

Senator

**Smart network operator platform
enabling shared, integrated and
more sustainable urban freight
logistics**

[D5. 10] Kerbside Management Study
[Dublin]



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N° 861540

Deliverable No.	5.10	Work Package No.	WP5	Task/s No.	T5.4
Work Package Title	Sustainable on-demand urban planning and living labs				
Linked Task/s Title	Pilot Case 2 Development - Dublin				
Status	Final		(Draft/Draft Final/Final)		
Dissemination level	PU		(PU-Public, PP- Restricted to other programme participants, RE-Restricted, CO-Confidential)		
Due date deliverable	2025-02-28		Submission date		2025-02-26
Deliverable version	Final				

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Document History

Version	Date	Comment
Version 1	2025-02-14	For Review
Version 2	2025-02-25	Final

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List of Acronyms

API	Application Programming Interface
AQI	Air Quality Index
CILT	Chartered Institute of Logistics and Transport
CM	Curb Management
CMP	Curb Management Plan
CO2	Carbon Dioxide
CSV	Comma-Separated Values
DCC	Dublin City Council
DESA	Department of Economic and Social Affairs
DoT	Department of Transport
DP	Development Plan
DPO	Disabled Persons' Organisation
EC	European Commission
ESR	Effort Sharing Regulation
ETD	Energy Taxation Directive
EU	European Union
EV	Electric Vehicle
GDA	Greater Dublin Area
GIS	Geographic Information System
IS	Information Systems
KML	Keyhole Mark-up Language
LiDAR	Light Detection and Ranging
NCAD	National College of Art and Design
NECP	National Energy and Climate Plan
PIN	Prior Information Notice
PTAL	Public Transport Accessibility Levels
ROI	Return on Investment
SCATS	Sydney Coordinated Adaptive Traffic System
SDG	Sustainable Development Goals
SFMTA	San Francisco Municipal Transportation Agency
SuDS	Sustainable Drainage Systems
TAG	Traffic Advisory Group
TAMS	Traffic Asset Management System
TNCs	Transportation Network Companies
UCD	University College Dublin
UK	United Kingdom
UN	United Nations
UNF	Unified National Framework

UNFCCC	UN Framework Convention on Climate Change
WHO	World Health Organisation

Executive Summary

The purpose of deliverable D5.8 – “Kerbside Management Study [Dublin]” is to report the results obtained in the Dublin pilot specifically on the kerbside management pilot considering its local requirements and peculiarities at month 53 (January 2025). This deliverable details the continued progress, results and next steps of the kerbside management pilot in Dublin. The dissemination level of this deliverable is designated as “public”, it has been prepared by Dublin City Council and is based on internal procedures and templates by ZABALA.

1 Introduction

Cities play a progressively important role in tackling climate change. Today, some 56% of the world's population – 4.4 billion inhabitants – live in cities. Urbanisation can contribute to sustainable growth if managed well. However, the speed and scale of urbanisation bring challenges, such as meeting the accelerated demands of its citizens. The trend of urbanisation is expected to continue, with the urban population more than doubling its current size by 2050, at which point nearly 7 of 10 people will live in cities.

Our cities are becoming increasingly congested with the concentration of populations in urban centres and a continued shift in consumer trends towards e-commerce. Dublin is ranked as the tenth slowest city in the world, according to the 2024 INRIX Global Traffic Scorecard. Congestion reduces the attractiveness of a location to work and live, negatively impacts climate change through increased greenhouse gas emissions, and ultimately harms local air and noise quality.

Competitive demand for space in our cities from multiple stakeholders with conflicting priorities is revealing fault lines in our city's fabric. This issue is becoming increasingly prevalent at our kerbside. Every city has kerbs, the access point between the road and the footpath, and every kerb has many functions; movement, access for business, access for people, activation and parking. The kerbside is a public space, an asset belonging to all its citizens, therefore effective management of this space is essential to ensure the continued growth and economic vitality of our cities. The decade-long association between the kerb and storage of personal vehicles, with the private car monopolising public space to the detriment of those who walk, wheel, cycle and scoot.

Many cities, including Dublin, are looking to take back control of their kerb space by gaining a better understanding of its inventory and usage, as well as using modern methods to manage this space.

A city must first identify its current allocations of kerbside. An analysis of data will ascertain how kerbside is used and identify existing conflicts with current arrangements. Having reviewed the current policy, aligned the city's goals, and identified hierarchy and inventory data, a kerbside management strategy can be defined.

1.1 What is Kerbside Management

Kerbside management involves the planning and regulation of the limited space where a road meets the footpath, to balance the competing demands of various users, such as vehicles, pedestrians, cyclists, and public transport. It encompasses activities like parking management, loading zones, ride-hailing pickup/drop-off, public transport stops, and spaces for micro-mobility services. Effective kerbside management improves urban mobility, reduces congestion, supports economic activity, enhances safety, and promotes sustainability by prioritising pedestrian-friendly infrastructure and equitable access.

Challenges include space scarcity, enforcement, and adapting to new technologies like electric vehicle charging and autonomous vehicles. Cities are increasingly leveraging smart technologies, such as sensors and data analytics, to dynamically optimise kerbside use and address these challenges as part of sustainable urban development.

2 Background and Context

With the City's kerbside transformed by the various COVID Mobility Strategy implementations, it was vital to reassess demands on the kerbside and the multiple stakeholders with their conflicting priorities. The measures significantly impacted the amount of space to facilitate servicing in the core. There was a need for an overarching servicing strategy, as outlined in SMT06 of the Dublin City Development Plan 2022-2028 (Dublin City Council, Dublin City Development Plan 2022-2028 Draft, 2022).

It is an Objective of Dublin City Council:	
	Servicing/Logistics Strategy
SMT06	To prepare a Servicing/Logistics Strategy for the city in collaboration with relevant stakeholders to ensure the continued viability of the city and urban villages.

Figure 1: Objective SMT06 Dublin City Development Plan 2022-2028 Chapter 8 Sustainable Movement and Transport. (Dublin City Council (DCC), 2022)

With no clear picture of the status of the kerbside or available space for loading in the city, a basis for engagement and strategy development was formed. The most recent mapping exercise performed in DCC was for the 2015 Public Realm Masterplan (Dublin City Council, The Heart of Dublin, City Centre Public Realm Master Plan, 2016), where several locations between the canals were mapped as shown in Figure 2. But it was static and has not been revisited since. It was believed that a comprehensive map of the kerbside could be beneficial as a starting point, as cited by Roe and Toocheck, we must choose measurement over myths (Roe & Toochech, 2017). The aspiration was to map everything at the kerbside; double yellow lines, loading bay dimensions and operating hours, to give a clear picture of existing conditions post-COVID.

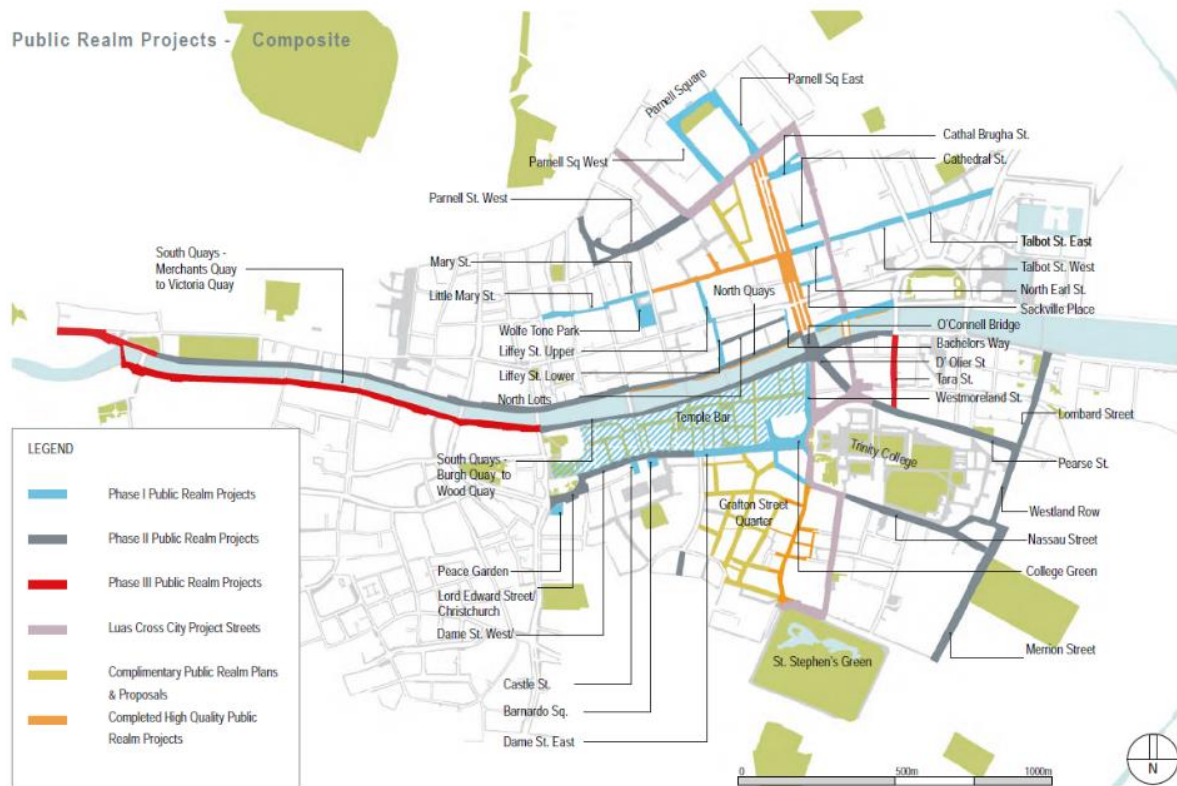


Figure 2: The Heart of Dublin City Masterplan Public Realm Projects - Composite. (Dublin City Council, The Heart of Dublin, City Centre Public Realm Master Plan, 2016)

The City Council launched a Prior Information Notice (PIN) in February 2022 through etenders.gov, inviting market consultation on developing kerbside mapping and management (Dublin City Council, Prior Information Notice with the purpose of inviting market consultation for the completion of Kerbside Mapping and Management, 2022). Its overview highlighted the need for more efficient management of kerbside space following the expansion of outdoor dining, increased footpaths, new cycle lanes and traffic-free thoroughfares post-COVID recovery. DCC acknowledged that the first step towards managing the kerb space is through a better understanding of its current uses and regulations, with key features of a pilot to include solutions that enable kerbside mapping and dynamic kerbside management.

The kerbside mapping piece looked to real-time or near real-time updating of digital kerbside maps, to enable DCC to reduce congestion and its associated environmental impacts. The kerbside management piece notes the importance of ensuring the maps are updated in real-time or at regular intervals, with DCC looking for solutions currently available in the marketplace to ensure that the mapping produced is usable by multiple stakeholders within the Council.

In May 2022, DCC in collaboration with An Post, through the Senator Project held the first external stakeholder workshop titled, 'Help us find the right route'. The workshop took place

in the Mansion House, Dublin and was hosted by the former Lord Mayor, Alison Gilliland. The workshop, attended by representatives from logistics companies operating in Dublin, representatives from DCC and local government; focused on barriers to last-mile delivery in the City.



Figure 3: Word cloud responses to the question, "What are the issues we are facing as a city?" posed to the Stakeholders at the 'Help us find the right route' Workshop. (Senator, Senator Pilot Case 2 results and

The Senator pilot area encompasses approximately 7,000 residential addresses and a diverse mix of commercial and retail establishments. To enhance management of this dynamic environment, the City sought to gain a comprehensive understanding of its assets, along with the regulations governing them.

The Digital Kerbside pilot was launched in September 2022 and it aimed to digitally map kerbside assets using two distinct technologies. For this, the Senator pilot area was divided into two regions, the South Docklands and the Grafton Street Quarter as shown in Figure 6.

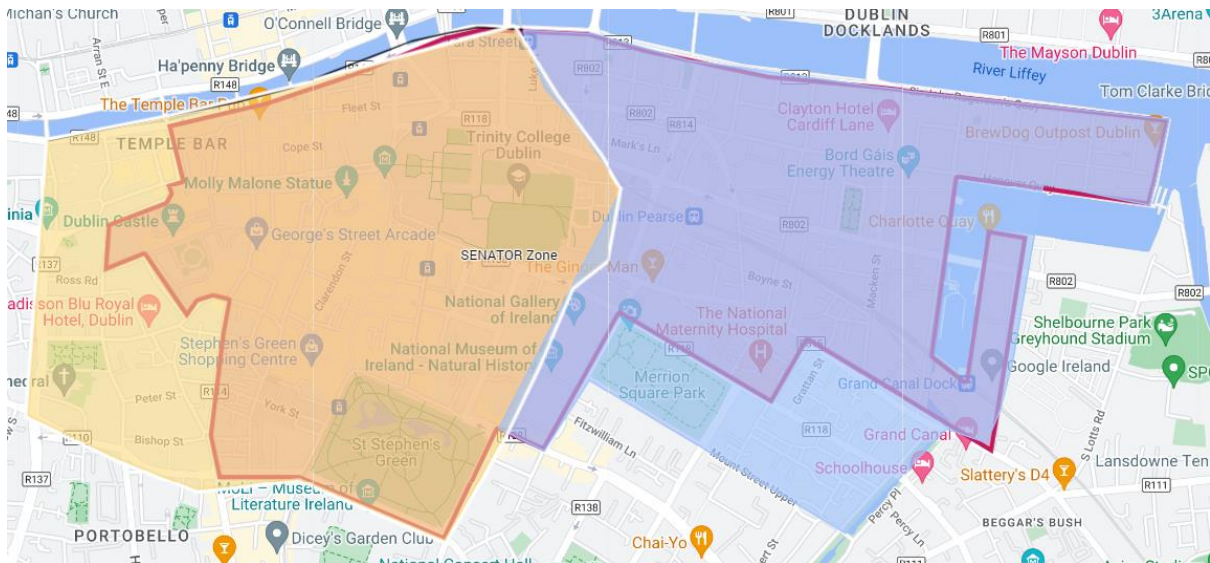


Figure 4: Senator Project Pilot Zone for Digital Kerbside Mapping. (Senator, Senator Pilot Case 2 results and follow-up (Dublin) Report 1 , 2023)

The City Council aimed to evaluate different surveying techniques and kerbside platform. Two companies were appointed—Appyway conducted a LiDAR survey, and CurbIQ utilised Augmented Mobile Mapping as shown in Figure 7 and Figure 8.



Figure 5: Appyway LiDAR Survey. (Senator, Senator Pilot Case 2 results and follow-up (Dublin) Report 1 , 2023)

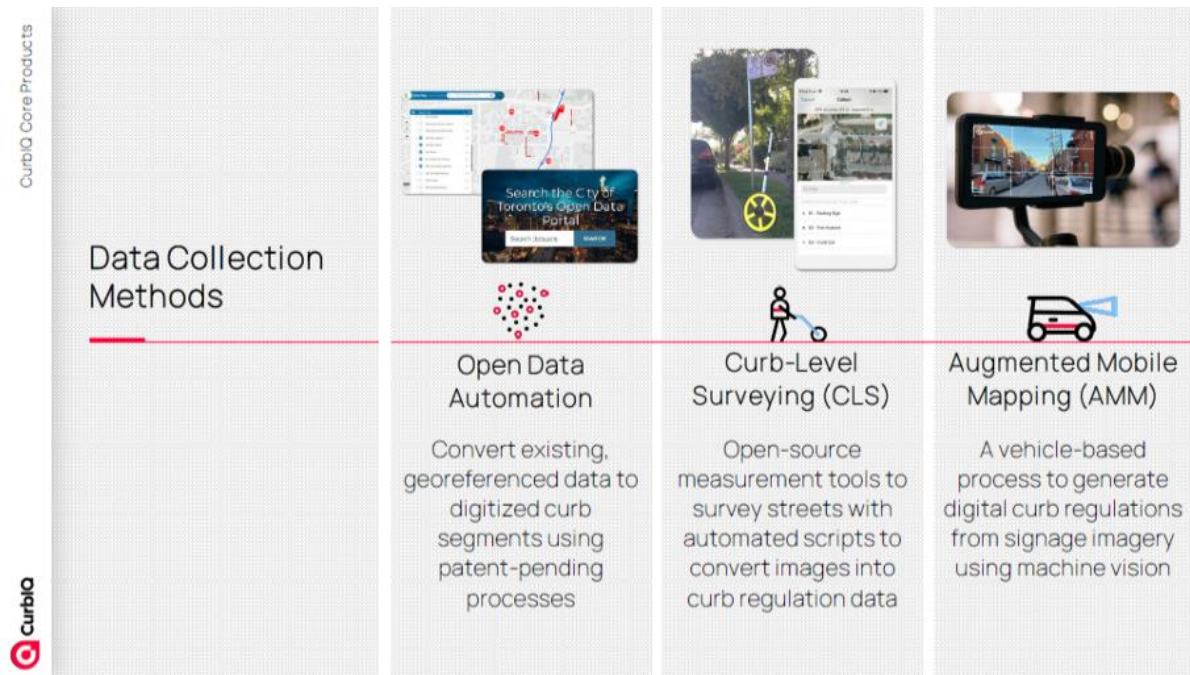


Figure 6: CurbIQ Surveying Technique. (Senator, Senator Pilot Case 2 results and follow-up (Dublin) Report 1, 2023)

DCC The mapping was completed in January 2023, with DCC gaining live access to the Appyway Traffic Suite platform and the CurbIQ Curb Viewer platform.

