Space for Cargo Bikes: International (IiA)

Report / Toolbox Space for Cargo Bikes

(IiA 40386) Space for Cargobikes: Dutch & International Context - Invest in Arup

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Setting the scene, what does this research contain?

- The content of this research is a report written in a **slide deck format** to create a clear and to the point experience for the reader. It contains **a literature research, as well as casestudies and policy research**. The research concludes with a **toolbox** containing a set of **practical strategies and measures** to promote the shift towards cargo bikes in urban logistics.
- The toolbox covers the description and examples of key **spatial, policy, logistics and market elements** and analysis methods to move towards an action plan for creating space for cargo bikes in logistics movements in urban areas.
- For whom is it intended: **municipalities / provinces worldwide** who want to boost cargo bike usage in their logistics systems, **governments** that want to update their urban design guidelines and **practitioners** aiming to support cargo bike friendly policies and design strategies.

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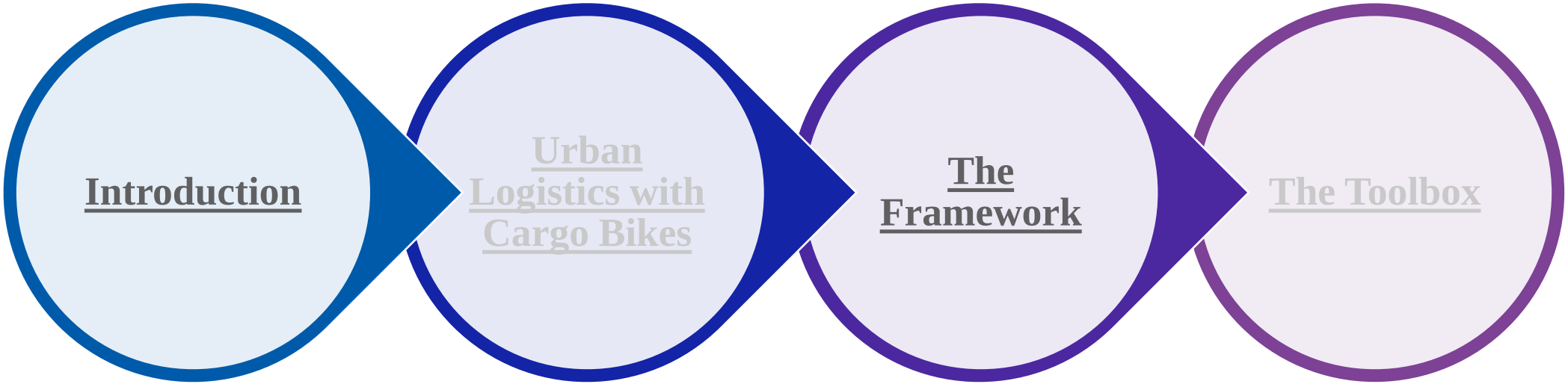

	Introduction	Urban Logistics with Cargo Bikes	The Framework	The Toolbox
Content	› About the Toolbox	› Benefits › Current (+ / -) › Potential › Roles & responsibilities › Cargo bikes: now	› Framework elements for cargo bike' spaces › Get inspired	› Steps & phases to create cargo bike friendly environments
Methodology		› Literature research › Interviews with involved parties › Case studies	› Literature research › Knowledge from previous projects – e.g. 'Ruimte voor Cargobikes'	› Literature research in e.g. ○ Policy development tools ○ Stakeholder engagement tools

About the Toolbox

- The toolbox provides a range of resources and ideas to support governmental institutions to understand the complexities of usage of cargo bike for logistics and help to guide them to design and successfully implement cargo bike friendly strategies in their urban environments.
- Here we look at the intersection between policy, spatial elements, logistics movements and market trends. To date there is limited guidance on how to create cargo bike friendly environments, although a lot is known about the individual elements of such environments .
- This toolbox helps fill this gap by bringing together these topics and providing guidance on how to initiate a simple but holistic structure for giving more space for cargo bikes in cities. It includes examples and practical information on the steps to achieve successful cargo bike development roadmaps.

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Urban Logistics with Cargo Bikes

Benefits of cargo bike friendly environments

Healthy and vibrant cities put social well-being, sustainability and equity at the center of their policies and strategies. For the WHO “A healthy city is defined by a process, not an outcome. A healthy city is not one that has achieved a particular health status. It is conscious of health and striving to improve it”. In the logistics sphere, cargo bikes are here central:

- Reduces congestion and emissions
- Promotes active movement, health and well being
- Increases equity as the bike is a fairer mode of transport
- Improves businesses brand and client experience
- Creates space and urban resilience by being smaller and more efficient than vans in dense urban areas

SDGs and targets cargo bike friendly cities can contribute to:

Urban Logistics with Cargo Bikes

Current vs. potential

Currently cities are facing significant challenges with the increasing number of urban deliveries and private car trips. Cargo bikes can be key to addressing the problems of loss of time, emissions, road safety and invasion of public space that this causes. **Usage** of cargo bikes has increased significantly in the Covid-era and continued later due to:

- ☺ Rise in e-commerce, decrease in package sizes and increase in frequency of deliveries
- ☺ Plans for introducing zero-emission zones
- ☺ Efficiency of this mode in going through the city avoiding congestion
- ☺ E-bike technological developments

The 'Mayor's Guide to Cargo Bikes', published by Horizon 2020 project CityChangerCargoBike, clusters these into six areas: food delivery, retail, logistics, family, community & public sector. However, despite the increased attention and demand for this mode in many cities, currently most cities still cater for motorized transport, creating **barriers** which hinder cargo bike for logistics to reach its full potential. Some barriers are for instance:

- ☹ Inadequate or non-existing cycling infrastructure
- ☹ Large distances between destinations and hubs
- ☹ Lack of subsidies schemes or low funding rates
- ☹ Limited visibility and educational support for this mode by government and institutions

Now

References: Urban mobility observatory

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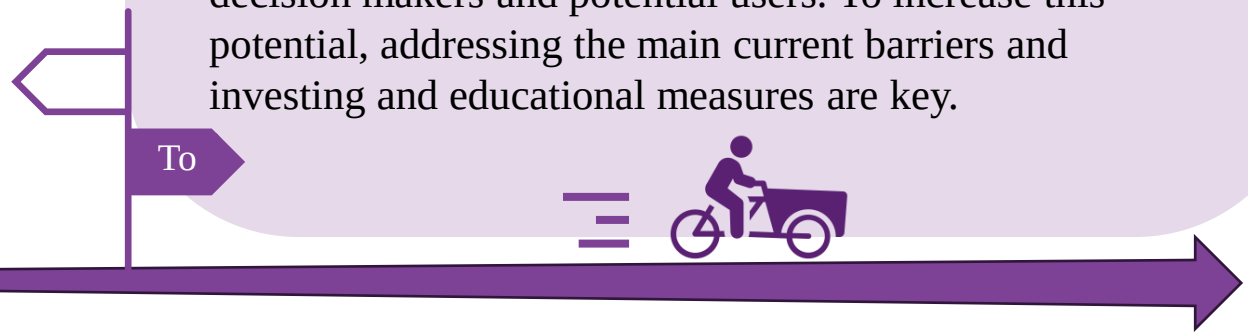
Current vs. potential

Social trends towards zero-emission urban centers, active and healthy cities and online shopping all open-up a range of opportunities for cargo bikes. Besides, this mode is much more suitable for denser urban areas as they are smaller, more efficient and improve traffic safety. To put into some numbers, delivery companies in the UK have found that they deliver good 66% more quickly by cargo bikes in city center (Here, 2023). The fact that anyone can drive a cargo bike without for instance the need for a license, also makes the recruitment and training process easier, which can help address the workforce issues the logistic sector is facing.

The **potential** of cargo bikes is huge, and as Lindsay Broadwell said "you just need to be capable to imagine it further" (ICBF blog). Sources report cargo bikes can potentially replace:

- 25% of all goods deliveries (e.g. courier, parcel, post)
- 50% of all business-related transport (e.g. road cleaning, tradespeople)
- 77% of all shopping trips

While empirical evidence shows a large potential for cargo bikes to replace vans in urban areas, perception of "what a bike is capable of" is still a major barrier for decision makers and potential users. To increase this potential, addressing the main current barriers and investing and educational measures are key.



References: Urban mobility observatory ; Cargobike Festival

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Roles & responsibilities

The market behavior and the urban space are critical in the process of pushing cargo bikes as a mode for urban logistics. While governments ultimately design the space and create the policies, businesses and users can be key drivers of change. Decisions from all these stakeholders have the potential to both facilitate the usage as well as delay or even completely stop developments.

Governments

- Provide space in the physical and legal spheres by removing barriers
- Provide educational measures and trials / pilots
- Align national and local governments efforts
- Ensure safety of road users without hindering efficiency of cargo bikers

Businesses / markets

- Create change by adjusting their own systems
- Benefit providers who use cargo bikes
- Engage with public authorities in decision making

Users / providers

- Participate in programs and be willing to change behaviors
- Engage with public authorities in decision making
- Invest in marketing strategies
- Adapt and innovate

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Case studies

Many cities are already experiencing the increase movement of cargo bikes in their urban spaces. Through interviews and literature research, it seems that this has been organized and developed differently in different geographies. Here we look at four cities and focus on 4 topics: **policies** implemented for cargo bikes and their success / failure**, spatial design** of cargo bike spaces, **logistics** companies and logistics chains' updates on cargo bike usage and finally how receptive is the **market** for cargo bikes.

Rotterdam

London

Sydney

New York

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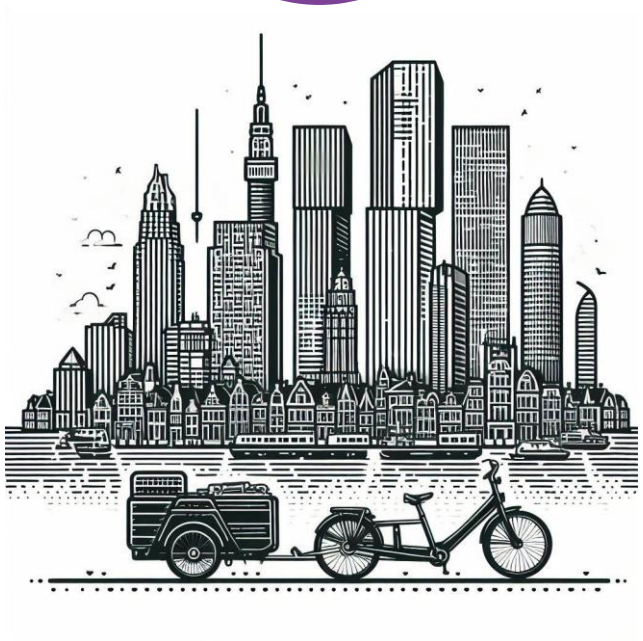
Urban Logistics with Cargo Bikes

Rotterdam



Policy

- Stimulation towards use of cargo bikes by municipality through policy and incentives
- Cargo bike innovations mostly a bottom-up approach
- No formal regulation yet from national government, cargo bike seen as bike
- Municipalities taking active role in governance and communication
- Weavers in inner cities

Spatial

- Utilization of the well-developed bicycle infrastructure and curb space, which are already crowded
- Looking for solutions to manage the scarce space safely
- Challenges especially in parking and charging, some cities also facing challenges in crowding of bicycle lanes
- High demand for curb space: more pedestrian movement, more functions like terraces
- Highly dense environment beneficial for cargo bikes

Logistics

- Logistics modalities rapidly changing
- Zero-emission zones by 2025 targets driving change in the sector
- Several logistics hubs already set up in locations in the city which facilitate cargo bikes usage

Market

- Smaller and larger businesses using cargo bikes
- Several types of users & innovation being pushed forward
- Main challenges are the initial investments needed and space for storing and charging

Urban Logistics with Cargo Bikes

London

Policy

- No formal regulation yet, cargo bike seen as bike
- No dimension restrictions
- Each borough is taking their own measures to manage the public space
- Municipality tends to not take an active role
- Decarbonization strategy Net Zero 2030/40 initiating discussions

Spatial

- Longer cycling distances due to less dense environments
- Hubs are currently located in the outskirts the city, east and west – 30 mins cycling
- Consolidation hubs are seen as a good option for making cargo bike more attractive
- Cycling infrastructure mostly composed of bicycle lanes with < 1.5 m wide

Logistics

- Service business (e.g., plumbers, workers) biggest opponent of cargo bikes – believe that it would stop them from doing their business

Market

- Logistics movement led more top-down, often by big companies (e.g., Amazon)
- Economical business plan would be ideal

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Urban Logistics with Cargo Bikes

Sydney

Policy

- No formal regulation yet, cargo bike seen as bike
- Lack of government steering the process causes uncertainty and risks, slowing down development
- Implementation of consolidation hubs is the main government investment (reserving land)
- Ambiguity of policies with regard to access to specific areas and with respect to emissions reductions leads to confusion among users
- No current regulation on kerb parking in policy for cargo bikes

Spatial

- Municipality is guiding towards 30 km/h streets, shared space and pedestrianization of busy commercial areas (more flexibility in usage)
- Municipality wants slow speed zones for diverse use of roads instead of only cycle lanes
- Safety as a key issue as cycling infrastructure is not developed enough
- Competition for kerbside is increasing (placemaking favoured over movement)
- Municipality is reducing the number of on-street loading bays

Logistics

- Business systems not able to accommodate new freight delivery models – no incentives
- Lack of microhubs to service broader areas
- Government increasing the number of micro hubs from 1 to 8 in coming years

Market

- Large entrepreneurs (e.g. DHL) not joining – low visibility, safety concerns, challenges with micro freight
- No policy requirements for small businesses to reduce emissions – no incentives

Urban Logistics with Cargo Bikes

New York

Policy

- Congesting pricing policies being made more strict to decrease truck and van movement in Manhattan
- Cargo bike pilots being planned by municipality have been successful
- Regulations in place specifically for cargo bikes, soon there will be a ban on cargo bikes longer than 3 m (would apply to the majority of currently seen bikes)
- There is a solid public engagement – it's important that the public is onboard and positive about the decision, community engagement important

Spatial

- Bike infra is already over capacity – city is looking at expanding
- Bikes are allowed to use the motorway, should stick to bike lane if it's available and not blocked
- Highly dense environment and concentration of commercial activities beneficial for cargo bikes
- Outside Manhattan cycling distances are longer, less attractive

Logistics

- Logistics hubs / micro hubs / mobile hubs are in development
- Digital solutions for infrastructure management for logistics would be positive but difficult to implement – start in smaller area

Market

- Large operators are active in development (e.g. DHL, Amazon) – good business case
- For smaller shops and services – too expensive to shift without subsidies
- Food delivery with many orders at the same time cause congestion at certain times

Urban Logistics with Cargo Bikes

Cargo bikes: now

Through this research and interviews some of the identified opportunities and challenges are presented below.

