# Future of delivery:

## Unleashing the potential of micromobility for the last mile

WSP FUTURE READY™

Uber

Demand for deliveries is surging.

Relying upon cars, vans and trucks for the last mile risks clogging up our local places and adding to emissions.

Transitioning to micromobility, like e-bikes and cargo bikes, in our city centres offers an alternative that is better for people, places and businesses.

This is a call for action to our city leaders to unleash the potential of micromobility for last mile deliveries.

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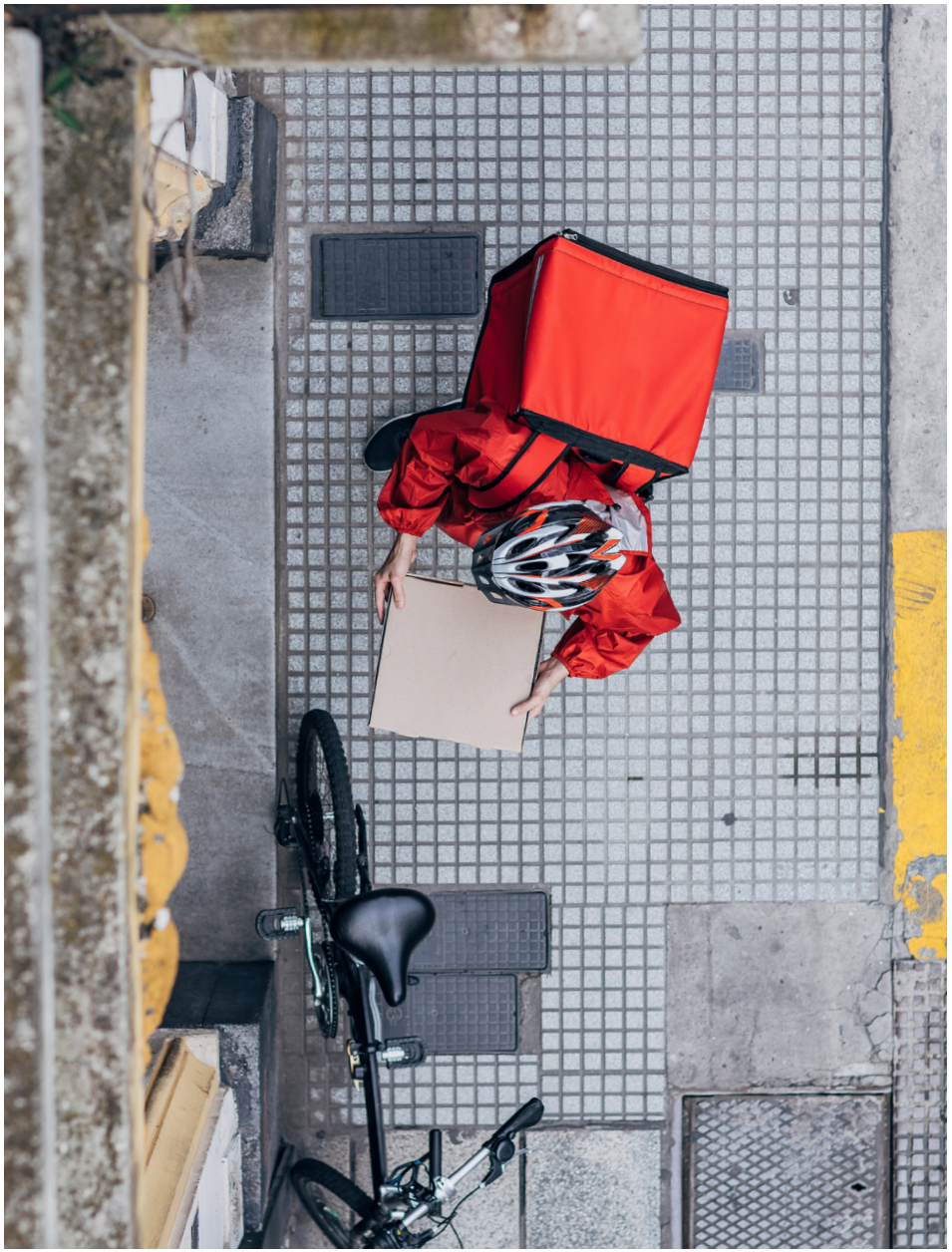

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# 1 — Increasing demand for deliveries

Over two billion people purchased goods or services online in 2020[1] - that's a quarter of the global population. Enabled by technology and new delivery players, people now consider fast and efficient deliveries a 'must have' service.[2]

In just a few years, delivery services have become a part of our day-to-day lives. Fast and efficient deliveries are an important contributor to economic growth as well as being an essential service connecting people to goods as demonstrated during lockdowns necessitated by the Covid-19 pandemic.

