

DUBLIN CITY CENTRE TRANSPORT PLAN 2023

Technical Notes | Part 3: Traffic Management



Dublin City Centre Transport Plan 2023 Technical Note Part 3: Traffic Management

Client name:	National Transport Authority	Project no:	321130AK
Client reference:	N/A	Project manager:	Matt Foy
Document no:	3	Prepared by:	Seán Mooney
Revision no:	Final	File name:	03 Dublin City Centre Transport Plan Traffic Management Technical Note.docx.docx
Date:	26/10/2023		
Doc status:	Final		

Document History and Status

Revision	Date	Description	Author	Checked	Reviewed	Approved
Final	26/10/2023	Issued	SM	MF	DK	SP

Distribution of Copies

Revision	Date	Description	Author	Checked	Reviewed	Approved
Final	07/02/2024	Issued	SM	MF	DK	SP

Jacobs Engineering Ireland Limited

Merrion House
Merrion Road
Dublin 4, D04 R2C5
Ireland

T +353 (0)1 269 5666
F +353 1 269 5497
www.jacobs.com

Copyright Jacobs Engineering Ireland Limited © 2024.

All rights reserved. The concepts and information contained in this document are the property of the Jacobs group of companies. Use or copying of this document in whole or in part without the written permission of Jacobs constitutes an infringement of copyright. Jacobs, the Jacobs logo, and all other Jacobs trademarks are the property of Jacobs.

NOTICE: This document has been prepared exclusively for the use and benefit of Jacobs' client. Jacobs accepts no liability or responsibility for any use or reliance upon this document by any third party.

3

TRAFFIC MANAGEMENT

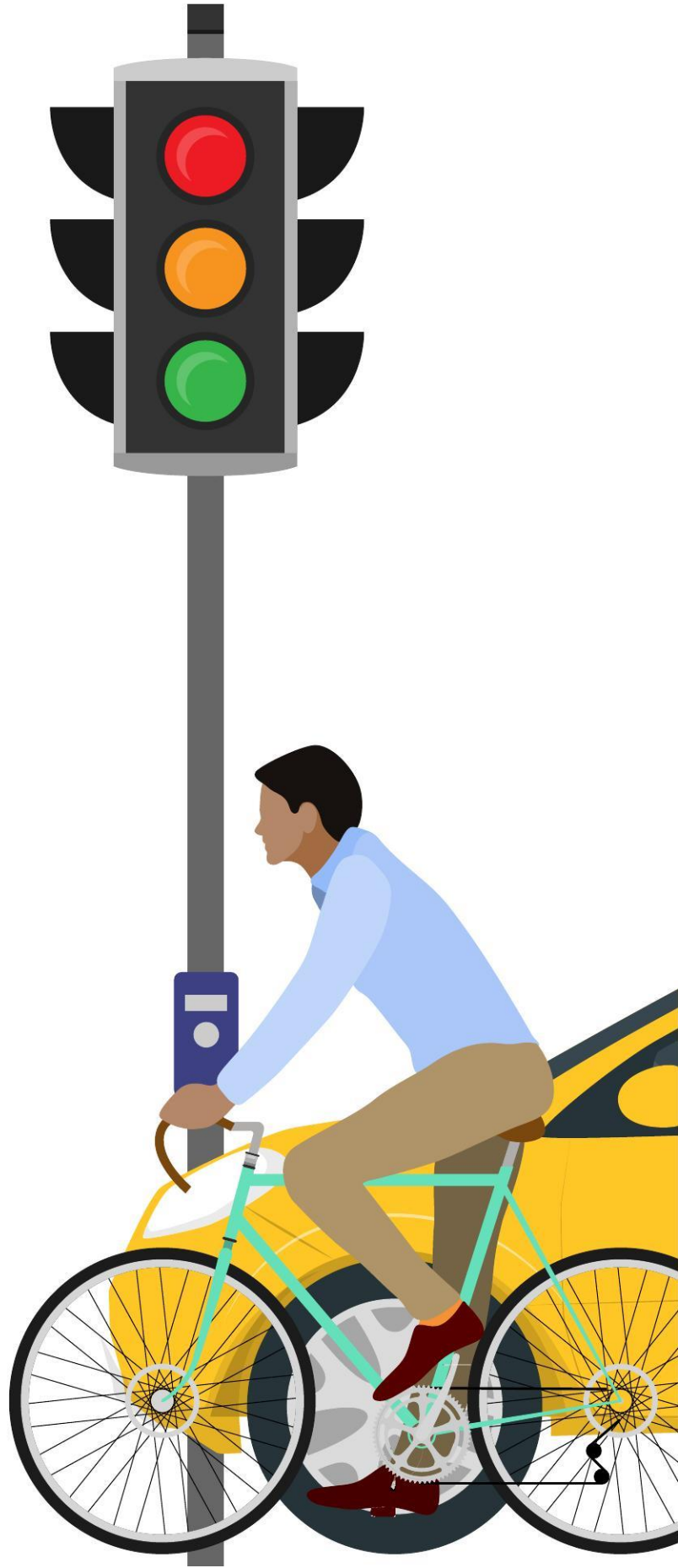


Table of Contents

1	Introduction	1
1.1	Context	1
1.2	Purpose of This Technical Note	1
1.3	Technical Note Structure	1
2	Policy and Planning Information	3
2.1	Dublin City Development Plan 2022-2028	3
2.1.1	Chapter 7 – The City Centre, Urban Villages and Retail	3
2.1.2	Chapter 8 – Sustainable Movement and Transport	4
2.2	Greater Dublin Area Transport Strategy 2022-2042	5
2.1.3	Chapter 8 – Planning for Sustainable Transport	5
2.1.4	Chapter 13 – Roads	6
2.1.5	Chapter 14 – Transport Measures and Travel Options	7
3	Background and Research	8
3.1	The Dublin Context	8
3.2	Sustainable Urban Mobility Plans	9
3.2.1	Brussels GoodMove	10
3.2.2	Birmingham Transport Plan, City Centre Segments	12
3.2.3	Barcelona Superblocks	13
3.2.4	Oxford Traffic Filters	14
3.3	Other Urban Mobility Plans	14
3.3.1	Connecting Leeds and City Square Plus	14
3.3.2	Canterbury Traffic Filters	16
3.3.3	London, Paris, Vienna, Italy	17
3.4	Developing an Approach to Managing Traffic in Dublin City Centre	18
3.4.1	Movement of Sustainable Modes	18
3.4.2	Movement of Goods, Service Vehicles, and Taxis	18
4	Concept and Principles of Traffic Management For Dublin City Centre	19
4.1	Traffic Management Concept for Dublin City Centre	19
4.2	Overview of the Approach to Managing Traffic in the Inner Core	20
4.3	Principles for Development of Accessible Urban Zones and Circulation Plans	22
5	Methodology	23
5.1	Step 1: Identify the Inner Core	23
5.2	Step 2: Identify the initial extents of area to be considered for prioritising sustainable modes	23
5.3	Step 3: Identify the Central Access Route	23

- 5.4 Step 4: Identify Accessible Urban Zones within Central Access Route23
- 5.5 Step 5: Identify Accessible Urban Zones’ Access Points and Circulation Plans.....23

- 6 An Approach to Traffic Management 24
 - 6.1 Step 1: Identify the Inner Core.....24
 - 6.2 Step 2: Identify initial extents of the area to be considered for prioritising sustainable modes26
 - 6.3 Step 3: Identify the Central Access Route27
 - 6.4 Step 4: Identify Accessible Urban Zones within Preferred Central Access Route28
 - 6.4.1 Management of North-South Movements 29
 - 6.4.2 North-Side AUZ Development..... 30
 - 6.4.3 South-Side AUZ Development..... 33
 - 6.5 Step 5: Identify Accessible Urban Zones’ access points and circulation plans to key destinations.....37

- 7 Traffic Management in Wider City Centre..... 42

- 8 Proposed Traffic Management Plan 43

- 9 Conclusion..... 45

- Appendix A: Optioneering for Central Access Route..... 46

1 INTRODUCTION

1.1 Context

The Dublin City Centre Transport Plan 2023 (the Plan) is an update of the 2016 City Centre Transport Study, as provided for in the Dublin City Development Plan (DCDP) 2022-2028¹. It is intended to frame the implementation of the DCDP and the 2022-2042 National Transport Authority (NTA) Transport Strategy for the Greater Dublin Area (the Transport Strategy) in Dublin City Centre.

The Plan considers ways to optimise and enhance the transport network to meet the transport needs, challenges, and opportunities for the city centre. This is based on prevailing national, regional and local transport policy, most notably the Hierarchy of Road Users model set out in the National Sustainable Mobility Policy (NSMP), which places sustainable modes at the top. The emerging proposals have been developed with the sustainable growth of the city and its economy as a key aim, as well as its social, cultural and environmental wellbeing.

A suite of technical notes has been produced which informed the development of the Plan. This note should be read in conjunction with the other technical notes.

1.2 Purpose of This Technical Note

This technical note looks at the development of an approach to traffic management that will provide a platform for the development of longer-term transport projects, creates opportunities to identify the optimum integrated transport network, and helps foster a people-centred and liveable city.

This will enable the reallocation of road space to allow more priority for public transport and safer and more attractive walking and cycling infrastructure, whilst creating opportunities for an improved public realm. This will help to reduce traffic congestion in the city centre, improve active travel and public transport offerings, support the consolidation of development, create a healthier environment for its residents and visitors, and contribute to the goal of reducing transport emissions by 50% as set out in CAP23.

The objective of the approach to traffic management is to enable the creation of a platform that would:

- Provide more space for active modes and public transport;
- Allow pedestrians and cyclists to move around in a safer and more comfortable environment;
- Allow buses and the Luas to operate with fewer delays;
- Support safer and easier travel for sustainable delivery modes in the city centre;
- Create opportunities for improvements to the public realm and new public spaces;
- Reduce the need for private vehicle parking; and
- Reduce emissions and noise pollution.

1.3 Technical Note Structure

The structure of this technical note is as follows:

- **Section 2** outlines the relevant policies that informed this technical note within the wider plan.
- **Section 3** presents examples of transport plans from other cities, and the relevance to Dublin City.
- **Section 4** presents the concept for an approach to traffic management and the principles used to guide the methodology and development of this technical note.
- **Section 5** outlines the methodology used for the development of options in Section 6.
- **Section 6** applies the methodology in Section 5 and recommends a potential approach to managing traffic in Dublin City Centre.

¹ Published by Dublin City Council (DCC) in 2022

- **Section 7** considers how the ideas presented in this technical note could be expanded to work within the whole of the Canal Cordon.
- **Section 8** presents the conclusions arising from this technical note.

2 POLICY AND PLANNING INFORMATION

A review of relevant policy and strategy documentation, and a review of upcoming, planned, and proposed projects within Dublin City which are likely to affect proposals laid out within the plan, are outlined respectively in Technical Note 1: Policy and Background Review and in Technical Note 2: Development Trends Review.

Within this section are high level extracts from the DCDP and from the Transport Strategy relevant to this technical note.

2.1 Dublin City Development Plan 2022-2028

The DCDP governs spatial policy in the city; its main strategic approach is to develop a city that is low carbon, sustainable and climate resilient. The DCDP’s vision is for a city where people will choose to live, work, experience city living, invest, and socialise.

The chapters within the DCDP that informed this technical note are Chapter 7: The City Centre, Urban Villages and Retail, and Chapter 8. Sustainable Movement and Transport.

2.1.1 Chapter 7 – The City Centre, Urban Villages and Retail

Chapter 7 of the DCDP details how the city centre and key urban villages, which are defined within the Chapter, offer the opportunity to provide people with vibrant areas to live, shop, eat, relax and work. It explores how active modes and public transport can be used to develop healthy and sustainable urban centres that offer more space and comfort for pedestrians and cyclists.

The policies and objectives within Chapter 7 of the DCDP relevant to this technical note are reproduced in Table 2-1 and Table 2-2, respectively.

Table 2-1 City Centre, Urban Villages and Retail Policies from the Draft Dublin City Development Plan

<i>It is the Policy of Dublin City Council</i>	
	Plan Active and Healthy Streets
CCUV37	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.

Examples of other policies used to inform this technical note were CCUV15: Premier Shopping Area, CCUV17: Diversifying the City Centre, CCUV39: Permeable, Legible and Connected Public Realm and CCUV40: Public Safety.

Table 2-2 City Centre, Urban Villages and Retail Objectives from the Draft Dublin City Development Plan

<i>It is the Objective of Dublin City Council</i>	
	Civic Spine / College Green
CCUVO13	To implement a programme of environmental and public realm improvements along the Grand Civic Spine from Parnell Square to Christchurch Place and along the city quays, and to prioritise the redevelopment of College Green as a pedestrian friendly civic space including the pedestrianisation of Foster Place.
	Pedestrianisation South William Street
CCUVO14	To support the full pedestrianisation of South William Street, subject to a feasibility study including opportunities for cycling provision.

Examples of other objectives used to inform this technical note were CCUVO16: Public Realm Plans/Masterplans and CCUVO17: Improve Links North/South.

2.1.2 Chapter 8 – Sustainable Movement and Transport

Chapter 8 of the DCDP emphasises the importance of transitioning to sustainable modes of transport to mitigate against the negative impacts of climate change by setting mode share targets that can be seen in SMT01 in Table 2-4. This chapter of the DCDP proposes numerous approaches of achieving these targets, including reallocating some of the road available away from private vehicles and effective integration of land use and transportation.

The policies and objectives within Chapter 8 of the DCDP relevant to this technical note are reproduced in Table 2-3 and Table 2-4, respectively.

Table 2-3 Sustainable Transport and Movement Policies from the Dublin City Development Plan

<i>It is the Policy of Dublin City Council:</i>	
	Modal Shift and Compact Growth
SMT1	To continue to promote modal shift from private car use towards increased use of more sustainable forms of transport such as active mobility and public transport, and to work with the National Transport Authority (NTA), Transport Infrastructure Ireland (TII) and other transport agencies in progressing an integrated set of transport objectives to achieve compact growth.
	Decarbonising Transport
SMT2	To support the decarbonising of motorised transport and facilitate the rollout of alternative low emission fuel infrastructure, prioritising electric vehicle (EV) infrastructure.
	City Centre Road Space
SMT14	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.

Examples of other policies used to inform this technical note were SMT3: Integrated Transport Network, SMT5: Mobility Hubs and SMT22: Key Sustainable Transport Projects.

Table 2-4 Sustainable Transport and Movement Objectives from the Dublin City Development Plan

<i>It is the Objective of Dublin City Council:</i>	
	Transition to More Sustainable Travel Modes
SMT01	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).
	Environmental and Road Safety Impacts of Traffic in the City
	To tackle the adverse environmental and road safety impacts of traffic in the city through measures such as:
SMT036	<ul style="list-style-type: none"> The implementation of traffic calming measures and filtered permeability including the restriction of rat-runs in appropriate areas in accordance with best practice and following advice contained in the Design Manual for Urban Roads and Streets (DMURS). To undertake a study, assessing and identifying areas adjacent to proposed sustainable transport projects for traffic calming and filter permeability. The ongoing monitoring of traffic noise and emissions, and the assessment and evaluation of the air quality and traffic noise impacts of transport policy and traffic management measures being implemented by Dublin City Council. To support programmes of action which tackle the issue of road safety in the city. To promote traffic calming in existing residential neighbourhoods through innovative street design and layout such as homezones, filtered permeability, low traffic neighbourhoods, quietways and unsignalised crossings where appropriate

Examples of other objectives used to inform this technical note were SMT019: ‘Park and Ride’ Services and SMT023: Elimination of ‘Free’ On-Street Parking.

2.2 Greater Dublin Area Transport Strategy 2022-2042

The Transport Strategy sets out a 20-year framework for investment in transport infrastructure and services. The strategy emphasises the need to align with wider national and regional policies, as well as spatial planning policy and strategy as Ireland undertakes a climate transition towards a low carbon and climate resilient society.

The chapters within the Transport Strategy that informed this technical note are Chapter 8. Planning for Sustainable Transport, Chapter 13. Roads and Chapter 14. Traffic Management and Travel Options.

2.1.3 Chapter 8 – Planning for Sustainable Transport

Chapter 8 of the Transport Strategy sets out the measures that are essential for reducing the need to travel and a transport system that is more focussed on sustainable modes rather than cars to cater for the majority of travel demand. These measures are based on the road user hierarchy (see Figure 2-1) which prioritises walking and wheeling, cycling and public transport over cars. The Transport Strategy measures proposed include filtered mobility and the reallocation of road space to limit car usage.



Figure 2-1 The Road User Hierarchy, Sourced from the Transport Strategy

Relevant measures from Chapter 8 of the Transport Strategy are outlined in Table 2-5.

Table 2-5 GDA Transport Strategy 2022 - 2042 Chapter 8 Relevant Measures

Transport Strategy Measures:	
	Road User Hierarchy
PLAN2	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.
	Filtered Permeability
PLAN9	Development Plans, SDZ Planning Schemes and Local Area Plans in the GDA should ensure that the road and street networks in new development areas are designed on the basis of providing for filtered permeability, and should incorporate measures which deliver filtered permeability in existing neighbourhoods.
	Reallocation of Road Space
PLAN16	The NTA, in conjunction with the local authorities, will seek the reallocation of road space in appropriate locations in Dublin City Centre, Metropolitan towns and villages, and towns and villages across the GDA in accordance with the road user hierarchy, in order to prioritise walking, cycling and public transport use and prioritise the placemaking functions of the urban street network.

Examples of other measures used to inform this technical note were PLAN3: Housing and Transport and PLAN5: Retail Development.

2.1.4 Chapter 13 – Roads

Chapter 13 of the Transport Strategy sets out how road space will be managed over the lifetime of the strategy. Underpinning the measures is a need to support sustainable travel by providing high quality infrastructure and safe and attractive environments for walking, cycling and public transport when managing public road space.

Relevant measures from Chapter 13 of the Transport Strategy are outlined in Table 2-6.

Table 2-6 GDA Transport Strategy 2022 - 2042 Chapter 13 Relevant Measures

Transport Strategy Measures:	
	Principles of Road Development
ROAD1	1. That there will be no significant increase in capacity for private car trips on radial roads within the Metropolitan Area, except where re-alignments or junction changes are necessary for safety reasons.
	National Road Requirements
ROAD2	2. Strategic traffic, in the context of national roads, is primarily comprised of inter-urban and interregional traffic. This includes vehicles involved in the transportation of goods and products, especially those travelling to and from the main ports and airports, both freight and passenger related. It also includes buses, other public service vehicles and cars which contribute to national and regional economic development.
	Regional and Local Roads Policy
ROAD9	3. Where part of a sustainable mobility plan, to develop orbital roads around towns, accompanied by, and facilitating, enhanced public transport, cycling and pedestrian facilities in the relevant centre.
	Roadspace Reallocation
ROAD13	The local authorities and the NTA will implement a programme of roadspace reallocation from use by general traffic or as parking to exclusive use by sustainable modes as appropriate, as a means of achieving the following: <ul style="list-style-type: none"> • Providing sufficient capacity for sustainable modes; • Improving safety for pedestrians and cyclists; and • Encouraging mode shift from the private car and reducing emissions.

Examples of other measures used to inform this technical note were ROAD5: Southern Port Access Route and ROAD10: Urban Roads and Streets.

2.1.5 Chapter 14 – Transport Measures and Travel Options

Chapter 14 of the Transport Strategy outlines management of traffic for Dublin City Centre – with emphasis placed on the need to continue the reduction of car usage in the city centre with increasing uptake in sustainable modes. This transition will be realised through measures such as low traffic neighbourhoods, car free zones, and a reduction in car parking.

Table 2-7 GDA Transport Strategy 2022 - 2042 Chapter 14 Relevant Measures

Transport Strategy Measures:	
	<p>Management of Dublin City Centre</p> <p>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.</p> <p>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.</p>
	<p>Low-Traffic Neighbourhoods</p> <p>The NTA will support local authorities seeking to implement Low-Traffic Neighbourhoods in urban areas across the region.</p>
	<p>On-Street-Parking</p> <p>The NTA will support local authorities in seeking to reduce the level of free or cheaply available on-street parking with a view to the reallocation of the roadspace to sustainable modes, and/or the implementation of charging regimes which facilitates motorists contributing to the local economy.</p>

Examples of other measures used to inform this technical note were TM2: Management of Urban Centres and TM7: Car Free Zones.

The policies and objectives from the DCDP and the measures from the Transport Strategy will guide the development of an approach to managing traffic in Dublin City Centre. The DCDP sets out its objective of a mode shift to sustainable modes to support the decarbonisation of the transport sector and the Transport Strategy provides a framework for this through the reallocation of road space and the use filtered permeability. Through these measures, demand can be managed and all modes can be provided for in a balanced manner, and a people-centred and healthy environment within Dublin can be fostered.

3 BACKGROUND AND RESEARCH

Encouraging the transition to sustainable transport is a key focus of the DCDP. It is necessary to investigate methods that can align Dublin City's transport network with this goal. As set out in Technical Notes 1: Policy and Background Review there are many plans and proposals in place to encourage the use of sustainable modes such as walking, cycling and public transport, however the provision of these plans and proposals needs to be balanced with the existing reliance on private cars within Dublin City Centre for those who have no alternative. Throughout this section, the objective to increase sustainable transport will be addressed by considering how to reduce reliance on private cars in the city centre - which in turn will create a more accessible and efficient city for sustainable modes.

To help develop an approach to managing traffic in Dublin City Centre that provides a platform to allow for more priority for sustainable modes through the reallocation of road space, research was carried out to understand how other cities were using traffic plans to reduce their reliance on private vehicles. In particular, examples of how filtered permeability, which is defined as low permeability for private vehicles and high permeability for sustainable modes, could be implemented were researched due to the importance ascribed to it in the DCDP.

3.1 The Dublin Context

Over the years, the traffic environment in modern-day Dublin has gone through many changes – from the first trials with pedestrianisation of Grafton Street and Henry Street in 1971 which were eventually made permanent in the 1980s, to the introduction of the DART and to the first Luas on the streets in 2004. In more recent years, the shift from vehicular traffic to sustainable modes have been supported by investments such as Luas Cross City, reopening of Phoenix Park Tunnel, bike-share schemes, high-quality pedestrian and cycle routes along the Grand Canal, pedestrianisations of areas in the retail core such as Suffolk Street and Saint Stephen's Green North. Demand for safer and better active travel facilities have been further boosted since COVID-19, which led to the introduction of car-free environments on Capel Street and around Grafton Street, e.g. Drury Street and South Anne Street, traffic regime changes to reallocate road space to other uses at locations such as Merrion Row and Nassau Street, as well as traffic-free trials on College Green and Dame Street. In the coming years, BusConnects, MetroLink, and substantial investments in cycling and walking schemes will further improve the city's offering for sustainable modes.

Dublin City has been gradually shifting away from cars to sustainable modes, in part due to efforts and investments in public transport, cycling, and walking; and in part due to growing desire and demand for active travel. However, more needs to be done in the current climate emergency - to achieve CAP23 target for 50% reduction in emissions by 2030, to achieve DCDP's target for 83% sustainable mode share by 2028, to enhance the city centre environment and public realm, and to improve its economy and liveability.

Figure 3-1 shows extracts from the NTA's Dublin Metropolitan Area Walking and Cycling Index 2021. The data indicate strong support for the reallocation of road space and reduction of traffic volumes in favour of better opportunities and safer facilities for walking and cycling.

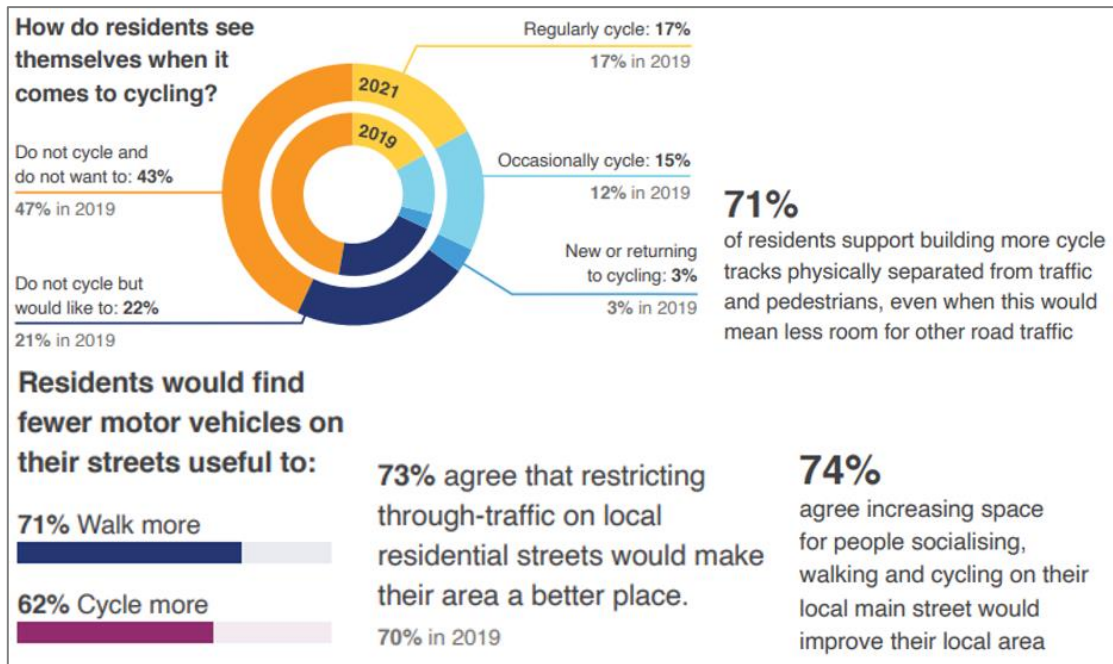


Figure 3-1: Extracts from NTA Dublin Metropolitan Area Walking and Cycling Index 2021

3.2 Sustainable Urban Mobility Plans

According to Europe's main observatory on urban mobility², the European Local Transport Information Service (ELTIS), a Sustainable Urban Mobility Plan (SUMP) is “a strategic plan designed to satisfy the mobility needs of people and businesses in cities and their surroundings for a better quality of life. It builds on existing planning practices and takes due consideration of integration, participation and evaluation principles”³.