	Rotterdam	London	Sydney	New York
OPPORTUNITIES	• Strong cycling culture making cargo bikes a natural fit for urban logistics • Extensive cycling-friendly infrastructure support safe and efficient cargo bike use • Zero-emission zones plans will come into effect from 2025 and are driving change • Municipality taking active role in planning and stakeholder management	• High cycling accessibility compared to cars / vans making it is easier for micro mobility movement than by motor vehicle • Existing traffic congestion, which gives cargo bikes a competitive advantage • Market appetite to invest in micro mobility and city also actively engaged in planning (TfL)	• Growth of e-cargo bikes can be a solution for some of the concerns of businesses • Investment being made from the government in reserving land for distribution hubs • City plans to move to 30 km/h zones, shared space and pedestrianized areas	• High population density favours cargo bikes for efficient deliveries • Department of Transport actively involved in pilots and education measures • Cargo bikes alleviate traffic congestion during peak hours – are seen as good by the residents • Large companies investing
CHALLENGES	• Existing infrastructure developed for normal bikes, creating accessibility issues for cargo bikes and their different dimensions • Navigating regulations related to cargo bike dimensions, weight, and usage can be complex • Dealing with crowded cycle lanes and many modalities with different speed	• Cycling infrastructure is not well developed, cargo bike interacts with traffic slowing down deliveries in peak hours • Ensuring rider safety amidst busy roads and intersections • Overcoming negative perceptions about cargo bikes for certain types of users	• Urban sprawl leads to longer cycling distances – need for planning of logistics systems with good micro hubs planning • Creating cycling culture likely to face strong opposition and take a long time • Limitations in infrastructure design and planning to address the topography and climate challenges	• New York's topography gives challenges for cargo bike riders. • No masterplan for the whole city where cargo bikes can be a part of • Infrastructure is already crowded, both kerb space and cycling • New regulations regarding size limitations will affect most current users

The Framework

Framework elements for cargo bikes' spaces

A framework is defined to holistically look at the question "**how to create cities where cargo bikes for logistics can thrive?**". The foundational principles of the framework focus on the following spheres:

- ### What

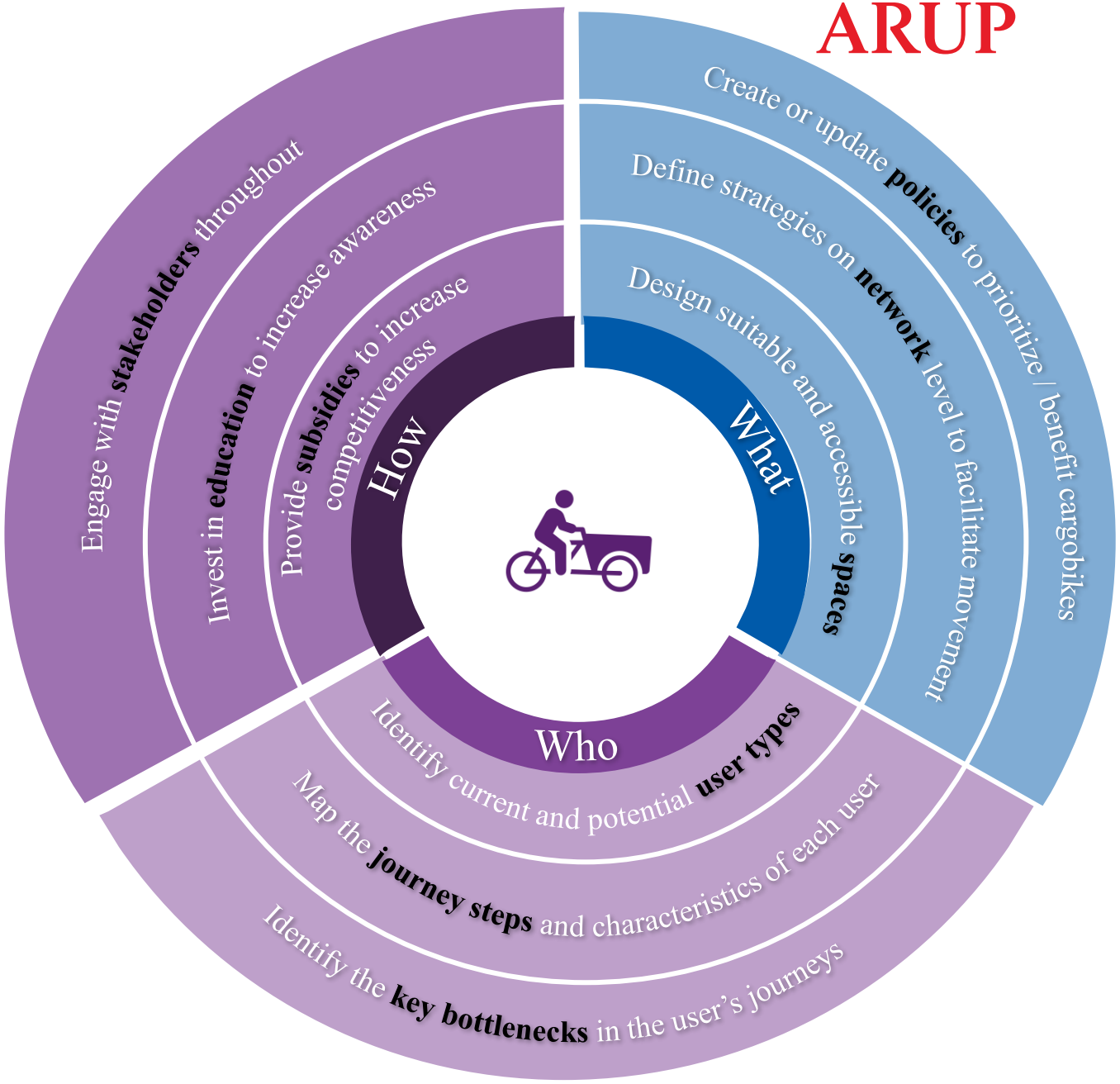
  Gathering information on elements which create cargo bike friendly environments.

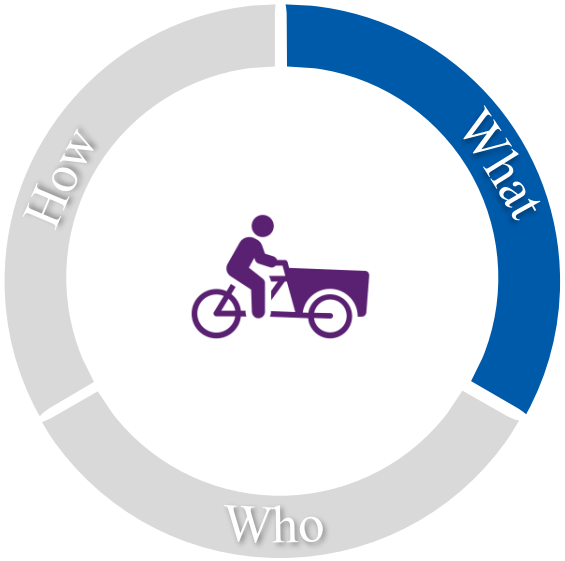
- ### Who

  Understanding who one is designing for to ensure the design is effective and inclusive.

- ### How

  Defining key starting measures to successfully implement strategies to boost cargo bike movement.





This dimension seeks to understand and illustrate policies, network strategies and spatial design elements which create favorable environments for cargo bikes.

Policy

From a policy point of view, the lack of definition of where the cargo bike stands in the mobility and logistics systems creates uncertainties and sometimes ambiguities among (potential) users and citizens. Once defined, key policies favorable to cargo bikes to implement are:

- Create specific safety regulations for interaction with other road users
- Facilitate outlay of businesses through funding, beneficial taxation and education schemes
- Regulate land use in a way that favors cargo bike initiatives
- Require analyses of activities and movement separately from other cycle types in statistics

The Cargo Bike Friendly City Guide, 2021

Network

Cargo bikes are more efficient as they don't get stuck in traffic and are stopped less frequently. An urban fabric which positively influences cargo bikes usage has elements that improve these further, such as:

Good cycling infrastructure with a network of well-connected wide bike lanes and accessible intersections

Microhubs / consolidation hubs are frequent in dense mixed areas reducing cycling distances

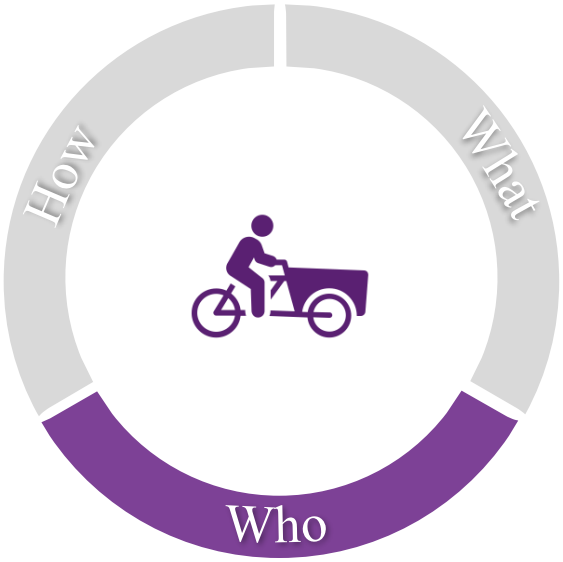
Dedicated parking areas and **effortless load / unload** processes through specified zones or curb access measures

Space

Key in spatial design is **inclusivity and accessibility** through all the steps in the user's journey, from loading/unloading, parking and charging.

Inclusive design which meets different users' needs (e.g. charging points, safe overnight storage)

Accessible spaces such as parking facilities, curb design for different cargo bike dimensions, number of wheels



This dimension seeks to understand how the different users make of use of the urban space to ensure effective and inclusive design. Here we focus on the journey of each type of user. For the different journey steps, users have specific behaviors and encounter barriers. The key question here is “how is the day in the life of a cargo biker?”

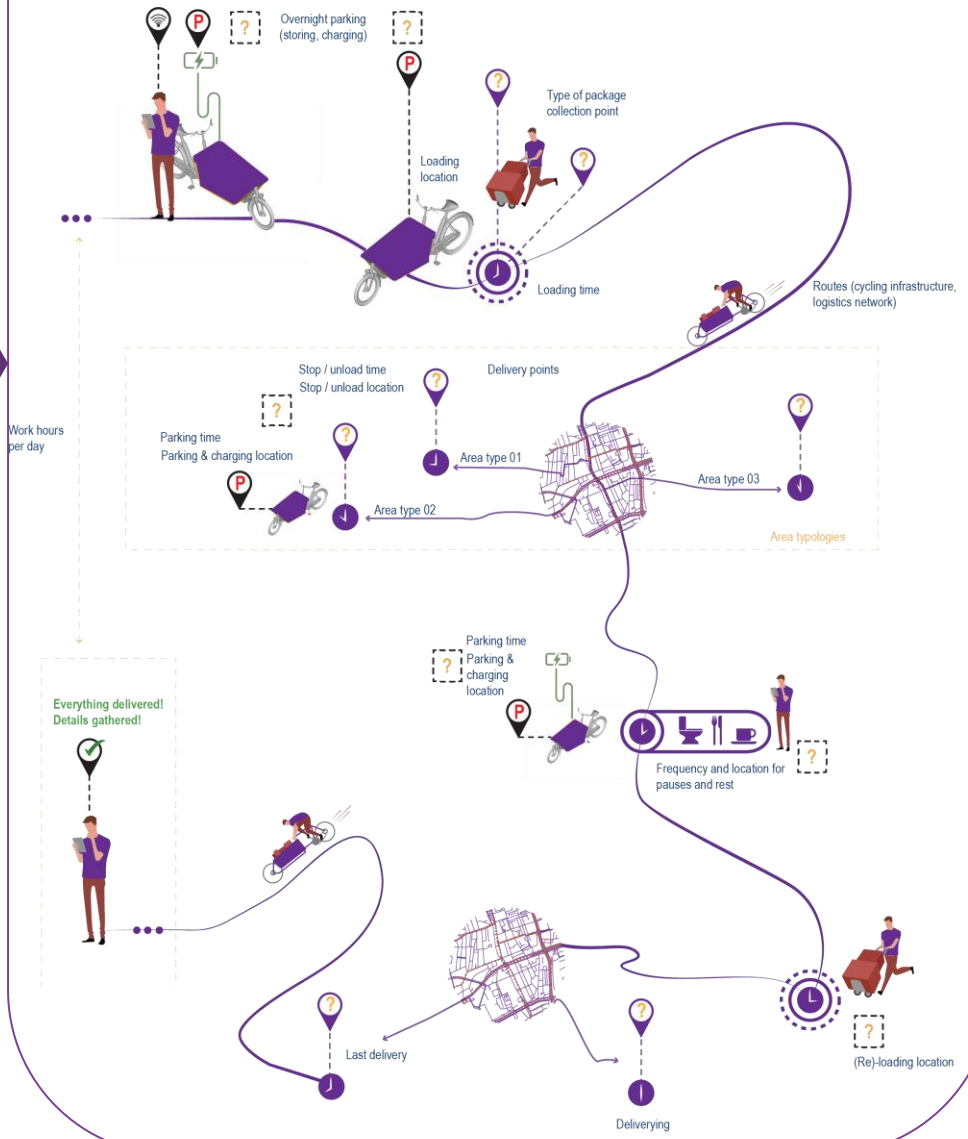
The users shape the cargobike world through their own behaviors. They use the space based on their own business needs and therefore they know what is creating less efficiency or stopping them from shifting to cargo bikes.