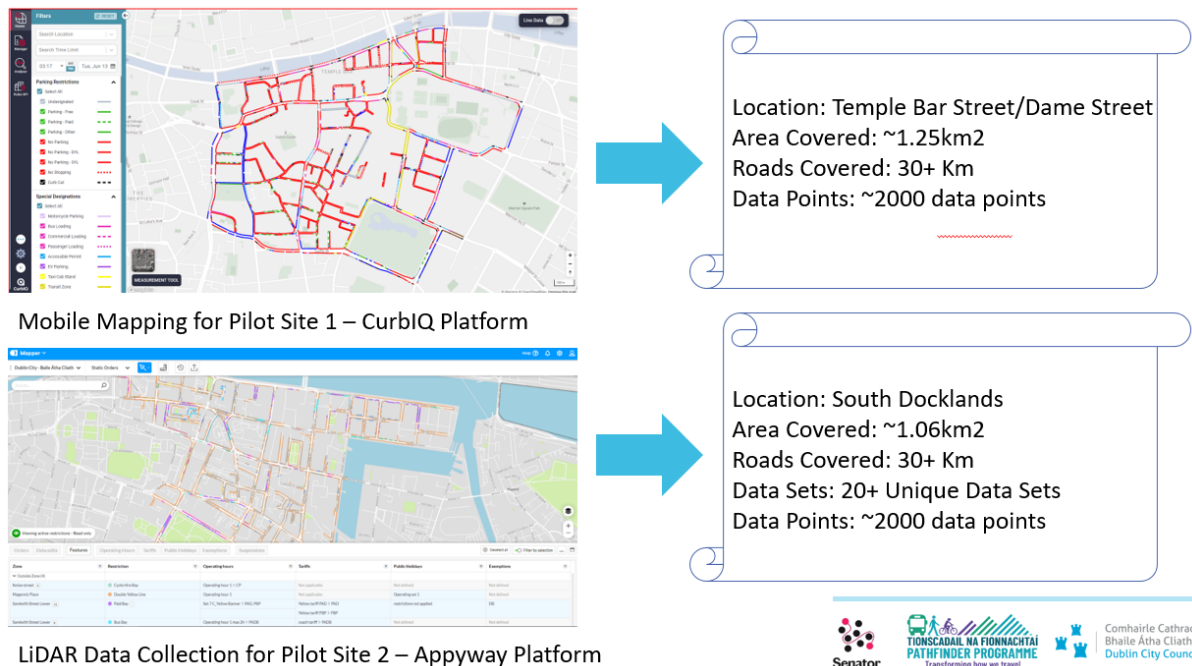


Figure 7: Extract from Presentation by Edell Cashin to Highways UK 2024

The inventory mapping could have following benefits which were then communicated to the stakeholders.

- Report on the percentage of public space assigned to active mobility.
- Report on the percentage of space allocated to greening and Sustainable Drainage Systems (SuDS) within the surveyed zone.
- Report on the percentage of kerb re-allocated to outdoor dining, public seating, and footpath buildouts.
- Establish an area-wide sustainability index, create baseline data for the decarbonised zone and track the index.
- Report on the percentage of Zero Emission deliveries and EV charging facilities.
- Event planning and way-finding for citizens.
- Ingesting Demand Data from open source libraries such as Shared Micro-mobility Data, Traffic Count, Accessibility Parking Sensor Data and Smart Loading Bay Data.

In order to keep the data updated, Dublin City Council engaged Inakalum, a company that specializes in street asset mapping using locally recruited data-gathering agents and proprietary mobile app to geotag and categorize street assets. Inakalum helped the City Council re-survey the Temple Bar/Dame Street area and provide the data to the Curb IQ team to update it on their platform. Furthermore, the Inakalum helped keeping the maps updated by surveying the area on quarterly basis.

The Inakalum Team gathers the data by walking the streets and, using its own proprietary smartphone app, through which, they photograph, geotag and categorise street assets and public domain places. Because the agents stand in front of every asset they log, there is an individual high-resolution images of all assets. These high-res images allow Inakalum to use machine learning to analyse assets and add additional metadata.

All data gathered is presented on Inakalum's map-based search engine with a range of integration and import/export options. The platform allows for layering of datasets so you can mix data from our street asset and public domain datasets, making it an invaluable resource for Local Authority planning and operational staff.

3 Value in Kerbside Management

The Senator Project and kerbside management pilots offered Dublin City Council a valuable opportunity to gain insight into stakeholder challenges and explore market-ready solutions. Effective kerbside management is essential, and optimising it can deliver significant operational and strategic benefits. The potential value of kerbside management, as outlined by CurbIQ, is detailed below.

Value in an Updated Kerb Inventory: Having an updated kerb inventory ensures that Dublin maintains and communicates the most up-to-date parking and kerbside policies internally and externally to the public. With an updated, digital kerb inventory, the kerb – and all the assets on it – are efficiently documented and quantified. Policy decisions can be readily referenced to specific locations within these digital inventories, such as managing the network of loading zones, as Dublin is doing in this project. This also supports the ability to dynamically reallocate parking spaces, as well as other types of kerbside uses. This kerb inventory data can also be shared with logistics companies to better optimise the process and planning of delivery and freight operations.

Value in Sharing Kerbside Data: Maintaining and communicating up-to-date kerbside data ensures stakeholders are informed and aligned on the most important demands on the kerb. Data integrations—relating to demand or utilisation of the kerb—enrich stakeholders' knowledge on the events at the kerb for each type of space. Sharing this data to users, such as other stakeholders, the public, or other vendors (e.g., TNCs, delivery and logistics companies) provides them with critical information that would reduce confusion and misunderstanding of kerbside uses. This could lead to many positive impacts such as increased compliance, reduced circulation, and reduced congestion.

Value in Kerbside Analytics: With an updated kerb inventory and corresponding supply and demand analytics, Dublin City Council and its stakeholders can make the most evidence-based, data-supported decisions for all kerb-related matters. This analytics data informs policy decisions related to allocating space on the kerb, such as parking, loading zones, or bike lanes. With robust analytics data, stakeholders can improve the process of planning for space. For example, with the CurbIQ platform, the local authorities can prepare scenarios and model how the supply of various kerb assets is shifted. Kerbside analytics enables cities to understand the exact demand/utilisation trends (e.g., occupancy, dwell time) for kerbside spaces with sensors. This is a level of richness in data that is not typically captured in traditional parking or transportation studies but is made seamlessly accessible on kerbside management platform.

4 Developing Kerbside Management Study

The primary objective of this study is to compile all key learnings from the kerbside management pilots into a comprehensive Kerbside Management Study. This document will serve as a central reference, consolidating insights, challenges, and best practices identified throughout the pilot initiatives.

Beyond documenting these learnings, the study has a strategic purpose—it could lay the groundwork for a Kerbside Management Business Case, demonstrating the value and necessity of a structured approach to kerbside governance. Additionally, it could contribute to the development of a Servicing Strategy for Dublin City Council, guiding future policies and implementation plans to optimise kerbside usage across the city.

4.1 Overall objectives

1. Introduce the concept and importance of managing the kerbside to the relevant stakeholders.
2. Identify and bring together different stakeholder groups to understand kerbside challenges and functions, based on the city's current demands.
3. Propose actions based on international best practices.
4. Develop recommendations that could feed in to a servicing strategy guidance document
5. Make recommendations on policy level (where needed).

4.2 Overall output

- Introduce the concept and importance of kerbside management.
- Identify the kerbside uses and functions.
- Mapping internal and external stakeholders.
- Interviewing relevant stakeholders and experts in the field to understand their requirements.
- Looking into the international best practices and citing it in Dublin context.
- Identifying links with existing planning and policy initiatives.
- Analysing current byelaws and regulations in Dublin and recommending the changes if needed.
- A land-use document that could guide how the adjoining kerb will function, the categorising of the land-use types to permit a city to develop its kerbside hierarchy, identifying areas that prioritize street activation, conservation, greening initiatives, servicing commercial activities or access for people.
- Process flow chart for effective Kerbside Management of assets.
- Return on Investment.

- How should it be funded?
- Recommending the relevant next steps with actionable items, policies and byelaws.

5 Alignment with Current Policies

There has been a plethora of policies at European and National level and with this study; we aim not to saturate the reader with more Strategy/Policies/Plans. The aim here is to present a high-level strategy at global level, national level and local level. These strategies are already linking to other strategies at European, National and Local Level.

This study outlines the alignment of transportation strategies with existing European, national, and local policies, particularly focusing on sustainable urban mobility, public transport accessibility, and kerbside management. It highlights key policies, sustainability goals, and strategies for optimising urban transport systems.

The study aligns with multiple [Sustainable Development Goals \(SDGs\)](#), including SDG 8 (Economic Growth), SDG 9 (Infrastructure & Innovation), SDG 11 (Sustainable Cities), and SDG 13 (Climate Action). These goals emphasise the need for decoupling economic growth from environmental damage, developing resource-efficient urban transport solutions such as urban consolidation centres and last-mile delivery, and reducing vehicle emissions and congestion in cities like Dublin. Dublin faces rising pollution due to increased e-commerce and private car ownership, making digital kerbside management essential for reducing inefficiencies and enhancing urban logistics.

The [Moving Together Strategy \(2024\)](#), led by the Department of Transport, aims to improve transport efficiency while addressing carbon emissions, congestion, and air quality. This strategy integrates key international and national policies, including the Paris Agreement, EU Green Deal, Fit for 55, National Sustainable Mobility Policy, and Freight and Haulage Strategy. A major focus is on optimising kerbside space to balance parking, deliveries, and mobility needs. Sustainable freight strategies will improve urban logistics through digital platforms, with particular emphasis on the EU SENATOR Project. Additionally, the strategy advocates for data-driven kerbside management using digital mapping tools to enhance efficiency and accessibility.

The [Dublin City Development Plan \(2022–2028\)](#) prioritises sustainable urban growth, reduced emissions, and efficient transport policies. A key objective is the development of a kerbside servicing and logistics strategy (Objective SMT06) to ensure efficient urban freight movement. Furthermore, Objective SMT15 promotes last-mile delivery solutions, such as micro-distribution hubs and bicycle-based deliveries, to reduce van traffic and emissions. The plan also supports active travel and public realm improvements (Objectives SMT12 & SMT14), reallocating road space for pedestrians and cyclists, impacting how kerbside areas are used.

The [Sustainable Residential Development and Compact Settlements Guidelines \(2024\)](#) advocate for higher urban densities near transport hubs, mixed-use development, and urban infill to reduce car dependency. A crucial element in assessing public transport accessibility is the Public Transport Accessibility Level (PTAL) tool, which measures proximity to transit stops, service frequency, and journey times. PTAL scores range from 0 (poor accessibility) to

6b (excellent accessibility) and are essential for planning compact settlements in well-connected areas.

The integration of PTAL with kerbside management provides valuable insights for urban planning. Areas with higher PTAL scores can prioritise bus lanes, cycling infrastructure, and reduced parking, while areas with lower PTAL scores may require more kerbside space for parking and last-mile solutions. Additionally, PTAL can inform dynamic kerbside allocation, allowing cities to adjust kerb usage for different functions at different times. This data-driven approach also supports sustainable freight and delivery logistics by determining the optimal placement of loading bays, consolidation hubs, and e-cargo bike stations. Moreover, PTAL-informed policies can shape parking regulations, kerbside pricing, and Low Traffic Neighbourhood (LTN) planning, ensuring that public transport-rich areas prioritise sustainable modes. Finally, PTAL highlights underserved areas where kerbside space could be better allocated for bus stops, taxi ranks, or shared transport, improving transport equity.

6 Stakeholder Engagement

Kerbside management is a broad and complex issue involving a wide range of stakeholders, both within the Council and externally, including the Department of Transport, businesses, logistics and delivery companies, the service industry, and citizens.

For this study, stakeholders have been categorised into two groups: internal and external. Internal stakeholders consist of Council teams responsible for managing and enforcing kerbside regulations, while external stakeholders are the users of the kerb.

The map below clearly identifies all the kerb users along with their interest and influence around it.

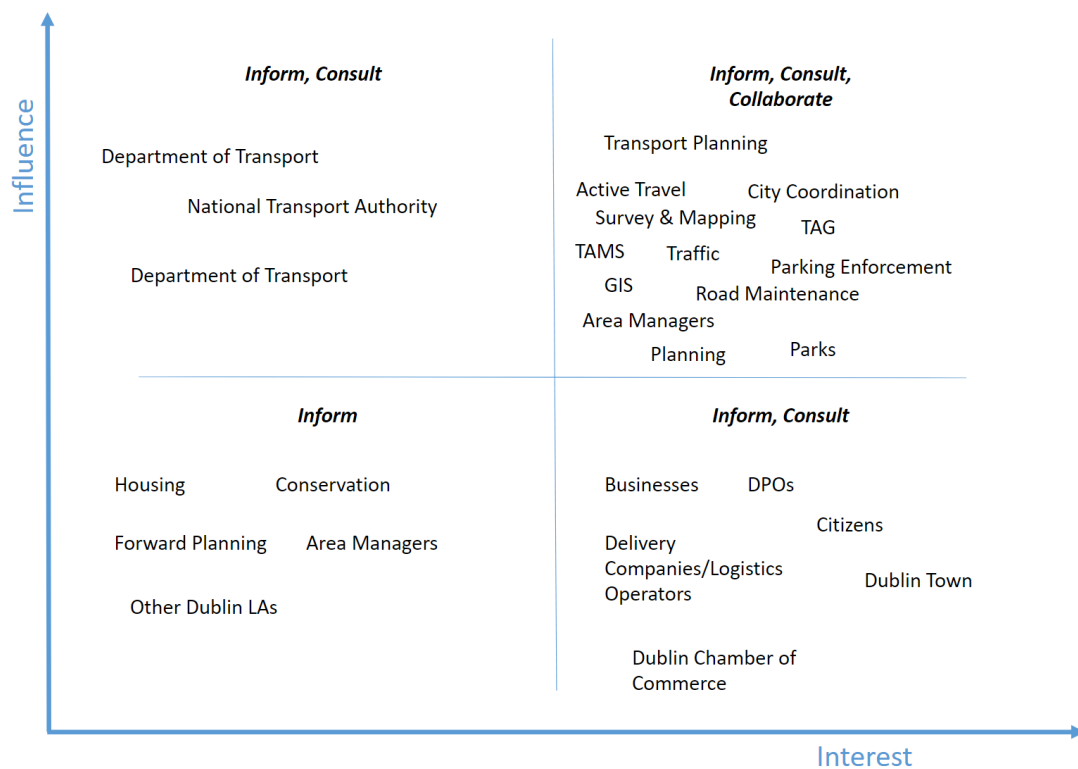


Figure 8: Table identifying kerb users linking to their influence and interest

6.1 External Stakeholder Engagement

Dublin City Council engaged with external stakeholders initially indirectly with the help of NCAD students to understand the reality on the ground and to research the need for managing the kerbside with the help of the students. After thorough research, the Council, with the help of Senator's project partner, An Post, they reached out the external stakeholders directly by organising a workshop in the Mansion House.