The trend of digitising the customer experience is here to stay.[3] Consumer expectations demand more and faster deliveries. According to a study by *McKinsey and Company*, about a quarter of consumers would pay a premium for same-day delivery.[4]

**Two billion people**
purchased good and services online in 2020.[1]


There are three key types of deliveries. Parcel deliveries are the largest market segment followed by grocery and food deliveries.

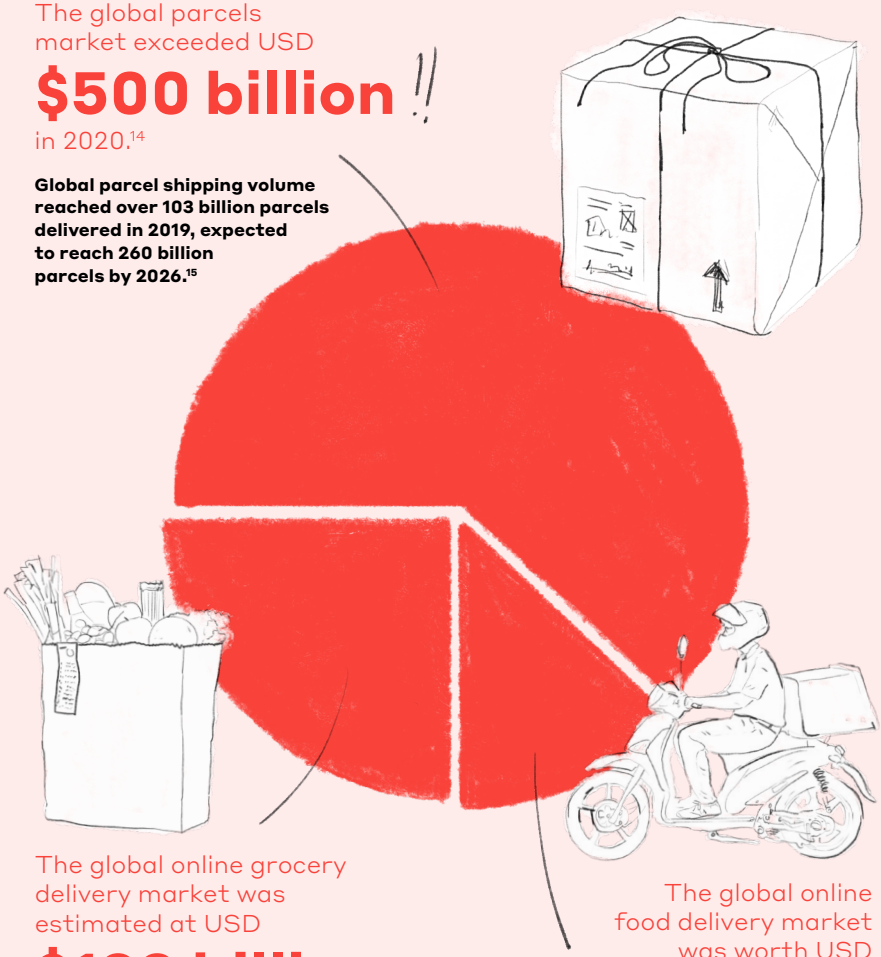
The global parcel delivery market, for everything from furniture to electronics, is on the rise. Key players such as *UPS*,[5] *DHL*,[6] *Amazon*[7] and *FedEx*[8] reported record growth in recent years. Home deliveries are increasing as more people work from home, while deliveries to businesses continue to be a significant contributor to the growing delivery task.

Grocery deliveries are a smaller market compared to parcel deliveries but are forecast for rapid growth. Venture capital firms have invested USD $14 billion in grocery delivery services globally since the beginning of the pandemic.[9] This equates to more funding in the first three months of 2021 compared to the whole of last year. According to analysis by *McKinsey Global Institute*, online grocery delivery is likely to be the most 'sticky' post Covid-19 delivery trend.[10]

Food deliveries have picked up momentum over the last five years and accelerated during Covid-19 pandemic induced lockdowns.[11] What started as delivering pizzas has expanded to include fast food and gourmet selections. The global food delivery app value is expected to triple over the next six years.[12] In the US alone, online food delivery market revenue increased by 204% between 2015 and 2020.[13]

The global parcels market exceeded USD
**$500 billion**
in 2020.[14]

**Global parcel shipping volume reached over 103 billion parcels delivered in 2019, expected to reach 260 billion parcels by 2026.[15]**



The global online grocery delivery market was estimated at USD
**$199 billion**
in 2020[16]

**...and is projected to reach USD $550.7 billion by 2027.[17]**

The global online food delivery market was worth USD
**$115 billion**
in 2020[18]

**...and expected to grow to USD $192 billion by 2025.[19]**

## 2 —
# The last mile delivery challenge

A legacy of designing cities for cars is that the majority of deliveries reach their final destination by cars, vans and trucks, even over short distances. This has resulted in competition for space and crowding on our roads and streets. We explored these issues in the *Future Ready Kerbside white paper*.[20]

Demand for deliveries of almost everything from ready-to-eat meals to home improvement items is on the rise.

