AECOM

Sandyford Clonskeagh to Charlemont Street Pedestrian & Cyclist Improvement Scheme (SC2C)

Options Selection Report

National Transport Authority

7 October 2022

Delivering a better world

Quality information

Prepared by	Checked by	Verified by	Approved by
Shay Durnin Engineer	Niall Geraghty Senior Consultant	Michael Dunne Associate Director	Philip Lee Associate Director

Revision History

Revision	Revision date	Details	Authorized	Name	Position
0	31/03/2022	WIP	PL	Philip Lee	Associate Director
1	07/10/2022	ISSUE	MD	Michael Dunne	Associate Director
2	25/01/2022	ISSUE	MD	Michael Dunne	Associate Director

Distribution List

# Hard Copies	PDF Required	Association / Company Name
N/A	Yes	The National Transport Authority

Project number: 60615775

Project reference: CDO_S017

Prepared for:

National Transport Authority
Dún Scéine,
Harcourt Lane,
Dublin 2,
D02 WT20

Prepared by:

Cycle Design Office

AECOM Ireland Limited
4th Floor
Adelphi Plaza
Georges Street Upper
Dun Laoghaire
Co. Dublin A96 T927
Ireland

T: +353 1 238 3100
aecom.com

Table of Contents

1. Introduction 8
1.1 Scheme Objectives 8
1.2 Report Structure 9
1.2.1 Context 9
1.2.2 Design Principles 9
1.2.3 Existing Conditions 9
1.2.4 Options Assessment 9
1.2.5 Emerging Preferred Scheme and Concept Design 9
1.2.6 Next Steps 9
2. Context 10
2.1 Need for the Scheme 10
2.2 Strategic and Policy Context 10
2.3 European Policy 11
2.3.1 European Green Deal 11
2.3.1.1 EU Sustainable and Smart Mobility Strategy 11
2.3.1.2 Biodiversity Strategy for 2030 12
2.3.2 Road Infrastructure Safety Management (RISM) Directive 12
2.4 National policy 13
2.4.1 'Project Ireland 2040' – National Planning Framework 13
2.4.2 Climate Action Plan 2021 14
2.4.3 National Investment Framework for Transport in Ireland (NIFTI) 15
2.4.4 National Physical Activity Action Plan 16
2.4.5 Government Road Safety Strategy 2021-2030 17
2.5 Regional policy 17
2.5.1 Regional Spatial and Economic Strategy (RSES) 2019-2031 17
2.5.2 Draft Transport Strategy for the Greater Dublin Area 18
2.5.3 GDA Cycle Network Plan 19
2.6 Local policy 20
2.6.1 Draft Dublin City Development Plan 2022-2028 20
2.6.2 'Your City, Your Space': Dublin City Public Realm Strategy 22
2.6.3 Dublin City Parks Strategy 2019-2022 23
3. Design Principles 24
3.1 Width 24
3.2 Integration and Segregation 25
3.3 Junctions 25
3.4 Access and Interchange 26
3.5 Impact on Other Modes of Transport 26
4. Existing Conditions 27
4.1 Existing Roadway Arrangements & Constraints 27
4.1.1 Section 1A: Clonskeagh Road 28
4.1.2 Section 1B: Sandford Road 30
4.1.3 Section 1C: Ranelagh Village 32
4.1.4 Section 1D: Ranelagh Road 34
4.1.5 Section 1E: Charlemont Street 36
4.2 Route Characteristics 38
4.3 Road junctions 38
4.4 Dublinbikes Stations 38
4.5 Road Collision Data 38
4.5.1 Section 1A 39

4.5.2 Section 1B 40
4.5.3 Section 1C 41
4.5.4 Section 1D 42
4.5.5 Section 1E 43
5. Options Selection – Assessment Process 44
6. Option Assessment Stage 1 – Feasibility Screening 44
6.1 Network Option 1: Do Nothing 44
6.2 Network Option 2: Resurface and reallocation of carriageway space 45
6.3 Network Option 3: Reduce traffic volumes and speeds to allow integrated cycling regime 45
6.4 Network Option 4: Cycling in bus lanes 45
6.5 Network Option 5: Shared space (pedestrians and cyclists) 46
6.6 Network Option 6: One-way raised cycle tracks on both sides of the carriageway 46
6.7 Network Option 7: One-way protected cycle lanes on both sides of the carriageway 47
6.8 Network Option 8: Two-way cycle track on one side of road 47
6.9 Network Option 9: Review route selection and divert cyclists through quieter streets 48
6.10 Conclusion of Stage 1 Assessment 48
7. Option Assessment Stage 2 – Multi Criteria Analysis 49
8. Multi Criteria Analysis - Results 51
8.1 Section 1A: Clonskeagh Road 51
8.2 Section 1B: Sandford Road 54
8.3 Section 1C: Ranelagh Village 57
8.4 Section 1D: Ranelagh Road 60
8.5 Section 1E: Charlemont Street 63
8.6 Assessment Conclusion 66
9. Option Assessment – Emerging Preferred Scheme 67
9.1 General 67
9.2 Section 1A: Clonskeagh Road 67
9.3 Section 1B: Sandford Road 67
9.4 Section 1C: Ranelagh Village 67
9.5 Section 1D: Ranelagh Road 68
9.6 Ranelagh Bridge 68
9.7 Section 1E: Charlemont Street 68
10. Next Steps 69

Figures

Figure 1-1 - Scheme Extents (Clonskeagh to Charlemont Street) 8
Figure 2-1 - European Green Deal focus areas 11
Figure 2-2 - Project Ireland 2040 National Strategic Outcomes 13
Figure 2-3 - NIFTI intervention and modal hierarchies 16
Figure 2-4 - Road user hierarchy 18
Figure 2-5 - City Landscape Vision (Source: Dublin City Parks Strategy 2019-2022) 23
Figure 3-1 - Width Calculator (Source: National Cycle Manual) 25
Figure 4-1 - Route Sections 27
Figure 4-2 - Section 1A: Clonskeagh Road 28
Figure 4-3 - Typical existing road cross section on Clonskeagh Road 29
Figure 4-4 - Imagery of existing road cross section on Clonskeagh Road 29
Figure 4-5 - Section 1B: Sandford Road 30
Figure 4-6 - Typical existing cross section on Sandford Road 31
Figure 4-7 - Imagery of existing road cross section on Sandford Road 31
Figure 4-8 - Section 1C: Ranelagh Village 32
Figure 4-9 - Typical existing road cross section at Ranelagh Village 33
Figure 4-10 - Imagery of existing road cross section at Ranelagh Village 33
Figure 4-11 - Section 1D: Ranelagh Road 34
Figure 4-12 - Typical existing road cross section on Ranelagh Road 35
Figure 4-13 - Imagery of existing road cross section on Ranelagh Road 35
Figure 4-14 - Section 1E: Charlemont Street 36
Figure 4-15 - Typical existing road cross section on Charlemont Street 37
Figure 4-16 - Imagery of existing road cross section on Charlemont Street 37
Figure 4-17 - Road Collision Data Key 38
Figure 4-18 - Section 1A Collision Record (Source RSA.ie) 39
Figure 4-19 - Section 1B Collision Record (Source RSA.ie) 40
Figure 4-20 - Section 1C Collision Record (Source RSA.ie) 41
Figure 4-21 - Section 1D Collision Record (Source RSA.ie) 42
Figure 4-22 - Section 1E Collision Record (Source RSA.ie) 43

Tables

Table 2-1 - Policy context for the Clonskeagh to Charlemont Street Scheme 10
Table 2-2 - Alignment to the EU Sustainable and Smart Mobility Strategy 11
Table 2-3 - Alignment with NPF National Strategic Outcomes 13
Table 2-4 - Alignment with NPF National Policy Objectives 14
Table 2-5 - Alignment with Climate Action Plan 2021 actions 15
Table 2-6 - Alignment with Regional Spatial and Economic Strategy (RSES) 2019-2031 actions 17
Table 2-7 - Alignment with draft GDA Transport Strategy actions 18
Table 2-8 - DCC draft Development Plan - sustainable movement & transport objectives 20
Table 2-9 - DCC draft Development Plan - green infrastructure & public realm objectives 21
Table 2-10 - DCC draft Development Plan - Climate & environmental infrastructure objectives 22
Table 4-1 - Section 1A: Clonskeagh Road 29
Table 4-2 - Section 1B: Sandford Road 31
Table 4-3 - Section 1C: Ranelagh Village 33
Table 4-4 - Section 1D: Ranelagh Road 35
Table 4-5 - Section 1E: Charlemont Street 37
Table 4-6 - Summary of Collisions from Clonskeagh Road to Sandford Road 39
Table 4-7 - Summary of Collisions from Sandford Road to Ranelagh Village 40
Table 4-8 - Summary of Collisions from Ranelagh Village to Ranelagh Road 41
Table 4-9 - Summary of Collisions from Ranelagh Road to Charlemont Street 42
Table 4-10 - Summary of Collisions from Charlemont Street to Harcourt Street 43
Table 5-1 - Summary of Stage 1 Options to be assessed 44
Table 5-2 - Summary of Stage 1 Assessment 48
Table 5-3 - Options considered at Stage 2 48
Table 6-1 - Criteria options scored against in the Multi-Criteria Analysis (MCA) 49
Table 6-2 - Scheme Options Colour Coded Ranking Scale 50
Table 7-1 - Options Assessment Summary – Section 1A 51
Table 7-2 - Options Assessment Summary – Section 1B 54
Table 7-3 - Options Assessment Summary – Section 1C 57
Table 7-4 - Options Assessment Summary – Section 1D 60
Table 7-5 - Options Assessment Summary – Section 1E 63
Table 7-6 - Summary of emerging preferred options from Stage 3 Options Assessment 66

1. Introduction

The National Transport Authority (NTA) Cycling Design Office on behalf of Dublin City Council (DCC) has been tasked with undertaking an options assessment for the Sandyford Clonskeagh to Charlemont Street Pedestrian & Cyclist Improvement Scheme (SC2C). The study area shown in Figure 1-1 encompasses a 3.1km route on the southside of Dublin City, spanning sections of the R117 Regional Road, including Clonskeagh Road, Sandford Road, Ranelagh Village, Ranelagh Road and Charlemont Street. The proposed scheme aligns with a primary route identified in the in the Greater Dublin Area (GDA) Cycle Network Plan, 2013 and is incorporated into the NTA Transport Strategy for the Greater Dublin Area 2016-2035. The route will also intersect with several other Primary and Secondary cycle routes identified in the GDA Cycle Network Plan.

The study considered a variety of options including do nothing, do minimum, and one-way and two-way cycle track options, each of which has been assessed based on feasibility and ability to achieve the scheme objectives.

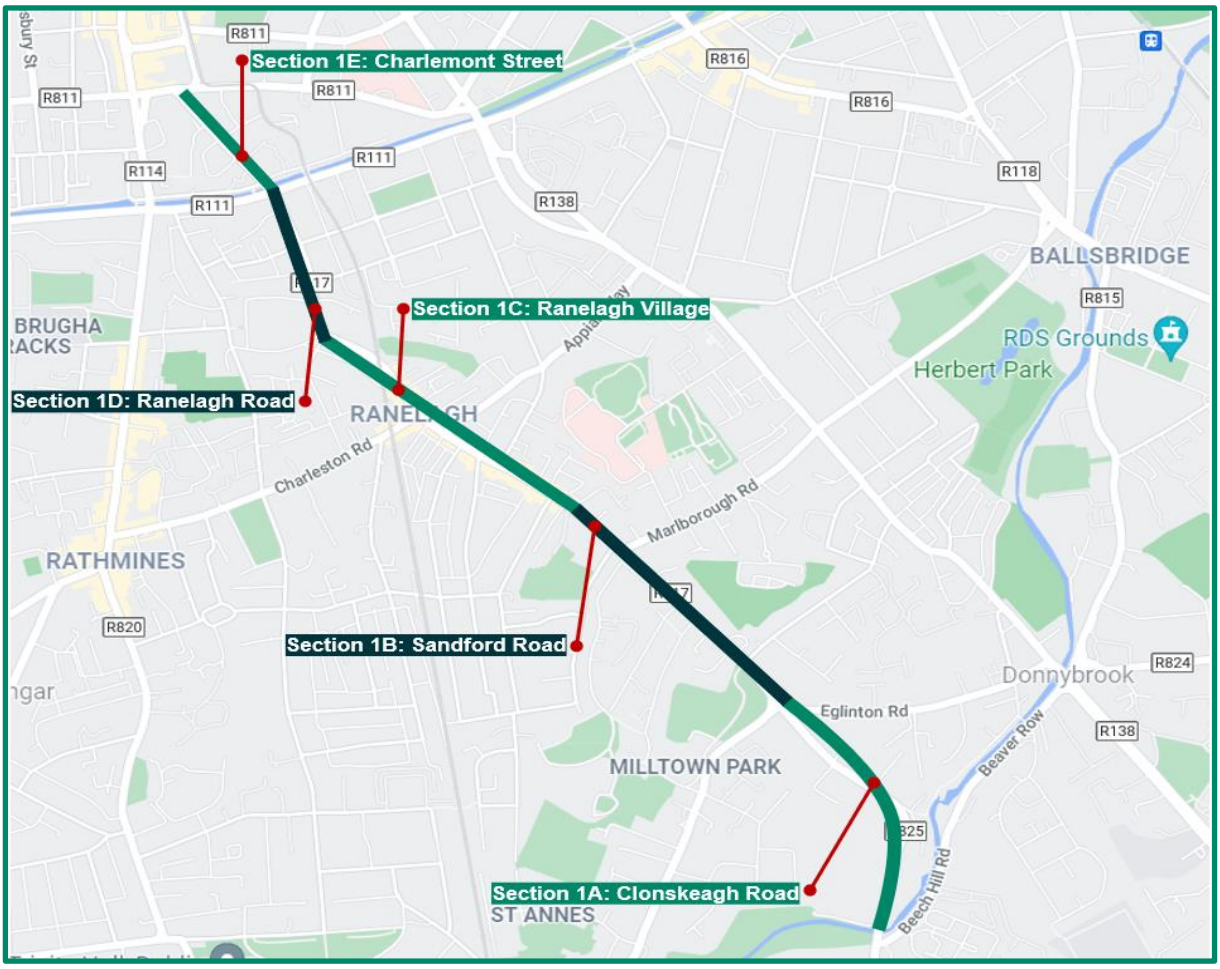


Figure 1-1 - Scheme Extents (Clonskeagh to Charlemont Street)

1.1 Scheme Objectives

The objectives of the scheme are:

- To facilitate the delivery of the Greater Dublin Area (GDA) Cycle Network Plan by providing continuous, segregated cycling facilities from Clonskeagh to Charlemont Street.
- To contribute to an increase in cycling mode share along the corridor by improving access to key education, employment, retail and transport destinations.
- To reduce the risk of cyclist collisions through segregation from traffic, where practicable, and minimising conflicts.
- To encourage increased levels of physical activity and leisure use along the corridor through provision of a safe, high-quality and attractive route for both cyclists and pedestrians.

1.2 Report Structure

The remainder of the report is set out as follows:

1.2.1 Context

A brief summary of the scheme in the context of relevant policies, strategies and plans.

1.2.2 Design Principles

A summary of design principles, informed primarily by the National Cycle Manual, including quality of service, cycle width calculator and segregation.

1.2.3 Existing Conditions

A description of the existing conditions on the route based on a combination of desk-top study, site visits and observations.

1.2.4 Options Assessment

The options assessment comprises of a two-stage process:

Stage 1: Feasibility Screening

Considers options at a high-level, including do-nothing and do minimum options. The purpose of this step was to eliminate options that cannot meet the scheme objectives.

Stage 2: Multi-Criteria Analysis (MCA)

Considers the successful options from Stage 1 and appraise each section of the scheme through a multi-criteria analysis using the Common Appraisal Framework for Transport Projects and Programmes, published by Department of Transport.

The results of the Stage 2 MCA are presented in a separate paragraph.

1.2.5 Emerging Preferred Scheme and Concept Design

Following the conclusion of the two-stage assessment the Emerging Preferred Scheme has been identified and a concept design has been developed.

1.2.6 Next Steps

The next project stage in the NTA Project Approval Guidelines (NTA PAG) is Phase 3: Preliminary Design. This paragraph briefly outlines the process that will be taking place once approval for Phase 2 is consolidated.

2. Context

2.1 Need for the Scheme

The need for the scheme was identified in the Greater Dublin Area (GDA) Cycle Network Plan and is incorporated into the NTA Transport Strategy for the Greater Dublin Area 2016-2035. The scheme forms a key section of a Primary Radial Route along the R117 leading into the South City Core where St Stephens Green, University College Dublin, the Royal College of Surgeons of Ireland, and Trinity College, among other key trip attractors, are located. The route will also intersect with several other Primary and Secondary cycle routes identified in the GDA Cycle Network Plan.

The Clonskeagh to Charlemont Street Scheme will service leisure, school and commuter traffic facilitating movements to shopping and work locations along Sandford Road and Ranelagh Village, local schools such as Sandford Parish National School, Saint Mary's National School, Sandford Park School, Gonzaga College SJ, Muckross Park and others. The Clonskeagh to Charlemont Street Scheme is expected to intersect with the proposed Dodder Greenway in the vicinity of Clonskeagh Bridge.

The scheme shall be developed having regard to a number of relevant policies, strategies and plans as outlined below.

2.2 Strategic and Policy Context

The Clonskeagh to Charlemont Street Scheme is strongly supported by policy at all levels (i.e., European, National, Regional and Local), as well as in multiple policy areas. While the Clonskeagh to Charlemont Street Scheme aligns most obviously with policy aimed at reducing emissions, improving safety and encouraging a modal shift to walking and cycling, the project provides a unique opportunity to address a much wider range of policy objectives by integrating green infrastructure and public realm improvements, particularly in Ranelagh Village. This section provides a detailed overview of this policy context and highlights how the Clonskeagh to Charlemont Street Scheme could make a positive impact in many policy areas.

Table 2-1 - Policy context for the Clonskeagh to Charlemont Street Scheme

Policy level	Policy
European	• European Green Deal • RISM Directive
National	• Project Ireland 2040: National Planning Framework • National Development Plan 2021-2030 • Climate Action Plan 2021 • National Investment Framework for Transport in Ireland (NIFTI) • National Physical Activity Plan • Government Road Safety Strategy 2021-2030
Regional	• Regional Spatial and Economic Strategy for the Eastern and Midland Region, 2019-2031 • Draft Transport Strategy for the Greater Dublin Area 2022-2042 • GDA Cycle Network Plan
Local	• Draft Dublin City Development Plan 2022-2028 • Dublin City Parks Strategy 2019-2022 • Your City, Your Space: Dublin City Public Realm Strategy 2012

2.3 European Policy

2.3.1 European Green Deal

The European Green Deal was adopted in 2020 and contains a set of policy initiatives (presented in Figure 2-1) aimed at making the European Union climate neutral by 2050. Overall, the Green Deal aims to reduce emissions by at least 50% by 2030 and achieve net-zero emissions by 2050 by introducing new strategies, funding and legislation for the circular economy, transport, buildings, and biodiversity. Two of these strategies are described in further detail.

Figure 2-1 - European Green Deal focus areas

2.3.1.1 EU Sustainable and Smart Mobility Strategy

Forming part of the Green Deal, the EU's *Sustainable and Smart Mobility Strategy* aims to reduce transport emissions across the Union through funding, regulations and policy supports for clean and sustainable mobility. While naturally EU policy mainly focuses on pan-European measures and cross-border mobility, the Strategy does reiterate strong support for investment in urban walking and cycling infrastructure by member states. The Strategy places a particular emphasis on urban mobility and increasing the sustainable mode shares for trips to work, school and other key destinations. The Clonskeagh to Charlemont Street Scheme will make progress towards several actions in the strategy, as shown in Table 2-2 below.

Table 2-2 - Alignment to the EU Sustainable and Smart Mobility Strategy

No.	Action
35	As set out in the 2030 climate target plan, increasing the modal shares of collective transport, walking and cycling, as well as automated, connected and multimodal mobility will significantly lower pollution and congestion from transport, especially in cities and improve the health and well-being of people. Cities are and should therefore remain at the forefront of the transition towards greater sustainability. The Commission will further engage with cities and Member States to ensure that all large and medium-sized cities that are urban nodes on the TEN-T network put in place their own sustainable urban mobility plans by 2030. The plans should include new goals, for example on having zero emissions and zero road fatalities. Active transport modes, such as cycling, have seen growth with cities announcing over 2300 km of extra cycling infrastructure. This should be doubled in the next decade towards 5000 km in safe bike lanes. The Commission is also considering developing a mission in the area of Climate-neutral and Smart Cities28 as a strategic priority for joint action to accomplish decarbonisation within a large number of European cities by 2030.

No.	Action
37	The EU and Member States must deliver on our citizens' expectations of cleaner air, less noise and congestion, and eliminating fatalities on our city streets. By revising the Urban Mobility Package to promote and support these sustainable and healthy transport modes, the Commission will contribute to the improvement of the current European framework for urban mobility. Clearer guidance is needed on mobility management at local and regional level, including on better urban planning, and on connectivity with rural and suburban areas, so that commuters are given sustainable mobility options. European policies and financial support should also reflect the importance of urban mobility for the overall functioning of the TEN-T, with provisions for first/last mile solutions that include multimodal mobility hubs, park-and-ride facilities, and safe infrastructure for walking and cycling.

2.3.1.2 Biodiversity Strategy for 2030

The *Biodiversity Strategy* is also part of the European Green Deal, and it *"aims to put Europe's biodiversity on the path to recovery by 2030 for the benefit of people, climate and the planet"*. Noting that *"the biodiversity crisis and the climate crisis are intrinsically linked"*, the strategy notes the dual benefits of green infrastructure or nature-based solutions, such as cooling in urban areas, reducing pollution and flooding, mitigating the impact of natural disasters, and protecting wildlife and biodiversity. It also recognises the value of green and open spaces to physical and mental wellbeing, particularly in urban areas where space is limited.

The Biodiversity Strategies recommends a number of actions aimed at greening urban areas, including:

- The "systemic integration" of healthy ecosystems, green infrastructure and nature-based solutions into urban planning, including in public spaces, infrastructure and the design of buildings and their surroundings;
- The development of 'Urban Greening Plans' in all European cities of at least 20,000 inhabitants which would focus on creating biodiverse and accessible urban parks, green spaces and tree-lined streets; as well as improve connections between existing green spaces.

The Clonskeagh to Charlemont Street Scheme provides a prime opportunity to integrate green infrastructure into the design of new walking and cycling facilities, and to enhance the urban realm throughout the scheme extents.

2.3.2 Road Infrastructure Safety Management (RISM) Directive

The European Union has set a 'Vision Zero' target, which aims to halve fatalities on European roads by 2030, and reduce this to 'almost zero' by 2050. Influenced by a 'Safe Systems' approach, which is a road safety concept that deaths and serious injuries are largely preventable by good design and maintenance of road infrastructure, the 'Vision Zero' target is accompanied by a suite of European and national policies and programmes aimed at achieving this strategic ambition.

