the wider strategic cycle network in the South Dublin Area

Project Objectives

This scheme aims to provide safer and more attractive infrastructure for active travel and enhance the public realm to provide for better quality of life in Tallaght, Clondalkin and the surrounding areas. This will be achieved by providing high quality and safe cycle facilities and improving existing facilities for cyclists, as well as increasing outdoor space for pedestrians and rendering these spaces comfortable and safe. Modern design standards will be applied to sections of car dominated urban carriageways along with upgraded junction designs and measures to reduce vehicle speeds. This will play a role in decreasing reliance on private vehicles for short journeys while increasing walking and cycling modes for a wide range of users as well as supporting economic development in villages and urban centres. This will create an appealing environment promoting a modal shift to more sustainable modes of transport.

To achieve these objectives the existing road layout and cross section has been reviewed to determine the optimum arrangement to improve pedestrian and cycle facilities, and the urban realm, while recognising the importance of vehicle accessibility and pedestrian and cyclist safety.

3. DESIGN GUIDANCE

The design and assessment of options will be done in accordance with guidance set-out in the Design Manual for Urban Roads (DMURS), National Investment Framework for Transport in Ireland (NIFTI), the National Cycle Manual, the Traffic Signs Manual and Traffic Management Guidelines. It will prioritise the user hierarchy set out in DMURS and NIFTI which promote sustainable forms of transport.



DMURS Road User Hierarchy

4. EXISTING CONDITIONS, CONSTRAINTS AND OPPORTUNITIES

An analysis of existing conditions of all project roads was carried out using Google Earth and various distinct cross sections were identified which are detailed in this section.



Figure 3 – Map Showing Various Existing Cross-section Types

Belgrad Road

Section 1: N81 to Square Town centre Roundabout (Length-120m) – Existing section includes divided carriageway with on-road cycle facility, grass verge and footpath on both sides.

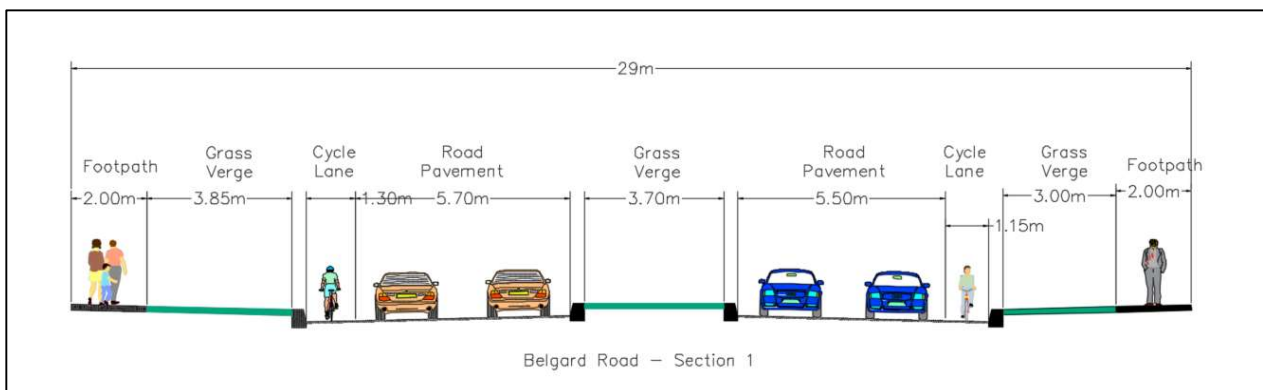


Figure 4 – Existing Cross-section 1 (Belgrad Road)

Section 2: Square Town centre Roundabout to Blessington Road intersection (Length-300m) – Existing section includes divided carriageway with segregated cycle track, grass verge and footpath on both sides.

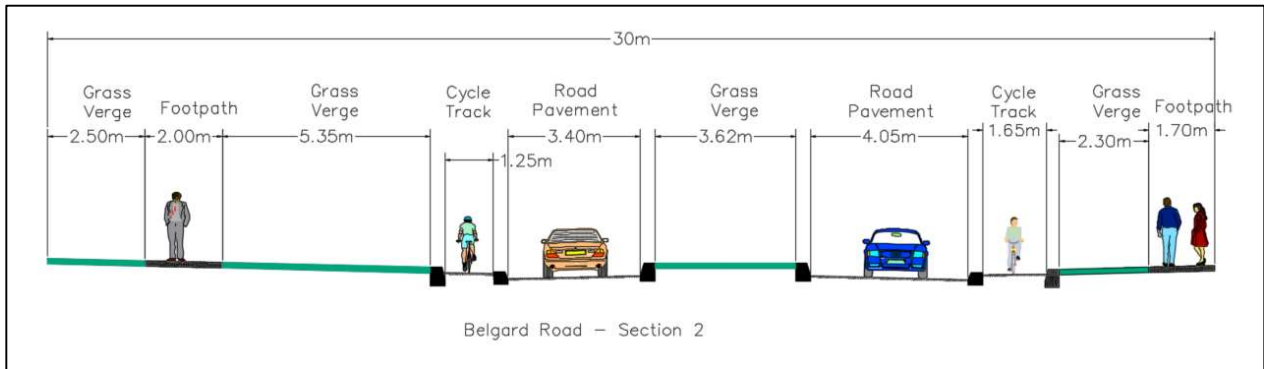


Figure 5 – Existing Cross-section 2 (Belgard Road)

Section 3: Blessington Road intersection to Cookstown Road intersection (Length-1200m) – Existing section includes divided carriageway with on-road cycle facility, grass verge and footpath on both sides.

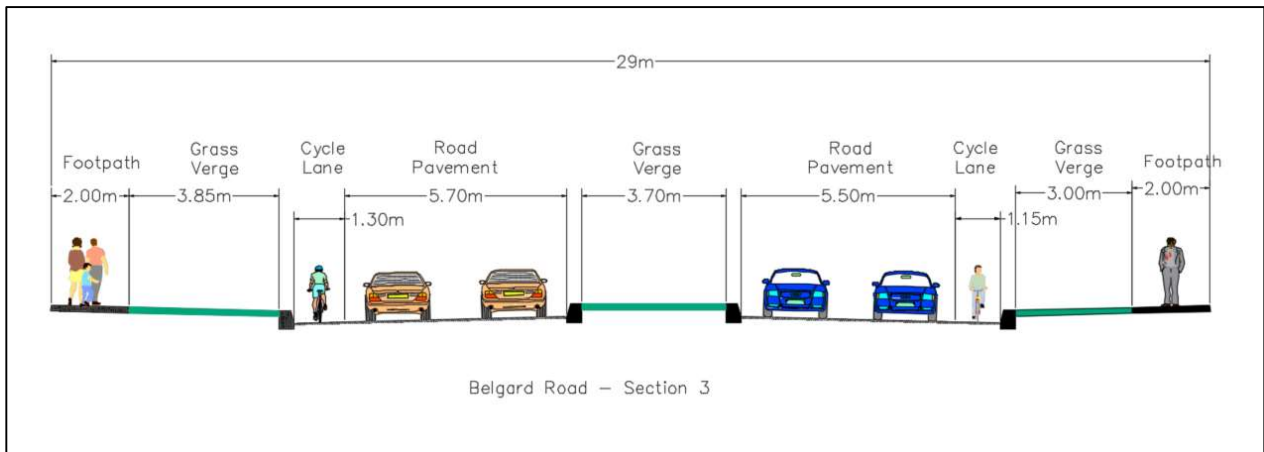


Figure 6 – Existing Cross-section 3 (Belgard Road)

Section 4: Cookstown Road intersection to Belgrad Community Centre (Length-280m) – Existing section includes divided carriageway with segregated cycle track on LHS, on-road cycle facility on RHS, grass verge and footpath on both sides.