**The resulting growing freight task, especially the 'last mile' that brings the service or product directly to customers, adds pressure to our cities and places resulting in pollution, congestion, and negative impacts on health and wellbeing.**

Given the current trajectory of increasing deliveries by 2030 there will be a 36% increase in the number of delivery vehicles in the top 100 global cities. Also, the resulting congestion will increase emissions from delivery traffic by nearly a third.[21]

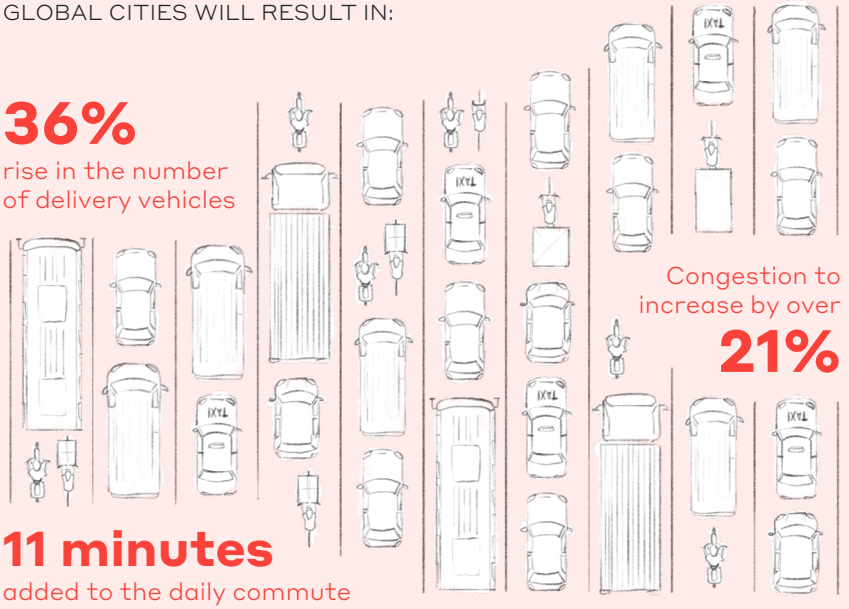
At a local level, more cars, vans and trucks means slower commutes, greater carbon emissions, noisy neighbourhoods, congested kerbsides and more traffic-related injuries.[22]

Our collective experience of living locally during the Covid-19 pandemic makes getting our local places working better for everyone even more pertinent. It is also an important opportunity to address climate impacts.

For freight operators, the last mile is the most complex in terms of cost and efficiency.

INCREASE IN DELIVERIES IN THE TOP 100 GLOBAL CITIES WILL RESULT IN:

**36%**
rise in the number of delivery vehicles

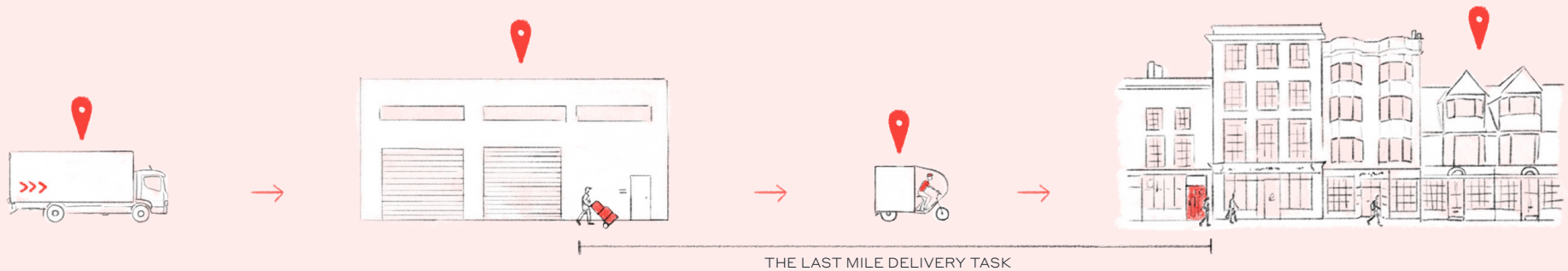


Congestion to increase by over **21%**

**11 minutes**
added to the daily commute

BY 2030.[23]

THE 'LAST MILE' BRINGS THE SERVICE OR PRODUCT TO ITS FINAL DESTINATION: THE CUSTOMER'S DOOR OR TO A COLLECTION POINT.

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The margins in logistics are slim, so with 53% of the overall cost of deliveries associated with the last mile it is a key focus for achieving greater efficiency.[24]

Congestion and competition for space on the kerbside contributes to delayed deliveries, costs associated with infringements and inability to meet customer expectation.