Figure 3-2: Core Sustainable Urban Mobility Planning Principles⁴

² [ELTIS - THE EU URBAN MOBILITY OBSERVATORY \(europa.eu\)](http://eltis.europa.eu)

³ [Sustainable Urban Mobility Plans \(SUMPs\) and Cycling \(europa.eu\)](http://eltis.europa.eu)

⁴ <https://www.eltis.org/mobility-plans/sump-concept>

ELTIS maintains a database of cities in Europe involved in ongoing and completed urban mobility projects and initiatives. Dublin is not unique – the challenges that the city faces are similar to those faced by many cities throughout Europe and, similarly, there is a desire to provide a high-quality urban environment with an integrated development of modes that is focused on people. Examples of urban mobility plans for four cities from the ELTIS database – Brussels, Birmingham, Barcelona, and Oxford – have been looked at, and are summarised in the following sections.

3.2.1 Brussels GoodMove⁵

The Regional Mobility Plan for the Brussels-Capital Region aims to “improve the living environment of the people of Brussels, while supporting the demographic and economic development of the Brussels-Capital Region”². It is an ambitious plan to influence the way people move and live in the city, by enabling travel choices using “*adapted, facilitated and integrated mobility solutions*”².

In Brussels’ city centre, the Pentagone, the traffic plan consists of a peripheral route with a “*mesh*” of six zones within it and access points along the peripheral route. The plan is an example of the implementation of filtered permeability with private cars that have destinations in the Pentagone being directed onto the Peripheral Access Route and onto access points designated for its destination zone. A circulation plan with one-way streets and loops ensures that private cars may circulate only within its destination area of the mesh, and are not allowed to travel across the mesh. Movements for walking, cycling, and public transport are unrestricted to, from and within the Pentagone, see Figure 3-4.

While filtered permeability is at the centre of Brussels’ mobility plan, it is important to note that implementation of the plan was supported by a robust framework and comprehensive action plan, which included dissemination of knowledge and information, extensive stakeholder consultation, and continuous close monitoring of implemented measures.

- **Good Neighbourhood**: to manage mobility in the neighbourhoods and improve the quality of life of the inhabitants;
- **Good Network**: organise the transportation networks and ensure an efficient service;
- **Good Service**: to provide the Region's inhabitants and users with a range of integrated services;
- **Good Choice**: to guide individual and collective choices without compromising individual freedom;
- **Good Partner**: ensure partnership governance of the mobility plan;
- **Good Knowledge**: update mobility data and regularly evaluate the Good Move plan.

Figure 3-3: Six Focuses of Brussels’ Good Move Mobility Plan⁶

A key element of the Brussels mobility plan is its efforts on vast stakeholder consultation, which took place over four years. This involved getting the opinions of residents, storeowners and users of the city and has been instrumental in securing public buy-in, as well as the plan’s eventual success in reducing city centre private car traffic by 19% within six months of implementation, while cycling grew by the same amount during that time⁷.

⁵ <https://mobilite-mobiliteit.brussels/en/good-move>

⁶ [Good Move | Brussels Mobility \(mobilite-mobiliteit.brussels\)](#)

⁷ [Communique de presse - 6 mois Good Move Pentagone.pdf \(bruxelles.be\)](#)

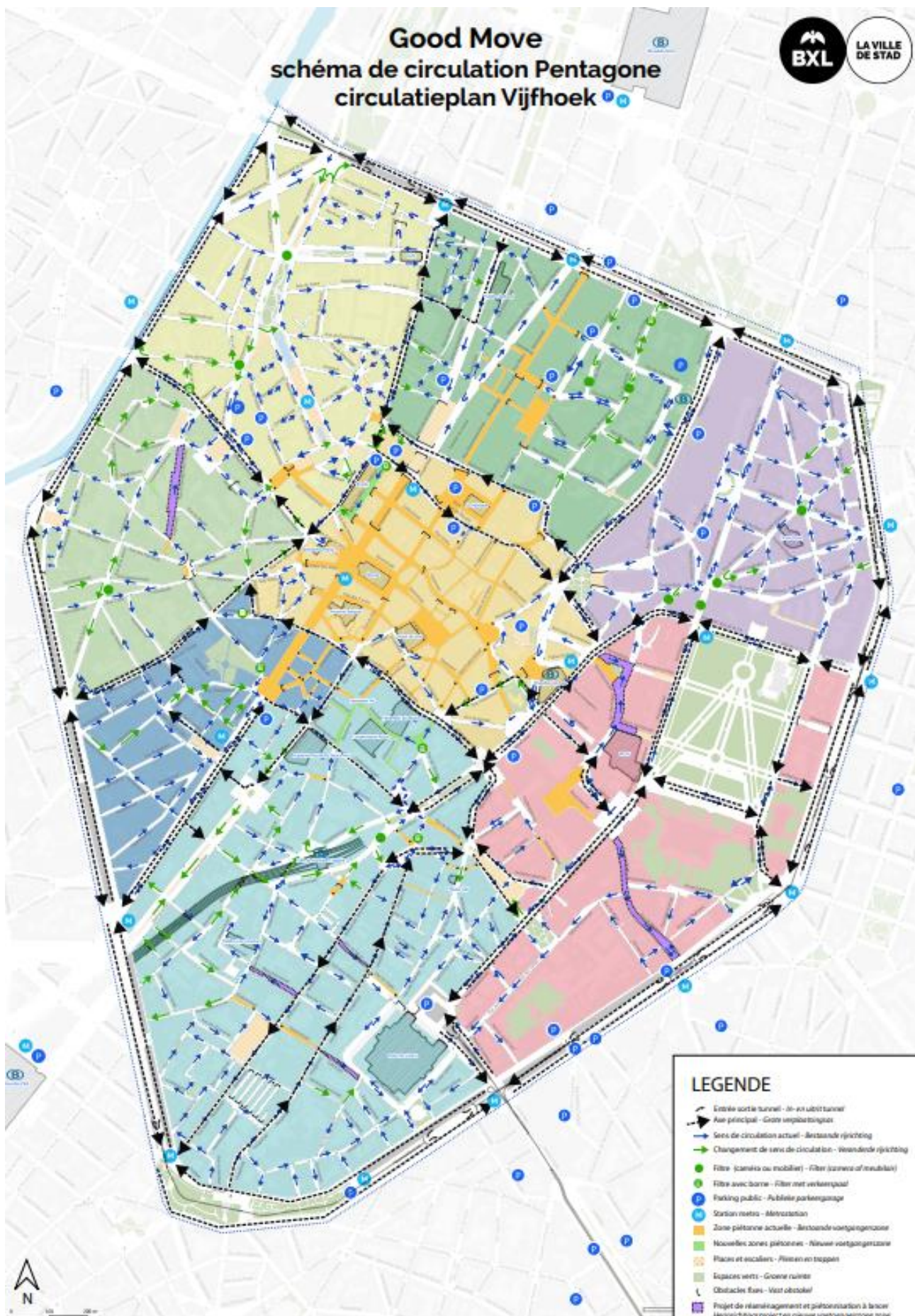
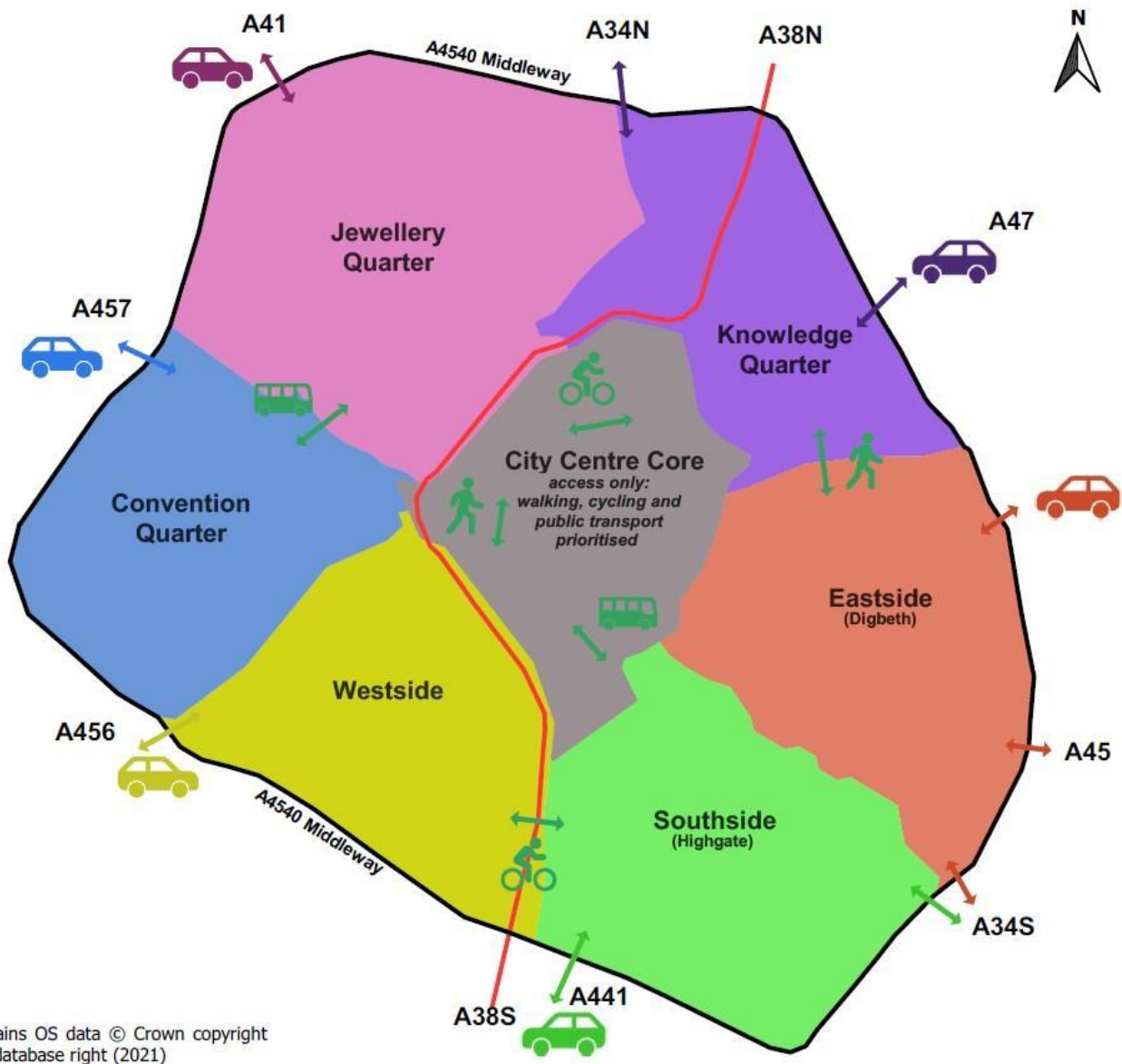


Figure 3-4: Circulation Plan for Brussels' City Centre Pentagone⁸

3.2.2 Birmingham Transport Plan, City Centre Segments

As a response to the COVID-19 pandemic, Birmingham City Council published the Emergency Birmingham Transport Plan in May 2020. In this they detailed how they would prioritise walking, cycling and public transport by implementing a city centre traffic segment initiative. This has been developed further into the city centre segments initiative in which the area within Birmingham’s A4540 Middleway ring road is divided into seven segments (see Figure 3-5). Access for private vehicles into each segment is via the ring road only, and no cross-segment movement is allowed for them. Vehicular traffic currently travelling through the city along the A38N Queensway tunnel will be directed onto the ring road; and strategically placed barriers and one-way-streets will be used to restrict private car movement between segments. Movements for walking, cycling, and public transport is unrestricted to, from, and between segments.

By diverting traffic away from the A34N Queensway tunnel, there is then the opportunity to allow more space for pedestrians and cyclists, as well as improve air quality in the city centre.



Contains OS data © Crown copyright and database right (2021)

Figure 3-5: Birmingham City Centre Traffic Segments⁹

Similar to Brussels, albeit not to the same scale, there was extensive dissemination of information and a public consultation in advance of statutory consultation of the Traffic Regulation Orders.

⁹ [Overview | City centre segments | Birmingham City Council](#)

3.2.3 Barcelona Superblocks

Barcelona city traditionally has a grid road system, where buildings are laid out within meshes of 50-150m. As part of its urban mobility plan aimed at safe, sustainable, equitable, and efficient mobility, Barcelona has identified a suite of actions to increase public transport services, develop an extensive cycle network, rationalise parking, and manage deliveries efficiently.

A key part of Barcelona’s urban mobility plan is the reorganisation of its urban structure into “superblocks” that brings together up to nine regular blocks to create 400m x 400m large blocks, whereby the roads in between is closed to non-destination cars and space is reallocated to sustainable modes and recreational use.

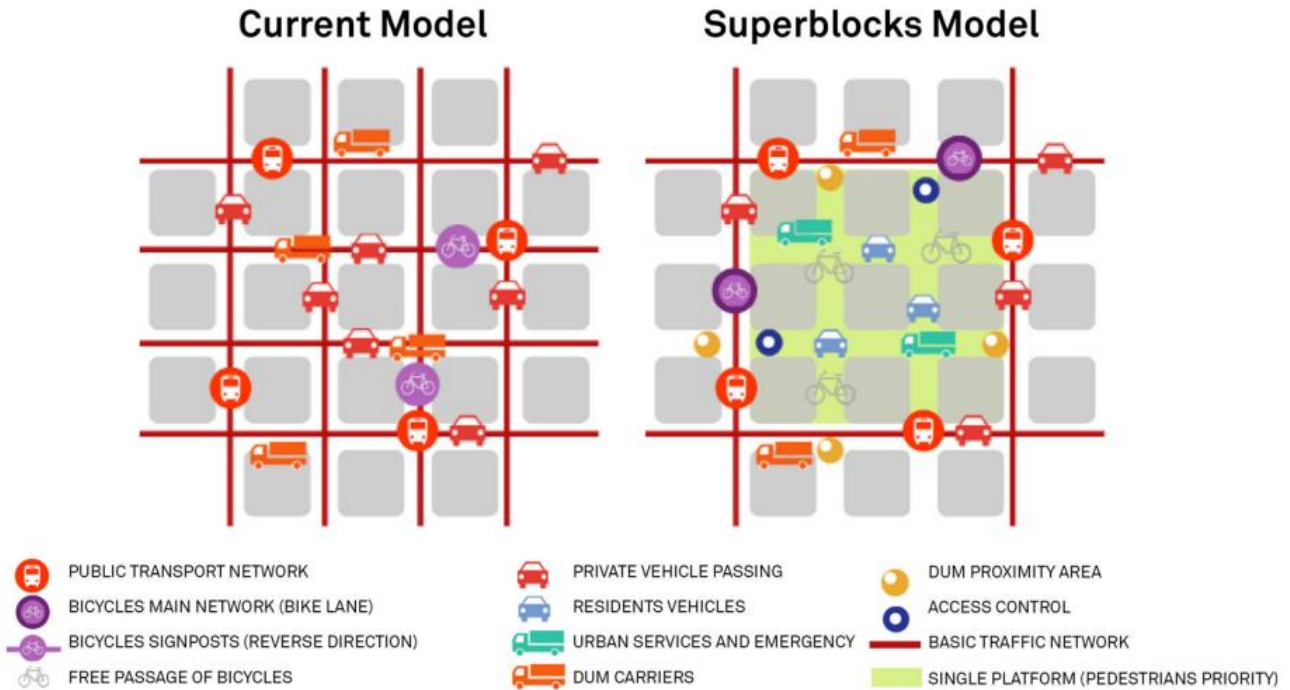


Figure 3-6: Barcelona Superblocks¹⁰

These are being implemented gradually by trialling, engaging with stakeholders, and refining the approach over time. Upon successfully trialling on a 9x9 block in 2016, these will be rolled out in Barcelona’s Eixample district to create 42 new green axes and squares by 2030. If fully implemented, Barcelona will see the creation of up to 503 superblocks, resulting in significant uplift of number of green areas and pedestrian areas.

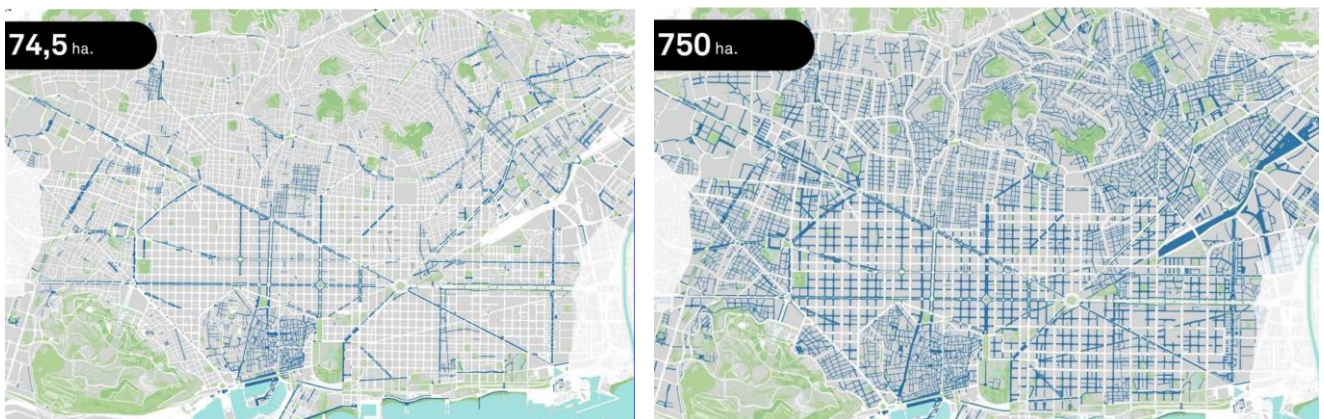


Figure 3-7: Barcelona Pedestrian Areas, Current vs. Planned¹¹

¹⁰ Urban Mobility Plan of Barcelona PMU, 2013-2018, Ajuntament de Barcelona

3.2.4 Oxford Traffic Filters

Oxford County Council are creating “traffic filters” in and around the city in an effort to reduce private car usage. These filters are roads that have time-based restrictions for cars crossing them but are fully permeable for all other modes (including taxis and goods vehicles).

While there are no physical barriers, automatic number plate recognition (ANPR) cameras will be used to enforce the restrictions and a fine will be levied on those who drive across the filters inside the banned times. Permits will be available for purchase to some residents of Oxford allowing them to cross the filters for up to 100 days per year.

A public consultation was held at the end of 2022 and a trial period of the scheme is scheduled to commence in 2024.

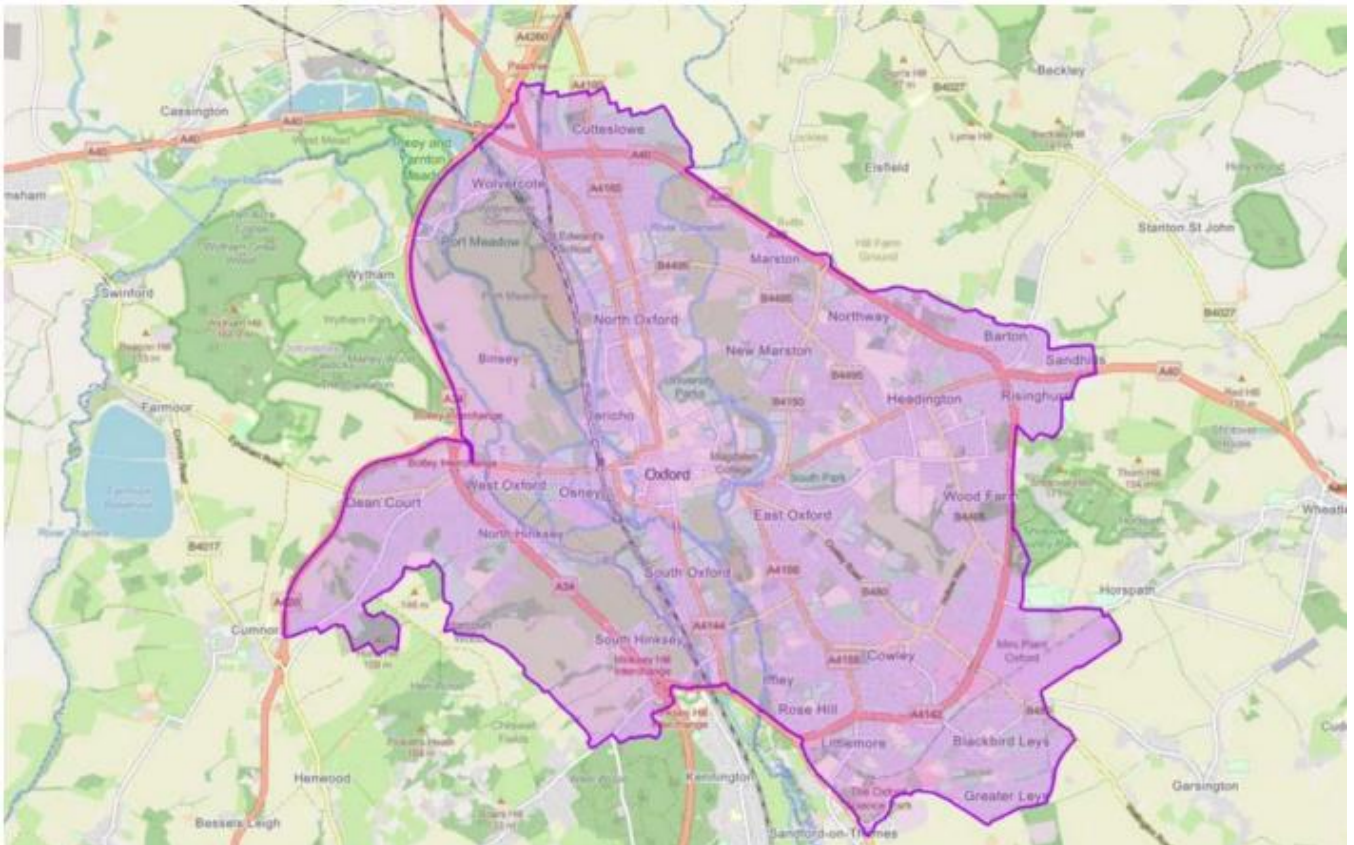


Figure 3-8: Areas in Oxford¹¹ with Proposed Traffic Filters

3.3 Other Urban Mobility Plans

Urban mobility and traffic management plans for other cities were also looked at, which are not specifically identified as sustainable urban mobility plans on ELTIS database. In the following sections, we summarise the plans for Leeds, Canterbury, London, Paris, Vienna, and Italy.

3.3.1 Connecting Leeds and City Square Plus

Leeds’s transport strategy outlines a comprehensive package of measures to deliver transport infrastructure that will encourage travel mode shift to sustainable modes, reduce carbon emissions, and improve people’s health. The package of measures includes substantial investment in upgrading and maintaining its inner and outer ring roads to increase capacity, significant improvements to public transport infrastructure and services (HS2) including upgrades to its main rail station, and making its core city centre car-free.

The strategy and its measures have been well communicated to the public, and all key measures were put through public consultation processes. Individual measures within the strategy are being packaged and delivered in a gradual but integrated manner, and the benefits of them are always highlighted and placed to the fore.

¹¹ [Traffic Filters – Strategic Assessment \(oxfordshire.gov.uk\)](https://www.oxfordshire.gov.uk/traffic-filters-strategic-assessment)

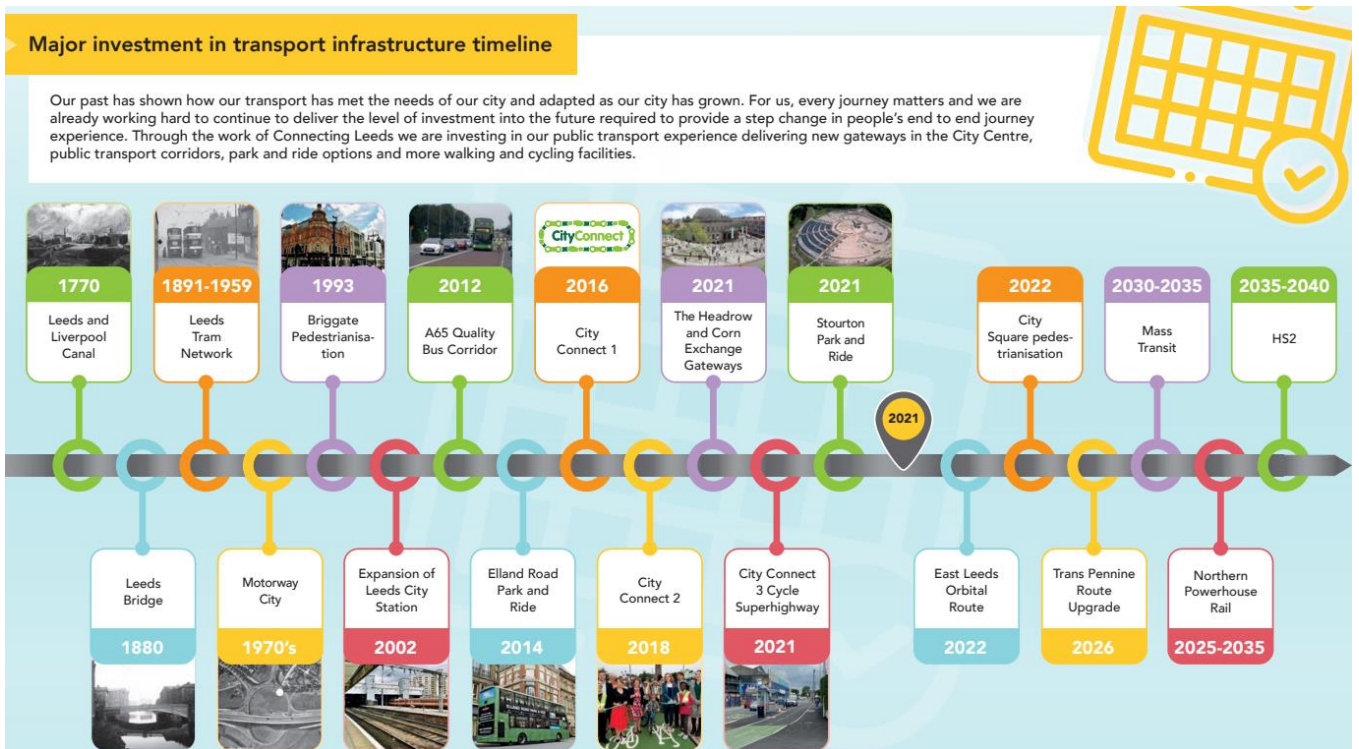


Figure 3-9: Connecting Leeds Strategy’s Transport Infrastructure Investment Timeline¹²

In the city centre, proposals are packaged as “City Square Plus”, which includes closure of its City Square to traffic, upgrade of traffic infrastructure to increase capacity at key junctions, upgrade of public space, enhanced pedestrian and cycling facilities, and new bus gates. Traffic can still access and move around the various parts of the city centre, but not through the City Square.