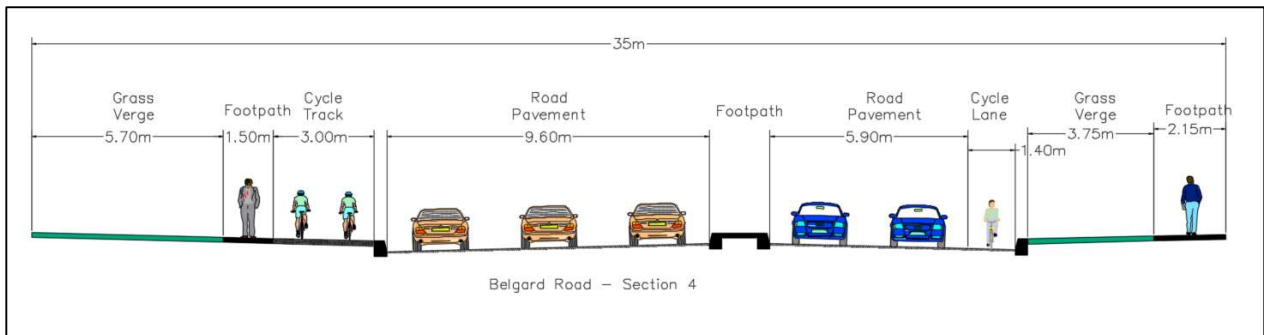


Figure 7 – Existing Cross-section 4 (Belgard Road)

Section 5: Belgrad Community Centre to L3005 intersection (Length-300m) – Existing section includes divided carriageway with on-road cycle facility, grass verge and footpath on both sides.

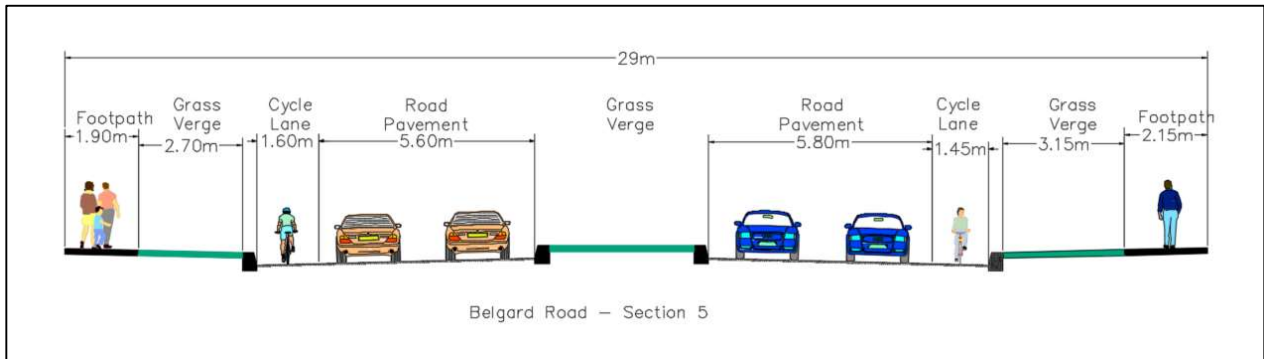


Figure 8 – Existing Cross-section 5 (Belgard Road)

Section 6: L3005 intersection to Slip Road from L3005 (Length-140m) – Existing section includes divided carriageway with segregated cycle track on LHS with a grass verge and footpath. RHS only provides for a footpath adjacent to the carriageway.

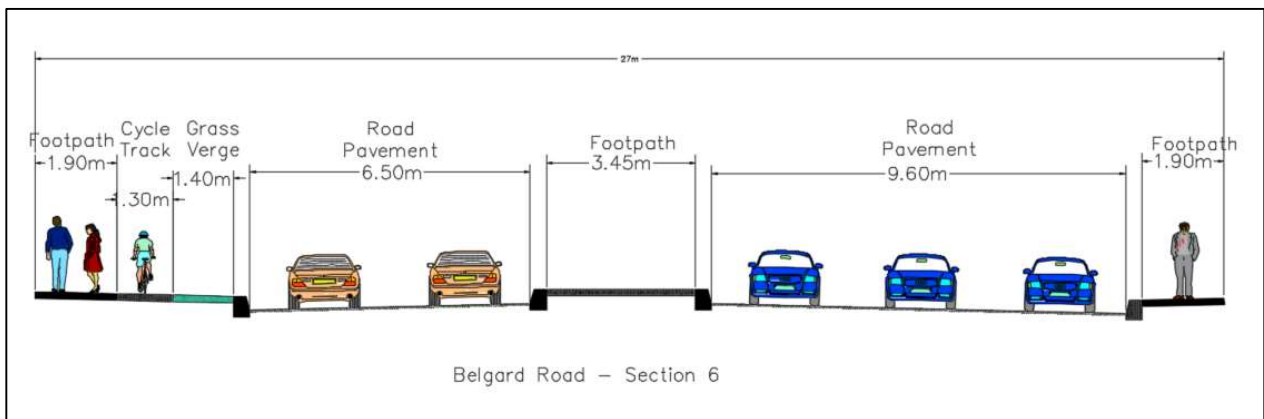


Figure 9 – Existing Cross-section 6 (Belgard Road)

Section 7: Slip Road from L3005 to Newlands Golf Club (Length-1000m) – Existing section includes divided carriageway with on-road cycle facility and footpath on both sides. Intermittent grass verges are also available on both sides of the carriageway.