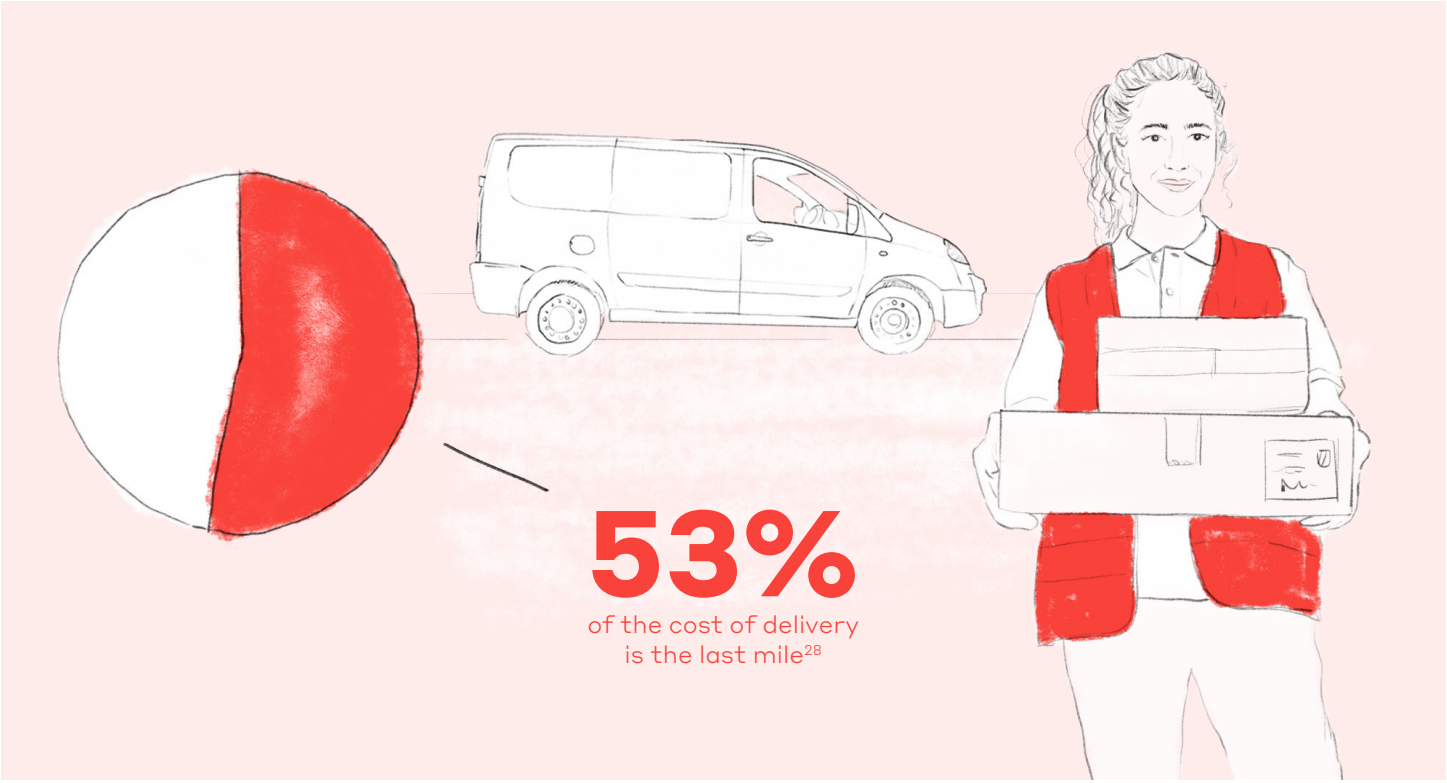
A greater variety and quantity of products being shipped directly to customers adds further complexity to the efficiency challenge.

In dense city centres where kerbside parking is at a premium, freight operators see fines as a cost of doing business and not a deterrent to changing behaviour.[25] In New York alone, major delivery companies *UPS* and *FedEx* incurred a combined total of USD $33 million in parking fines in 2019 for approximately 500,000 violations.[26]

Businesses and freight operators need to optimise their operations to meet increasing demands, especially in busy and dense city centres. Cities need to foster and guide innovation to enable a shift towards safer and greener ways to move freight and mitigate the negative impacts of the growing freight task.

Micromobility offers a compelling solution.

Delivering by micromobility is not the right option in all places.[27] Success will depend on the city's density, urban form, the operating environment, size and type of delivery, operator willingness and proximity to customers. But where these ingredients come together, the last mile freight task is ripe for disruption to create better outcomes for cities and improved efficiencies for businesses.





*Source: Tomter Photography.*
*Cargo bikes on a London street that prioritises bikes.*[29]

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3 —

# Micromobility is a smarter way to move freight in city centres

Micromobility is emerging as the smart way for people to move freight in our city centres. Small, environmentally-friendly and space-efficient vehicles can have a competitive advantage over cars, vans and trucks in busy and dense city centres, where space to move and to park is increasingly at a premium. Ramping up the adoption of delivering by micromobility where it makes sense to do so brings safety, economic and environmental benefits.