6.1.1 NCAD Students' Kerbside Research

In 2021, Dublin City Council worked with NCAD (National College of Art and Design) to research the subject of kerbside management and understand the stakeholders and their challenges. NCAD have an optional subject on service design wherein the students take different real-world challenges, kerbside management in this case, and find a solution through designing the service for it. For this

Ten NCAD students were engaged on the project for a 6-week design challenge and the students came up with identified and interviewed stakeholders and suggested three solutions for managing the kerbside.

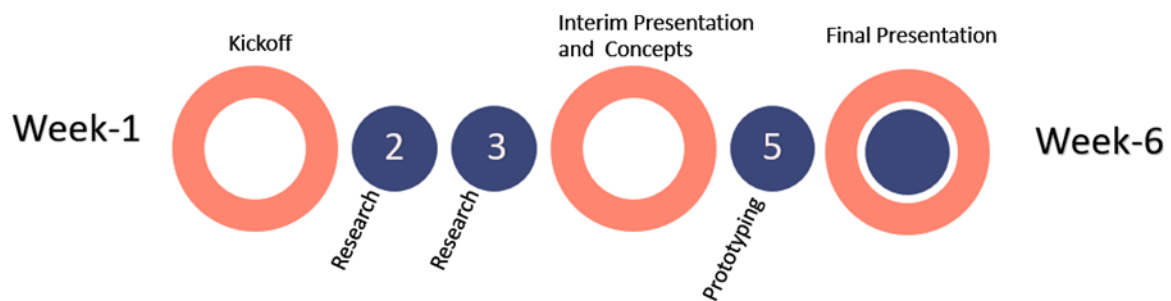


Figure 9: NCAD Students Six-Week Programme

6.1.1.1 Research

The NCAD team identified three major stakeholder groups: Restaurant, Deliveries and Pedestrians. They then proceeded to interview the relevant people and observe to understand their day to day challenges.

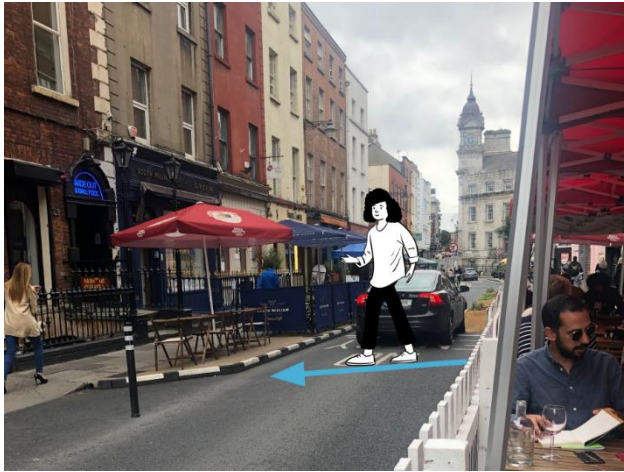
Research Objectives for the students were as following.

- Assess how people are currently interacting with the kerbside.
- Evaluate expectations of the kerb.
- Understand the cultural context and unwritten rules.
- Provide recommendations for improvement.

Following questions were kept in mind while researching the topic.

- How easy is it to negotiate the footpath?
- How has the increase in outdoor dining affected the kerbside?
- How does the overall feeling of current kerbside use resonate with the people using it?

- Are deliveries being made efficiently and safely?



“

When I have a table across the road, it's like survival mode.

”

Anna

Waitress at Platform 61

6.1.1.2 Research Methods

- **External stakeholder mapping**

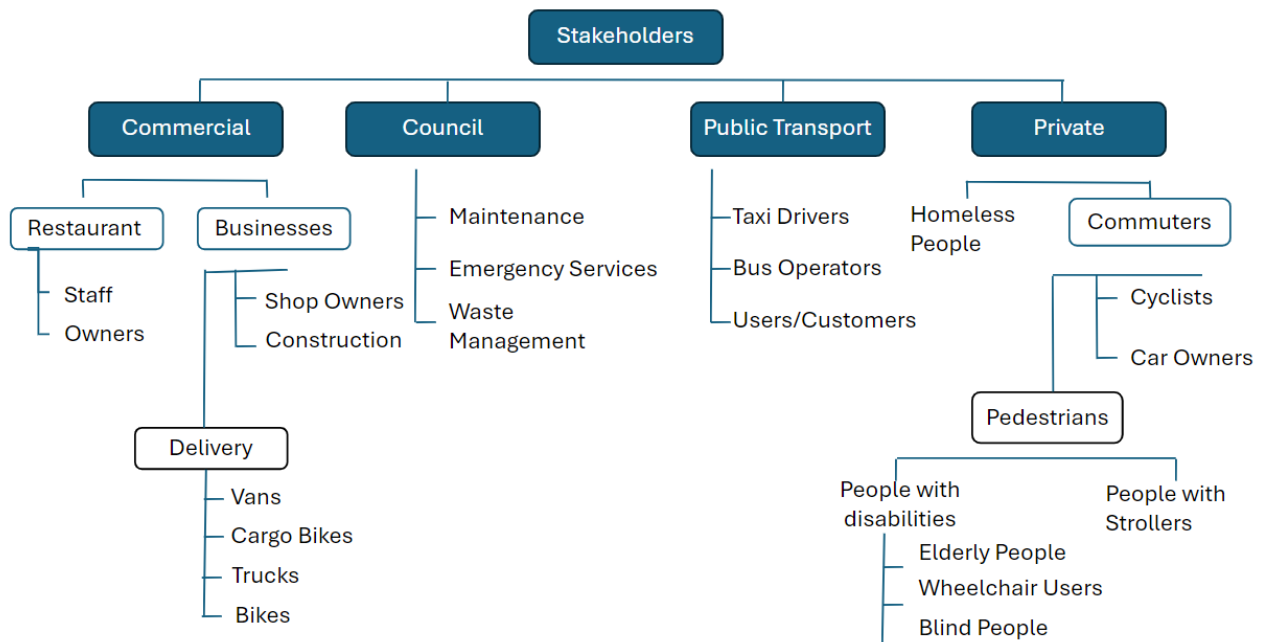


Figure 10 Stakeholder Mapping by Students

- **Street observations**

The students started their research with stakeouts at Bestseller Cafe on Dawson Street and Metro Cafe on South William Street. The following observations were made on the stakeout.

- Limited parking.

- Multiple vehicles delivering to the same places.
- Some drivers unloading into the road.
- Cars taking up loading spaces/ idling on double yellow lines.
- Drivers delivering to multiple places, parking for longer.
- Drivers parking inappropriately.
- Some drivers parking in loading areas for their breaks.
- Delivery cyclists bringing their bikes into restaurants and shops.
- The sheer number of vehicles that passed them...

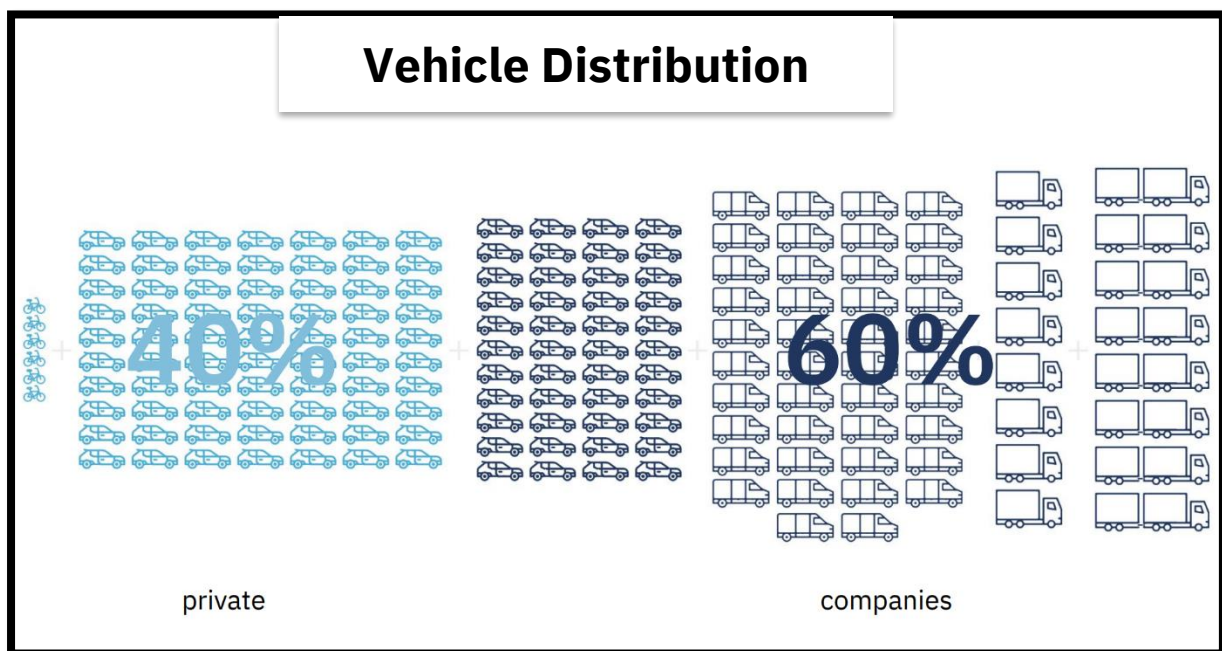
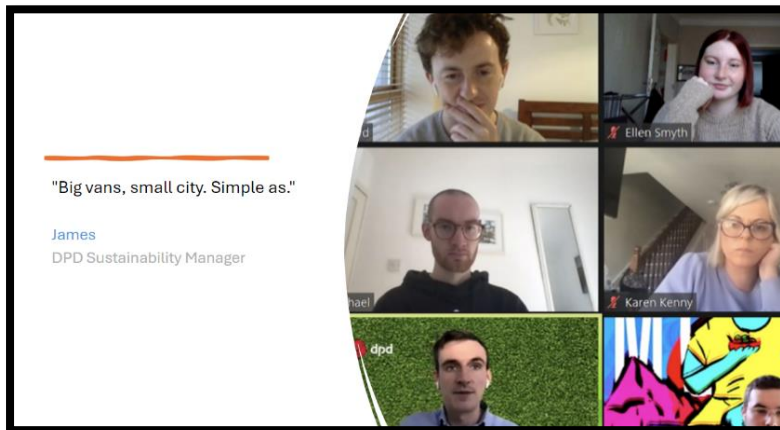


Figure 11: Bestseller Cafe on Dawson Street and Metro Cafe on South William Street

- **Bodystorming**

In order to understand the challenges of disabled kerbside users, one of the students went on a bodystorming. She got onto a wheelchair and started navigating the kerb to identify challenges from a wheelchair user perspective.



- **Interview with Delivery Companies and Delivery Drivers**

The students also got a first-hand experience by talking to the delivery drivers and logistics companies' representative. They had a conversation with DPD's Sustainability Programme Manager to understand the

challenges they face as a company.

- **Interviews with other stakeholders**

The students also conducted interviews with other stakeholders using the kerb like taxi drivers, Just Eat rider, and everyday citizens.





6.1.1.3 Research Findings

Unwritten Rules

- Businesses are usually friendly with each other and try to help each other out.

- There's a lack of flexibility leading to unused spaces by restaurants and misused spaces by deliveries.
- There is huge demand and need to pedestrianise streets for both pedestrians and businesses but it is critical these streets are designed properly for maximum usage.
- Inconsistencies in kerb and path cause issues, especially for people with disabilities and restaurants staff.

The solutions presented are as following.

- **Light Loading:** A solution for the limited space for the loading and unloading of the delivery vehicles.
- **Path Pocket:** A Solution to tackle the spread of bin bags on the kerbside

- Kerbside Sheriff: A mobile application for the citizens to report on the kerbside issues that will be directed to Dublin City Council Customer Services.

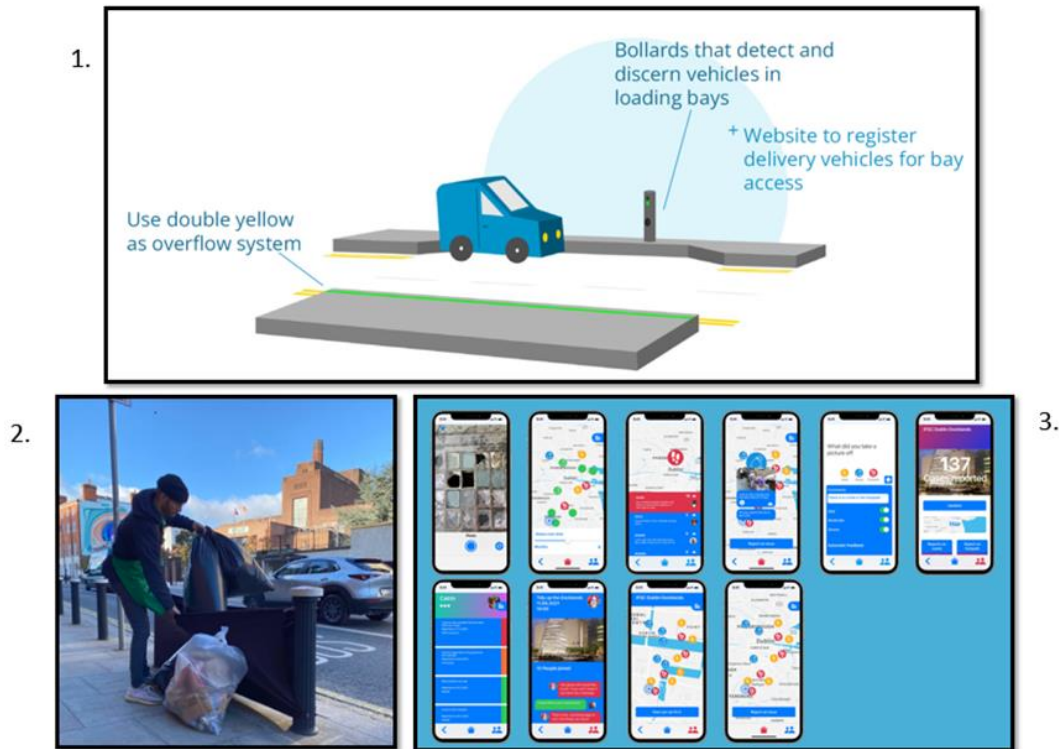


Figure 12: Solutions Designed by Students

6.1.2 Senator External Stakeholder Workshop

On 11th May 2022, Dublin City Council in collaboration with An Post organized an external stakeholder workshop to discuss the solutions under Senator Project and understanding the general acceptance and requirements of the wider group.



Figure 13: Dublin City Council stakeholder workshop in collaboration with An Post.

6.1.2.1 Objectives of the workshop

1. To bring together different delivery and logistics companies together with public sector organisations (Dublin City Council, National Transport Authority, Department of Transport) for a clear bilateral communication.
2. To establish the common goal for a smarter and greener Dublin and establish next steps to achieve those goals.
3. To increase collaboration between different logistics and delivery operators in Dublin.
4. To create a Delivery Working Group comprised of the delivery and logistics companies, business representatives and Dublin City Council.

6.1.2.2 Workshop Attendees

With more than 40 attendees, the workshop saw diverse stakeholders and a good mix of public and private organisations. Then Lord Mayor of Dublin, Alison Gilliland, gave a closing remark for the workshop inspiring all the participants to work collaboratively.



Figure 14: Members of the stakeholder workshop with the then Lord Mayor of Dublin Alison Gilliland

	Organisations
Delivery and Logistics Companies	An Post
	DPD
	Fastway
	Dasher
	Cyclone
	DHL
Dublin City Council	Traffic Team
	Transport Planning
	Traffic Advisory Group (TAG)
	Dublin City Centre Project Team
	Micromobility Unit
National Agencies	Department of Transport
	National Transport Authority
Other	Chartered Institute of Logistics and Transport (CILT) in Ireland

6.1.2.3 Questions Asked from the Attendees

1. What are the frustrations and pain points to deliveries in Dublin City Centre?
2. What are the barriers to last mile collaboration in Dublin City Centre (inside canals)?

3. What are the barriers to last mile collaboration in Dublin City Centre (inside canals)?
4. What are the barriers to last mile collaboration in Dublin City Centre (inside canals)?

