

DUBLIN CITY CENTRE TRANSPORT PLAN 2023

Technical Notes | Part 7: Goods Movement



Comhairle Cathrach
Bhaile Átha Cliath
Dublin City Council



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Dublin City Centre Transport Plan 2023 Technical Note Part 7: Goods Movement

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GOODS
MOVEMENT



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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

Freight transit is an element of transport within a city area and needs careful integration with other modes of transport due to its increased emissions, road space demand and safety concerns. This technical note will take consideration from existing plans and strategies surrounding freight transit in Dublin City Centre, and the wider country, but also from the other modes/elements analysed within the other technical notes. The prioritisation between these modes is governed by the Road User Hierarchy.

Dublin City is a hub for Ireland's freight transport and distribution with much of the country's key freight infrastructure being situated in/around the city. The city faces a number of freight-related challenges that are defined by the traffic generated by the city itself, the marine port, and the airport. The most significant of these is Dublin Port, which handles 71% of Ireland's freight traffic by tonnage². This adds to traffic in the city since Dublin Port is heavily road dependent, with over a million goods vehicles moving through it annually from roll-on roll-off (Ro-Ro) traffic alone³.

1.3 Technical Note Structure

Following this introductory section, the next sections of this technical note are organised as follows:

Section 2 outlines the Planning Context, where relevant extracts from Technical Note 1: Policy and Background Review are presented.

Section 3 outlines the receiving environment in 2030, including changes in land use, population, and transport infrastructure that are expected to be in place by 2030, along with the constraints and opportunities this presents.

Section 4 presents the principles that could be applied towards a freight transit network in the context of this Plan.

Section 5 presents the methodology used to identify a revised HGV network for Dublin.

Section 6 presents a proof of concept HGV Network informed by findings from Section 2, Section 3, and Section 4.

Section 7 details the potential revisions that could be made to Dublin's HGV Network, while also outlining future needs and outlook for lighter freight modes.

¹ Published by Dublin City Council (DCC) in 2022

² CSO, Q1 2022 <https://www.cso.ie/en/releasesandpublications/ep/p-spt/statisticsofporttrafficquarter12022/>

³ Based on Q1 2022 CSO data <https://www.cso.ie/en/releasesandpublications/ep/p-spt/statisticsofporttrafficquarter12022/>

2 PLANNING CONTEXT

A full review of relevant policy information relating to the suite of technical notes has been completed within Technical Note 1: Policy and Background Review. Within this section is a selection of Freight relevant policy reviews, as well as high level extracts from within Technical Note 1: Policy and Background Review.

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 plan to create a socially inclusive city of urban neighbourhoods hinges on the principle of 15-minute cities whereby people’s daily requirements will be accessible within a 15-minute walk, cycle or public transport journey.

As the DCDP inherits policy directives from the NPF and the East and Midlands Regional Spatial and Economic Strategy (RSES), it aims to promote compact growth and sustainable development patterns. In particular, the DCDP promotes transit-oriented development by encouraging intensified density in proximity to DART and Luas lines.

Measures identified within the DCDP relevant to Goods Movement in Dublin City Centre are taken from 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 objective within Chapter 7 of the DCDP relevant to this technical note is reproduced in Table 2-1.

Table 2-1 Goods Movement Measures in the Development Plan

<i>It is the Objective of Dublin City Council</i>	
	Car Parks and Last Mile Delivery
CCUVO6	To investigate the potential of the use of car parks in the city centre for micro hubs and distribution centres for ‘last-mile’ delivery as part of the preparation of a Servicing / Logistics Strategy for the city

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 SMT1 in Table 2-2. 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 outlined in Chapter 8 of the DCDP relating to Goods Movement in Dublin City Centre are outlined in Table 2-2.

Table 2-2: Relevant Measures in the Development Plan

<i>It is an Objective 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.
	Integrated Transport Network
SMT3	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.

<i>It is an Objective of Dublin City Council:</i>	
	Mobility Hubs
SMT5	To support the development of mobility hubs at key public transport locations and local mobility hubs in tandem with new developments to include shared car and micro mobility initiatives, creating a vibrant, accessible and liveable place to support the transportation experience.
	'Last-Mile' Delivery
SMT14	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.
	The Rail Network and Freight Transport
SMT21	<ul style="list-style-type: none"> To work with Iarnród Éireann/Irish Rail, the NTA, TII and other operators to progress a coordinated approach to improving the rail network, integrated with other public transport modes to ensure maximum public benefit and promoting sustainable transport and improved connectivity. To facilitate the needs of freight transport in accordance with the NTA's Transport Strategy for the Greater Dublin Area 2016 – 2035 and forthcoming review.
	Repurposing of Multi-Storey Car Parks
SMT26	To support the repurposing of multi-storey car parks for alternative uses such as central mobility hubs providing high density bike parking, shared mobility services, 'last mile' delivery hubs and recreational or cultural uses.
	National Road Projects
SMT28	To protect national road projects as per the NTA Strategy for the Greater Dublin Area 2016 – 2035 and its review including the provision of a SPAR to Poolbeg.

2.2 Greater Dublin Area Transport Strategy 2022 - 2042

The Transport Strategy, the six-year update of its predecessor Transport Strategy for the Greater Dublin Area 2016- 2035, sets out a 20-year strategy to develop a clear understanding of the transport outlook for the Greater Dublin Area (GDA) between 2022 and 2042. The Transport 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 Transport Strategy objectives are listed as:

- Enhanced natural and build environment,
- Connected communities and better quality of life,
- Strong sustainable economy,
- Inclusive transport system.

The Transport Strategy constitutes a variety of chapters relevant to this Plan: Chapter 13. Roads; Chapter 14. Traffic Management and Travel Options; Chapter 15. Freight Delivery and Servicing – all of which will be summarised in this section.

2.2.1 Chapter 13 – Roads

The overarching aim of this chapter is the prioritisation of sustainable travel with road schemes providing an increase in road capacity deterred in favour of active and public transport modes. This sees measures recommended for the continued protection of strategic function of existing roads but limits the ability for further roads to be built – unless for safety, economy, sustainable travel or development needs. Within the Transport Strategy, the Southern Port Access Route (SPAR) is recommended which will enable enhanced connection to the south lands of Dublin Port – enabling more efficient economic activity in this area and enabling development.

Policies set out in Chapter 13 of the Transport Strategy relating to Goods Movement in Dublin City Centre are presented in Table 2-3.

Table 2-3 GDA Transport Strategy 2022 - 2042 Chapter 13 Relevant Measures

<i>Transport Strategy Measures:</i>	
ROAD5	Southern Port Access Route

A new public road which links from the national road network at the Dublin Tunnel to serve the south port lands and adjoining areas will be delivered. A reservation for such development should be included in the Dublin City Development Plan.

Road space Reallocation

The local authorities and the NTA will implement a programme of road space reallocation from use by general traffic or as parking to exclusive use by sustainable modes as appropriate, as a means of achieving the following:

ROAD13

- Providing sufficient capacity for sustainable modes;
- Improving safety for pedestrians and cyclists; and
- Encouraging mode shift from the private car and reducing emissions.

2.2.2 Chapter 14 – Traffic Management 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 reduced speed limits, low traffic neighbourhoods, car free zones, and low car parking/car free developments where possible. Where car trips are unavoidable, it is the objective of the strategy to encourage electric vehicle uptake where possible through provision of charging infrastructure, and car sharing.

Policies set out in Chapter 14 of the Transport Strategy relating to Goods Movement in Dublin City Centre are presented in Table 2-4.

Table 2-4 GDA Transport Strategy 2022 - 2042 Chapter 14 Relevant Measures

<i>Transport Strategy Measures:</i>	
	Management of Dublin City Centre
TM1	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.

2.2.3 Chapter 15 – Freight, Delivery and Servicing

Due to the intensive transport requirements of the freight industry, challenges exist in relation to safety, congestion, air and noise pollution. With national and Dublin growth levels predicted in the National Planning Framework (NPF), there is likely to be an increased demand for delivery and freight activity in Dublin City Centre and the wider GDA. To combat the challenges associated with this, a low carbon transition must take place in the freight industry with low/no emission modes utilised such as Electric Vehicles (EVs), trains, or bicycles etc. As with land use planning and the transport of people outlined in previous sections, it is also necessary to plan appropriate locations for freight intensive development in line with transport needs and provision. This is supported further by the outlining of measures for consolidation centres, and HGV management to minimise HGV impact.

Policies set out in Chapter 15 of the Transport Strategy relating to Goods Movement in Dublin City Centre are presented in Table 2-5. **Error! Reference source not found..**

Table 2-5 GDA Transport Strategy 2022 - 2042 Chapter 15 Relevant Measures

<i>Transport Strategy Measures:</i>	
	Environmental Measures for Freight
	It is the intention of the NTA, in collaboration with other authorities, to:
FREIGHT1	<ul style="list-style-type: none"> • Seek the reduction of the amount of ‘last mile trips’ being made by non-zero emission vehicles; • Facilitate the transition to zero-emission delivery vehicles including emerging technologies for HGV, Electric Light Goods Vehicles and cargo bikes; and • Support local ‘Click and Collect’ facilities where appropriate to minimise trips to individual homes and workplaces.
	FREIGHT3
	Planning Policy and Freight

Transport Strategy Measures:	
	It is recommended that local authorities in the GDA, with the input of the NTA and TII, identify appropriate locations for freight-intensive developments in their Development Plans.
FREIGHT4	<p>HGV Management</p> <p>Consideration will be given to identifying specific HGV routes and/or time restrictions for deliveries to improve the efficiency of HGV movements while minimising their impact.</p>
FREIGHT5	<p>Rail Freight</p> <p>The NTA will support Irish Rail in the implementation of the outcomes of the Rail Freight 2040 Strategy.</p>
FREIGHT7	<p>Consolidation Centres</p> <p>It is the intention of the NTA, in collaboration with local authorities, to support and secure the delivery of consolidation centres and break bulk facilities, which will facilitate smaller vehicles delivering to Dublin City Centre and other major town centres.</p>

2.3 Sustainable Freight Distribution Framework for the Greater Dublin Area

Arriving from recommendations in the GDA Strategy, the Sustainable Freight Distribution Framework (the Framework) for the GDA has been in development with a large array of GDA-specific freight initiatives considered. The Framework recommends an overarching freight trip management approach consisting of the "4Rs":

- **Remode:** To change how goods are moved from A to B; associated with reducing the most polluting and inefficient forms of road transport.
- **Reduce:** To lower the number of trips that are made and ultimately helping to reduce the demand to travel.
- **Reroute:** To recalibrate the way in which items are delivered and for planning and optimising journeys to avoid sensitive areas or navigate busier travel corridors.
- **Retime:** To change the point in time when goods are being delivered; with the primary aim of travelling outside of peak periods.

The Framework summarizes all the recommended measures which are most suited for implementation of the Framework’s objectives, and these are reproduced in condensed form in Table 2-6.