DEFINING MICROMOBILITY:

**People or electric powered, low to moderate speed, light weight vehicles such as bikes, cargo bikes, trolleys and drones.**

John Pearson, CEO, *DHL Express Europe* was reported as saying: *"Bicycles offer a number of advantages in express delivery operations: they can bypass traffic congestion and make up to two times as many stops per hour than a delivery vehicle. The total cost of ownership over their lifetime is less than half of a van. And crucially, they generate zero emissions."*[30]

Enabled by technology and digital connectivity, schemes to integrate micromobility in the last mile delivery task are already showing favourable outcomes in cities.

Berlin has demonstrated success with its micro distribution pilot,[31] while trials in other cities such as New York, Sydney and Bogotá have also signalled positive outcomes. Globally, more than 46% of *Uber Eats* deliveries are completed on two-wheels.[32] Following improvements to the cycling network, *Uber Eats* in Toronto has seen a 40% increase in deliveries by bike between 2019 and 2020.[33] *PostNL* in Utrecht has achieved a reduction in $CO_2$ emissions of around 35,000 kg per year by switching to micromobility.[34] *Dublin City Council* launched a 6-month cargo bike pilot to encourage businesses and the community to experience the benefits and the competitive advantage of micromobility in the movement of goods.[35]

New business models like virtual kitchens, local fulfilment centres and crowd-shipping are leveraging efficiencies presented by micromobility to satisfy demand and reduce on-site stock.

According to the *UK Bicycle Association*, 32% of deliveries in UK cities could shift to micromobility.[36] On the ground this means a local bakery delivering bread to the customer's doorstep by bike, or a new bathroom tap arriving on a cargo bike, scooter or even a drone from the local distribution centre.

Remoding deliveries from cars, vans and trucks to cleaner, quieter, and more cost-effective alternatives for the growing freight task also gets cities closer to achieving several of the *UN's Sustainable Development Goals* to achieve a better and more sustainable future.

THERE ARE TEN OPPORTUNITIES IF MICROMOBILITY IS PRIORITISED FOR DELIVERIES IN CITY CENTRES:

1. **Support *Vision Zero***
2. **Focus on people and place**
3. **Decarbonise the last mile**
4. **Promote healthy communities**
5. **Improve access for all**
6. **Empower local businesses**
7. **Create jobs**
8. **Productive use of infrastructure**
9. **Competitive advantage for businesses**
10. **Leverage emerging technology**

MEETING THE *UN SUSTAINABLE DEVELOPMENT GOALS*[37]:


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# 1 Support *Vision Zero*

*Vision Zero* is an approach adopted by governments that aims to *"eliminate all traffic fatalities and severe injuries, while increasing safe, healthy, equitable mobility for all."*[38]

ACCORDING TO THE *CENTRES FOR DISEASE CONTROL AND PREVENTION,*

***"Every day 3,700 people are killed globally in crashes. More than half of those killed are people on foot, on bikes and motorbikes."***[39]

The past few years have witnessed an increase in fatalities involving delivery riders.[40] This has led to actions from governments and industry to enhance safety.

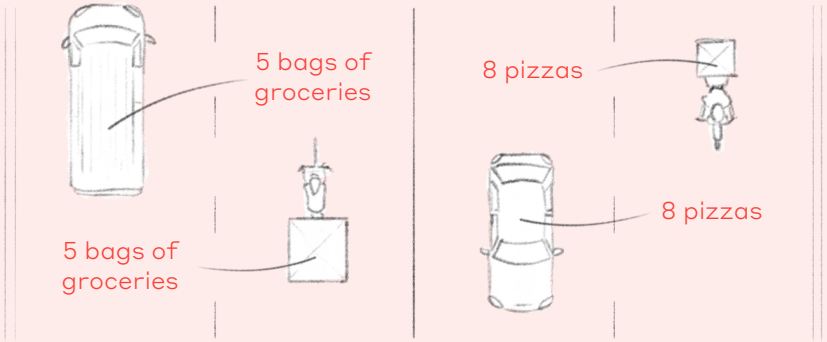
Making our streets safer for slower, smaller, low speed vehicles and for people walking will also have positive flow on effects for all road users, and in doing so, support cities in their commitment towards *Vision Zero.* Remoding deliveries to micromobility in our busy city streets will reduce the safety risk posed by bigger, faster vehicles.

Lower speeds, safe moving infrastructure and a strong focus on safety education in partnership with industry brings cities a step closer to achieving *Vision Zero*.