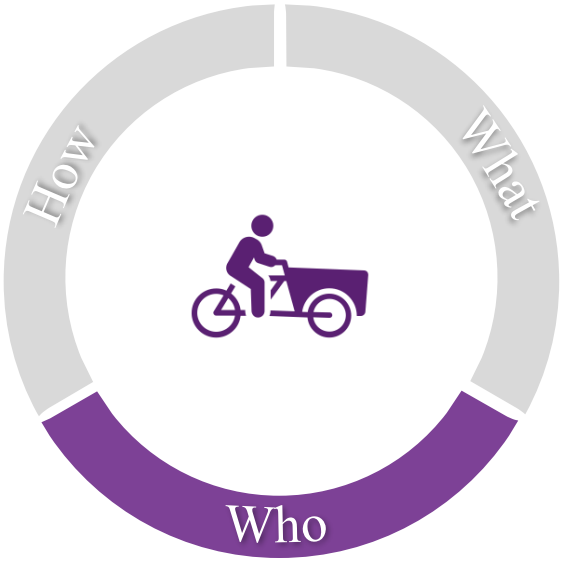
The list of **user types** are many.

- Package delivery and Business-to-business (B2B): carriers like DHL and Cycloon (NL) or individual providers
- Shop owners: bakeries, florists
- Service providers: plumbers, nail artists, photographers
- Businesses-on-bike: mobile coffee shops, ice-cream bikes
- Public services: trash collection, environment maintenance
- Others: again “you just need to be capable to imagine it further”

Information on the types of cargo bikes (e.g. 2-wheelers, front or back load) is relevant to map against each type of user.

Mapping the **journey** will illustrate how the day in the life of each cargo bike user is. Key elements are the *steps in the journey, location where these steps occur in the city, time and facilities required for that step*.





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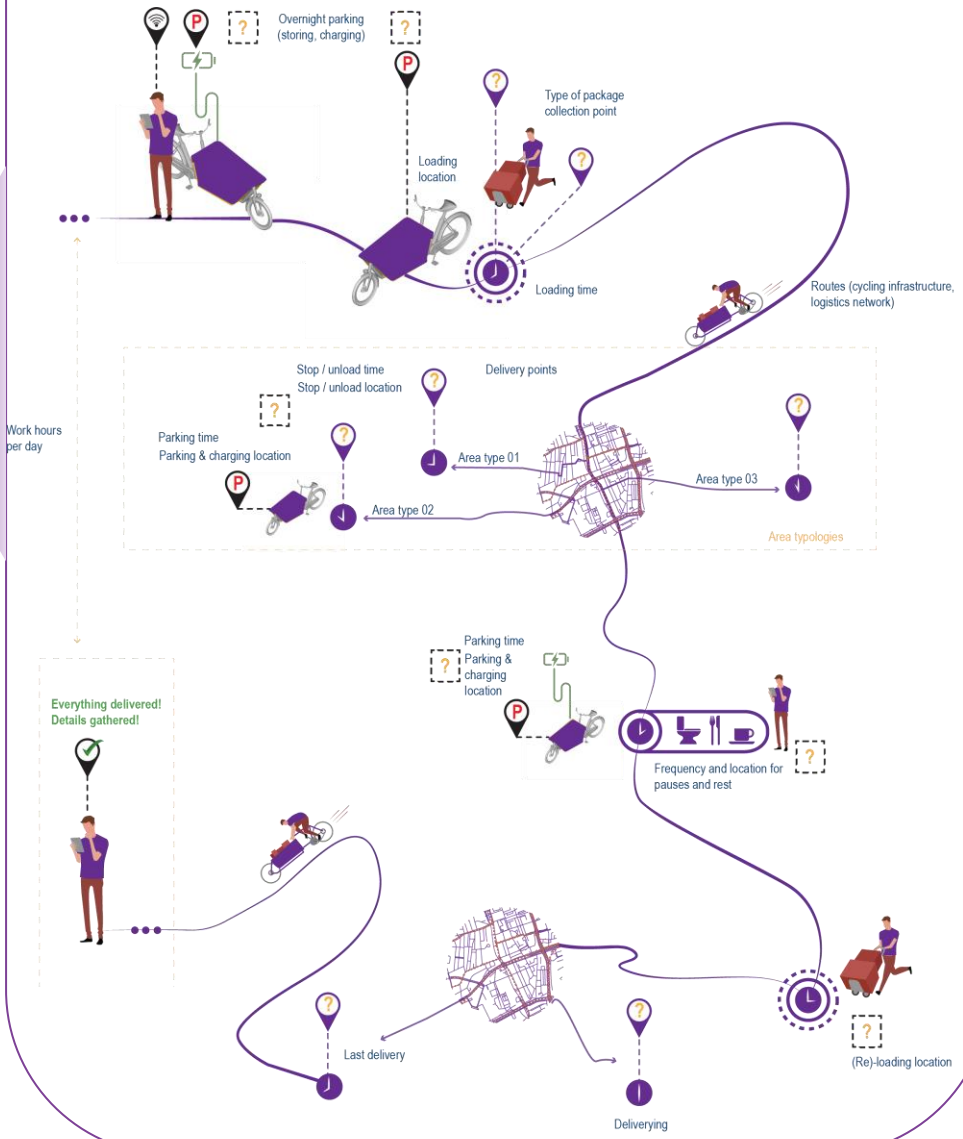
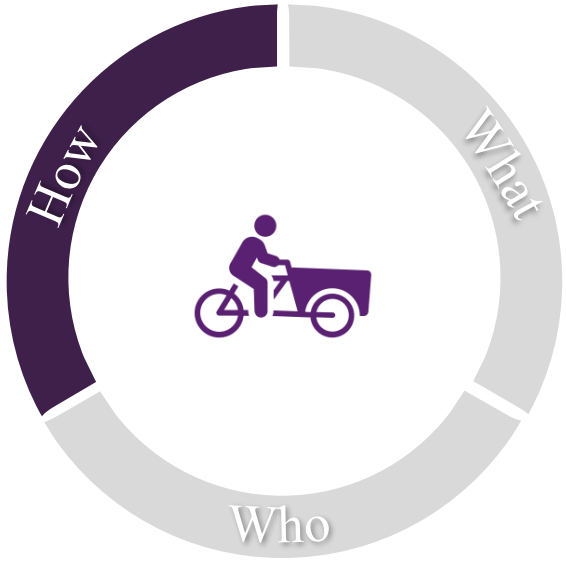
For each step of the journey of the different types of user, identifying the **barriers** they encounter and how much these hinder their efficiency will shed light into the challenges that must be solved, as well as help prioritizing investments. Often these barriers can be classified into *physical or behavioral*.

- Physical: a lack of adequate infrastructure for cargo bikes and their different dimensions, such as wide bicycle paths and parking spots, as well as a lack of access to specific areas.
- Behavioral: current van users of logistics can be reluctant to change their operations due to unclarity on risks or costs. The market and end-users of the products or services delivered can also pose barriers to this mode by not making space for them. Governments can create barriers by not including cargo bike needs in urban planning strategies.

For each step in their journey, there are requirements that must be met to make this mode attractive, for instance a charging station or a secured parking location. If not met, these requirements can turn into barriers.





This dimension seeks to highlight the key starting points to support (potential) users in successfully shifting or to cargo bikes for their business and making it work with the city.

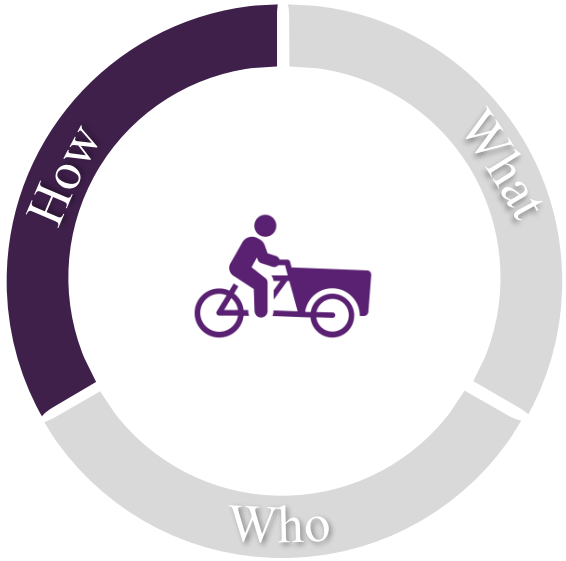
Stakeholders

Public institutions play a central role in ensuring safety while still giving this mode a competitive advantage. Logistic movement planning for cargo bikes intersects with various public authorities' levels and departments, especially in public space management and economic services. Some examples are:

- **Planning** on a country, state and municipal level. From mobility & logistics movement and infrastructure to urban development and housing strategies
- **Economic** for support in infrastructure investments and incentive schemes (e.g. subsidies)
- **Regulatory** for enforcements, exemptions and education

Citizens can also influence decisions on a direct and indirect role. From their consumer role, when given the option, citizens can choose cargo bike as a preferred mode for their deliveries. Meanwhile, from a resident's role, citizens can actively engage in discussions and decision-making processes, as well as being flexible to trying out different alternatives and changing their own behaviors in their usage of the space.

Private organizations here include both the vendor and courier side. In several cities, developments on cargo bike are initiated from businesses, especially the large online shopping vendors or parcel delivery service providers. Vendors can start by choosing for couriers that deliver with cargo bikes and in collaborating with them to pursue innovative solutions and planning of their storage facilities. Couriers can invest in their cargo bike fleet and in innovate in their movement planning schemes.



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Educational Measures

Lack of information and training is a barrier identified by multiple studies in several geographies. Education must be provided in several levels to align ideas and avoid ambiguities. This can come in the form of private consultations, but also pilot programs. Some examples of target educational measures for different stakeholders are:

Who	Target of measure
(Potential) Users	Support the shift through having information about the applicability of the solution to their operations, cost-benefits of implementation and have a trial period experience with training for safety.
Markets	Understand how they can support businesses that operate with cargo bikes through for instance strategies on where to place their storage spaces, or how to adjust their business processes.
Governments	Understand how to implement effective policies, connect with stakeholders and set the example.
Citizens	Promote a culture of cycling and inform citizens about the impacts of spatial changes planned (e.g. removing parking spots, increase in traffic safety).

Subsidies

Providing businesses with subsidies for purchasing a (E-) cargo bike can be a key barrier breaker for many small / medium size businesses to change their business needs. Most of these businesses already have a van or other mode of transport which they use, so the decision to shift involves more factors.