Table 2-6 Dashboard of Measures from the Sustainable Freight Distribution Framework

Transport Measure	Modes	Economic Impact	Environment Impact	Societal Impact	Dublin Relevance
Charging/Fuel Infrastructure	Road	Improved Journey Times	Reduce GHGs	Better Placemaking	Already in place in Dublin Port
Cargo Handling Equipment	Rail, Sea	Improved loading efficiency	Reduce GHGs	Less community disturbance	Could help reduce existing port congestion
E-Cargo Bikes	Cycle (Displacing LGVs)	Better Connectivity, efficiency	Improved Air Quality, Emissions, Urban Realm	Safer, Less Disturbance, better placemaking	Can take advantage of port proximity and cycling plans
Waterborne Freight	Sea	Better Connectivity, efficiency	Reduced Particulates and improved urban realm.	Safer. Doesn't integrate as well.	Dublin has strategic waterways. Suited to construction.
Freight on Public Transport	Bus, Rail	Better Connectivity, efficiency	Reduced HGV Trips – Less GHG	Minimal – potential for peak our impact	Not used yet in GDA. Could be combined with e-bikes.
Port Side Booking System	Road, Sea	Better Connectivity, efficiency	Reducing congestion and hence emissions	Minimal	Would better manage the limited space in Dublin Port

<i>Transport Measure</i>	<i>Modes</i>	<i>Economic Impact</i>	<i>Environment Impact</i>	<i>Societal Impact</i>	<i>Dublin Relevance</i>
Telematics	All	Better Efficiency	Picks ideal routes – reduced GHGs	Less disturbance, better placemaking	Would overcome routing concerns around Dublin
Dynamic Kerbside Management	Road	Better Connectivity, efficiency	Minimises urban realm impact	Less disturbance, better placemaking	On trial in Dublin
Autonomous Vehicles	Road	Better efficiency, job creation, addresses driver shortage	Would lessen urban realm impact	Improved Safety	More likely for use on long distance trips
Load Sharing	Road	Improved Efficiency	Less GHGs – better Air Quality	Minimal	Reduced empty running

In addition to the measures summarised in the dashboard, the Framework proposes several notable interventions. To foster innovation, attract the interest of companies working on enhanced vehicles, fuels, data systems, and other technologies for freight, the Freight Strategy proposes the establishment of Future Transport Zones (FTZs). These would act as “living labs” where companies, stakeholders and the government can trial innovative solutions in a controlled manner but retain the ability to gauge the innovation’s suitability for the real world. The FTZs would be leveraged to ameliorate the perceived disconnect between government directives and the real direction of innovation and private sector practices.

2.4 Rail Freight Strategy 2040

The Rail Freight Strategy prepared by Irish Rail aims to support national and European objectives and help enable compact growth, enhanced regional connectivity and sustainable mobility while also helping to achieve climate action targets. Though the Rail Freight Strategy includes measures for all of Ireland, there are several measures which will have impact on the study area:

- Improved rail integration at Dublin Port including assessment of a grade separated junction at the entrance to the port and the operation of off-peak and night-time services.
- Dublin Eastern Gateway: A strategic rail freight terminal to the West of Dublin that would facilitate intermodal traffic to and from the South-West, which is currently the busiest corridor for Heavy Goods Vehicles (HGVs) entering the city (Figure 3-3).
- Network developments in the Southeast, including a Strategic Freight Terminal at the Limerick Junction and new rail connections to Marino Port in Cork and the Port of Foynes. These will enable a shift away from HGVs and onto rail for the busiest HGV corridor – the N07 – which connects the study area with the southwest of the country.
- Addressing rolling stock requirements, including use of bi-mode electric locomotives.

The Rail Freight Strategy – and therefore the measures – have a target date of 2040, but they are nevertheless likely to have affected freight movements through the study area by 2030 as it is reasonable to expect a partial rollout by that time.

2.5 Irish Rail Strategy 2027

The Irish Rail Strategy up to 2027 includes important rail upgrades that are likely to facilitate a reduction in HGV traffic through the city centre. Most importantly, the Irish Rail Strategy envisions four-tracking the Cork Line between Heuston and Park West, which would improve operability for freight trains arriving from Ballina and the West in general. Similar improvements will be seen on the Belfast line between Conolly Station and Malahide which is earmarked for upgrades to three or four tracks.

3 RECEIVING ENVIRONMENT

3.1 Network and Infrastructure in Place in 2030

Goods movements destined for end customers are undergoing significant changes both in terms of demand and the infrastructure that accommodates them. The rise of next day deliveries, increasingly replacing personal trips to retail locations, the growth of food delivery services and the advent of small vehicle-based delivery services, are reshaping how goods and end customers find each other. The changing form of urban spaces further complements these changes as a high-quality public realm is increasingly valued, which will likely see urban realm prioritised over on-street parking, loading bays and other servicing facilities that would otherwise enable the use of heavier delivery vehicles.

3.1.1 Dublin Port Trends

The location of the Dublin Port – straddled between the city centre and the Irish Sea – is a key factor shaping freight movements in the study area, while the city itself also generates a significant amount of goods movement. Due to their noise and pollution impacts, heavy vehicle movement is restricted in certain areas of the city. Until 2030 the SPAR, as detailed in the Dublin Port Masterplan 2040, which will be just east of the existing East Link Toll Bridge, is expected to improve the city’s road freight network and improve the Port’s connectivity. The likely reopening of rail freight connections to Foynes and Cork Ports, as detailed in the Rail Freight 2040 Strategy, has potential to shift some goods traffic from HGVs towards more sustainable rail freight.

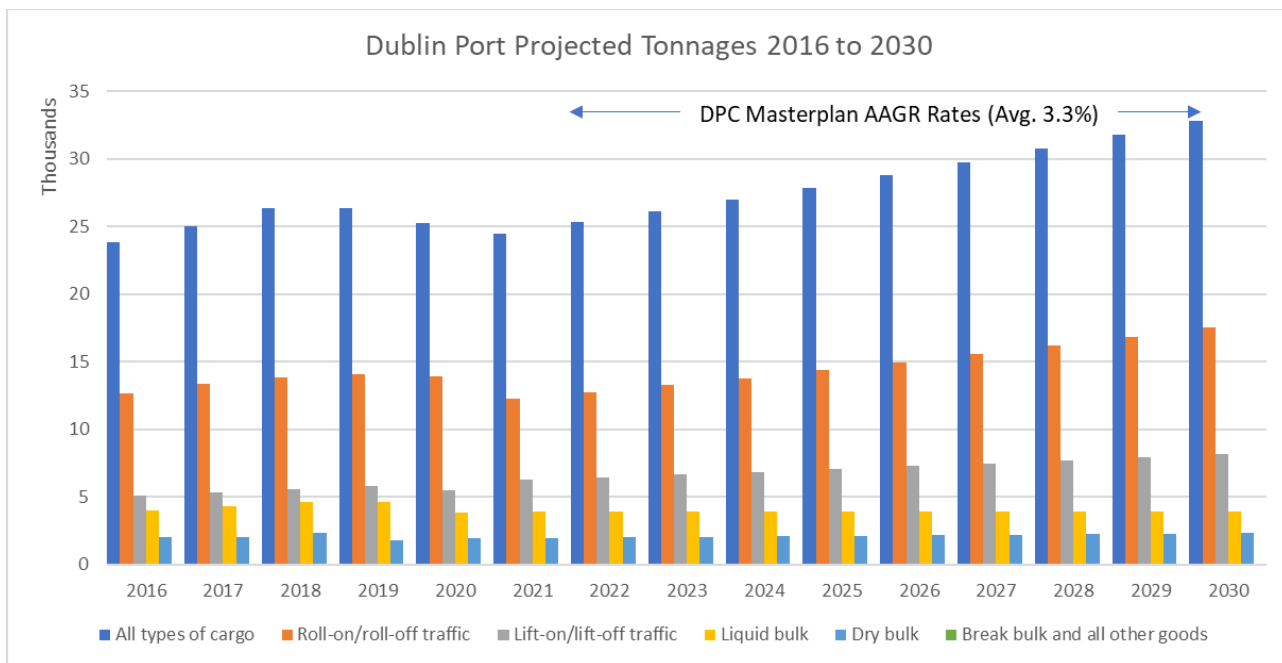


Figure 3-1: Forecast Freight Movements at Dublin Port 2016 to 2030 (CSO & DPC)

In addition to the freight traffic generated by the city itself, the Dublin Port and the Airport are significant generators of roll-on roll-off (RoRo), load-on load-off (LoLo) and bulk freight traffic, as shown in Figure 3-1 . Since this freight is all delivered to the same destination, the last-mile delivery problem arising from the dispersed delivery destinations of consumer-bound goods needs not be considered here. Of particular importance for this Plan is the level of RoRo traffic at the port, since this can only be met by HGVs which, due to the port’s location must traverse the city through the Dublin Tunnel or through the city centre for local deliveries – increasing congestion and emissions along their routes. The proportion of RoRo traffic is only expected to increase in the coming years, with the Dublin Port Masterplan predicting a 4.1% average annual growth rate for RoRo in Dublin Port between 2010 and 2040 compared with 3.3% for total freight through the port.

3.1.2 Heavy Freight Network in 2030

The current freight network in Dublin is defined by designated HGV routes for heavy freight deliveries, and the Dublin Tunnel and the freight rail link for heavy freight deliveries to Dublin Port. The current designated HGV routes and the HGV

restricted zones are shown in Figure 3-2. Of particular importance among these routes is the Dublin Tunnel, which is recognised as important for freight movement in the DCDP, the Transport Strategy and the Framework.

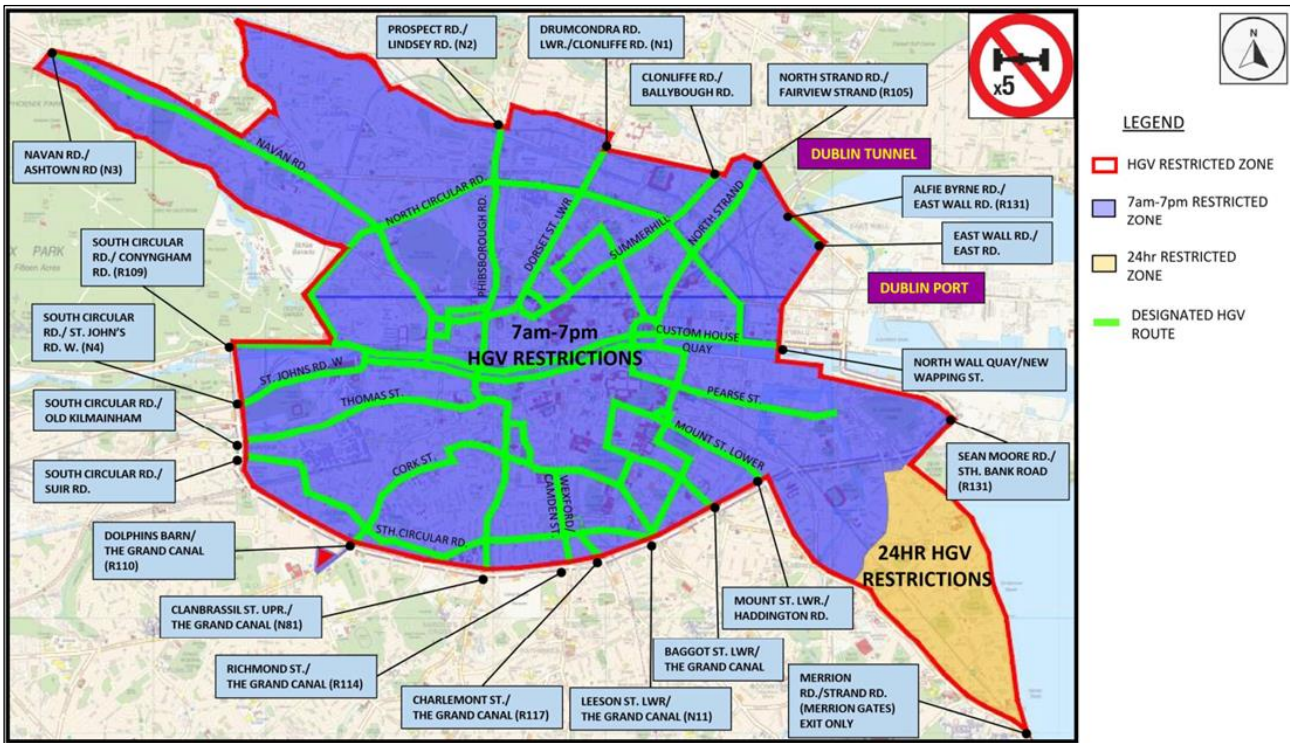


Figure 3-2: HGV Restrictions in Dublin City Centre

Observed HGV traffic flows into and around the city in the years 2018 to 2022 are shown in Figure 3-3, which presents data from Transport Infrastructure Ireland (TII) traffic counters. This figure illustrates the regional imbalance of HGV movements; the largest number of HGVs enters Dublin through the N7, while the South sees lower volumes, as does the N3. It is expected, as outlined in the Irish Rail Freight Strategy and the Framework, that the Dublin Eastern Gateway will be located along the N7 or M50 and enable freight interchange and smarter movement of goods within the M50.