Industry action can take many forms. *Uber's* global approach includes the *Bike Safe Navigation* programme to ensure bike couriers are routed appropriately,[41] bike lane alerts, helmet detection and bike safety checklists.[42] *Pedal Me,* based in the UK, offers cargo bike rider and maintenance training as well as near miss and error reporting to ensure ongoing safety of delivery staff.[43] *NZ Post* works with local councils to identify safe areas to operate their small electric delivery vehicles, called *Paxters*. It also requires its staff to go through a comprehensive training programme before operating the *Paxters*.[44]


> It can never be ethically acceptable that people are killed or seriously injured while moving within the road transport system.
>
> — 1997 Swedish Parliament bill on Traffic Safety cited in Johansson, R. (2009).[45]

MICROMOBILITY VEHICLES ARE THE RIGHT TOOL FOR LAST MILE DELIVERIES IN DENSE, BUSY CITY CENTRES, TAKING UP LESS SPACE ON ROADS AND KERBSIDES COMPARED TO CARS, VANS AND TRUCKS.[46]




# 2 Focus on people and place

As cities have increased in size and scale, they have become more congested and polluted. Dominated by cars, vans and trucks during the 20th and 21st centuries, our cities generally prioritise the movement of people and goods over creating great places.

Prioritising active modes in cities can make the urban environment more liveable for people and support a high quality of life.[47] It has also been shown to bring additional economic benefits. Research by the *George Washington University School of Business,* reported by the *European Cyclists' Federation,* suggests that cities with a high level of people walking and cycling have up to 38% higher GDP per capita compared to cities that prioritise cars, vans and trucks.[48]

The important role of micromobility in planning more human scale cities is also recognised in the *UN's New Urban World Agenda* that prioritises active modes over motorised vehicles.[49] Bike friendly cities are consistently at the top of the *Mercer* 'quality of life' rankings.[50]

Organisations such as *Projects for Public Spaces* and *PlacemakingX* are becoming more influential as cities adopt Lighter, Quicker, Cheaper approaches to tactical urbanism that reimagine streets as places for people.[51]

Reallocating road and kerb space to support deliveries by micromobility as a way of moving freight is part of the response to shift the focus to people and places in our cities.[52]

## 3 Decarbonise the last mile

Growth in last mile deliveries in the world's top 100 cities will increase carbon emissions by 30% by 2030, according to the *World Economic Forum.*[53]

**Replacing deliveries by cars, vans and trucks with micromobility for the last mile is an important way for cities to go net zero, and necessary to meet global obligations confirmed at *COP26* to limit the rise in global temperatures to 1.5 degrees Celsius.**

*Norway Post* reported using a combination of micromobility and electric vans to achieve *"a 25% increase in worker productivity and a 40% decrease in the service's CO2 footprint in Oslo."*[54]

*DHL* has created a *City Hub*[55] concept, being trialled in Berlin and Utrecht, in which standardised containers filled with freight bound for a specific local area are brought by van to a micro-logistics hub. From there, the containers are transferred directly to customised electric cargo bikes with a carrying capacity of 125kg saving over 16 tonnes of carbon emissions per year.[56]

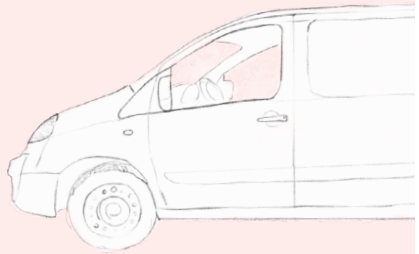
This method allows *DHL* to cost-effectively remove van trips from city centres, replacing them with a zero emission, sustainable method of delivery across the last mile.

Cargo bikes emit

**90%**

**fewer carbon emissions**

compared to diesel vans[57]



## 4 Promote healthy communities

Over 70% of the world's transport emissions come from road vehicles moving people and freight.[58] The main pollutants emitted are carbon dioxide, carbon monoxide, volatile organic compounds, nitrogen oxides and noise.

**The *World Health Organization (WHO)* estimates nearly 91% of people worldwide breathe polluted air and every year 4.2 million premature deaths could be attributed to ambient (outdoor) air pollution.**

Research also suggests that long-term exposure to noise can raise stress, affect mental health, and contribute to developing health issues such as high blood pressure.[59]

There is also a recognised link between urban environments and mental health.[60] According to the *Centre for Urban Design and Mental Health*, *"cities are associated with higher rates of most mental health problems compared to rural areas: an almost 40% higher risk of depression, over 20% more anxiety, and double the risk of schizophrenia, in addition to more loneliness, isolation and stress."*[61]

Transitioning from the delivery van model in favour of micromobility can improve air quality, reduce noise, and contribute to creating healthier places for people.

**Preliminary research suggests that if made permanent, pop-up cycleways implemented during the Covid-19 induced lockdowns will deliver USD $2.3 billion in annual health benefits across Europe.[62]**

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## 5 Improve access for all

A greater number and increasingly diverse range of people are now getting orders sent directly to their doorstep as a result of affordable and fast delivery options. Delivery trends show that more than half of the once tech-resistant generation, people aged 65 and above, are now shopping online.[63]

The Covid-19 pandemic and associated movement restrictions have also led to more people accessing goods and services online.