6.1.2.4 Workshop Outcome

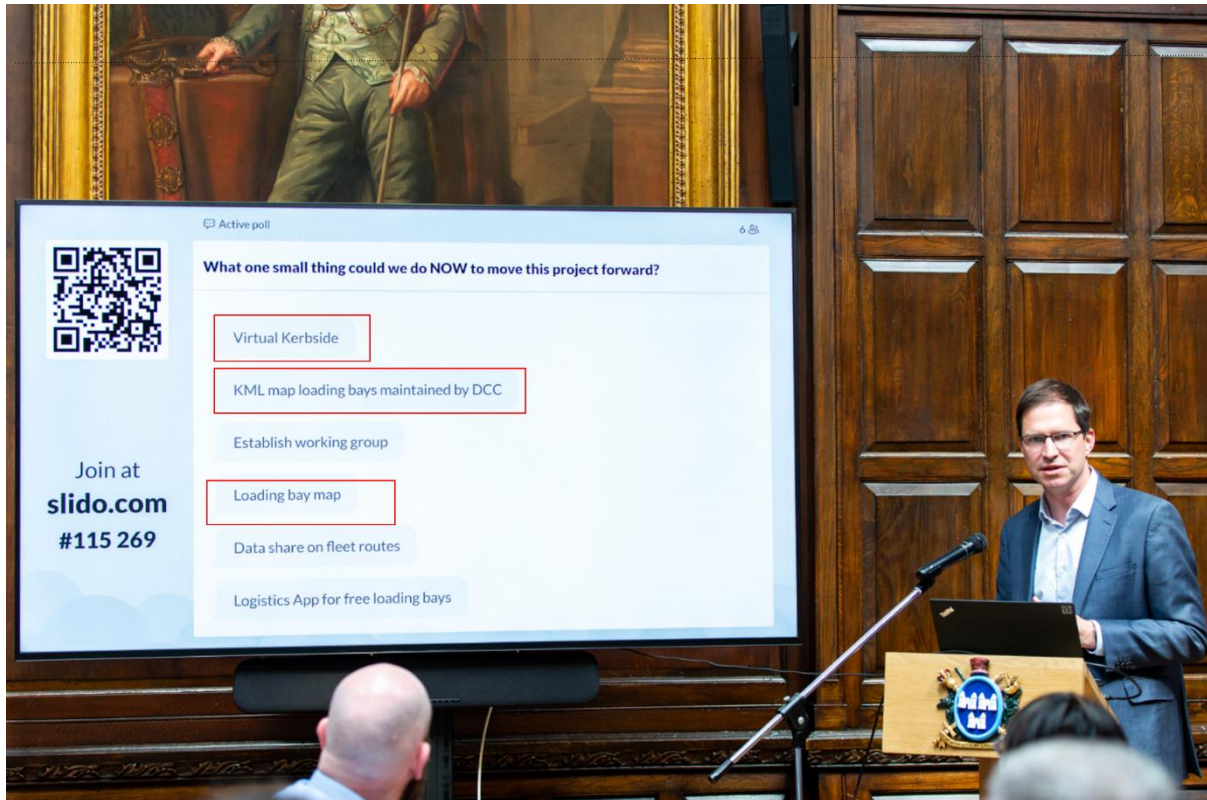


Figure 15: Poll response to the question ‘What one small thing could we do to move this project forward?’ the ‘Help us find the right route’ Workshop

“What one small thing could we do now to move Senator Project forward?”

When addressing the question of what one small thing could be done to move the project forward, kerbside management emerged as a central theme. Responses frequently mentioned ideas such as a virtual kerbside, a comprehensive map of loading bays maintained by Dublin City Council (preferably in KML format), and a logistics app for delivery drivers. Ultimately, these suggestions point to the importance of creating and maintaining a digital inventory of kerbside assets.

Additionally, there was strong support for establishing a Delivery Working Group, which the council successfully launched a few months after the workshop, further solidifying efforts toward collaboration and improved urban logistics.

6.2 Internal Stakeholder Engagement – Dublin City Council

Internal stakeholder engagement within a local authority like Dublin City Council is crucial for fostering collaboration, ensuring alignment on strategic goals, and driving effective decision-making. By involving diverse teams—ranging from planning and transportation to area-management and environmental departments—local authorities like DCC can leverage a wide range of expertise and perspectives, leading to more holistic and sustainable outcomes.

Strong internal engagement also enhances communication, minimises silos, and builds a shared sense of ownership over projects and policies. This is particularly important in addressing complex urban challenges, such as kerbside management or climate resilience, where coordinated efforts across multiple disciplines are essential for success

The selection criteria for stakeholder interviews focused on representatives from various divisions within Dublin City Council that engage with the kerbside. The objective was to develop a holistic understanding of the current approach to kerbside management, encompassing day-to-day operations, challenges, and existing processes.

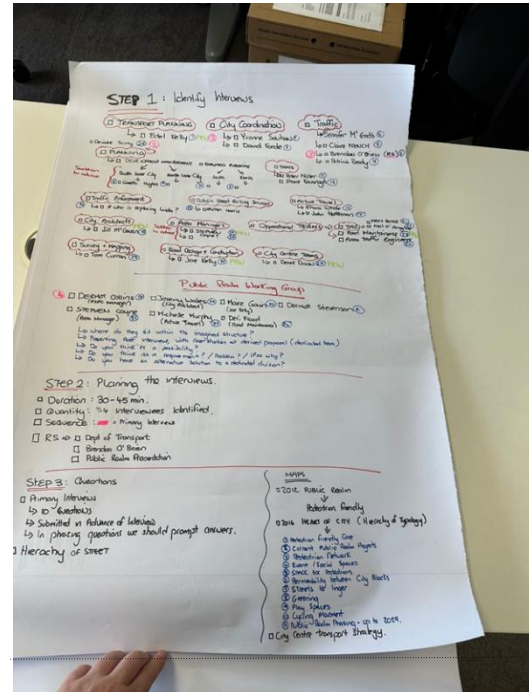


Figure 16: Brainstorming to identify Interviewees

The list of the representative teams interviewed for this study can be found in Appendix Section 13.2.

6.2.1 Summary of key topics raised in interviews

6.2.1.1 Challenges with Existing Systems and Processes

- **Outdated Tools:** Reliance on manual processes like Excel spreadsheets, photocopied maps, and inconsistent data formats limits efficiency and coordination.
- **Data Gaps:** Lack of real-time digital mapping (e.g., GIS or dynamic kerbside databases) hampers enforcement, planning, and decision-making.
- **Complex Licensing:** Street furniture licensing and enforcement involve lengthy, multi-step processes requiring approvals from multiple departments (e.g., traffic, planning, and fire).

- **Resistance to Change:** Businesses often resist changes to kerbside use (e.g., transitioning from loading zones to outdoor dining), complicating the adoption of sustainable strategies.

6.2.1.2 Opportunities for Digital Transformation

- **Unified Digital Mapping:** Development of centralised GIS platforms to streamline kerbside management, allowing inspectors and planners to access real-time data.
- **Automated Licensing:** Adoption of public-facing platforms for automated applications and approvals, reducing processing time and administrative burden.
- **Dynamic Kerbside Management:** Implementation of flexible systems to adapt kerbside use based on real-time data (e.g., reassigning underutilised loading bays to outdoor dining).
- **Centralised Management:** Drawing inspiration from international examples like Lambeth Council, Dublin could benefit from a dedicated kerbside manager to coordinate across departments and ensure consistent strategies.

6.2.1.3 Impact of COVID-19 and Shifting Urban Dynamics

- **Reclaimed Spaces:** COVID-19 enabled pedestrianisation and outdoor dining initiatives (e.g., Suffolk Street), but maintaining these gains faces pushback from stakeholders seeking a return to prior uses.
- **Changing Demand:** New work patterns (e.g., remote work) have altered footfall, with businesses requesting flexible or seasonal licensing to match demand.
- **Lessons from Pilot Projects:** Examples like shared-use loading bays and adaptive zoning provide templates for balancing pedestrian, business, and transportation needs.

This summary highlights the need for digital tools, better coordination, and adaptive kerbside strategies to address Dublin's evolving urban challenges.

6.2.2 Current Data Management

6.2.2.1 Corporate GIS

There are a number of corporate Geographical Information Systems (GIS) tools that are used for data management in the City Council. It is used to manage, analyse and visualise spatial data. The GIS tool has the capability to integrate data from various sources while maintaining user accessibility.

Users: Planning, Transport Planning, Survey and Mapping, Road Maintenance, Traffic Team, City Architects, Flooding/Surface Water Team

Pros of using GIS:

- Versatile Tool, used by most of the teams in DCC

- A web, light version available, that could be used for mapping assets

Cons of using GIS:

- Can't do analysis unless have access to ArcGIS Pro software
- Can't add or amend an existing map/data base
- Require Training and licence set-up
- Just two people on GIS Team

6.2.2.2 TAMS (Traffic Asset Management System)

TAMS is an asset management system that has been operational for nearly 10 years, with first module rolled out in 2015.

Users: Road Maintenance, Public Lighting, Traffic Team, Traffic Advisory Group (TAG), Active Travel

Pros of using TAMS:

- Capable of ingesting any data in provided in CSV or Geo JSON format.
- It also has the capability of mapping Trees, Furniture etc, however, is not the simplest of tools to work with.
- It has the capability and is used to process Statutory Orders.

Cons of using TAMS:

- One need specialised training to work with TAMS and currently there are just two people (one fulltime and one part-time) dedicated to the team.
- It doesn't have interoperability with GIS or any other system within DCC.
- Teams outside of Traffic does not have access or necessary skills to use TAMS.

6.2.2.3 Excel Sheets/CSV Files:

Even with multiple teams and units working across different systems, data exchange primarily relies on Excel sheets or CSV files. This is largely due to the absence of a common data standard that could be universally applied across the software programs used by various teams. CSV files serve as a versatile format, compatible with both GIS and TAMS platforms, as well as accessible to users who lack access to either platform or administrative tools.

Users: Area Managers, City Coordination

Pros of using Excel Sheets/CSV Files:

- Easy to use and portable (can be sent via email).
- Doesn't need any special software, compatible with most of the databases.
- Easy for exporting and importing data.

Cons of using Excel Sheets/CSV Files:

- It cannot handle large data sets.

- Difficult to query/manipulate.
- Difficult to lay one data set over the other.
- Not visual, no location data.

6.2.2.4 External Surveys

A number of the teams that were interviewed noted that at the start of any works they typically have to outsource detailed surveys of the site areas as there is no up-to-date data repository in DCC.

Users: Planning, Traffic Planning, Traffic Engineers, Active Travel, Road Maintenance

Pros of using External Surveys

- Direct and easy to deploy
- Best way to get the most up to date project specific data

Cons of using External Surveys

- Expensive
- Time Consuming
- Specific to the team/department
- Usually not shared across the teams

7 Key Areas of Concern Identified within Dublin City Council

A number of stories emerged from the interviews that highlighted the importance of a more strategic approach to managing the kerbside. This section details few of the stories along with their challenges and teams involved. The stories are categorised into four different areas.

- Servicing and Enforcement
- Informed Decision Making
- Street Furniture and Licencing
- Waste Management

The respective stories can be found below.

7.1 Servicing and Enforcement

The Story: Newmarket, Dublin 8

In Newmarket, plans were approved to transform the city centre into a pedestrian-friendly area called Universal Square. The project aimed to reduce traffic to a single carriageway, widen pavements and create a space that prioritised pedestrians over vehicles. While the long-term goal was to eliminate traffic entirely, the need to accommodate business operations presented challenges.

A new Tesco store in Universal Square required a loading bay for deliveries. Initially, an 8-meter bay was designated, but Tesco requested a 12-meter bay to accommodate their fixed-frame delivery trucks. The larger bay was approved as a practical measure to support the store's operations, though it temporarily deviated from the pedestrian-focused vision.

Similar challenges arose in other parts of Newmarket. Tesco developments on Reuben Street and at Grand Canal Harbour also requested larger loading bays, resulting in logistical issues such as awkward vehicle manoeuvres in areas designed for limited



Figure 17: Newmarket, Dublin – Service Issues for the hotel and distillery

traffic. This led to a fragmented approach to loading zones, complicating efforts to maintain a consistent pedestrian-first strategy.

Coordination between Tesco and the city's traffic teams highlighted some systemic gaps. While Tesco had agreed to a sustainable delivery strategy that included alternative loading areas, they continued to request bespoke solutions. This lack of alignment between planning and execution resulted in multiple loading zones that were not always compatible with the broader design goals.

The adjustments made for these developments illustrate the difficulty of balancing immediate operational needs with the long-term vision for a pedestrian-friendly Newmarket. The experience pointed to the need for clearer communication, better coordination, and a unified approach to managing urban logistics.

Teams Involved: Area Managers, TAG, City Centre Traffic Team, Public Realm Group

Technology Used: Excel Sheet, Emails, Images

Challenges:

- Lack of data and standardisation on streets.
- Lack of kerbside hierarchy on the street.
- No Servicing Strategy to set parameters on business owners.

7.2 Informed Decision Making

Divisions: City Architects, Planning and Area Managers.

The Story: Suffolk Street, Dublin 2

The City Architects role within Dublin City Council is to focus on delivering public realm projects under the City Centre Masterplan – Grafton Street Redevelopment and College Green. Projects are prioritised based on the Master Plan, funding availability and stakeholder needs. The challenges faced by the City Architects are the ongoing efforts to reduce vehicular kerbside use, in favour of socially beneficial uses like pedestrian spaces and green infrastructure. There is a competitive demand for the kerbside, and when looking at interventions in the public realm the City Architects must balance the needs of businesses, pedestrians and transport modes. All projects undertaken by the City Architects within the public realm, many of which are Part 8 planning applications, require extensive coordination with various internal departments such as parks, roads and transportation planning.



Figure 18: Suffolk Street, Dublin 2

The impact of COVID-19 provided opportunities to reclaim kerbside space for social and amenity use, an example being Suffolk Street, Dublin 2. Before the pandemic, the entire length of Suffolk St. was required for loading and servicing the businesses in the Grafton Street Quarter. Following the COVID Interventions, the street was converted to outdoor dining. However, there is continued resistance to change from some businesses and other stakeholders who are looking for the return of loading and parking on Suffolk Street as part of the College Green Masterplan. The City Architects are of the opinion that if the businesses have successfully serviced their premises since 2020, where is the need to reintroduce parking and all-day loading to the street.

The lack of consistent in-house systems for data management combined with a lack of current data inventory results in inefficient coordination between internal divisions. The City Architects noted that the implementation of a street hierarchy to prioritise pedestrian-friendly and sustainable uses would bolster their design intent, by protecting the primary streets from car storage.

Teams Involved: City Architects, City Centre Projects, Traffic, Area Managers, TAG, Public Realm Group, Parks Dept., and Transportation Planning.

Technology Used: Excel Sheet, Emails, Images, Microstation, External Surveys and Corporate GIS.

Challenges:

- Lack of data and standardisation on streets.
- Lack of kerbside hierarchy on the street.
- Resistance to change from businesses and other stakeholders.

The Story: Redesign of Cathal Brugha Street, Dublin 1

The DCC City Architects handle public realm projects, including city centre pedestrianisation, active travel integration and large-scale projects such as Metrolink and BusConnects. The redesign of Cathal Brugha Street presents several challenges due to its multifunctional use and high traffic volume. The project aims to upgrade the street and make it more pedestrian-friendly, aligning with its role as part of an active travel route. However, the area's current usage creates complexity, as it accommodates hotels that require regular deliveries, existing taxi ranks on both the north and south sides of the street, coach parking, and Dublin Bus parking. This congestion has required careful consideration in the design process.



Figure 19: Cathal Brugha Street, Dublin 1

A preliminary design was finalised, and the next step involves public consultation with local businesses. To address these concerns, one proposed solution is shared use of spaces. For example, loading bays could operate between 6:00 AM and 11:00 AM, after which they would transition into taxi ranks, similar to the model used on Grafton Street.

A precedent for such shared-use time-plated bays exists on D'Olier Street, where a loading bay also functions as a taxi rank during specific hours. However, this setup will soon be removed to accommodate the Parnell Square to College Green active travel route. Despite the precedent, the proposal for Cathal Brugha Street is expected to face resistance, particularly from taxi rank representatives, who are well-organized and likely to push back against the changes. In contrast, delivery services, which lack formal representation, may be less vocal in the consultation process.