Accordingly, the Directive on Road Infrastructure Safety Management (RISM) defines procedures for EU member states to improve safety on European road networks. Under RISM, each member state is required to carry out actions to monitor and improve road safety on the network, including network-wide 'Safety Ranking', regular Road Safety Inspections, Road Safety Audits during planning and design of infrastructure, training, certification and knowledge exchange with local authorities and European partners. While RISM was originally intended to cover just the TEN-T network, the 2019 revision to the RISM Directive notes that it is: *"desirable for those RISM principles to be applied to other parts of the European road network*".

RISM was updated in 2019 to require Member States to take into account the needs of 'vulnerable road users' in network planning, design and operation, which are defined as *"non-motorised road users, including, in particular, pedestrians and cyclists".* In planning and designing road infrastructure, the updated RISM Directive places much greater emphasis on separating protecting vulnerable road users from the risks of high-speed and high-volume traffic, and requires authorities to consider things such as:

- *"Provisions for cyclists, including the existence of alternative routes or separations from high-speed motor traffic;*
- *Density and location of crossings for pedestrians and cyclists;*
- *Provision for pedestrians and cyclists on affected roads in the area; and*
- *Separation of pedestrians and cyclists from high speed motor traffic or the existence of direct alternative routes on lower class roads".*

Similarly, the rationale for the Clonskeagh to Charlemont Street Scheme recognises that traffic volumes are too high along the R825 and R117 to have cyclists mixed with general traffic, and aims to provide a continuous, segregated and high-quality cycling route to Dublin city.

2.4 National policy

2.4.1 'Project Ireland 2040' – National Planning Framework

Project Ireland 2040 is Ireland's National Planning Framework (NPF) and provides a high-level strategic plan to shape planning policy, future growth and development in Ireland in the period to 2040. The NPF aims to avoid the "mistakes" made in previous planning policy – mistakes that have led to urban sprawl, unbalanced regional development, and increased car dependency - by ensuring that investment is closely aligned to these overarching principles. The NPF is based on ten 'National Strategic Outcomes' (NSO), which are an expression of the shared national goals or benefits the NPF aims to achieve. These are displayed in Figure 2-2.

Figure 2-2 - Project Ireland 2040 National Strategic Outcomes

All public projects are required to demonstrate how they align to the NPF, and how they would contribute to the achievement of the NSO. The alignment of the Clonskeagh to Charlemont Street Scheme to the NSO is summarised in the table below.

Table 2-3 - Alignment with NPF National Strategic Outcomes

NSO	Relevance to the Clonskeagh to Charlemont Street Scheme
1. Compact Growth	Responding to past levels of urban sprawl and car dependency, the NPF aims to concentrate growth in existing villages, towns and cities; and to ensure that residents have easy access to jobs, amenities and services. The Clonskeagh to Charlemont Street Scheme will encourage compact growth by encouraging a shift to sustainable modes of transport, and making Dublin city a healthier and more liveable city. These are described below.
4. Sustainable Mobility & 10. Transition to a low Carbon and Climate Resilient Society	The Clonskeagh to Charlemont Street Scheme aims to support major sustainable mobility projects in Dublin City, and encourage a shift from private cars to reduce transport emissions. The project will create a segregated cycle route between Dublin City / Dún Laoghaire–Rathdown County Boundary.
7. Enhanced Amenity & Heritage	There is a shortage of greenspace and opportunities for leisure/exercise within Dublin City. Through improvements in walking and cycling infrastructure, the Clonskeagh to Charlemont Street Scheme would create new spaces and opportunities for local residents and visitors to walk, cycle, jog, or to simply enjoy spending time in a high-quality public realm.

9. Sustainable management of water, waste and other environmental resources	The Clonskeagh to Charlemont Street Scheme aims to improve environmental quality in Dublin City by integrating green infrastructure (i.e. vegetation, SUDs etc) into the planning and design, where possible. Creating a green corridor along the Clonskeagh to Charlemont Street Scheme could help to improve the city air quality, reduce flooding, regulate temperatures and enhance biodiversity.

As well as the NSO, the NPF also includes 'National Policy Objectives' to provide a more specific statement of the types of actions or investment that should be prioritised. Several of these are of particular relevance to the Clonskeagh to Charlemont Street Scheme, and are displayed in Table 2-4 below. As well as transport and climate objectives, this highlights the potential of the project to make a positive contribution to other policy areas, particularly in terms of improving the environment and quality of life within Dublin City.

Table 2-4 - Alignment with NPF National Policy Objectives

No.	National Policy Objective
6	**Making Stronger Urban Places:** Regenerate and rejuvenate cities, towns and villages of all types and scale as environmental assets, that can accommodate changing roles and functions, increased residential population and employment activity and enhanced levels of amenity and design quality, in order to sustainably influence and support their surrounding area.
26	**People, Homes and Communities:** Support the objectives of public health policy including Health Ireland and the National Physical Activity Plan, through integrating such policies, where appropriate and at the applicable scale, with planning policy.
27	**People, Homes and Communities:** 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.
54	**Realising our Sustainable Future:** Reduce our carbon footprint by integrating climate action into the planning system in support of national targets for climate policy mitigation and adaption objectives, as well as targets for greenhouse gas emissions reductions.
57	**Realising our Sustainable Future:** Integrating sustainable water management solutions, such as Sustainable Urban Drainage (SUDS), non-porous surfacing and green roofs, to create safe places.
62	**Realising our Sustainable Future:** Identify and strengthen the value of greenbelts and green spaces at a regional and city scale, to enable enhanced connectivity to wider strategic networks, prevent coalescence of settlements and to allow for the long-term strategic expansion of urban areas.
64	**Realising our Sustainable Future:** Improve air quality and help prevent people being exposed to unacceptable levels of pollution in our urban and rural areas through integrated land use and spatial planning that supports public transport, walking and cycling as more favourable modes of transport to the private car, the promotion of energy efficient buildings and homes, heating systems with zero local emissions, green infrastructure planning and innovative design solutions.

2.4.2 Climate Action Plan 2021

Climate action is a key objective of the Clonskeagh to Charlemont Street Scheme, and is rooted in a robust national climate policy framework. In 2021, the 'Climate Action and Low Carbon Development (Amendment) Act' became law. The Act established a legally-binding target to reduce emissions by 50% (relative to a 2018 baseline) by 2030, and to move towards net-Zero emissions by 2050. The Act provides for a system of carbon budgets to enforce these targets, which would set a maximum level of emissions for each sector of the economy to stay within, and gradually decrease in the period to 2030 and 2050. In October 2021, the Climate Change Advisory Council (CCAC) published proposed carbon budgets for the 2021-2030 period, which outlined pathways to achieving the overall emissions reductions target of 50% by 2030. The carbon budgets were based on an average reduction of 4.8% per annum in 2021-2025, rising to 8.3% in 2026-2030.

In November 2021, the Department of Environment, Climate and Communications published a new Climate Action Plan, which sets out targets and actions required to give effect to the carbon budgets for 2021-2030. Overall, the Plan aims for a 51% reduction in transport emissions by 2030, with a particular focus on demand management, sustainable mobility and shifting trips from fossil fuel-powered cars to walking, cycling and public transport. Among the targets and measures contained in the Plan:

- Increase in daily public transport and active mode trips by 500,000 (+14%) through planned sustainable mobility programmes (i.e. BusConnects, DART+, Connecting Ireland), investment in active travel and other measures
- Reduction in internal combustion engine vehicle kilometres by 10%.

According to the Plan, achieving these targets requires *"continued and enhanced investment in walking, cycling and public transport infrastructure and services across the country"*, and a focus on "reliable" and "realistic" sustainable mobility options to enable this shift. It commits to allocating 20% of the transport capital budget towards active travel, as well as the completion of the GDA Cycle Network. The Climate Action Plan also supports the reallocation of public space to be less "vehicle centred" and more "people centred". Some relevant actions are shown in the table below.

Table 2-5 - Alignment with Climate Action Plan 2021 actions

No.	Action
98	Increase nature connectedness and promote pro-environmental behaviours by developing outdoor recreation
231	Continue the improvement and expansion of the Active Travel and Greenway Network
232	Develop a coherent and connected National Cycle Network Strategy
233	Construct an additional 1,000km of cycling and walking infrastructure, and deliver 500km of cycling and walking infrastructure in the GDA Network
234	Encourage an increased level of modal shift towards active travel (walking and cycling) and away from private car use
255	Balance better movement priorities within urban areas to transition the built environment and public domain from one that is "vehicle centred" to being "people centred" to align with the goal of net zero by 2050.
473	Explore options for the delivery of a National Implementation Strategy for Nature-based Solutions to the Management of Rainwater and Surface Water Runoff in Urban Areas

The Clonskeagh to Charlemont Street Scheme clearly aligns with the objectives of the Climate Action Plan and the legally-binding targets for emissions reductions. It will support the implementation of the GDA Cycle Network Plan and a major shift towards sustainable modes of transport, while discouraging use of private cars in Dublin City. It will also help to make Dublin more resilient to climate change through the provision of green infrastructure; promoting a nature-based approach to managing challenges from flooding and pollution.

2.4.3 National Investment Framework for Transport in Ireland (NIFTI)

The Department of Transport recently published a framework for guide future investment in the land transport network and to prioritise investment that supports the delivery of the National Strategic Outcomes. The investment objectives of NIFTI are:

- *'Delivering clean, low-carbon and environmentally sustainable mobility;*
- *Supporting successful places and vibrant communities;*
- *Facilitating safe, accessible, reliable and efficient travel on the network; and*
- *Promoting and strong and balanced economy.'*

NIFTI includes two 'hierarchies' specifying the order in which transport investment should be prioritised: an 'intervention hierarchy' and a 'modal hierarchy'; both of which are shown in the figure below.

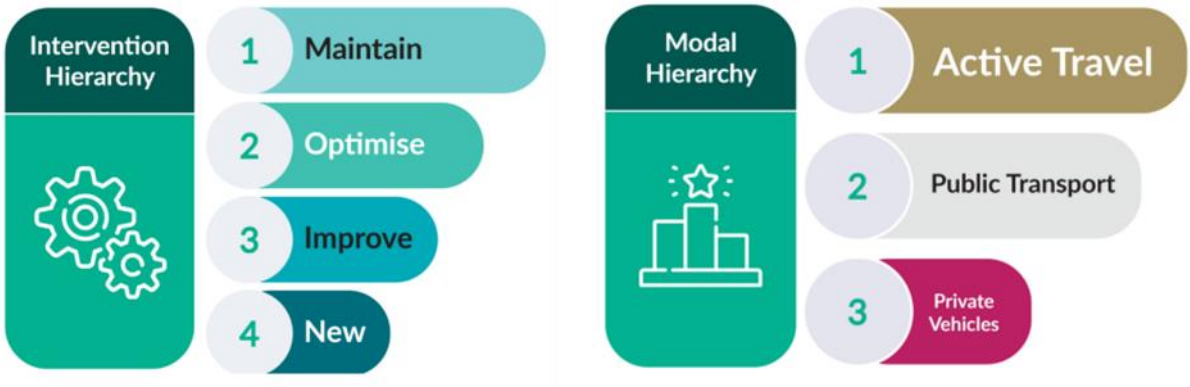


Figure 2-3 - NIFTI intervention and modal hierarchies

The Intervention Hierarchy differentiates between the level of intervention proposed, and states that investment should firstly seek to 'maintain' existing infrastructure; then to 'optimise' or 'improve' existing infrastructure; and finally – if it is not possible to achieve an objective through previous steps – to invest in providing 'new' infrastructure. The aim of the Investment Hierarchy is to maximise the lifespan and value for money of past investments, and to ensure that more affordable and efficient options for achieving an objective are considered before investing in large-scale transport projects or programmes. The Clonskeagh to Charlemont Street Scheme is mostly aligned with Level 3 ('improve') on the Intervention Hierarchy. While requiring new infrastructure in parts, the primary focus of the project is improving and re-designing existing public space in Dublin City to be more efficient, sustainable and equitable. This includes targeted upgrades to cycling, pedestrian, and public transport infrastructure, while reducing the prominence given to private cars.

The Modal Hierarchy differentiates between the modes of transport, and states that Active Travel (walking, wheeling and cycling) should be prioritised, followed by public transport, and lastly by private vehicles. As outlined throughout, the Clonskeagh to Charlemont Street Scheme has been guided by a user hierarchy which seeks to prioritise active travel and bus users over private cars, which squarely aligns with NIFTI's Modal Hierarchy.

2.4.4 National Physical Activity Action Plan

The aim of the Department of Health's *National Physical Activity Plan* is to increase physical activity levels across the whole population, and the Plan sets separate targets for adults, children and older people to reach the recommended levels of physical activity. Recognising that there are many reasons that people are unable to meet recommended levels of physical activity, the Plan contains some guiding principles to promote greater levels of physical activity, namely by: *"creating increased opportunities for people to be active in ways which fit into everyday lives; which is suitable for individual needs, circumstances and interests; and which removes the barriers people face to being active and encouraging people to recognise how to overcome those barriers".*

The Plan highlights walking and cycling as a way to easily incorporate physical activity in everyday life, and includes several actions aimed at promoting active travel and recreation, including to:

- *'Develop and promote walking and cycling strategies in each Local Authority Area;*
- *Ensure that the planning, development and design of towns, cities and schools promotes cycling and walking with the aim of delivering a network of cycle routes and footpaths;*
- *Ensure that the planning, development and design of towns and cities promotes the development of local and regional parks and recreational spaces that encourage physical activity;*
- *Prioritise the planning and development of walking and cycling and general recreational / physical activity infrastructure; and*
- *Explore opportunities to maximise physical activity and recreational amenities in the natural environment'.*

As noted previously, there is a shortage of greenspace and limited opportunities for physical activity and recreation in Dublin City and along the Clonskeagh to Charlemont Route. As well as providing dedicated facilities for walking and cycling, the Clonskeagh to Charlemont Street Scheme aims to create a green corridor running from Dublin City at Charlemont Street to the Dublin City Boundary at Clonskeagh Bridge that would improve access to greenspace and create opportunities for physical activity and exercise for city residents, locals and visitors alike. In line with national policy, this infrastructure should be attractive and accessible to users of all ages

and abilities, and the project aims to increase use of Clonskeagh to Charlemont Corridor by under-represented groups, such as inexperienced and new cyclists, women, children and older people.

2.4.5 Government Road Safety Strategy 2021-2030

The Government's Road Safety Strategy (RSS) 2021-2030 is Ireland's fifth RSS, and provides an integrated strategy for managing safety on the road network up to 2030. Building on progress over previous decades, the RSS aims to reduce road deaths on Irish roads by at least 50% (144 to <72), with serious injuries decreasing by the same percentage (1259 to <630). One of the key intervention areas is promoting safe and healthy modes of travel (i.e. walking and cycling). The RSS emphasises the many benefits provided by active travel, and recognises the unique vulnerability of pedestrians and cyclists in collisions. It proposes several actions aimed at improving safety and encouraging increased uptake, including:

- Continue to implement an active travel infrastructure scheme where Local Authorities can apply for funding to develop improved active travel infrastructure;
- Encourage modal shift to support environmental, safety and health objectives by promoting the use of sustainable and active modes of travel; and
- During 2021-2025, construct 1,000 km of segregated walking and cycling facilities to provide safe cycling and walking arrangements for users of all ages.

In line with the RSS, the Clonskeagh to Charlemont Street Scheme aims to reduce fatal, serious and minor collisions with vulnerable road users, and encourage increased levels of walking and cycling due to a safer and more pleasant environment.

2.5 Regional policy

2.5.1 Regional Spatial and Economic Strategy (RSES) 2019-2031

The *Regional Spatial and Economic Strategy* (RSES) for the Eastern & Midland Regional Assembly provides a high-level development framework for the region, and supports the implementation of the NPF and relevant economic policies and objectives of the Government at a regional level. Local authorities are required to give effect to the policies of RSES when developing county and local area plans. For the Dublin Metropolitan Area, the RSES notes several key guiding principles, including the development of strategic and sustainable transport networks, urban and social regeneration, and enhancing amenities and Green Infrastructure.

Several Regional Policy Objectives (RPO) are also relevant to the Clonskeagh to Charlemont Street Scheme, especially the strong emphasis placed on developing strategic Green Infrastructure that links key environmental assets in the Dublin region.

Table 2-6 - Alignment with Regional Spatial and Economic Strategy (RSES) 2019-2031 actions

RPO	Action
5.2	**Sustainable transport:** Support the delivery of key sustainable transport projects including Metrolink, DART and Luas expansion programmes, BusConnects and the GDA Metropolitan Cycle Network and ensure that future development maximises the efficiency and protects the strategic capacity of the metropolitan area transport network, existing and planned.
5.3	**Sustainable transport:** Future development in the Dublin Metropolitan Area shall be planned and designed in a manner that facilitates sustainable travel patterns with a particular focus on increasing the share of active modes (walking and cycling) and public transport use and creating a safe and attractive street environment for pedestrians and cyclists
5.7	**Green Infrastructure:** Coordinate across local authority boundaries to identify, manage, develop and protect regional Green Infrastructure, to enhance strategic connections and develop a Green Infrastructure policy in the Dublin Metropolitan Area
5.8	**Green Infrastructure:** Support the promotion and development of greenway infrastructure and facilities in the Dublin metropolitan area, and support the expansion and connections between key strategic cycle routes and greenways as set out in the NTA GDA Cycle Network Plan

2.5.2 Draft Transport Strategy for the Greater Dublin Area

The overall aim of the draft Strategy is:

> *"To provide a sustainable, accessible and effective transport system for the Greater Dublin Area which meets the region's climate change requirements, serves the need of urban and rural communities, and supports economic growth".*

This is accompanied by four key objectives, which are:

- An enhanced natural and built environment - To create a better environment and meet our environmental obligations by transitioning to a clean, low emission transport system, reducing car dependency, and increasing walking, cycling and public transport use.
- Connected communities and a better quality of life - To enhance the health and quality of life of our society by improving connectivity between people and places, delivering safe and integrated transport options, and increasing opportunities for walking and cycling.
- A strong and sustainable economy - To support economic activity and growth by improving the opportunity for people to travel for work or business where and when they need to, and facilitating the efficient movement of goods.
- An inclusive transport system - To deliver a high quality, equitable and accessible transport system, which caters for the needs of all members of society.

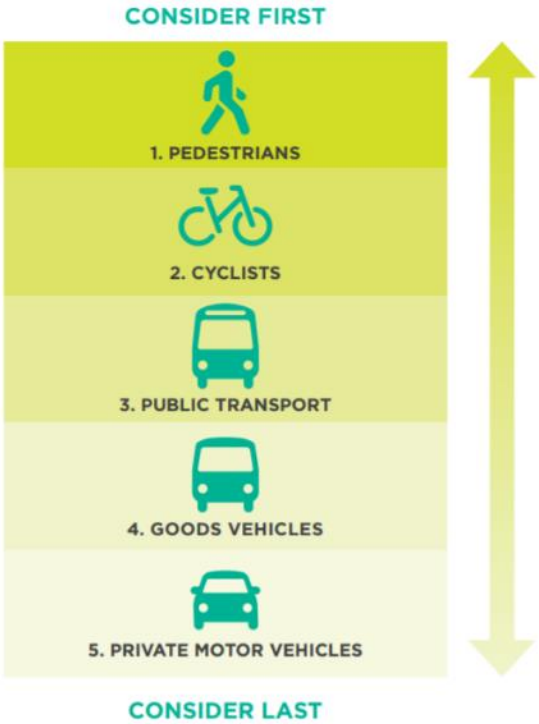


Figure 2-4 - Road user hierarchy

As with NIFTI, the draft Strategy is guided by a road user hierarchy, which aims to prioritise investment and space allocation towards pedestrians at the top, followed by cyclists, public transport, goods, and lastly, private motor vehicles.

The objectives of the Clonskeagh to Charlemont Street Scheme align squarely with the high-level objectives of the draft GDA Transport Strategy outlined above. They also align with numerous specific actions (shown in Table 2-7 below), particularly those relating to completion of the GDA Cycle Network, improving quality and accessibility of public space for pedestrians, and integrating high quality design and place-making with transport investments.

Table 2-7 - Alignment with draft GDA Transport Strategy actions

No.	Action
PLAN 12	**Urban Design in Major Infrastructure Projects:** The NTA will incorporate a high standard of urban design and placemaking into the planning and design of all major public transport infrastructure schemes, and will consider how greater biodiversity could be fostered.
PLAN 13	**Urban Design in Walking and Cycling Projects:** In the design, planning and prioritisation of walking and cycling schemes, the NTA and the local authorities will ensure the incorporation of urban design and placemaking considerations.
PLAN 14	**Reallocation of Road Space:** The NTA, in conjunction with the local authorities, will seek the reallocation of road space in Dublin City Centre, Metropolitan towns and villages, and towns and villages across the GDA to prioritise walking, cycling and public transport use and prioritise the placemaking functions of the urban street network.
PLAN 16	**The Road User Hierarchy:** The NTA, in the decision-making process around the design, planning and funding of transport schemes in the GDA, will be guided by the priority afforded to each mode in the Road User Hierarchy as set out in the Transport Strategy.

WALK 2	**Improved Footpaths:** The NTA, in conjunction with local authorities, will implement footpath improvement schemes across the GDA where required throughout the period of the Transport Strategy in order to ensure that they are of sufficient width, adequately lit, serve both sides of the road in urban areas (in most cases) are of good quality surfacing and are free of unnecessary clutter.
WALK 3	**Improved Junctions:** *The NTA, in conjunction with local authorities, will implement junction improvements across the GDA as follows: • To enhance safety at junctions, a programme of "narrowing" junctions by reducing kerb-line radii will be undertaken as a means of managing vehicular speeds; and • To enhance movement by pedestrians and cyclists, a programme of removal of slip lanes will be undertaken at appropriate locations, together with consideration of junction signalling changes to better balance the use of the junction between motorised and vulnerable modes.*
WALK 8	**Persons with Disabilities:** Local authorities in the GDA and the NTA will take full account of people with disabilities and pedestrians with mobility impairments when delivering transport schemes which affect the pedestrian environment; and will implement improvements to existing facilities where appropriate and encourage the enforcement of the Road Traffic Laws in this regard.
CYC 1	**GDA Cycle Network**: It is the intention of the NTA and the local authorities to deliver a safe, comprehensive, attractive and legible cycle network in accordance with the updated Greater Dublin Area Cycle Network.
CYC 2	**Cycle Infrastructure Design:** It is the intention of the NTA to ensure that cycle infrastructure in the GDA provides an appropriate quality of service to all users, through the implementation of the design guidance contained in the latest version of the National Cycle Manual.
TM 1	**Management of Dublin City Centre:** The NTA and Dublin City Council, in collaboration, will deliver the public transport, cycling and walking networks, and public realm that are required to serve an expanding City Centre and to facilitate a post-Covid recovery based on sustainable transport. The NTA and Dublin City Council will also ensure that the delivery of goods to city centre businesses and the operation of taxis are managed to the benefit of all users of the city centre.
FREIGHT 8	**Environmental Measures for Freight:** It is the intention of the NTA, in collaboration with other authorities to: • Seek the reduction of the amount of 'last mile trips' being made by motorised vehicles; • Facilitate the transition to zero-emission delivery vehicles such as cargo bikes and electric vehicles; and • Support local 'Click and Collect' facilities where appropriate to minimise trips to individual homes and workplaces.