*"It's hard to imagine how many of us would get through lockdown without getting parcels delivered. Over half of us say we're more reliant on parcel deliveries than ever before. They've allowed us to send and receive gifts from families or friends to retain a sense of normality, and even helped businesses to stay afloat. But for many disabled consumers or for those previously shielding, parcel delivery has become a lifeline for accessing essential items."*[64]

— Dame Gillian Guy,
Chief Executive of *Citizens Advice*, UK

As demand for deliveries increases, a shift towards micromobility will play an important role in satisfying consumer demand. This is especially critical in locations difficult to service by traditional delivery modes.

The lockdowns necessitated by the Covid-19 pandemic inspired a last mile delivery service by micromobility in the favelas of Brazil, not serviced by other delivery operators or the postal service.[65] *Favela Brasil Xpress* hired locals familiar with the favelas to navigate narrow roadways and tight turns, delivering goods to favela residents previously unable to access deliveries.

## 6 Empower local businesses

Living through the Covid-19 pandemic has highlighted the importance of local places for people to access goods and services, as well as for social connection. Delivery by micromobility is emerging as an opportunity for local businesses to expand their footprint into surrounding communities.

Hyperlocal delivery platforms offering delivery services for local businesses are emerging. German-based *Kiezkaufhaus*[66] (which translates to 'neighbourhood department store') offers same day deliveries by cargo bikes.

*Good Sixty Ltd*, a food and grocery delivery business, uses cargo bikes to courier local produce and goods to homes within a 4km radius of Bristol city centre in the UK.[67]

**Technology-enabled platforms offering delivery services are making local businesses more visible to customers and enabling them to participate in a highly competitive market.[68] This increased visibility has been key to the survival of many local businesses through lockdowns.[69]**

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Number of delivery people active on the *Uber Eats* platform increased by more than 40% in the US, Canada, France and the UK between Q4 2019 and Q4 2020.[70]

## 7 Create jobs

The rise of online shopping has led to an increase in demand for deliveries. Businesses and delivery companies have responded by hiring thousands of new delivery people and people in supporting sectors such as technology companies and payment service providers.[71] According to the *Platforms Work Report* survey, 60-75% of new delivery people using the *Uber* platform who signed up during the Covid-19 pandemic identified as being ineligible or did not access government support.[72] Delivery work offered them an alternative source of income.

*Amazon* added 400,000 jobs in 2020 to meet the growing demand for online shopping.[73] *Hermes*, a parcel delivery company hired 9,000 more new couriers in the UK alone.[74] Companies offering on-demand delivery services like *Uber*, *Deliveroo*, *Getir* and *Gorillas* are also witnessing similar rapid growth.

Micromobility can make it quicker and easier for people to join the delivery job market. The cost of accessing micromobility is much lower than a car, van or truck and entry to the job does not require a driving licence.

## 8 Productive use of infrastructure

Before London's *Congestion Charge zone* was introduced in 2002, time lost to congestion cost the city's economy up to €2 million a week.[75] Urban congestion is estimated to cost Australia over AUD $16.5 billion every year, and is forecast to reach between AUD $27.7 and AUD $37.7 billion by 2030.[76] The traditional response to the congestion problem has often been to build new infrastructure for cars, which is not cheap, easy or fast to bring online.

Bike lanes, on the other hand, are five times more efficient as general traffic lanes in moving people based on analysis undertaken by *Transport for London*.[77] Bikes take up less space compared to cars. Infrastructure for these smaller vehicles is cheaper to build and maintain.

Prioritising micromobility to move freight in our cities will lead to cleaner air, safer streets, and save people and governments money. According to a study carried out by the *Institute for Transportation & Development Policy* and the *University of California*, a global shift to cycling could save cities trillions of dollars in lower energy use, reduction in CO2 emissions, and savings in direct costs to citizens (including vehicle purchase and operation costs).[78]

Micro-logistics hubs can also contribute to the productive use of infrastructure by reducing the number of delivery vehicle trips.[79] Consolidation of deliveries close to the end customer allows operators to make fewer trips to the end customer and optimise delivery vehicles.

A global shift to cycling could save cities USD

**$24 trillion**

by 2050 in lower energy use, reduction in $CO_2$ emissions, and savings in direct costs to citizens.[80]

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# 9 Competitive advantage for businesses

The last mile is the most inefficient and costly part of the delivery chain, absorbing over half the overall cost.[81] Micromobility can help to reduce delivery costs, while appealing to customers who value sustainability.

Studies show that in busy city streets, it can take between 9 and 15 minutes to find parking.[82] This wasted time along with time spent in traffic has to be factored into the operator's delivery timing and cost.