The overall trend in freight movements across the data in Figure 3-3 reveals that HGV traffic has recovered beyond pre-covid levels in some areas, particularly for traffic originating from the South-West on the N81 and N7. In general, it is consistent with the data to assume that pre-covid HGV traffic is resuming⁴ and will continue to grow alongside the economy, requiring an approach that not only optimises for current demand levels but also accommodates increased freight movements in the future.

⁴ With the exception of HGV traffic on the N3, which has not recovered

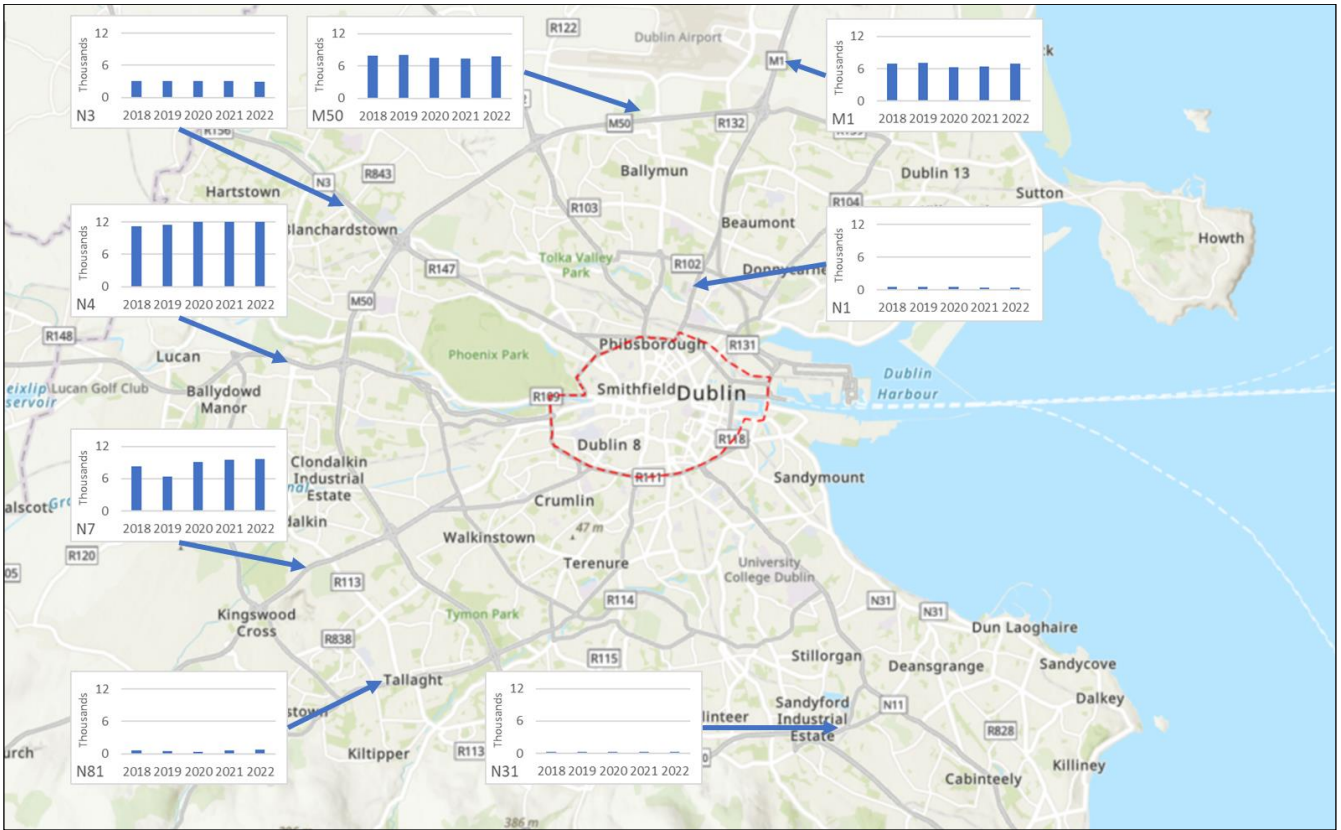


Figure 3-3: HGV AADT around and into Dublin (in thousands)

As part of the Dublin Port 2040 Masterplan and the Transport Strategy, the Southern Port Access Road (SPAR) has been proposed to improve connectivity between the south port lands and the Dublin Tunnel. This project has the potential to reduce the impacts of heavy port traffic on the local road network by keeping north-south movements within the port lands and away from the East Link bridge, which is the busiest Liffey crossing for HGVs (see Figure 3-4). The SPAR will be available for port traffic only, minimising the impact on local communities while enabling better use of the port capacity on the Poolbeg Peninsula.

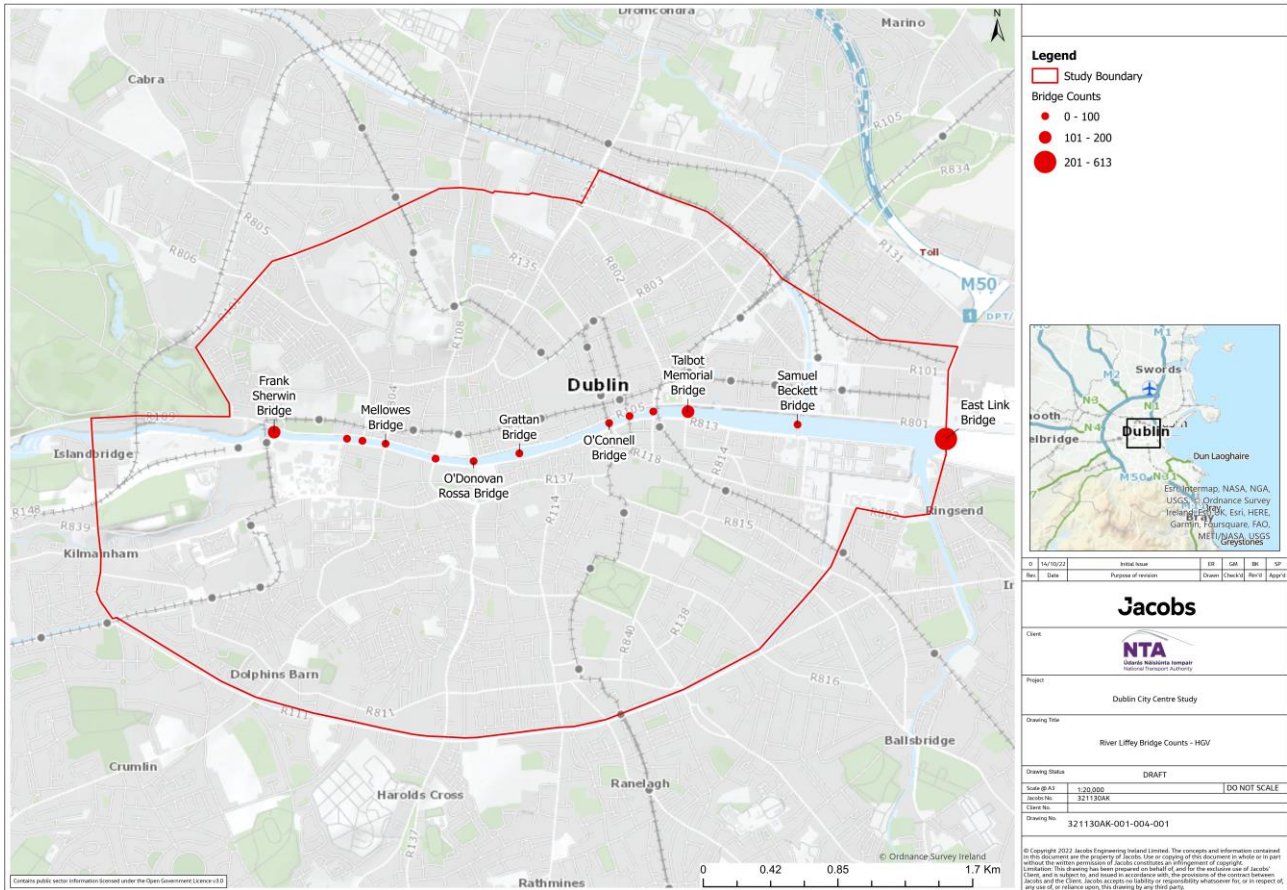


Figure 3-4: River Liffey Bridge Counts - HGV

The rail freight network is an instance where infrastructure that reaches far beyond the study area significantly affects the transport circumstances in the city centre. Improved rail freight terminals outside the city (Dublin Eastern Gateway) and improved rail freight linkage throughout the country have potential to reduce the number of HGVs that traverse Dublin through the interchange of goods, or direct transport of goods to the port from their origin via rail freight.

Rail freight is currently limited to two lines which run from Dublin Port north to Tara Mines and West to Ballina, as shown in Figure 3-5. Based on proposals in the Rail Freight Strategy 2040 and the Irish Rail Strategy:

- Sections leading into the city centre from lines to Tara Mines and Ballina are to be upgraded to 3 or 4 tracks;
- Marino Point in Cork, and the Port of Foynes are due to be connected to the rail network;
- The rail connections into the Dublin Port are to be upgraded; and
- The Dublin Eastern Gateway will add intermodal capacity for rail freight entering Dublin from the west and south-west.

It is unlikely that all proposals in the Rail Freight Strategy will be completed by 2030, but it is anticipated that progress will be made on an expansion in rail freight volumes into the Dublin Port due to the planned €500 million investment into rail freight which will alleviate HGV demand for road space in the wider GDA and Dublin City (Sustainable Freight Distribution Framework).