Besides subsidies in the purchasing of the material, other forms of economic support could be:

- Incentives schemes with tax benefits
- Coverage of insurances (e.g. vehicle insurance, fire insurance in case of battery)
- Investment in technological innovations (e.g. smart curb management systems)

The Framework

Get inspired: 3 examples

What

New York City Department of Transport has not only allowed for cargo bikes to load and unload wherever commercial vehicles can but has also created designated cargo bike corrals, which was proven to be a powerful incentive for companies during a pilot carried out in 2019 / 2021.

commercial-cargo-bicycle-pilot-evaluation-report.pdf (nyc.gov)

Who

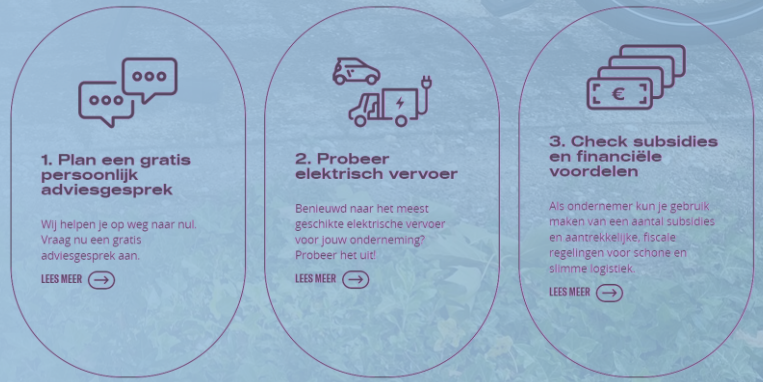
Through the cAIRgo bike project, Brussels has accompanied professionals in their conversion to cargo bikes and learned valuable lessons regarding opportunities and challenges for different types of users. Highlights being:

- Need for provision of ***secured parking place***
- ***Financial support*** is key for micro, small and medium business
- Access to ***tailor-made advice and training*** for citizens and professionals

https://www.cairgobike.brussels/fr

How

The municipality of Rotterdam created the Logistiek010, a network to engage with their stakeholders to assist them in the shift to the zero emission zones through giving consultations for personalized advice and information about subsidies and financial examples.



https://logistiek010.nl/

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Introduction

- About the Toolbox

Urban logistics with cargobikes

- Benefits
- Current (+ / -)
- Potential
- Roles & responsibilities
- Cargo bike: now

The Framework

- Framework elements for cargo bike' spaces
- Get inspired

The Toolbox

- Steps & phases to create cargo bike friendly environments

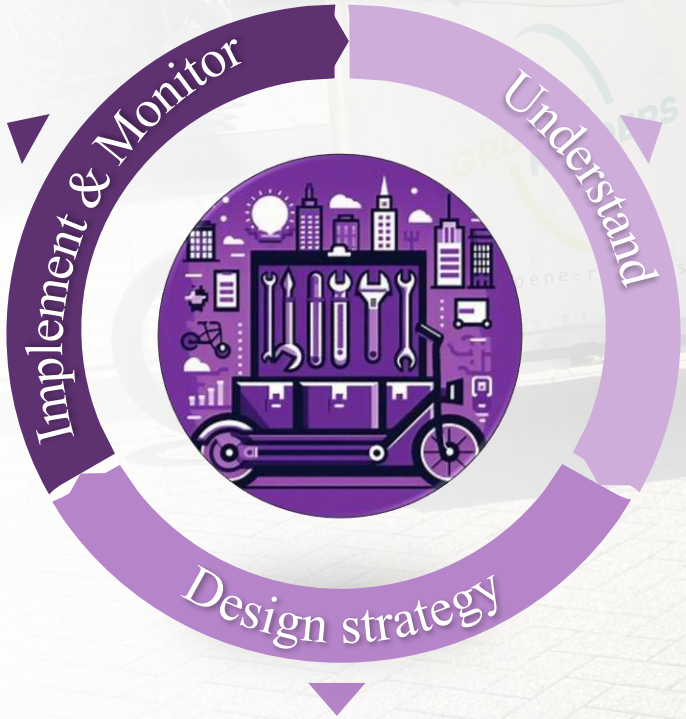
The Toolbox

Steps & phases to create cargo bike friendly environments

The toolbox provides a structure for municipalities and practitioners to understand the current state of their study area and identify how to achieve their goals for making their urban spaces more cargo-bike-friendly. Three main elements and their key goals are identified and shown in the figure.

The circular structure of the toolbox indicates its nature to be an **iterative process**. Due the innovative nature of this logistics mode and the state in which each country is at, the step to monitor the implementation of the design strategies provides key inputs to the next “understand” iteration, to go back to the design table and design new strategies based on reevaluating old ones in the road map.

Measure the impact of strategies through monitoring KPI’s and staying connected with stakeholders



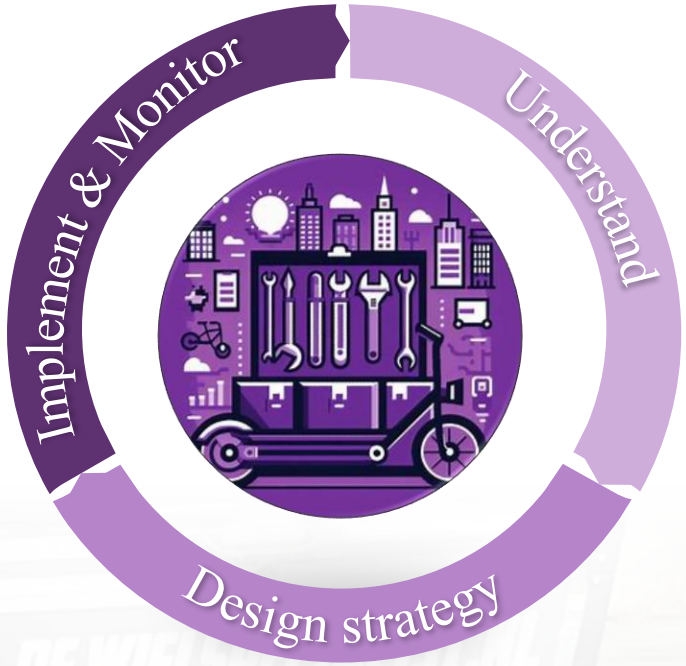
Understand the environment in relation to cargo bike friendliness, get to know the (potential) users and stakeholders and identify current and upcoming relevant policies

Design strategies for adapting policies, adjusting infrastructure and creating behavior change

The Toolbox

How to use it

For each step of the toolbox, **targets** are set for the policy, spatial, logistics and market spheres. The targets describe general but effective goals to guide the process of creating cargo bike friendly environments. The generalization of the targets is necessary given the different stages of development that each city is at and their individual contexts.



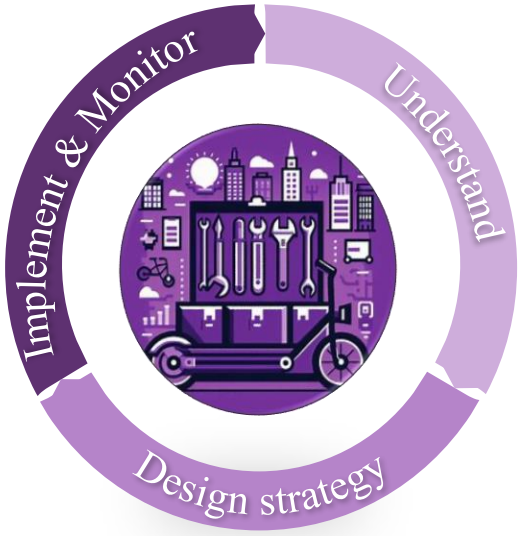
Actionable Strategies

To achieve these targets and provide flexibility to users of the toolbox, several options of actionable strategies are given per target.

Tools

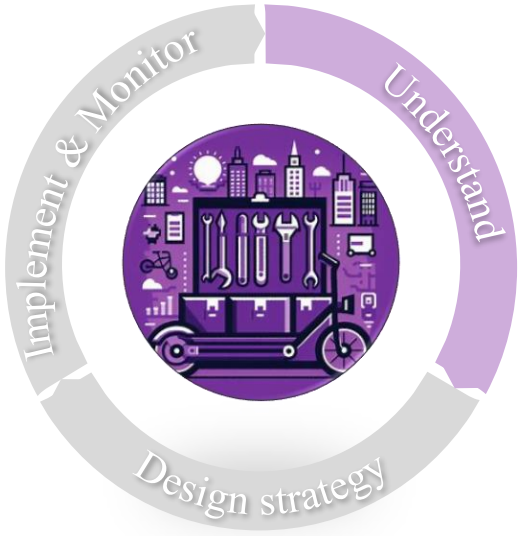
Specific tools are described to assist in the realization of the targets. Some tools are provided with templates and examples.

Overview Targets



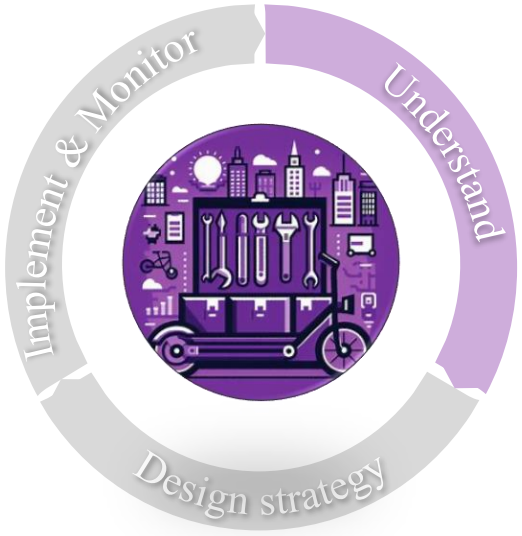
	Policy	Spatial	Logistics	Market
Understand current situation	**Review existing traffic and transportation policies** to integrate cargo bikes (e.g., zoning regulations, traffic management).	**Identify key areas for cargo bike infrastructure and key infrastructure elements** (e.g., city centers, residential areas, industrial zones).	**Establish partnerships** with logistics companies for last-mile deliveries using cargo bikes.	**Conduct market research** to understand demand for cargo bike services and potential user demographics and their specific challenges.
Design strategy	**Develop and implement policies** supporting cargo bikes businesses.	**Design urban spaces and remove barriers** to create more cargo bike friendly environments.	**Invest in fleet management systems and technology** for efficient deployment and tracking of cargo bikes.	**Collaborate with local businesses** to educate them and promote cargo bike usage.
Implement and monitor	**Deploy incentives** such as tax breaks or subsidies for businesses and individuals adopting cargo bike transportation.	**Develop interconnected network** of cargo bike routes to facilitate seamless movement across the city.	**Provide training and support** for cargobike operators and maintenance personnel.	**Launch marketing campaigns** to raise awareness about the benefits of cargo bike usage and encourage behaviour change.

Actionable Strategies



	Policy	Spatial	Logistics	Market
Understand current situation	**Review existing traffic and transportation policies** to integrate cargo bikes (e.g., zoning regulations, traffic management).	**Identify key areas for cargo bike infrastructure and key infrastructure elements** (e.g., city centers, residential areas, industrial zones).	**Establish partnerships** with logistics companies for last-mile deliveries using cargo bikes.	**Conduct market research** to understand demand for cargo bike services and potential user demographics and their specific challenges.
	➢ Conduct a comprehensive review of current policies to identify gaps or areas where cargo bike considerations could be integrated. ➢ Involve public consultations and collaboration with experts. ➢ Study success stories of other locations.	➢ Analyze traffic flow data, population density, and commercial activity to determine where cargo bike infrastructure would be most effective. ➢ Conduct surveys and consult with urban / transport planners and residents	➢ Promote engagement between municipalities and logistics companies to explore opportunities for incorporating cargo bikes into their delivery operations ➢ Explore ideas for pilot projects, cost-sharing agreements, and public-private partnerships.	➢ Commission surveys and focus groups to understand consumer preferences, behaviors, and attitudes towards cargo bike / bike usage. ➢ Explore marketing and educational strategies and outreach efforts.

Tools



	Policy	Spatial	Logistics	Market
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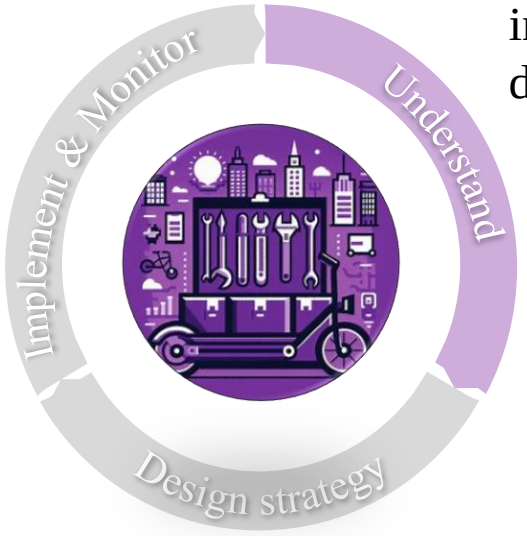
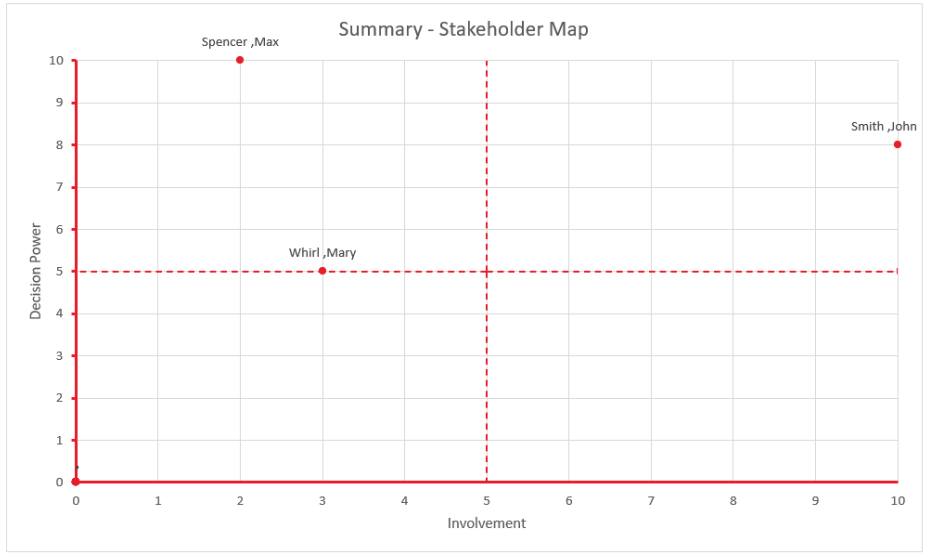
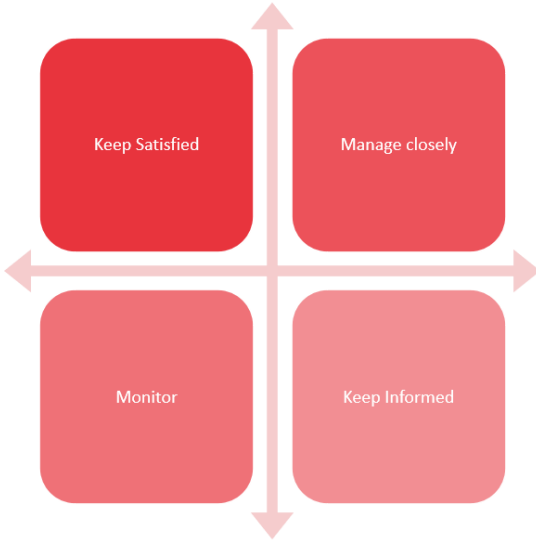
	Tool 1. Stakeholder Map: Policy	Tool 2. Day in the Life of a Cargo Biker Tool 3. Geographic Information Systems (GIS)	Tool 4. Engagement Meetings Goals & Agenda	Tool 5. Stakeholder Map: Market