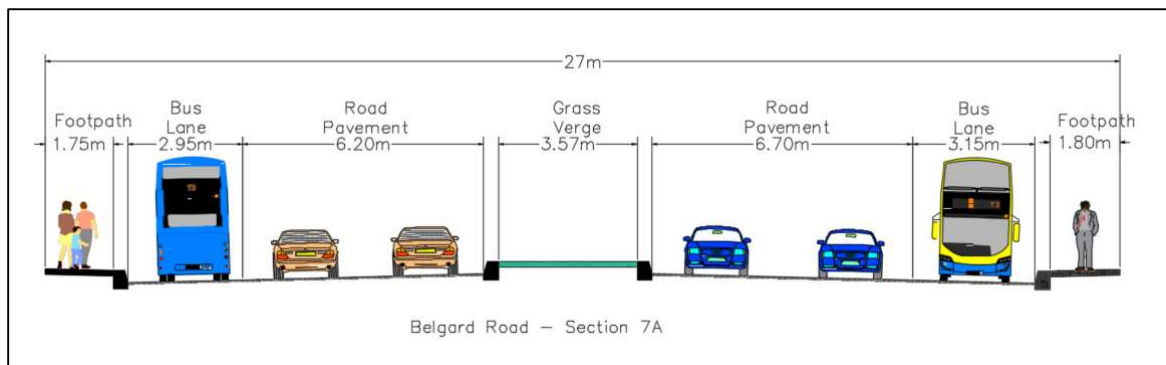


Figure 10 – Existing Cross-section 7A (Belgard Road)

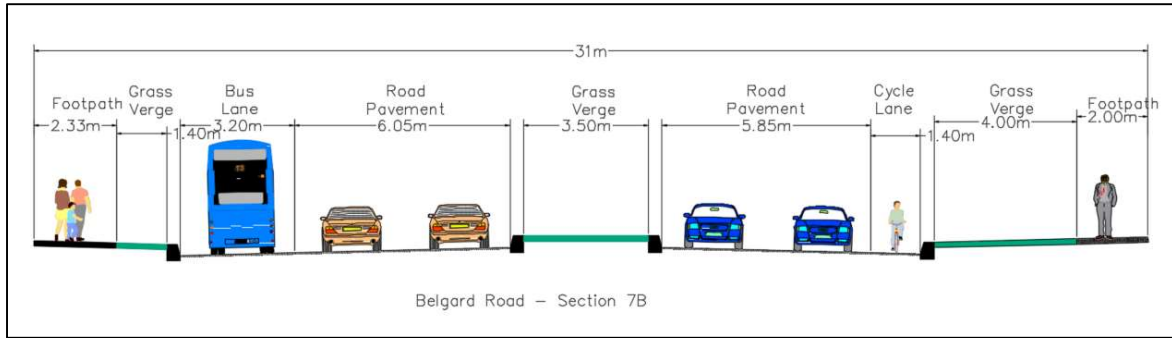


Figure 11 – Existing Cross-section 7B (Belgard Road)

Section 8: Newlands Golf Club to Nass Road, N7 (Length-240m) – Existing section includes divided carriageway with on-road cycle facility and footpath on both sides, and what seems to be a service road on RHS. Land records to be checked.

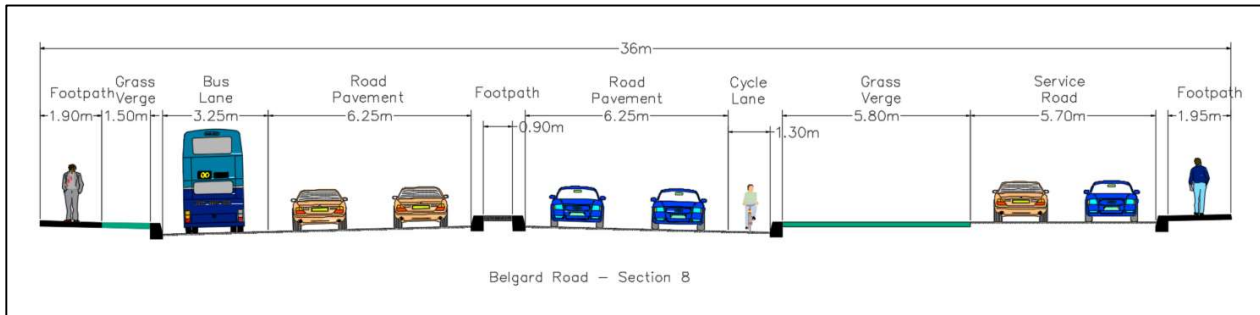


Figure 12 – Existing Cross-section 8 (Belgard Road)

Airton Road

Entire stretch (Length-880) – Existing section includes single carriageway with no cycle facility. Footpath and grass verge are existent on both sides.

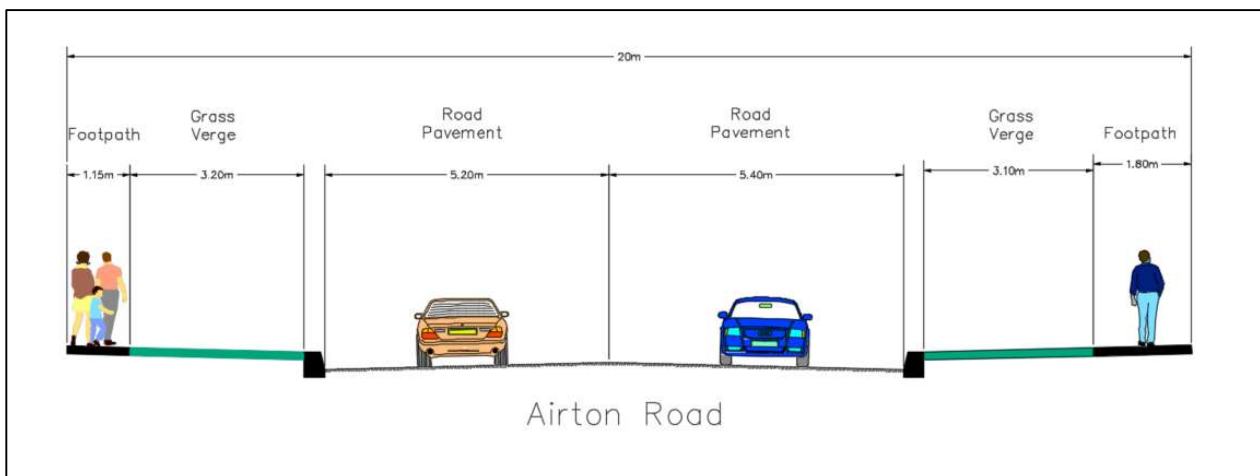


Figure 13 – Existing Cross-section for Airton Road

Fonthill Road

Entire stretch (Length-1200) – Existing section includes single carriageway with no cycle facility. Footpath and intermittent grass verge are existent on both sides. 150m long handrail is existent on RHS along this section.