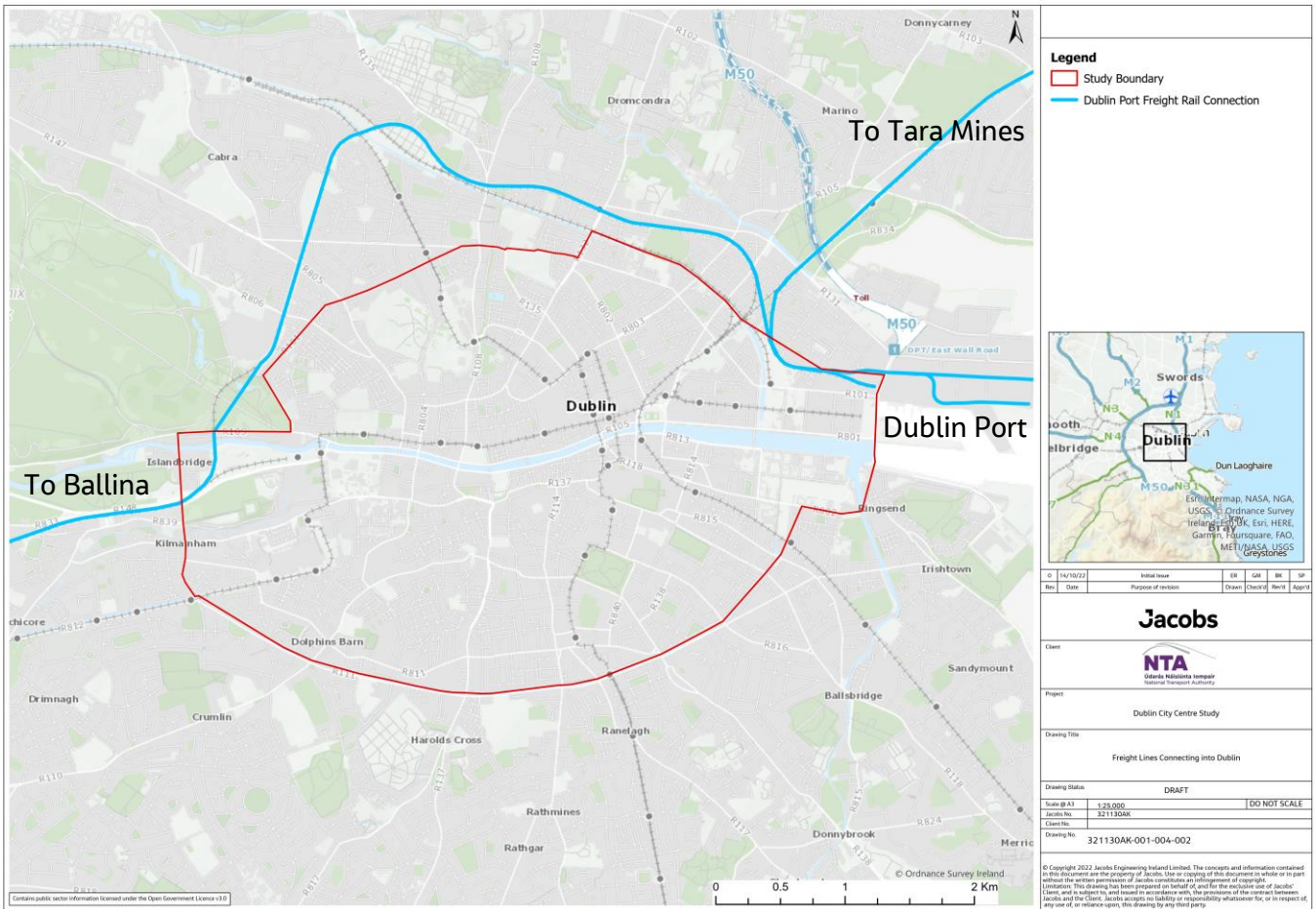


Figure 3-5: Rail Freight Routes Connecting into Dublin Port

3.1.3 Light Freight Network in 2030

In accordance with the DCDP and the Framework, freight distribution to consumers will focus on a delivery hub-based system where heavier vehicles deliver goods to strategically placed distribution centres. From these, goods are distributed to their final destination using smaller, lower-impact vehicles. In line with the policy directives, this Plan’s recommendations in relation to the public realm – i.e. to rebalance the streetscape towards people-focussed uses – require limiting the dispersion of heavy vehicles around the city centre and instead focussing their movements around strategically located delivery hub locations.

The location of these potential hubs is not yet defined, but the Framework suggests using multi-storey car parks for this purpose, among others. A map of existing multi-storey car parks is shown in Figure 3-6.

- Pearse Station (Bus, Train); and
- O’Connell Street (Metro, Luas, Bus).

3.2 Constraints and Opportunities

3.2.1 HGV Routeing

The HGV Management Strategy 2007 (HGV Strategy) defines the permitted movement of 5+ Axle HGVs in the city centre through the introduction of a cordon around the city to remove through traffic and incentivise use of the Dublin Tunnel. The HGV Strategy limits the roads that HGVs can utilise within the cordon, while also restricting areas based on time of day. This system of restrictions is shown in Figure 3-7.

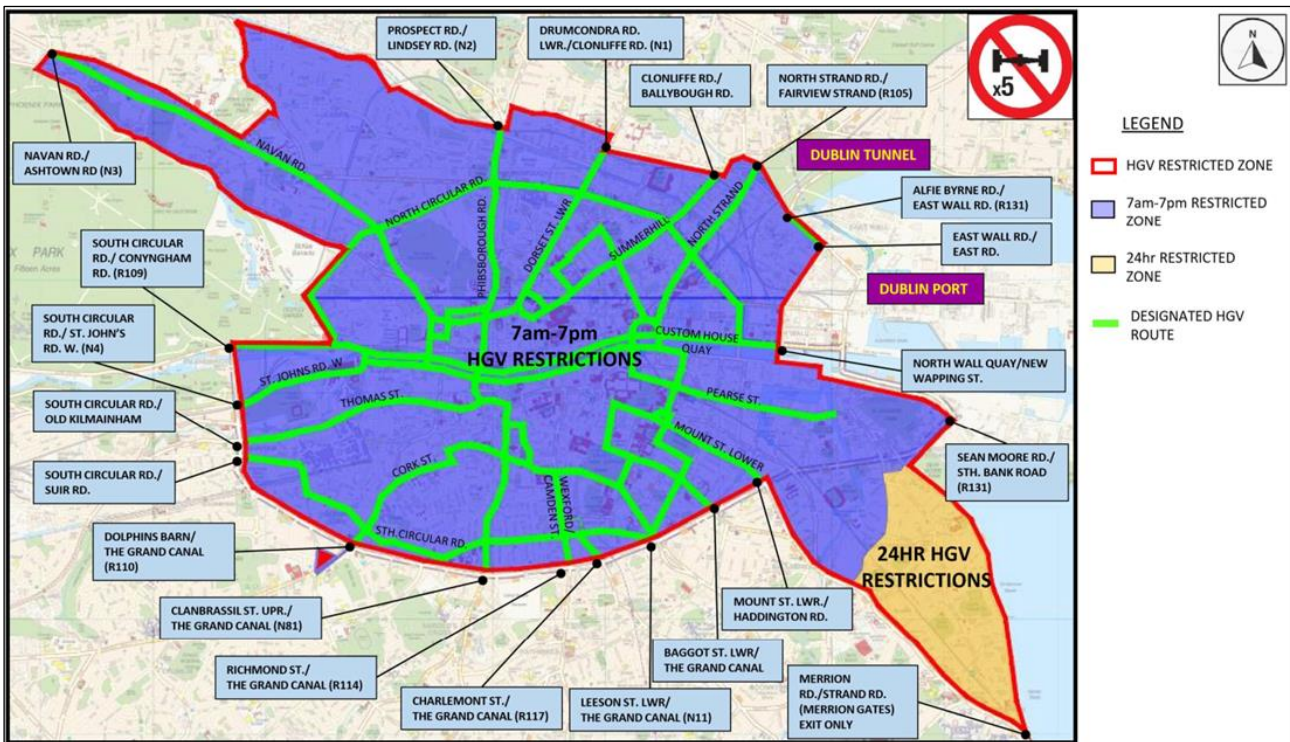


Figure 3-7: HGV Corridors and Restricted Zone

The HGV Strategy encourages HGVs to only access Dublin City Centre for internal deliveries rather than for transversal of the city to reach an outside destination, and constrains the routes that HGVs are permitted to traverse from 7am to 7pm. HGVs have to obtain individual permits to use designated routes during the hours from 7am to 7pm. HGVs are expected to travel to the closest point on the designated network to their delivery destination where they are allowed to deviate from the network to complete delivery before returning to the network and exiting the cordon through designated routes. Outside of the hours 7am to 7pm, HGVs are allowed to drive unrestricted and without permits through the city. A 24hr cordon is in place around the Sandymount area – necessitating permits for any HGV deliveries to this area.

By managing the use of HGVs throughout the city and their ability to access key locations for much of the day, the HGV Strategy provides the opportunity to encourage a modal shift to more sustainable/less space demanding modes of freight transport such as LGVs, Light EVs, Rail and Cycle which will not be subject to the same restrictions.

The HGV Strategy is supported by the Transport Strategy which aims to retain and even expand upon the HGV Strategy Restricted Zone (shown in Figure 3-7): “Provision for the continuation of the current Dublin City Heavy Goods Vehicle Management Strategy and for its further expansion to other vehicle types, potentially with an expanded exclusion area”.

Heavy freight routes are also constrained by the presence of low railway bridges and subsequent height restrictions in the southeast inner city. This results in all north-south HGV traffic which crosses the railway line in this sector being made to travel down Westland Row, the only railway bridge high enough to allow HGVs to safely pass underneath. This constraint restricts potential HGV access on South Cumberland Street, Sandwith Street Upper, Erne Street Upper, Erne Place, Macken Street, Grand Canal Quay, Barrow Street.

3.2.2 Rail Freight

Rail was historically a key mode for freight transport in Ireland, however, yearly tonnages have reduced from over 3 million tonnes transported each year throughout the 1980's and early 1990's, to less than 0.5 million tonnes in 2021⁵. The potential for expansion of rail freight in Ireland is realised as part of the Irish Rail 2040 Freight Strategy - outlining that rail freight offers the opportunity to cut freight Greenhouse Gas (GHG) emissions by up to 76% - and is supported by a €500m investment to make it a more attractive option than road freight.

For Dublin City Centre, this provides the opportunity to reduce the number of HGVs passing through the M50 and city centre, thus freeing up space for other modes, enabling better placemaking and increasing road safety.

Factors constraining rail freight in Dublin City presently are:

- The need for the railway line to cross the R131 at Alexandra Road – leading to the stoppage of traffic to/from the Dublin Tunnel for a time.
- The existing and likely further future congestion on rail lines around Dublin City which are shared with passenger services.
 - Planned upgrades to rail lines connecting Dublin are currently targeted for passenger use as part of DART+, and increased future use of these lines by passenger services will significantly constrain line capacity to carry freight.
- Dublin Port is the only existing rail freight hub in the city. Due to space scarcity, it is also unlikely for any further rail freight terminals to be built in the city centre. While rail can move substantial amounts of freight into the port, it is unlikely to become a significant means to supply the city itself with goods.

Opportunities surrounding rail freight are predominantly present in the Framework, Irish Rail Freight Strategy 2040 and Irish Rail Strategy 2027, which indicate:

- The potential for dedicated infrastructure such as grade separated junctions, rail alignment widening could have a major positive effect in making rail freight a more attractive mode choice.
- The use of a consolidation centre in west Dublin to take HGVs off city roads and allow for trains to carry freight onward to the port.
 - The combination of rail freight and micro delivery trips using cargo bikes, LGVs or EVs from dedicated distribution centres in the outskirts of Dublin (Dublin Eastern Gateway) could reduce the need for HGV deliveries in the city centre.
- Opportunity to use electric locomotives for freight trains enabling a low carbon mode of freight transport. This is supported by the expected electrification of Dublin's suburban rail lines as part of Dart+.
- The three (or four) tracking of the Belfast Line between Connolly and Malahide and the four-tracking of the Cork Line between Heuston and Park West are likely to alleviate congestion on the rail lines in and around the city. Since the additional tracks are primarily intended for passenger services, they will improve flexibility for freight services but not provide a fully freight dedicated rail corridor in either case.