2.5.3 GDA Cycle Network Plan

The GDA Cycle Network Plan accompanies the draft GDA Transport Strategy, and sets out the vision and planned network of cycling facilities in Dublin city centre and the surrounding GDA. The overall vision of the Network is:

> *"The Greater Dublin Area Cycle Network seeks to be an inclusive cycling environment that is safe for all cycling abilities and ages with strong function and recreational connectivity between homes and key destinations".*

The goals of the GDA Cycle Network are to:

- **Increase participation –** The plan propose an optimised cycle network accessible by cyclists of all abilities, regardless of users' level of confidence and skill. Specific attention is given to increasing cycling for school, education and recreational trips
- **Improve safety and accessibility –** Safety and accessibility will be improved on the GDA Cycle Network, such that actual and perceived safety concerns are reduced. Users should be able to quickly access the network from home, work and/or education settings.
- **Improve connectivity –** Barriers will be removed or mitigated where they obstruct direct and continuous cycling. Initiative and infrastructure will be designed, developed and delivered to enhance permeability and enable the connection to key destinations.
- **Create a navigable and coherent network –** The GDA Cycle Network will be enhanced to improve connections between cycle routes with suitable infrastructure, ancillary supporting facilities and wayfinding signage.

The 2021 GDA Cycle Network Plan places a much greater emphasis on the safety, quality and accessibility of cycling infrastructure compared to before, making it clear that in order to attract cyclists of all abilities, the Clonskeagh to Charlemont Street Scheme must be designed to very high specifications, with a high standard of segregation and continuity. It also places more emphasis on recreational cycling, which supports measures to improve the comfort and attractiveness of any cycling facilities.

The Clonskeagh to Charlemont Street Scheme is identified as a primary radial route, meaning that it is a main cycling arterial with high levels of utility cycling within and between Dublin's town centres. As well as carrying utility traffic from the many primary arterial and secondary routes that feed into it, the Clonskeagh to Charlemont Street Scheme has the potential to accommodate higher levels of recreational cycling among local residents and to/from the City.

2.6 Local policy

2.6.1 Draft Dublin City Development Plan 2022-2028

The draft Dublin City Development Plan 2022-2028 was released in late 2021, and once finalised, will provide a framework for the city's development over the next six years. The Clonskeagh to Charlemont Street Scheme strongly aligns with the objectives of the draft Development Plan, particularly with regard to climate, sustainable mobility and green space.

Table 2-8 shows the sustainable movement and transport objectives contained in the draft DCC Development Plan, highlighting how the development of the Clonskeagh to Charlemont Street Scheme would meet many of DCC's sustainable mobility priorities. Firstly, the Clonskeagh to Charlemont scheme aims to rebalance space towards active modes and public transport to support local and national sustainable mobility goals, which ties with objectives SMT01, SMT3, SMT13 and SMT31. Secondly, the provision of a segregated, high quality cycle route will support objectives SMT15 and SMT08, which are aimed at encouraging a shift to cycling and improving safety. Finally, measures to improve the public realm and pedestrian experience align closely with SMT10, SMT11, and SMT17 which are focused on creating a more integrated, accessible and enjoyable environment for pedestrians in Dublin city. Other objectives such as reducing city centre good traffic by encouraging last-mile deliveries (SMT14) are also relevant to the Clonskeagh to Charlemont Street Scheme.

Table 2-8 - DCC draft Development Plan - sustainable movement & transport objectives

No.	Policy / Objective
SMTO1	**Transition to more sustainable travel modes:** to achieve and monitor a transition to more sustainable travel modes including walking, cycling and public transport over the lifetime of the development plan, in line with the city mode share targets of 26% walking/cycling/micro-mobility; 57% public transport (bus/rail/Luas); and 17% private car/van/HGV/motorcycle.
SMT3	**Integrated Transport Network:** to support and promote the sustainability principles set out in National and Regional documents to ensure the creation of an integrated transport network that services the needs of communities and businesses of Dublin City and the region.
SMT10	**Pedestrian Network:** To protect, improve and expand on the pedestrian network inclusive of facilities for people with mobility impairment and/or disabilities, including the elderly and people with children, linking key public buildings, shopping streets, public transport points and tourist and recreational attractions.
SMT11	**Pedestrians and Public Realm:** To enhance the attractiveness and liveability of the city through the continued reallocation of space to pedestrians and public realm to provide a safe and comfortable street environment for pedestrians of all ages and abilities.
SMT13	**City Centre Road Space:** To manage city centre road-space to best address the needs of pedestrians and cyclists, public transport, shared modes and the private car, in particular, where there are intersections between DART, LUAS and Metrolink and with the existing and proposed bus network.
SMT14	**'Last-Mile' Delivery:** To seek to achieve a significant reduction in the number of motorised delivery vehicles in the City through supporting and promoting the use of the 'last-mile' delivery through the development of micro hubs and distribution centres.
SMT15	**Walking, Cycling and Active Travel:** To prioritise the development of walking and cycling facilities and encourage a shift to active travel for people of all ages and abilities, in line with the city's mode share targets.

SMT17	**The Pedestrian Environment:** To continue to maintain and improve the pedestrian environment and promote the development of a network of pedestrian routes which link residential areas with recreational, educational and employment destinations to create a pedestrian environment that is safe, accessible to all in accordance with best accessibility practice.
SMTO8	**Cycling Infrastructure and Routes:** To improve existing cycleways and bicycle priority measures and cycle parking infrastructure throughout the city and villages, and to create protected cycle lanes, where feasible. Routes within the network will be planned in conjunction with green infrastructure objectives and the NTA's Cycle Network Plan for the Greater Dublin Area, and the National Cycle Manual, having regard to policies GI2, GI6 and GI8 and objectives GI02 and GIO16.
SMT31	**Street and Road Design:** To ensure that streets and roads within the city are designed to balance the needs and protect the safety of all road users and promote place making, sustainable movement and road safety providing a street environment that prioritises active travel and public transport whilst ensuring the needs of commercial servicing is accommodated.

As well as transport and sustainable mobility, the Clonskeagh to Charlemont Street Scheme has strong support in many of DCC's objectives regarding green infrastructure and public realm. The need to improve access to open space and opportunities for leisure / physical activity are emphasised in objectives GI32, GI45 and GI46, while objective GI40 promotes tree planting as a way to introduce green space into urban areas.

Table 2-9 - DCC draft Development Plan - green infrastructure & public realm objectives

No.	Policy / Objective
GIO6	**To support the development of the following metropolitan greenways and local cycleways / walkways:** • Grand Canal (including the inner Grand canal loop • Dodder (to Dublin Mountains). • •Local routes and extension of existing routes.
GI32	**Linear Parks and Recreational Use of Waterways Aspects:** To develop linear parks, sustainable riverine access, walkways, cycleways and water focused recreational, sporting and tourism amenities which enhance appreciation of rivers in a manner that ensures that any adverse environmental effects are avoided and ecological enhancements, where appropriate, are employed to ensure a net biodiversity gain. Where lands along the waterways are in private ownership, it shall be policy in any development proposal to secure public access along the waterway.
GI40	**Tree Planting:** To require appropriate and long-term tree and native hedgerow planting in the planning of new development, urban spaces, streets, roads and infrastructure projects. New development should seek to provide for additional tree planting using a diversity of species including native species as appropriate to the location of the development in the interests of natural heritage, amenity, environmental quality and climate resilience.
GI45	**National Physical Activity Plan 2016:** To improve the health and well-being of communities by increasing access to participation in sports, recreation and healthy activity in line with the National Physical Activity Plan 2016, the Healthy Ireland Framework 2019 – 2025 and the Sport Ireland Participation Plan 2021 – 2024.
GI46	**To Improve and Upgrade / Provide Access to Sports / Recreational Facilities:** To improve and upgrade existing sports/recreational facilities in the city and to ensure the availability of and equal access to a range of recreational facilities to the general population of all ages and groups (including women/girls and minority sports) at locations throughout the city, including housing complexes. In areas where a deficiency exists, Dublin City Council will work with the providers of such facilities, including schools, institutions and private operators, to ensure access to the local population.
CCUV 37	**Plan Active and Healthy Streets:** To promote the development of a network of active, healthy, attractive, high quality, green, and safe streets and public spaces which are inviting, pedestrian friendly and easily navigable. The aspiration is to encourage walking as the preferred means of movement between buildings and activities in the city. In the case of pedestrian movement within major developments, the creation of a public street is preferable to an enclosed arcade or other passageway
CCUV 38	**High Quality Streets and Spaces:** To promote the development of high-quality streets and public spaces which are accessible and inclusive in accordance with the principles of universal design, and which deliver vibrant, attractive, accessible and safe places and meet the needs of the city's diverse communities regardless of age, ability, disability or gender.
CCUV 39	**Permeable, Legible and Connected Public Realm:** To deliver a permeable, legible and connected public realm that contributes to the delivery of other key objectives of this development plan namely active travel and sustainable movement, quality urban design, healthy placemaking and green infrastructure.

CCUV 40	**Public Safety:** To promote the development of a built environment and public spaces which are designed to deter crime and antisocial behaviour and which promote safety, as set out in the 'Your City Your Space' Public Realm Strategy 2012.
CCUV 41	**New Infrastructure Development:** Infrastructure projects in Dublin City should ensure placemaking outcomes through a design-led approach. Dublin City Council will work the relevant agencies / infrastructure providers to achieve public realm enhancements in the design, implementation and delivery of infrastructure projects.

The draft Development Plan also reiterates commitment to implementation of the *Dublin City Public Realm Strategy* and the *Dublin City Parks Strategy.*

While the draft Development Plan mainstreams climate action across all policy areas, as evidenced above, some additional climate and environmental objectives are relevant to the Clonskeagh to Charlemont Street Scheme. Table 2-9 highlights objectives recognising and promoting the importance of integrating green infrastructure and Sustainable Urban Drainage Systems (SUDS) in all city development.

Table 2-10 - DCC draft Development Plan - Climate & environmental infrastructure objectives

No.	Policy / Objective
CA8	**Climate Adaption Actions in the Built Environment:** Development proposals should demonstrate sustainable design principles for new buildings/services/sites. The Council will promote and support development which is resilient to climate change. This would include minimising pollution by reducing surface water runoff through increasing permeable surfaces and use of Sustainable Urban Drainage Systems (SUDS) and promoting and protecting biodiversity and green infrastructure
CA28	**Climate Action and Green infrastructure:** To promote connect and expand the city's Green infrastructure while optimising the climate change adaption and mitigation services it provides
SI22	**Sustainable Urban Drainage Systems:** To require the use of Sustainable Urban Drainage Systems (SUDS) in all new developments, where appropriate as set out in the Greater Dublin Strategic Drainage Study. SUDS should protect and enhance water quality through treatment at source while enhancing biodiversity and amenity
SI34	**Management of Air Quality:** To monitor, pro-actively manage and improve air quality in the city through integrated land use and spatial planning measures to avoid, mitigate and minimise unacceptable levels of air pollution in accordance with national and EU policy Directives on air quality and, where appropriate, drive compliance with established targets.

2.6.2 'Your City, Your Space': Dublin City Public Realm Strategy

The purpose of the *Dublin City Public Realm Strategy* is to detail the importance, character and public realm objectives for different areas of the city, and to provide a common framework to guide DCC's approach to managing and improving Dublin's public realm. DCC's vision for the public realm is one that:

- *"Is easy for people of all ages or abilities to use. Universal Design Principles will be used to design create and deliver spaces that are safe, easy to navigate and can easily facilitate daily life and business.*
- *Is welcoming and comfortable, one that supports and promotes health lifestyles and behaviours for all because quality experiences make life more enjoyable.*
- *Celebrates the quality of Dublin's unique spaces and historic character, and creates areas where people can get together.*
- *Shows the city to its best advantage which in turn makes it more attractive to business and investors."*
- *'The Quality of the public realm is exemplary and of the highest international standard;*
- *'The public realm is coherent and consistent in design, and constructed using the highest quality materials creating a pleasant environment in which it is easy to move around; and*
- *A mix of activities are accommodated with make the Civic Spine a key attraction nationally.'*

The objectives of the Clonskeagh to Charlemont Street Scheme support the *Public Realm Strategy* by recognising an opportunity to integrate high quality public realm upgrades into the overall design of the scheme, and to make it a more pleasant and accessible space for people to enjoy.

2.6.3 Dublin City Parks Strategy 2019-2022

The *Dublin City Parks Strategy 2019-2022* was developed to review and plan for the provision of parks and green space by DCC, with an overall vision of *"growing towards a greener and more liveable Dublin city".* The objectives of the Strategy include:

- Defining and understanding parks resources and services and their contribution to Dublin at the present time and planning for the future;
- Assessing quantity, quality and accessibility of park resources to the public and addressing shortfalls where they occur;
- Reviewing international cities and their vision and approach to their park and landscape resources;
- Expressing Dublin's history and culture through its parks and enhancing the visitor experience; and
- Protecting and enhancing parks, landscape and biodiversity into the future as the pressure for development continues.

As outlined previously, the Strategy identifies a deficit of green and open space in Dublin City, and envisages *"greening and public realm strategies that combine to enhance the core city landscape by providing quality to the exterior streets and spaces of the city".*

The Clonskeagh to Charlemont Street Scheme would tie well with these objective, as it forms a strategic corridor connecting the Inner City, Ranelagh, the Dodder greenway and routes identified in the Strategy, as shown in the figure below. Not only would it directly provide more space for recreation, but it would also enhance access to these larger parks outside the inner city. By reallocating road space to pedestrians, cyclists and green infrastructure, the project would create a safer and more pleasant atmosphere along the Clonskeagh to Charlemont Street Scheme for users, and provide more equitable access to space for exercise and leisure within Dublin's inner city.

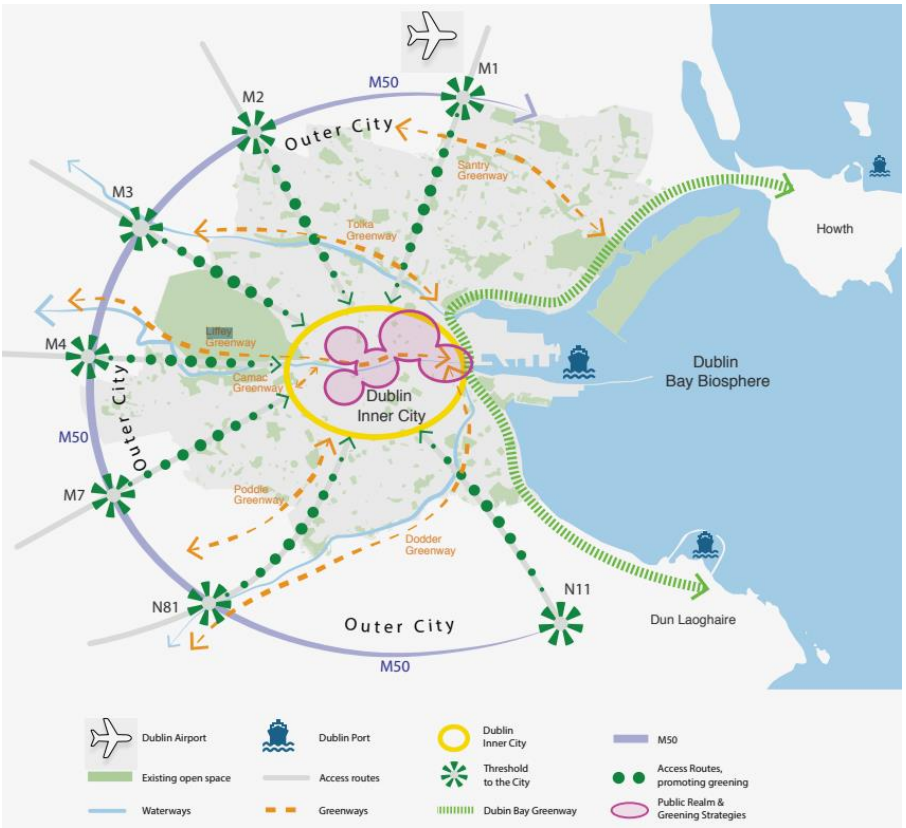


Figure 2-5 - City Landscape Vision (Source: Dublin City Parks Strategy 2019-2022)

3. Design Principles

The National Cycle Manual (NCM) and Design Manual for Urban Roads and Streets (DMURS) are documents that seek to improve the safety and comfort for all users. The documents combined encompass all users of the road with both pedestrians and cyclists at the forefront of their design principles.

DMURS aim is provide safe, attractive, and comfortable facilities for all users that encompasses pedestrians and cyclists within towns and cities, providing a safe and pleasant place to live. The document aims to provide the practical measures to achieve;

- Highly connected streets which allow people to walk and cycle to key destinations in a direct and easy-to find manner.
- A safe and comfortable street environment for pedestrians and cyclists of all ages by reducing spaces that 'feel' safe for driving but are often hazardous places to walk or cycle.

Additionally, within National Cycle Manual NCM the 'Principles of Sustainable Safety' underpin the National Cycle Manual NCM (NTA) and were developed to reinforce all road design, particularly with regards to road safety. The principles comprise of 5 key principles;

- **Functionality**: The principle of functionality is that the design which is fit for purpose is safer. Urban streets and roads are always multi-functional. The functions are either movement or place related. It is important that the functions applicable to this scheme are understood and accommodated as far as practicable. In terms of movement, this will include pedestrians and cyclists (commuters, school/college, recreational trips); motor vehicles; and access to properties (private dwellings and commercial properties.
- **Homogeneity**: The principle of Homogeneity is that reducing the relative speed, mass and directional differences of different road users sharing the same space increases safety.
- **Legibility**: The principle of Legibility is that a road environment that all road users can read and understand is safer. All potential conflicts should be obvious to all users, potential hazards being able to be identified in advance and road users being able to visually communicate with each other. The scheme should ensure that the cycling regime is legible (e.g. is overtaking or two-abreast cycling possible), the facilities for cyclists to turn right across traffic should be legible, crossing locations should be properly positioned. The scheme's legibility should also be effective at night and in poor weather.
- **Forgiveness:** The principle of Forgivingness (Passive Safety) is that environments that contribute to benign outcomes are safer. Items to consider include physical hazards (e.g. gullies, lamp posts and trees); and provision of sufficient space between cyclists and motor traffic to allow for falling and evasion room.
- **Self-awareness**: The principle of Self-Awareness is that where road users are aware of their own abilities and limitations to negotiate a road environment, the environment is safer. This includes providing a higher quality of Service close to locations where cyclists are less experienced; providing alternative routes within an area that matches reduced ability; site specific information and signage; training for inexperienced users; and considering cycling challenges at different times of day or week.

3.1 Width

The National Cycle Manual width calculator is a tool to determine the appropriate width of a cycle lane or track. This includes three basic elements:

1. Space to the left of a cyclist;
2. Space required to support the cycling regime (two-abreast, single file, overtaking, etc); and
3. Space to the right of a cyclists.

This calculator also allows for other geometric features such as sharp bends, turning pockets for cyclists and loading bays/taxi ranks.

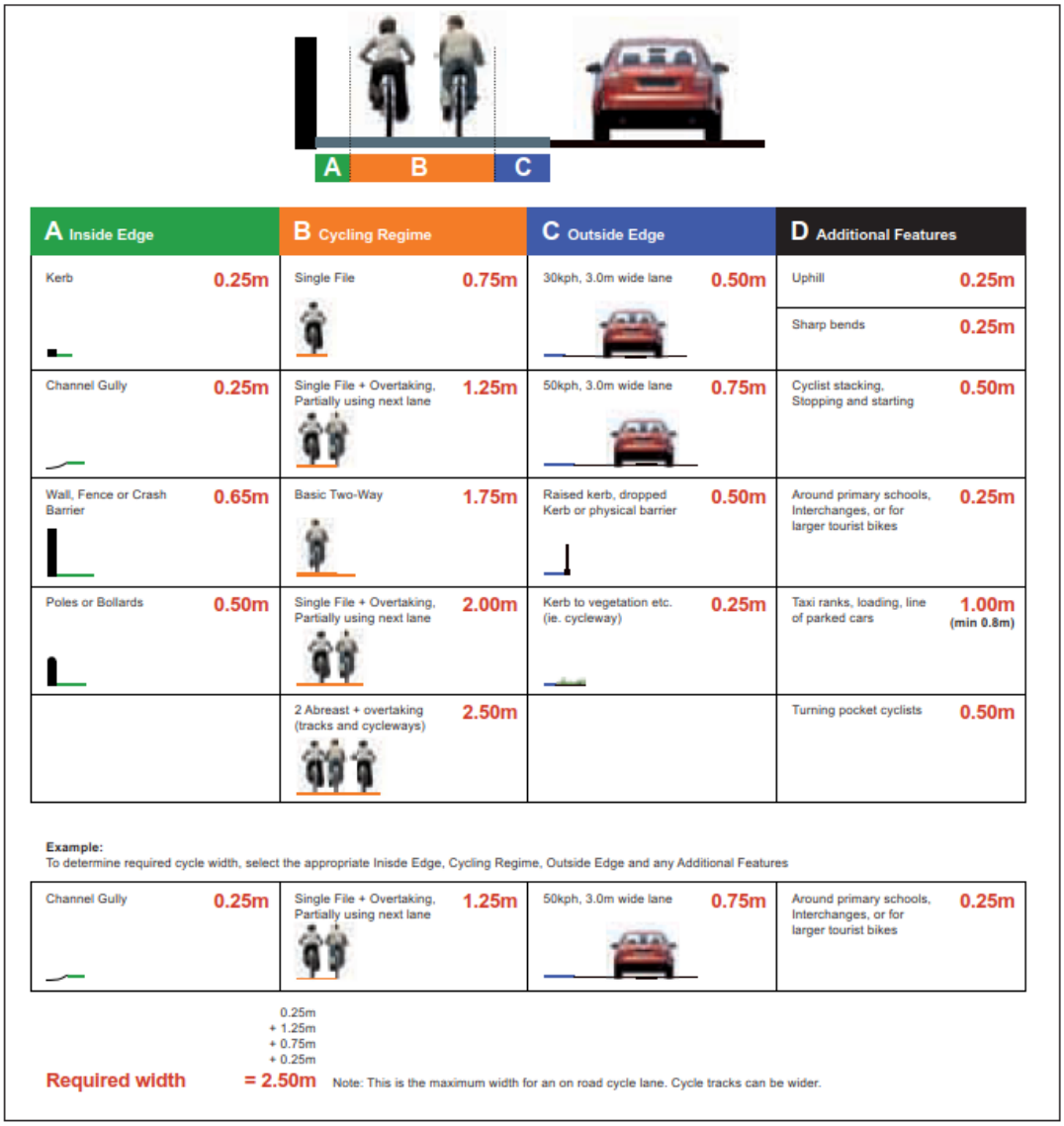


Figure 3-1 - Width Calculator (Source: National Cycle Manual)

Furthermore, the manual also provides tips to create additional effective width for cyclists. This includes reducing kerb heights between the cycle lane/track and footpath to 50mm or lower so that it doesn't catch the lower pedal of the bicycle and using side draining gullies in the cycle lane/track.