Tool 1. Stakeholder Map: Policy

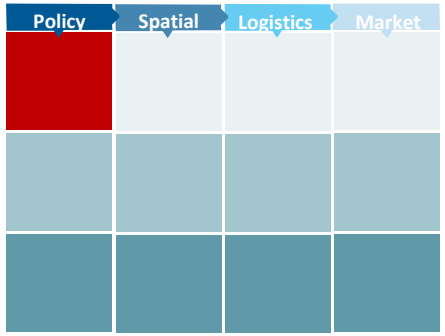


Mapping the stakeholders aims at involving citizens, users, local businesses and interest groups in the planning process to understand needs, concerns and preferences and keeping them up to date with information.

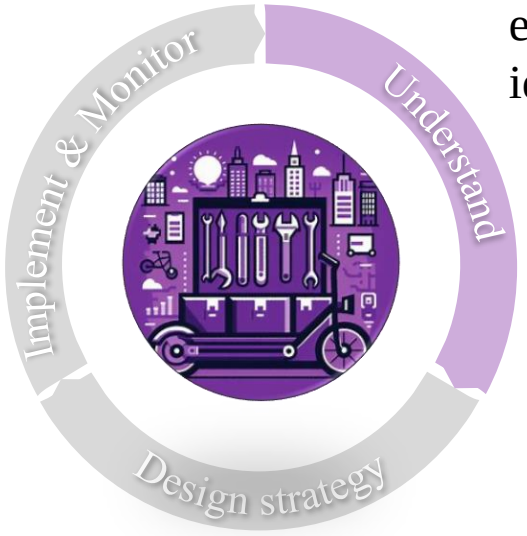




Access tool | Tool 1. Stakeholders Map: Policy



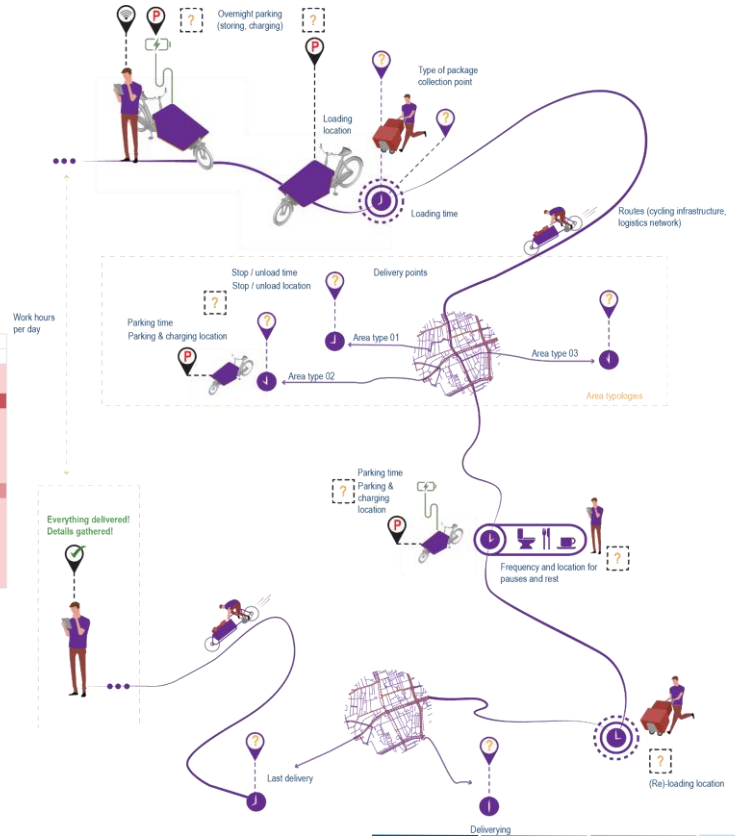
Tool 2. Day in the Life of a Cargo Biker

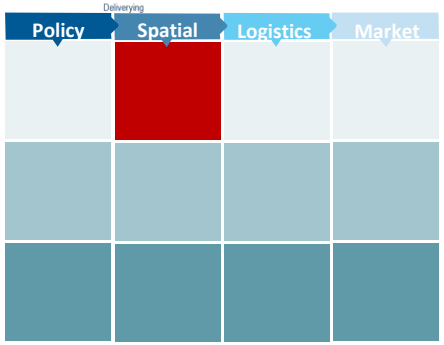


This tool focuses on analyzing routes to understand how each cargo bike user makes use of the urban space and identify opportunities for improving their experience.

Opportunities heat map for the different steps in the journey

Opportunity	Storing (overnight)	Charging (overnight)	Loading	Riding	Unloading	(Re-)Loading	Parking	Charging	Resting
Opportunity 1									
Opportunity 2									
Opportunity 3									
Opportunity 4									
Opportunity 5									
Opportunity 6									
Opportunity 7									
Opportunity 8									
Opportunity 9									
Opportunity 10									
Opportunity 11									
Opportunity 12									
Opportunity 13									
Opportunity 14									
Opportunity 15									

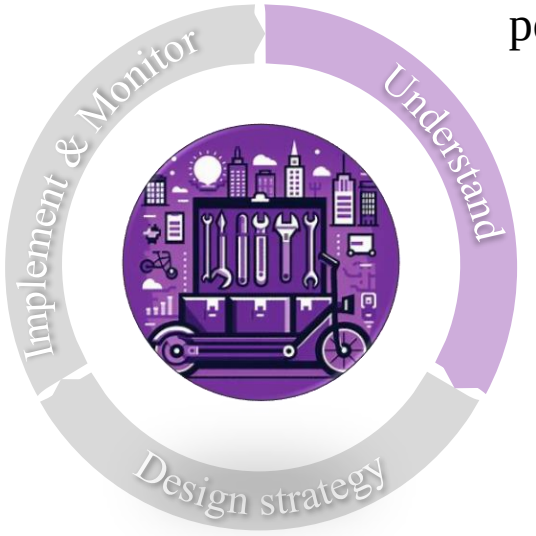


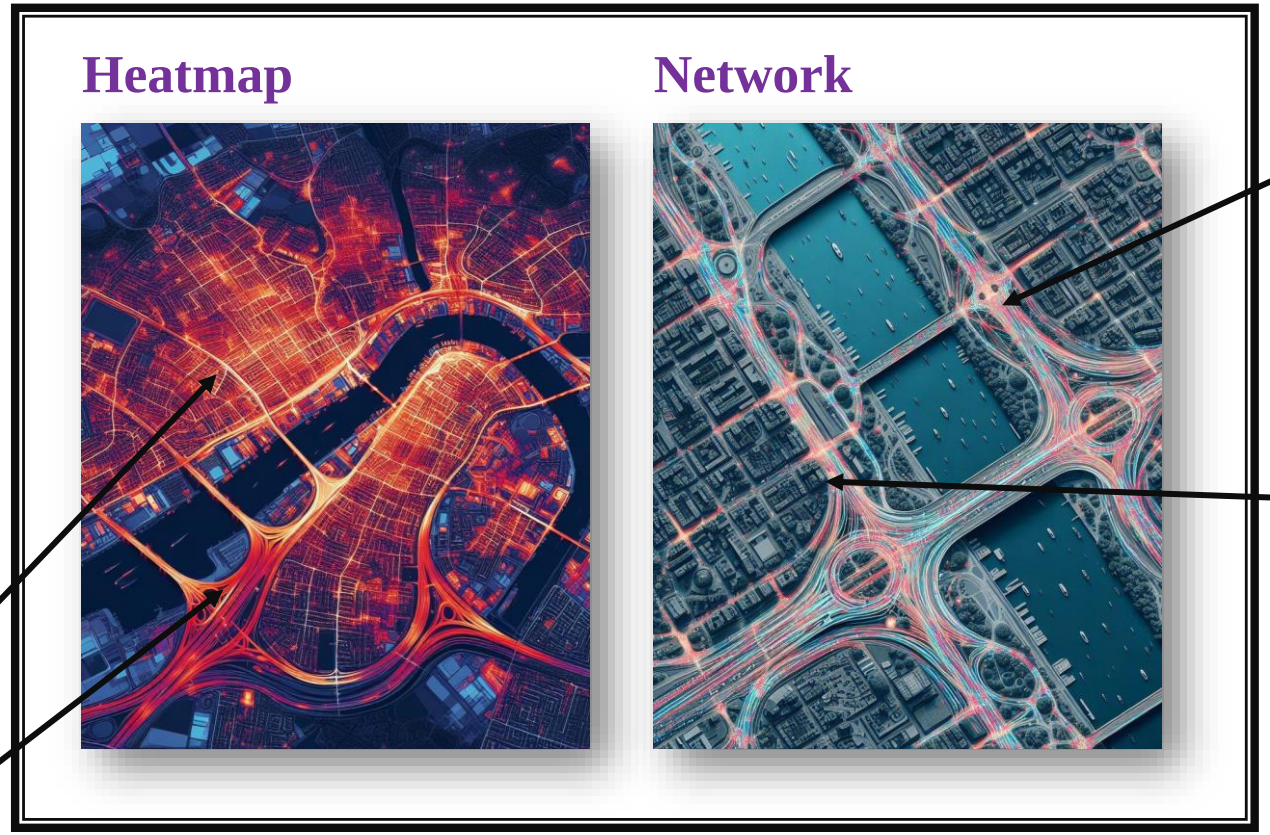


Access tool | Tool 2. Day in the Life of a Cargo Biker

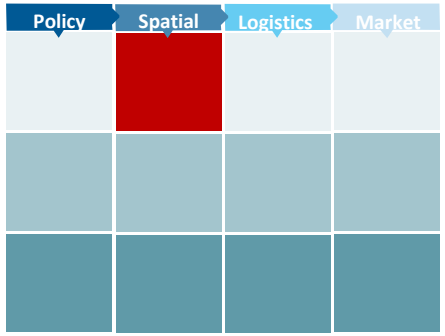
Tool 3. Geographic Information Systems (GIS)

GIS tools allow to map current traffic flows, infrastructure and available space, as well as potential locations for cargo bike parking.

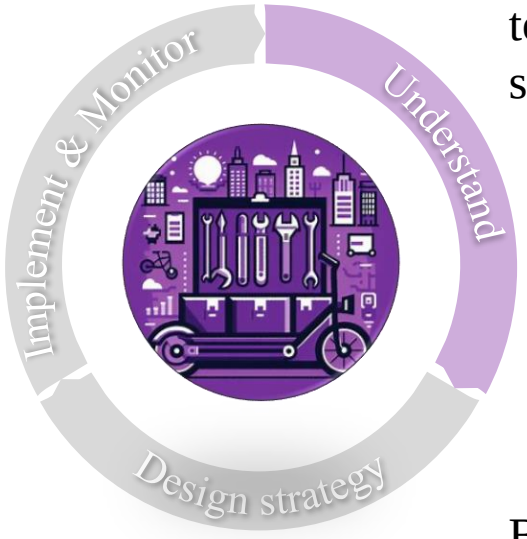




ArcGIS



Tool 4. Engagement Meetings Goals & Agenda



The engagement meetings are key to keeping communicating with stakeholders.

From a government perspective, it is ideal to stay in the loop of developments and hear from the entrepreneurs what kind of innovative solutions they see in the market.

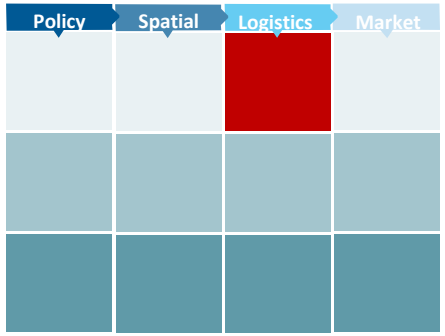
Besides, informing interested parties on the plans for development will assist them in anticipate and predict the impact in their business, giving them time to adjust their operations if / when necessary and giving them advice and support.