3.2.3 Potential of New Technologies and Consolidation Centres

Use of new modes and technologies such as cargo bikes, EVs, and alternate fuels pose a very achievable short-term opportunity to decarbonise goods movement.

Modes

Cargo bikes have potential to reduce emissions and can leverage proposed cycle infrastructure in the city, potential mobility hubs, and the potential future freight consolidation centres. They can offer a fast and green micro-delivery solution as an alternative to private vehicles – as has been seen with the mass implementation of bikes for use by An Post for local deliveries. The use of cargo bikes will become more suited to the city as the implementation of the cycle network and mobility hubs advances. This will enable the delivery of goods to private homes and businesses without the presence of space restrictive trucks and vans and the associated pollution from such vehicles.

⁵ CSO Table TCA03 – Principal Commodities Conveyed by Rail



Figure 3-8: An Post Cargo E-Bikes

Consolidation Centres

Consolidation Centres/Delivery Hubs within the wider city area have been identified as a favourable strategy as part of the DCDP and the Framework and can easily be implemented with all modes of freight transit – especially for use in last-mile trips by light vehicles or cargo bikes. These centres would also have the benefit of reducing empty trips, use of heavy vehicles in the urban setting, and emissions due to the more efficient organising of freight and freight trip making. These consolidation centres can be considered for existing major freight attractors such as Dublin Port, however, they are also expected to be implemented on smaller scales for sustainable last-mile deliveries from mobility hubs.

Technology

The use of electric vehicles is gaining traction and their introduction in the road freight sector would significantly reduce environmental impacts. While the priority should remain to remove as many heavy vehicle trips from the city centre as possible, their total removal is not feasible for some larger deliveries. Such cases highlight the importance of minimising the environmental impact from such trips - which will be supported by the expected uptake of electric freight vehicles in the coming years.

Technology that could enable autonomous vehicles has the potential to significantly disrupt the supply of logistics services. As autonomous vehicle technology advances in the coming years, goods movement on both HGVs and last-mile delivery vehicles could be significantly impacted. This presents both an opportunity, to reduce logistics costs, and a risk, that goods movement traffic could drastically rise as a result.

4 PRINCIPLES FOR FREIGHT TRANSIT NETWORK DEVELOPMENT

Within the context of the Plan, and following the Road User Hierarchy, freight movements in the city will be adjusted to prioritise preferred interventions for walking & wheeling, cycling and public transport.

Within the development of Technical Note 3: Traffic Management, the use of Accessible Urban Zones (AUZs) as a tool for traffic management within the core city has been outlined and is a key factor in the design of Traffic Management measures. These conceptual AUZs (see Figure 4-1) are envisaged to enable uptake and efficient operation of more sustainable modes which will have a greater contribution towards the liveability of the city.

The primary consequence of the proposed AUZs would be a reduction in the number of private/goods vehicles in the city centre core. This would have several benefits:

- The lower traffic volumes would mean that air pollution is reduced, a key goal in the Climate Action Plan 2023 (CAP23) as well as the DCDP and the Transport Strategy.
- Noise pollution would be lowered.
- Congestion within the city centre would improve. This would have the following knock-on benefits:
 - Bus services would run more efficiently;
 - Cycling and walking would be safer and thus more attractive; and
 - Freeing up road space would allow for areas to be opened up for public spaces.
- Reduction in vehicles would create a platform to implement changes that could contribute to making Dublin a friendlier and more liveable city, as per examples described in Technical Note 8: Opportunities.
- Mode segregation could be implemented to a greater degree allowing people the space and freedom to enjoy their journey without facing potential negative impacts of interaction with traffic.

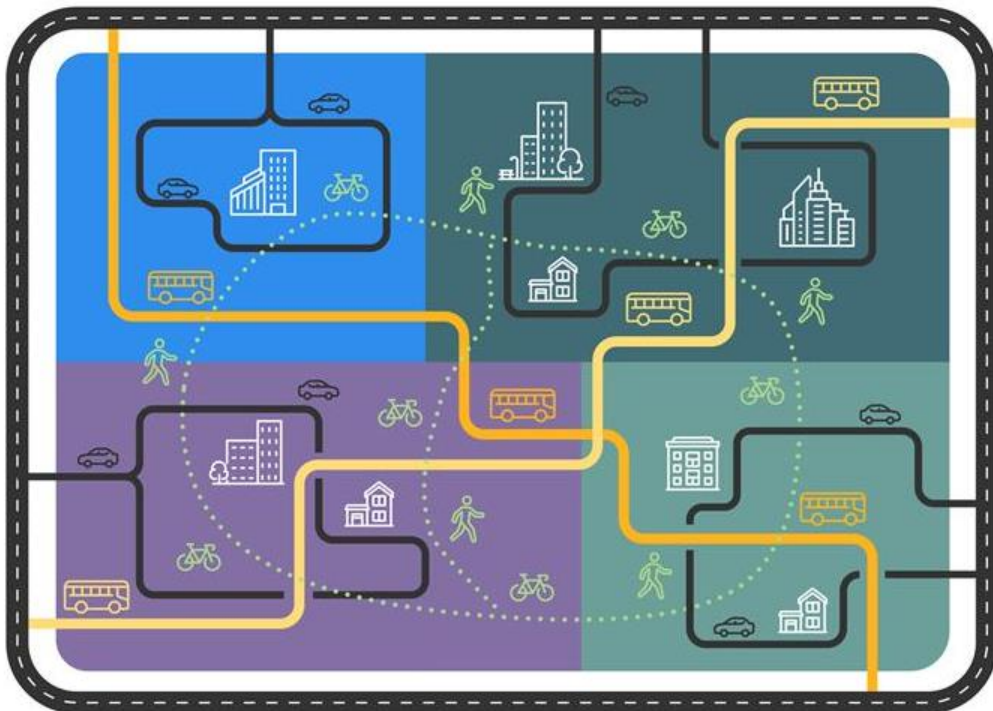


Figure 4-1: Diagrammatic Representation of the Proposed AUZ Structure

For HGVs, the use of an Accessible Urban Zone (AUZ) structure, as detailed in Technical Note 3: Traffic Management, would manage entry and exit points, as the existing HGV Strategy does. However, the relative permeability seen by the

existing HGV Strategy would not fall within the objectives of the AUZ structure. As a result, routes within the core city centre would need to be investigated and necessary measures taken to ensure that designated HGV routes align with AUZ objectives – while also providing sufficient access to businesses for deliveries. By employing an AUZ structure, HGV trips can be concentrated along set corridors, or where possible can be shifted to lower impact modes. This will support the wider Plan objective to make Dublin a safer and more liveable city.

Conceptual AUZs within the core city centre are shown in Appendix A.

Principles for the development of options and proposals for goods movement in this Plan have been identified as:

- Goods must arrive to their destination or their intended recipient safely.
- Priority should be given to sustainable modes of goods movement.
 - To reduce HGV demand, rail freight should be made more attractive and better connected where possible. HGV internal access trips should be accommodated to reduce the impact on urban realm, noise pollution etc. I.e., they should be concentrated along a few strategic routes that allow the quick dissipation of HGV presence in the city.
 - A “hub and spoke” model should be implemented where possible, where the hub is served by heavy vehicles and the spoke trips are completed by lighter, lower impact modes.
- Efficient movement of goods to support the economy should be balanced with their impact on sustainable transport modes for the general public.
- HGVs should be deterred from taking unnecessary trips through the city centre and should be encouraged to utilise the M50/Dublin Tunnel.
- Traffic AUZs identified within the core city should be followed with the designation of HGV routes which will aid in the alignment of freight networks with the principles set out within this section.

The overall aim is to create a network that enables an efficient logistics system in the city while minimising the negative impacts of heavy vehicles on the public realm, air quality, emissions, public transport and noise pollution.

5 METHODOLOGY

The methodology undertaken for the development of a 2030 Heavy Freight Network for Dublin city consisted of:

- Consideration of planned infrastructure projects and policies likely to impact freight.
- Multi-Criteria Analysis of HGV Strategy and proposed infrastructure in the city in relation to movement of freight and Plan principles/objectives. MCA Criteria included:
 - Alignment with AUZ principles;
 - Liveability;
 - Net Zero;
 - Safety; and
 - Necessity.
- Comparison with interventions from Technical Note 3: Traffic Management and recommendations of suitable changes.
- Selection of Emerging Preferred Heavy Goods Freight Network.

Throughout the review of policy and strategies relating to freight transit in Dublin City Centre, as well as the wider national context, several trends and projects were identified as being key to the future of freight delivery in both Ireland and Dublin City Centre:

- The retention and expansion of the HGV Strategy in Dublin City Centre (Transport Strategy).
- The expansion of Rail Freight for longer distance freight movements (Irish Rail Freight Strategy 2040, National Development Plan).
- The use of consolidation centres, mobility hubs and delivery hubs, including the Dublin Eastern Gateway (Irish Rail Freight Strategy 2040).
- Use of sustainable modes for last-mile trips (the Framework).
- Expansion in use of EV's/Alternative Fuel Vehicles for freight trips (the Framework).

With the above in mind, a 2030 network for heavy freight transport in Dublin City Centre was developed and proposals put forward for the network with cognizance of the Plan, local, and national objectives.

6 OPTIONEERING/NETWORK DEVELOPMENT

Each main corridor of the HGV Strategy (excluding gyratories/link roads) within the core city centre area, potential future HGV corridors, major infrastructure proposals, and rail freight corridors serving Dublin Port were analysed using a Multi Criteria Analysis to rank their utility within the Plan principles and objectives to benefit both Dublin City and wider freight transit. The chosen objectives for analysis were:

- Alignment to AUZ Principles: Corridors that allow for permeability between AUZs will not be permitted, while it will also be favourable to assign clear entry and exit points for each AUZ. Certain routes will lie on the border of AUZs, and so may be retained with traffic/route restrictions added to ensure no permeability between AUZs.
- Liveability: Places of high cultural, social, or local importance should be avoided by HGVs to maximise comfort and attractiveness of areas.
- Net Zero: Measures which encourage a more sustainable transport network are favoured to help reduce GHG emissions. Use of busy city streets will incur greater impact of emissions, whereas more segregated/quieter areas will have a lower impact on people.
- Safety: It is a key principle of freight network development to have a safe network for the public, freight operators, and freight itself. Where streets are deemed narrow or have high pedestrian volumes, it is favourable to limit HGV volumes.
- Necessity: Corridors deemed to encourage non-essential trips through the city will have a negative impact on all other principles and should be identified. Where corridors are deemed to be essential, other objectives may have to be conceded to allow for entry and exit of vehicles to key areas.

The scoring matrix presented in Table 6-1 informed the MCA.