Meetings with businesses and stakeholders are scheduled in the coming weeks to discuss the proposals. The outcome of these consultations will play a critical role in balancing the diverse needs of the area while advancing the goals of pedestrianisation and active travel.

Information Gathered through: Traffic Counts at the Street, pedestrian/cycling surveys done, bus network maps, a conversation with TAG, stakeholder engagement including business groups, conversation with Bus Companies like Matthews and airport bus companies.

Teams Involved: City Architects, City Centre Projects, Traffic, Area Managers, TAG, Public Realm Group, Parks Dept., Public Lighting and Transportation Planning.

Technology Used: Excel Sheet, Emails, Images, Microstation, External Surveys and Corporate GIS.

Challenges:

- Businesses often resist changes like reduced parking or shared use of loading bays, despite successful precedents (e.g., Suffolk Street, Grafton Street).
- Data limitations, such as inconsistent kerbside usage information, hinder decision-making and public consultations.

The Story: Planning – Development Management

Day-to-day activities for planners include processing planning applications, pre-planning consultations, and assessing projects impacting public space (e.g., footpaths, cycle lanes, signage). Planners frequently interact with departments like transportation, drainage, housing, and legal teams, often serving as a central point of contact for diverse queries. Increasing reliance on e-planning systems signals a move toward digitization, but full implementation and workflow automation are still in progress.

The planning dept. emphasised the importance of high-quality public realm and pedestrian-friendly designs, with streets serving clear functions while maintaining safety and aesthetic appeal to encourage footfall and vibrancy. Day-to-day challenges include balancing the many kerbside uses while avoiding “dead streets” that lack public engagement.

COVID-19 and remote work have significantly altered city dynamics, with many suburban neighbourhoods feeling more vibrant than the city centre. There is a noticeable lack of activity or vibrancy in central areas, particularly in the evenings, despite the ongoing public realm projects. The planners expressed a need for integrated planning data, improved digital tools, and a clear vision for kerbside management to address Dublin's evolving urban challenges.

Information Gathered through: Traffic Counts at the Street, pedestrian/cycling surveys done, bus network maps, a conversation with TAG, stakeholder engagement including business groups, conversation with Bus Companies like Matthews and airport bus companies.

Teams Involved: Admin, Forward Planning, Validation, Enforcement, Finance, Transport Planning, Drainage, Parks, Active Travel, Housing

Technology Used: E-Planning (New), APAS with a GIS Option, Corporate GIS, validation through Google Maps, Microsoft Office Programmes, Hard Copies, Site Photos, Personal Knowledge

Challenges:

- Changing Designs of Bus Connects Networks – keeping up to date with that information.
- Difficulty of balancing immediate operational needs with the long-term vision.
- Data Formats between teams and departments is not consistent, making it difficult to exchange information/data.
- Internal Consultations.
- Resources.

7.3 Street Furniture and Licensing

The City Coordination Office handles street furniture licensing, casual trading, street performers, and event trading across Dublin. Businesses apply for street furniture licenses (e.g., tables and chairs) via a manual process, requiring checks with transportation, planning, traffic and fire departments. Inspectors handle enforcement but face challenges with outdated tools and lack of centralised data or mapping systems.

Seasonal and time-specific requests for street furniture (e.g., summer licenses or evening-only setups) highlight the need for more flexible, dynamic systems. Post-COVID changes in footfall patterns have created uneven demand across the city, with Mondays and Fridays being less busy than mid-week.

Information Gathered through: Email, site visits and photocopied PDF map of the city from 2019.

Teams Involved: Transportation Planning, Planning, Traffic and Dublin Fire Brigade.

Technology Used: Hard copy of PDF Map from 2019, email, Microsoft Office Programmes, Site Photos and Personal Knowledge

Challenges:

- **Lack of Digital Tools:** No real-time maps or centralised GIS database; current systems rely on photocopied maps and Excel spreadsheets.
- **Inefficient Processes:** Applications require multi-step approvals, and inspectors must manually verify licenses, often requiring communication with various departments.
- **Inadequate Enforcement Data:** Inspectors struggle to identify unlicensed furniture and ensure compliance due to the absence of live data.
- **Outdated Zoning:** Pricing zones for licenses are based on old parking maps, leading to inconsistencies in footfall and fairness.
- **Unorganised Infrastructure:** Examples include confusion over bike racks or loading bays, with no clear ownership or mapping for quick resolution.

Opportunities:

- **Digital Mapping:** A unified GIS or digital map is essential to streamline processes, track licenses, and assist inspectors.
- **Streamlined Processes:** Automating application and approval processes via a public-facing platform, reducing manual steps.
- **Improved Enforcement Tools:** Providing inspectors with devices (e.g., tablets) to access real-time data, track license compliance, and manage violations.
- **Dynamic Kerbside Management:** Using live data to reallocate spaces (e.g., unused loading bays for outdoor dining) based on demand.
- **Standardisation:** Implement consistent markings (e.g., steel discs or zones) to designate outdoor dining areas and improve visual clarity.
- **Dedicated kerbside Manager:** Drawing on international examples (e.g., Lambeth), appointing a single point of contact to coordinate kerbside activities across departments.
- **Digitising street furniture zones** and introducing payment options like direct debits for annual licenses.
- **Re-evaluating zone boundaries** and pricing structures to reflect current usage and fairness.
- **Integrating existing survey data** from departments like Active Travel into a centralized GIS platform.

- **Addressing branding violations** (e.g., furniture with advertising) through stricter enforcement and collaboration with businesses.

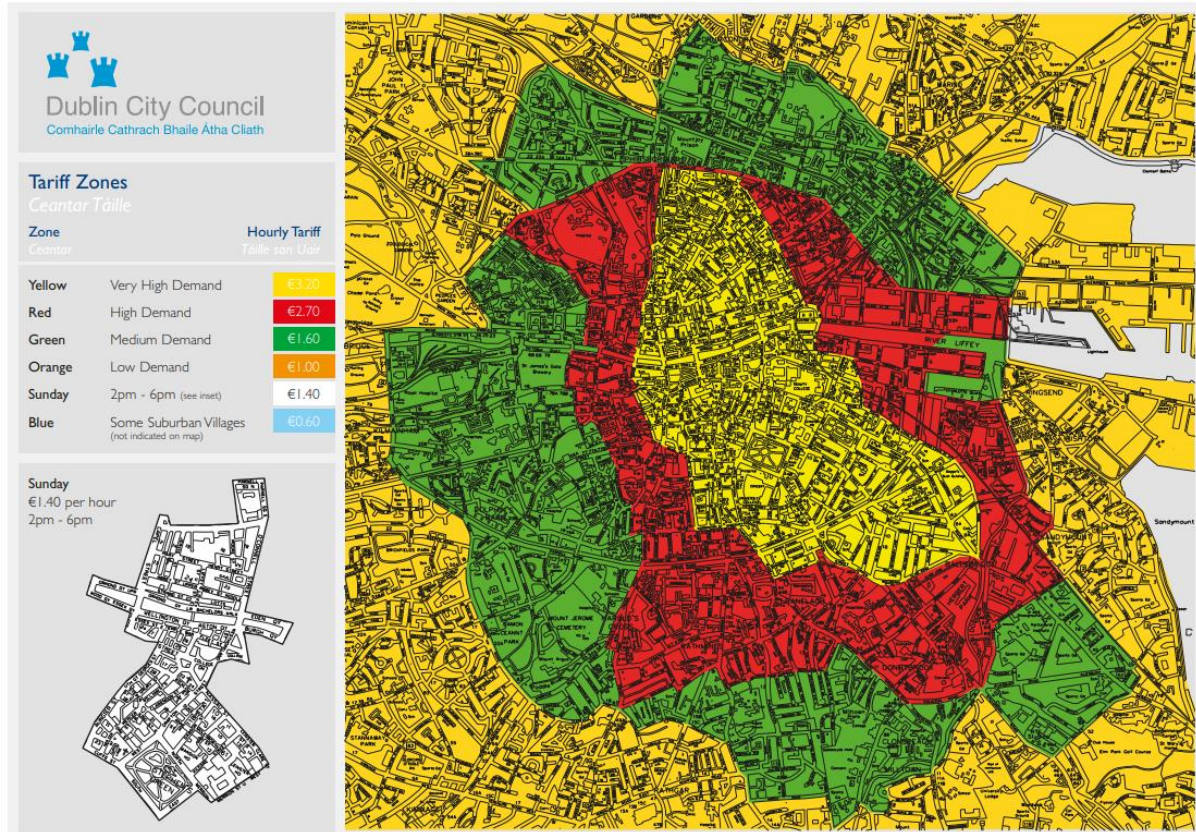
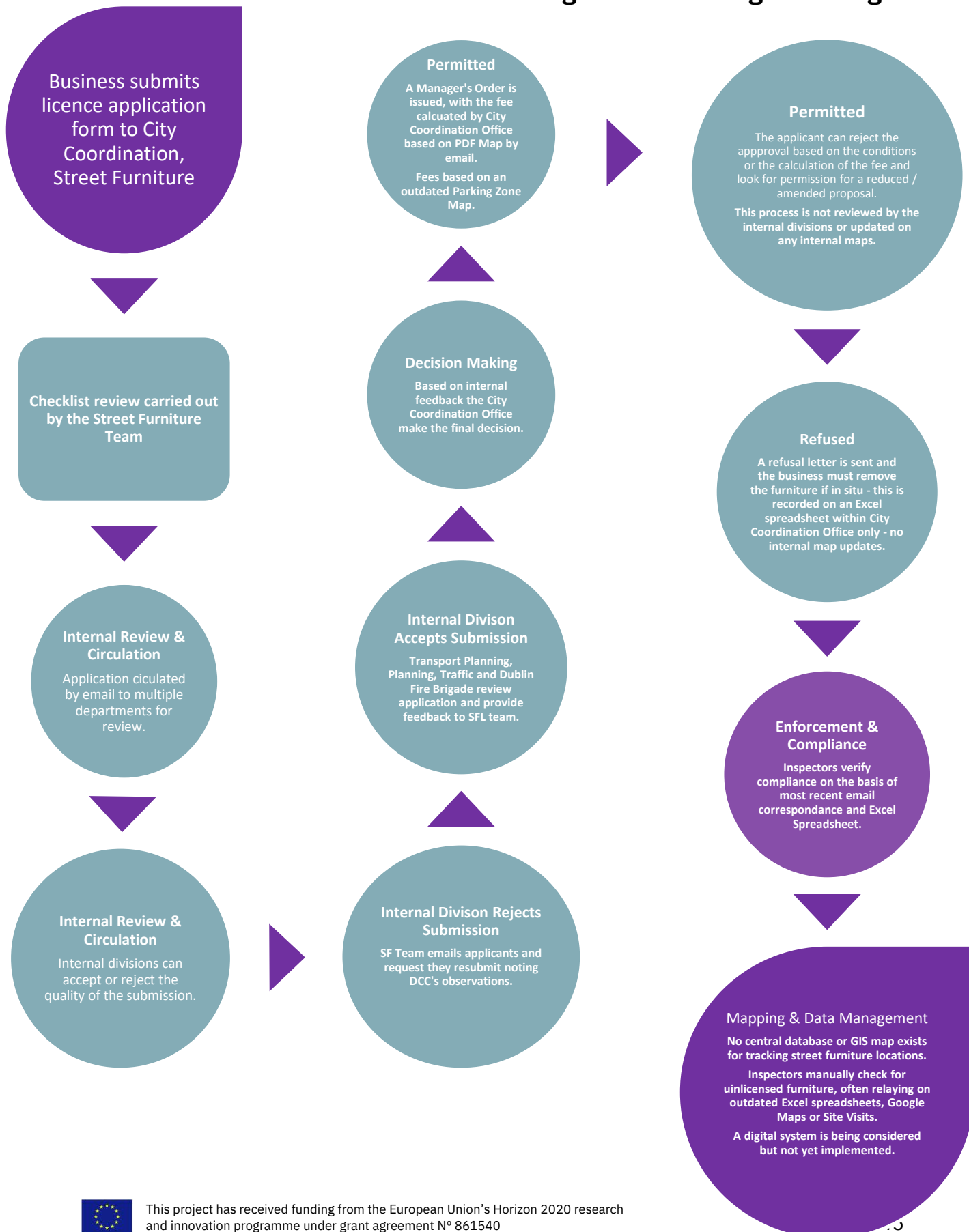


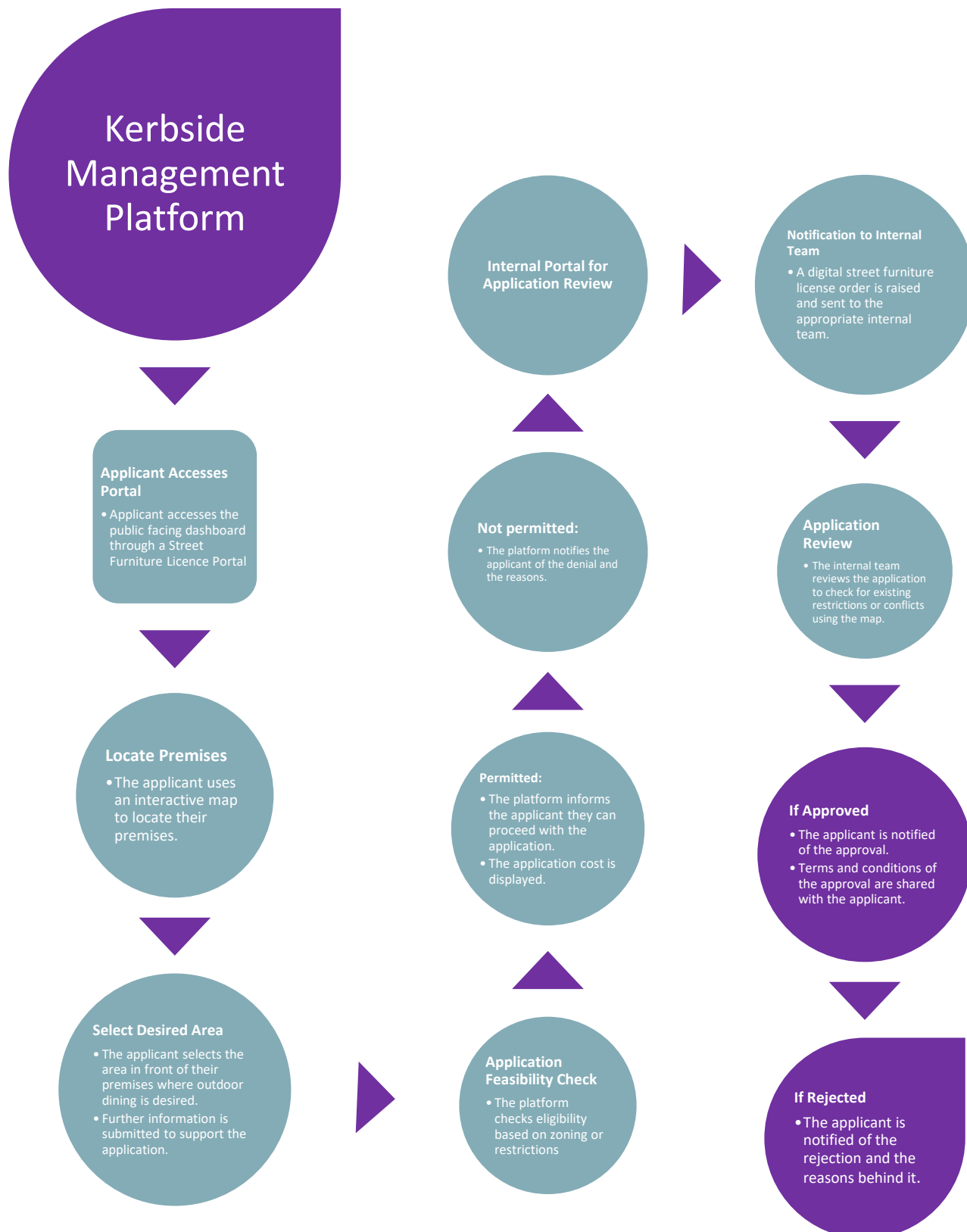
Figure 20: Dublin City Council Parking Tarrifs Map - July 2019

<https://www.dublincity.ie/sites/default/files/2020-11/parking-tariffs-map-july-2019.pdf>

7.3.1 As-Is Process Flow Chart – Existing Outdoor Dining Licensing



7.3.2 To-Be Process Flow Chart – Alternative Outdoor Dining Licensing



7.4 Waste Management

7.4.1 Waste Collection and Street Cleanliness

Waste Management requires coordination with many departments within DCC such as Roads, City Centre Projects, Parks and Public Realm. One of the key areas of concern discussed during the internal stakeholder engagement was the presence of multiple waste collection companies operating in the same areas, leading to inefficiencies and congestion in laneways. A specific example was given regarding a public laneway with about 70 large skips permanently stationed, making it impossible for vehicles to pass through.