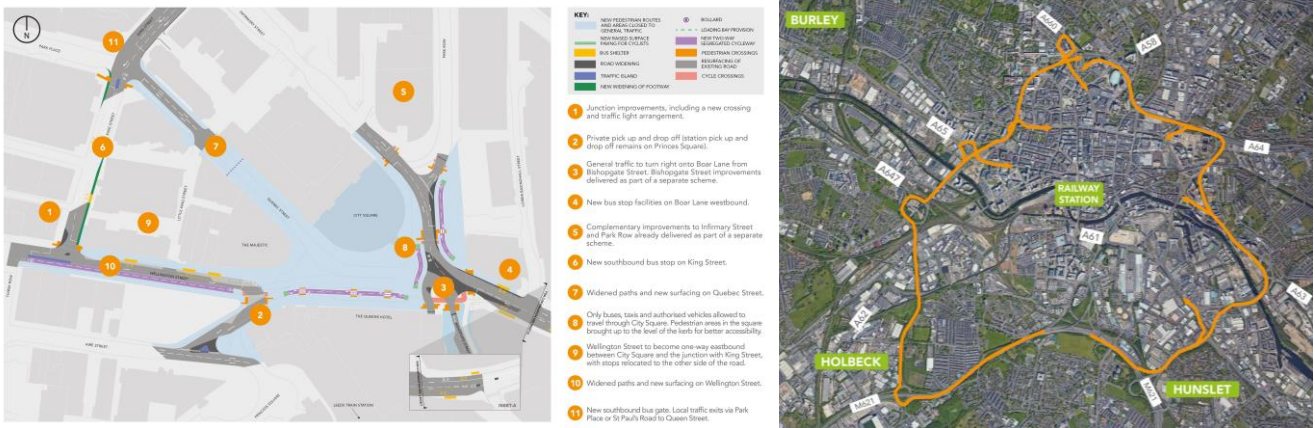


Figure 3-10: Connecting Leeds’ “City Square Plus” Proposals for Car-Free City Centre¹³

¹² [Connecting Leeds Report Appendix 1A 111021.pdf](#)

¹³ [Have Your Say Today - Previous consultations - Leeds City Square \(commonplace.is\)](#)

3.3.2 Canterbury Traffic Filters

Canterbury has plans to implement low-traffic neighbourhoods by identifying peripheral routes around its city centre, and allowing destination traffic to reach different parts of its inner city via designated access points on the peripheral. Drivers who want to move between different parts of Canterbury inner city have to go back onto the peripheral route, and go around it to get to the access point for their next destination. Walking, cycling, and public transport have no movement restrictions.

Canterbury will utilise “traffic filters” in the form of constant video surveillance and enforcement to detect errant drivers who do not go back onto the peripheral route to get to other parts of its inner city.

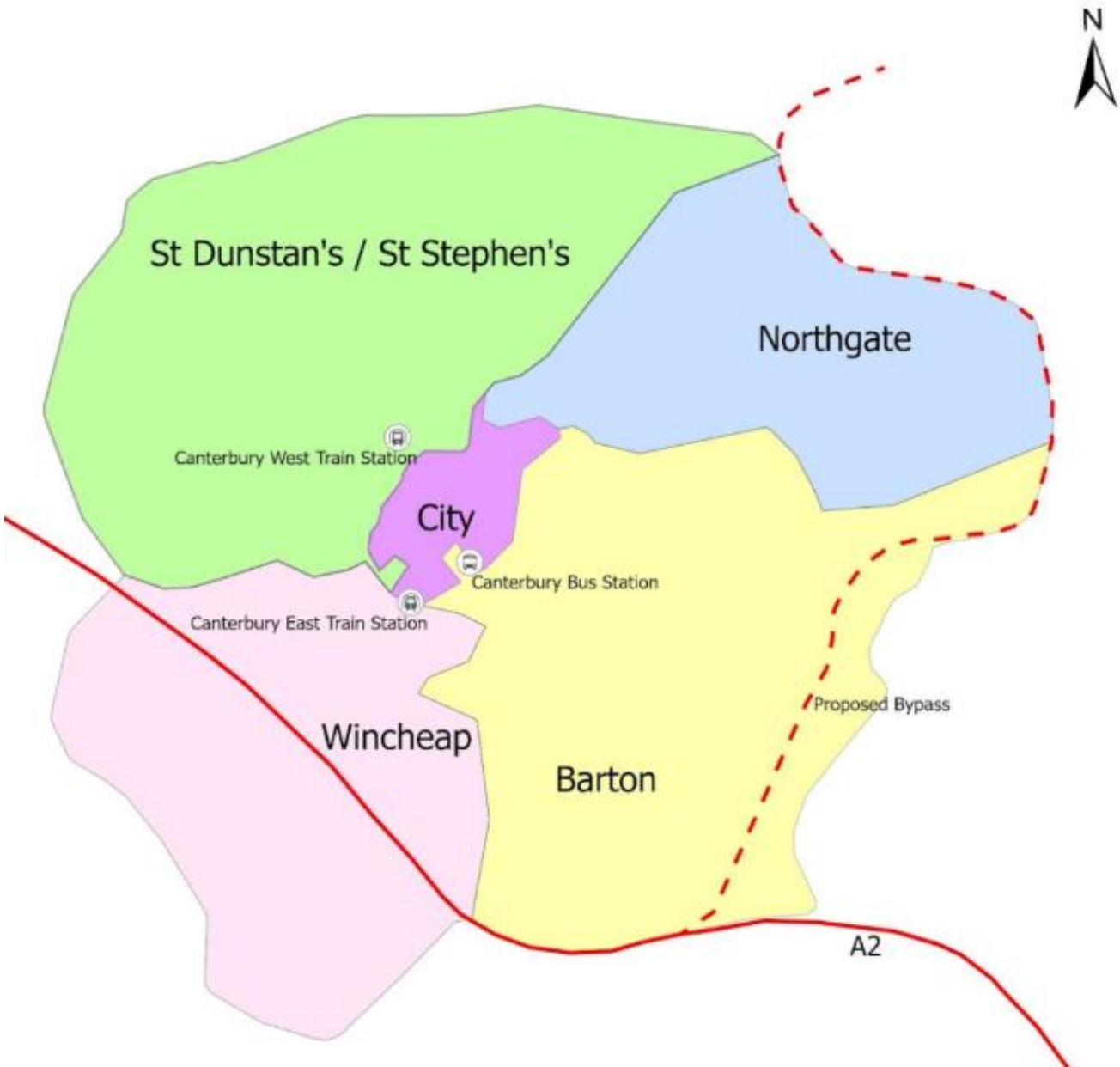


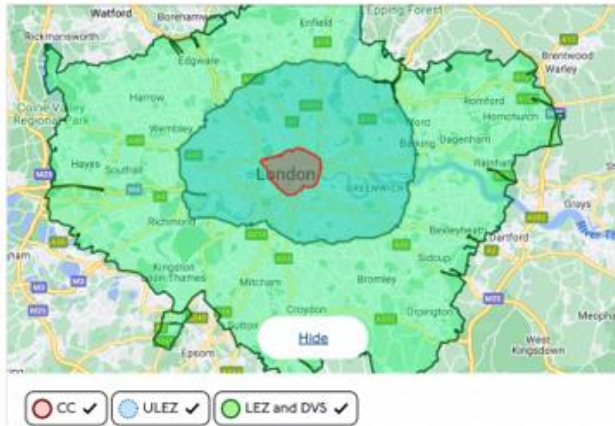
Figure 3-11: Areas in Canterbury¹⁴ With Proposals for Traffic Filters

¹⁴ <https://news.canterbury.gov.uk/news/your-guide-to-the-draft-canterbury-local-plan-to-2045/>

3.3.3 London, Paris, Vienna, Italy

London has implemented a congestion charge on non-exempt vehicles in its city centre since 2003; and has since also implemented charges on vehicles that do not meet specifications for emission levels in its Low-Emission Zones and Ultra-Low-Emission Zones. Paris is implementing a ban on non-destination traffic in its core city centre by 2024. Vienna is set to issue permits to allow only select private cars into its inner city centre. Cities in Italy such as Rome, Florence, Bologna, and Pisa have traffic restrictions on private vehicles in their core city centres.

Traffic management plans in these cities rely on video surveillance and enforcement, whereby non-compliant or errant drivers are charged or fined for crossing into the boundaries of controlled zones.



Map of the peaceful zone: Paris Center and Saint-Germain
City of Paris

Traffic concept car-free inner city Vienna

- proposed "car-free" area
- current pedestrian area or encounter zone



Figure 3-12: City Centre Traffic Restrictions in London¹⁵, Paris¹⁶, Vienna¹⁷ and Italy¹⁸

¹⁵ <https://tfl.gov.uk/modes/driving/dvs-where-and-when>

¹⁶ [Paris crée une zone apaisée dans le centre de la - Ville de Paris](#)

¹⁷ [A car-free inner city - accilium](#)

¹⁸ [Linee Guida ZTL 5050 28 giugno 2019.pdf \(mit.gov.it\)](#)

3.4 Developing an Approach to Managing Traffic in Dublin City Centre

The objective of this technical note, as laid out in Section 1.2, is to support the implementation of the DCDP and Transport Strategy by providing a platform for the development of longer-term transport projects, creating opportunities to identify the optimum integrated transport network, and helping foster a people-centred and liveable city. The reallocation of public road space to favour public transport, cycling and walking is an objective of current policies, and has been an approach taken by other cities such as Brussels and Birmingham. For this to be able to happen, the volume of traffic within the city must decrease, which can be achieved through the creation of a sustainability-driven people-centred movement plan for Dublin City Centre.

Based on the Plan's research on SUMP implemented in other cities, the Brussels and Birmingham approach provides the optimal framework for Dublin City Centre, for the following reasons:

- Dublin city's existing road network is primarily a loop-radial structure, with a compact north-south east-west axial network in its core. This lends itself to the type of circulation system that Brussels and Birmingham have proposed for their city centres, where a peripheral route encircling the city centre is used for access into different parts of the city at designated points.

A peripheral access road would have the advantages of:

- Not requiring cross movements, such as north-south or east-west axial movements.
- Allowing the possibility of expanding while still serving and facilitating access into the bounded area if the core of the city centre grows.
- Having the flexibility to allow diversions if required to accommodate activities or incidents in the city centre.
- A carefully designed circulation system can be used to direct non-destination traffic away from the core city centre without relying on constant surveillance and enforcement. It is more equitable, cost efficient, and requires lower maintenance in the long term.
- Wide communication and extensive stakeholder engagement is key to public buy-in. The Brussels approach communicates the benefits in a holistic way, by offering the public an opportunity to move around in better ways, has been well received.

3.4.1 Movement of Sustainable Modes

Based on the road user hierarchy (as shown in Figure 2-1) the needs of pedestrians and vulnerable road users should come first in the allocation of road space, in the establishment of priority at conflict points with other modes, and in ease of access and permeability throughout the city.

The needs of cyclists should come after pedestrians in the allocation of road space, in the establishment of priority at conflict points with other modes, and in ease of access and permeability throughout the city. It should be noted here that the future profile of cyclists could include vulnerable cyclists, including younger children, and cargo bikes for families and for deliveries.

Buses should be allowed to go sufficiently close to where there is demand. Both buses and trams should have priority over cars at conflict points. The movement of passengers accessing public transport by foot will have the same priority as pedestrians.

3.4.2 Movement of Goods, Service Vehicles, and Taxis

The movement of goods and service vehicles are vital to the economy; and the movement of taxis are vital for facilitating point-to-point journeys that cannot be completed by alternative modes.

Due to existing road space and height restrictions, there are limited options for HGV routes. Routes that are suitable for HGV movements in the city centre, including to and from Dublin Port, will be identified in tandem with traffic circulation plans for private cars.

The circulation of goods and service vehicles will follow that of private cars, and will be allowed significantly greater levels of access during specific times. The circulation of goods and services using sustainable modes will enjoy greater permeability and access. For example, the DCDP commits to the development of 'last mile' delivery hubs within the city to make kerbside activity more efficient.

Taxis could potentially benefit from increased kerbside pick-up and drop-off opportunities during the most opportune times, particularly at public transport nodes, and in parts of the city with thriving night-time economy.

4 CONCEPT AND PRINCIPLES OF TRAFFIC MANAGEMENT FOR DUBLIN CITY CENTRE

An approach to managing traffic in Dublin City Centre should provide a platform to allow for the development of longer term transport projects, create opportunities to identify the optimum integrated transport network, and help foster a more people centric and liveable city. This would provide for safer and more attractive walking and cycling, more priority for public transport, and better public spaces within the city centre area and enables filtered permeability and reallocation of road space – an approach that is inline with current policy and has been used extensively in other cities.

For a transformative approach to succeed, it needs to have buy in from all stakeholders including the general public. It is therefore essential that an open and transparent communication and consultation plan is undertaken with dissemination of facts and accurate information, a high degree of stakeholder engagement, availability and clear visibility of alternatives, and integrated with complementary measures such as parking-space management, and loading / delivery / servicing management.

4.1 Traffic Management Concept for Dublin City Centre

Drawing from examples set by Brussels and Birmingham, the proposal for Dublin City Centre will be to identify a central area that can be served by a contiguous, access route. This area bounded by the access route will consist of several zones that will remain accessible for all modes. Cars will access and egress their destinations in each zone using designated points along the peripheral access route, while sustainable modes will have full permeability through all areas. Figure 4-1 illustrates this concept.

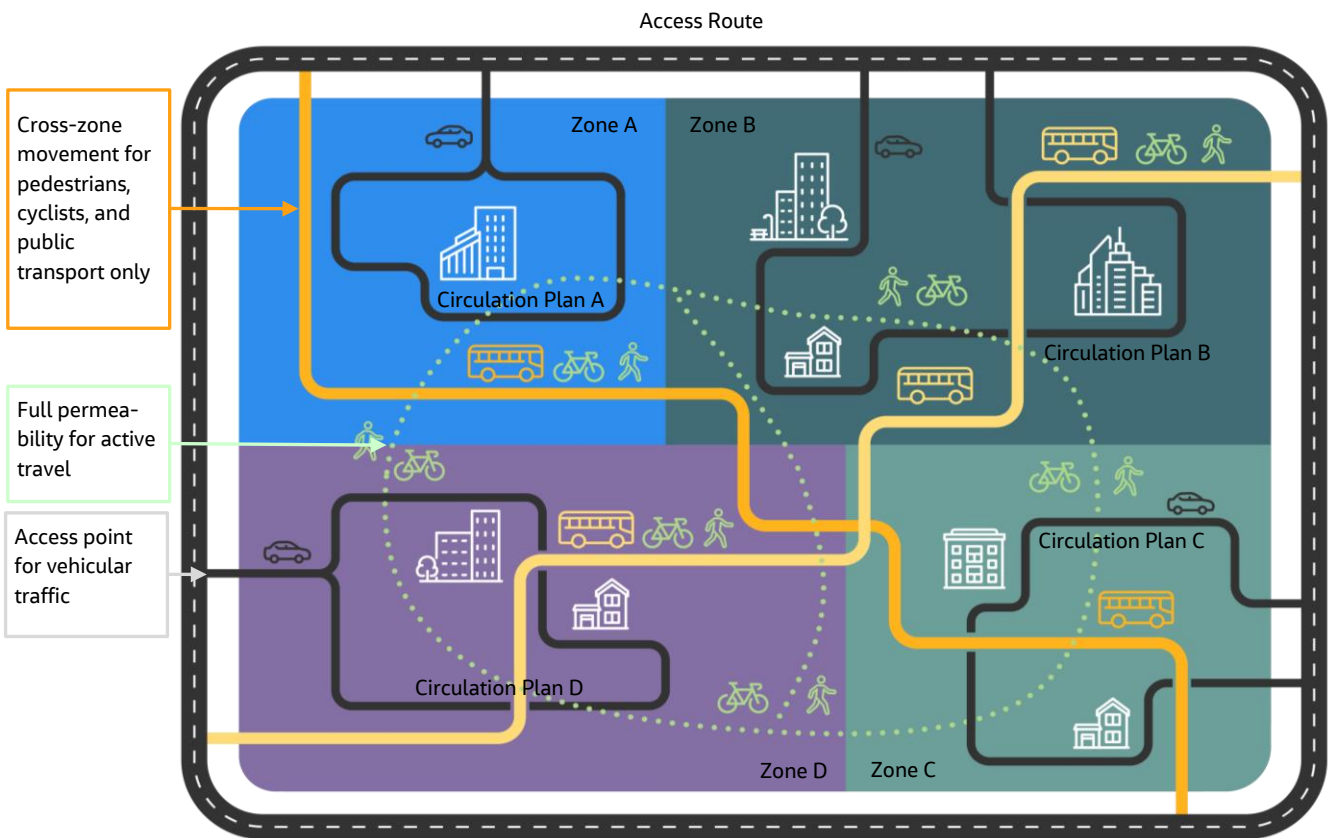


Figure 4-1 Traffic Management Concept

To balance the need for vehicular access to all parts of the city with the need to filter-out non-destination vehicular traffic effectively for the benefit of sustainable modes and better places for people, the size of an area considered for filtered permeability should be appropriate to the road network and the environment it serves. The size of areas of filtered permeability served by an access route in compact city centres similar to Dublin, such as Brussels’ Pentagone and Birmingham are 4.3km² and 7.8km² respectively; in comparison, the area of Dublin City Centre covered in this plan is 13.5km² (see Figure 4-2 for the study area). Hence an area in the compact core of the city centre would be identified initially for this approach; and this approach can then be expanded to other parts of the city by introducing one or more additional peripheral routes.

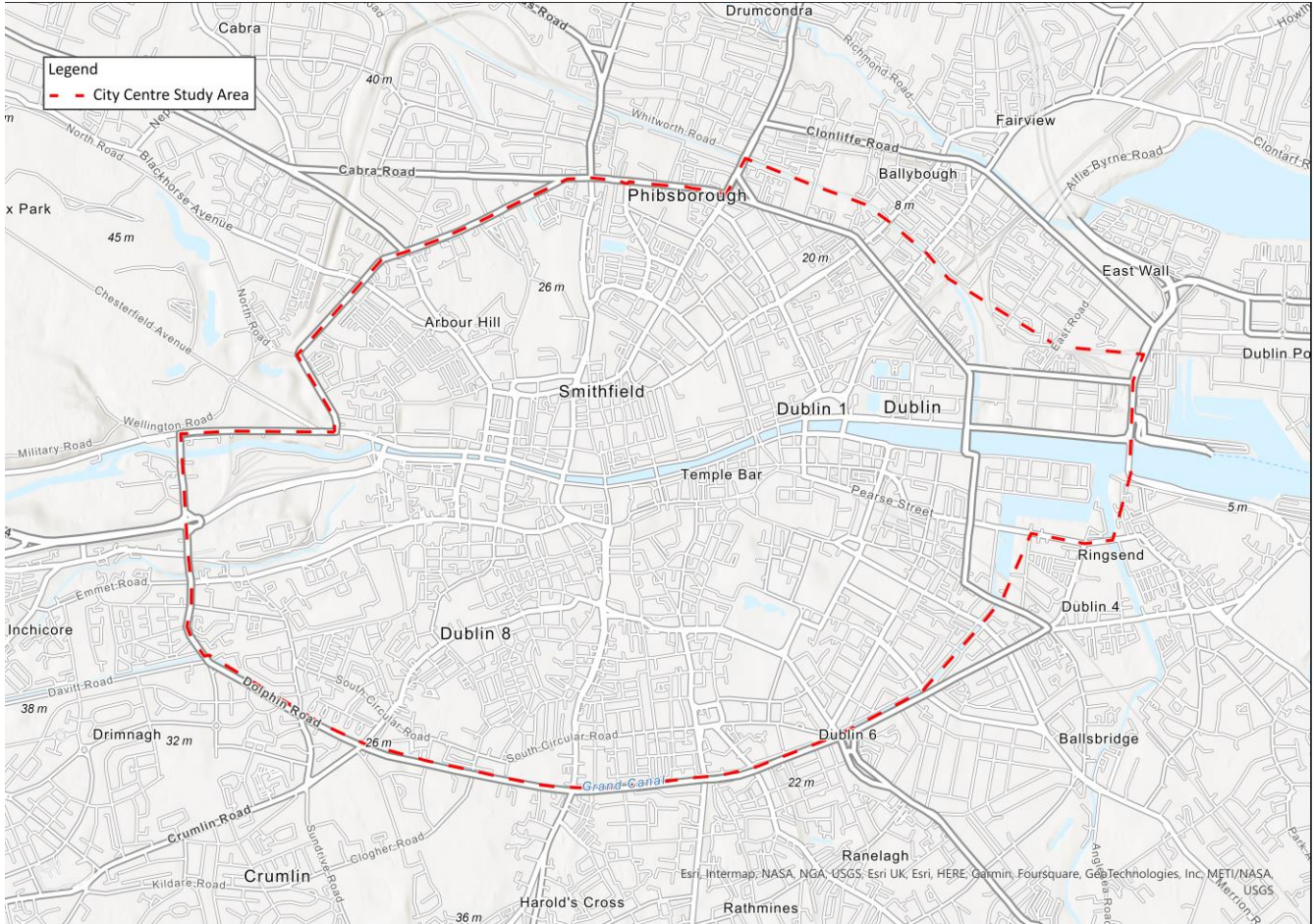


Figure 4-2 Dublin City Centre Transport Plan – Study Area

The initial area considered for prioritising sustainable modes by means of a peripheral access route will be the inner core (“Inner Core”) – where there is the highest density of commercial and pedestrian activity, and where there is convergence or high volume of public transport (see Chapter 6). This is also the area where filtered permeability will have the most positive impact on sustainable modes given the high density of activity.

This approach for filtered permeability can also be applied for other areas within the Canal Cordon. However, given the extent of the whole area (13.5km²), further study will be necessary to identify the most appropriate measures for balancing car and sustainable mode movements in each area.

4.2 Overview of the Approach to Managing Traffic in the Inner Core

The approach for managing traffic in the Inner Core will be made up of the following elements:

- An access route – the **Central Access Route (CAR)**;
- **Accessible Urban Zones (AUZs)** that makes up the area within the CAR; and
- Circulation Plans for AUZs.

Access and movements for walking, cycling, public transport, and emergency vehicles will not be restricted. Similar to Brussels and Birmingham, a route (Central Access Route, CAR) will facilitate car access to and from the Inner Core where there is the highest density of commercial and pedestrian activity, and where there is convergence or high volume of public transport.

To facilitate access for cars into destinations in the Inner Core i.e. area bounded by the CAR, different access points will be identified along the CAR for different parts of the city, identified as Accessible Urban Zones (AUZs).

Circulation routes within the city centre and within each AUZ will be designed such that cars can travel to and from their destination without meandering around other parts of the Inner Core. This concept is illustrated below in Figure 4-3.

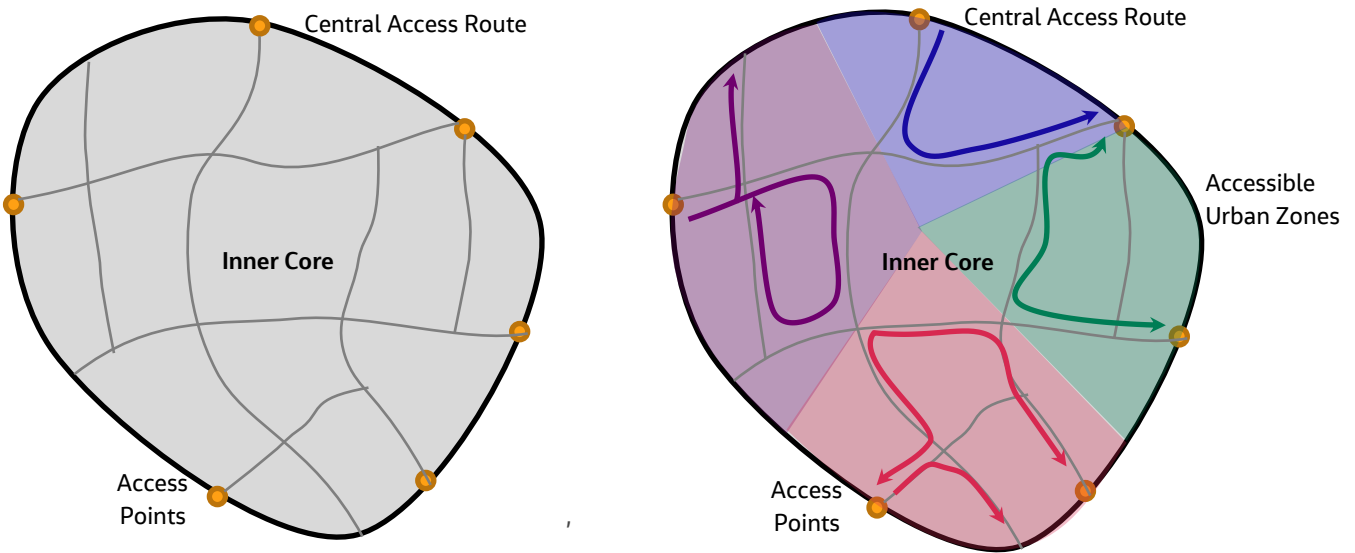


Figure 4-3: Accessible Urban Zones Principle

This structure of the CAR and AUZs will result in a reduction of cars on roads within the Inner Core as it removes through-routes for vehicular traffic within the CAR, and allows better use of roads in the Inner Core for sustainable modes and for cars that have origins or destinations within individual AUZs.

Any vehicle that has an origin or destination within an AUZ will be facilitated. Delivery and service vehicles can be offered more freedom of access and movement at appropriate times.

4.3 Principles for Development of Accessible Urban Zones and Circulation Plans

A set of principles have been identified for the development of AUZs and circulation plans, that will provide the opportunity to reallocate road space in line with the road user hierarchy, that ensures residents and businesses continue to have necessary access, that the Inner core remains attractive as a destination, and that the economy of the city can continue to thrive.