Table 6-1: MCA Key

Ranking	Symbol
Below Average	
Average	
Above Average	

Each corridor was considered in terms of the objectives above, and scored in Table 6-2. The outcome for each corridor was noted as a recommendation for inclusion in a 2030 heavy freight network (“Proceed”), or exclusion from the network (“Remove”). HGV Strategy routes outside of the core city centre were deemed necessary for access to the core city centre and were all retained, unless changes proposed for the routes within the core city centre negate the need for certain outer routes.

Table 6-2: HGV Measures MCA

Corridor	AUZ	Liveability	Net Zero	Safety	Necessity	Outcome
Railway – Northern (Connolly) Line	N/A					Proceed
Railway – Western (Heuston) Line	N/A					Proceed
Southern Port Access Road	N/A					Proceed
Existing HGV Strategy						
North Quays (Fr. Matthew Bridge to IFSC)						Remove
North Quays (IFSC to Dublin Port)						Proceed
South Quays (Fr. Matthew Bridge to IFSC)						Remove
North Circular Road to Guild Street						Proceed

Corridor	AUZ	Liveability	Net Zero	Safety	Necessity	Outcome
South Circular Road (Leonard’s Corner – Harcourt Street)	Red	Red	Red	Red	Yellow	Remove
Constitution Hill	Yellow	Yellow	Red	Yellow	Green	Proceed
Dorset Street	Yellow	Yellow	Red	Yellow	Green	Proceed
Parnell Street/Square	Red	Yellow	Red	Yellow	Yellow	Remove
Gardiner Row/Place	Red	Yellow	Red	Yellow	Green	Remove
Summerhill	Green	Yellow	Yellow	Yellow	Yellow	Proceed
Gardiner Street	Green	Yellow	Red	Yellow	Red	Remove
Amiens Street	Yellow	Yellow	Red	Yellow	Green	Proceed
Beresford Place	Yellow	Red	Red	Yellow	Yellow	Remove
Pearse Street	Green	Yellow	Red	Yellow	Green	Proceed
Tara Street	Red	Yellow	Red	Yellow	Yellow	Remove
Lombard Street	Red	Yellow	Red	Yellow	Green	Remove
Westland Row	Green	Red	Red	Red	Green	Proceed
Lincoln Place/Merrion Street Lower	Red	Red	Red	Red	Yellow	Remove
Mount Street	Yellow	Yellow	Red	Yellow	Green	Proceed
Nassau Street (Dawson Street – Kildare Street)	Yellow	Yellow	Red	Yellow	Yellow	Remove
Baggot Street	Green	Red	Red	Red	Green	Proceed
Dawson Street	Yellow	Red	Red	Red	Red	Remove
Fitzwilliam Place/Square/Street	Red	Red	Red	Red	Red	Remove
Merrion Square (N)	Green	Red	Red	Yellow	Green	Proceed
Merrion Square (S + W)	Yellow	Red	Red	Yellow	Red	Remove
Adelaide Road	Red	Red	Red	Yellow	Red	Remove
Charlemont Street	Green	Red	Red	Yellow	Red	Remove
Leeson Street	Red	Yellow	Red	Yellow	Green	Remove ⁶
Camden Street	Green	Red	Red	Yellow	Green	Proceed
Kevin Street	Green	Yellow	Red	Yellow	Green	Proceed
Bride Street (Golden Lane – Kevin Street)	Red	Red	Red	Yellow	Yellow	Remove
Clanbrassil Street	Yellow	Yellow	Red	Yellow	Green	Proceed
Proposed Additions to HGV Management Strategy						
Samuel Beckett Bridge	Yellow	Green	Red	Yellow	Green	Proceed
Macken Street	Yellow	Yellow	Red	Yellow	Green	Proceed
Belvedere Road	Yellow	Yellow	Red	Yellow	Green	Proceed
Gardiner Street Upper	Green	Yellow	Red	Yellow	Green	Proceed
Fenian/Grand Canal Street Lower	Green	Yellow	Red	Yellow	Green	Proceed
Kildare Street	Green	Red	Red	Yellow	Green	Proceed
Lord Edward/Dame Street	Green	Red	Red	Red	Green	Proceed
George’s Street	Green	Red	Red	Red	Green	Proceed
Longford Street Great/Golden Lane	Green	Yellow	Red	Red	Green	Proceed
Bride Road	Green	Yellow	Red	Red	Green	Proceed

⁶ Due to traffic restrictions leading to Cuffe Street becoming one-way eastbound, Leeson Street will act as an exit route for deliveries which have deviated from the HGV Designated Routes to access Harcourt Street.

7 OPTIONS AND PROPOSALS FOR GOODS MOVEMENT NETWORK

7.1 HGV Routes and Access – Proof of Concept Proposals

Based on Optioneering and Network Development, outcomes on the suitability of major infrastructure proposals and potential future changes to the HGV Strategy to tie into local and Plan objectives have been identified and are discussed in relation to their benefit to the wider city. For each conceptual AUZ, the HGV Strategy has been altered to ensure that there is no permeability between AUZs, while retaining sufficient access for delivery vehicles to access junctions within the AUZ to deviate from the designated route and access businesses. Proposals for HGV access in specific conceptual AUZs are as follows:

- Parnell Square/Capel Street AUZ:** This AUZ contains a dense concentration of commercial businesses as well as key distribution hubs in the markets area in need of HGV deliveries. This necessity is constrained by a network of narrow streets with many direction and turning restrictions. As such, the most suitable route to serve this AUZ has been deemed as the bordering streets of Dorset Street, Bolton Street and Church Street. It is envisaged that delivery vehicles will deviate from bordering designated routes on these streets onto the many one-way streets feeding commercial areas of Henry Street, O'Connell Street etc. with key entry/exit routes for deviated vehicles expected to be at Father Matthew Bridge, Jervis Street, Parnell Street, and Parnell Square. For deliveries to pedestrianised zones in this AUZ: Capel Street, Henry Street, and Moore Street, it is assumed that early morning deliveries will be permitted – hence providing access to these areas for delivery vehicles. To limit permeability between AUZs, and due to traffic restrictions reducing their utility, designated routes along Parnell Street, Parnell Square, Gardiner Row and Gardiner Place have been removed.
- Gardiner Street AUZ:** This AUZ sees a mix of commercial areas in the O'Connell Street/Talbot Street/Parnell Street areas while also retaining high densities of housing and public services to the north and east of the AUZ. As such, HGV designated routes have been retained/added along Summerhill and Gardiner Street Upper to enable HGVs to penetrate deep into the AUZ to allow for deviations directly into commercial areas rather than through more residential areas. Designated entry and exit points are at the junction of Portland Row/Summerhill and the junction of Gardiner Street/Dorset Street respectively. Key inner access routes to enable deviated vehicles to access businesses are expected to be Gardiner Street and Marlborough Street which are both easily accessible from the designated corridor serving this AUZ. To protect public realm and pedestrians, designated routes have been removed from Beresford Place and the quays.
- Connolly Station/IFSC AUZ:** This small AUZ sees a concentration of businesses at its centre in the IFSC, while being primarily filled with narrow/constrained streets with considerable traffic restrictions. The most suitable designated route has been identified as Amiens Street, Custom House Quay, and North Wall Quay which will provide a clear entry to exit corridor along the AUZ borders, and adequate access to businesses located primarily around Mayor Street within the IFSC. Key routes for vehicles deviated from the designated network are expected to be along Sheriff Street Lower, Commons Street and Mayor Street which provide sufficient and clear access to designated routes for entry/exit. AUZ entry/exit points come at the junction of Seville Place/Amiens Street and the junction of North Wall Quay/Guild Street respectively.
- Pearse Street/Tara Street AUZ:** This AUZ sees a mix of intense commercial areas in the west, while having considerable residential and office areas to the north and east – adding complexity to the routing of vehicles through it. This AUZ is also constrained by the railway line cutting through the centre of the AUZ – with limited bridges suitably high to allow HGVs to pass underneath. Given the concentrations of businesses to the west of the AUZ, HGV designated routes have been added for access far into the AUZ, with corridors on Pearse Street, Westland Row and Fenian/Lower Grand Canal Street proving clear access to businesses/routes to businesses in the AUZ. It is envisaged that deliveries bound for Westmoreland Street/the quays will divert from designated routes at Erne Street and utilise Townshend Street for local access to the west of the AUZ. Access to the AUZ comes from the junction of Macken Street and Pearse Street, with vehicles exiting the AUZ via the on-way Fenian Street, and Grand Canal Street. Within this AUZ, Lincoln Place, the quays, Tara Street and Pearse St (Westland Row to Tara Street) have been removed from the network to remove inter-AUZ permeability between this AUZ and surrounding AUZs.

- Dawson Street/Baggot Street AUZ: This AUZ sees intense commercial areas to the west of the AUZ along Nassau and Dawson Street, as well as along Baggot Street. This AUZ also sees sensitive and heavy footfall areas in Saint Stephens Green and Dawson Street. Given the density of businesses in this area, a designated route has been proposed from Mount Street to Kildare Street and exiting via Baggot Street. This configuration balances the need to service commercial premises within this AUZ, while reducing impact on the public, and other forms of transport as much as possible. With this in mind, designated routes have been removed from Merrion Square (West and South), Nassau Street (West of junction with Kildare Street), Dawson Street, Saint Stephens Green, and Leeson Street. These interventions will primarily serve to protect public realm and limit interaction with other modes and will also remove the ability for inter-AUZ movements – which is supported by the removal of Lincoln Place from the network in the Pearse Street/Tara Street AUZ. Servicing routes deviating from the designated route in this AUZ are expected to concentrate towards Dawson Street – with access coming via Molesworth Street and the provision of a right turning lane at the southern end of Kildare St, and from Dawson Street to Nassau Street to enable delivery access to Saint Stephens Green (North) and Dawson Street.
- Portobello/Adelaide Road AUZ: This AUZ displays a strong mix of residential areas to the west in Portobello, along with major commercial premises along Camden Street and Harcourt Street. To sufficiently service commercial areas with limited impact on the residential areas within this AUZ, designated HGV corridors are proposed for Kevin Street, turning onto Camden Street which is the key commercial area in this AUZ. This will allow for on-street deliveries, with an easy exit from the AUZ then possible from Richmond Street. For deliveries to Harcourt Street, HGVs will be expected to deviate from the designated route at the junction of Camden Street and Charlotte Way before turning onto Harcourt Street. Due to traffic restrictions introduced onto Cuffe Street, HGVs will be forced to exit the network from a secondary exit point at the Leeson Street Bridge – accessed via Saint Stephens Green, Earlsfort Terrace, and Hatch Street Lower.
- Cathedrals/Grafton Street AUZ: This AUZ is one of the most commercially intensive areas in Dublin with dense shopping areas between Dawson Street to the east, and George’s Street to the west. This area which is likely to see a high volume of HGV deliveries will require a designated HGV route deep into the AUZ to enable straightforward delivery of goods. This corridor is proposed to enter the AUZ at Christchurch Cathedral and travel along Dame Street before turning up George’s Street (necessitating the provision of a right turn) before exiting the AUZ via Longford Street Great, Golden Lane, Bride Street, and Bride Road. Due to pedestrianisation of many streets in this area, morning deliveries will be utilised for many key streets such as Grafton Street. It is envisaged that deliveries will be possible to the Grafton and South William Street areas via Dame Street and Trinity Street – with Suffolk Street and Grafton Street allowing through traffic for deliveries in early morning hours. Exits from these streets will be possible from their south ends via Mercer Street and Longford Street Little.