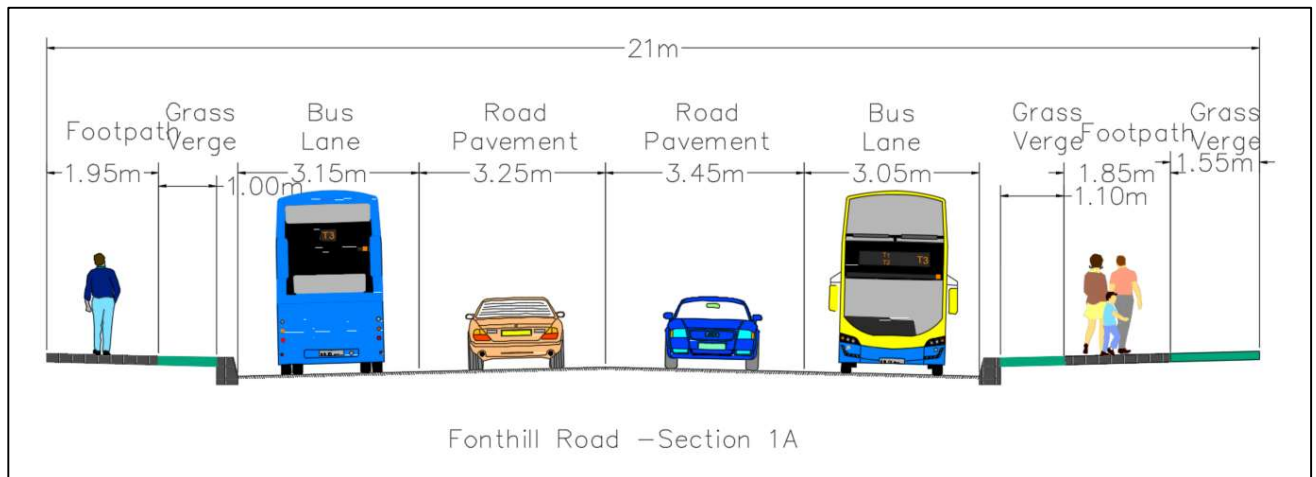


Figure 14 – Existing Cross-section 1A (Fonthill Road)

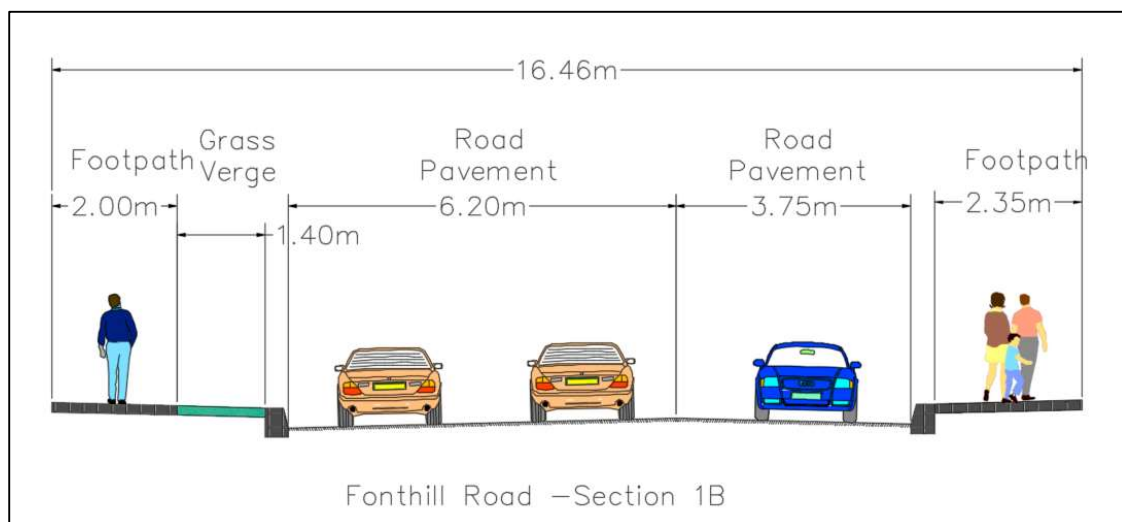


Figure 15 – Existing Cross-section 1B (Fonthill Road)

New Road

Section 1: Nass Road, N7 to New Road/Newlands Road intersection (Length-60m) – New path to be proposed for pedestrians and cyclists.

Section 2: New Road/Newlands Road intersection to Main Street (Length-840m) – Existing section includes single carriageway with no cycle facility. Footpath is existent on both sides of the carriageway.

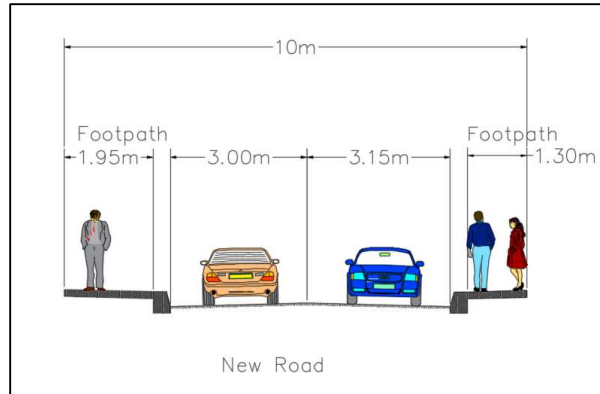


Figure 16 – Existing Cross-section for New Road

Caldbeck Road

Entire stretch (Length-150) – Existing section includes single carriageway with no cycle facility. Footpath and grass verge are existent on both sides.

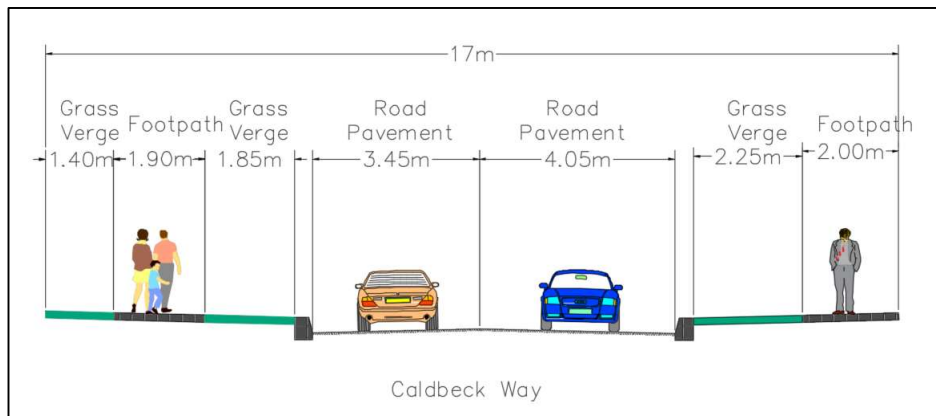


Figure 17 – Existing Cross-section for Caldbeck Road

Boot Road

Entire stretch (Length-500) – Existing section includes single carriageway with no cycle facility. Footpath is existent on both sides.

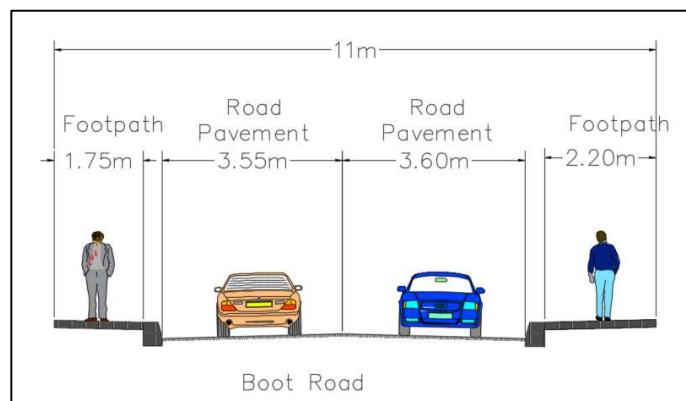


Figure 18 – Existing Cross-section for Boot Road

Some of the constraints identified for scheme are as follows:

- Lack of appropriate cycle infrastructure.
- Existing junctions are not cycle friendly.
- The available width on Boot Road, New Road and Caldbeck Road is too narrow to accommodate adequate cycle infrastructure. Two-way access of these roads is crucial as these are bus routes.
- The presence of underground and overhead utilities may limit work proposals

In addition to the above constraint's designers have identified the following opportunities in this section of the study area:

- There is an opportunity to improve cyclists' facilities along the project roads and at crossings and junctions.
- There is an opportunity to improve pedestrian facilities along the project roads and at crossings and junctions.
- There is an opportunity to include new landscaping along the project roads.
- Following the introduction of the new BusConnects bus network there may be redundant bus stops along this section. There is an opportunity to reallocate this space.