The principles for development of AUZs and circulation plans are as follows:

1. No restrictions on walking, cycling, public transport, and emergency vehicle movements between AUZs.
 - To encourage the use of and reduce the travel time of these modes.
2. It will be possible to reach areas of the city centre that require access by private cars.
 - To maintain access to car parks for workplaces and residences and multi-storey car parks;
3. Restrictions to north-south car movements across the River Liffey in the core city centre.
 - To reduce through-traffic by cars in the core city centre.
4. Restrictions to car movements between AUZs.
 - To reduce traffic volumes which will reduce noise and air pollution;
 - To enable the creation of public spaces; and
 - To make the city more liveable for residents and businesses and more welcoming for visitors.
5. Cars will generally ingress and egress an AUZ via the same location.
 - For ease of route planning by road users.
6. Access will be allowed for servicing and delivery vehicles at appropriate times.
7. Access for emergency vehicles will be maintained at all times.

5 METHODOLOGY

The methodology steps for developing AUZs and circulation plans, using the concept and principles defined in Section 4, are:

1. Identify the busiest part of the city centre, where there is the highest order of commercial, pedestrian and public transport activity;
2. Identify initial extents of area to be considered for prioritising sustainable modes;
3. Identify the CAR;
4. Identify AUZs within the CAR; and
5. Identify each AUZs' access points and circulation plans within the CAR.

5.1 Step 1: Identify the Inner Core

The area in the core of the city centre where there is highest density of commercial and pedestrian activity and where there is convergence or high volumes of public transport services will be identified. This is the area where congestion would have the most negative impact on sustainable modes given the high density of activity and where filtered permeability measures would have the most benefit for sustainable modes.

5.2 Step 2: Identify the initial extents of area to be considered for prioritising sustainable modes

An initial series of contiguous existing roads encircling the Inner Core from Step 1 will be identified. The area bounded by this is the initial extents of area that was considered for filtered permeability.

This boundary will be the starting point for development of a CAR.

5.3 Step 3: Identify the Central Access Route

A comprehensive optioneering exercise will be carried out to identify a preferred CAR using appropriate contiguous existing roads. The area bounded by the CAR will be the area of filtered permeability.

The concept of the CAR is that it is only to be used by cars with origins or destinations within the bounded area. The development of it will not include providing capacity for large volumes of traffic with origins and destinations far beyond the area within it, i.e. it is not a preferable way for strategic traffic to bypass the city centre.

5.4 Step 4: Identify Accessible Urban Zones within Central Access Route

To filter away cars that do not have origins or destinations within the CAR, the area within it will be disaggregated into a honeycomb of connected AUZs, so that traffic circulation plans can be developed for each individual zone in the next step.

The disaggregation will be done firstly by identifying existing roads that have limited opportunities for cars to travel across. Where there are multiple options of roads for defining an AUZ, a recommendation will be made by determining whether the road type would:

- a) Have sufficient capacity; and
- b) Be best placed to allow easy access for cars traveling to/from key destinations in AUZs on either side, yet can be managed such that they cannot travel directly between AUZs on either side.

5.5 Step 5: Identify Accessible Urban Zones' Access Points and Circulation Plans

Access points into each AUZ, and circulation plans to key destinations, will be identified. Consideration will be given to how cars can be routed as directly as possible from the boundary to key destinations in each AUZ, while maintaining priority for sustainable mode users.

6 AN APPROACH TO TRAFFIC MANAGEMENT

The development of the AUZs and circulation plans were undertaken using the steps set out in Section 5: Methodology

6.1 Step 1: Identify the Inner Core

The area where filtered permeability measures would have the most positive outcomes for those on the top of the road user hierarchy was identified. This is an area that would benefit most from high permeability for pedestrian, cyclists, and public transport; and low permeability for cars.

This should be the busiest part of the city, with the following characteristics:

- High density of commercial and pedestrian activity;
- High volumes of buses, particularly scheduled buses; and
- Contains key public transport nodes.

Therefore, this area should enclose the following key public transport and active mode links and nodes within the city centre:

- The retail core (from Chapter 7 of the DCDP).
 - o Category 1 – Premier shopping streets in the city.
 - Grafton Street and Henry Street.
 - o Category 2 – Other shopping streets, for example including:
 - Capel Street;
 - O’Connell Street;
 - Parnell Street;
 - Dawson Street; and
 - Georges Street.
 - o Pedestrian Connectivity.
 - Streets that lead to the bridges between O’Connell Bridge and Grattan Bridge, inclusive, allowing cross river connectivity, such as, Parliament Street and Liffey Street Lower.
- Strategic Development Regeneration Areas (SDRAs) - Areas designated for sustainable development in the DCDP.
 - o Greening, Cycling and Pedestrian Corridor.
 - Streets to be designated as important cycling and walking links.
 - o Core Pedestrian Spine.
 - Streets to be designated as important walking links.
- Luas Red and Green Line stops.
- Irish Rail stations
- Busáras.
- Future Metrolink stops.
- BusConnects spine corridors.
- Primary Cycling Route as defined in the Transport Strategy.

This area identified as the Inner Core, as well as the links and nodes listed above, are shown in Figure 6-1.

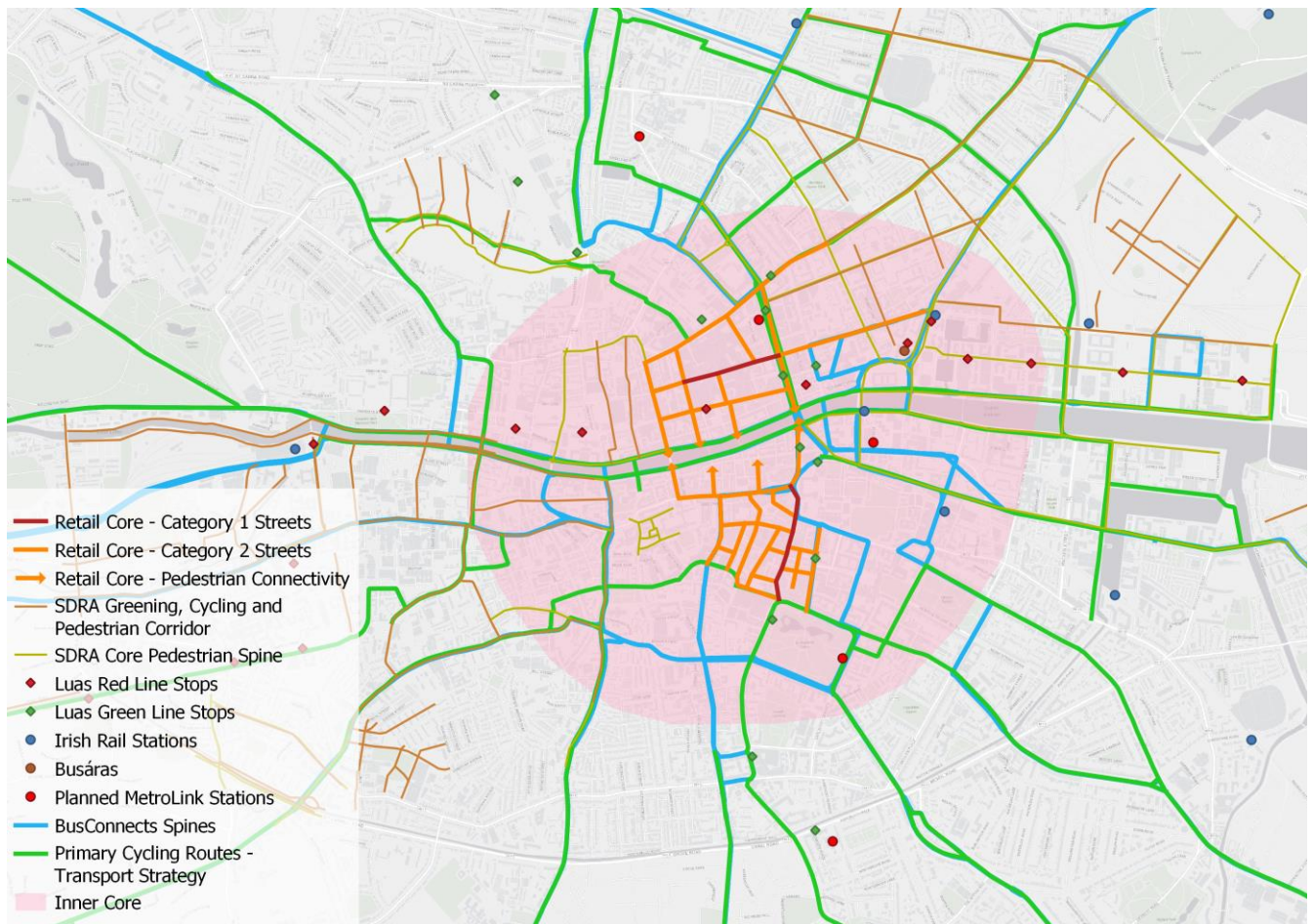


Figure 6-1: Map Identifying the Inner Core

6.2 Step 2: Identify initial extents of the area to be considered for prioritising sustainable modes

An initial area representing the Inner Core was identified in Step 1. A boundary for this area was identified using existing roads in the network and was contiguous throughout, shown in Figure 6-2. This is the initial extents of the area to be considered for prioritising sustainable modes through filtered permeability.

This boundary will be brought to Step 3 as the first option for developing the CAR.

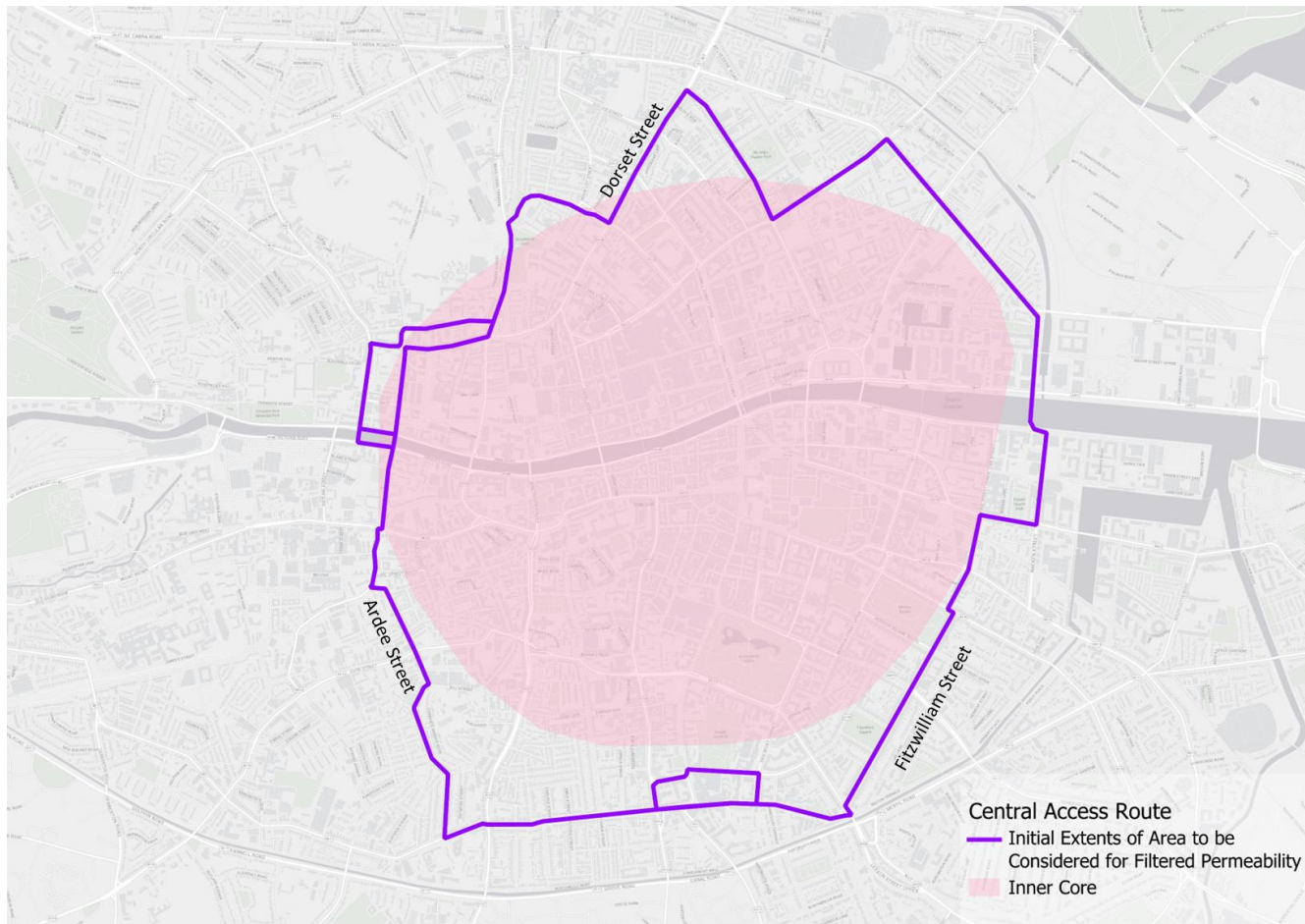


Figure 6-2: Initial Extents of the Area to be Considered for Filtered Permeability

6.3 Step 3: Identify the Central Access Route

Access for cars into the area considered for filtered permeability can be facilitated by identifying a series of contiguous roads around the periphery

The optioneering and analysis to identify the best CAR to serve the city centre is detailed in Appendix A of this document. The emerging preferred CAR for the city centre is shown in Figure 6-3. The size of area bounded by the CAR is 6 km².



Figure 6-3: Preferred Central Access Route, as Developed in Appendix A

6.4 Step 4: Identify Accessible Urban Zones within Preferred Central Access Route

The area within the Preferred CAR, i.e. the area of filtered permeability, is shown in Figure 6-4 and will be disaggregated into individual AUZs.

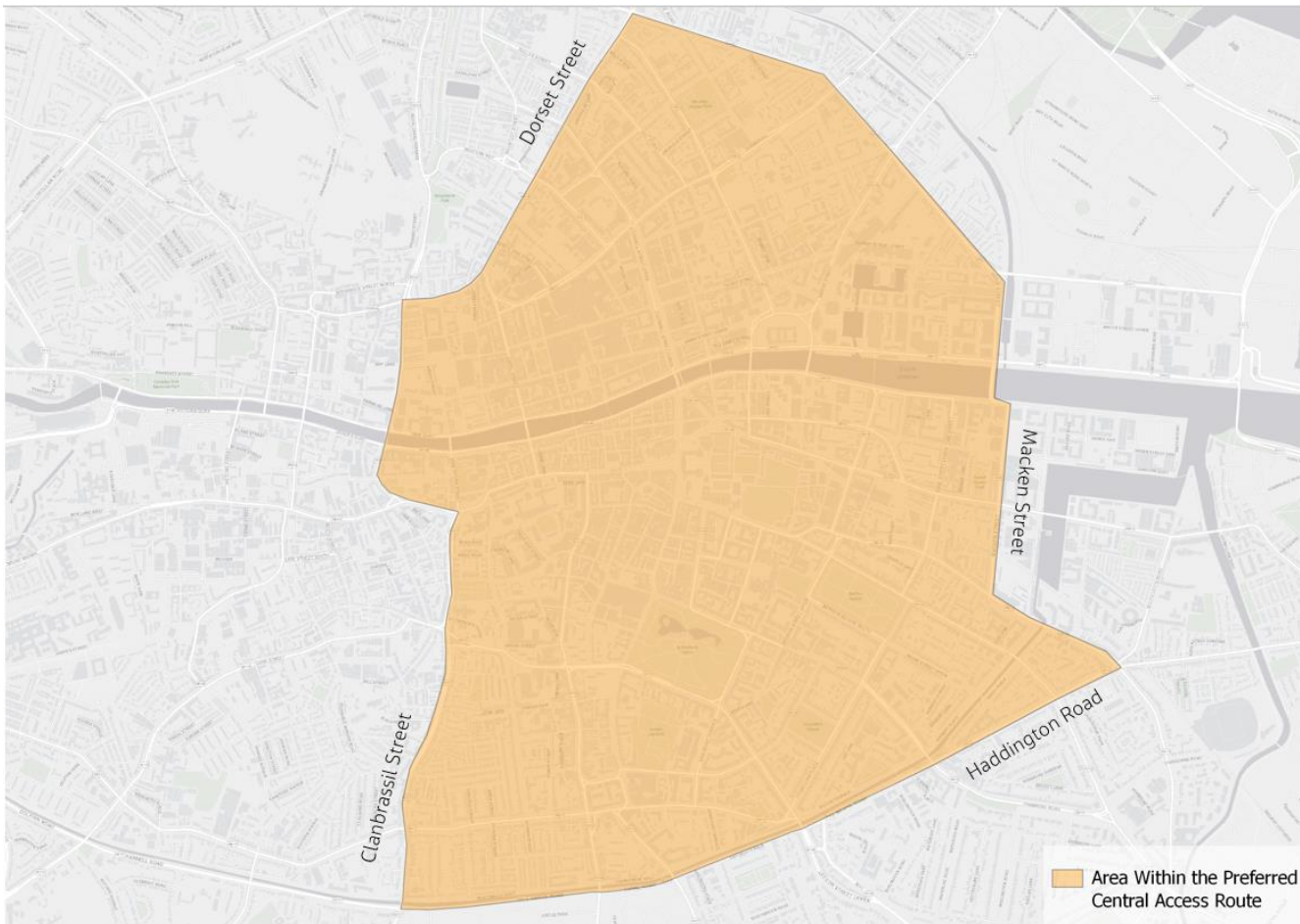


Figure 6-4: Area within the Preferred Central Access Route, the Traffic Managed Area

The following outlines how this disaggregation into a honeycomb of connected AUZs was done.

6.4.1 Management of North-South Movements

The management of north-south movements across the River Liffey made it necessary to remove vehicular traffic from the following bridges:

- O'Donovan Rossa Bridge;
- Grattan Bridge;
- O'Connell Bridge;
- Rosie Hackett Bridge;
- Butt Bridge; and
- Matt Talbot Bridge.

To achieve this an AUZ delineation was drawn through the river (see Figure 6-5) with crossings possible on the CAR only, i.e., at Father Matthew Bridge and Samuel Beckett Bridge.



Figure 6-5: The Traffic Managed Area North and South of the Liffey

6.4.2 North-Side AUZ Development

To manage cross-zone movements, roads that are difficult to cross were used to delineate AUZs. North of the river these are:

- O’Connell Street.
- Capel Street.
- Amiens Street.
- Parnell Square East/West.

Plotting these, with Parnell Square East favoured over the west side due to the latter’s continuation from O’Connell Street, see Figure 6-6. Figure 6-7 was developed by joining the lines to the CAR and numbering each AUZ.



Figure 6-6: Roads that are difficult to cross north of the Liffey

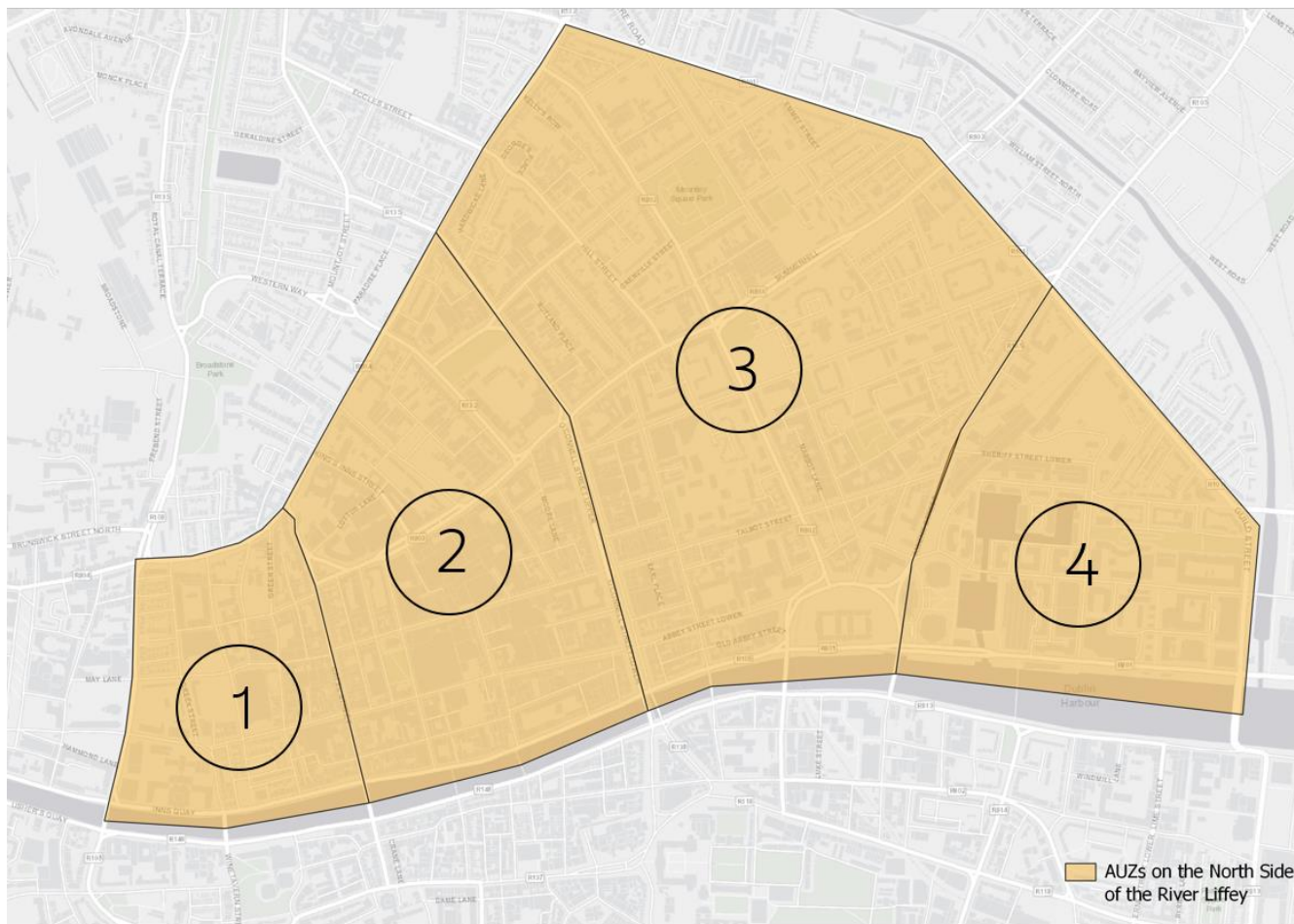


Figure 6-7: First Set of Accessible Urban Zones North of the Liffey

It was determined that 1 in Figure 6-7 lacked a road type with suitable capacity for providing adequate access to the whole AUZ in a self-contained manner. Thus, it was necessary to combine 1 and 2. Movements from the east side of Capel Street to the west can be undertaken using Strand Street and combining the AUZs would also make access to the southern section of Capel Street easier given that it’s not part of the traffic-free initiative. The preferred AUZ structure for the city north of the Liffey can be seen in Figure 6-8.

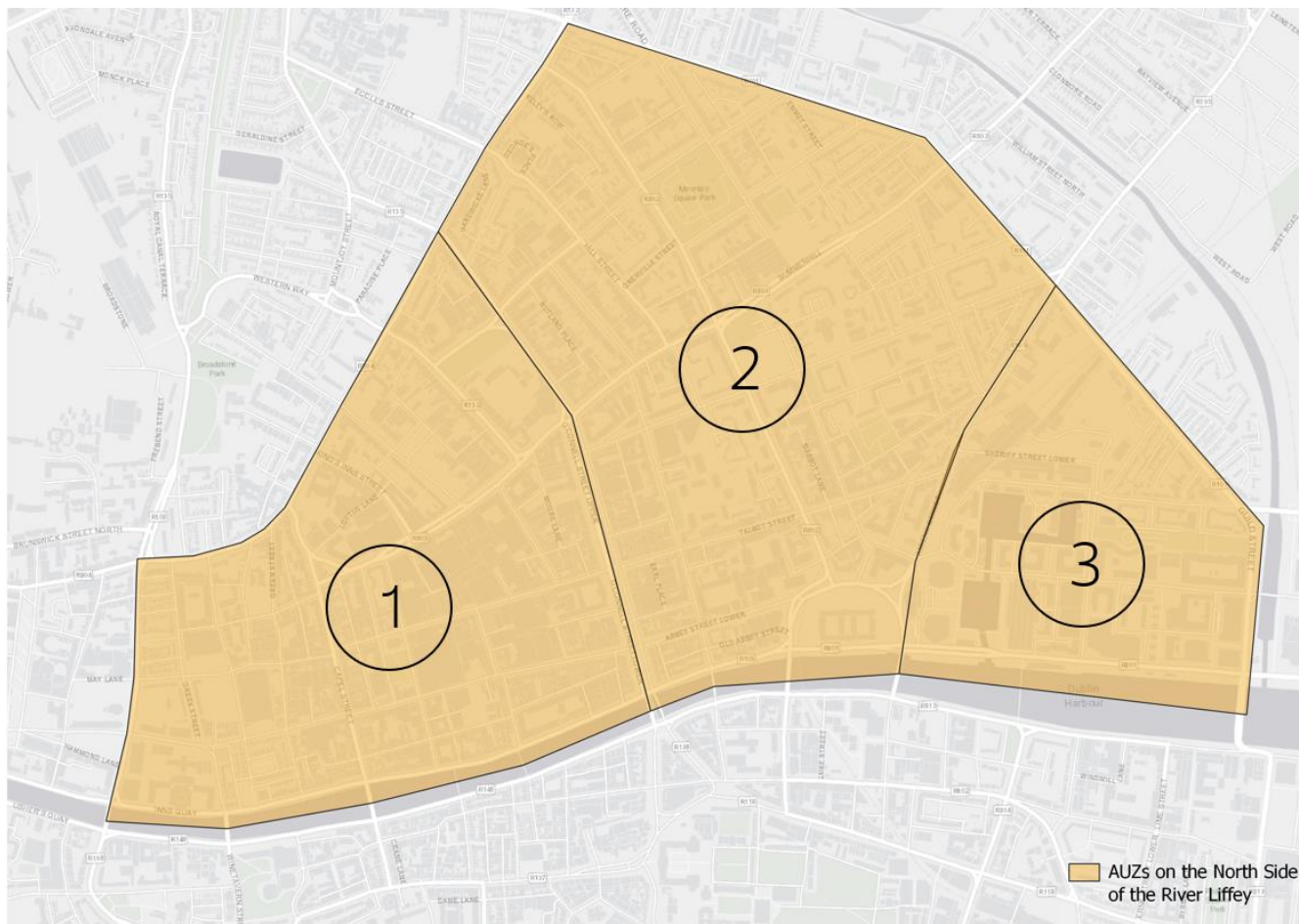


Figure 6-8: Preferred Accessible Urban Zones North of the Liffey

6.4.3 South-Side AUZ Development

Roads that are difficult to cross, thus making them suitable to delineate AUZs, south of the river are:

- Leeson Street.
- Grafton Street/Dawson Street/Kildare Street.
- D’Olier/Westmoreland Street.
- St Stephens Green.
- Trinity College Dublin.