Monthly Logistics Team Meeting

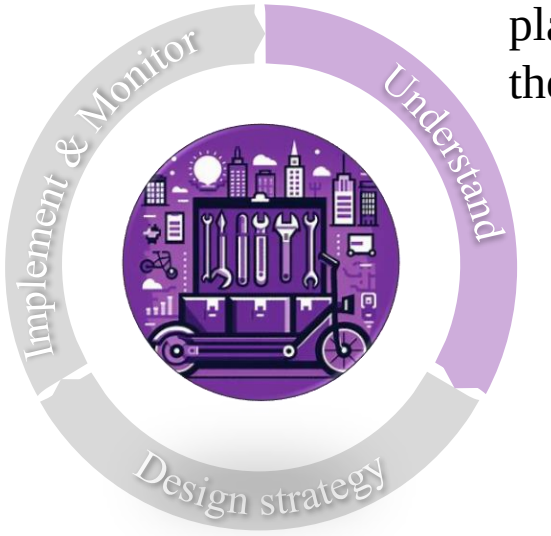
Agenda Date: [Insert Date]
Time: [Insert Time]
Location: [Insert Location or Virtual Meeting Link]

1. Welcome and Introductions (5 minutes)
    a) Brief welcome to all attendees
    b) Introduce any new members or guests.
2. Updates from Logistics Departments (20 minutes)
3. Announcements and Reminders (5 minutes)
    a) Remind members of upcoming events or deadlines.
    b) Any important announcements related to logistics or city operations.
4. Collaboration Opportunities (10 minutes)
    a) Identify potential collaboration opportunities with other city departments or external organizations.
    b) Discuss ways to enhance efficiency and effectiveness through partnerships.
5. Any Other Business (5 minutes)
    a) Provide an opportunity for members to raise any additional topics not covered in the agenda.
    b) Quick discussion and resolution if possible.
6. Next Meeting Details (5 minutes)

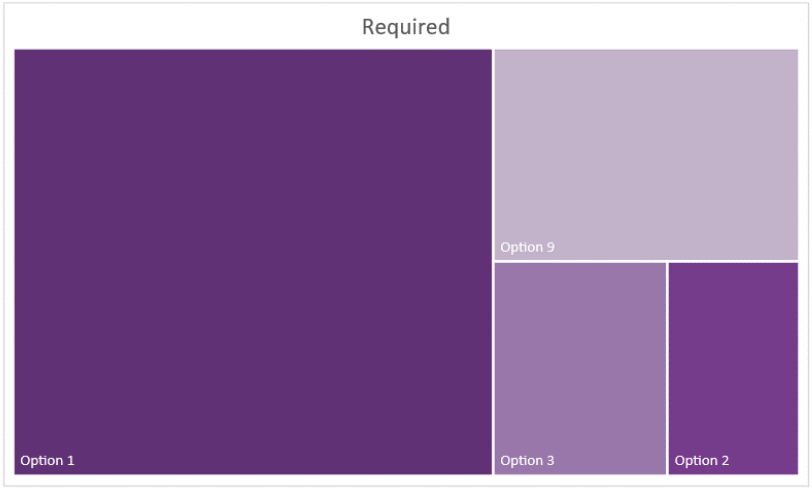
Example of monthly logistics Team Meeting agenda

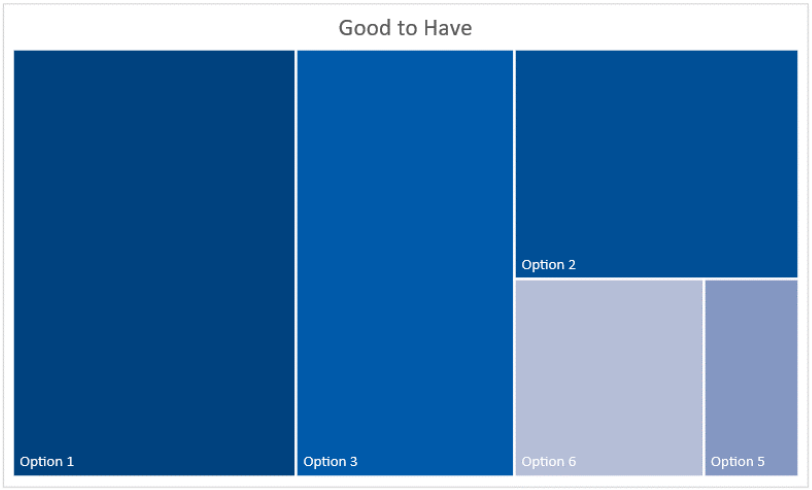


Tool 5. Stakeholder Map: Market

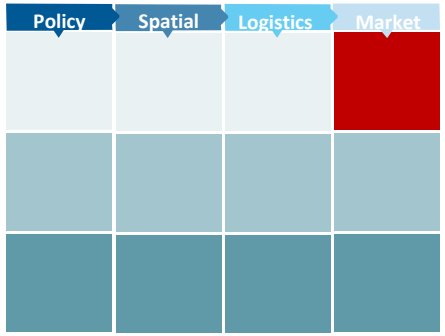


The goal of this tool is to promote engagement with market parties to keep them updated with plans, as well as getting their input regarding their needs to make more use of cargo bikes for their business operations.

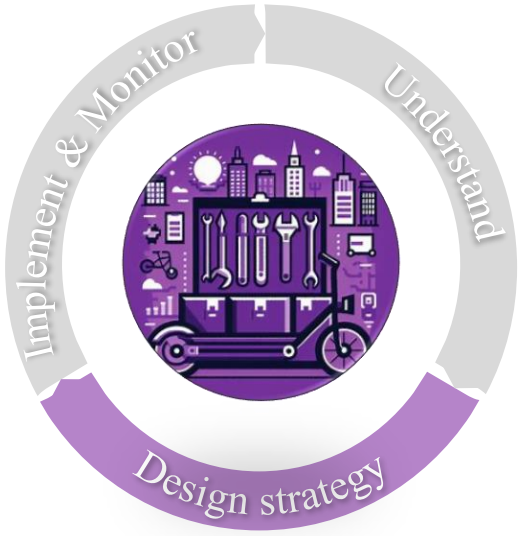




Access tool | Tool 5. Stakeholders Map: Market

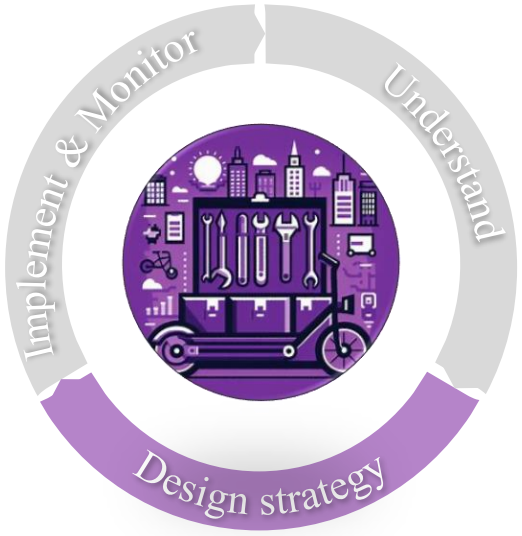


Actionable Strategies



Design strategy	Policy	Spatial	Logistics	Market
	Develop and implement policies supporting cargo bikes businesses.	**Design urban spaces and remove barriers** to create more cargo bike friendly environments.	**Invest in fleet management systems and technology** for efficient deployment and tracking of cargo bikes.	**Collaborate with local businesses** to educate them and promote cargo bike usage.
	➢ Define where the cargo bike stand as a mode of logistics to avoid ambiguities. ➢ Form a committee or task force comprising stakeholders from government, transportation, and environmental sectors to create / update policies.	➢ Integrate cargo bike lanes, make parking facilities accessible, and convert storage areas into new development projects and urban renewal initiatives. ➢ Densify areas and / or multiply consolidation hubs.	➢ Create business case for private and public investments. ➢ Invest in GPS tracking systems, fleet management software, and maintenance facilities to support efficient deployment and maintenance of cargo bikes.	➢ Engage with local businesses by offering incentives, providing marketing support, and facilitating partnerships.

Tools



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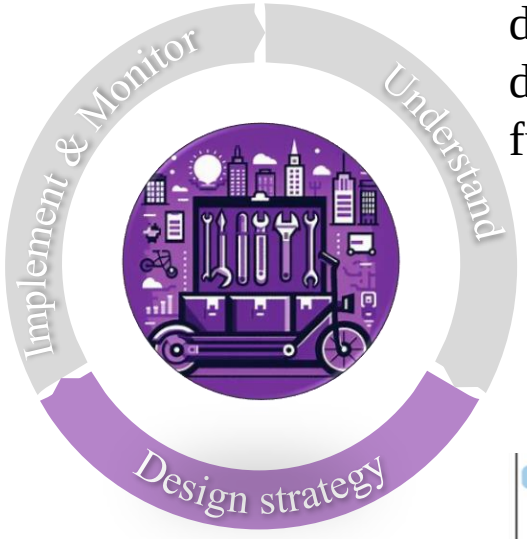
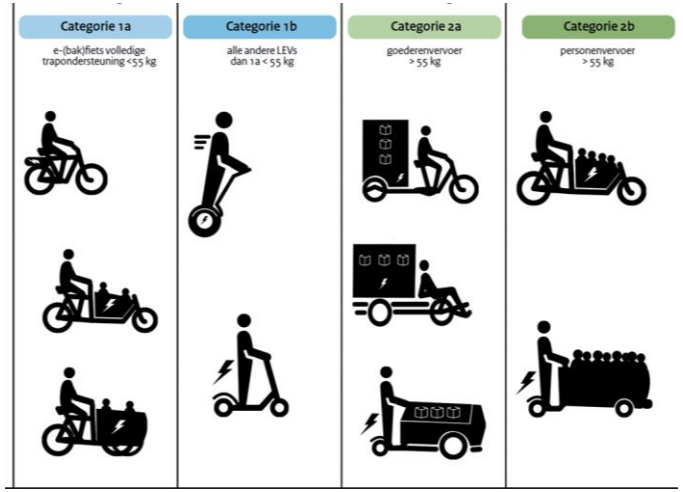
	Tool 6. Cargo Bike Family Design Tool 7. Cargo Bike Policy Checklist Tool 8. Business case	Tool 9. Route Advice and Optimization Tool 10. Zoning Plans Updates Tool 11. Spatial Models	Tool 12. Dashboard Cargo Bike Usage	Tool 13. Road Map: Pilot Projects & Goals

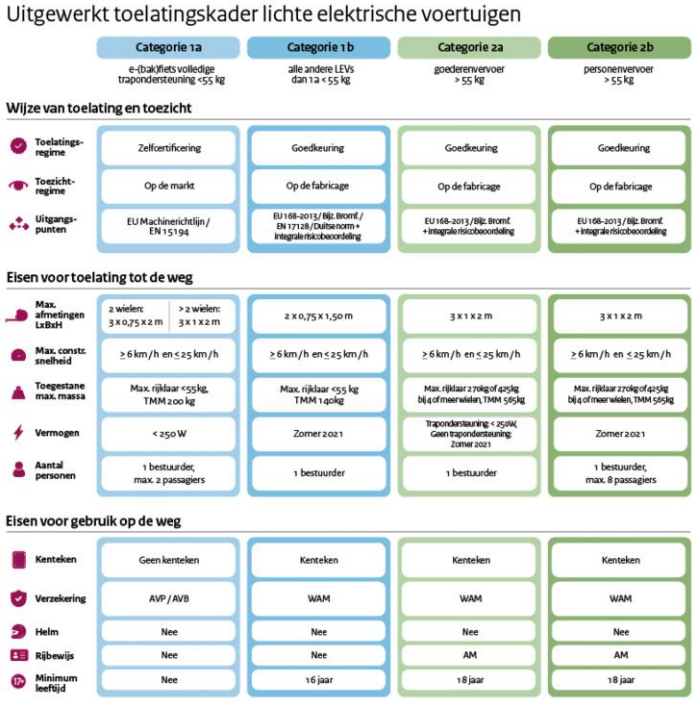
Tool 6. Cargo Bike Family Design



Based on the understanding of the market and needs, as well as the plans for infrastructure developments, the cargo bike family can be designed and their specific rules and regulations defined. The goal of this step to avoid ambiguities, assist urban designers in designing functional, safe and aesthetically attractive spaces which meets the needs of users of that space, as well as provide input to policy development and users in the business plans.

Example from the Dutch government's light-electric vehicle admission framework.