3.2 Integration and Segregation

The appropriate type of facility (mixed, cycle lane, cycle track) will be informed by the Principles of Sustainable Safety and the project objectives.

The National Cycle Manual provides guidance on the appropriate type of facility based on Principles of Sustainable Safety and the Hierarchy of Provision. The Cycle Provision Guidance Graph (Section 1.7.4 of the Manual) will inform the options considered in the assessment process. The typical options available are outlined in Section 1.6 of the National Cycle Manual and include: mixed traffic lanes, cycle lanes, cycle tracks (kerb or light segregation) and shared facilities (pedestrians and cyclists).

3.3 Junctions

The Clonskeagh to Charlemont Street Scheme will intersect with junctions, side streets and property accesses along the route. In keeping with the National Cycle Manual, the proposed route option will seek to minimise the frequency of these conflicts, and reduce possible journey time delays.

As cyclists will have to travel through several signalised junctions along the route, the safe progression of cyclists through these junctions in a timely manner will have to be considered carefully. This can be done by providing

cyclists with physical segregation, advanced stop lines/advanced stacking locations, a dedicated signal stage or providing cyclists with an ‘early start’ traffic signal.

A second design principle that will have to be considered in relation to junctions is ensuring that cyclists are not impeded while looking to access the stop line of a junction. This could include providing dedicated segregation in advance of the stop line so that cyclists will not be impeded by other queuing vehicles or parked vehicles.

3.4 Access and Interchange

The connection of the scheme with other existing facilities (for example, the existing Grand Canal Cycleway and Dodder Greenway) and the ability to interchange with bus routes will be important in providing a sustainable and effective route. This will include facilities for other cyclists to safely and easily access or egress the cycle route at various points. Furthermore, the provision of safe, universally accessible crossing facilities and bus stops for pedestrians will be a key design consideration.

3.5 Impact on Other Modes of Transport

The impact of feasible options for Clonskeagh to Charlemont Street Cycle scheme on other modes of transport in terms of diversion effects, capacity, etc. will need to be assessed and balanced with other transport needs particularly public transport, where possible. This will include consideration of accesses to properties, loading requirements to businesses, and emergency services using the route.

4. Existing Conditions

For the purposes of examining existing conditions and assessing design options the Clonskeagh to Charlemont Street Scheme has been divided into five sections as shown in Figure 4-1. All sections are currently restricted by a 50km/h speed limit, the existing characteristics of each route section is summarised below. Detailed maps of each route section can be found in Paragraph 4.1.

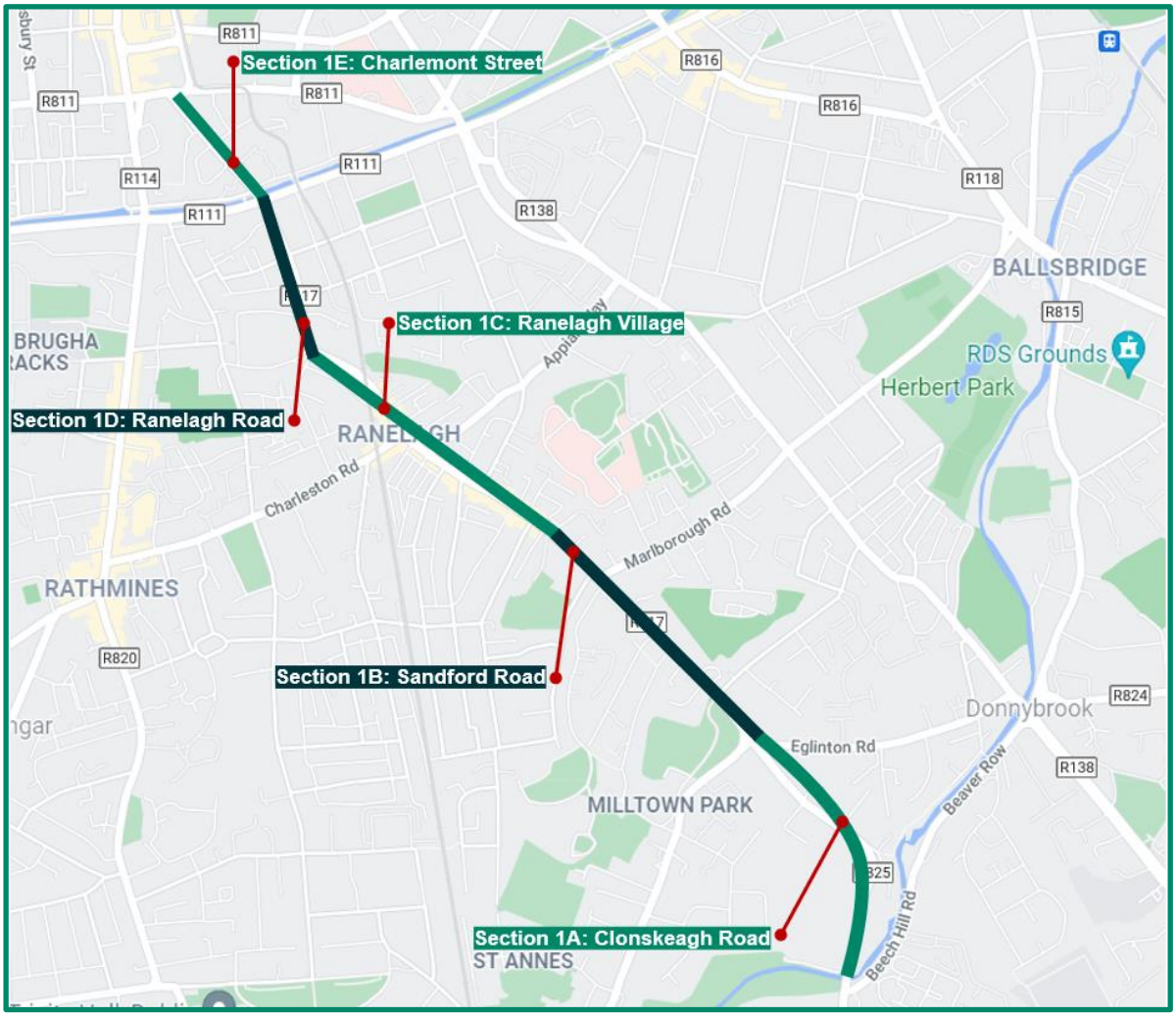


Figure 4-1 - Route Sections

4.1 Existing Roadway Arrangements & Constraints

The Cycle Design Office have undertaken a review of the previous studies and background information alongside site visits and desktop study. The review focused on both pedestrians and cyclists. The route was cycled twice from end to end with a GoPro camera recording real-time information on the route and identifying the constraints and delays for cyclists.

Existing constraints and arrangements specific to this scheme were identified as part of this review and are summarised below in Table 4-1 - Table 4-5 for convenience.

4.1.1 Section 1A: Clonskeagh Road

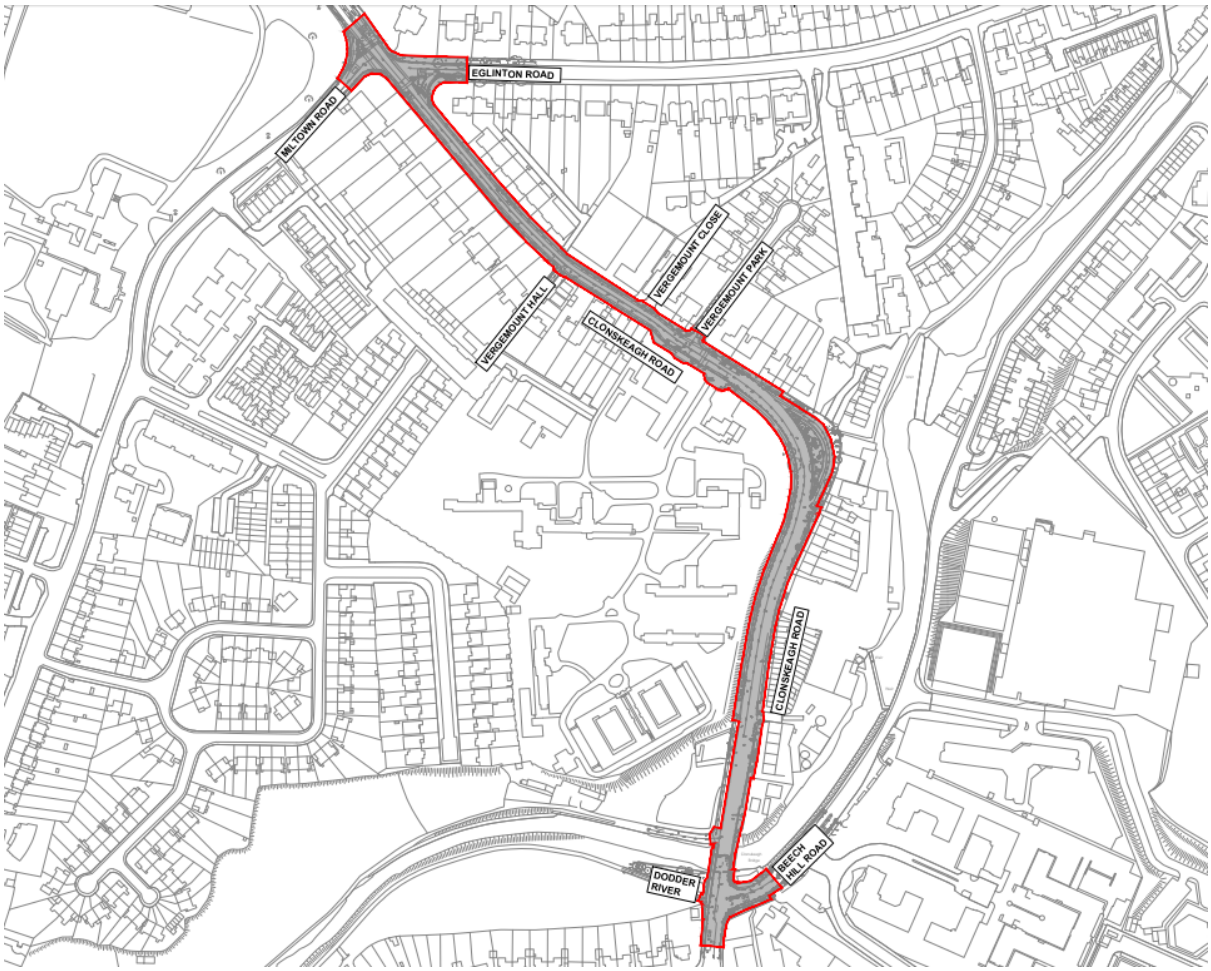


Figure 4-2 - Section 1A: Clonskeagh Road

Currently one way cycle lane facilities are present along both sides of the road varying in width 1.25m to 1.5m width no segregation. There are conflicts between cyclists and motor turning movements at the Ellington Road and Milltown Road Junction. A section of approximately 80m of pedestrian guardrail poses a risk to cyclists and pedestrians becoming trapped on the road, between vehicles and the railing. Cycle lanes run adjacent to parking spaces; buffer zone is absent on the city bound lanes. A pinch point at the Clonskeagh Hospital results in a narrow radius for cyclists to manoeuvre. Connectivity to the River Dodder greenway is not easily accessed or sign posted.

The Clonskeagh Road section is approximately 982m in length with a typical road width of 8-11.5m. This section caters for greater than 21,000 veh/day Cycle lane lengths are restricted by temporary operational hours 07:00 – 19:00, Mon-Sat. Pedestrians are catered for with controlled crossings at junctions and uncontrolled crossings at side roads. 6no. public transport bus stops are located along the section (3 inbound and 3 outbound, Dublin Bus No.11). Private motor vehicles benefit from pay-and-display roadside parking.

Junctions along the section include;

Two signalised junctions:

- Signalised T-junction with Beech Hill Road, including two signalised pedestrian crossings straight and left lanes southbound on Clonskeagh Road at the junction, left and right turn lanes on Beech Hill Road at the junction and straight and right turn lanes northbound on Clonskeagh Road at the junction;
- Signalised four-arm junction with Eglington Road and Milltown Road and Sandford Road/Clonskeagh Road, including signalised pedestrian crossings across Clonskeagh Road, Milltown Road and Eglington Road. Both Milltown Road and Eglinton Road have slip lanes.

Signalised pedestrian crossings.

- Clonskeagh Hospital and Vergemount Park.

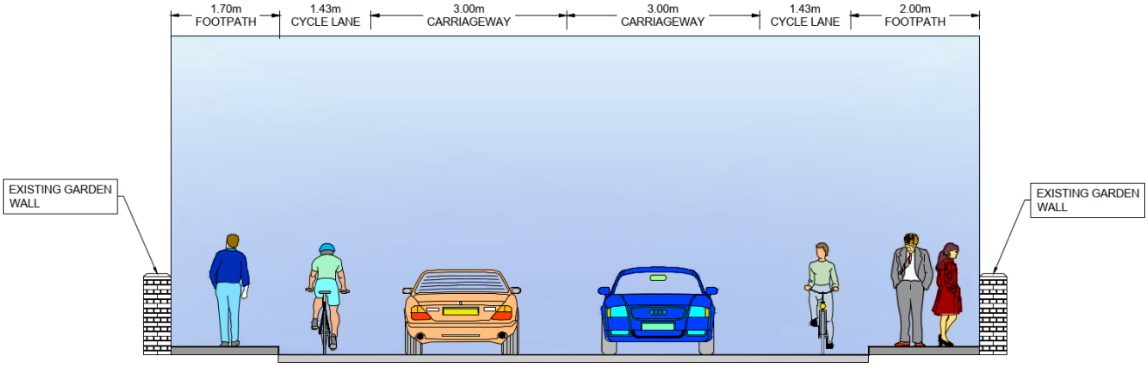


Figure 4-3 - Typical existing road cross section on Clonskeagh Road

Figure 4-4 - Imagery of existing road cross section on Clonskeagh Road

Table 4-1 - Section 1A: Clonskeagh Road

Section 1A Clonskeagh Road	
Section Length:	Approximately 982m
Speed Limit:	50 kph
Traffic Volume (AADT):	21,000 vehicles / day
Existing Carriageway Width:	Approximately 8m to 11.5m
Junctions & Crossings	1 x signalised junction of three-arms 1 x signalised junction of four-arms 2 x signalised pedestrian crossings and 6 x non-signalised junctions
Cycle Facilities	Cycle lanes on both sides, some stretches operational hours 07:00 – 19:00 Monday to Saturday. cycle lane width vary between 1.25m – 1.7m. No bicycle parking available.
Bus Services	Three bus stops in each direction (3 inbound and 3 outbound, Dublin Bus No.11). Bus shelter provided at two stops in each direction.
Parking and Loading Bays	Approximately 370m pay-and-display roadside parking (bays unmarked).
Existing Utilities	Most utilities are located underground. Public lighting present throughout on either one side or both. Overhead cable present in a number of locations north of Clonskeagh Hospital.
Existing Trees	Route is tree lined in part.

4.1.2 Section 1B: Sandford Road

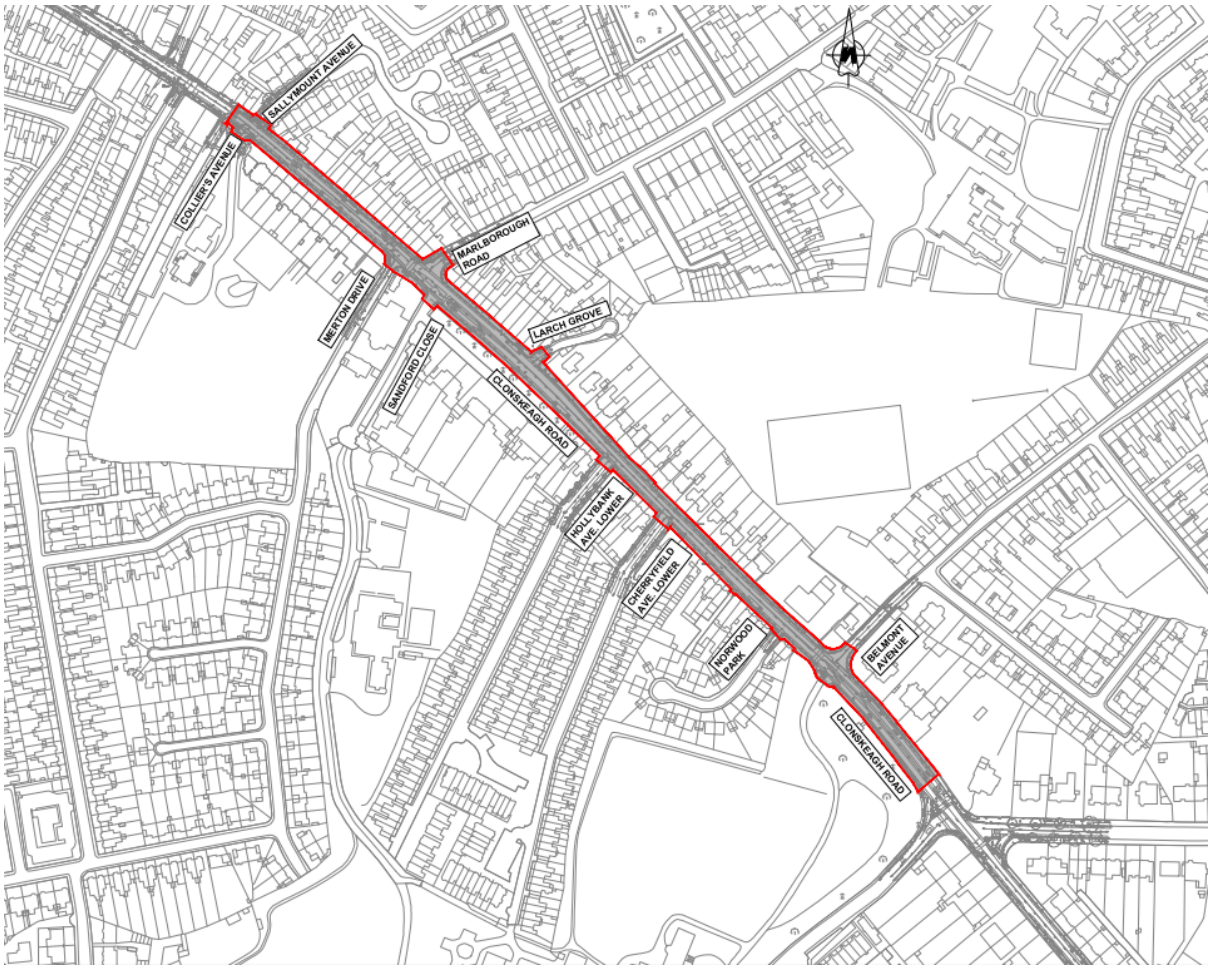


Figure 4-5 - Section 1B: Sandford Road

One way cycle lane facilities are present along both sides of the road varying in width 1.25m to 1.5m width. There are conflicts between cyclists and motor turning movements at the Marlborough Road, Merton Drive and Sandford Close Junction. The route section is 771m in length with typical road width 9-13m catering for greater than 22,000 veh/day.

Cycle lanes are restricted by temporary operational hours 07:00 – 19:00, Mon- Sat. Pedestrians are catered for with both controlled and uncontrolled crossings at junctions and side roads. 6no. Public transport bus stops are located along the scheme (3no. inbound and 3no. outbound, Dublin Bus No. 11, 44, and 61).

Junctions along the section include;

One signalised junction:

- Signalised four-arm junction with Marlborough Road and Sandford Close and Sandford Road, including signalised pedestrian crossing across Sandford Road between Marlborough Road and Merton Drive.

One signalised pedestrian crossing:

- Anna Villa junction – across Sandford Road

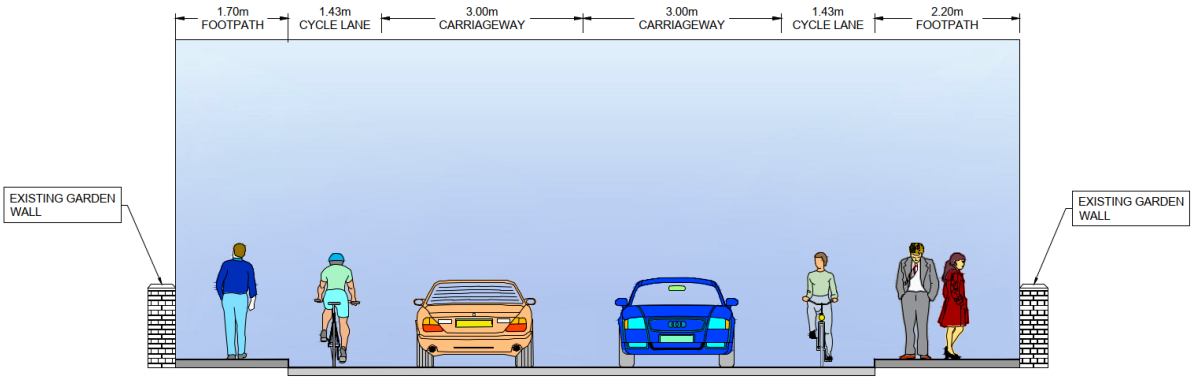


Figure 4-6 - Typical existing cross section on Sandford Road

Figure 4-7 - Imagery of existing road cross section on Sandford Road

Table 4-2 - Section 1B: Sandford Road

Section 1B: Sandford Road

Section Length:	Approximately 771m
Speed Limit:	50 kph
Traffic Volume (AADT):	22,000 vehicles / day
Existing Carriageway Width:	Approximately 9m to 13m.
Junctions & Crossings	1 x signalised junction of four-arms 1 x signalised pedestrian crossing; and 7 x non-signalised junctions
Cycle Facilities	Cycle lanes on both sides, some stretches operational hours 07:00 – 19:00 Monday to Saturday. cycle lane width vary between 1.25m – 1.5m. No bicycle parking available.
Bus Services	Three bus stops in each direction (3 inbound and 3 outbound, Dublin Bus No.11). Bus shelter provided at one stop in each direction.
Parking and Loading Bays	No pay-and-display roadside parking. No marked loading bays.
Existing Utilities	Most utilities are located underground. Public lighting present throughout on either one side or both. Overhead cable present north of the Merton Road junction.
Existing Trees	Route is tree lined in part, more extensively on the eastern footpath.