Drawing these lines on a map, as in Figure 6-9, gave the southern side of the city a natural central delineation.

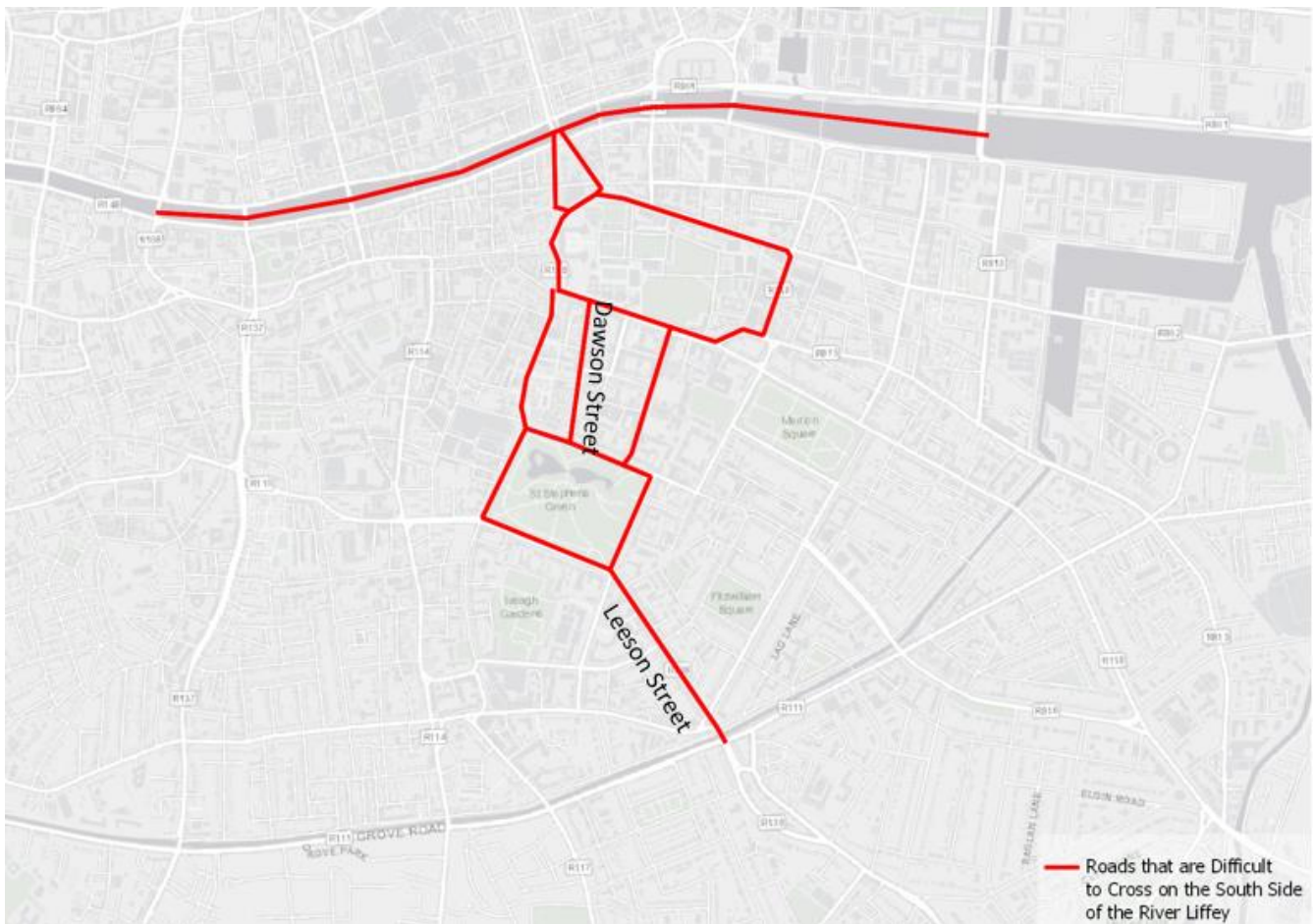


Figure 6-9: Roads That Are Difficult to Cross South of the Liffey

Where there were multiple parallel options, the following were chosen:

- The boundary at Dawson Street was selected over Grafton Street and Kildare Street, to ensure the whole of the Grafton Quarter was in the same AUZ while keeping the boundary as close to College Green as possible for improved legibility.
- The boundary at Westmoreland Street was selected over D’Olier Street, for a natural continuation from College Green.

Figure 6-10 updates Figure 6-9 with the above changes to create initial AUZs south of the river (see Figure 6-11).

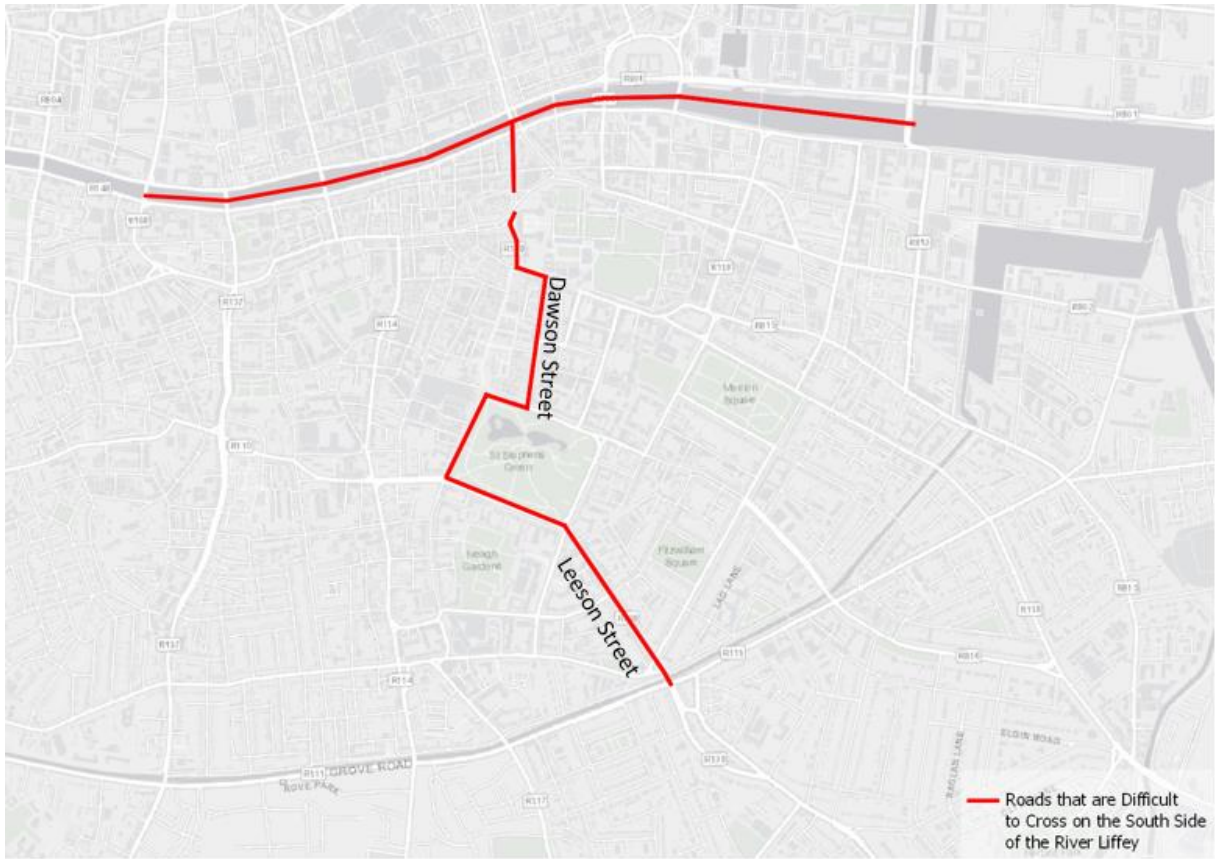


Figure 6-10: Initial Boundaries South of the Liffey

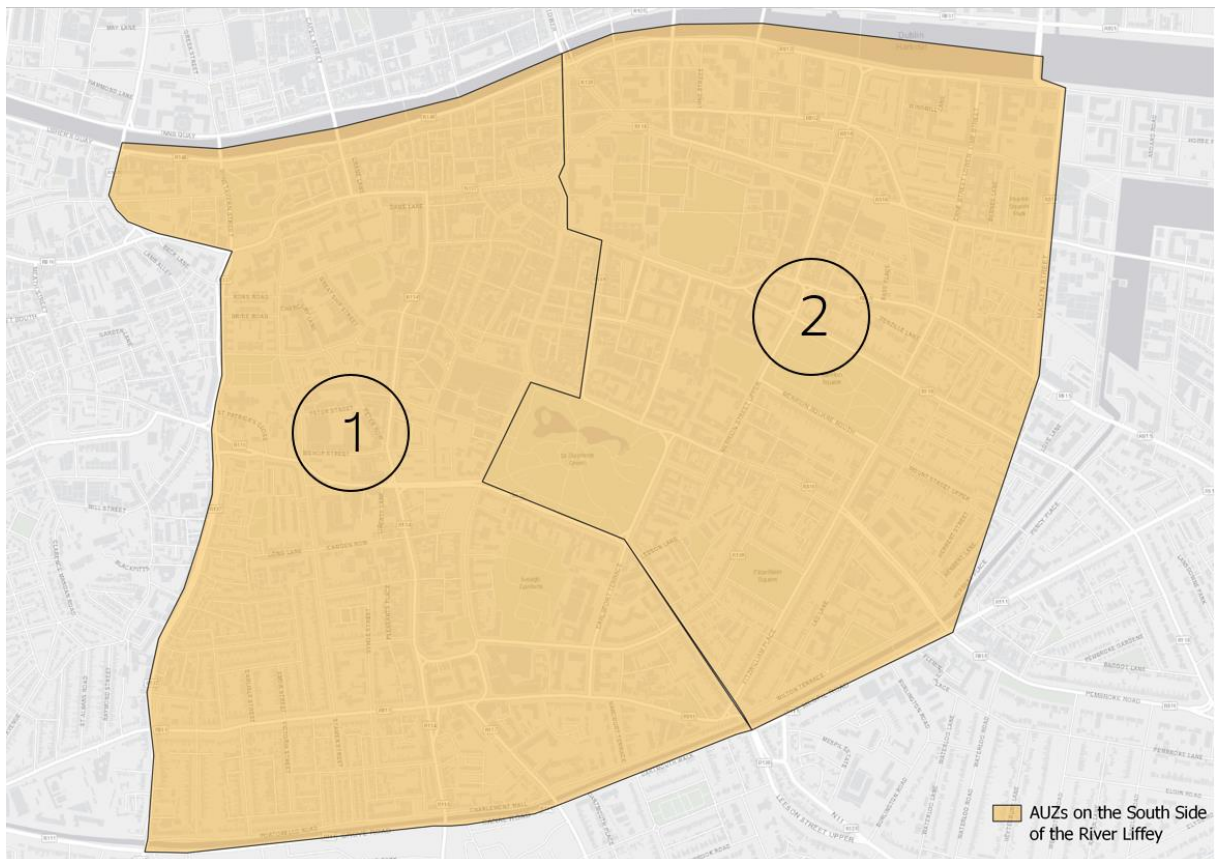


Figure 6-11: First Set of Accessible Urban Zones South of the Liffey

1 (shown in Figure 6-11) could be split horizontally along the following streets:

- Dame Street;
- Kevin Street/Cuffe Street; or
- South Circular Road.

Creating a boundary at Dame Street or South Circular Road would produce AUZ that are too small for effective circulation plans. Thus, a boundary along Kevin Street/Cuffe Street was the most viable option.

Figure 6-12 shows the AUZ structure with this boundary drawn.

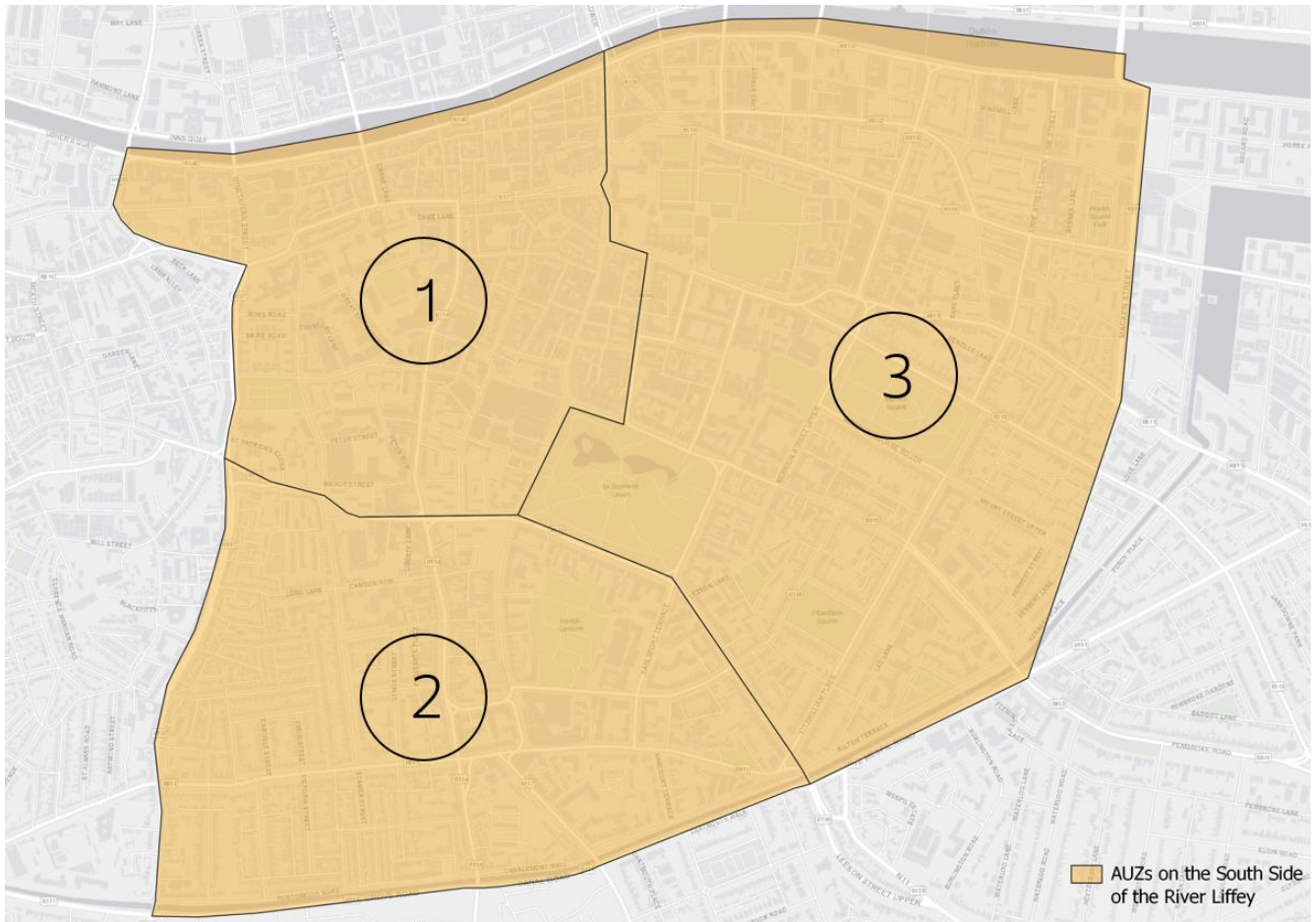


Figure 6-12: Iteration 2 South of the Liffey

In Figure 6-12, 2 could be split vertically along Camden Street. However, the one-way system proposed along Camden Street by BusConnects would mean that there would be no way for cars to access and exit from the western side at the same location. AUZ 1 could be split along Georges Street/Aungier Street, but this would create an AUZ between those streets and College Green/Dawson Street that could not be accessed from the boundary.

Therefore, Figure 6-12 shows the preferred AUZ structure of the west half of the south side of the city.

3 (shown in Figure 6-12) could be split horizontally along the following streets:

- Pearse Street.
- Nassau Street/Fenian Street.
- Nassau Street/Mount Street.
- Baggot Street.

Creating a boundary along Pearse Street would prove making a circulation plan difficult as Pearse Street itself would be the only possible entry/exit point and ensuring all destinations could be reached with this constraint would be difficult. Creating

a boundary along Baggot Street would mean that, given the road layout, St Stephens Green East would be required to be a two lane road to ensure that all destinations would be accessible and to allow vehicles to turn around to exit the AUZ. This is complicated by the St Stephens Green end of Leeson Street having a bus gate.

Westland Row is required for north-south HGV movements and because of this Fenian Street was chosen over Mount Street as this would limit cross-zone movements. If HGVs were routed along Fenian Street to/from Westland Row, then the Lincoln Place gyratory could be managed such that cross-zone movements are kept to a minimum at this location. Creating the AUZ boundary on Mount Street would make permeability for cars between AUZs easier. Thus, the Preferred AUZ structure for the city south of the Liffey can be seen in Figure 6-13.

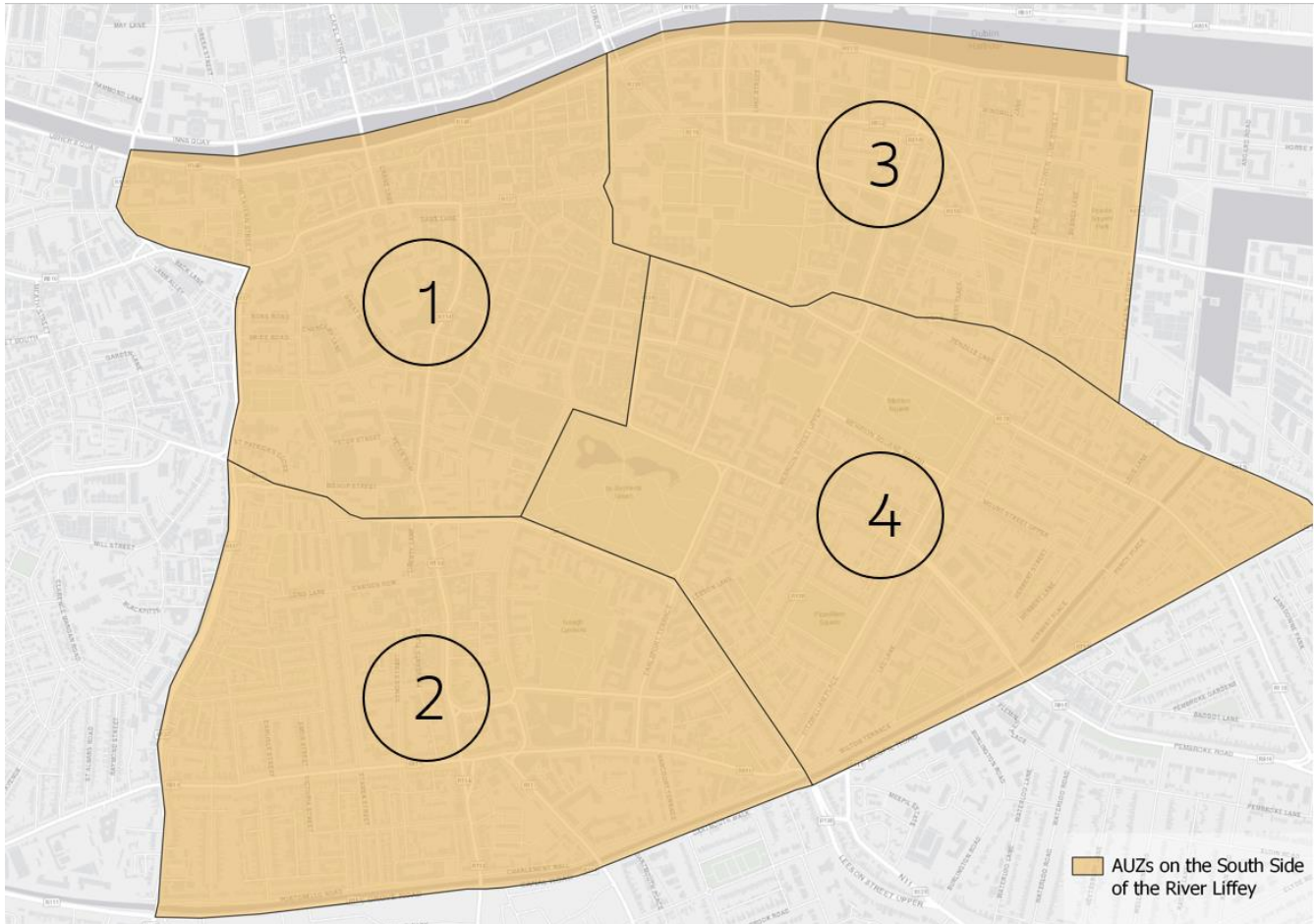


Figure 6-13: Preferred Accessible Urban Zones South of the Liffey

The Preferred AUZ structure can be seen in Figure 6-14.

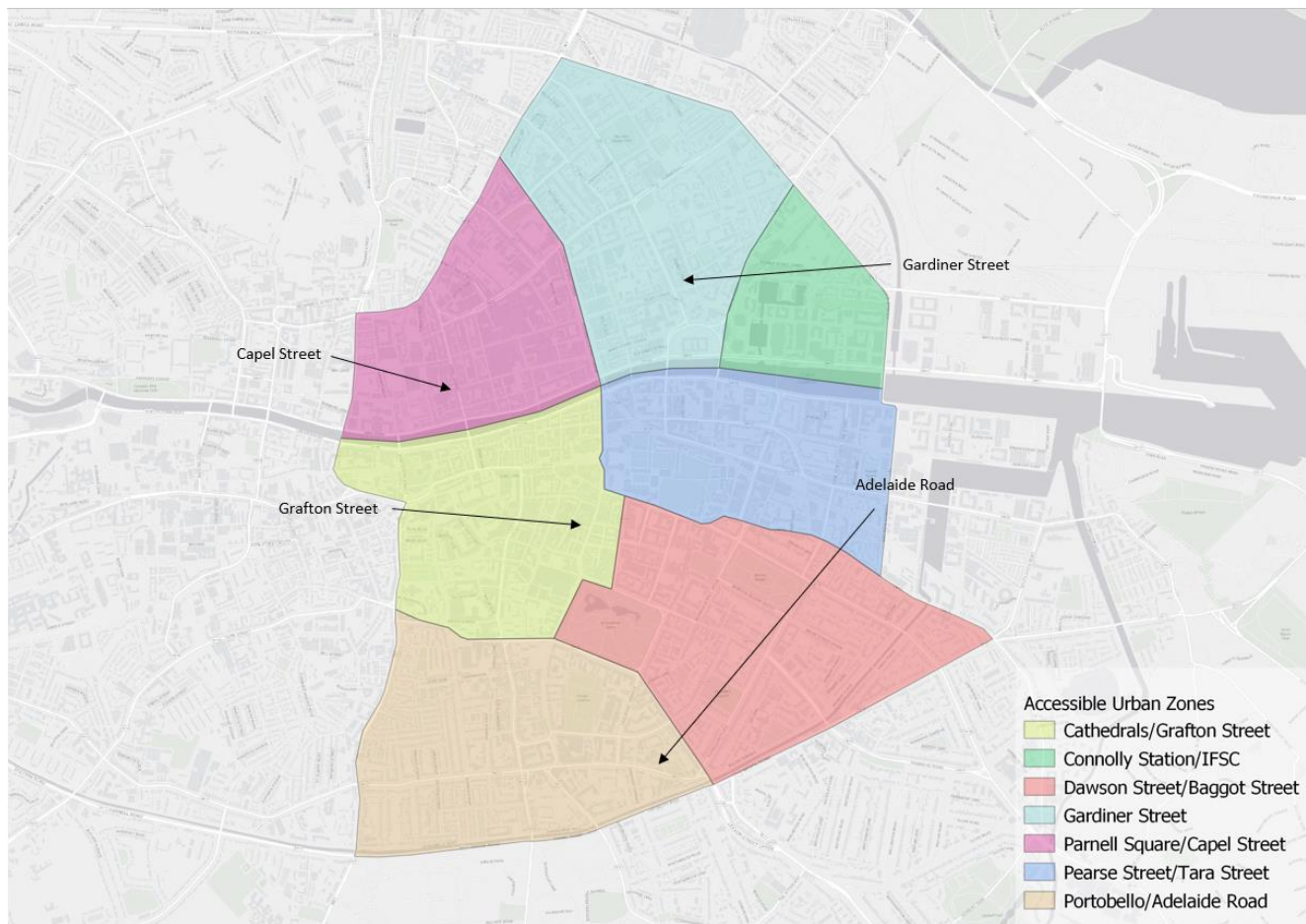


Figure 6-14: Preferred Honeycomb of Accessible Urban Zones

6.5 Step 5: Identify Accessible Urban Zones’ access points and circulation plans to key destinations

To create effective circulation plans in each AUZ, the start and end points must be identified, that is, the entry points and the key destinations within each AUZ.

The fourth principle defined in Section 4 states that entry and exit points will generally be at the same location. While not necessary, ideally entry points to AUZs should be chosen at locations that also allow exit. They should be on roads that are two-way and are situated to provide routing options to multiple destination to reduce the number of roads required.

- North Wall Quay.
 - o Provides entry and exit into the IFSC and IFSC Car Park.
- Mayor Street Lower.
 - o Alternative entry to the Connolly Station/IFSC AUZ. It is not possible to exit at this point.
- Amiens Street
 - o Due to its importance for BusConnects, Amiens Street can serve Connolly Station and its car park.
- Summerhill
 - o Provide access to the southern portion of the Gardiner Street AUZ.
- Gardiner Street Upper
 - o Provide access to the northern portion of the Gardiner Street AUZ.
- Parnell Square East
 - o Provide access to Marlborough Street which is used for the Spire and Arnotts’ Car Parks.
- Dominic Street.