Adjacent Schemes

BusConnects Network Redesign

The National Transport Authority published the new Dublin Area bus network in September 2020. The overall objective of the improved network is a significant increase in capacity and frequency for customers, as well as more evening and weekend services for all spines.

The implementation of the new network will take place on a phased basis over a number of years, the first phase of the new BusConnects network for Dublin was launched in June 2021 and it is expected to be fully implemented by the end of 2024.

In the existing scenario, the project roads are serviced by the 76, 76a, 175, 56a, 777, 13, 51d and 69 as shown in the figure below.

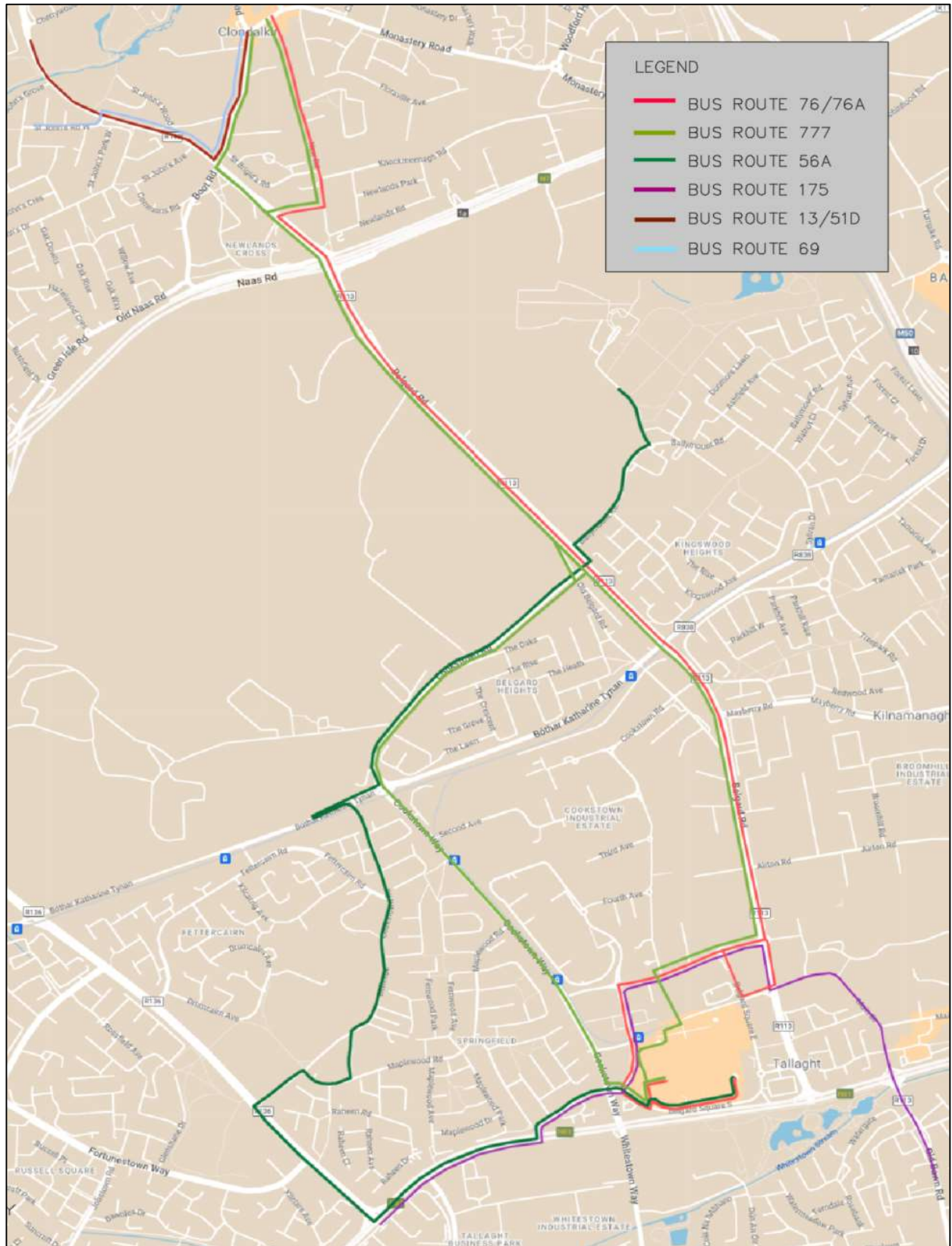


Figure 1: Existing Bus Network

Below is a timetable for the buses that service the project roads in the existing scenario:

Route No.	Timetable	Project Roads Served
76	Thrice every hour between 8am to 9pm	Belgard Road, Caldbeck Road, Fonthill Road, New Road
76A	6 times during the day from Tallaght to Blanchardstown	Belgard Road, Caldbeck Road, Fonthill Road, New Road
	7 times during the day from Blanchardstown to Tallaght	
175	Twice every hour on a weekday	Belgard Road
	Once every hour on weekends	
13	4 times every hour	Fonthill Road, Boot Road
69	Once every hour on weekdays	Fonthill Road, Boot Road
	Once every 1 hour 15 minutes on weekends	
56A	Once every 1 hour 15 minutes	Belgard Road
777	Once every 2 hours	Belgard Road, Fonthill Road, Caldbeck Road, New Road, Boot Road

Future Scenario

As is shown in the figure below, in the future scenario the project roads are serviced by the W2, W4, W6, S6 and S8 orbital routes, L56 Local Route Dublin Bus Services, the 58, 71 and 82 City Bound Routes and the D2, D3, D4 and D5 spinal routes.



Figure 2: BusConnects New Network

The following section tabulates the frequency of each of the new bus lines that would service the project roads.