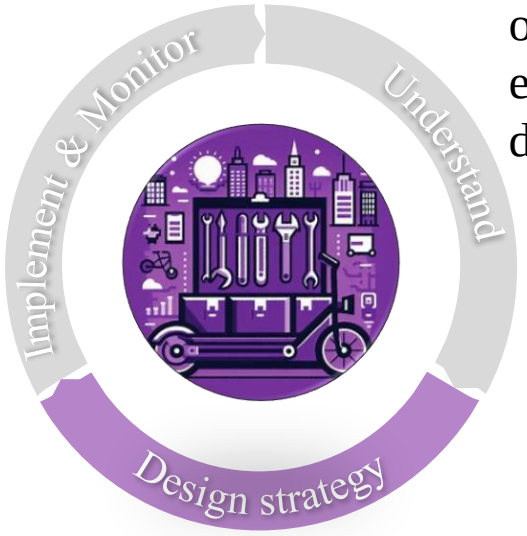




Source: Overheid.nl

Policy | Spatial | Logistics | Market

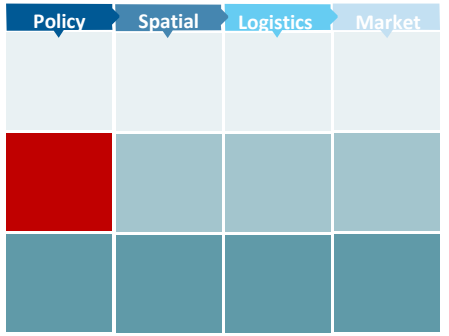
Tool 7. Cargo Bike Policy Checklist



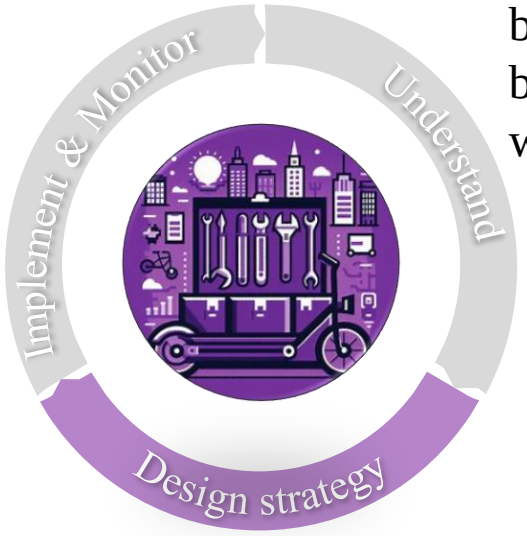
This tool focuses creating an overview of old and new regulations and policies regarding the use of cargo bikes, to have complete overview and avoid ambiguity for users. The goal is also to ensure policies are aligned and reviewed based on new developments. It may serve as a policy database.

			Opportunities	
Question	**Options**	**Status**	**Description**	**Actions**
		Select from list		*If status is "non-conformance" what needs updating*
Have the following guidelines beeing checked?	A1	Not applicable		
	A2	Confirming		
	A3	Non-conformance		
	A4	Not applicable		
	A5	Confirming		
	A6	Opportunity for improvement		
	A7	Confirming		
	A8	Non-conformance		
	A9	Opportunity for improvement		
	A10	Confirming		

Access tool | Tool 7. Cargo Bike Policy Checklist



Tool 8. Business Case



Developing a business case can explain the potential value of a project and illustrate how it will bring an impact in the specific area it focuses. Elements of such business case can include cost-benefit analyses for infrastructure or incentives programs, weighing the financial investments with benefits like reduced traffic congestion and air pollution, but also allow for comparing alternatives and making more informed decisions about strategies.

Strategic Case

- Scope of the case
- Problems the work will solve
- Fit with global plans

Evaluation Criteria

- KPI's & stakeholders
- Preliminary / conceptual options

Strategic Alignment

- Cost-benefit analysis of preliminary options

Options Alignment

- Select preferred option

Costs

Is it affordable?

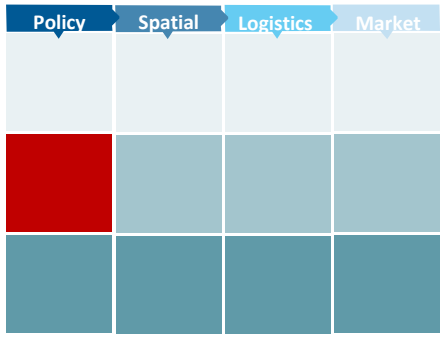
Risks

Is it feasible?

Implementation Plan

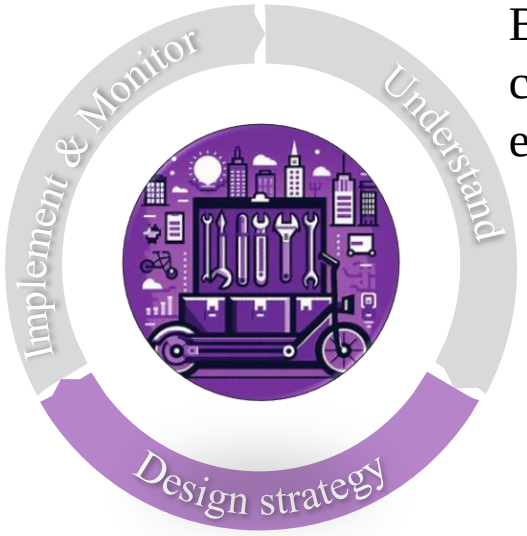
Management & Capacity

- Manage the investment, monitor success x failure
- Review and revisit



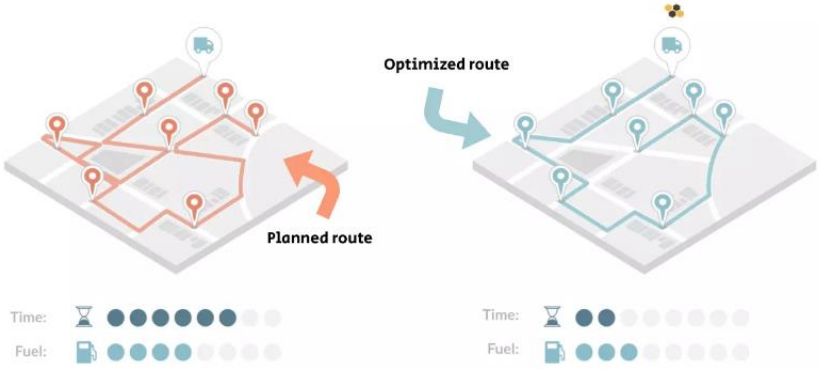
Source: SharedDynamics

Tool 9. Route Advice & Optimization



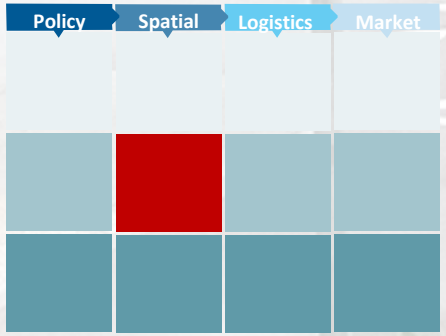
Route advice and optimization are integral to the efficiency and sustainability of cargo bike logistics. By minimizing travel time and distance, these tools enhance delivery efficiency, reduce operational costs, and maximize resource utilization. For trucks and vans, optimized routes contribute to environmental conservation by reducing fuel consumption and carbon emissions.

They also aid in traffic management and offer flexibility to adapt to changing conditions, ultimately ensuring smoother operations and promoting the adoption of eco-friendly transportation solutions in urban areas. By planning specific cargo bike routes the municipality can also focus efforts and investments while still incentivizing this mode.

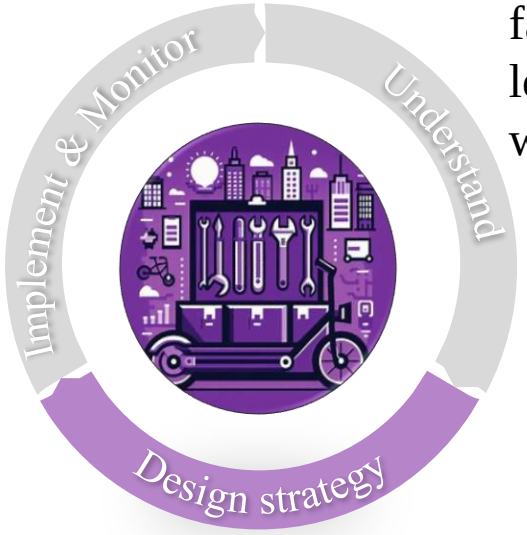


Source: Routific

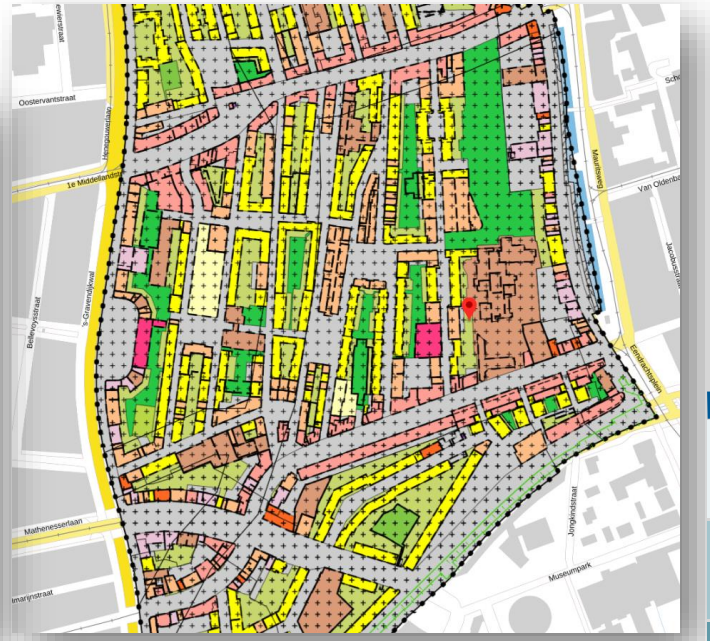
Example of a planned route and an optimized route, where there is need for less time and effort.



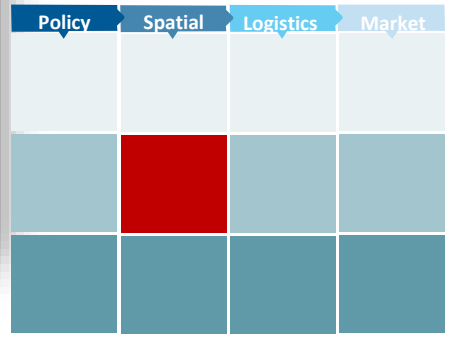
Tool 10. Zoning Plans Update



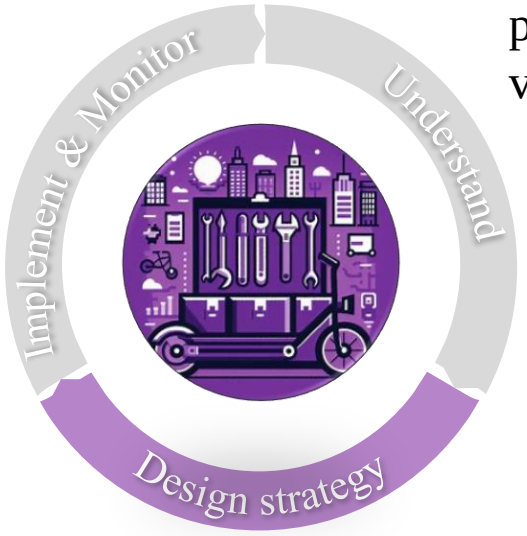
Drawing up or adjusting zoning plans to create space for cargo bike parking and charging facilities at strategic locations in the city, such as transport hubs or shopping areas. Furthermore, looking at optimal locations for consolidation / micro hubs which maintain cycling distances within 5 km radius of key business / commercial areas.



Source: Ruimtelijkeplannen.nl

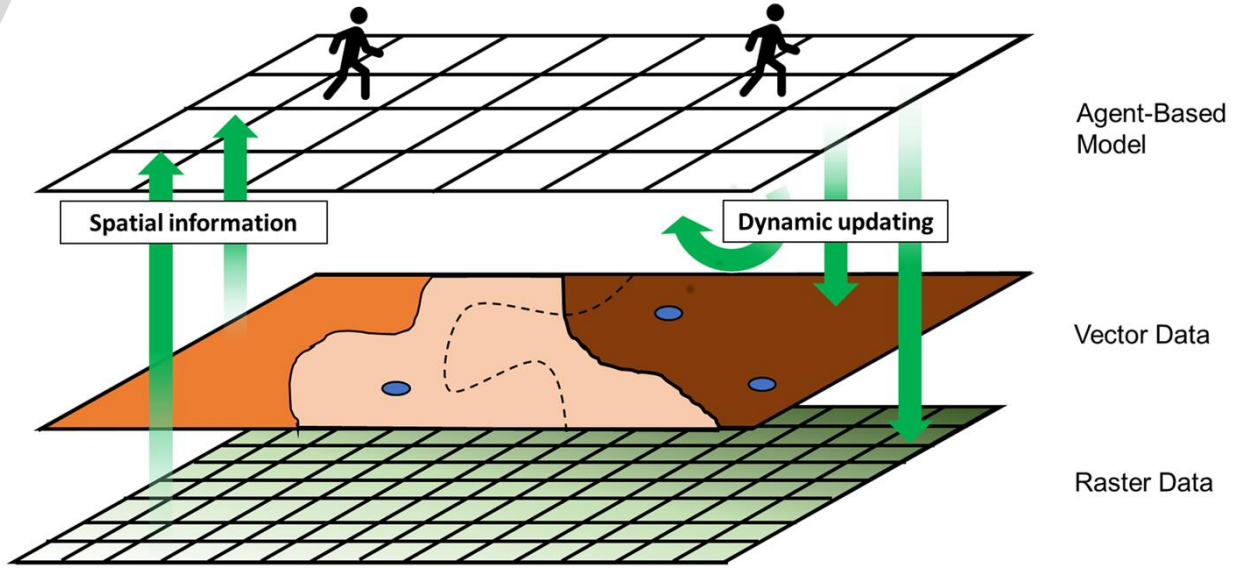


Tool 11. Spatial Models



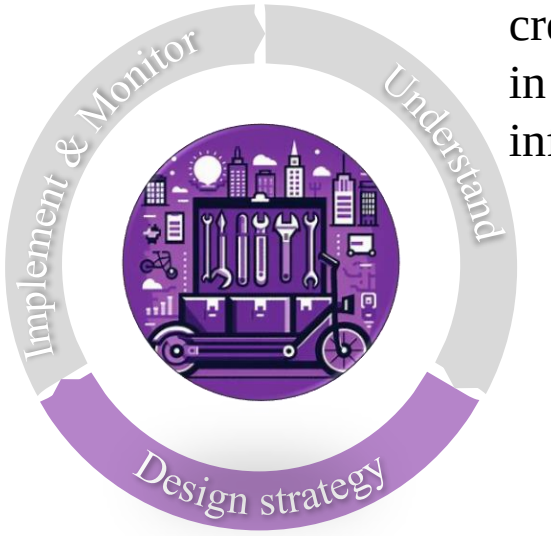
Spatial models such as GIS, traffic models, and ABM can help simulate the impact of cargo bike parking on traffic flows, pedestrian space and parking in different scenarios. GIS aids in data visualization and decision-making for optimal route planning and resource allocation.