- o While only one-way, Dominic Street can be used to access the ILAC Centre, Parnell and Jervis Street Car Parks.
- Mary's Lane.
 - o Provide access to the west side of the Parnell Square/Capel Street AUZ.
- Christchurch Place.
 - o Provide access to the following Car Parks: Christchurch, Drury Street, Drury Street ParkRite, St Andrews and Brown Thomas.
- Kevin Street.
 - o Provide access to Drury Street ParkRite and St Stephens Green Car Parks and the west side of the Portobello/Adelaide Road AUZ.
- South Circular Road.
 - o Provide access to the west side of the Portobello/Adelaide Road AUZ.
- Ranelagh Road.
 - o Provide access to the east side of the Portobello/Adelaide Road AUZ.
- Leeson Street.
 - o Provide limited access to the AUZs on either side of it.
- Baggot Street.
 - o Provide access to the south and east sides of the Dawson Street/Baggot Street AUZ.
- Mount Street.
 - o Provide access to Setanta and Dawson Street Car Parks and the north and west sides of the Dawson Street/Baggot Street AUZ.
- Grand Canal Street Lower.
 - o Provide north-south HGV access.
- Pearse Street.
 - o Provide access to the Pearse Street/Tara Street AUZ.

These access points can be seen in Figure 6-15. This is one potential solution, and further consultation will be required to determine the best access points for each AUZ.

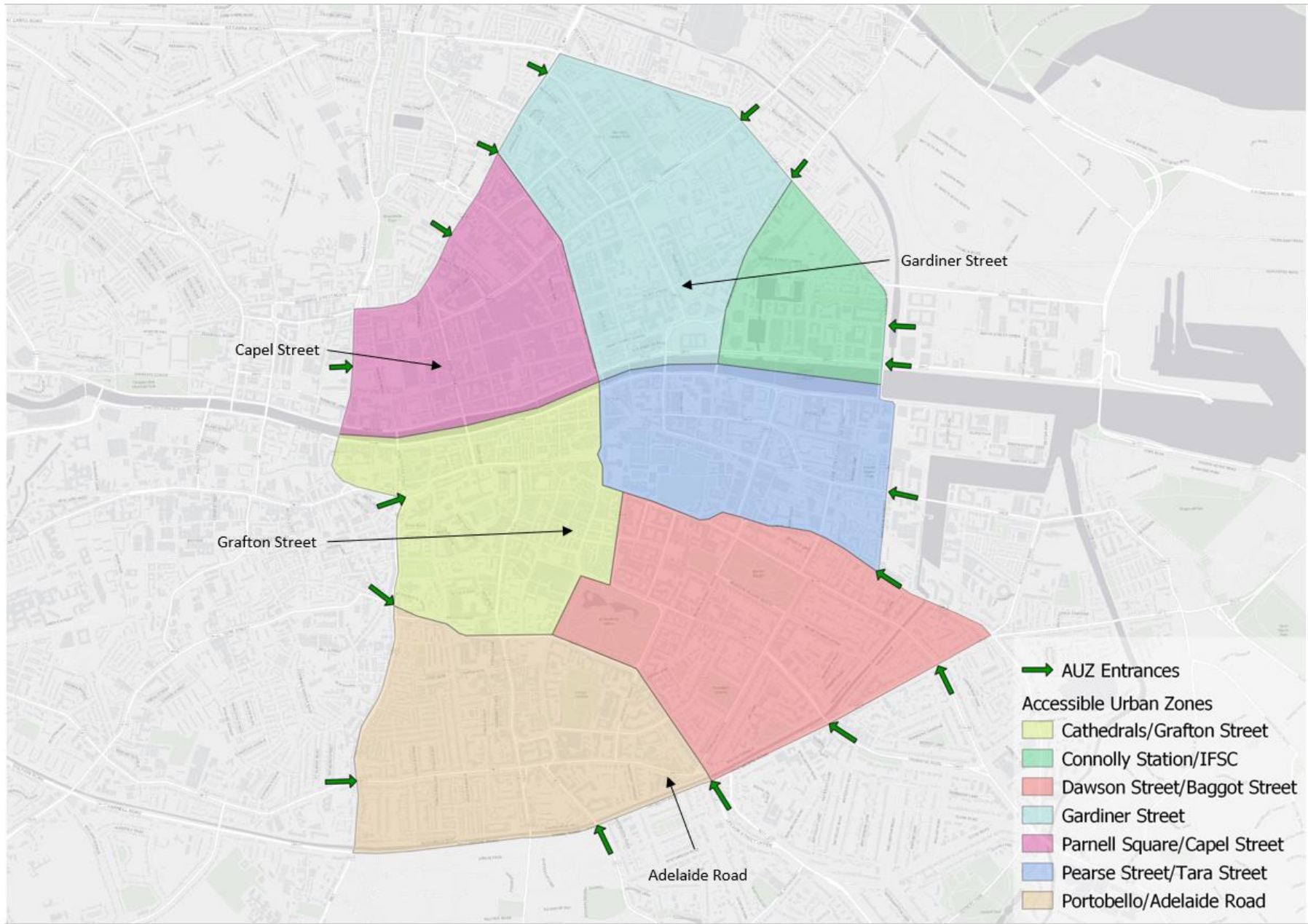


Figure 6-15: Entrances to Each Accessible Urban Zone

Key destinations consist of multi-storey car parks, workplaces and residences. Without an exhaustive list of the latter two, this technical note focuses on multi-storey car parks. On-street parking has not been considered due to plans within the DCDP and Transport Strategy for a large reduction in this type of parking for general purposes.

The list of multi-storey car parks within the circulation plan boundary are:

- Parnell Car Park;
- ILAC Centre Car Park;
- Jervis Car Park;
- Arnotts' Car Park;
- Spire Car Park;
- Irish Life Car Park;
- Connolly Station Car Park;
- IFSC Car Park;
- Fleet Street Car Park;
- Christchurch Car Park;
- Trinity Street Car Park;
- Drury Street Car Park;
- ParkRite Drury Street Car Park;
- Brown Thomas Car Park;
- St Stephens Green Car Park;
- Dawson Street Car Park; and
- Setanta Car Park.

With key destinations and entry points defined, circulation plans can be created that connects them.

An example of a potential circulation plan for the Cathedrals/Grafton Street Area is shown in Figure 6-16. This is one potential solution, and further consultation will be required to determine the best circulation plan for each AUZ.

Cathedrals/Grafton Street Accessible Urban Zone

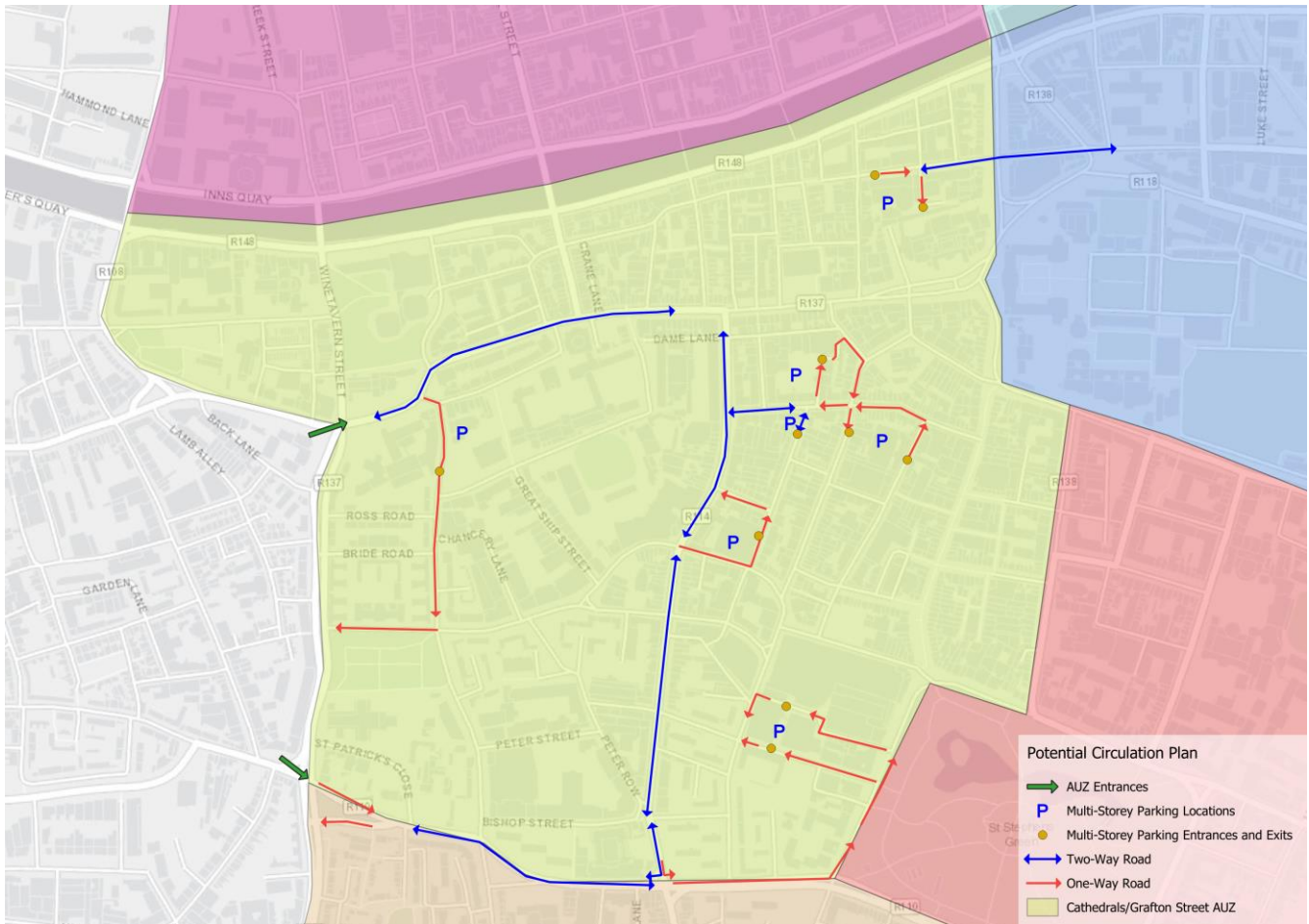


Figure 6-16: A Potential Circulation Plan for an Accessible Urban Zone based around the Cathedrals/Grafton Street

The Cathedrals/Grafton Street AUZ is bordered by the Liffey to the north, College Green/Grafton Street/St Stephens Green to the east, Kevin Street/Cuffe Street to the south and Patrick Street/High Street to the west. The AUZ is served in the following ways:

- The main access roads are Dame Street, Georges Street/Aungier Street and Kevin Street, with the two entrances at Christchurch Place and Kevin Street.
- Exchequer Street is used to access Trinity, Drury and Grafton Car Parks, with one-way routing in place to guide vehicles to Trinity and Grafton Car Parks. This would allow for an improved public realm on the roads between Grafton Street and Georges Street by providing the space to prioritise active travel.
- Grafton Car Park entrance is on William Street South and the exit is on Clarendon Street. This allows for more efficient routing when coming from Georges Street.
- Fleet Street Car Park is accessed from a neighbouring AUZ, however, it is not possible to get further into the Cathedrals/Grafton Street AUZ from this direction as the section between Merchant’s Arch and Asdill’s Row is proposed to be for active modes.
- Cars cannot go straight onto Wexford Street from Aungier Street. Travel is not possible the other way due to Camden Street/Wexford Street being southbound only under BusConnects. This would simplify traffic signals as all movements could be made at the same time.
- St Stephens Green Car Park is accessed from Cuffe Street. It is not possible to continue on to St Stephens Green South from Cuffe Street.
- Traffic on Harcourt Street must turn right, so it is not possible to get into the Cathedrals/Grafton Street AUZ from the one to the south.

7 TRAFFIC MANAGEMENT IN WIDER CITY CENTRE

The concept of AUZs can be expanded out to the wider city centre. This would involve the identification of appropriate zones, access routes and linkages to and from the CAR (presented above). An example of this is illustrated in *Figure 7-1*, with an indicative additional access route and potential AUZs. Vehicular traffic would use the outer peripheral to access the outer AUZs and would be guided to the CAR to access the inner AUZs. Such an approach would help to improve movements within each locality for sustainable modes and contribute towards more liveable neighbourhoods around urban villages.

Further study, analysis, consultation, and stakeholder engagement would be required to identify suitable plans and measures for these areas.

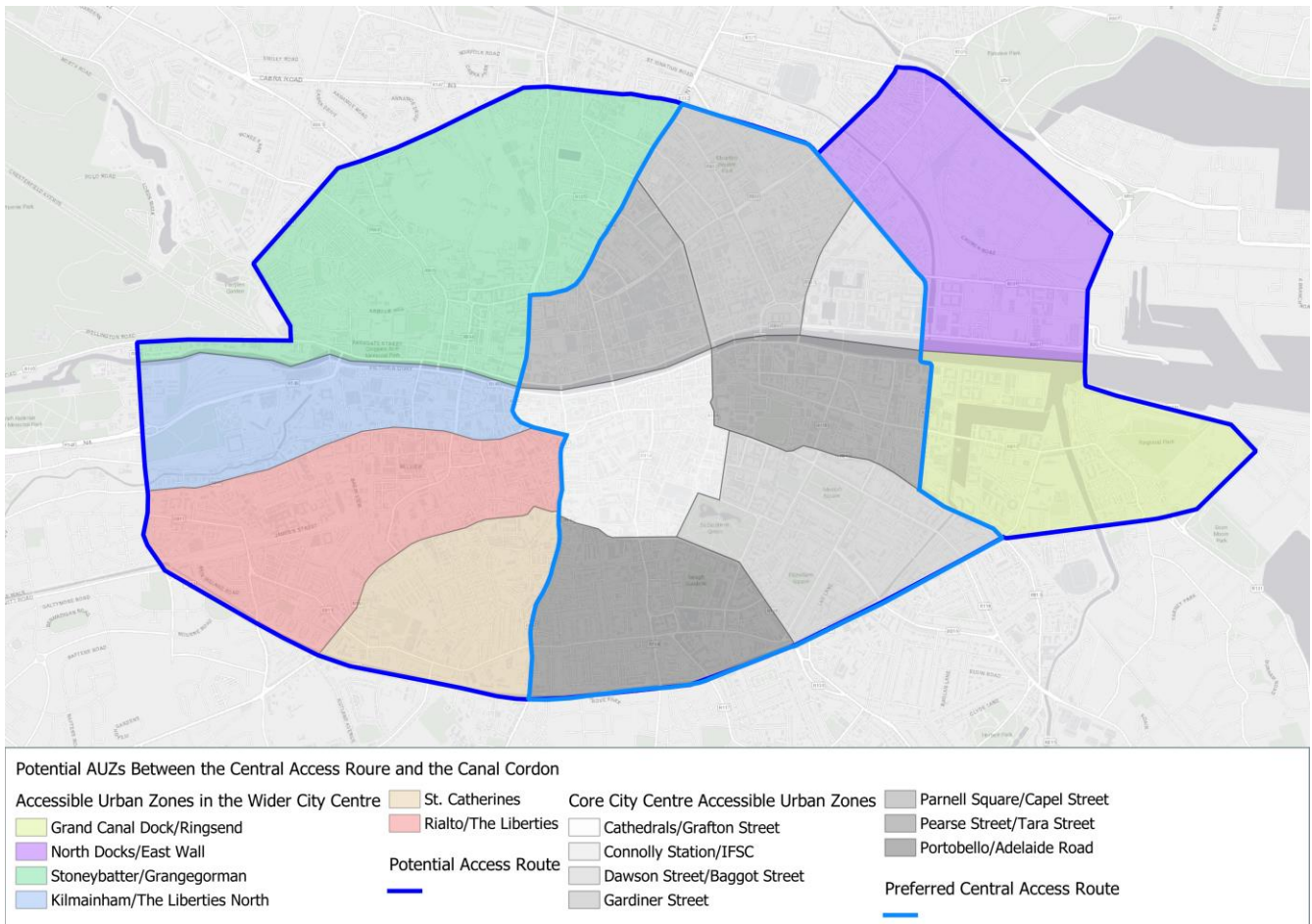


Figure 7-1: Potential Accessible Urban Zones Outside of the Core City Centre

8 PROPOSED TRAFFIC MANAGEMENT PLAN

This technical note presents a potential traffic management plan for Dublin City Centre that would provide a platform for the development of public transport and active mode projects, integrated transport networks, and help foster a people-centred and liveable city.

The Plan published by DCC describes a suite of measures, shown in **Figure 8-1**, that were informed by this technical note, will enable prioritisation of public transport and active modes movements, and creation of opportunities to develop integrated high-quality public spaces - meeting SMT05 objective of the DCDP to set out a “clear strategy to prioritise active travel modes and public transport use, whilst ensuring the integration of high-quality public realm”.

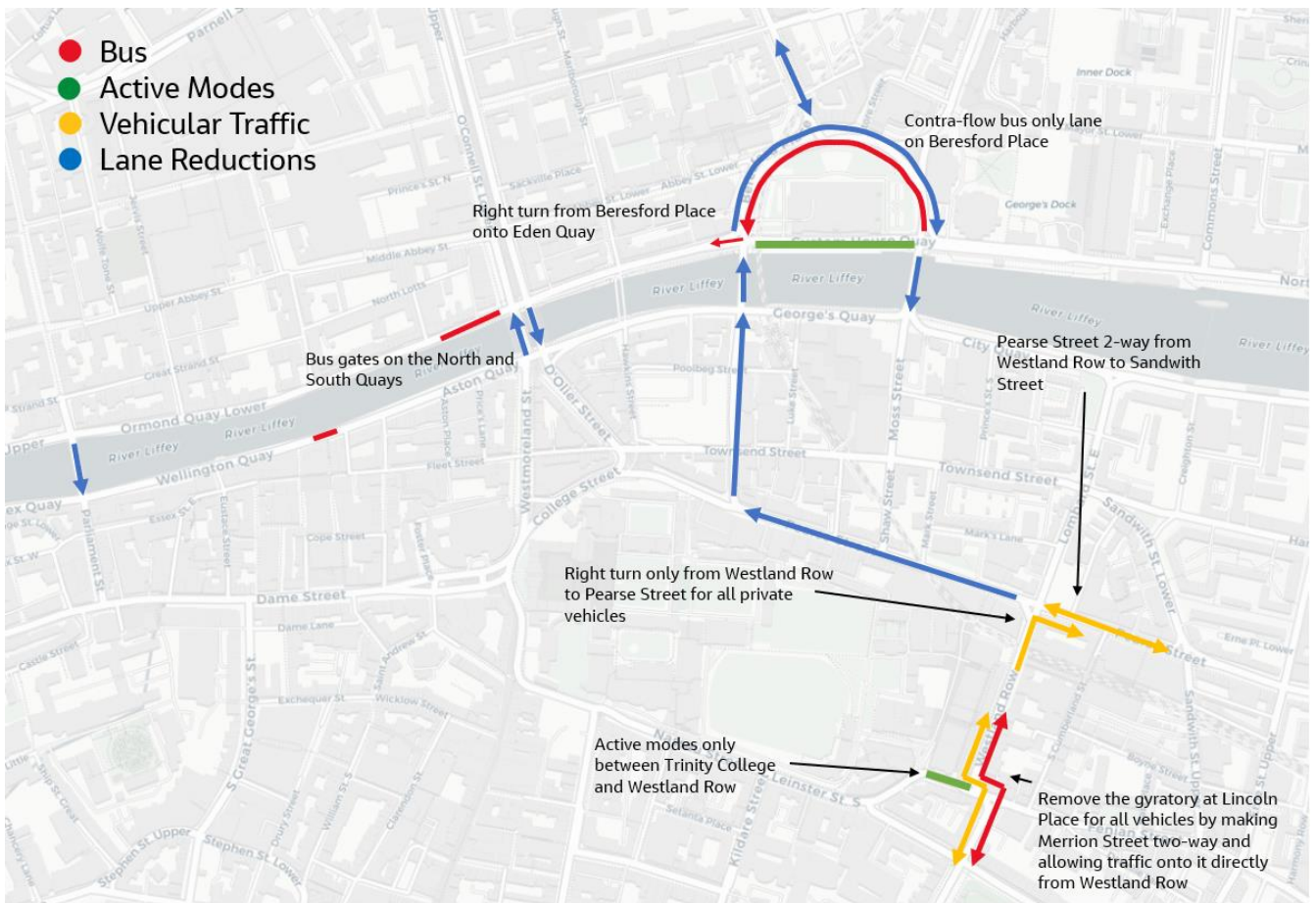


Figure 8-1 Proposed Measures within the Dublin City Centre Transport Plan 2023

These measures align with the concept and principles of the traffic management plan presented within this technical note. They will enable reallocation of roadscape to provide better facilities and safer environments for walking and cycling, to prioritise and improve efficiency for operation of bus and Luas services, to increase public spaces, and to allow for the integration of transport infrastructure and public spaces for a high-quality and inclusive public realm within the city centre.

An example of where these improvements could be realised is Bachelors Walk, where the proposed bus gate would limit traffic using the North Quays due to the inability of private vehicles to cross O’Connell Bridge (see Figure 8-2 for an interpretation of how this could look), thus:

- Allowing bus services on and surrounding the North Quays, as well as the Luas on Abbey Street, to operate more efficiently;
- Providing a safer walking and cycling environment along the North Quays and on O’Connell Bridge; and

- Allowing more space to be used for public realm improvements making the area more attractive for people to gather and travel through.

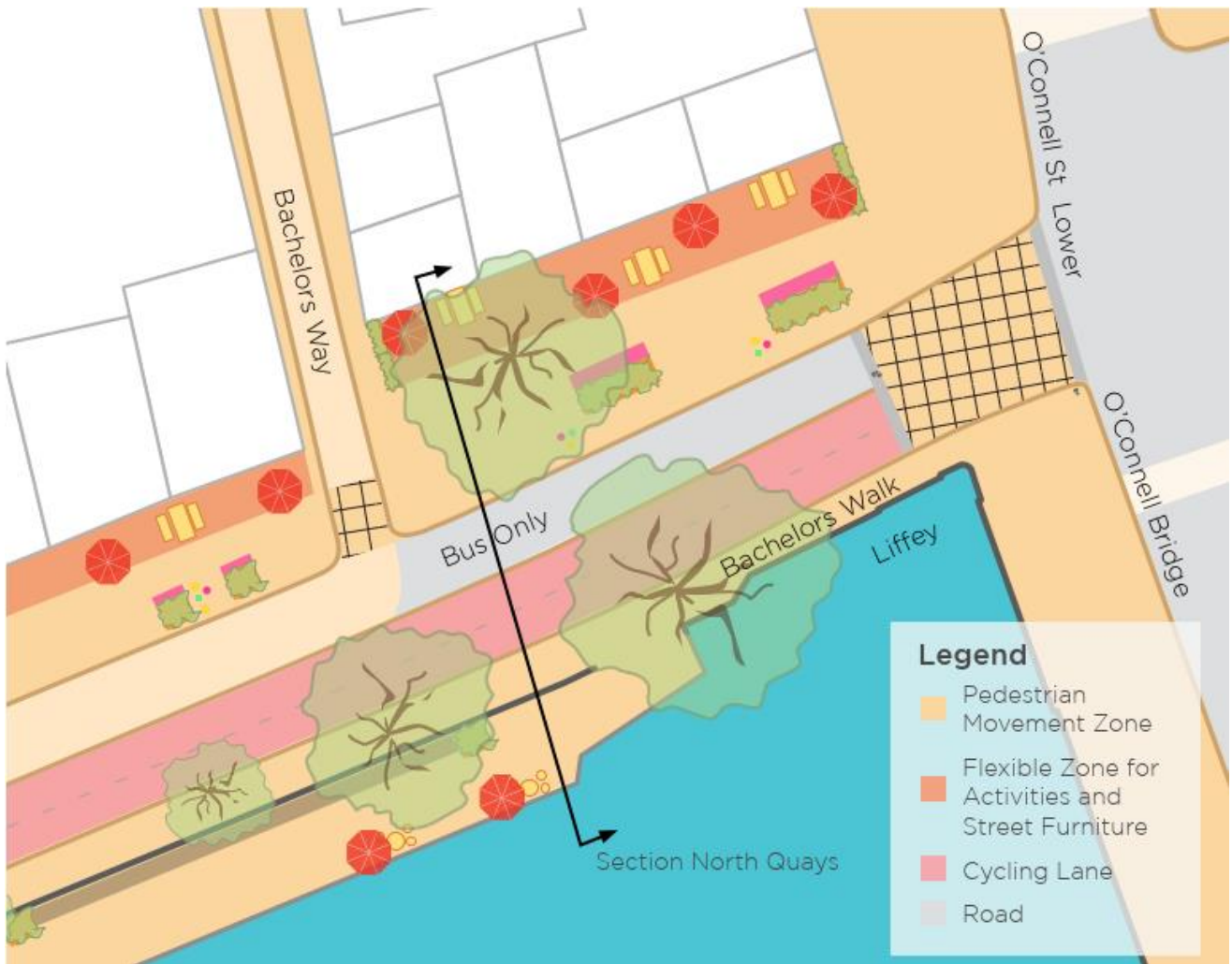


Figure 8-2 Interpretation of Bachelors Walk with the Proposed Bus Gate

9 CONCLUSION

The transport management plan presented in this technical note creates a platform for longer term projects that will continue Dublin City Centre's shift away from private vehicles and towards sustainable modes and provides a basis for which further analysis and stakeholder engagement can take place to achieve this goal.

The measures proposed in The Plan published by DCC (see *Figure 8-1*) were informed by the concepts and proposals, centred around filtered permeability, described in this technical note, and will create the opportunity for future investment in public transport, active mode and public realm improvement projects that align with DCDP objectives, such as SMT05.

APPENDIX A: OPTIONEERING FOR CENTRAL ACCESS ROUTE

Central Access Route Option 1

The starting point for the development of the CAR is the boundary of the initial extents of area to be considered for prioritising sustainable modes (Section 0 of this document), where there is high density of commercial, pedestrian, cycling and public transport activity. Identified here as CAR Option 1, it can be seen in Figure A-1.