4.1.3 Section 1C: Ranelagh Village

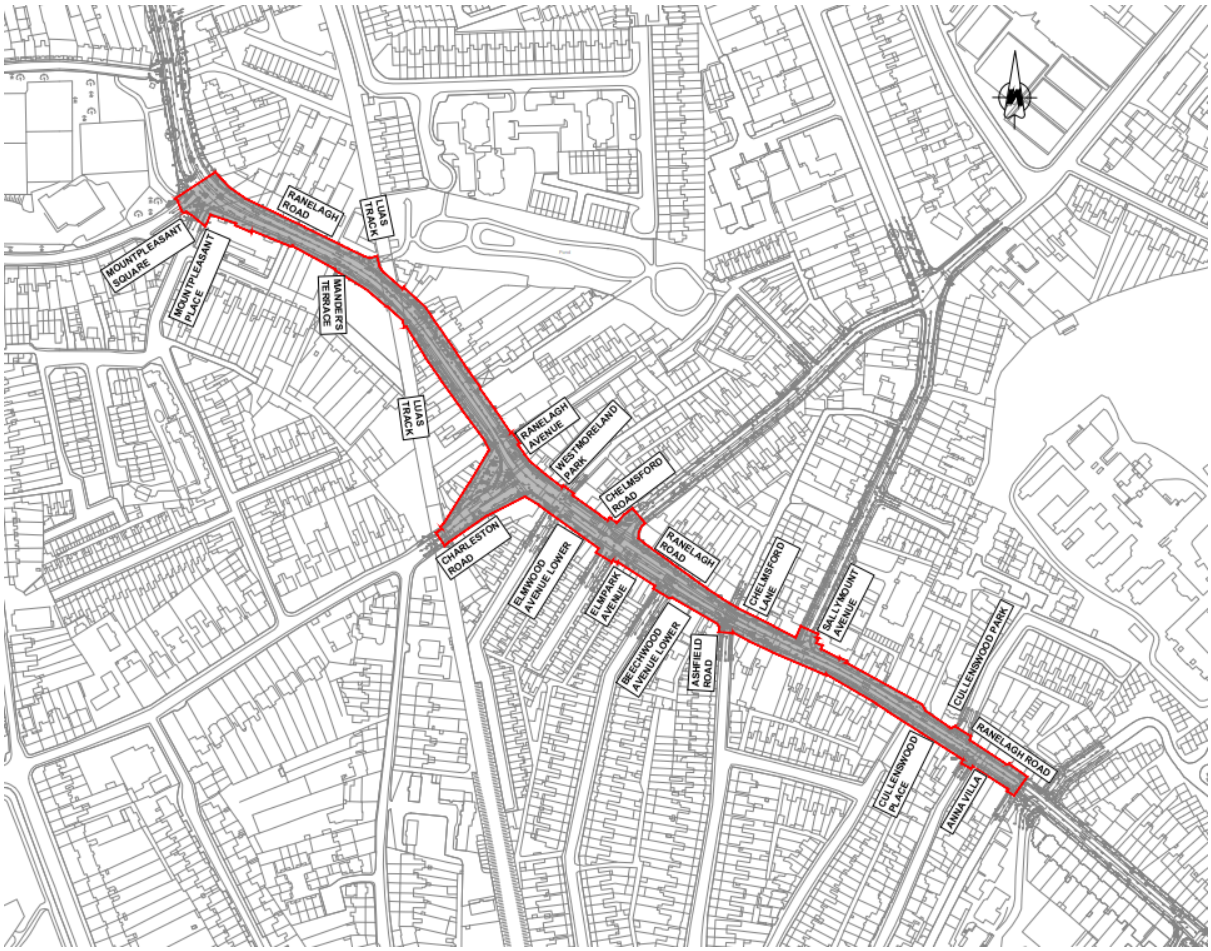


Figure 4-8 - Section 1C: Ranelagh Village

One way cycle lane facilities are present along both sides of the road varying in width 1.25m to 1.5m width. Cycle lanes are interrupted by several part time parking and loading bays. The cycle facilities are non-continuous, on approach to Ranelagh Village cycle lane provision stops for a section and is absent though the junction between Chelmsford Road and Charleston Road to allow 4no. traffic lanes though the junction. There are conflicts between cyclists and motor turning movements at the Charleston Road and Chelmsford Avenue Junctions.

The section is approximately 545m in length with typical road width 8-19m. This section caters for greater than 18,000 veh/day. Pedestrians are catered for with both controlled and uncontrolled crossings at junctions and side roads. 4no. public transport bus stops are located along the scheme (2no. in each direction). Private motor vehicles benefit from pay-and-display roadside parking and marked loading bays on Ranelagh Road.

Junctions along the section include;

Two signalised junctions staggered closely together with a single traffic signalling plan:

- Signalised three-arm junction with Charleston Road including three signalised pedestrian crossings across Ranelagh Road, Charleston Road, and left-turning slip lane from Charleston Road;
- Signalised four-arm junction with Chelmsford Avenue, Elmpark Avenue (residential access road) including one signalised pedestrian crossing across Ranelagh Road;
- Note that a non-signalised four-arm junction with Westmoreland Park and Elmwood Avenue Lower (both residential access roads) is located between Charleston Road junction and Chelmsford Avenue junction.

Two signalised pedestrian crossings:

- Ranelagh Luas Station – across Ranelagh Road
- Sallymount Avenue junction – across Ranelagh Road

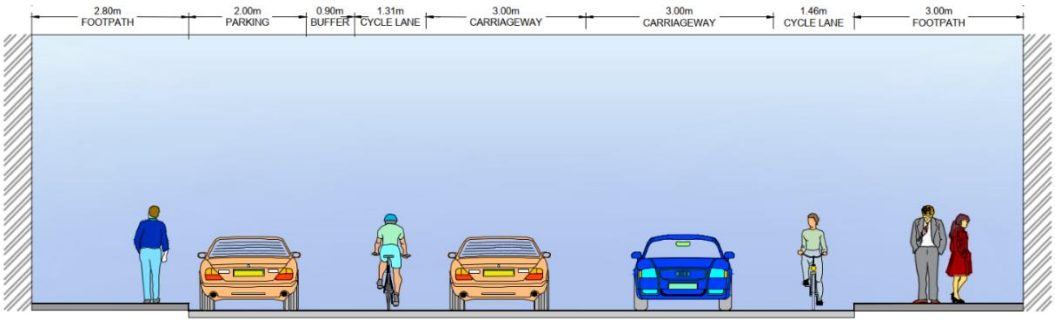


Figure 4-9 - Typical existing road cross section at Ranelagh Village

Figure 4-10 - Imagery of existing road cross section at Ranelagh Village

Table 4-3 - Section 1C: Ranelagh Village

Section 1C: Ranelagh Village	
Section Length:	Approximately 545m
Speed Limit:	50 kph
Traffic Volume (AADT):	18,000 vehicles / day
Existing Carriageway Width:	Approximately 8m to 13.5m.
Junctions & Crossings	2 x staggered junctions of three-arms and four-arms, operating on a single traffic-signalling plan; 2 x signalised pedestrian crossings; and 8 x non-signalised junctions
Cycle Facilities	Cycle lanes on both sides except between Charleston Road junction and Chelmsford Road junction, with operational hours 07:00 – 19:00 Monday to Saturday. Cycle lane widths vary between 0.9m – 1.5m. Limited bicycle parking available.
Bus Services	Two bus stops in each direction. Bus shelter provided at one stop in each direction.
Parking and Loading Bays	25no. pay-and-display roadside parking. 2no. marked loading bays on Ranelagh Road.
Existing Utilities	Green Line Luas track overhead and station located near access to Ranelagh Gardens. Most utilities are located underground. Public lighting present throughout on either one side or both. Overhead cable present southeast of Charleston Road junction.
Existing Trees	Route is tree lined in part to the north of the Charleston Road junction.

4.1.4 Section 1D: Ranelagh Road

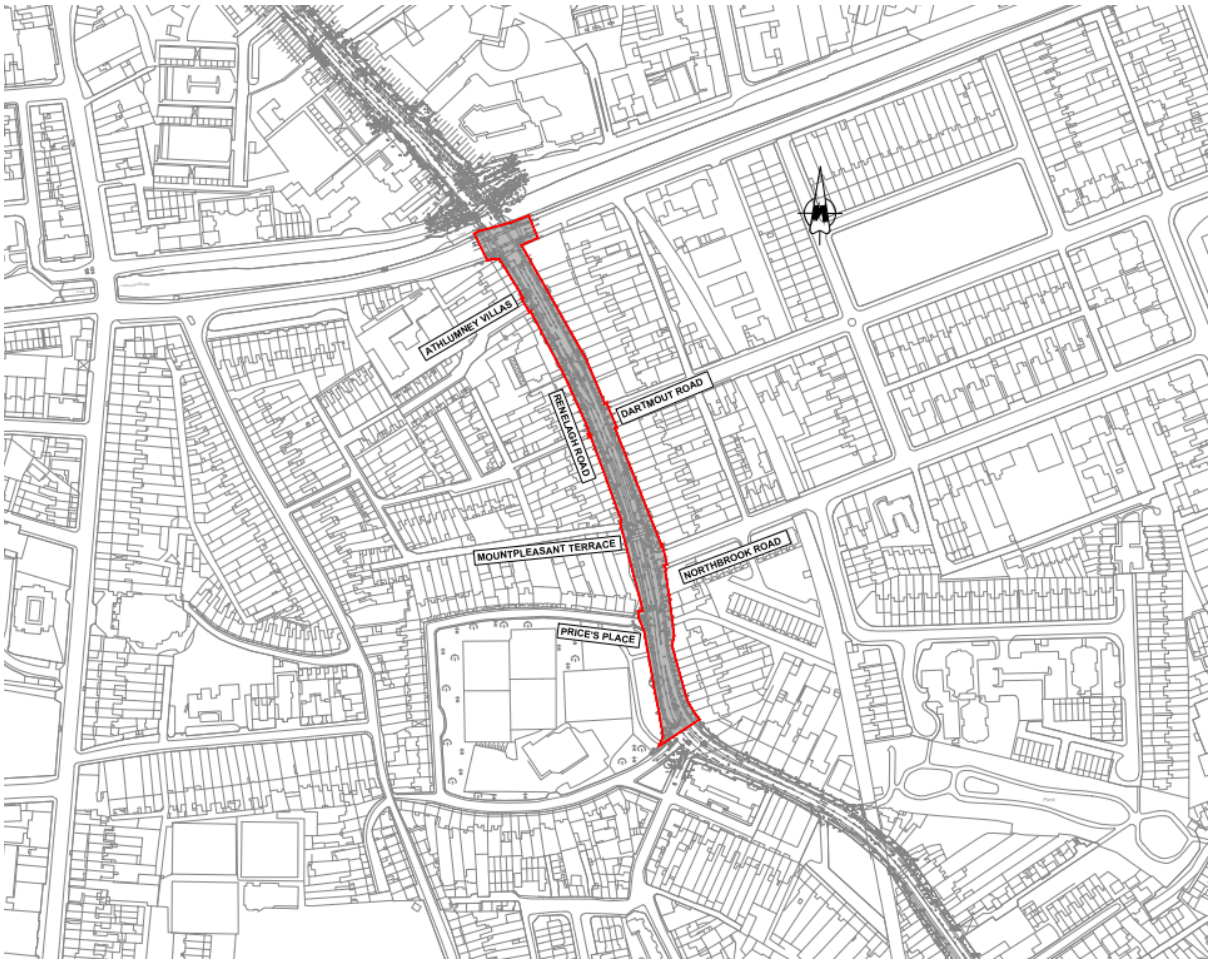


Figure 4-11 - Section 1D: Ranelagh Road

One way unsegregated cycle lane facilities are present along both sides of the road varying in width 1.25m to 1.5m width. Cycle lanes city bound share road space with part time bus lanes. Cycle facilities are interrupted by part time parking.

The section is approximately 544m in length with typical road width 10-17m. The section caters for greater than 16,000 veh/day. Pedestrians are catered for with both controlled and uncontrolled crossings at junctions and side roads. 3no. public transport bus stops are located along the scheme (2no. bus stops inbound, 1no. bus stop outbound) however not all have bus shelters. Private motor vehicles benefit from pay-and-display roadside parking on Ranelagh Road.

Junctions along the section include;

One signalised junction:

- Signalised four-arm junction with Canal Road and Grand Parade including three signalised pedestrians crossing across Ranelagh Road, Grand Parade and Canal Road.

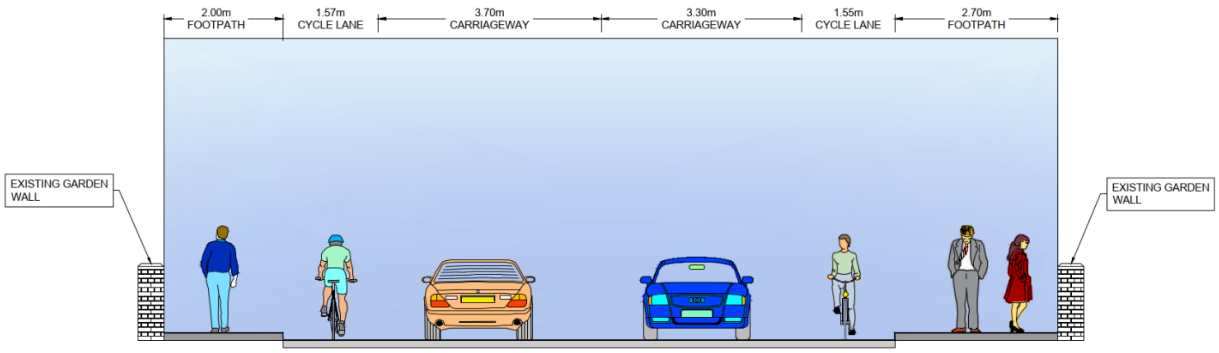


Figure 4-12 - Typical existing road cross section on Ranelagh Road

Figure 4-13 - Imagery of existing road cross section on Ranelagh Road

Table 4-4 - Section 1D: Ranelagh Road

Section 1D: Ranelagh Road	
Section Length:	Approximately 544m
Speed Limit:	50 kph
Traffic Volume (AADT):	16,000 vehicles / day
Existing Carriageway Width:	Approximately 10m to 17.5m.
Junctions & Crossings	1 x signalised junction of four-arms; 1 x signalised pedestrian crossings; and 9 x non-signalised junctions
Cycle Facilities	Cycle lanes on both sides, some stretches operational hours 07:00 – 19:00 Monday to Saturday. Cycle lane widths vary between 1.25m – 1.5m. Limited bicycle parking available.
Bus Services	Two bus stops inbound, one bus stop outbound. Bus shelter provided at one stop inbound.
Parking and Loading Bays	Approximately 130m of pay-and-display roadside parking shared with time plated cycle track / bus lane. 2no. marked loading bays on Ranelagh Road.
Existing Utilities	Most utilities are located underground. Public lighting present throughout on either one side or both. Overhead cable present at Mountpleasant Place junction.
Existing Trees	Route is tree lined in part, with some very mature trees present.

4.1.5 Section 1E: Charlemont Street

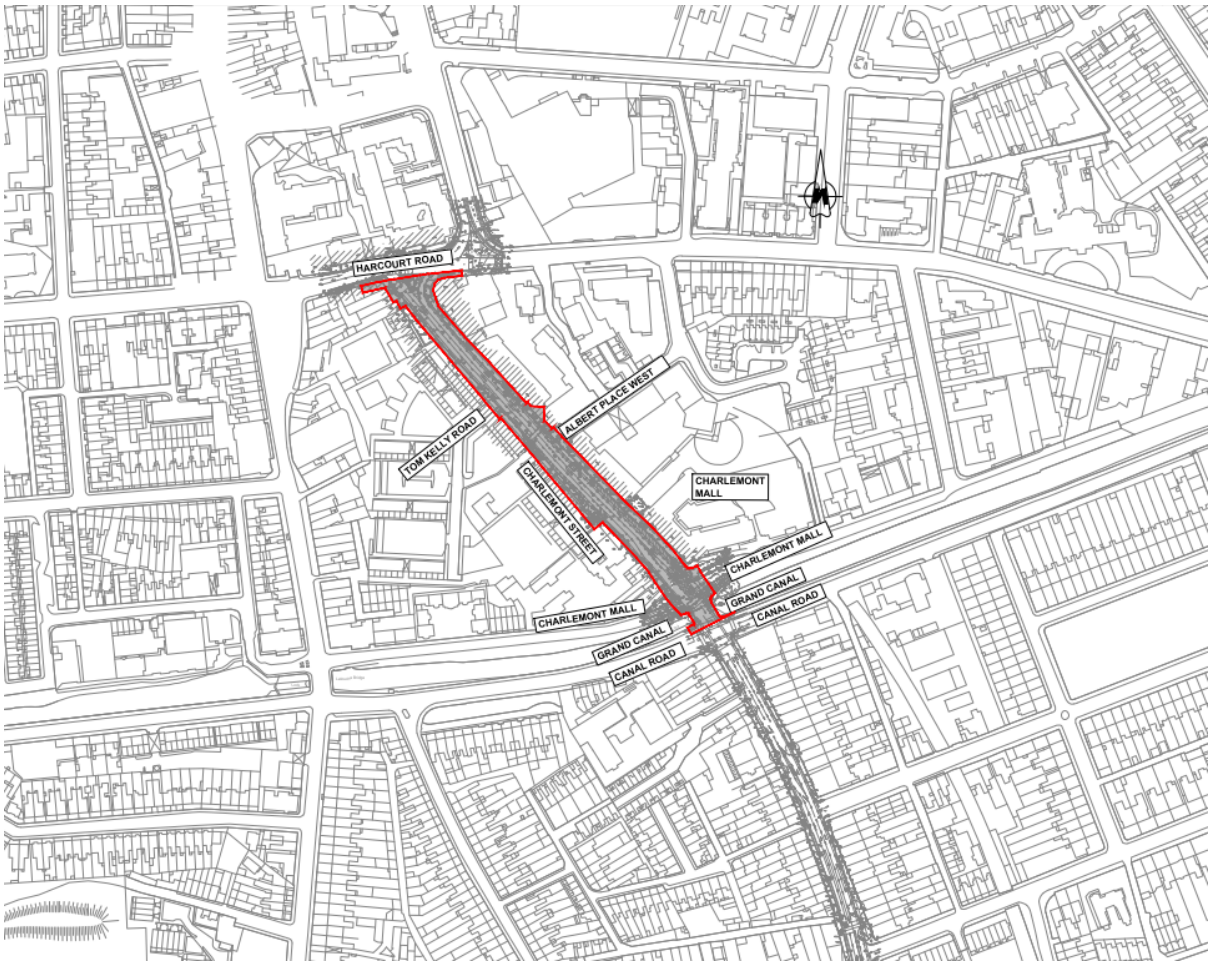


Figure 4-14 - Section 1E: Charlemont Street

One way unsegregated cycle lane facilities are present along both sides of the road varying in width 1.25m to 1.5m width. Cycle lanes city bound share road space with a part time bus lane and are interrupted by part time parking. Conflicts with junctions at the Charlemont bridge between cyclist and motor vehicles and issues with connectivity to the Grand Canal Greenway is not easily accessed or sign posted.

The Charlemont Street section is approximately 340m in length with typical road width 11.7m - 17.5m. This section caters for greater than 13,900 veh/day. Pedestrians are catered for with both controlled and uncontrolled crossings at junctions and side roads. Public transport bus stops 2no. are located along the scheme, however only one has a bus shelter (outbound). Private motor vehicles benefit from full-time pay-and-display roadside parking, pay-and-display roadside parking shared with time plated cycle track/bus lane and marked loading bays on Charlemont Street.

Junctions along the section include;

One signalised junction:

- Signalised four-arm junction with Charlemont Mall, Charlemont Place and with Charlemont Street /Ranelagh Road, including three signalised pedestrians crossing at Charlemont Mall, Charlemont Place and with Charlemont Street /Ranelagh Road.

Two signalised pedestrian crossings:

- Charlemont Street / Harcourt Road;

One signalised toucan crossing:

- Charlemont Street / Albert Place

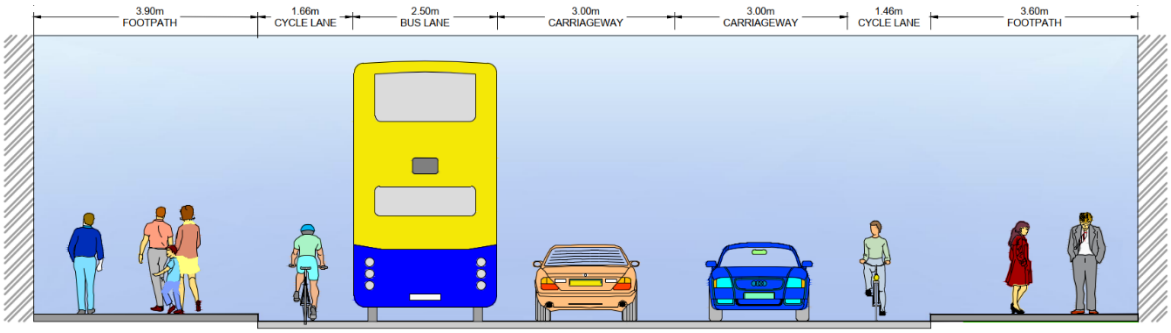


Figure 4-15 - Typical existing road cross section on Charlemont Street

Figure 4-16 - Imagery of existing road cross section on Charlemont Street

Table 4-5 - Section 1E: Charlemont Street

Section 1E: Charlemont Street

Section Length:	Approximately 340m
Speed Limit:	50 kph
Traffic Volume (AADT):	11,167 vehicles / day
Existing Carriageway Width:	Approximately 11.7m to 15.5m.
Junctions & Crossings	1 x signalised junction of four-arms including signalised toucan crossing; 1 x signalised toucan crossing 2 x signalised pedestrian crossings; and 3 x non-signalised junctions
Cycle Facilities	Non mandatory Cycle lanes on both sides of Charlemont Street, some stretches operational hours 07:00 – 19:00 Monday to Saturday. Cycle lane widths vary between 1.2m – 1.5m. Limited bicycle parking available.
Bus Services	One bus stop inbound, One bus stop outbound. One bus shelter provided at outbound bus stop.
Parking and Loading Bays	14no. full-time pay-and-display roadside parking. 12no. pay-and-display roadside parking shared with time plated cycle lane / bus lane. 2no. marked loading bays on Charlemont Street.
Existing Utilities	Most utilities are located underground. Public lighting present throughout on either one side or both.
Existing Trees	None present.

4.2 Route Characteristics

The Clonskeagh Road through to Ranelagh Road is a single carriageway road prior to the approach to Charlemont Street bridge where three traffic lanes are present and a section through Ranelagh Village where four traffic lanes are existing between Charleston Road and Chelmsford Avenue. Between Charlemont Street and Harcourt Road the road layout changes to a three-lane two-way carriageway, including some sections of a city bound bus lane.

Further details of this are expanded upon in section 7 of this report.

4.3 Road junctions

The Clonskeagh to Charlemont Street Scheme will intersect with a number of junctions, side streets and property accesses along the route. In keeping with the National Cycle Manual and DMURS, the proposed route will seek to minimise the frequency of these conflicts and reduce possible journey time delays and providing routes along desire lines.

At junctions, cyclists are susceptible to collisions, in particular when performing turning movements. Along the route cyclists performing right turns must navigate from the offside cycle lane position to occupy a vulnerable position in the right side of the nearside traffic lane. Cyclists must then wait for an opportunity to manoeuvre the right turn. This can lead to side wipe and rear end collision types.

Similarly, cyclists intending to turn left must follow from the offside cycle lane through the junction into side roads, in this scenario cyclist are vulnerable to corralling form motor vehicles performing the same movement. On a left turn movement both users require the space available within the side road width occupying the same lane, this may not be apparent to succeeding motorists when junctions have wide sweeping junction entry mouths

In addition, when cyclist are positioned in the offside cycle lane a risk of left hook type collisions is present at junctions where vehicles to the right side of cyclists intend to perform a left turn. In this scenario cyclists are following straight through the junction on the far side blind spot of the motor user.