The inefficiency of multiple waste collection services using the same route daily was highlighted, in some locations with a bin collection every day, three or four different waste collection companies will need to access the same lane.

7.4.2 Waste Management Costs and Public Cleanliness

High financial expenditure on street cleaning was noted, with authorities struggling to maintain cleanliness despite increasing resources.

The impact of littering was emphasised, particularly in areas where pedestrian schemes and public realm upgrades were implemented such as Capel Street. The new planters have been the unwilling recipients of food containers and coffee cups.

7.4.3 Bin Management & Sensor Technology

Discussions on street bin maintenance and sensor technologies for waste monitoring uncovered an uncoordinated approach, where bins are emptied regardless of their capacity. Some cities use sensors that notify when a bin is full, however, there was hesitation about adopting such technology widely.

Dublin City currently has approximately 350 Solar Compacting Smart Bins in operation, allowing the waste collection team to monitor usage patterns and allocate staff more efficiently. However, due to the combination of regular and smart bins across the city, staff still conduct manual checks to ensure cleanliness and maintain service standards.



Figure 21: Waste discarded on planters on Capel Street Dublin.

7.4.4 Lack of Kerb Space to Facilitate Waste Collection

In September 2024, DCC introduced a new 3 Pillar Waste Management Strategy (Council D. C., Media Releases, 2024) to deliver a cleaner city. This includes a provision that prevents commercial premises within designated parts of the city centre from presenting their waste in plastic bin bags which often attracts interference from wildlife resulting in littering and street staining.

With the new waste collection regime there is a need for inventive solutions for businesses who do not have access to bin storage spaces. For example, a wheelie bin is not a suitable solution for a business based on the second or third floor over a retail unit which doesn't have a lift.

Similarly, a number of businesses have complained that they don't have the physical space on the kerbside outside their premises required for wheelie bins and fear a fine of €150 for non-compliance.



Figure 22: Business and residences on a number of Dublin Streets are no longer permitted to leave waste on the pavement for collection.

Image Source: Derick Hudson/Getty

7.4.5 Public Waste Sorting & the Bottle Return Scheme

A negative side effect of the bottle return scheme was noted, where people remove bottles from bins for monetary return, leaving the remaining waste scattered on footpaths. The issue as described by the former Lord Mayor of Dublin James Geoghegan at the launch of the 3 Pillar Waste Management Strategy (Council D. C., Media Releases, 2024).



Figure 23: Public Waste Challenges on Dean Street Dublin 8

7.4.6 Coordination Challenges in Waste & Public Realm Management

Waste management operates separately from other public realm maintenance efforts, which leads to coordination issues. A call for a more centralised approach to public domain upkeep was made to prevent a fragmented approach to waste collection, graffiti, and public realm maintenance.

8 Kerbside Functions and Hierarchy

8.1 Identification of different functions of kerbside

The kerbside serves multiple critical functions, balancing the needs of pedestrians, vehicles, and urban infrastructure. It provides space for parking, loading/unloading, ride-hailing, public transport stops, and micro-mobility options like bikes and scooters. It also supports pedestrian access, safety, and amenities, such as street furniture and green infrastructure. The kerbside facilitates urban freight and logistics, waste management, and utility services while contributing to city revenue through parking fees and dynamic pricing. Increasingly, it supports smart city initiatives with technologies like electric vehicle charging stations and traffic sensors.

The kerb, the border between the carriageway and the footpath, a seemingly mundane space, but acknowledged by the San Francisco Municipal Transportation Agency (SFMTA) as the setting for extremely diverse and dynamic activities, central to an effervescent and well-functioning city. In 2020, noting that their kerbside was stretched to its limits, SFMTA published their first kerb management strategy (SFMTA, 2020).

Function	Definition	Examples of Uses
Mobility	Moves people and goods	• Sidewalks • Bus or streetcar lanes • Bike lanes • General purpose travel lanes (includes freight) • Right- or left-turn only lanes
Access for people	People arrive at their destination, or transfer between different ways of getting around	• Bus or rail stops • Bike parking • Curb bulbs • Passenger load zones • Short-term parking • Taxi zones
Access for commerce	Goods and services reach their customers and markets	• Commercial vehicle load zone • Truck load zone
Activation	Offers vibrant social spaces	• Food trucks • Parklets and streateries • Public art • Street festivals
Greening	Enhances aesthetics and environment health	• Plantings • Boulevards • Street trees • Planter boxes

		• Rain gardens and bio-swailes
Storage	Provides storage for vehicles or equipment	• Bus layover • Long-term parking • Reserved spaces (e.g., for police or other government use) • Construction

Table 1: National Association of City Transportation Officials (NACTO) - Curbside Management Strategies (2017) - Kerbside Function Framework

The transportation landscape in America shifted dramatically over the previous decade, many new modes of personal mobility, like ride-hailing, bike-sharing, electric scooters, and private transit, along with on-demand package and food delivery services, compete with more traditional modes for space on the streets and at kerbside.

San Francisco moved to reimagine how the kerbside was allocated and managed, acknowledging that this finite space should be more flexible, dynamic and responsive.

Following an in-depth review of existing regulations, current kerbside demand, an exhaustive data

collection process and numerous stakeholder workshops, a plan emerged that prioritised access for people above all. However, concerns around advancements were raised at a conference in October 2020, Hank Willson the Policy Manager for Parking and Kerb Management at the SFMTA spoke to the equity challenges with adopting new kerb



Figure 24: Kerbside functions including in the San Francisco Municipal Transportation Agency's Curbside Management Strategy (SFMTA, 2020)

management technology, with many tech-enabled solutions inaccessible to many San Franciscans (Willson & Management, 2020).

8.2 Prioritisation and hierarchy of kerbside

In 2022 the City of Bellevue, Washington B.C. realised that their approach to kerb management was focused on accommodating single-occupancy vehicles (City of Bellevue, City of Bellevue Curb Management Plan, 2023). The city's growing population brought about an increased demand for the kerbside at a time when a changing transportation network was imminent. The opening of Link Light Rail in 2024, fundamentally changed interactions at the kerbside. The city has also experienced major changes to daily commuting patterns, like in Dublin City, many citizens continuing to work remotely post-COVID.

As the demographic trends evolved, the Bellevue looked for an adaptable kerbside management plan that could support the City into the future. Whilst the challenges are not unique, the city looked to create a Curb Management Plan (CMP) that could communicate a holistic vision for how to optimise kerbside space within Bellevue's Urban Core and densest neighbourhoods.

The project team conducted a series of public consultations, whilst consulting kerb management experts and city decision-makers to inform the CMP. With feedback received, an overarching principle emerged, kerb equity. As defined by Executive Order #13985 (Biden, 2021), *"the term 'equity' means the consistent and systematic treatment of all individuals in a fair, just, and impartial manner, including individuals who belong to communities that often have been denied such treatment"*. The city concluded that as kerbs are a public space, they should be managed accordingly, serving the needs of citizens.

Building on previous and current objectives, as outlined in the Smart Mobility Plan (City of Bellevue, Smart Mobility Plan 2018, 2018), they implemented kerbside monitoring technology to better inform users of the kerb and facilitate improved enforcement. The monitoring produced vital data that informed the public engagement phase, recognising stakeholders were supportive of diverse kerb uses.

A Kerb Typology Framework was developed in collaboration with stakeholders, defining kerb functions. Overlapping kerb functions identified areas in the City where city plans and policies conflicted, highlighting zones where specific kerb uses must be prioritised over others. This, in turn, allows the city to manage the kerb more dynamically, now and in to the future. The CMP adopted unanimously by the City Council, came into effect July 2023.

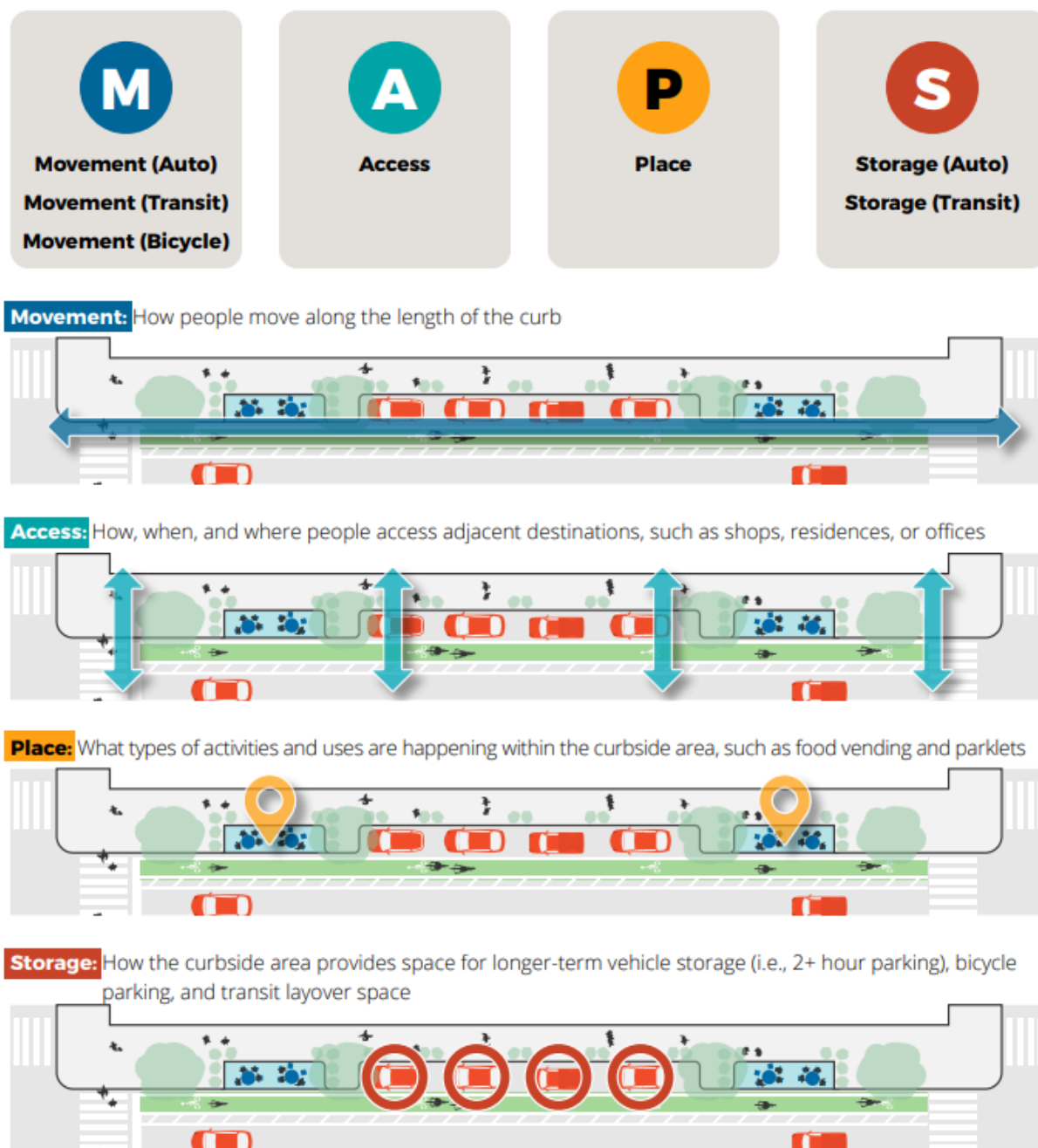


Figure 25: Kerb Typology Framework for describing and prioritising kerb use in Bellevue. (City of Bellevue, City of Bellevue Curb Management Plan, 2023)

8.3 Challenges with Current Kerbside Management

8.3.1 Identification of a Project Owner

A relevant department within the Council is to be identified to take ownership of the project if it advances past the pilot stage. The Environment and Transportation Section within DCC has several sub-departments, with each department charged with the collection and maintenance of its own set of data. Given the varied nature of the kerbside, the project crosses over many sections such as; the public realm, micro-mobility, parking enforcement, roads and traffic, street licensing and city greening, which makes it difficult to identify the team that could be ultimately responsible for the project.

8.3.2 Keeping Kerbside Maps Up-to-date

Keeping the data current in real-time is a difficult process. Many cities make the mistake of collecting an inventory of their kerbs but allow it to become out of date. This often requires the inventory to be collected from scratch when they want this information again. The City should look to establish a clear strategy to maintain this data, either through regular data validation or management software.

Two options were proposed, first, to update data internally within the council which has obvious resource issues when there has yet to be a project owner identified, or second, to survey the areas at regular intervals. In working with the companies involved with Senator, DCC hope to understand the projected costs associated with the updating of digital maps and possible return on investment given the value of up-to-date data.

8.3.3 Utilising Existing Data Sources

The City continues to collect data from several vendors, providing a good database of information which is valuable for planning decisions. Therefore, the City should take advantage of this data and find methods to harness it, either through internal analysis, report generation, or third-party software.

8.3.4 Integration with Existing Legacy Platforms

DCC and the logistics companies are working with their legacy platforms, integration with the kerbside platform has resulted in some security issues. According to Senator, this is not uncommon across other cities that are testing digital kerbside solutions. With data in DCC siloed to specific departments and platforms, it can create extra layers of complexity when processing the data.

While many cities have their data in silos, with limited accessibility to other departments, stakeholders, or the public, providing access to this data, ideally in a dynamic format via API data feeds, dashboards, or open data portals, can make the value of this information go that much further.

8.3.5 Adaptation to new technology and new dashboard

There is the danger of generating ‘dashboard saturation’ when trying to implement new smart technologies. Also as this is a new technology that is still being piloted and tested around the world, a few scalable and best-practice examples could be presented to the stakeholders to win acceptance and trust (Senator, 2023).

9 Recommendations

There are multiple approaches to maximizing the value and seeing tangible returns from modern kerbside management practices. Dublin City Council has already taken steps to addressing their kerbside needs. Using a Kerbside Management platform could be an option through which the City can derive actionable insights on various kerb uses (e.g., loading zones, accessible permit spaces). The City of Dublin's adoption of a digital kerbside management solution, even as a pilot, showcases a proactive and data-driven approach to understanding the kerb, setting a precedent for other cities looking to enhance efficiency and effectiveness of this scarce resource.

By looking to existing planning and policy initiatives a city can identify its current goals, as a new strategy must align with citywide priorities for recovery, sustainability, mobility, equity, liveability and access for all. Kerb functions should then be determined, based on the city's current demands, and futureproofing for emerging technology. As land-use will guide how the adjoining kerb will function, the city must categorise the land-use types. This allows a city to develop its kerbside hierarchy, identifying areas that prioritize street activation, conservation, greening initiatives, and servicing of commercial activities or access for people.

A city can then build its digital kerbside inventory, identifying its current assets, demands and regulations. An analysis of this data will ascertain how kerbside is used, and identify existing conflicts with current arrangements. Having reviewed the current policy, aligned city goals, identified hierarchy and inventoried data, a kerbside management strategy can be defined. As described by the research and literature review, the implementation of pilot projects can identify what might work best in a given scenario, as not all initiatives are omni-relevant. The final piece of the puzzle is to develop a strategy guidance document, one that is easily legible to all, and that can be brought to public consultation. Engagement and consultation on placemaking interventions are essential, "Cities have the capability of providing something for everybody, only because, and only when, they are created by everybody." Jane Jacobs.

There are many potential solutions for managing the kerbside, but the key question is: *What works for Dublin?* Below are some approaches that could be effective.

9.1 Policy and Strategy

A key recommendation for a project of this scale is the establishment of a formal policy mandating the maintenance and management of kerbside data at the municipal level. While the inclusion of kerbside management in the Draft Moving Together Strategy is a positive step, a more comprehensive and enforceable implementation plan is necessary to ensure its long-term effectiveness.