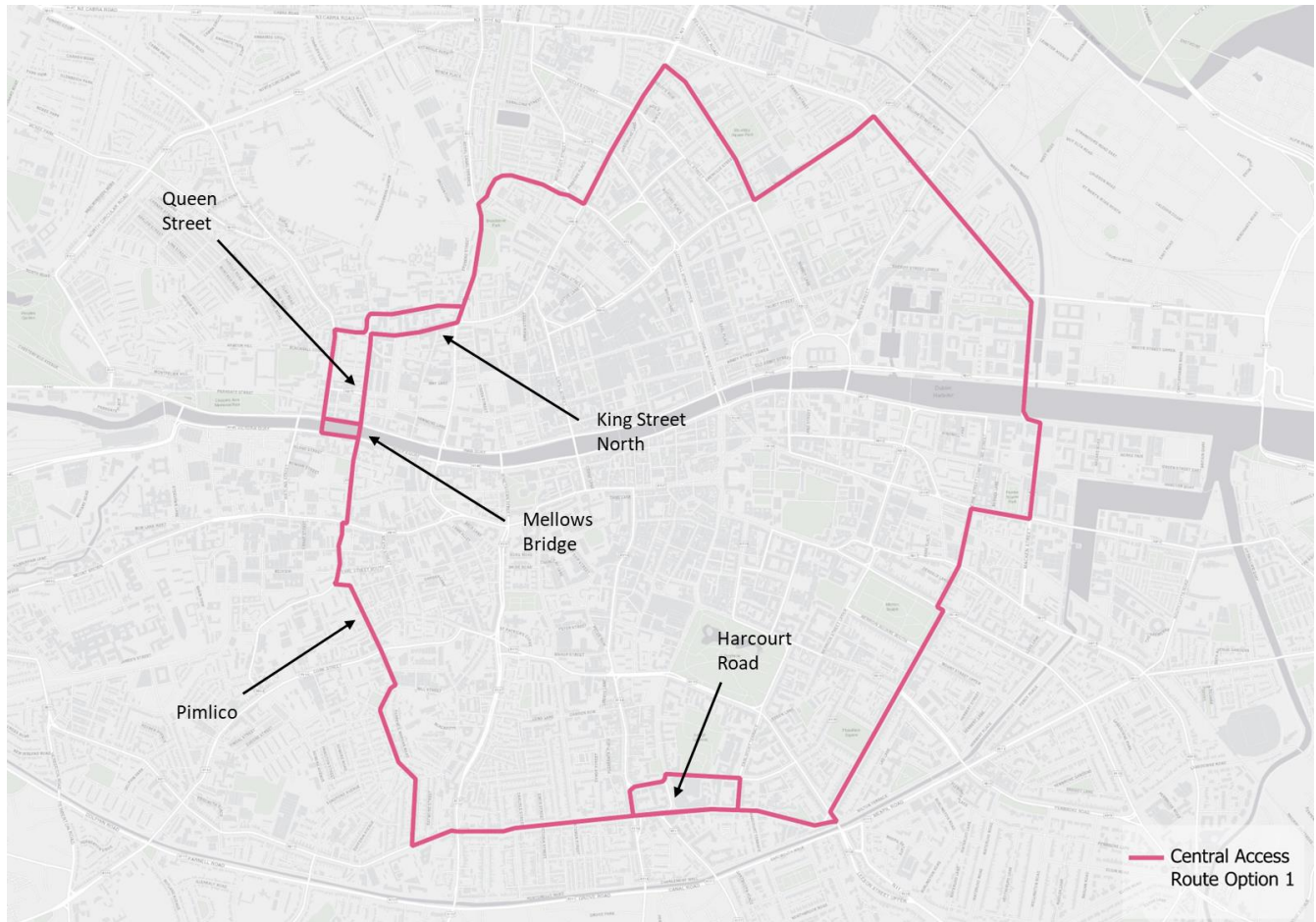


Figure A-1 Central Access Route Option 1

Central Access Route Option 2

Option 1 contains some gyratories and roads that are one-way or unsuitable for two-way traffic, such as residential roads. Locations of the most evident issues are:

- The gyratory at Smithfield, with Queen Street being on the southbound direction and Blackhall Place being on the northbound;
- The gyratory along the quays between Mellows Bridge and James Joyce Bridge;
- Between the quays at Mellows Bridge and the South Circular Road there are a series of one-way and residential roads unsuitable for the CAR; and
- The gyratory at Harcourt Road.

Gyratories and one-way streets along the CAR makes it complicated for cars to enter and egress the AUZs via same location. Option 2 addresses these location-specific issues in the following ways (with each point corresponding to the point above):

- Both King Steet North and Queen Street are two lane roads. Therefore, it would be possible to convert these to two-lane roads.
- Using Queen Street two-way and converting Mellows Bridge to be the same links Queen Street and Bridgefoot Street negating the need to route along the quays.
- Moving the fragmented series of roads between Mellows Bridge and South Circular Road to the west would bring the CAR too far from the city for adequate access to a cell. The next suitable road to the east is Patrick Street. This can be linked to Mellows Bridge via Thomas Street.
- Instead of using South Circular Road and Adelaide Road, the CAR could be brought closer to the city at Cuffe Street and St Stephens Green, or further from the city to Canal Road (see Figure A-2Figure A-2 for a comparison of these options):
 - Using the northern routing would bring the CAR closer to the city but it could also have negative effects on St Stephens Green which has the potential to be a key transport, social and cultural hub.
 - Using Canal Road brings the CAR further from the city, but it would also have less impact on other modes and would result in a more legible and direct routing. Based on the desired characteristics of the CAR, this is the more agreeable option.

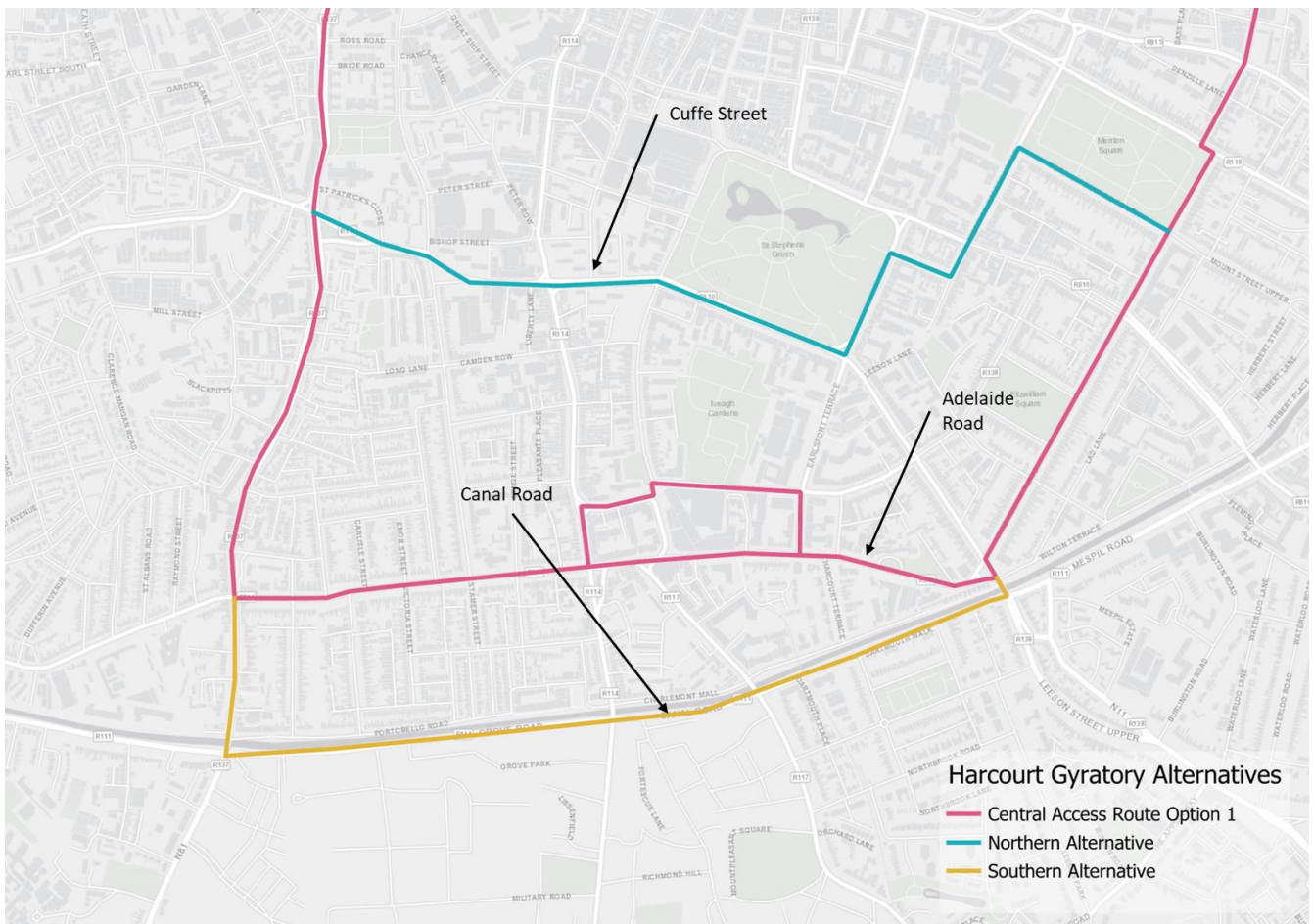


Figure A-2 Possible Routing of the Central Access Route Between Clanbrassil Street and Leeson Street

Figure A-3 shows these changes implemented into CAR Option 2.

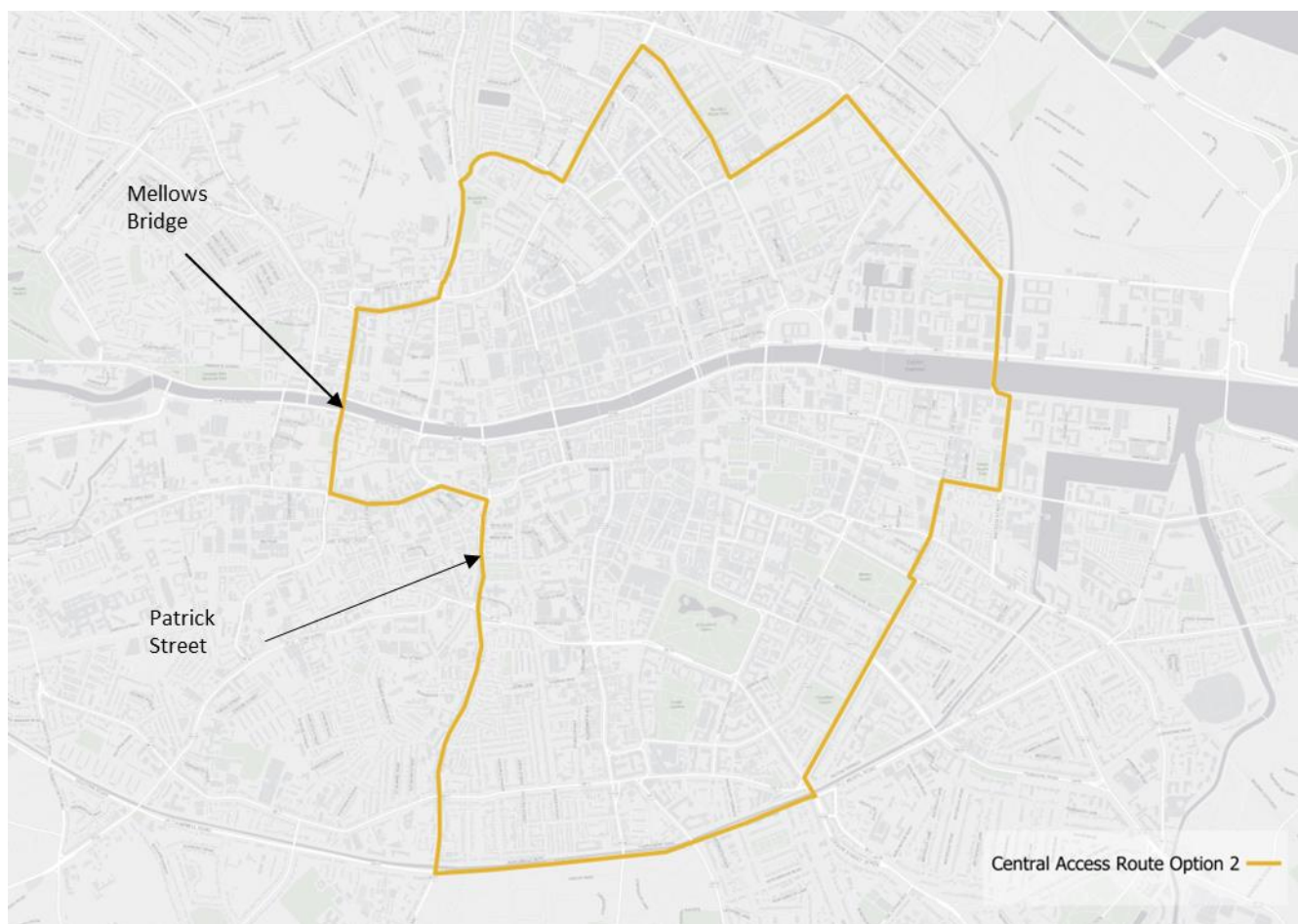


Figure A-3 Central Access Route Option 2

Figure A-4 shows a comparison of CAR Options 1 and 2.

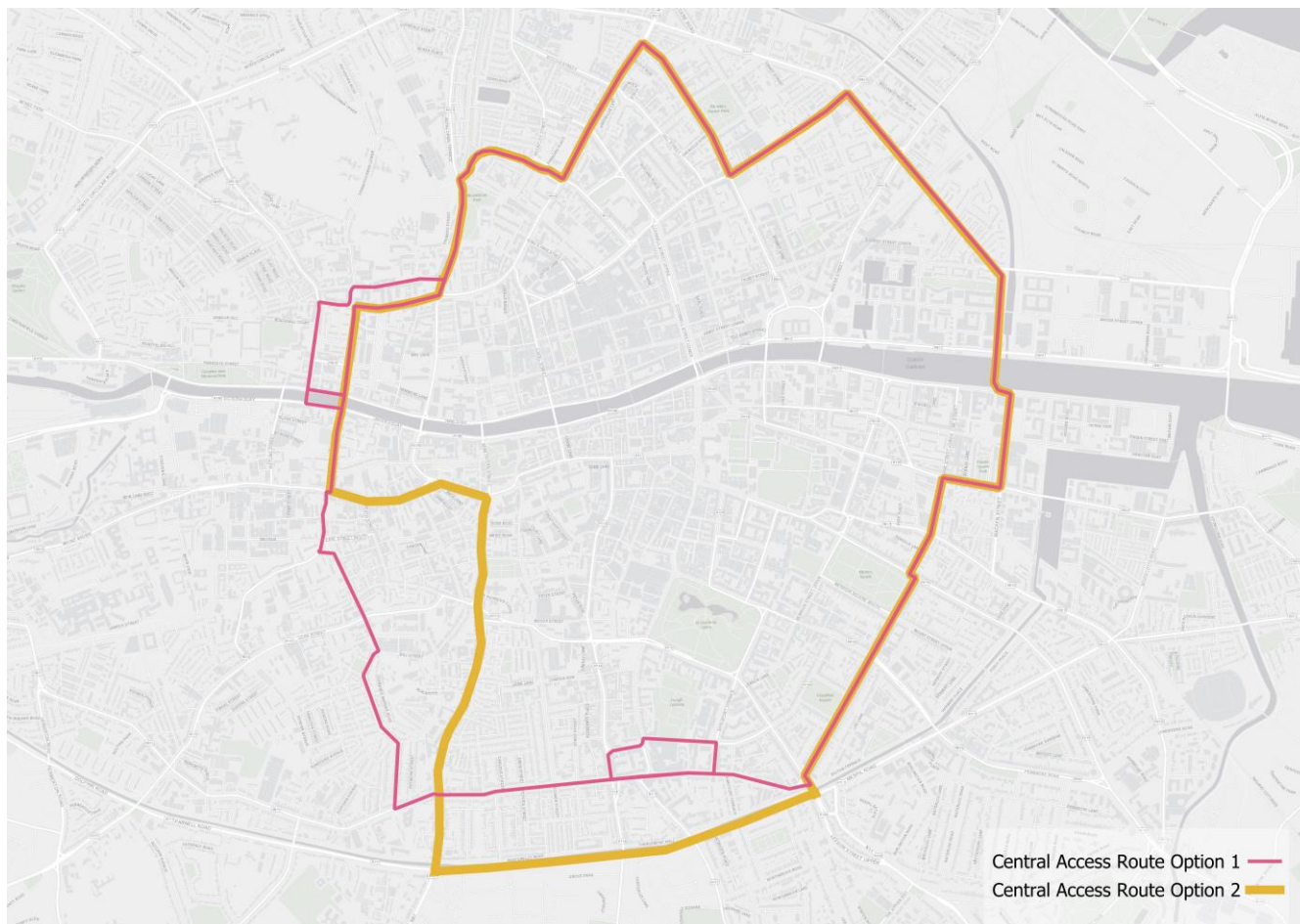


Figure A-4 Comparison of Central Access Route Options 1 and 2

Central Access Route Option 3

Issues identified in Option 2 include:

- The routing through Queen Street and Mellows Bridge is not as direct as it could be. Moving this section to Church Street and crossing at Father Matthew Bridge would make for a more legible route; and
- It is possible that Erne Street Lower would experience capacity constraints due to its narrowness in places. The alternatives are:
 - Move it west to Westland Row. This is less than ideal because it's the only north-south road that can take HGVs and other heavy sided vehicles. It would also mean that Pearse Street Station, an important public transport station is outside the AUZ structure.
 - Turn the CAR earlier onto Grand Canal Street Lower, then Macken Street. This is preferred as it doesn't inhibit access and the roads are more suitable for the purpose.

Option 3 can be seen in Figure A-5 and the differences with Option 2 in Figure A-6.

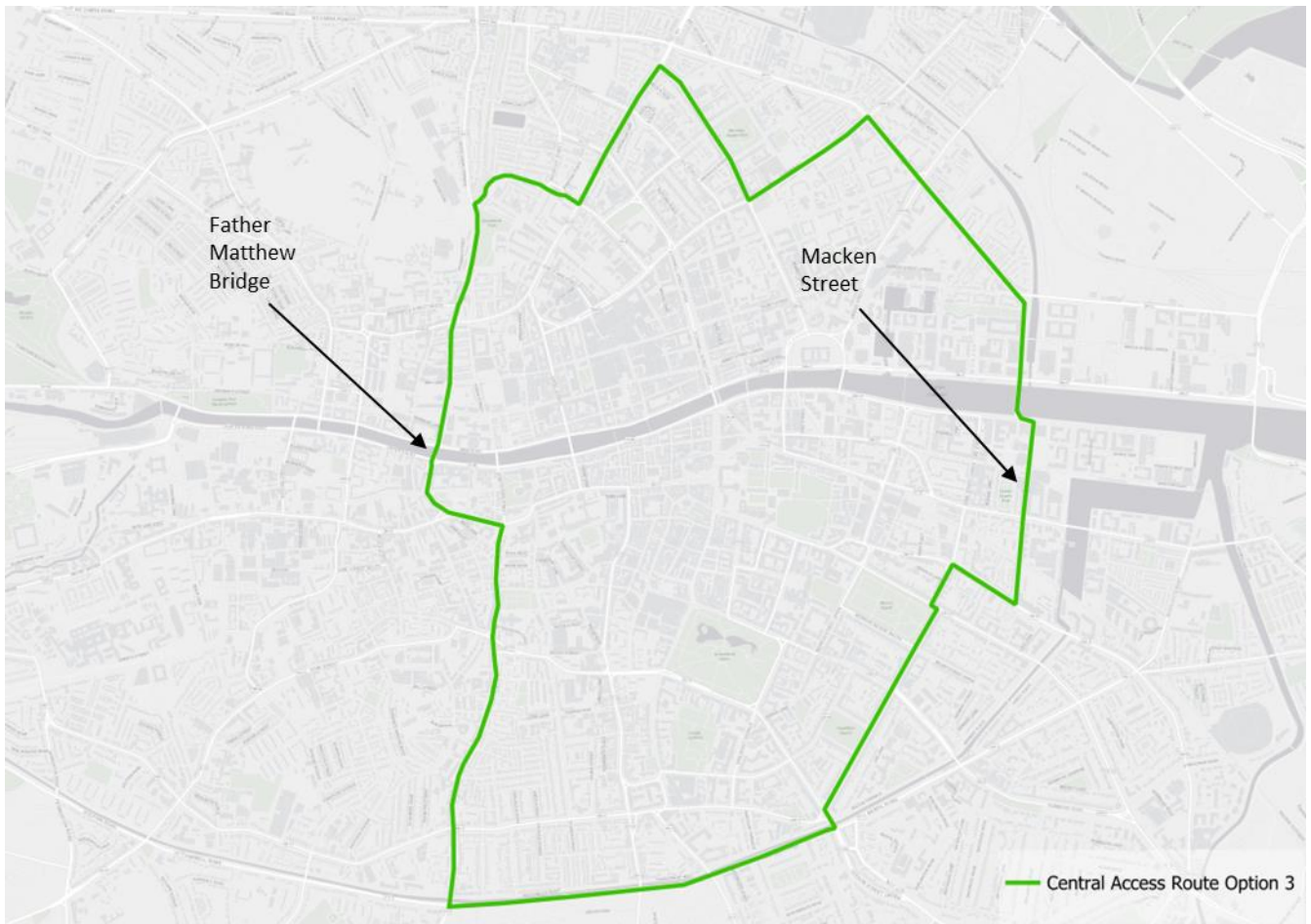


Figure A-5 Central Access Route Option 3

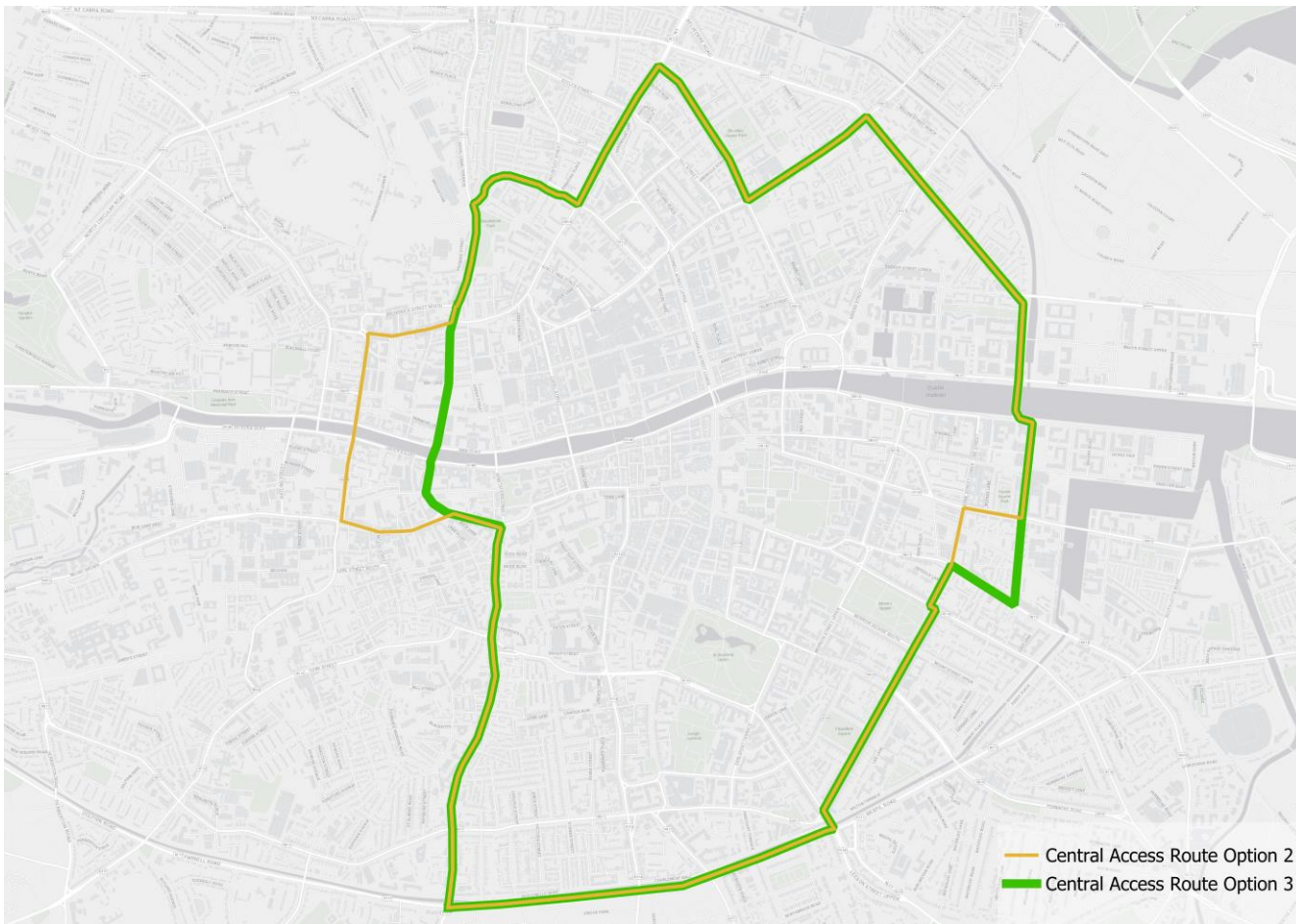


Figure A-6 Comparison of Central Access Route Options 2 and 3

Central Access Route Option 4

Considering both interactions with other modes and the desire for a direct route, the routing of Option 3 could be improved by continuing along Dorset Street instead of turning right onto Western Way. This would remove a slight diversion from the most direct route and eliminate interaction with BusConnects as Western Way will take the E Spine and the south end of Dorset Street and Bolton Street have no planned services.

Option 4 can be seen in Figure A-7 and the differences with Option 3 in Figure A-8.