Furthermore, the route presents clusters and long starches of private residential and commercial accesses, these interfaces present as hazardous to cyclists where vehicles emerging or entering the access point are not aware of the oncoming cycle movement risk of a hook or side on collision type are prevalent in these scenarios.

4.4 Dublinbikes Stations

Along the route, there is one Dublinbikes station located on Charlemont Place which intersects with Charlemont Street. The station at Charlemont Place has 26 bikes stands, 20 pedal cycles and 6 electric assisted pedal cycles.

4.5 Road Collision Data

A Road Safety Authority (RSA) database of personal injury collisions was examined to establish if there are any existing safety issues within the site. The database provides collision records for the period 2005 to 2016, with 2016 being the most recent available data. The figures below outline the recorded collisions over the 11-year period into 3 categories of severity; Fatal, Serious and Minor with the key for the figures shown in Figure 4-17.

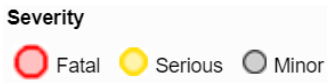


Figure 4-17 - Road Collision Data Key

Collision data was reviewed in five sections of the route, the five sections are as follows;

- Section 1A: Clonskeagh Road
- Section 1B: Sandford Road
- Section 1C: Ranelagh Village
- Section 1D: Ranelagh Road
- Section 1E: Charlemont Street

4.5.1 Section 1A

A review of the collision data within Section 1A from Clonskeagh Road to Sandford Road shows there was a total of 30no. incidents within the section over the 11-year period. From the 30no. recorded incidents there was 1no. fatal incident, 2no. serious incidents and 27no. minor incidents. A cluster of accidents are located at the Eglinton/Milltown Road junction and Beech Hill Road/Clonskeagh Road Junction.

Table 4-6 below provides a summary of the collisions involving pedestrians, bicycles, and motorised vehicles along the section and Figure 4-18 provides the locations of the collisions.

Table 4-6 - Summary of Collisions from Clonskeagh Road to Sandford Road

Location	Mode	No. Incidents	No. Fatal	No. Serious	No. Minor
Clonskeagh Road to Sandford Road	Pedestrians	4	-	-	4
	Bicycle	8	-	-	8
	Motorised Vehicles	18	1	2	15

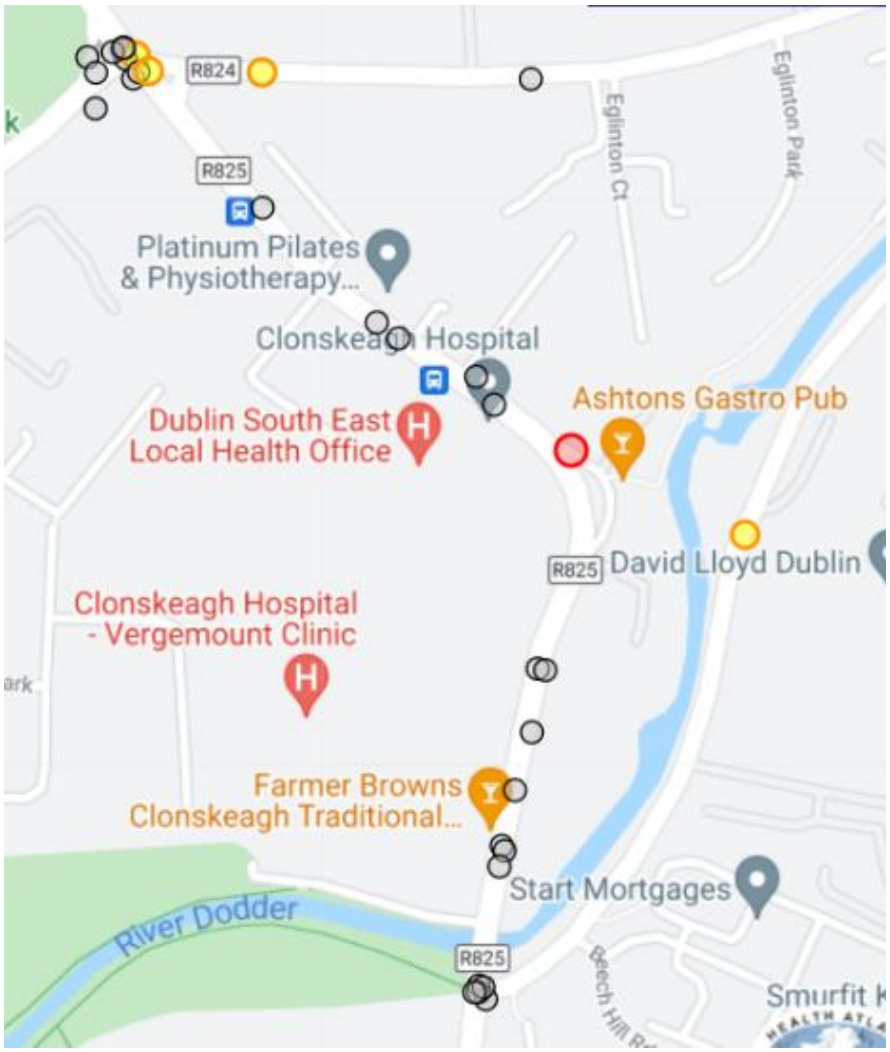


Figure 4-18 - Section 1A Collision Record (Source RSA.ie)

4.5.2 Section 1B

A review of the collision data within Section 1B from Sandford Road to Ranelagh Village shows there was a total of 24no. incidents within the section over the 11-year period. From the 24no. recorded incidents there were zero fatal incidents, 2no. serious incidents and 22no. minor incidents. A cluster of accidents are located at the Marlborough Road Junction.

Table 4-7 below provides a summary of the collisions involving pedestrians, bicycles, and motorised vehicles along the section and Figure 4-19 provides the locations of the collisions.

Table 4-7 - Summary of Collisions from Sandford Road to Ranelagh Village

Location	Mode	No. Incidents	No. Fatal	No. Serious	No. Minor
Sandford Road to Ranelagh Village	Pedestrians	2	-		2
	Bicycle	7	-		7
	Motorised Vehicles	15	-	2	13

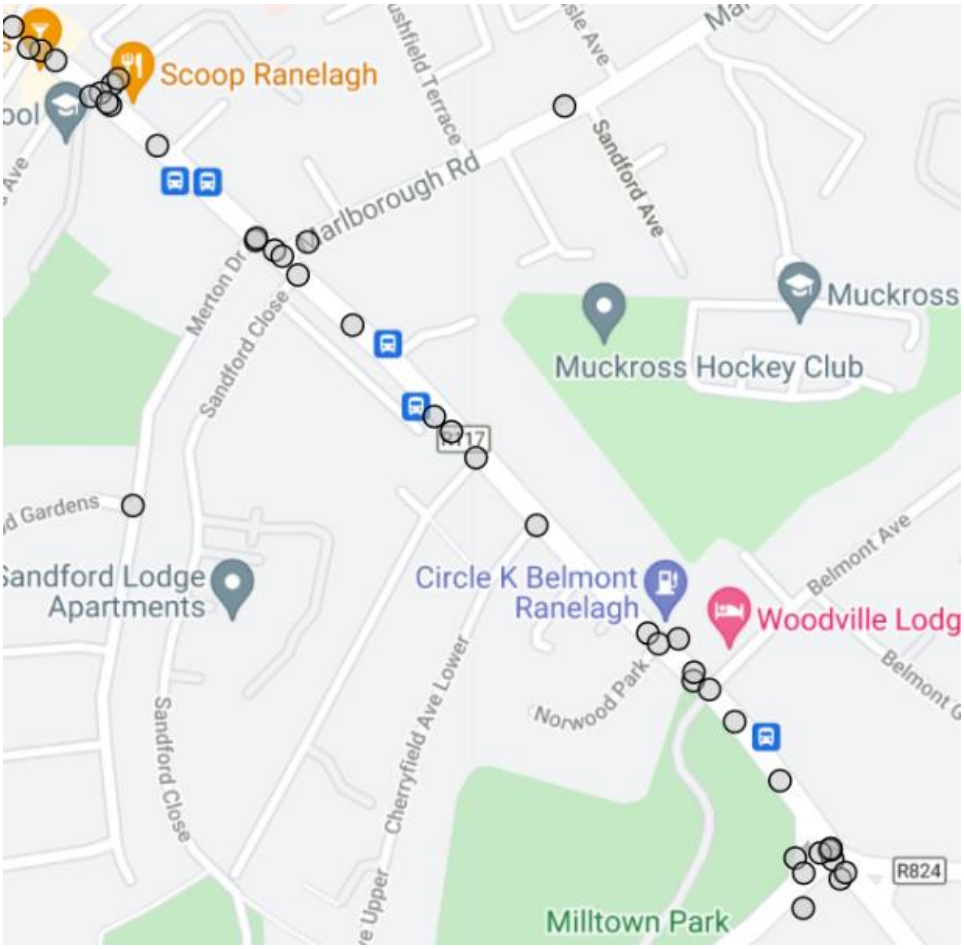


Figure 4-19 - Section 1B Collision Record (Source RSA.ie)

4.5.3 Section 1C

A review of the collision data within Section 1C from Ranelagh Village to Ranelagh Road shows there was a total of 51no. incidents within the section over the 11-year period. From the 51no. recorded incidents there were 1no. fatal incident, 4no. serious incidents and 46no. minor incidents. A cluster of accidents are located at the Chelmsford Road junction.

Table 4-8 below provides a summary of the collisions involving pedestrians, bicycles, and motorised vehicles along the section and Figure 4-20 provides the locations of the collisions.

Table 4-8 - Summary of Collisions from Ranelagh Village to Ranelagh Road

Location	Mode	No. Incidents	No. Fatal	No. Serious	No. Minor
Ranelagh Village to Ranelagh Road	Pedestrians	12	1		11
	Bicycle	14	-	2	12
	Motorised Vehicles	25	-	2	23

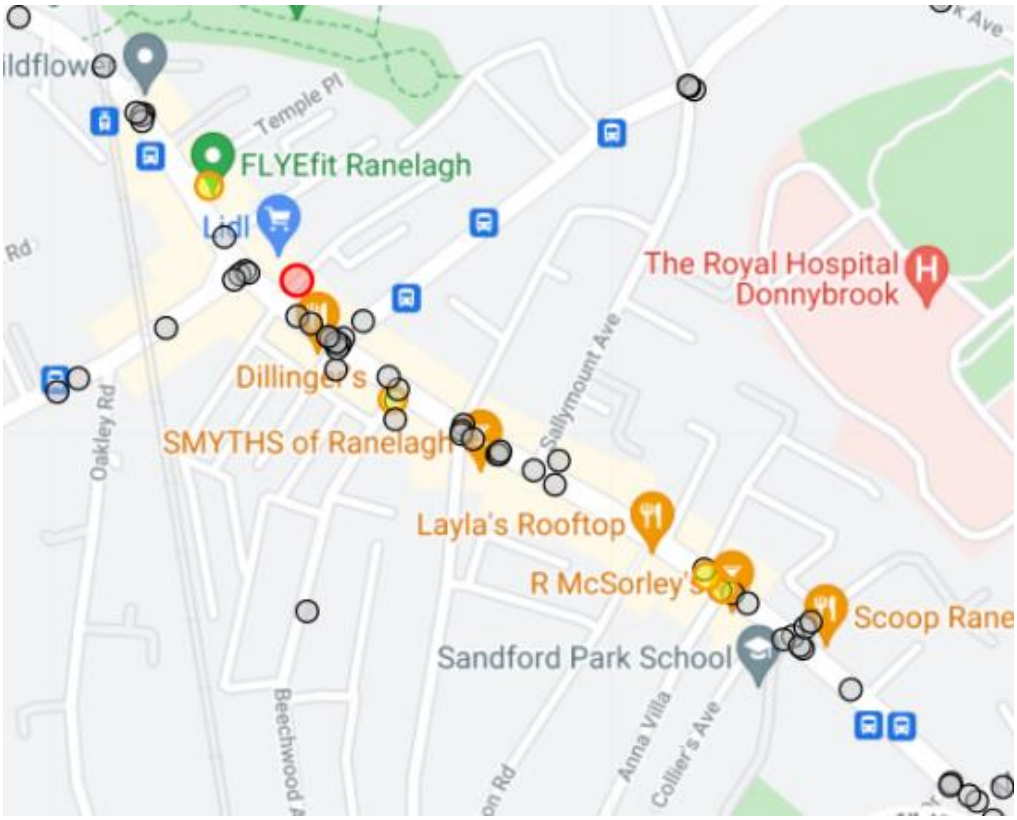


Figure 4-20 - Section 1C Collision Record (Source RSA.ie)

4.5.4 Section 1D

A review of the collision data within Section 1D from Ranelagh Road to Charlemont Street shows there was a total of 39no. incidents within the section over the 11-year period. From the 39no. recorded incidents there were zero fatal incidents, 6no. serious incidents and 33no. minor incidents. A cluster of accidents are located at the Ranelagh Road/Grand Parade Junction and Northbrook Road Junction.

Table 4-9 below provides a summary of the collisions involving pedestrians, bicycles, and motorised vehicles along the section and Figure 4-21 provides the locations of the collisions.

Table 4-9 - Summary of Collisions from Ranelagh Road to Charlemont Street

Location	Mode	No. Incidents	No. Fatal	No. Serious	No. Minor
Ranelagh Road to Charlemont Street	Pedestrians	5	-	1	4
	Bicycle	9	-	4	5
	Motorised Vehicles	25	-	1	24

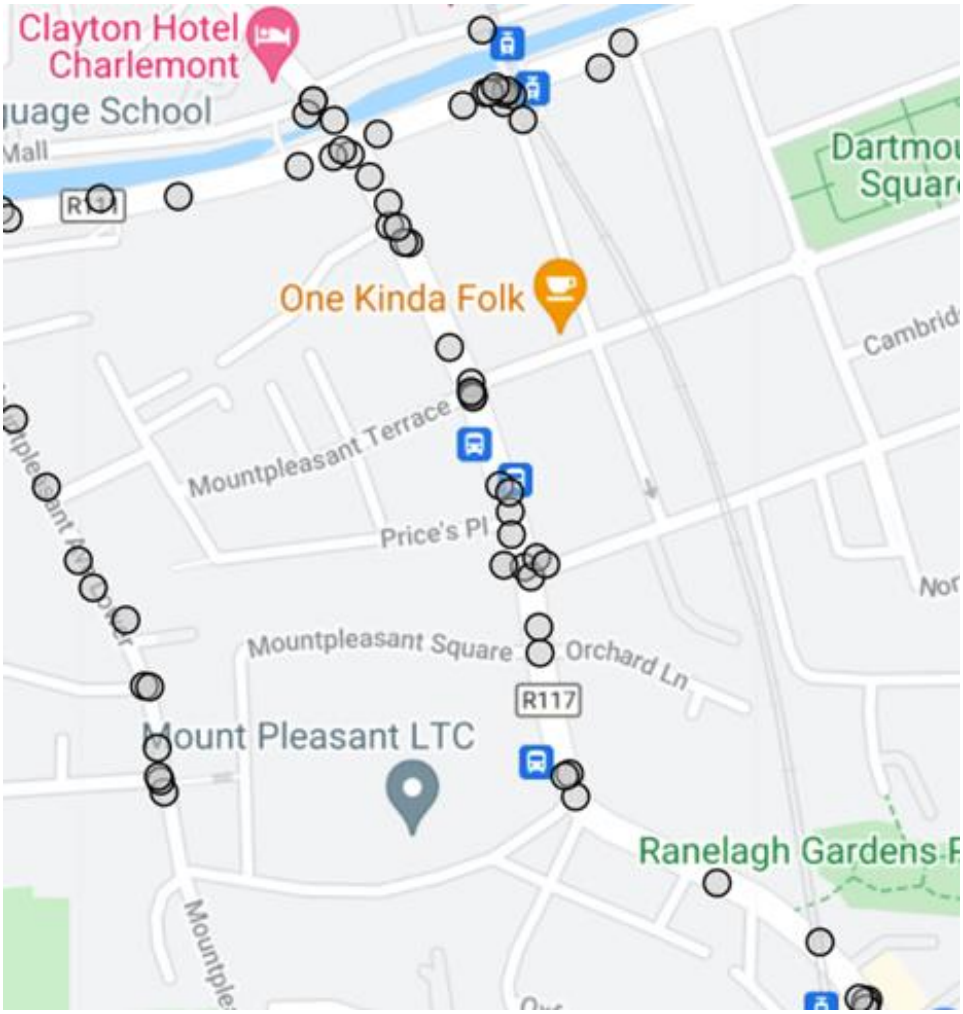


Figure 4-21 - Section 1D Collision Record (Source RSA.ie)

4.5.5 Section 1E

A review of the collision data within Section 1E from Charlemont Street to Harcourt Street shows there was a total of 9no. incidents within the section over the 11-year period. From the 9no. recorded incidents there were zero fatal incidents, 1no. serious incident and 8no. minor incidents.

Table 4-10 below provides a summary of the collisions involving pedestrians, bicycles, and motorised vehicles along the section and Figure 4-22 provides the locations of the collisions.

Table 4-10 - Summary of Collisions from Charlemont Street to Harcourt Street

Location	Mode	No. Incidents	No. Fatal	No. Serious	No. Minor
Charlemont Street to Harcourt Street	Pedestrians	2	-	-	2
	Bicycle	2	-	1	1
	Motorised Vehicles	5	-	-	5

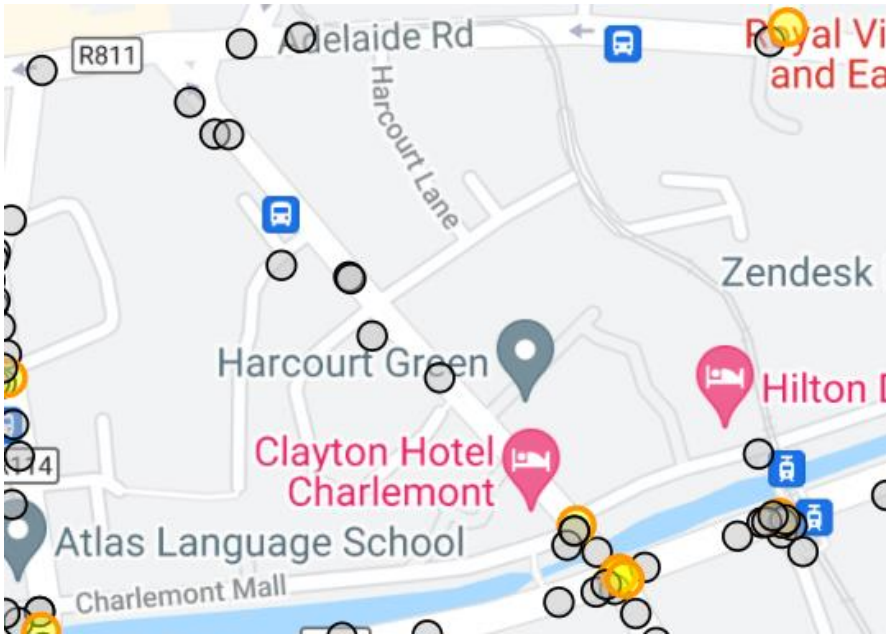


Figure 4-22 - Section 1E Collision Record (Source RSA.ie)

The ultimate aim of the Clonskeagh to Charlemont Street Scheme is to improve safety for pedestrians and cyclists, after the review of the collision records an informed decision can be made cognisant of where accident clusters occur. Major junctions are a location where pedestrian/cyclist collision hotpots occur along the route, the concept design should consider junction improvements to mitigate the risks to road users at these locations.

5. Options Selection – Assessment Process

The Clonskeagh to Charlemont Pedestrian and Cyclist Improvement Scheme route is identified as a primary route in the GDA network; therefore, the route corridor is fixed and alternative routes were not considered. The first step in the assessment process was to consider options within that corridor.

The Options assessments process is broken up into three stages. An initial 'Stage 1' high-level route options assessment or 'sifting' process is undertaken, which appraised options in terms of ability to achieve scheme objectives and whether they could be practically delivered.

Options which passed this initial stage were taken forward to a more detailed 'Stage 2' assessment, a more comprehensive and in-depth assessment on a section-by-section basis along the proposed cycle route, which scrutinises each option in greater detail.

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

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

6. Option Assessment Stage 1 – Feasibility Screening

An initial assessment of possible options for the proposed Clonskeagh to Charlemont Street Scheme was carried out, consisting of a sifting exercise to identify appropriate options for the route to be brought forward and considered in more detail.

The Stage 1 Assessment considered various options at each section. This stage constitutes an exercise to eliminate options that have fundamental and irreconcilable issues with the objectives of the scheme, as set out in **Section 2** of this report. As a result of this stage, options considered to be not feasible will not progress to the Stage 2 Multi Criterial Analysis assessment.

Table 6-1 - Summary of Stage 1 Options to be assessed

Network Option	Description
1	Do Nothing
2	Resurface and re-mark cycle lanes
3	Reduce traffic volumes and speeds to allow integrated cycling regime
4	Cycling in bus lanes
5	Shared space (pedestrians and cyclists)
6	One-way raised cycle tracks on both sides of the carriageway
7	One-way protected cycle lanes on both sides of the carriageway
8	Two-way cycle track on one side of road
9	Alternative routing through quiet streets

6.1 Network Option 1: Do Nothing

This option proposes to maintain the existing regime along the route. This would offer no improvement to the existing route. It would be difficult to justify this option as it does not align with the objectives of the scheme due

to the existing conflicts and substandard cycle lane widths throughout the route. Thus, the Do-Nothing option would not achieve the objectives of the scheme.

The National Cycle Manual notes that physical segregation of cyclists from motorised traffic is appropriate for routes with greater than 10,000 AADT and actual speeds greater than 30km/h. The AADT on all sections of the route is estimated to be above this threshold. This suggests that this option does not comply with the recommendations of the National Cycle Manual and would not achieve the objectives of the scheme.

Option 1 is not considered feasible

6.2 Network Option 2: Resurface and reallocation of carriageway space

This option proposes resurfacing and remarking the full route. This proposal would consist of surface course treatment, plain and inlay resurfacing of existing carriageway followed by installation road markings delineating cycle lanes. This option would offer the opportunity to adjust road space allocation, reducing road width to minimum to allow cycle lane widening. This would also involve maintaining the Interim Mobility Interventions installed in 2020-21 along Ranelagh Village section.

The new surface course would improve the existing pavement condition. The cycle lanes could be reinstalled and road space reallocated to gain additional effective width for cyclists resulting in an improvement in the number of adjacent cyclists and would improve the cyclist level of comfort and safety.

Overall, this option does not provide the level of segregation required and fails to deliver on the scheme objectives therefore this option will not be carried forward.

Option 2 is not considered feasible

6.3 Network Option 3: Reduce traffic volumes and speeds to allow integrated cycling regime

This option proposes to reduce traffic volumes and speeds to a level that would allow the provision of an integrated cycling facility. An integrated cycle facility along this route would consider the existing layout retaining some cycle lane facilities (light segregation) and mixed road use all modes sharing the traffic lanes. For this to be feasible, traffic speeds would have to be reduced to 30km/h or less alongside AADT being reduced to less than 10,000. Typically, this could be achieved through regular traffic calming measures and speed limit reductions, traffic signal changes, and modal filters at certain locations.