Route Type	Route No.	Time →	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11		
		Day ↓																					
Spines/Branches	D2	Weekdays	30	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	30		
		Saturdays		20	20	20	15	15	15	15	15	15	15	15	15	15	15	20	20	20	20	30	
		Sundays				30	30	20	20	20	20	20	20	20	20	20	20	30	30	30	30	30	
	D3	Weekdays	30	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	30	
		Saturdays		20	20	20	15	15	15	15	15	15	15	15	15	15	15	20	20	20	20	30	
		Sundays				30	30	20	20	20	20	20	20	20	20	20	20	30	30	30	30	30	
	D4	Weekdays	60	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	60	
		Saturdays		40	40	40	30	30	30	30	30	30	30	30	30	30	30	40	40	40	40	60	
		Sundays				60	60	40	40	40	40	40	40	40	40	40	40	60	60	60	60	60	
	D5	Weekdays	60	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	60	
		Saturdays		40	40	40	30	30	30	30	30	30	30	30	30	30	30	40	40	40	40	60	
		Sundays				60	60	40	40	40	40	40	40	40	40	40	40	60	60	60	60	60	
Orbital Routes	S6	Weekdays	30	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	30		
		Saturdays		20	20	20	15	15	15	15	15	15	15	15	15	15	15	20	20	20	20	30	
		Sundays				30	30	20	20	20	20	20	20	20	20	20	20	30	30	30	30	30	
	S8	Weekdays		20	15	15	20	20	20	20	20	20	15	15	15	20	30	30	30	30	30	30	
		Saturdays		30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	
		Sundays				60	60	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	
	W2	Weekdays	30	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	30	
		Saturdays		20	20	20	15	15	15	15	15	15	15	15	15	15	15	20	20	20	20	30	
		Sundays				30	30	20	20	20	20	20	20	20	20	20	20	30	30	30	30	30	
	W4	Weekdays		30	15	15	30	30	30	30	30	30	15	15	15	30	30	30	30	30	30	60	
		Saturdays		60	60	60	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	60	
		Sundays				60	60	30	30	30	30	30	30	30	30	30	30	30	30	30	30	60	
	W6	Weekdays		30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	60	
		Saturdays		60	60	60	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	60	
		Sundays				60	60	30	30	30	30	30	30	30	30	30	30	30	30	30	30	60	
	Radial Routes	58	Weekdays		60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	
			Saturdays		60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
			Sundays				60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
71		Weekdays		30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	60	
		Saturdays		60	60	60	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	60	
		Sundays				60	60	30	30	30	30	30	30	30	30	30	30	30	30	30	30	60	
82		Weekdays		20	20	20	20	20	20	20	20	20	20	20	20	20	20	30	30	30	30	30	
		Saturdays		30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	
		Sundays				60	60	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	
Local Routes	L56	Weekdays		60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60		
		Saturdays		60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	
		Sundays				60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	

Table 1- Timetable Proposed Under BusConnects for Buses Servicing the Project Roads

Airton Road Extension

The Airton Rd Ext. project involves extending the Airton Rd westward through the junction at the entrance to the Belgard Retail Park, where it currently terminates. The new link will join Fourth Ave and Cookstown Rd in a new junction lay out. This project has already gone out for tender.

N81 Junction Improvement

TII are progressing a separate study that may involve the upgrade of junctions along N81. This would include the N81/Belgard road junction and the roundabout to the north of this on Belgard Road. The section covered by this study has been excluded from the cycle scheme.

5. OPTIONS ASSESSMENT METHODOLOGY

To gain an appreciation of the specific constraints and opportunities within the study area Barry Transportation conducted a comprehensive data collection process consisting of desktop analysis and a site visit. Potential options were then developed bearing in mind the information gathered during the data collection stage. Engineering judgement was used to determine which options were feasible and could be progressed to the options assessment stage. These options were developed using design guidance from the National Cycle Manual and DMURS. In accordance with NTA Rapid Build Active Travel Note Rev 1 Feb 2023, all options considered in this report are designed to be quickly and inexpensively implemented.

The options were then compared against one another using Multi-Criteria Analysis (MCA) in accordance with the Transport Appraisal Framework (June 2023).

Each of the proposed options has been assessed against the various Options Assessment criteria and assigned a colour grade, based on a 5-colour palette shown in Figure 3-1 below.

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

Figure 10 Five-Point Grading Scale

The criteria and sub-criteria considered as part of this assessment are outlined in the paragraphs below.

1. Economy

1a Capital Costs

The cost estimate determines the likely capital infrastructure cost of a particular scheme, taking into account the extent of works required in order to construct that scheme. The infrastructure costs include the following:

- Pedestrian and Cycle route infrastructure
- Road re-alignment / new road construction
- Junction upgrades
- Drainage
- Services and utilities protection and relocation work
- Lighting
- Landscaping street furniture and urban realm improvements
- Signs & Lines
- Construction traffic management

1b Speed of Implementation

This criterion assesses the time required to deliver the scheme taking into account the extents of work required.

1c Maintenance costs

This criterion assesses the estimated maintenance cost that would be incurred once the scheme has been developed.

2. Integration

2.a. Land Use Integration

This criterion assesses how a scheme would integrate with any future planned developments in the catchment area and how a scheme fits into local area plans or any other objectives in area / county policies.

2.b. Pedestrian Integration

The level of service provided to pedestrians is assessed under this criterion. Footpath widths, pedestrian desire lines and the suitability and convenience of crossing points are considered.

2.c. Cyclist Integration

The level of service provided to cyclists is assessed under this criterion. Cycle lane widths, segregation type, gradient, directness, comfort and the suitability and convenience of crossing points are considered.

2.d. Public Transport Integration

Under this criterion, integration with the wider transport network is assessed and compared for each scheme. This includes transport modes such as railway, coaches, public bike schemes, and public and private bus operators. The potential for interchange facilities such as cycle parking areas, etc. are also assessed under this criterion.

2.e. Traffic Network Integration

The anticipated traffic impact expected to be incurred by motorists using private vehicles as a result of the different route options will also be factored in. The disadvantages experienced by motorists in respect of reduced junction capacity and restricted movements will be considered.

3. Accessibility and Social Inclusion

3.a. Mobility & Vision Impaired Road Users

This criterion assesses the quality of the facilities provided for mobility and vision impaired road users as part of each option.

4. Safety

4.a. Road Safety

This criterion looks at road safety risks present for all road users in each the options.

5. Environment

5.a. Archaeological, Architectural and Cultural Heritage

Effects on archaeological heritage can be considered in terms of impacts on below ground archaeological remains, historic buildings (individual and areas), and historic landscapes and parks. The construction, presence and operation of transport infrastructure can impact directly on such cultural heritage resources through physical impacts resulting from direct loss or damage, or indirectly through changes in setting, noise and vibration levels, air quality, and water levels.

Potential impacts of each scheme on Recorded Monuments and Protected Structures (RMPs) on each option are assessed and compared. Potential impacts on Sites of Archaeological or Cultural Heritage, Architectural Conservation Areas and on buildings listed on the National Inventory of Architectural Heritage are also assessed and compared under this criterion.

5.b. Biodiversity

This criterion looks at the impacts on biodiversity, for example, through removal of trees/hedges, or creation of new pollinator friendly planting. These impacts are compared for each scheme under this criterion.

5.c. Soils and Geology

Construction of infrastructure has the potential to negatively impact on soils and geology. For example, through land acquisition and ground excavation. There is also the potential to encounter ground contamination from historical industries. These considerations are compared for each scheme under this criterion.