Traffic models identify congestion patterns and inform infrastructure improvements, while ABM simulates individual behaviors to evaluate policy interventions. Together, these models enable informed decision-making, leading to improved mobility and environmental sustainability in cities.

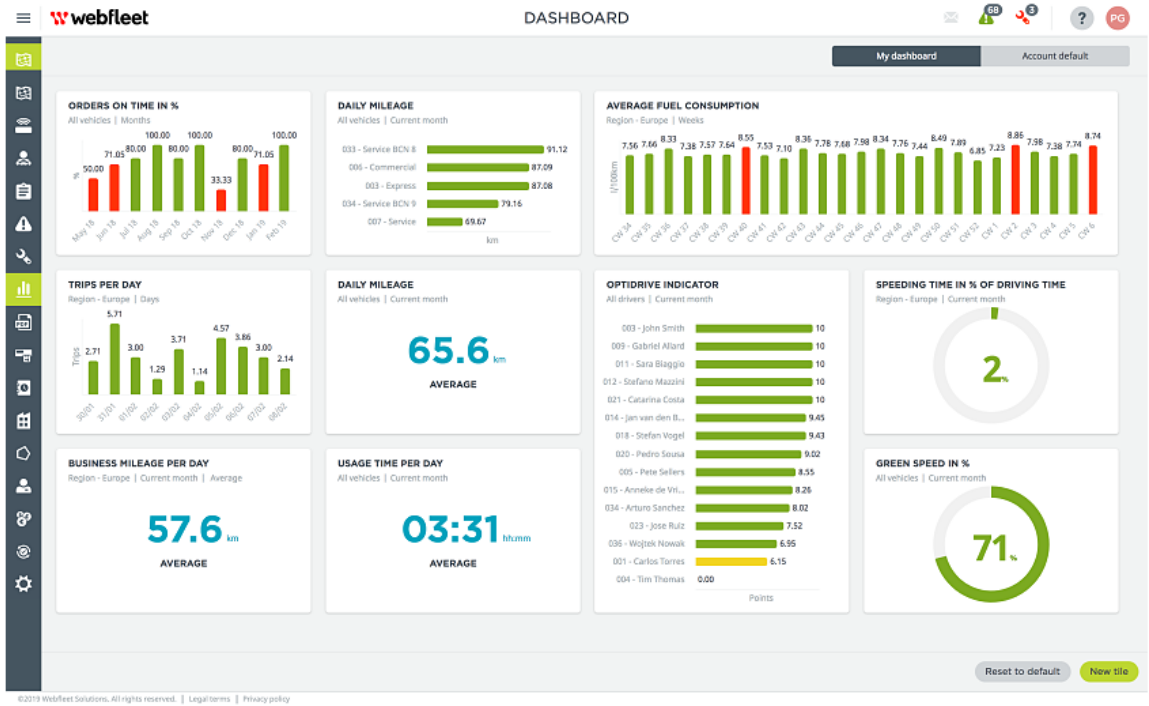


Source: Cambridge Core

Tool 12. Dashboard Cargo Bike Usage



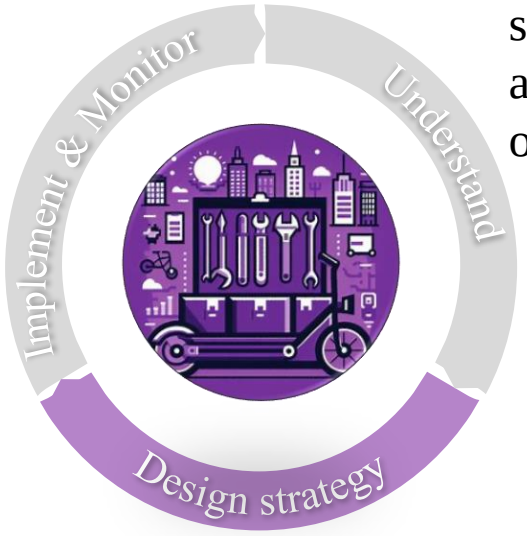
Monitoring specific KPI's regarding the entire fleet and in relation to cargo bikes can assist in creating the business case for investments. Measuring the effect on cargo bike fleet investments in rider efficiency, number of deliveries and CO2 emissions can provide organisations with key information for benchmarking and tracking progress towards their goals.



Source: Webfleet

Policy | Spatial | Logistics | Market

Tool 13. Road Map: Pilot Projects & Goals

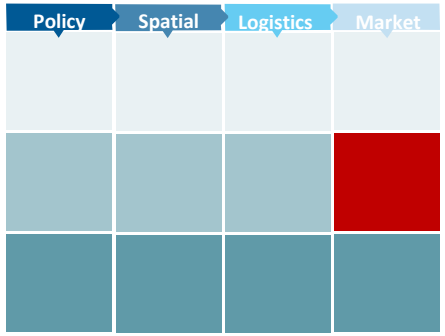


Efforts to promote cargo bikes for logistics have been most successful when the municipality and the businesses collaborate and help one another. This is often done with the implementation of a serios of pilot projects, which can include:

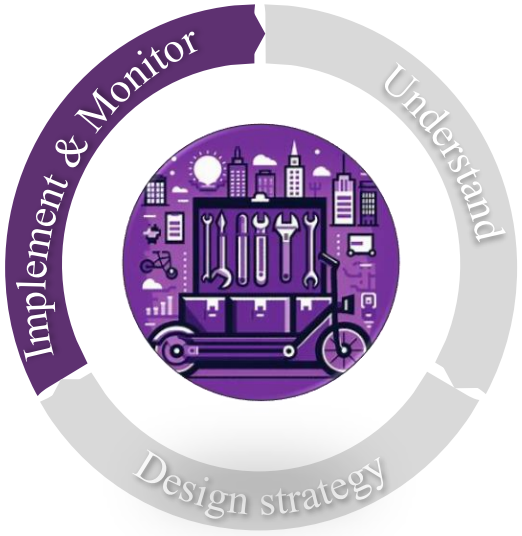
- Providing businesses with a cargo bike fleet that they can try out for a period
- Helping businesses design schemes for mobile hubs
- Creating or expanding shared cargo bike fleet and mobility hub locations

Access tool | Tool 13. Road Map: Pilot Projects & Goals

Source: How to build a step-by-step pilot project timeline

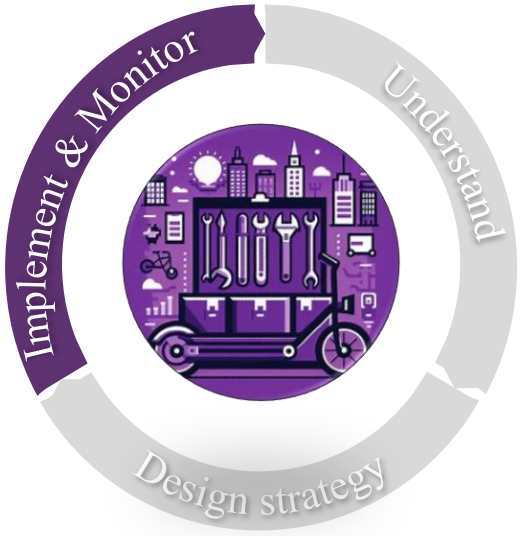


Actionable Strategies



	Policy	Spatial	Logistics	Market
Implement and monitor	**Deploy incentives** such as tax breaks or subsidies for businesses and individuals adopting cargo bike transportation.	**Develop interconnected network** of cargo bike routes to facilitate seamless movement across the city.	**Provide training and support** for cargobike operators and maintenance personnel.	**Launch marketing campaigns** to raise awareness about the benefits of cargo bike usage and encourage behaviour change.
	➢ Work with local lawmakers and economists to introduce tax incentives or subsidies for businesses and individuals.	➢ Give cargo bikes a network of safe routes connecting key areas such as commercial centers, residential areas, and public transportation hubs. ➢ Allow and prioritize cargo bikes when using load / unload zones	➢ Organize workshops, training sessions, and certification programs for cargo bike operators and maintenance personnel. ➢ Gain feedback from companies throughout pilot programs.	➢ Develop marketing materials, social media campaigns, and community events to raise awareness about the benefits of cargo bike usage. This may involve collaboration with local influencers, advocacy groups, and media outlets.

Tools



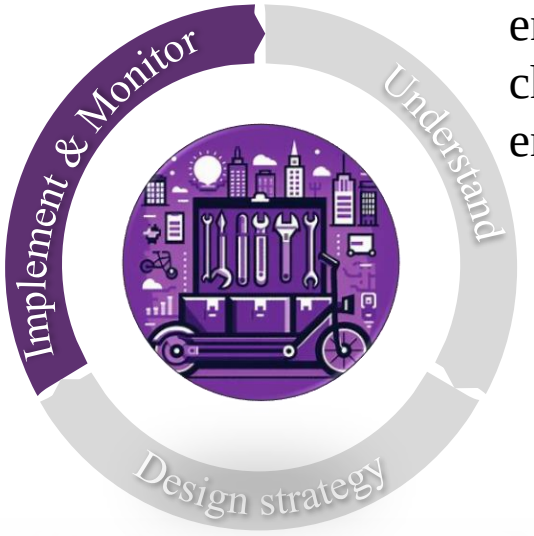
Implement and monitor

Policy	Spatial	Logistics	Market
Deploy incentives such as tax breaks or subsidies for businesses and individuals adopting cargo bike transportation.	**Develop interconnected network** of cargo bike routes to facilitate seamless movement across the city.	**Provide training and support** for cargobike operators and maintenance personnel.	**Launch marketing campaigns** to raise awareness about the benefits of cargo bike usage and encourage behaviour change.

Tool 14. Evaluation checklist

Environmental Assessment
Financial Assessment
Engagement Assessment
Safety Assessment

Tool 14. Evaluation Checklist



Carrying out an assessment of the possible environmental impacts of cargo bike sheds, such as changes in air quality, noise levels and CO2 emissions.

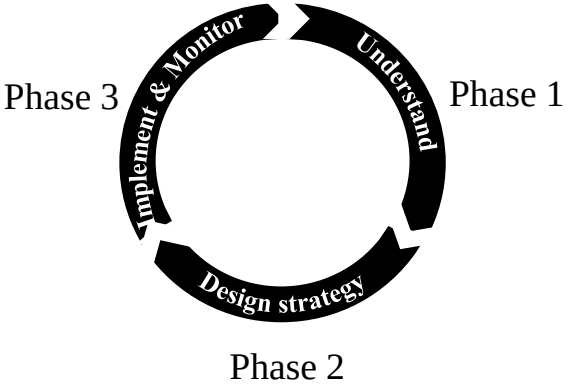
Carrying out cost-benefit analyzes to weigh the investment costs of cargo bike parking facilities against the expected benefits, such as reduced traffic congestion and air pollution.

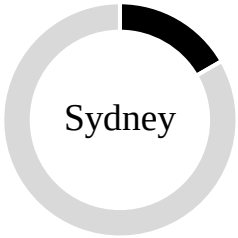
Toolbox & Case Studies

From the case studies of the different cities some of the key challenges these cities are facing with the implementation of cargo bikes are highlighted. Here we map some of the tools of the toolbox with these case studies, illustrating how the tool could support their goals. In the circle diagram is shown how far in the process the different cities are.

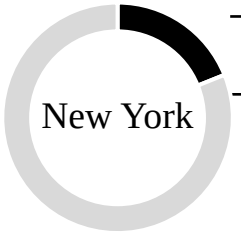
Tool	
Tool 9, 10, 11, 12, 13. Route Optimisation, Zoning Plans, Spatial Models, Dashboard Cargo Bike Usage, Road Map	Assist in creating design strategy based on the ambitions and starting points the city already has.

Tool	
Tool 4. Engagement Meetings: Goals & Agenda	Assist in avoiding negative responses from residents/stakeholders/potential users by not involving them in the process.





Tool	
Tool 7. Cargo Bike Policy Checklist	Assist in avoiding ambiguity in developing new policies and keeping record of relevant checks that must be done on existing guidelines.



Tool	
Tool 6. Cargo Bike Family Design	Assist in guiding users on their vehicle choices and urban designers on their design guidelines updates, to avoid costly changes later.

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Ruimte voor Cargobikes

This report takes into account the particular instructions and requirements of our client. It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

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References

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