However, in this instance and due to the AADT value of greater than 20,000 it is considered unfeasible that volumes and speeds could be reduced to such an extent that the route could function as a mixed or shared street. The route is a significant route through Dublin, as a result the typical measures to implement a shared road option are not appropriate for this location.

Option 3 is not considered feasible

6.4 Network Option 4: Cycling in bus lanes

This option proposes to utilise existing bus lanes along the route that could be shared by both cyclists and buses. This would be a relatively low-cost option and would provide cyclists with a wide facility despite sharing with large vehicles. The bus lanes would have to operate 24 hours, 7 days per week to maintain the lanes for bus, taxis and cyclists only. Delineator posts, flexible bollards or some other type of segregation would have to be installed to reinforce the restrictions for general traffic. The relative speed and mass of buses compared with cyclists makes this option not ideal as these travel modes are mis matched if any collisions were to occur.

Bus lanes are present along a stretch of the existing route on Ranelagh Road and Charlemont near the end of the route. Considering the other existing road widths and footway there does not appear to be adequate space to install additional lengths of bus lane in all sections of the route, furthermore if a direct route for cyclists and buses cannot be achieved this would result in additional conflicts with an increase in lane merging. As a result, the option of the bus/cycle lane option would not be appropriate.

Option 4 is not considered feasible

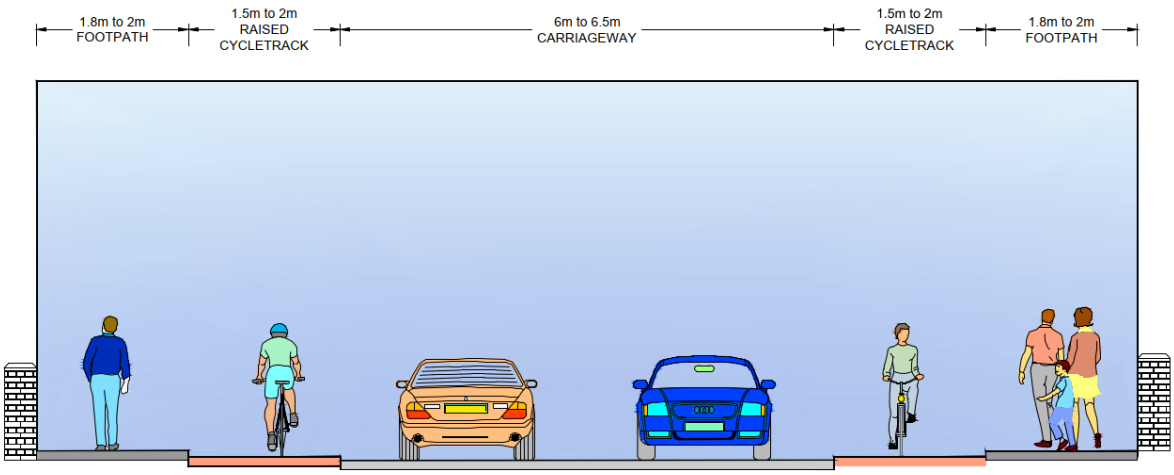
6.5 Network Option 5: Shared space (pedestrians and cyclists)

This option includes the provision of wide shared spaces by extending the existing footway, this will require reallocation of road space to provide wide raised pathways for both cyclists and pedestrians. Given the existing and likely future volumes of pedestrians and cyclists using the route, this would not be considered a convenient, comfortable or sufficiently safe as an option for pedestrians or cyclists. However this option would fail to achieve the objectives of the scheme in terms of meeting the needs of cyclists.

Furthermore, this option would require the removal/relocation of street furniture and mature trees at a number of locations along the route to ensure sufficient space for both pedestrians and cyclists.

Option 5 is not considered feasible

6.6 Network Option 6: One-way raised cycle tracks on both sides of the carriageway

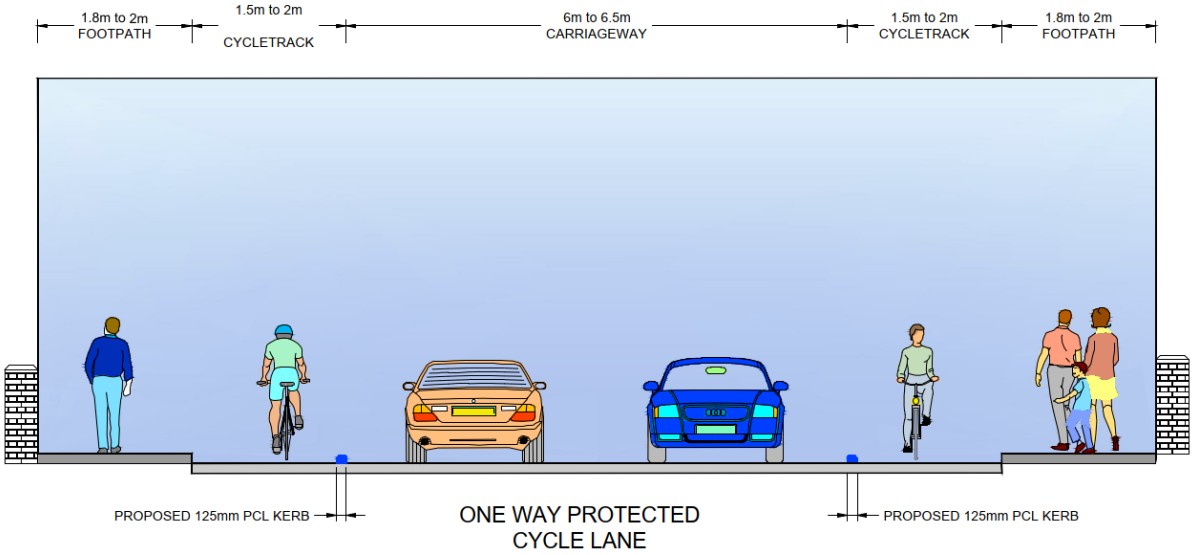


TYPICAL CROSS SECTION
RAISED CYCLE TRACK

This option provides segregation of cyclists from general traffic by means of a one-way raised adjacent cycle track on both sides of the carriageway. For this arrangement cyclists are at an interim grade, below footway and above road surface, cyclists are further segregated by kerb between cycle track and road. The provision of this layout will require additional space to provide the cycle track and kerb which may require the removal of parking. Options for drainage of the cycle track will have to be considered, such as cycle-friendly gully grates, side inlet gullies or providing gaps or dropped kerbs to allow water to flow into the carriageway drainage system. Interactions with vehicular accesses and side streets would also have to be considered and addressed alongside covers/chambers in roadway possibly requiring relocation.

Option 6 is considered feasible

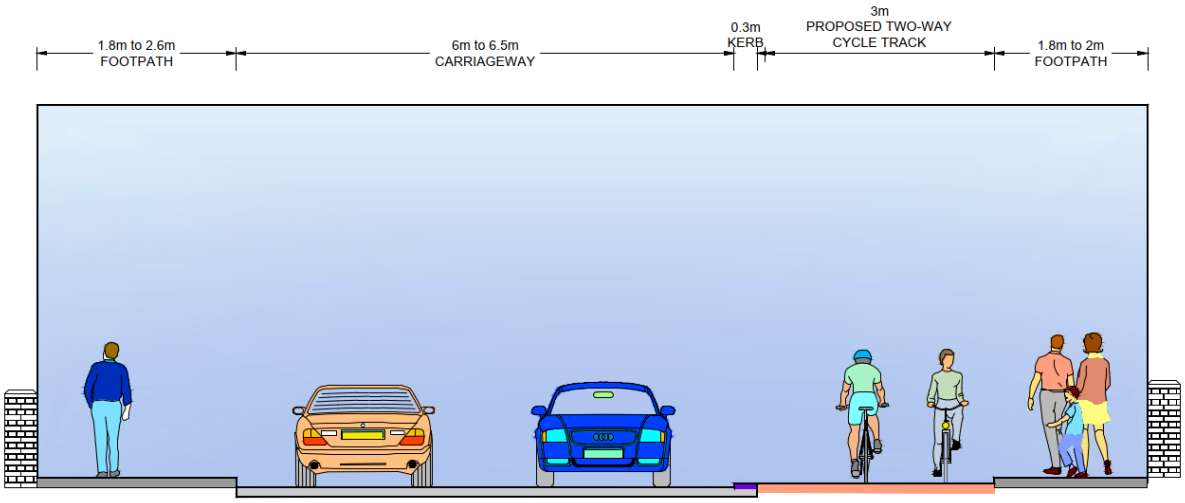
6.7 Network Option 7: One-way protected cycle lanes on both sides of the carriageway



This option provides an at-grade one-way cycle lane on both sides of the road with physical segregation between the cyclist and motor traffic. In this option Cyclists are effectively cycling on road, the cycle area is segregated by a range of installations (Bollard-Kerb upstand) and provides a range of protection level, this is an improvement in comfort and safety compared to a white line marking , however less beneficial to cyclists than a raised cycle track (option 6). Physical segregation could be installed relatively quickly and could feature a variety of materials such as flexible bollards, orcas, armadillos, removable planters, bolt-down rubber kerbs, extruded concrete kerbs or a combination of these. This has been used effectively at a variety of locations in the GDA as a low-cost, efficient solution. It has also been used effectively as part of COVID-19 interim interventions in Dublin City and other locations across Ireland.

Option 7 is considered feasible

6.8 Network Option 8: Two-way cycle track on one side of road



TYPICAL CROSS SECTION
TWO-WAY CYCLE TRACK

This option proposes a two-way segregated cycle track on one side of the road. Two-way tracks have been implemented in the GDA, with the Grand Canal Cycleway being an example of a highly successful route. Two-way facilities generally require additional works on signal control at junctions to cater for contraflow movements. However, they can make efficient use of road space, particularly on tidal routes or where it is likely that a mix of cycling users will be present as the opposing lane can be used for overtaking when clear.

Option 8 is considered feasible

6.9 Network Option 9: Review route selection and divert cyclists through quieter streets

This option considers avoiding the current Clonskeagh to Charlemont Street Cycle corridor completely and developing cycle routes on the next available route corridor on each side of the Clonskeagh to Charlemont Street route. In brief It would be necessary to provide two alternative routes on both sides of the Clonskeagh corridor, since one side in isolation would be too remote to serve demand. Further to this a direct, comfortable route through quiet streets is not apparent to the user, it is unlikely to achieve a coherent option as a result significant way finding signage would be required, the delays to cyclists utilising the offline alternative route would be discouraging and fail the scheme objectives to cater to the range of cyclists desired.

Option 9 is not considered feasible

6.10 Conclusion of Stage 1 Assessment

The Stage 1 Assessment has identified a number of feasible options for the Clonskeagh to Charlemont Street Scheme. The feasible options will now be brought forward to a more comprehensive and in-depth assessment on a section-by-section basis along the proposed route. The more detailed Stage 2 Assessment will scrutinise each option in greater detail.

In conclusion, the Stage 1 Feasibility Screening results in 3 of 9 options considered to be included in the Stage 2 Assessment. The options advancing to Stage 2 are the proposals highlighted in green, shown in Table 6-2**.** For assessment purposes these options have been recategorised in Table 6-3 below.

Table 6-2 - Summary of Stage 1 Assessment

Network Option	Description	Advance to Stage 2 Assessment
1	Do Nothing	No
2	Resurface and re-mark cycle lanes	No
3	Reduce traffic volumes and speeds to allow integrated cycling regime	No
4	Cycling in bus lanes	No
5	Shared space (pedestrians and cyclists)	No
6	**One-way raised cycle tracks on both sides of the carriageway**	Yes
7	**One-way protected cycle lanes on both sides of the carriageway**	Yes
8	**Two-way cycle track on one side of the carriageway**	Yes
9	Alternative routing through quiet streets	No

Table 6-3 - Options considered at Stage 2

Stage 1 Options carried forward and recategorized	Description
A	**One-way raised cycle tracks on both sides of the carriageway**
B	**One-way protected cycle lanes on both sides of the carriageway**
C	**Two-way cycle track on one side of the carriageway**

7. Option Assessment Stage 2 – Multi Criteria Analysis

Following Stage 1 assessment, an in-depth review through multi criteria analysis of the feasible options was conducted to assess and better understand the challenges and implications of each option.

Further to Paragraph 6 of this report the Clonskeagh to Charlemont Street Scheme was divided into 5 sections to assess the route characteristics, which are:

- Section 1A: Clonskeagh Road
- Section 1B: Sandford Road
- Section 1C: Ranelagh Village
- Section 1D: Ranelagh Road
- Section 1E: Charlemont Street

The Stage 2 assessment comprises of a qualitative assessment of potential scheme options identified along each section of the route, using well-established criteria Stage 2 will consider the feasible options listed in Table 6-3**.**

The 'Common Appraisal Framework for Transport Projects and Programmes' published by the Department of Transport provides a structured approach to determining overall preferences among alternative options.

Multi-Criteria Analysis (MCA) can be applied under common headings to determine the range of positive effects (benefits) and negative effects (costs) in a single framework to allow easy comparison of alternative options in decision making. It offers the criteria below to undertake a comparative assessment. These have been tailored to have commonality to the Common Appraisal Framework guidelines where practical.

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

Physical Activity has been scoped out of the multi-criteria analysis at this stage. This is because all scheme options are considered to promote physical activity equally and derive significant health benefits to users. It is therefore not considered to be a key differentiator between options.

An additional criterion of Quality of Service Level has been added to the assessment as the delivery of a safe, high-quality and attractive route for both cyclists and pedestrians is an objective of the scheme. It is assumed that all options will provide a significantly improved pavement condition (cycling surface) and that HGV% will remain at the same value for all options. Therefore, these two sub-criteria have been scoped out of the assessment. Full list of MCA criteria shown in Table 7-1.

Table 7-1 - Criteria options scored against in the Multi-Criteria Analysis (MCA)

Criterion	Assessment Sub-Criteria
Economy	1.a. Capital Cost 1.b. Transport Reliability (Journey Time)
Integration	2.a. Land Use Integration 2.b. Residential Population and Employment Catchments 2.c. Public Transport Network Integration 2.d. Cycle Network Integration 2.e. Traffic Network Integration
Accessibility & Social Inclusion	3.a. Key Trip Attractors 3.b. Deprived Geographic Areas
Safety	4.a. Road User Safety
Environment	5.a. Air Quality 5.b. Noise and Vibration 5.c. Landscape and Visual Quality 5.d. Biodiversity 5.e. Cultural Heritage 5.f. Land Use
Quality of Service	6.a. Number of adjacent cyclists 6.b. Number of conflicts 6.c. Journey time delay

For MCA each assessment criteria is considered, options are compared relative to each other based on a five-point scale, ranging from having significant advantages to significant disadvantages over other scheme options. For illustrative purposes, this five-point scale is colour coded as presented in Table 7-2 with advantageous options graded to ‘dark green’ and disadvantageous options graded to ‘red’.

Table 7-2 - Scheme Options Colour Coded Ranking Scale

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

8. Multi Criteria Analysis - Results

8.1 Section 1A: Clonskeagh Road

Table 8-1 - Options Assessment Summary – Section 1A

Criterion	Assessment Sub-Criteria	Option A: One-way raised cycle tracks	Option B: One-way protected cycle lanes	Option C: Two-way cycle track
Economy	1.a. Capital Cost			
		Higher cost option due to additional traffic management, construction time, materials, drainage implications as a result of alterations to both sides of the road. In comparison to other options additional costs expected.	Use of segregation methods such as bollards and bolt down barriers are likely to be least expensive of the options.	Higher cost option in comparison to option B. Construction occurring on one side of the road likely reduces costs associated with traffic management and may reduce the construction time needed. However, costs are estimated to be similar to option A.
	1.b. Transport Reliability (Journey Time)			
		All options Similar		
Integration	2.a. Land Use Integration			
		All options Similar		
	2.b. Residential Population and Employment Catchments			
		All options Similar		
	2.c. Public Transport Network Integration			
		All options Similar		
	2.d. Cycle Network Integration			
		All options Similar		
	2.e. Traffic Network Integration			
		All options Similar		
Accessibility & Social Inclusion	3.a. Key Trip Attractors			
		All options Similar		
	3.b. Deprived Geographic Areas			
		All options Similar		

Criterion	Assessment Sub-Criteria	Option A: One-way raised cycle tracks	Option B: One-way protected cycle lanes	Option C: Two-way cycle track
Safety	**4.a. Road User Safety**			
		Cyclists travel with the flow of traffic segregated from motor vehicles. This option provides higher road user safety in comparison with Option B as cyclists travel with the flow of traffic fully segregated at a different grade.	Similar arrangements to Option A, however road user safety will not achieve the same level as option A due to cyclists sharing grade with motor vehicles. This type of segregation when compared with raised cycle tracks do not offer the same level of protection for road users.	This option positions cyclists on one side of the road, typically this arrangement poses a risk to cyclists traveling contraflow at side road interchanges where motor users may not anticipate oncoming cyclists. Through the Clonskeagh Road section (Clonskeagh Bridge to Eglinton Road) the opportunity to position the cycle track on the Dublin City inbound side of the route offers a route with limited number of conflicts from side road interchanges and private access mitigating the risk to cyclists.
Environment	**5.a. Air Quality**			
		All options Similar		
	5.b. Noise and Vibration			
		All options Similar		
	5.c. Landscape and Visual Quality			
		One-way cycle tracks will complement the existing kerbs with little visual intrusion on the streetscape.	Presence of segregation infrastructure in absence of full cycle track construction are likely to negatively impact on the visual quality of the street.	A two-way track will complement the existing kerbs with little visual intrusion on the streetscape.
	5.d. Biodiversity			
		All options Similar		
	5.e. Cultural Heritage			
		All options Similar		
	5.f. Land Use			
		All options Similar		
Quality of Service	**6.a. Number of adjacent cyclists**			
		Most like can only achieve width suitable for single file cycling	Similar to Option A. However, cycle width constraints posed by edge of track detail. This option offers a reduced cyclable width when compared with Option A.	Two abreast cycling is achievable with Option C, the opposing cycle lane could be utilised informally for overtaking or two abreast cycling.

Criterion	Assessment Sub-Criteria	Option A: One-way raised cycle tracks	Option B: One-way protected cycle lanes	Option C: Two-way cycle track
	6.b. Number of conflicts			
		Cyclists will be segregated from motor traffic. Cyclists travel with the flow of traffic which mitigates the side road contraflow conflicts. However overall number of conflicts on this option are larger through the Clonskeagh Road section when compared with option C.	Similar to Option A, however additional conflicts are likely to be presented as a result of reduction/breaks in segregation provision at access and side roads.	Option C likely presents as an advantageous arrangement through the Clonskeagh section. The Opportunity to position the cycle track on the Dublin City inbound side of the route offers a route with limited number of conflicts as there are fewer side roads and accesses.
	6.c. Journey time delay			
		All options Similar		
Summary	**Rank**	**2**	**3**	**1**

8.2 Section 1B: Sandford Road

Table 8-2 - Options Assessment Summary – Section 1B

Criterion	Assessment Sub-Criteria	Option A: One-way raised cycle tracks	Option B: One-way protected cycle lanes	Option C: Two-way cycle track
Economy	1.a. Capital Cost			
		Higher cost option due to additional traffic management, construction time, materials, drainage implications as a result of alterations to both sides of the road. In comparison to other options additional costs expected.	Use of segregation methods such as bollards and bolt down barriers are likely to be least expensive of the options.	Higher cost option in comparison to option B. Construction occurring on one side of the road likely reduces costs associated with traffic management and may reduce the construction time needed. However, costs are estimated to be similar to option A.
	1.b. Transport Reliability (Journey Time)			
		Segregated cycle tracks in conjunction with cycle signals will improve journey time for cyclists. Additional signal time will be required for the cycle signal stage	Similar to Option A	Due to number of junctions, side roads and private accesses along Sandford Road there will be additional signalling time required. This will likely be the option with the most significant delay on journey times
Integration	2.a. Land Use Integration			
		All options Similar		
	2.b. Residential Population and Employment Catchments			
		All options Similar		
	2.c. Public Transport Network Integration			
		With Cycle tracks on both sides of the road in the direction of traffic integration to facilities will be more coherent than option C.	Similar to option A	Sight disadvantage to connect to facilities as a result of cycle track being located on one side of road only.
	2.d. Cycle Network Integration			
		One-way raised cycle track facilitate cycle movements on both sides of the road with cyclists traveling in the direction of motor vehicles. This arrangement is likely to integrate most easily with the existing network.	Similar to Option A, however it's likely that sections of the route will require unsegregated lengths along the route to facilitate motor vehicle movements at side roads and access points along Sandford Road	Two-way cycle track would require additional cycle signal control at some junctions. Option C arrangement is likely more impactful than Option A to route cyclists onto/off one side of the road.
	2.e. Traffic Network Integration			
		All options Similar		
Accessibility & Social Inclusion	3.a. Key Trip Attractors			
		All options Similar		

Criterion	Assessment Sub-Criteria	Option A: One-way raised cycle tracks	Option B: One-way protected cycle lanes	Option C: Two-way cycle track
	3.b. Deprived Geographic Areas			
			All options Similar	
Safety	**4.a. Road User Safety**			
		Cyclists travel with the flow of traffic segregated from motor vehicles. This option provides higher road user safety in comparison with Option B.	Similar arrangements to Option A, however road user safety will not achieve the same level as option A due to cyclists sharing grade with motor vehicles. This type of segregation when compared with raised cycle tracks do not offer the same level of protection for road users.	This option positions cyclists on one side of the road, typically this arrangement poses a risk to cyclists traveling contraflow at side road interchanges where motor users may not anticipate oncoming cyclists. Along the Sandford Road, following from Clonskeagh Road, to maintain a coherent route the two way cycle track is best placed on the Dublin City bound side of the road, this section of the scheme presents several sideroad and residential access conflicts which pose a risk to cyclists traveling contraflow to the motor traffic lanes.
Environment	**5.a. Air Quality**			
			All options Similar	
	5.b. Noise and Vibration			
			All options Similar	
	5.c. Landscape and Visual Quality			
		One-way cycle tracks will complement the existing kerbs with little visual intrusion on the streetscape.	Presence of segregation infrastructure in absence of full cycle track construction are likely to negatively impact on the visual quality of the street.	A two-way track will complement the existing kerbs with little visual intrusion on the streetscape.
	5.d. Biodiversity			
			All options Similar	
	5.e. Cultural Heritage			
		Features will likely be affected on both sides of the road; this will be the most intrusive of the options	It's possible that this option will not affect features of concern. This is the least intrusive option	Similar to Option A. however, will only affect one side of the road which will reduce the overall impact
	5.f. Land Use			
			All options Similar	