5.d. Water Resources

The provision of infrastructure may include aspects (eg: increased run off, or new sustainable urban drainage measures) with the potential to impact on hydrology or water resources. Any such impacts are considered for each scheme under this criterion.

5.e. Landscape and Visual

Schemes have the potential to impact on the landscape and visual aspects of the area, for example, by the removal of front gardens or green spaces or the altering of streetscapes, character and features. Different schemes are compared, and any effects considered under this criterion.

5.f. Noise, Vibration and Air

Provision of infrastructure has the potential to negatively impact on noise, vibration and air quality. These effects are compared for each scheme option under this criterion. The impact is quantified on whether the source of noise, vibration or air pollution (road) is moving closer to sensitive receptors, for example through road widening or a new road alignment.

5.g. Land Use and the Built Environment

This criterion assesses the impact of each scheme option on land use character, and measures impacts which affect land from achieving its intended use, for example through land acquisition, reallocation of road space, creation of new urban realm areas, removal of parking or loading spaces, or changes to access arrangements.

6. OPTION SELECTION

Options Development

Three options have been developed for rapid build of the Tallaght to Clondalkin Cycle Scheme.

Option 1

This option proposes a one-way cycle lane on either side of the road. Segregation of the cycle facilities from the carriageway would be provided using kerbs or horizontal buffers depending on the space available at each section, see typical cross sections 1 and 2 below.

The sections of the scheme with existing off-road cycle facility have been retained and widened where this can be easily achieved. Carriageway widths have been reduced to 3m and the space from some traffic/bus lanes has been reallocated to make space for cycle lanes. 2m wide cycle lanes can be provided throughout, with the exception of a number of short pinch points where 1.5m wide lanes are proposed.

This option also proposes a quick build strategy for junctions along the scheme.

For a small section along Fonthill Road at the Fonthill Road/Caldbeck Road junction, Option 1 proposes removal of the traffic island in order to provide for cycle facilities on both sides of the carriageway.

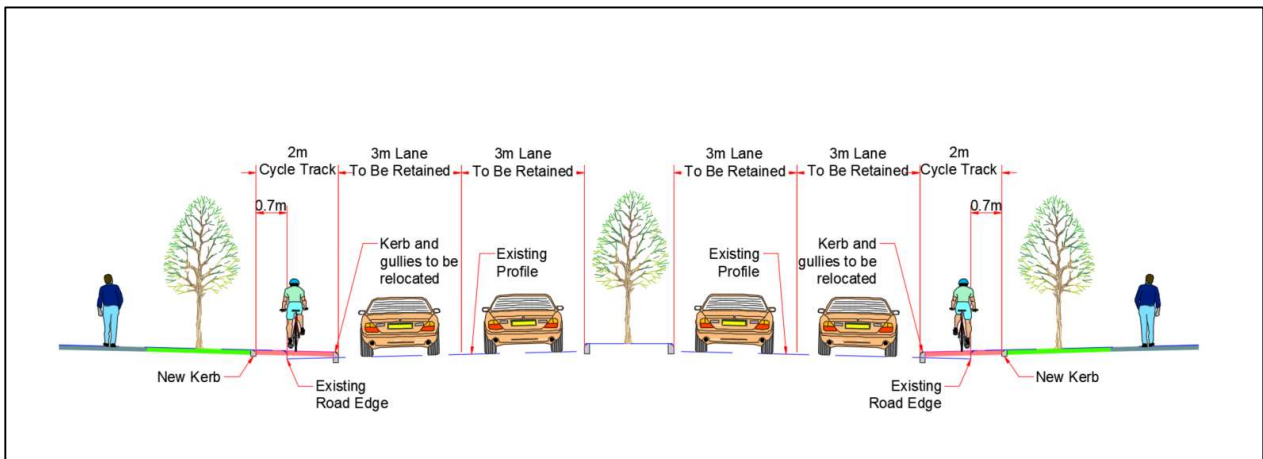


Figure 11 Option 1- Typical Cross-section 1 (Cycle Track with Kerbs)

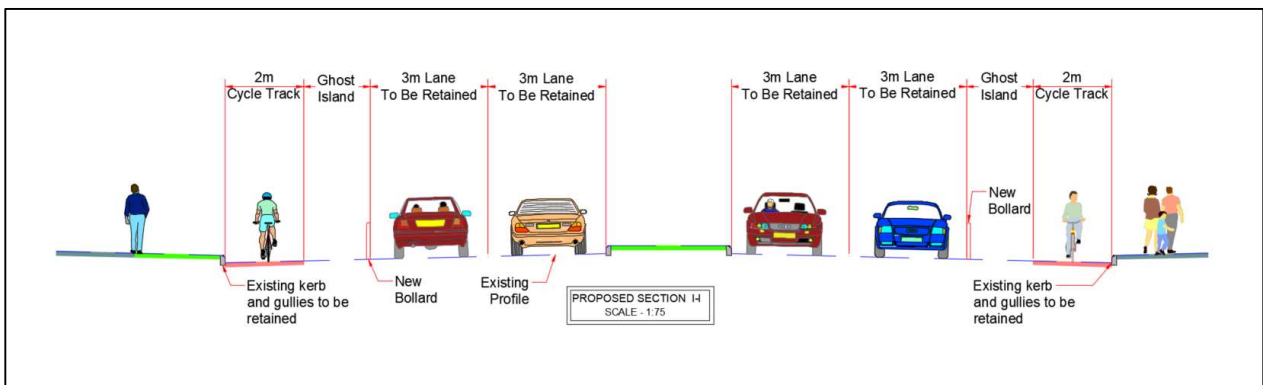


Figure 12 Option 1- Typical Cross-section 2 (Cycle Track with bollards and Ghost Island)

Option 2

This option is similar to Option 1 but is cheaper and faster to implement. No new kerbs would be built, and all segregation would be provided by bollards or bolt down kerbs. See typical cross sections 1 and 2 below. The cycle lane width varies section by section depending on the width available between the kerbs, long sections of the route would have cycle lanes below 1.5m wide.

Like Option 1, Option 2 also proposes removal of the traffic islands on Fonthill Road at the Fonthill Road/Caldbeck Road Junction, in order to provide for cycle lanes on both sides of the road.