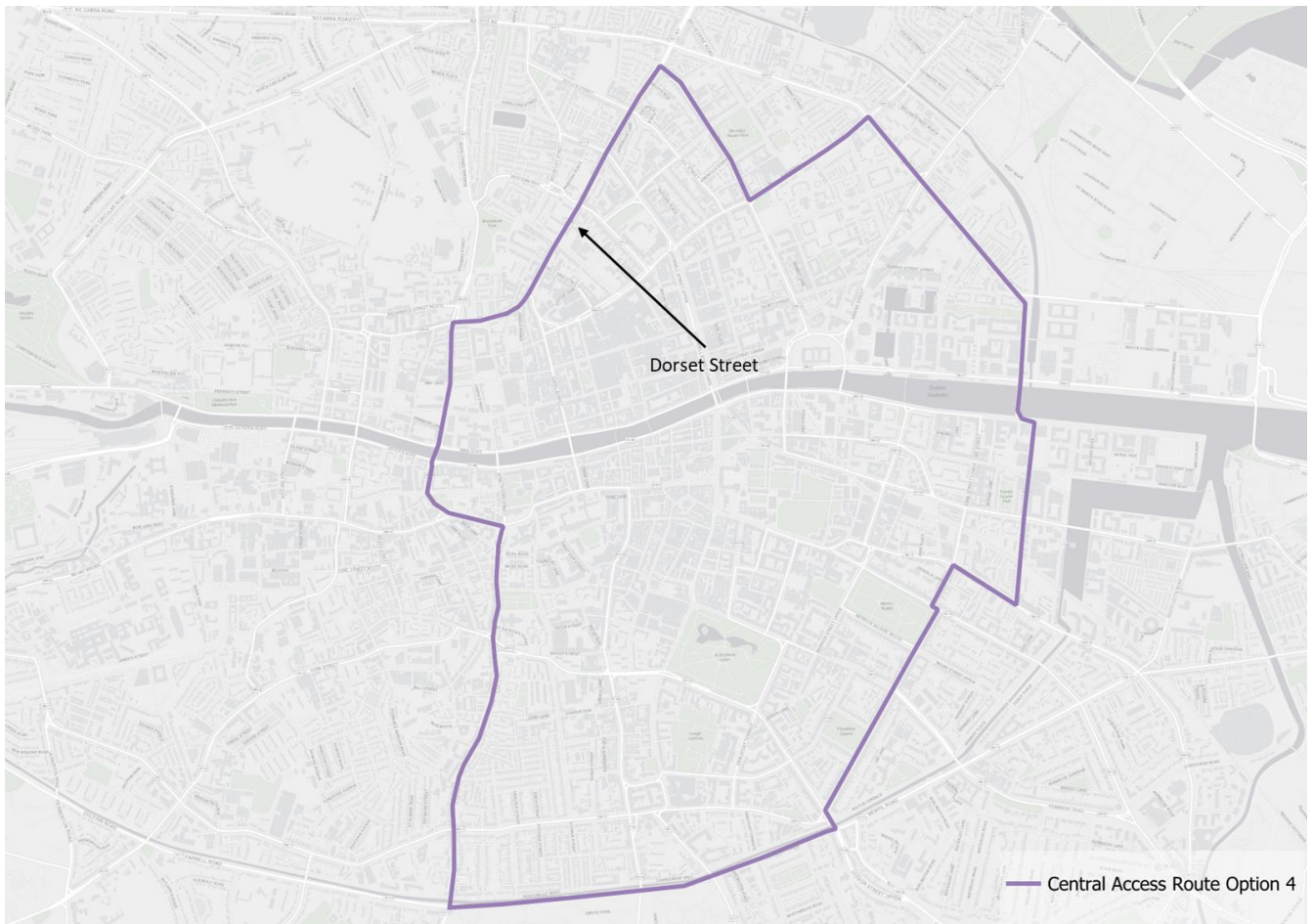


Figure A-7 Central Access Route Option 4

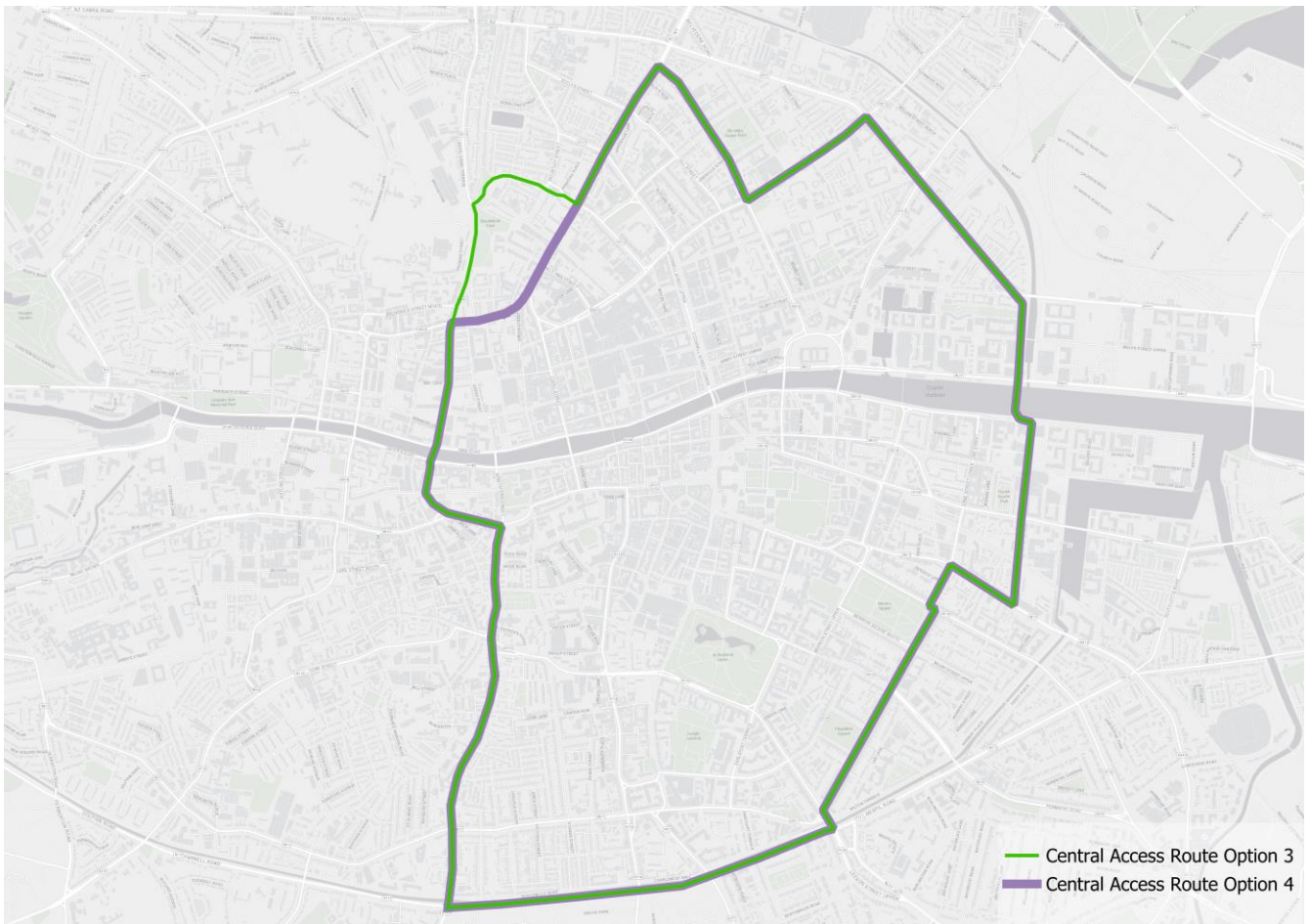


Figure A-8 Comparison of Central Access Route Options 3 and 4

Central Access Route Option 5

Option 4 contains two S-bends:

- At Leeson Street between Grove Road and Fitzwilliam Street; and
- Between Merrion Square East and Holles Street.

As well as having reduced legibility at these points, they have the possibility to interfere with bus and cycle movements along Leeson Street and Mount Street, respectively. For these reasons Option 5 uses Mespil Road and Haddington Road before turning left onto Grand Canal Street Upper.

Option 5 can be seen in Figure A-9 and the differences with Option 4 in Figure A-10.

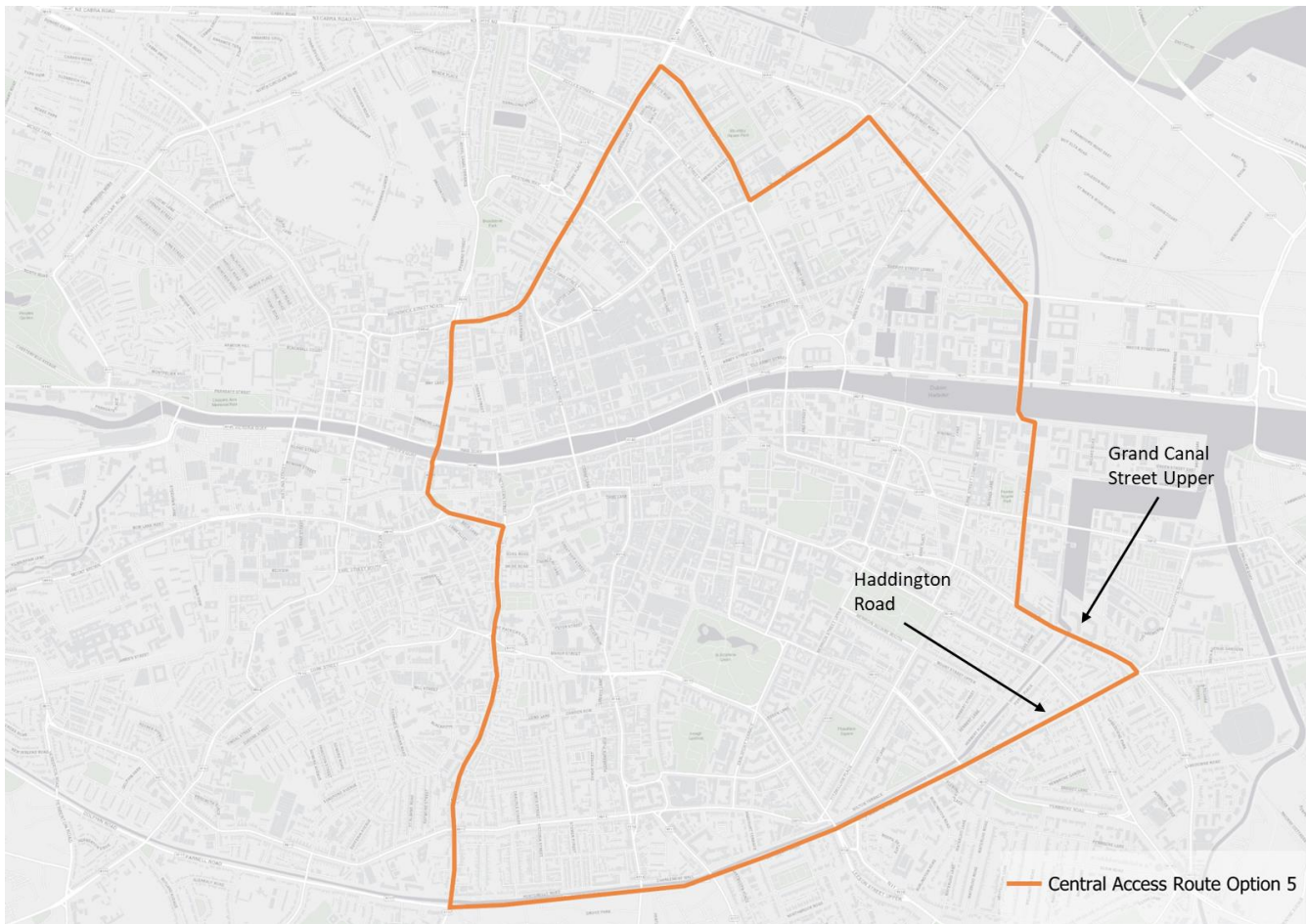


Figure A-9 Central Access Route Option 5

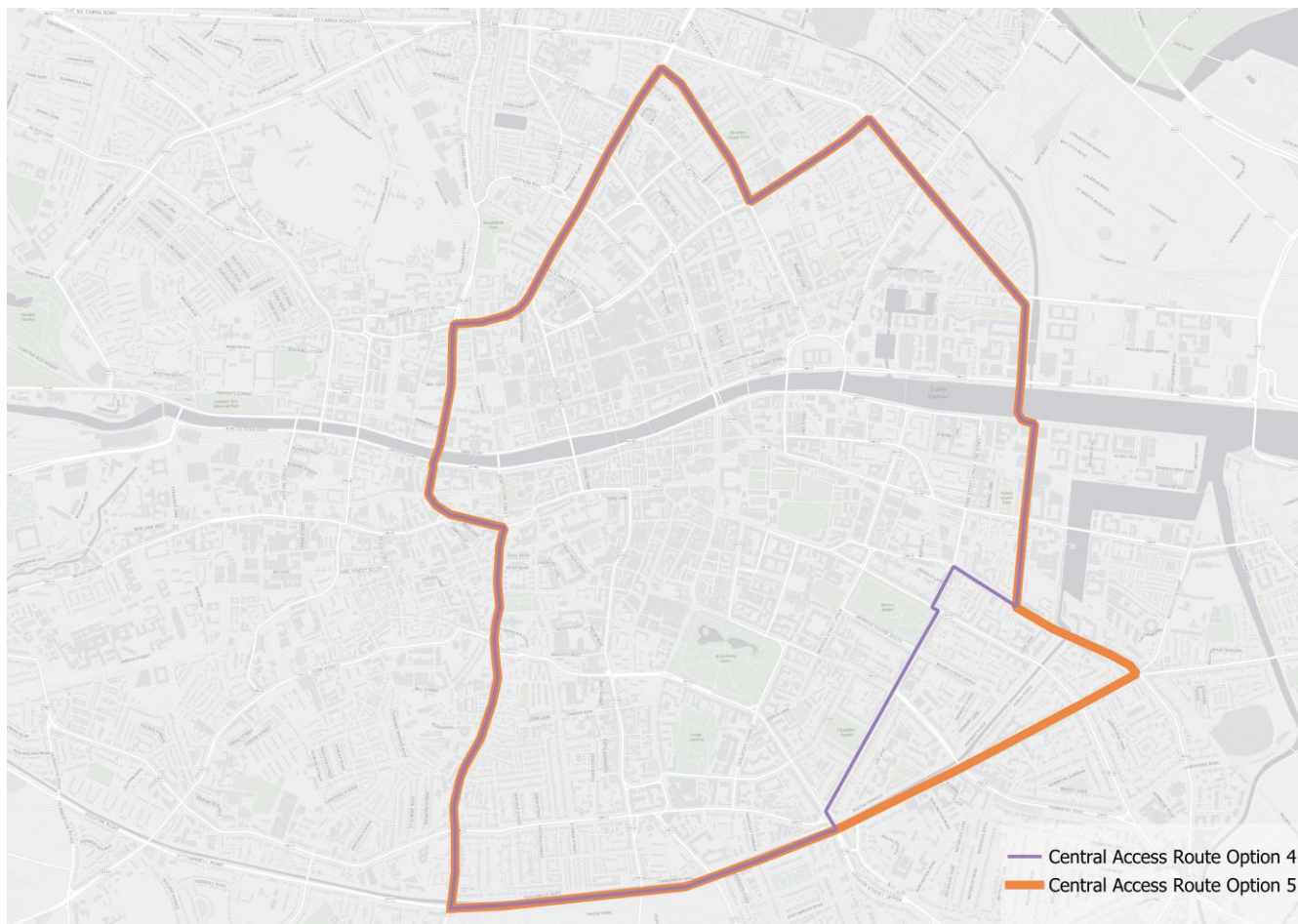


Figure A-10 Comparison of Central Access Route Options 4 and 5

Central Access Route Option 6

Benefits of extending the CAR to include the cut-out at the northern end would be to improve legibility and include Mountjoy Park and Summerhill Bus Station in the AUZ structure. Thus, Option 6 uses the North Circular Road instead of Summerhill and Gardiner Street Upper.

Option 6 can be seen in Figure A-11 and the differences with Option 5 in Figure A-12.

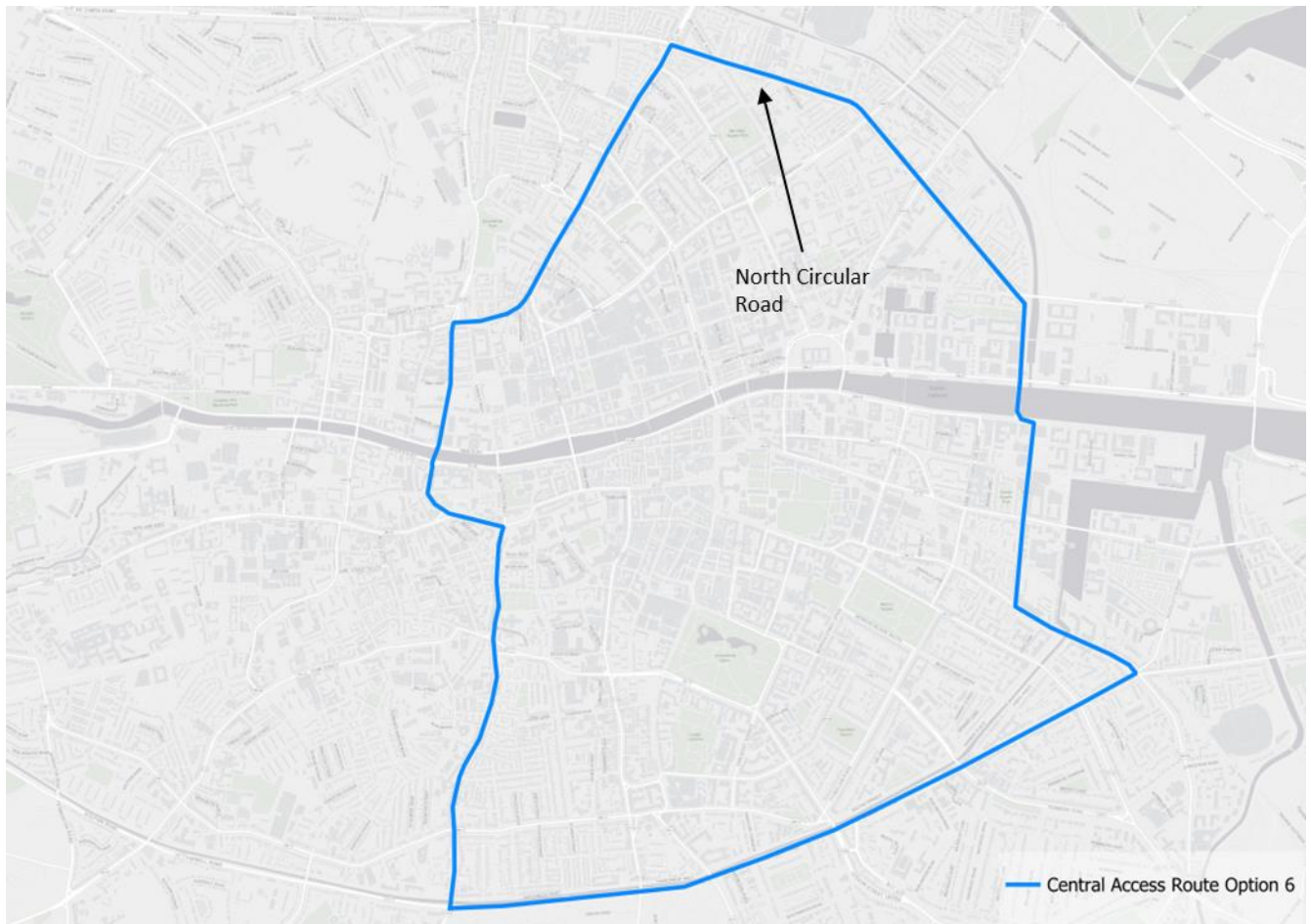


Figure A-11 Central Access Route Option 6

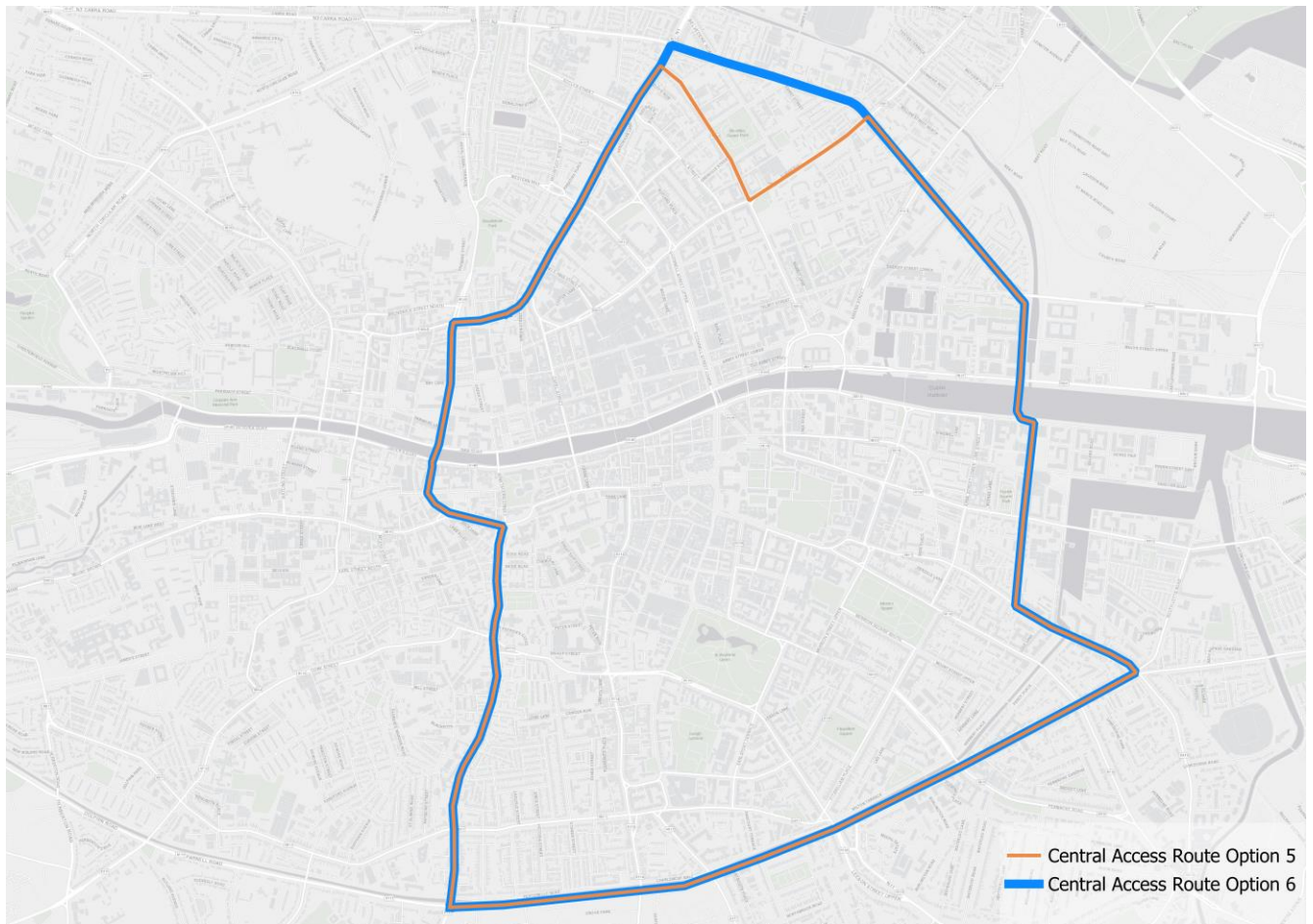


Figure A-12 Comparison of Central Access Route Options 5 and 6

Preferred Central Access Route

Based on the preceding iterative process, the resulting Preferred CAR is shown in Figure A-13Figure A-13.

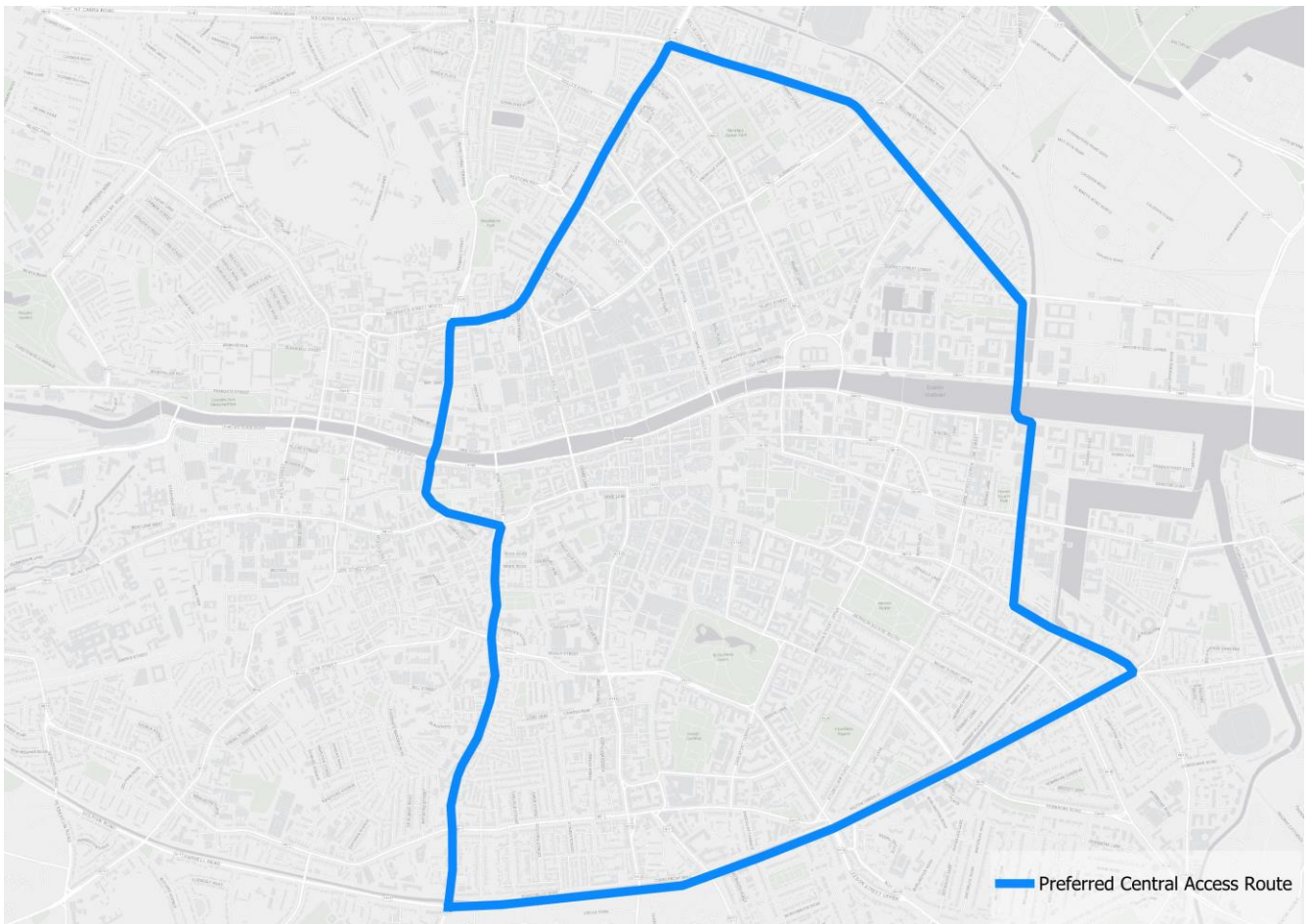


Figure A-13 Preferred Central Access Route