Criterion	Assessment Sub-Criteria	Option A: One-way raised cycle tracks	Option B: One-way protected cycle lanes	Option C: Two-way cycle track
Quality of Service	**6.a. Number of adjacent cyclists**			
		Most like can only achieve width suitable for single file cycling	Similar to Option A. However, cycle width constraints posed by edge of track detail. This option offers a reduced cyclable width when compared with Option A.	Two abreast cycling is achievable with Option C, the opposing cycle lane could be utilised informally for overtaking or two abreast cycling.
	6.b. Number of conflicts			
		Cyclists will be segregated from motor traffic. Cyclists travel with the flow of traffic which mitigates the side road contraflow conflicts.	Similar to Option A, however additional conflicts are likely to be presented as a result of reduction/breaks in segregation provision at access and side roads.	Cyclists will be segregated from motor traffic. Cyclists travel in both directions along one side of the route. This arrangement presents a risk at side road and access interchanges as emerging vehicles may not anticipate a contraflow cyclist. As a result, although the route is located on one side of the road the overall the number of conflicts are comparable with option A.
	6.c. Journey time delay			
		This option offers the most flexibility for cyclists to manoeuvre in the same phase as motor traffic, likely the least impactful option to journey times	Similar to Option A	Due to cyclists occupying one side of the road only. Additional signal phasing will be required to facilitate cycle movements through junctions.
Summary	Rank	**1**	**3**	**2**

8.3 Section 1C: Ranelagh Village

Table 8-3 - Options Assessment Summary – Section 1C

Criterion	Assessment Sub-Criteria	Option A: One-way raised cycle tracks	Option B: One-way protected cycle lanes	Option C: Two-way cycle track
Economy	1.a. Capital Cost			
		Higher cost option due to additional traffic management, construction time, materials, drainage implications as a result of alterations to both sides of the road. In comparison to other options additional costs expected.	Use of segregation methods such as bollards and bolt down barriers are likely to be least expensive of the options.	Higher cost option in comparison to option B. Construction occurring on one side of the road likely reduces costs associated with traffic management and may reduce the construction time needed. However, costs are estimated to be similar to option A.
	1.b. Transport Reliability (Journey Time)			
		Segregated cycle tracks in conjunction with introduction of cycle signals on all major junctions within Ranelagh Village will improve journey time for cyclists. Additional signal time will be required for the cycle signal stage.	Similar to Option A	A two-way cycle track arrangement where cyclists are located on one side of the road will result in additional signal phasing at each major junction. Considering the number of major junctions along the Ranelagh Village route there will be additional signalling time required increasing journey times.
Integration	2.a. Land Use Integration			
		All options Similar		
	2.b. Residential Population and Employment Catchments			
		All options Similar		
	2.c. Public Transport Network Integration			
		With Cycle tracks on both sides of the road in the direction of traffic integration to facilities will be more coherent than option C.	Similar to option A	Sight disadvantage to connect to facilities as a result of cycle track being located on one side of road only.
	2.d. Cycle Network Integration			
		Connections to the cycle network are catered for with upgraded signal crossings, due to this all options perform similarly		
	2.e. Traffic Network Integration			
		All options Similar		
Accessibility & Social Inclusion	3.a. Key Trip Attractors			
		All options Similar		
	3.b. Deprived Geographic Areas			
		All options Similar		

Criterion	Assessment Sub-Criteria	Option A: One-way raised cycle tracks	Option B: One-way protected cycle lanes	Option C: Two-way cycle track
Safety	**4.a. Road User Safety**			
		Cyclists travel with the flow of traffic segregated from motor vehicles. This option provides higher road user safety in comparison with Option B. This option likely provides the most coherent arrangement for all road users.	Similar arrangements to Option A, however road user safety will not achieve the same level as option A due to cyclists sharing grade with motor vehicles. Light segregation when compared with raised cycle tracks do not offer the same level of protection for road users. Irregular upstand and/or street furniture can pose a risk to pedestrians and cyclists.	This option positions cyclists on one side of the road, typically this arrangement poses a risk to cyclists traveling contraflow at side road interchanges where motor users may not anticipate oncoming cyclists. Ranelagh Village consist of many pedestrian receptors resulting in irregular and uncontrolled crossings of the road. Pedestrians crossing the road may present as an additional risk traversing contraflow cycle lanes.
Environment	**5.a. Air Quality**			
		All options Similar		
	5.b. Noise and Vibration			
		All options Similar		
	5.c. Landscape and Visual Quality			
		One-way cycle tracks will complement the existing kerbs with little visual intrusion on the streetscape.	Presence of kerb infrastructure and street furniture or similar is likely to negatively impact on the visual quality of Ranelagh Village.	A two-way track will impact the landscape and visual quality of the village. Although a higher level of alteration is necessary in this option, little visual intrusion will be experienced on the streetscape.
	5.d. Biodiversity			
		All options Similar		
	5.e. Cultural Heritage			
		Features will likely be affected on both sides of the village streetscape, this will be the most intrusive of the options	It's possible that this option will not affect features in of concern. This is the least intrusive option	Similar to Option A, however, will only affect one side of the village streetscape which will reduce the overall impact
	5.f. Land Use			
		All options Similar		

Criterion	Assessment Sub-Criteria	Option A: One-way raised cycle tracks	Option B: One-way protected cycle lanes	Option C: Two-way cycle track
Quality of Service	**6.a. Number of adjacent cyclists**			
		Most like can only achieve width suitable for single file cycling	Similar to Option A. However, cycle width constraints posed by edge of track detail. This option offers a reduced cyclable width when compared with Option A.	Two abreast cycling is achievable with Option C, the opposing cycle lane could be utilised informally for overtaking or two abreast cycling.
	6.b. Number of conflicts			
		All options Similar		
	6.c. Journey time delay			
		This option offers the most flexibility for cyclists to manoeuvre in the same phase as motor traffic, likely the least impactful option to journey times	Similar to Option A	Due to cyclists occupying one side of the road only. Additional signal phasing will be required to facilitate cycle movements through junctions.
Summary	Rank	**1**	**2**	**3**

8.4 Section 1D: Ranelagh Road

Table 8-4 - Options Assessment Summary – Section 1D

Criterion	Assessment Sub-Criteria	Option A: One-way raised cycle tracks	Option B: One-way protected cycle lanes	Option C: Two-way cycle track
Economy	1.a. Capital Cost			
		Higher cost option due to additional traffic management, construction time, materials, drainage implications as a result of alterations to both sides of the road. In comparison to other options additional costs expected.	Use of segregation methods such as bollards and bolt down barriers are likely to be least expensive of the options.	Higher cost option in comparison to option B. Construction occurring on one side of the road likely reduces costs associated with traffic management and may reduce the construction time needed. However, costs are estimated to be similar to option A.
	1.b. Transport Reliability (Journey Time)			
		All options Similar		
Integration	2.a. Land Use Integration			
		All options Similar		
	2.b. Residential Population and Employment Catchments			
		All options Similar		
	2.c. Public Transport Network Integration			
		With Cycle tracks on both sides of Ranelagh Road in the direction of traffic. Integration to facilities will be more coherent than option C.	Similar to option A	Sight disadvantage to connect to facilities as a result of two way being located on one side of road
	2.d. Cycle Network Integration			
		All options Similar		
	2.e. Traffic Network Integration			
		All options Similar		
Accessibility & Social Inclusion	3.a. Key Trip Attractors			
		All options Similar		
	3.b. Deprived Geographic Areas			
		All options Similar		

Criterion	Assessment Sub-Criteria	Option A: One-way raised cycle tracks	Option B: One-way protected cycle lanes	Option C: Two-way cycle track
Safety	**4.a. Road User Safety**			
		Cyclists travel with the flow of traffic segregated from motor vehicles. This option provides higher road user safety in comparison with Option B. This option likely provides the most coherent arrangement for all road users.	Similar arrangements to Option A, however road user safety will not achieve the same level as option A due to cyclists sharing grade with motor vehicles. Light segregation when compared with raised cycle tracks do not offer the same level of protection for road users. Irregular upstand and/or street furniture can pose a risk to pedestrians and cyclists, in particular at Charlemont Bridge.	This option positions cyclists on one side of the road, typically this arrangement poses a risk to cyclists traveling contraflow at side road interchanges where motor users may not anticipate oncoming cyclists. Charlemont Bridge and Charlemont Street are busy pedestrian zones resulting in irregular and hurried crossings of the road. Pedestrians crossing the road may present as an additional risk traversing contraflow cycle lanes.
Environment	**5.a. Air Quality**			
		All options Similar		
	5.b. Noise and Vibration			
		All options Similar		
	5.c. Landscape and Visual Quality			
		One-way cycle tracks will complement the existing kerbs with little visual intrusion on the streetscape.	Presence of kerb infrastructure and street furniture or similar is likely to negatively impact on the visual quality of Ranelagh Road.	Similar to Option A. however, will only affect one side of the road which will reduce the overall impact
	5.d. Biodiversity			
		All options Similar		
	5.e. Cultural Heritage			
		All options Similar		
	5.f. Land Use			
		All options Similar		
Quality of Service	**6.a. Number of adjacent cyclists**			
		Most likely can only achieve width suitable for single file cycling	Similar to Option A. However, cycle width constraints posed by edge of track detail. This option offers a reduced cyclable width when compared with Option A.	Two abreast cycling is achievable with Option C, the opposing cycle lane could be utilised informally for overtaking or two abreast cycling.

Criterion	Assessment Sub-Criteria	Option A: One-way raised cycle tracks	Option B: One-way protected cycle lanes	Option C: Two-way cycle track
	6.b. Number of conflicts			
		Cyclists will be segregated from motor traffic. Cyclists travel with the flow of traffic which mitigates the side road contraflow conflicts.	Similar to Option A, however additional conflicts are likely to be presented as a result of reduction/breaks in segregation provision at access and side roads.	Cyclists will be segregated from motor traffic. Cyclists travel in both directions along one side of the route. This arrangement presents a risk at side road and access interchanges as emerging vehicles may not anticipate a contraflow cyclist. As a result, although the route is located on one side of the road the overall the number of conflicts are comparable with option A.
	6.c. Journey time delay			
		All options Similar		
Summary	**Rank**	**1**	**3**	**2**

8.5 Section 1E: Charlemont Street

Table 8-5 - Options Assessment Summary – Section 1E

Criterion	Assessment Sub-Criteria	Option A: One-way raised cycle tracks	Option B: One-way protected cycle lanes	Option C: Two-way cycle track
Economy	**1.a. Capital Cost**			
		Higher cost option due to additional traffic management, construction time, materials, drainage implications as a result of alterations to both sides of the road. In comparison to other options additional costs expected.	Use of segregation methods such as bollards and bolt down barriers are likely to be least expensive of the options.	Higher cost option in comparison to option B. Construction occurring on one side of the road likely reduces costs associated with traffic management and may reduce the construction time needed. However, costs are estimated to be similar to option A.
	1.b. Transport Reliability (Journey Time)			
		Segregated cycle tracks in conjunction with introduction of cycle signals on the Charlemont Bridge junctions will improve journey time for cyclists. Additional signal time will be required for the cycle signal stage.	Similar to Option A	A two-way cycle track arrangement where cyclists are located on one side of the road will result in additional signal phasing at the Canal Bridge junctions. Considering the key junctions between Ranelagh Road and Charlemont Street there will be additional signalling time required increasing journey times.
Integration	**2.a. Land Use Integration**			
		All options Similar		
	2.b. Residential Population and Employment Catchments			
		All options Similar		
	2.c. Public Transport Network Integration			
		With Cycle tracks on both sides of the road in the direction of traffic integration to facilities will be more coherent than option C.	Similar to option A	Two-Way Cycle track presents additional challenges to connect to facilities as a result of cycle track being located on one side of road only.
	2.d. Cycle Network Integration			
		One-way raised cycle track facilitate cycle movements on both sides of the road with cyclists traveling in the direction of motor vehicles. This arrangement is likely to integrate most easily with the existing network.	Similar to Option A	Two-way cycle track would require additional cycle signal control at junctions. Arrangements at the Charlemont Bridge will be challenging. Two way cycle track is likely more impactful than Option A
	2.e. Traffic Network Integration			
		All options Similar		

Criterion	Assessment Sub-Criteria	Option A: One-way raised cycle tracks	Option B: One-way protected cycle lanes	Option C: Two-way cycle track
Accessibility & Social Inclusion	3.a. Key Trip Attractors			
		All options Similar		
	3.b. Deprived Geographic Areas			
		All options Similar		
Safety	4.a. Road User Safety			
		Cyclists will be segregated from motor traffic. Cyclist segregated from each other and traveling in same direction of motor vehicles. This option is likely to provide the higher road user safety than the other options. Potential for conflict with bus passengers/traffic at bus stops and interactions at sideroads and junctions.	Similar to Option A, however reduced safety due to sharing grade with motor vehicles and light segregation/significant gaps when compared with raised cycle track where cyclists are at a different grade from motor users	Slight advantage with two way option, there may be the opportunity to position the cycle track on the Dublin City inbound side of the route which offers a long section with limited number of conflicts
Environment	5.a. Air Quality			
		All options Similar		
	5.b. Noise and Vibration			
		All options Similar		
	5.c. Landscape and Visual Quality			
		One-way cycle tracks will complement the existing kerbs with little visual intrusion on the streetscape.	Presence of segregation infrastructure in absence of full cycle track construction are likely to negatively impact on the visual quality of Charlemont Street.	A two-way track will complement the existing kerbs with little visual intrusion on the streetscape.
	5.d. Biodiversity			
		All options Similar		
	5.e. Cultural Heritage			
		All options Similar		
	5.f. Land Use			
		All options Similar		
Quality of Service	6.a. Number of adjacent cyclists			
		Most like can only achieve width suitable for single file cycling	Similar to Option A. However, cycle width constraints posed by edge of track detail. This option offers a reduced cyclable width when compared with Option A.	Two abreast cycling is achievable with Option C, the opposing cycle lane could be utilised informally for overtaking or two abreast cycling.
	6.b. Number of conflicts			
		All options Similar		

Criterion	Assessment Sub-Criteria	Option A: One-way raised cycle tracks	Option B: One-way protected cycle lanes	Option C: Two-way cycle track
	6.c. Journey time delay			
		This option offers the most flexibility for cyclists to manoeuvre in the same phase as motor traffic, likely the least impactful option to journey times	Similar to Option A	Due to cyclists occupying one side of the road only. Additional signal phasing will be required to facilitate cycle movements through junctions particularly at Charlemont Bridge.
Summary	**Rank**	**1**	**2**	**2**

8.6 Assessment Conclusion

The results of the Stage 2 – MCA Assessment are provided below in Table 8-6, each option has been ranked 1st to 3rd for each section along the scheme.

Table 8-6 - Summary of emerging preferred options from Stage 3 Options Assessment

Section		Option A: One-way raised cycle tracks	Option B: One-way protected cycle lanes	Option C: Two-way cycle track
Section 1A: Clonskeagh Road	MCA Ranking	2nd	3rd	1st
Section 1B: Sandford Road	MCA Ranking	1st	3rd	2nd
Section 1C: Ranelagh Village	MCA Ranking	1st	2nd	3rd
Section 1D: Ranelagh Road	MCA Ranking	1st	3rd	2nd
Section 1E: Charlemont Street	MCA Ranking	1st	2nd	2nd
Overall Scheme (sections 1A-E)	MCA Ranking	1st	3rd	2nd

Three options were assessed through Stage 2 – MCA Assessment for Clonskeagh to Charlemont Street Scheme. Option A (one-way cycle tracks) emerges as the top ranked option with advantages over the protected cycle lanes at road level option (Option B) and Two-way cycle track option (Option C). In terms of meeting the scheme objectives.

Option A is the preferred option due to the continuity with the preceding sections along the network and integration to both Canal greenway and Dodder Greenway (giving a more coherent route overall), greater attractiveness and comfort provided by raised cycle tracks when compared to protected cycle lanes and reduced visual impact when compared with segregation infrastructure features that are typical in light segregation options.

While there is a capital cost difference between Option A and B, the design life of a raised cycle track will be longer than a light segregated cycle lane option and the raised track will have lower maintenance requirements. It is expected that the construction cost between option A and C will be comparable however with Option A there will likely be additional cost associated with drainage and construction sequencing such as traffic management. Option A offers a reduction in potential collisions when compared with option C as cyclists travel in the direction of motor vehicles, this mitigates risks associated with sideroad blind sighting interactions with contraflow movements and reduces the need for additional signalling that is required to manoeuvre two-way cycle tracks through the route.

The Stage 2 assessment has resulted in Option A (one-way raised cycle tracks) being the emerging preferred option for all of the route sections.

9. Option Assessment – Emerging Preferred Scheme

Following the conclusion of the two-stage assessment the Emerging Preferred Scheme is presented below. A preliminary design will be developed based on this assessment in NTA PAG Phase 3.

9.1 General

One-way raised cycle track on both sides of the carriageway to be constructed along the route. Carriageway resurfacing and road markings, footpath surfacing and kerbs to be replaced where required. Signalised pedestrian crossings to be upgraded and tactile paving to be provided along footpaths at all signalised and non-signalised crossing locations. Where possible separate pedestrian, traffic and dedicated cyclist staging provided throughout the scheme. No shared surfaces are proposed to minimise pedestrian / cyclist conflict. Traffic lanes will be reduced to 3.25m, except at particular constrained sections of the route.

9.2 Section 1A: Clonskeagh Road

- Raised one-way cycle track both sides of the road, 2.0m wide. Except where space constraints exist.
- Left turn lane to be removed from Beech Hill Road outbound onto Clonskeagh road and wrap around pedestrian crossing facilities to be provided.
- Right turning pocket maintained onto Verge mount Road leading to Ashton's public house and a new footway along Clonskeagh road.
- On street parking and a number of trees removed western side of Clonskeagh Road, the space is required to provide a segregated facility. It is removed from the Clonskeagh Hospital side of the street rather than the residential side.
- On street parking on eastern side of Clonskeagh Road adjacent to the residential area to be adjusted, a raised level cycle track to run behind the car parking with buffer between parking and cycle track.
- 2.0m wide footway to be provided on western side of Clonskeagh Bridge.
- Northbound Bus Stop removed at exit of Farmer Brown's Public House. Farmer Brown's Public House exit maintained.
- Proposed raised signalised pedestrian crossing south of southern access to Ashton's public house.
- Pedestrian and Cyclist priority given at minor roads and junctions.
- Tightening up and reduction in scale of the junction of Clonskeagh Road, Sandford Road, Milltown Road and Eglington Road in line with DMURS guidance.
- Left turn slip lane removed from Milltown Road onto Clonskeagh Road.
- Left turn slip lane removed from Eglington Road onto Clonskeagh Road.
- New signalised pedestrian crossing on Eglington Road.
- New signalised pedestrian crossing and dedicated cyclist signal facilities at the junction of Clonskeagh Road, Sandford Road, Milltown Road and Eglington Road.
- Upgrade to bus stop facilities to island arrangement as per NCM guidance at Clonskeagh Hospital.
- Revised signal phasing at Clonskeagh Road, Sandford Road, Milltown Road and Eglington Road to accommodate cycle movements.
- Reduced speed limit to 30kph.

9.3 Section 1B: Sandford Road

- Raised one-way cycle track both sides of the road, 2.0m wide. Except where space constraints exist. Cycle lane width restricted to 1.5m from Belmont Avenue to Sallymount Avenue due to geometry constraints.
- Right turning pocket removed from Sandford Road leading to Belmont Avenue
- Upgrade to bus stop facilities to island arrangement, as per NCM guidance, South of Marlborough Road.
- Upgrade to bus stop facilities to in line arrangement, as per NCM guidance, North of Marlborough Road.
- Revised signal phasing at Marlborough Road to accommodate cycle movements.
- Right turn removed from Sandford Road to Marlborough Road.
- Dedicated cyclist signal facilities at the junction of Belmont Avenue and Marlborough Road.
- Reduced speed limit to 30kph.

9.4 Section 1C: Ranelagh Village

- Raised one-way cycle track both sides of the road, 2.0m wide. Except where space constraints exist. Cycle lane width restricted to 1.5m from Woodstock Gardens to Sallymount due to geometry constraints.

- Signalised pedestrian facilities on all arms of the Chelmsford Avenue/ Elm Park Ave junction with Ranelagh Road.
- Removal of the Right turn lane from Ranelagh Road onto Charlestown Road in order to provide space for a continuous and safe cycle facility.
- Removal of Left turning pockets from Ranelagh Road to Chelmsford Avenue.
- Left slip lane from Charleston Road onto Ranelagh Road removed.
- Reconfigure Charleston Road/Cullenswood Road to a 3no. traffic lanes, including 2no. lanes outbound onto Ranelagh Road, dedicated left and right turning lanes, 1no. lane facilitating turns off Ranelagh Road onto Charleston Road/Cullenswood Road
- On Ranelagh Road north of the Charleston Road junction loading/parking/disabled parking reconfigured with cycle lane behind parking, minimal impact to parking here.
- Footpath outside Spar at corner of Ranelagh Road and Chelmsford Avenue to be widened.
- Upgrade bus stop facilities to NCM guidance, bus stops to be island arrangement.
- Reduced speed limit to 30kph.
- Opportunity for public realm improvements to streetscape at the triangle and along amenity frontage.

9.5 Section 1D: Ranelagh Road

- Raised one-way cycle track both sides of the road, 2.0m wide. Except where space constraints exist. Trees in close proximity to buildouts may be affected.
- Existing below standard width Right turning pockets removed at Northbrook Road.
- Right turning pockets at Mountpleasant Road upgraded and additional signalised pedestrian and cyclist crossings provided.
- On street parking removed on the western side of road. In this proposal this bus lane is also removed.
- Upgrade bus stop facilities to NCM guidance, bus stops to be island arrangement.
- Provision of proposed 2No. pedestrian crossings on Ranelagh Road adjacent to Mountpleasant Square.

9.6 Ranelagh Bridge

- On road one-way cycle lane both sides of the road, 1.75m wide. Except where space constraints exist.
- Cycle island and right turn cyclist provision provided northbound on the bridge to access Grand Canal Cycleway.

9.7 Section 1E: Charlemont Street

- Raised one-way cycle track both sides of the road, 2.0m wide. Except where space constraints exist.
- On street parking removed on western side of carriageway, parking maintained on the eastern side of carriageway.
- Existing bus lane to be removed
- Upgrade bus stop facilities to NCM guidance, bus stops to be island arrangement.

10. Next Steps

This report has identified an Emerging Preferred Scheme for the Clonskeagh to Charlemont Street Scheme. The next project stage: Phase 3 of the NTA Project Approval Guidelines (the development of a Preliminary Design) will further refine and update the concept design along the route. The Preliminary Design will define the final achievable scheme for the Clonskeagh to Charlemont Street Scheme considering more detailed studies of constraints and impacts at a local level.

Progressing with the scheme and as part of Preliminary Design, consideration should be given to other important aspects of the overall design of the scheme, including environmental mitigations, lighting requirements, drainage, pavement requirements.

The key stakeholder for the delivery of this scheme is Dublin City Council. Other stakeholders may be identified during the design process. At the conclusion of the Preliminary Design stage, an internal DCC stakeholder consultation process will be undertaken, with inputs and feedback received incorporated where practical and appropriate to do so.

This Preliminary Design may form the basis of the planning consent process for the scheme, it is yet to be determined the route to be taken in order to receive approval for the scheme, be it a Part 8 application or implementation through Section 38 of the Road Traffic Act.

DCC Planning Departments will be consulted in order to confirm the appropriate statutory planning process for this scheme.

aecom.com