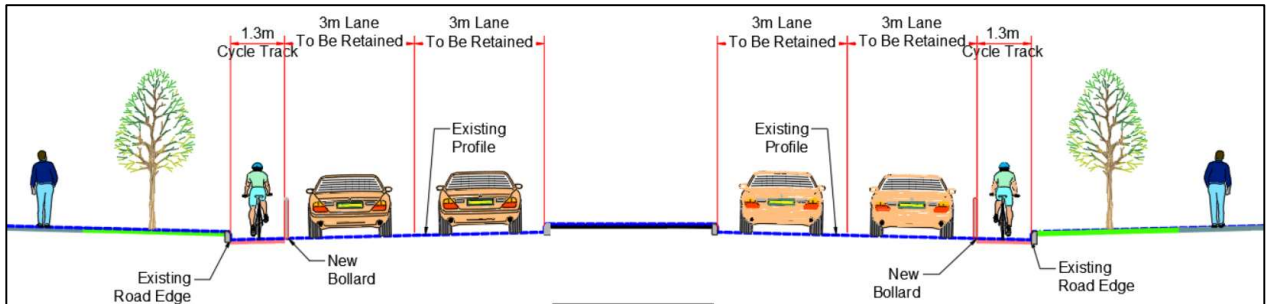


Figure 13 Option 2- Typical Cross-section 1 (Cycle Track with bollards)

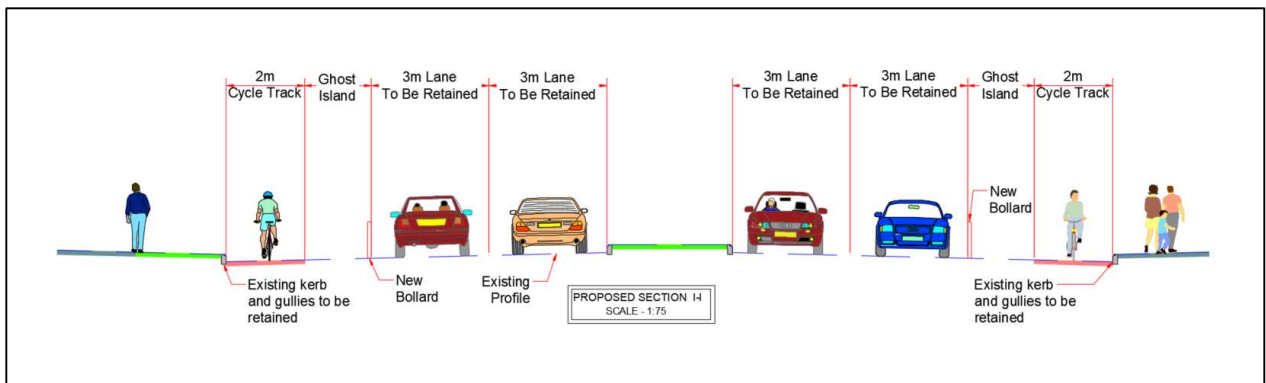


Figure 14 Option 2- Typical Cross-section 2 (Cycle Track with bollards and Ghost Islands)

Option 3

This option proposes a two-way cycle facility on both sides of Belgard Road, segregation is provided using bollards or kerbs depending on the space available at each section. As more space is required to provide two-way cycle lanes more space would need to be reallocated from traffic and bus lanes than Options 1 & 2. Significant works would be required at all junctions along the route to provide traffic signals for the new two-way cycle facilities.

The proposal for Airton Road and Fonthill Road remains the same as in Option 1, the cycle facility is segregated from the carriageway using kerbs or horizontal buffers.

We are in the process of preparing the typical cross-sections for Option 3 and they shall be added to the next version of this report.

Options Assessment

Tallaght to Clondalkin Cycle Scheme					
Assessment Criteria	Sub-Criteria	Option 1	Option 2	Option 3	Do Nothing
Economy	Capital Cost				
	Speed of Implementation				
	Maintenance Costs				
Integration	Land Use Integration				
	Pedestrian Integration				
	Cyclists Integration				
	Public Transport Integration				
	Traffic Network Integration				
Accessibility and Social Inclusion	Mobility & Vision Impaired Road Users				
Safety	Road Safety				
Environment	Archaeological, Architectural and Cultural Heritage				
	Biodiversity				
	Soils and Geology				
	Water Resources				
	Landscape and Visual				
	Noise, Vibration and Air Quality				
	Land Use and Built Environment				

Regarding Capital Cost, the Do-Nothing option presents obvious advantages when compared to the other options. Option 2 mostly involves changes to line marking and the use of temporary bolt down segregation and is the cheapest option. Option 1 involves constructing new permanent kerbs in places, and is the next most expensive. Option 3 is disadvantageous in this criterion as it involves high costs because of the works required to provide new traffic signals at junctions.

Regarding Speed of Implementation, Option 2 presents slight advantages as compared to Option 1 as no permanent kerbs are proposed. Option 3 has significant disadvantages under this criterion due to works at junctions.

Regarding Maintenance costs, Option 2 and 3 are disadvantageous as they provide more bollards and bolt down segregation which can be damaged if struck by vehicles. Option 1 has slight advantages under this criterion as more permanent kerbs are constructed.

Regarding Pedestrian Integration, all do-something options present similar advantages as there are changes proposed to the junctions which will slightly improve pedestrian access along the scheme. The Do-Nothing option is disadvantageous under this criterion.

Regarding Cyclist Integration, Option 1 presents significant advantages as it proposes segregated cycle facility along the scheme with a width of 2m at nearly all locations. There are short sections only with 1.5m width. Option 2 is slightly advantageous, but the width of cycle lane would be narrower in certain sections (as low as 1.2m). Option 3 would be disadvantageous as it would not provide easy access for cyclists on junctions. Do-nothing option is the most disadvantageous in this criterion.

Regarding Public Transport Integration, Option 1, 2 and 3 present disadvantages as they propose omission of bus lanes/driving lanes in certain sections.

Regarding Traffic Network Integration, Option 1, 2 & 3 present disadvantages as they propose omission of driving lanes in certain sections. Option 3 removes the most lanes as space for general traffic and so is the least advantageous. The Do-Nothing option presents the most advantages as it does not propose any changes to the carriageway lanes.

Regarding Mobility & Vision Impaired Road Users, all do-something options present similar advantages as there are changes proposed to the junctions which will slightly improve pedestrian access along the scheme. The Do-Nothing option is disadvantageous under this criterion.

Regarding Road Safety, Option 1 presents advantages as it proposes wide segregated cycle facilities along the scheme. Option 2 is slightly advantageous, but the width of cycle lane would be narrower in certain sections. Option 3 would be disadvantageous as it would not provide easy access for cyclists at junctions. Do-nothing option is the most disadvantageous in this criterion.

For Landscape and Visual, Option 2 and 3 present slight disadvantages as they propose a lot of bollards or verge removal. Option 1 and the Do-Nothing option have advantages under this criterion.

Recommendation

There are significant advantages to Option 1 when compared to Options 2, 3 and the Do-nothing option.

- It provides the highest level of service for cyclists, with wide segregated cycle lanes provided on either side of the road.
- It is easier to maintain and permanent in nature in many locations.
- Permanent kerbs are less visually obtrusive than lines of plastic bollards or bolt down kerbs.

The slight disadvantages of this option under Capital Cost and Speed of Implementation are considered to be outweighed by the above positives and Option 1 has been recommended as the preferred rapid build option for this scheme.

7. EMERGING PREFERRED OPTION

The preferred option is Option 1. A drawing of the full preferred scheme has been provided along with this draft report.

8. PRELIMINARY COST ESTIMATES

An initial cost estimate has been prepared based on unit rates per km and the estimated cost for the scheme is approx. €5m inc. VAT (€1.9 per km).

Please note that each estimate is based on a limited amount of design information available at this early stage of the project.

This estimate is inclusive of Risk, Contingency & VAT.