When outside of the AUZs in the city centre, it is envisaged that HGVs will keep as much as possible to the Central Access Route as outlined in Technical Note 3: Traffic Management; and adhere strictly to the Revised HGV Strategy Network. Further to the changes proposed as part of the AUZs, it is also proposed to add exit routes from the network via Sheriff Street Upper (requiring investigation into the redesignation of the weight limit over the former railway bridge) and on Belvedere Road to enable right turning traffic from the North Circular Road to Dorset Street Lower.

As opposed to the networks developed in Technical Note 3: Traffic Management, where the AUZ principle is strictly followed, it is conceded that in some cases there may be a need for HGVs to cross AUZ boundaries after having deviated from the main HGV Strategy network for local deliveries. Therefore, within the permit system currently employed by DCC as part of the HGV Strategy, it is recommended to enable drivers to apply for permission to cross AUZ boundaries in cases where it is otherwise unavoidable.

The revised HGV Strategy Network, along with other major existing and potential future freight corridors, is shown below in Figure 7-1. This map outlines the elements of the existing HGV Strategy which are to be retained, such as the HGV restricted zones as outlined in Figure 3-7, while also detailing proposed changes to the HGV Strategy in the core city to align with AUZ principles. Access and traffic restrictions within individual AUZs are shown in Appendix A.

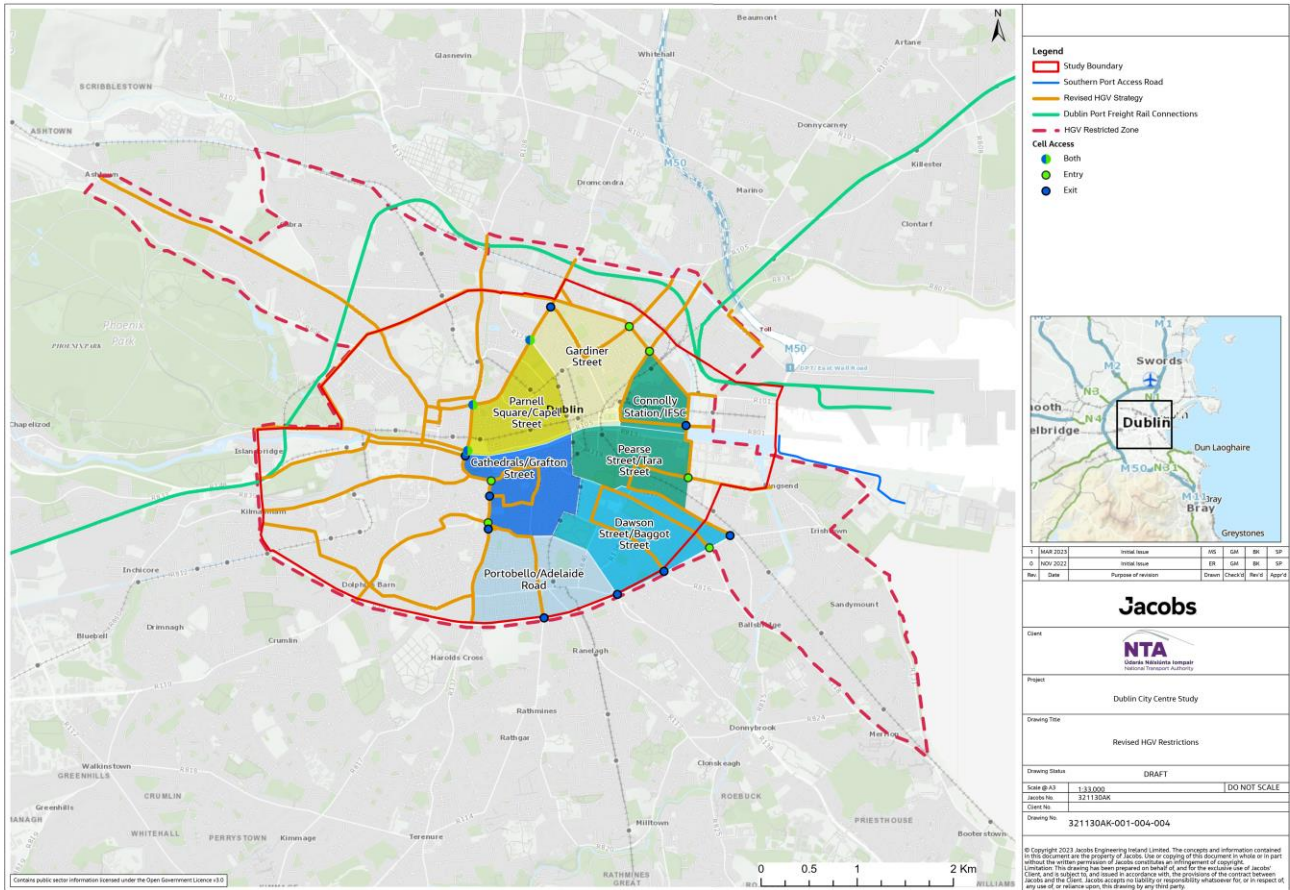


Figure 7-1: Revised HGV Management Strategy and Traffic AUZs

7.2 LGV Routes and Access

LGVs are expected to utilise a road network similar to that of private general traffic. However, while much of the heavy freight traffic is destined for Dublin Port, the key destinations for LGVs are expected to be commercial premises and goods consolidation centres. The primary road network identified for private vehicles in Dublin in 2030 has been analysed in Technical Note 3: Traffic Management, and is shown in Figure 7-2. This network will concentrate traffic onto the Samuel Becket and Father Matthew Bridges.

Further to the key routes expected to be utilised by LGVs, it will be necessary for LGVs to leave the core road network to reach their destinations which will in some cases require access to areas expected to be pedestrianised by 2030 – such as Parliament Street, College Green, and Capel Street. In these areas, a similar system as that currently in place on Grafton Street is likely to be employed, where early hours of the morning will permit goods traffic to deliver to businesses where off-street access is unavailable.

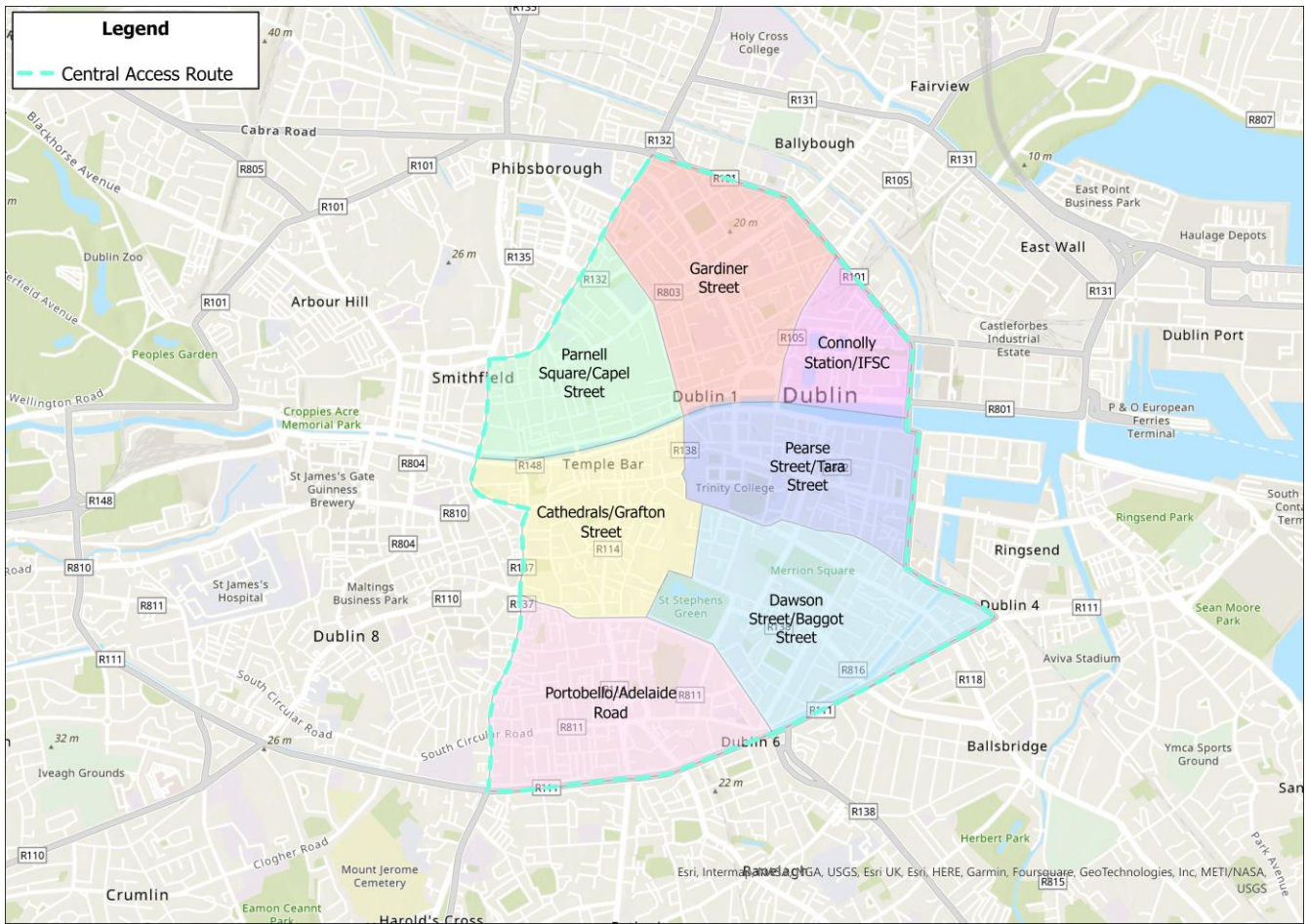


Figure 7-2: Proposed 2030 Road Network

7.3 Micro Deliveries

Last-mile deliveries using cargo bikes, motorcycles, bicycles, and by foot should be able to utilise walking and cycle networks. Micro deliveries will therefore benefit from walking and cycling networks providing good permeability. The preferred primary cycling network for 2030 as outlined within Technical Note 5: Cycling, and the preferred primary walking network outlined in Technical Note 4: Walking, would contribute to this objective. Additionally, potential locations for mobility hubs, cycle parking, and major trip generators such as health and education campuses could all be used as micro consolidation centres with the ability to accommodate cargo bike parking, delivery lockers and micro deliveries.

7.4 Interaction Between Freight Modes

It is important to consider the transfer of goods from heavy to light freight vehicles for transit to city centre locations. This will be enabled by strategic objectives for consolidation centres throughout Dublin such as the Dublin Eastern Gateway, while mobility hubs and existing car parks could also act as interchange locations – enabling the transfer of goods to low-impact last-mile delivery modes such as cargo bikes.