Given the limited urban space in cities like Dublin, a well-defined strategy is crucial to optimising its use in the most efficient and equitable way. This would facilitate transparent

communication with key stakeholders, including businesses, logistics and delivery companies, service providers, residents, and councillors. A structured approach would not only enhance operational efficiency but also support sustainable urban mobility.

To ensure widespread adoption and consistency, this initiative should be directed at a national level, ideally led by the Department of Transport or the National Transport Authority (NTA). The policy should then be embedded within municipalities at a corporate level, ensuring alignment with broader urban planning and transport objectives.

Furthermore, a dedicated funding stream should be established to support the development and implementation of kerbside management initiatives. Without designated financial backing, municipalities may struggle to prioritise and sustain these efforts. By securing corporate-level investment, cities can create a scalable and future-proof kerbside management framework that aligns with national transport and sustainability goals.

9.2 Technology Platform

Dublin City Council piloted two technology solutions, as outlined in Section 2. Both served as data aggregators, consolidating information from various sources into a single kerbside management platform where data could be visualized, accessed, updated, and utilised by stakeholders.

To support this, Dublin City Council commissioned a kerbside survey to create an accurate inventory of assets, making this data accessible to all stakeholders. However, a major challenge identified was keeping the platform up to date—external surveys are costly and could be minimised by implementing a simple yet effective process: updating the data whenever changes occur on the field.

Despite these challenges, the team recognised the real potential of such a platform if managed properly. However, technology is only as effective as the people and processes supporting it. Before integrating a tool, it is essential to define clear processes, ensuring that technology enhances, rather than dictates, the solution.

9.3 Dedicated Resource

One key takeaway from the Senator project's kerbside management pilots is that, at least in the initial years (and potentially beyond), a dedicated resource is needed to bridge fragmented data sources and coordinate multiple stakeholders.

In the internal stakeholders' interview across different teams, "lack of resources" emerged as a recurring issue. A dedicated kerbside management specialist could help mitigate this by facilitating collaboration across teams. This role would require:

- Technical proficiency (e.g., familiarity with TAMS and GIS)

- Strong stakeholder management and communication skills to coordinate a wide range of interests.

Many major cities have already adopted this approach. For example:

- Seattle Department of Transportation has a Curbside Management Team (SDOT, 2019) responsible for planning, managing, and maintaining kerbside spaces to support mobility, access, and sustainability goals.
- City of Lambeth (UK) introduced a Kerbside Strategy Programme Manager (Council L., 2023) within its Planning, Transport & Development Unit to oversee the implementation of a comprehensive kerbside management plan.

9.4 Use of Existing DCC platforms

The Council has the option to manage kerbside data within its existing internal platforms, such as GIS and TAMS. The key advantage of this approach is that it requires no additional investment, and some team members are already trained in these systems. Additionally, it bypasses the often resource-intensive and time-consuming procurement process.

However, for this approach to be effective, the Council must address the following key areas:

- **Resource Optimisation:** Nearly all teams, particularly TAMS and GIS, have cited limited resources as a major challenge. With only one or two full-time staff in each team, maintaining and processing data for the entire Environment and Transport (E&T) Department is far from ideal.
- **Dedicated Point of Contact:** As highlighted in Section 7.1.2, assigning a dedicated resource would be the most efficient way to manage data on either an existing or new platform. This role would be essential in coordinating various work streams and facilitating collaboration among diverse stakeholders.
- **Integration with Emerging Technologies:** The Council is already utilising technologies such as IoT sensors, Digital Twins, and Pedestrian Counters. These tools have the potential to enhance kerbside data management by feeding information into or extracting insights from these mapping systems, benefiting multiple teams across departments.

10 Return on Investment

10.1 Qualitative Returns

Effective kerbside management can play a vital role in helping Dublin City Council achieve the goals set out in its Dublin City Development Plan 2022-2028, particularly in areas related to sustainable mobility, environmental sustainability, urban liveability, and economic growth. Below are the key ways it aligns with and supports the plan's objectives:

10.1.1 Promoting Sustainable Transport and Mobility

- **Encouraging Active Travel:** Kerbside space can be reallocated to prioritize pedestrians and cyclists by creating wider footpaths, protected bike lanes, and micro-mobility parking areas. This supports the Development Plan's focus on promoting walking and cycling as sustainable and safe modes of transport.
- **Public Transport Efficiency:** Designated kerbside areas for buses and trams, along with priority access for public transit vehicles, can improve efficiency, reduce delays, and encourage public transport use.
- **Decarbonisation of Transport:** Supporting electric vehicle (EV) infrastructure, such as EV charging stations and mobility hubs replacing private vehicle parking, which aligns with the Council's goal to reduce greenhouse gas emissions and transition to low-carbon mobility.

10.1.2 Reducing Traffic Congestion and Pollution

- **Freight Management:** Allocating kerbside loading zones for deliveries reduces "cruising" (vehicles searching for parking) and double parking, minimising traffic conflicts and emissions caused by idling vehicles. This is especially important given the rise in e-commerce and delivery activity in Dublin.
- **Air Quality Improvement:** By promoting sustainable last-mile delivery options (e.g., cargo bikes) and reducing vehicle emissions, kerbside management supports the Development Plan's goals to improve air quality and public health.
- **Dynamic Space Allocation:** Time-based and flexible kerbside usage can prioritise deliveries during off-peak hours and pedestrian or recreational uses during peak periods, optimising street space and reducing congestion.



Figure 26: Logistics on Exchequer Street, Dublin
2

10.1.3 Enhancing Public Realm and Urban Liveability

- **Reclaiming Public Space:** Kerbside areas can be converted into parklets, outdoor dining spaces, or green infrastructure like rain gardens and urban tree planting. This supports the Development Plan's aim to create more inclusive, vibrant, and people-focused urban spaces.
- **Improving Accessibility:** Prioritising kerbside areas for pedestrians, individuals with mobility challenges, and disadvantaged communities ensures equitable access to transport and public spaces.
- **Safer Streets:** Effective kerbside management reduces illegal parking and improves pedestrian safety, aligning with the Council's goal of creating safer, more walkable streets.

10.1.4 Supporting Economic Growth

- **Efficient Urban Logistics:** By optimising kerbside spaces for deliveries and freight, businesses can reduce operational inefficiencies, supporting economic activity and the local economy.

- **Tourism and Retail:** Improved kerbside amenities and public spaces attract more visitors, shoppers, and tourists, which aligns with the Development Plan's focus on economic vibrancy and urban regeneration.

10.1.5 Advancing Smart City Goals

- **Data-Driven Decision-Making:** Technologies like sensors and data analytics can monitor kerbside usage and help Dublin City Council implement dynamic pricing, optimise space allocation, and enforce regulations. This supports the Development Plan's smart city ambitions by integrating technology into urban management.
- **Climate Resilience:** Kerbside green infrastructure can help manage stormwater, mitigate urban heat, and enhance biodiversity, contributing to the Plan's sustainability and climate adaptation goals.

10.1.6 Addressing Key Urban Challenges

- **Tackling Congestion and Urban Sprawl:** Efficient kerbside use can address issues related to urban densification, such as limited space and increased demand for freight, transport, and parking, all of which are highlighted in the Development Plan.
- **Adapting to Urbanisation and E-Commerce Growth:** Kerbside management helps manage the rising demand for deliveries and mobility services, ensuring that urban growth is sustainable and efficient.

By optimising how kerbside space is used, Dublin City Council can address key priorities in its Dublin City Development Plan 2022-2028, including sustainable transport, reduced emissions, urban regeneration, and enhanced public spaces. Effective kerbside management not only supports the city's goals of achieving a sustainable and climate-resilient future but also enhances urban mobility, economic efficiency, and overall quality of life for residents and visitors.

10.2 Quantitative Returns

Effective kerbside management requires both technological and human resources. While an external platform could streamline data integration and reduce survey costs, a dedicated resource would ensure efficient coordination and maintenance. This section outlines the financial implications of both approaches, weighing their benefits against the investment required.

10.2.1 Cost of an external platform

Dublin City Council conducts various surveys, including topographical surveys, drone surveys, LiDAR, and mobile mapping, to support projects like active travel construction, road

maintenance, statutory order execution, and data-driven decision-making on elements such as parking spaces and public seating. However, this valuable data is dispersed across multiple teams, including TAMS, GIS, Survey and Mapping Servers, and even physical maps. While data is shared on a need-to-know basis, there is no centralised system to track who is conducting surveys and when they are happening. Currently, this information is exchanged informally, often by word of mouth, leading to inefficiencies in coordination and accessibility.

In case that an external platform be adopted to integrate and maintain survey data from multiple sources, it could significantly reduce survey costs for complex projects and eliminate the need for redundant surveys on smaller ones. This approach could enable near real-time updates to kerbside data, making it accessible to various teams. Additionally, it would create a robust, continuously updated kerb data set, enabling more efficient, data-driven decision-making at a fraction of the cost of traditional surveys.

10.2.2 Cost of a Resource

As outlined in Section 9.3, appointing a dedicated resource to manage and coordinate kerbside activities is essential, regardless of whether a new platform is adopted or an existing system is utilised. This role would require both technical proficiency and strong stakeholder management and communication skills, given the need to collaborate with various teams and external partners.

Acting as a central point of contact for all kerbside-related matters, this individual would play a critical role in maintaining accurate data, streamlining processes, and ensuring effective cross-departmental coordination.

Notably, the cost of employing such a resource could be comparable to the expense of conducting a survey for a small-to-medium-sized area. This makes the role a cost-effective solution, offering long-term value by reducing survey expenses and improving operational efficiency.

11 Conclusion

“We are custodians of public realm and make decisions with people in mind.”

Interview Respondent, Dublin City Council

Dublin’s streets can date back to centuries (Dublin.ie, n.d.), making the integration of modern infrastructure a complex challenge. The city's kerbside is in high demand, serving a diverse range of functions—from traditional uses like pedestrian pathways and car parking to more dynamic roles such as active travel routes, bus lanes, and servicing zones (Council D. C., Dublin City Centre Transport Plan , 2023). Balancing these competing needs is a critical aspect of urban planning, requiring thoughtful management to ensure efficiency, accessibility, and sustainability.

The current approach to kerbside management, while functional, may not be sustainable in the long run, highlighting the need for a more unified and strategic framework. As emphasised in KPMG’s report (KPMG, 2024), Smart to Smarter Cities, *“The big question isn’t who owns the data or where it resides, but rather how it can be shared and what outcomes it can deliver.”*

Currently, kerbside data is collected through various methods, including surveys, statutory orders, historical human knowledge, and even physical photocopies. Similarly, storage methods vary across platforms such as TAMS, GIS, Excel files, and, in some cases, hard copies. However, the core challenge is not just data collection or storage but how the data is utilised and shared. Insights from stakeholder interviews indicate a lack of a consistent and accessible system for the public or decision-makers to access this information efficiently.

The urgency to explore a more effective solution is reinforced by multiple policy frameworks, as outlined in Section 3, as well as through internal stakeholder engagement. When asked whether kerbside management needs to be improved, the response was unanimously "yes." This consensus further underlines the necessity of adopting a more structured and data-driven approach.

There is a significant investment required to transform how the city’s kerbside is managed. However, this investment offers both tangible and intangible benefits as has been mentioned in Section 10.

The Senator Project has provided a thorough overview of how modernised kerbside management could be adopted in the City to improve kerb planning and operations. The first phase of the project focused on understanding existing conditions and processes in the City, including generating a baseline digital kerb inventory. Phase 2 expanded on this, investigating how kerbside operator’s data could be brought into a kerbside solution, and options for managing the kerb long term and the associated insights and value that come along with it.

Kerbside Management is a relatively new concept for DCC, but looking ahead, the City has all the tools required to optimise access of their kerb. This report highlights the priorities for the City to ensure they can take advantage of the work that has already been done and continue to build on their kerbside management practices.

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13 Appendix

13.1 Alignment with Current Policies

13.1.1 Sustainable Development Goals (SDG)

13.1.1.1 Overview

The study aligns with multiple Sustainable Development Goals (SDGs), showcasing the importance of sustainable practices in urban mobility and infrastructure. SDG 8 promotes sustainable economic growth and aligns with Target 8.4, focusing on decoupling economic growth from environmental degradation. Technological advancements like self-driving cars and drones reshape how we transport goods and people, creating opportunities while addressing concerns about innovation's impact on jobs. SDG 9 emphasises resilient infrastructure and sustainable industrialisation, aligning with Target 9.4 by advocating for resource-efficient logistics like urban consolidation centres and last-mile delivery innovations to reduce emissions and improve sustainability. SDG 13 calls for urgent climate action, emphasising low-carbon mobility and transport infrastructure designed for climate resilience, inclusiveness, and long-term viability. These goals collectively stress the need for transformative urban transport systems to achieve a sustainable and equitable future.

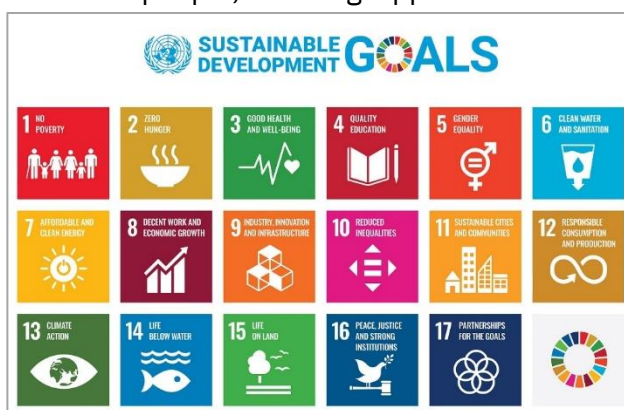


Figure 27: Sustainable Development Goals (SDGs) (United Nations, 2023)

13.1.1.2 Sustainable Development Goal 11

SDG 11 focuses on creating inclusive, sustainable cities, with Target 11.6 aiming to reduce cities' per capita environmental impact, particularly regarding air quality. In Dublin, rapid population growth, increased e-commerce, and private car ownership have worsened air pollution, with vehicle emissions from logistics vehicles being a major contributor. While Dublin's air quality is within the World Health Organisation (WHO) "good" range, it still falls short of the WHO target of $10 \mu\text{g}/\text{m}^3$ and ranks the poorest in Ireland. Globally, urbanisation, rising demand for freight services, and post-COVID infrastructure investment pressures highlight the need for sustainable transport solutions, as the transport sector accounts for 28% of the EU's greenhouse gas emissions (IQAir, 2023).

Target 11.7 emphasizes equitable access to green, public spaces, especially for marginalized communities disproportionately affected by urban challenges. Poor kerbside management exacerbates issues like congestion, pollution, and limited public space. Digitalisation and data analytics in kerbside management, as proposed by Castrellon, could reduce delivery inefficiencies, eliminate double parking, and promote decarbonisation with relatively low investment compared to major infrastructure projects. However, balancing land use and service requirements remains a significant challenge (Castrellon, 2023).

More than \$2 trillion in transport infrastructure investments will be needed globally each year until 2040.

Key trends impacting transport infrastructure demand in the long term

Growing passenger and freight transport demand

From ~53 trillion pkm¹ in 2015 to 105 trillion–125 trillion pkm in 2050;
from ~135 tkm² in 2015 to ~280–350 tkm in 2050

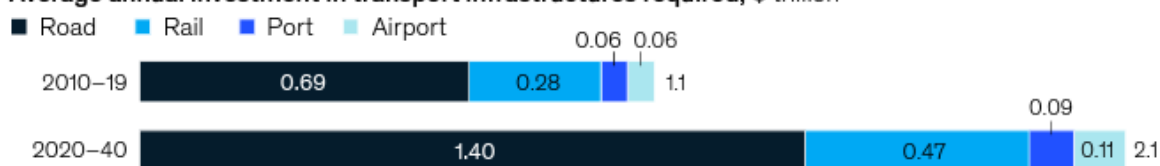
Urbanization

From ~30% of urban population in 1950 to ~55% in 2018 and ~70% in 2050

Stimulus plans

\$2 trillion in US,
€672.5 billion in Europe,
\$500 billion in China

Average annual investment in transport infrastructures required, \$ trillion



¹ Passenger-kilometer.

² Ton-kilometer.

Source: Global Infrastructure Outlook, data extracted in July 2021; OECD (International Transport Forum 2021); press search; 2018 Revision of World Urbanization Prospects, United Nations

Figure 28: McKinsey & Company's Key Trends impacting infrastructure demand long term (Milani, Mohr, & Sandri, 2021)

13.1.1.3 Sustainable Development Goal 13

SDG 13 emphasises the urgent need for transformative action to reduce greenhouse gas emissions in line with the Paris Agreement. Ireland has committed to cutting emissions by

Sustainability infrastructure has four dimensions, which can be approached from five angles.

Sustainability dimensions



Environmental

Performance indicator example:
CO₂/ton-mile



Social

Performance indicator example:
safety or cost of public transport



Institutional

Performance indicator example:
regional development



Economic

Performance indicator example:
revenue, EBITDA¹

Angles to approach projects

Resilient

Sustainability as resiliency to climate change and reduced environmental impact

Inclusive

Sustainability as enhanced social inclusivity and no prevention from benefiting from the service

Technological

Sustainability as benefits from increasing technology innovations

Productive

Sustainability as increased productivity and streamlining of delivery and implementation of the projects

Flexible

Sustainability as improved ability to flexibly adapt to shocks and changing environment

¹ Earnings before interest, taxes, depreciation, and amortization.

51% by 2030 and achieving net zero by 2050, as outlined in the Carbon Budgets 2022 (Department of the Environment Climate and Communications, Carbon Budgets, 2022) and Climate Action Plan 2023 (Department of the Environment Climate and Communications, Climate Action Plan 2023, 2023). Achieving these goals requires a significant shift toward active travel, public transport, and decarbonised mobility, as highlighted in the National Sustainable Mobility Policy (Department of Transport, 2022). While commuter behaviour in Dublin has improved with increased active travel and reduced car use (SYSTRA Ltd., 2021), congestion and transport-related CO₂ emissions continue to rise. Miliani's 360° framework advocates for sustainable transport infrastructure with clear performance indicators across environmental, social, institutional, and economic dimensions (Milani, et al., 2021). Environmentally, infrastructure must enhance climate resilience, while socially, it should address vulnerable populations, protect rights, and improve inclusiveness and quality of life. Institutionally, infrastructure must align with national objectives, and economically, it should ensure financial viability and contribute to job creation and growth. This holistic approach is critical for balancing sustainability with the rising demand for services like next-day delivery.

Figure 29: McKinsey & Company's Sustainability Infrastructure Four Dimensions (Milani, Mohr, & Sandri, 2021)

13.1.2 Draft Moving Together Strategy by Department of Transport (2024)

The Moving Together Strategy aims at improving the efficiency of the Transport Systems and alleviate the impacts of vehicles on the economy, the environment and the health of our society. The Strategy is a call to action across Government and society not only to help reduce carbon emissions from transport over the medium to long term but to address more immediate issues of congestion, road safety and air quality.

The Strategy aligns closely and support a range of UN and EU policies and obligation on climate, sustainable development, transport and energy in particular. The Key Policies include,

International and European Policy Drivers	National Climate and Transport Policy Drivers
The Paris Agreement to the UN Framework Convention on Climate Change (UNFCCC)	Climate Action Plan 2023
European Green Deal 2020	National Sustainable Mobility Policy
Fit for 55	Metropolitan Area Transport Strategies
Effort Sharing Regulation (ESR)	GDA Strategy and Demand Management Scheme
Clean Energy Package	Electrification and Renewable Energy Policy
EU's Sustainable and Smart Mobility Strategy	Energy Efficiency and Security
Sustainable development Goals	Freight and Haulage Strategy
Energy Efficiency Directive (EU) 2023/1719	National Roads 2040
National Energy and Climate Plan (NECP)	National Investment Framework for Transport in Ireland
Energy Taxation Directive (ETD)	Road Safety Policy

The Moving Together strategy calls upon the kerbside management work under Local Authority climate Action, parking measures, and demand management schemes. The kerbside management was a key area of focus for Steering Group and the Subgroups, specifically under Optimal Use of Space and Generators of Demand (Freight and Industrial/Retail) Subgroups.

Taking account of national policy priorities, the strategy incorporates guidelines, which will be informed by the 5 Cities Demand Management Study. The guidance includes the development of kerbside management strategies to efficiently allocate kerb space for activities such as loading/unloading, deliveries, and passenger pick-up/drop-off, thereby helping to reduce congestion and promote well-being. Key challenges called out in the strategy includes:



Efficient Use of Space: The strategy advocates for optimising kerbside space to meet the needs of all stakeholders, which is essential for reducing traffic and improving city functionality.

Figure 30: Moving Together: A Strategic Approach to the Improved Efficiency of the Transport System in Ireland (Department of Transport,,

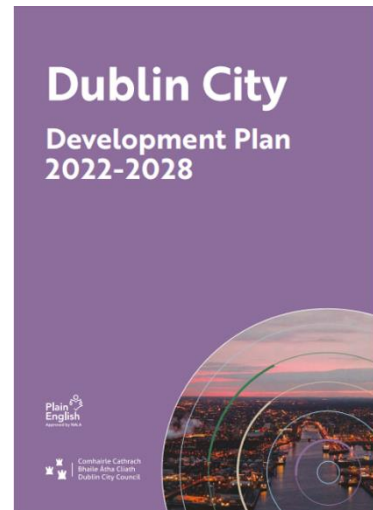
Sustainable Freight Distribution: A significant recommendation includes developing strategies to improve freight movement across five cities, aligning with local measures from the EU-funded SENATOR project. This project also promotes asset sharing and digital platforms to improve freight management, reducing pressure on kerbsides.

Digital Mapping and Data Utilisation: One of the core elements is the use of advanced digital tools to map kerbside usage, enabling more efficient management. The use of data will help local authorities in demand management initiatives.

13.1.3 The Dublin City Development Plan 2022–2028

Dublin City Development Plan (2022-2028) is a plan, which sets out how the city will develop to meet the needs of all residents, workers and visitors. The overall objective of the Development Plan is to develop a city that is low carbon, sustainable and climate resilient. Businesses are the backbone of any city and it is important to enable them as much as the citizens. How do we make sure that the conflicting priorities are managed well? How do we manage the assets when we don't know what we are trying to manage?

The Plan includes several specific objectives and policies related to kerbside management:



Servicing and Logistics: The plan acknowledges the growing pressure on kerbside space due to urbanisation and sets forth objectives to address it. Specifically, SMT06 calls for the preparation of a Servicing/Logistics Strategy in collaboration with stakeholders to ensure

Figure 31: Dublin City Council Development Plan 2022-2028 (Dublin City Council, Dublin City

It is an Objective of Dublin City Council:	
SMT06	Servicing/Logistics Strategy To prepare a Servicing/Logistics Strategy for the city in collaboration with relevant stakeholders to ensure the continued viability of the city and urban villages.

Transport. (Dublin City Council (DCC), 2022)

efficient kerbside management and to maintain the operational viability of both the city and its urban villages.

'Last-Mile' Delivery: The objective SMT15 promotes the reduction of motorized delivery vehicles through the use of 'last-mile' delivery, encouraging micro-distribution hubs and cycling/walking-based deliveries. This strategy is critical in reducing emissions and kerbside congestion.

Active Travel and Public Realm: SMT12 and SMT14 refer to the reallocation of city centre road space to pedestrians and cyclists, focusing on creating a pedestrian-friendly environment and enhancing active travel infrastructure. This affects kerbside use as more space is dedicated to non-motorised transport.

SMT14	City Centre Road Space To manage city centre road-space to best address the needs of pedestrians and cyclists, public transport, shared modes and the private car, in particular, where there are intersections between DART, Luas and Metrolink and with the existing and proposed bus network.
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Figure 34: Objective SMT14 Dublin City Development Plan 2022-2028 Chapter 8 Sustainable Movement and Transport. (Dublin City Council (DCC), 2022)

It is the Policy of Dublin City Council:	
SMT12	Pedestrians and Public Realm To enhance the attractiveness and liveability of the city through the continued reallocation of space to pedestrians and public realm to provide a safe and comfortable street environment for pedestrians of all ages and abilities.

Figure 35: Objective SMT12 Dublin City Development Plan 2022-2028 Chapter 8 Sustainable Movement and Transport. (Dublin City Council (DCC), 2022)

13.1.4 Sustainable Residential Development and Compact Settlements Guidelines for Planning Authorities

The Sustainable Residential Development and Compact Settlements Guidelines for Planning Authorities, issued by the Department of Housing, Local Government and Heritage in Ireland (2009), serve as a comprehensive framework to guide planning authorities in delivering high-quality residential development in urban, suburban, and rural areas. These guidelines aim to promote sustainable land use, support compact settlement patterns, and enhance overall urban design quality.

For urban locations such as Dublin City Council the guidelines emphasize:

Higher Densities in Cities and Towns: Promote higher-density development in central urban areas, near public transport corridors, and within walking distance of services.

Mixed-Use Development: Encourage integration of residential, commercial, and recreational uses to create vibrant communities.

Urban Infill and Brownfield Development: Prioritize development on vacant or underused lands in built-up areas to make better use of existing infrastructure and reduce urban sprawl. The benefits of the guidelines are reduced carbon emissions through compact growth and less reliance on cars; the creation of well-integrated communities with access to services and facilities and lower infrastructure costs and increased economic activity in vibrant, well-planned settlements.

In Chapter 3.4 the guidelines introduce the Public Transport Accessibility Levels (PTAL) tool which is a measure used to assess the accessibility of an area to public transport services. It considers:

- Proximity to public transport stops (bus, rail, tram, etc.).
- Frequency of services available at those stops.
- Journey time to access key destinations.

PTAL scores range from 0 (poor accessibility) to 6b (excellent accessibility), providing a clear indication of how well an area is served by public transport.

PTAL, a data based tool, is a critical metric for ensuring that compact settlements are developed in areas with appropriate public transport infrastructure. Integrating PTAL is crucial for planning authorities to align residential development with sustainable transport policies and optimise land use in areas with high accessibility. PTAL provides a practical, evidence-based framework for planning authorities to align compact settlement design with public transport accessibility. By leveraging PTAL, authorities can promote higher-density, mixed-use developments in areas with strong transport connectivity, ultimately supporting national goals for climate action, housing, and sustainable growth.

Using PTAL to inform policy implementation, planning authorities can integrate data into Local Area Plans to clearly indicate areas suitable for compact growth and transport-led development.

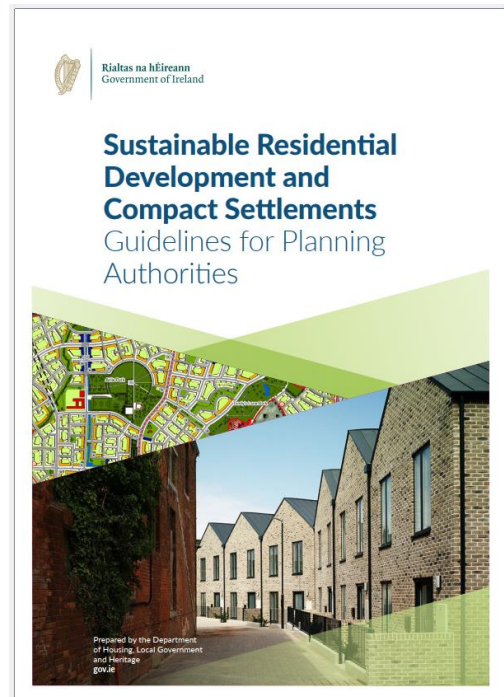


Figure 36: Sustainable and Compact Settlements Guidelines for Planning Authorities (Gov of Ireland, 2024)

13.1.4.1 Link between PTAL and Kerbside Management

Public Transport Accessibility Level (PTAL) is a useful tool for informing and improving kerbside management in urban areas. It provides a measure of public transport accessibility,

which can help city planners and transport authorities optimize kerbside use based on accessibility levels. Here's how PTAL can assist with kerbside management:

Prioritising Kerbside Space Based on Accessibility

Areas with high PTAL scores (i.e., well-served by public transport) can justify reduced on-street parking in favour of bus lanes, cycle lanes, parklets, or micro-mobility hubs. Areas with low PTAL scores (poor public transport access) might need more kerbside space for car parking, including disabled bays or car clubs, to support residents' mobility.

Informing Dynamic Kerbside Allocation

PTAL data can help create dynamic kerbside management strategies, adjusting space allocation based on demand at different times of the day. For example, in high-PTAL zones, kerbside space might prioritise loading bays during peak delivery hours and shift to public space or outdoor seating in off-peak times.

Supporting Sustainable Mobility Initiatives

High PTAL areas can support demand-responsive transport (DRT), e-scooters, or bike-sharing schemes, reducing car dependency and congestion. In lower PTAL areas, kerbside space might be allocated for shuttle services, shared mobility, or last-mile solutions to improve connectivity.

Enhancing Freight & Delivery Logistics

Cities can map PTAL against logistics needs to determine where dedicated loading zones, consolidation hubs, or e-cargo bike stations should be placed. High PTAL areas might benefit from off-peak or night-time deliveries to reduce daytime congestion.

Influencing Policy & Regulation

PTAL informed policies can guide parking charges, kerbside pricing, and permit systems, ensuring that high-accessibility areas prioritise sustainable transport modes. It can also support Low Traffic Neighbourhood (LTN) planning, restricting vehicle access in areas where public transport is strong.

Improving Transport Equity

PTAL can highlight underserved areas where kerbside space could be better allocated for bus stops, taxi ranks, or community/shared transport to improve accessibility.

13.2 Internal Stakeholder Interviewees

No.	Division	Date
1.	Planning & Property Development	09/07/2024
2.	Traffic Asset Management (TAMs)	12/07/2024
3.	Traffic Asset Management (TAMs)	17/07/2024

4.	Survey & Mapping	17/07/2024
5.	Environment & Transportation Executive Manager	18/07/2024
6.	Active Travel	24/07/2024
7.	Department of Transport	24/07/2024
8.	Department of Transport	24/07/2024
9.	Department of Transport	24/07/2024
10.	Transport Planning	25/07/2024
11.	Dublin Street Parking	13/08/2024
12.	Parking Enforcement Dublin City Council	15/08/2024
13.	Traffic	19/08/2024
14.	City Coordination	21/08/2024
15.	Area Manager South East	21/08/2024
16.	Road Maintenance	21/08/2024
17.	Road Design Construction	21/08/2024
18.	Micro-mobility and Road Safety	22/08/2024
19.	GIS	22/08/2024
20.	GIS	22/08/2024
21.	City Architects	28/08/2024
22.	Area Manager	28/08/2024
23.	Parking Enforcement Dublin City Council	10/09/2024
24.	Area Manager Central Area	19/09/2024
25.	City Architects	26/09/2024
26.	Planning – Development Management - Central	18/11/2024

27.	Planning – Development Management - North	18/11/2024
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13.3 List of Qualitative Questions for Internal Stakeholder Engagement

1. Ask the interviewee to introduce themselves.
2. Can you describe your team's day-to-day interactions with the kerbside currently?
3. Is it easy?
4. What is the role of kerb in your context?
5. How do you think it has changed in last 5 years and how do you see it changing in next 5 years?
6. How does your usage of kerb support the strategic goals of Dublin City Council?
7. How many teams do you interact on daily basis to manage your [activity name] on kerbside?
8. Can you please talk through the process that you follow for [activity name].
9. What are your biggest challenges in relation to your interaction with kerbside?
10. What types of data or information in relation to kerbside does your team currently rely on?
 - How do you currently receive and utilize this information in your work?
 - What tool do you use to access the data/information?
11. In an ideal world, what type of data or information would make your life easier?
 - How would that solve any of the challenges that you mentioned above?
 - What could we do to make it better?
12. Are there any technological solutions (e.g., real-time data sensors, interactive maps) that you think could improve the management of the public realm?
13. If there is one thing that we could do now to better manage the kerbside, what would that be?
14. Where do you think kerbside management sits within Dublin City Council?
 - Within a specific team or each division manage their own area.
 - If it is within a specific team, which Team?
 - Do you think it would be possible to have a dedicated team?
 - If yes/no, why?
15. What according to you takes priority from the following options on the kerbside in Dublin City Centre:

13.4 Sample resource organigram for dedicated resource and team structure