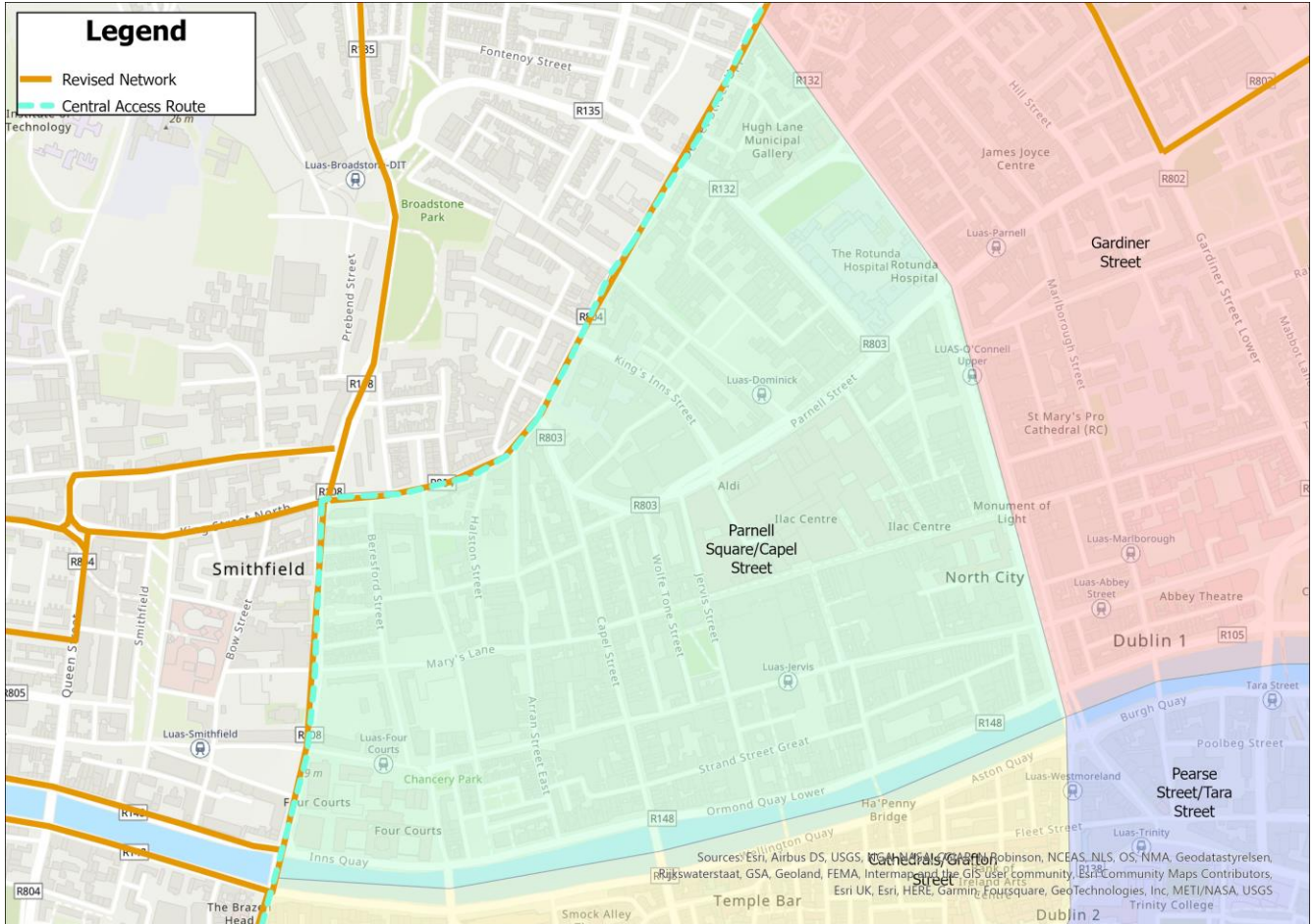
It is also necessary to consider the transfer of goods from HGVs and LGVs to Micro Delivery modes. This intermodality is dependent on proximity to the destination of goods as Micro Deliveries should not have to cover large distances. As such, the following locations for freight exchange could be considered:

- Future Mobility Hubs,
- Existing Multi-Storey Car Parks,
- Dublin Port.

8 APPENDICES

8.1 Appendix A – AUZ Access Proof of Concept

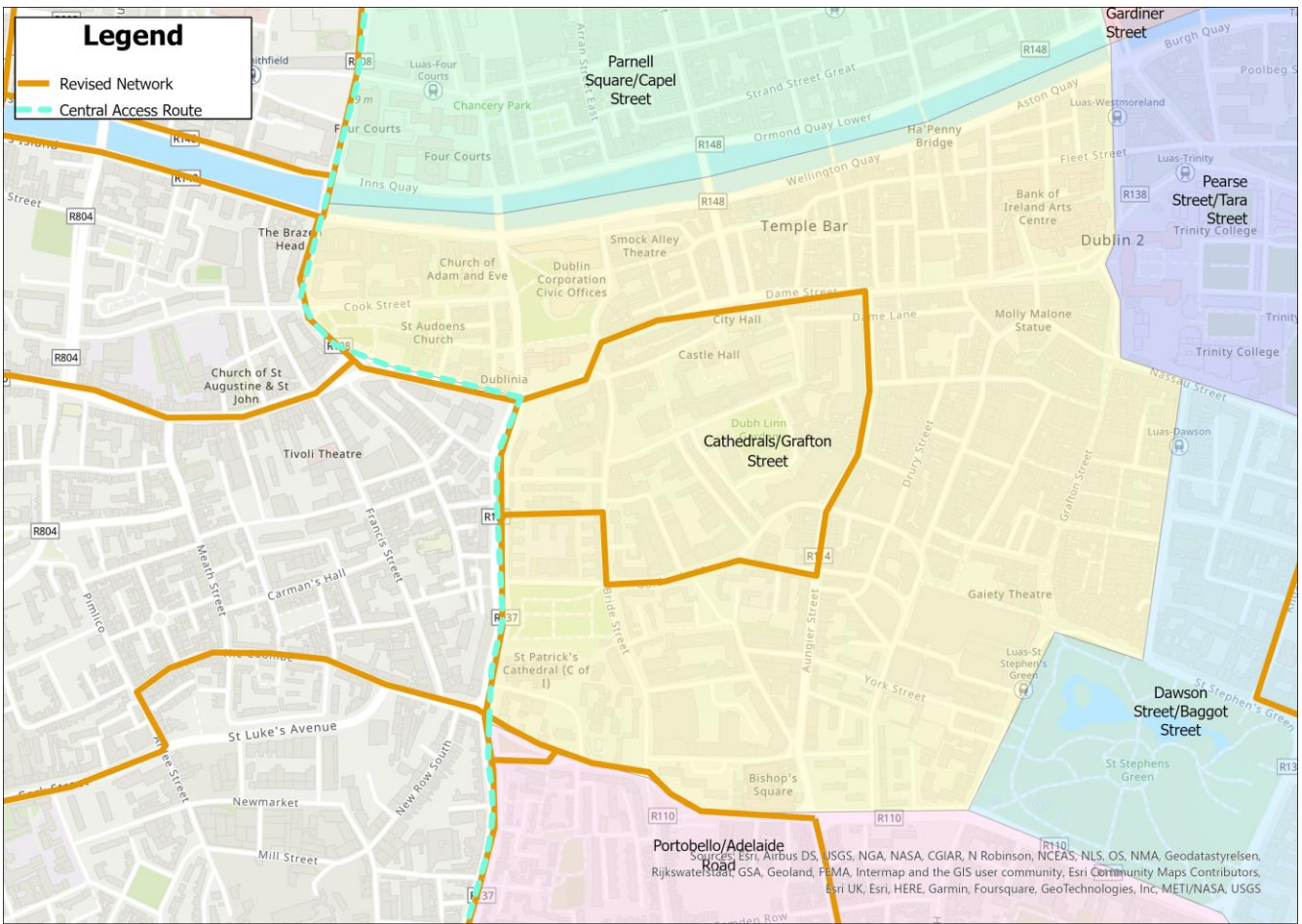
8.1.1 Parnell Square/Capel Street



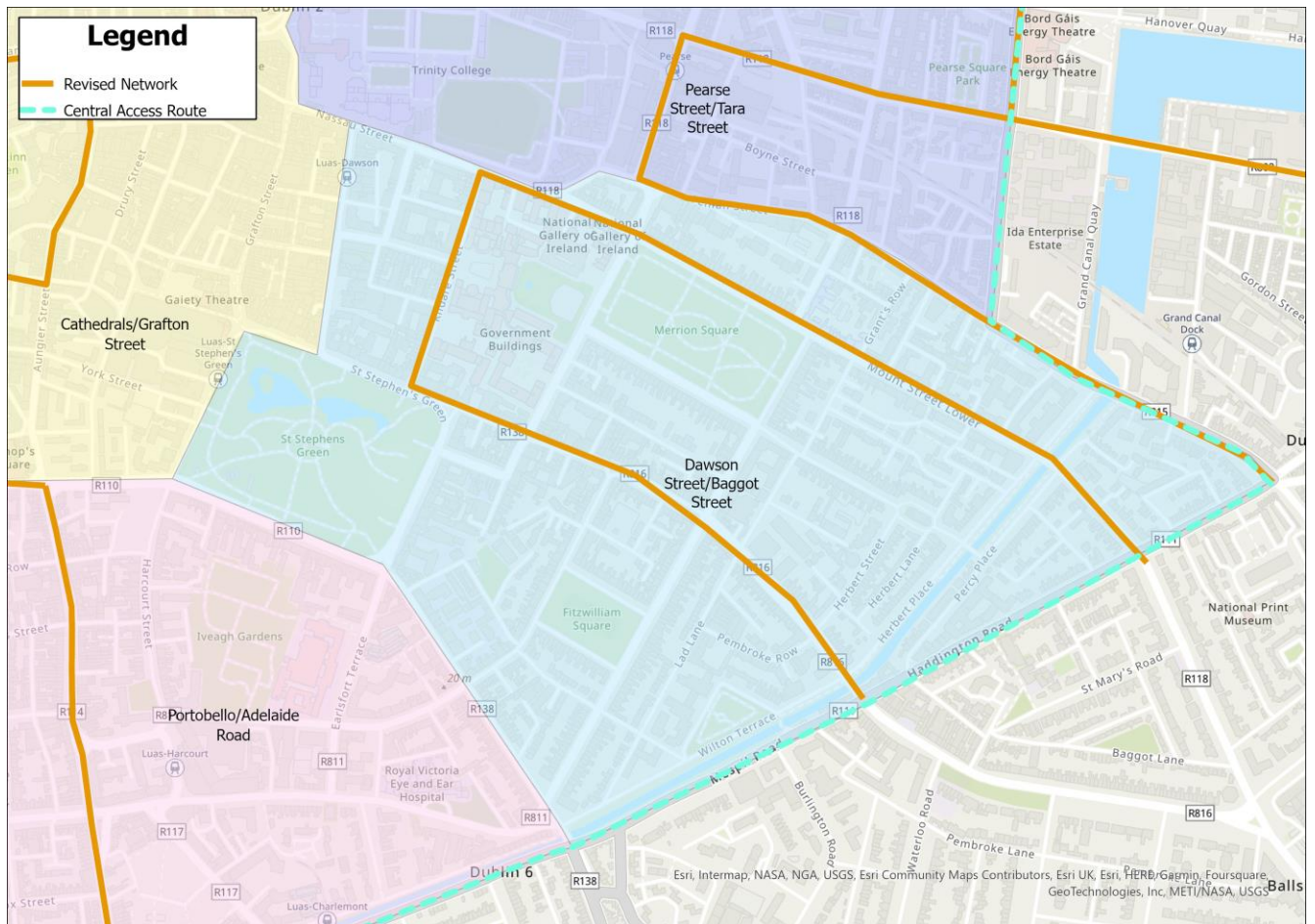
8.1.3 Connolly Station/IFSC



8.1.4 Cathedrals/Grafton Street



8.1.6 Dawson Street/Baggot Street



8.1.7 Portobello/Adelaide Road