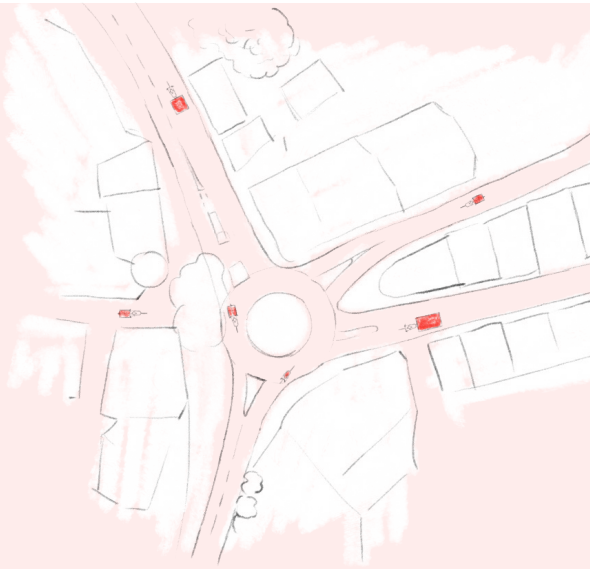
A new type of consumer is also starting to emerge – one that values sustainable and local produce, waste reduction and who choose or even demand deliveries by cleaner modes.[83]

According to an *IBM Research Insights* report, 57% of people are willing to change their online shopping habits to reduce their environmental impact.[84]

Bringing micromobility in to complete last mile deliveries is a way for businesses to keep delivery-related capital and operational costs low to turn last mile deliveries into a business asset.

A mixture of businesses making smart commercial decision and pressure from customers will encourage more deliveries by micromobility.

An empirical analysis by *Pedal Me* demonstrated that in comparison to vans, **e-cargo bikes are faster and have shorter, more efficient routes** because deliveries are distributed amongst more vehicles, reducing costs.[85]



# 10 Leverage emerging technology

Emerging technologies will continue to play an important role to meet surging demand for more and quicker deliveries.

For the last mile, the opportunity for micromobility extends to greater use of data and technology to streamline the supply chain and distribution of freight, and the potential of drones and robots.

- Technology enabled business models like crowd-shipping aim to exploit the space in vehicles travelling for other purposes, to deliver goods.[86]
- Tools like *Gatesolve*[87] are starting to emerge that make it easier to find the exact locations of building entrances and new route optimisation algorithms are making the delivery task more streamlined.
- Drones and robots are currently being tested for viable use cases. Conceptual modelling undertaken for the *Queensland Government* in Australia suggests drones may be better suited for deliveries to outer suburban, rural and island communities.[88] Autonomous delivery robots that travel along footpaths are being trialled by a number of companies around the world keen to optimise the last mile delivery task.[89]

Leveraging emerging technologies has the potential to optimise the last mile freight task to better meet consumer choices and improve industry efficiency.

Source: Wikimedia Commons - Christopher Down[90]

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4 —

# Big Moves for city leaders to unleash the potential of micromobility

The demand for deliveries is growing.

Transitioning last mile deliveries to micromobility offers an opportunity to move away from cars, vans and trucks for safer and cleaner city streets. This is particularly important in the context of bouncing back from the Covid-19 pandemic and a greater focus on creating better local places for people and businesses.

We have looked at cities from around the world and leaned into *WSP's* global network of experts to identify 5 Big Moves for public and private sector city leaders to unleash the potential of micromobility.

Not all Big Moves are equal, some are **fundamental** to creating the right operating environment, while others are an opportunity to **accelerate** the transition towards last mile deliveries by micromobility in city centres.

In this section we explore the actions required by city leaders to bring life to the 5 Big Moves, with examples from cities around the world.

## → Fundamental

### 1 Safe Moving

Being and feeling safe getting from A to B is a fundamental enabler for people to travel and deliver by micromobility. *Vision Zero* is an approach championed by governments to take a safe systems view that recognises that all injuries and deaths are preventable. This can involve a suite of infrastructure solutions such as protected cycle lanes, regulatory options such as low speed limits, and softer nudges such as communications, campaigns and adoption of initiatives like 'the Dutch Reach' to prevent cyclists being injured by opening vehicle doors.

### 2 Easy PUDO

Facilitating the safe and easy pick-up and drop-off of deliveries is a key enabler for using micromobility in the last mile freight task. Being able to safely and conveniently pick-up and drop-off deliveries, and to quickly embark on the next delivery is essential for an efficient delivery chain. Example initiatives include space for micromobility on the kerbside and building codes that mandate space for micromobility for safe and easy pick-up and drop-off options.

### 3 Policy Leadership

Governments are responsible for setting the long-term policy direction for the future of cities. By setting long-term targets and market-setting strategies, governments can create the right environment to foster innovation in the last mile freight task. This can include targets such as net zero emissions and *Vision Zero*, favourable regulatory environment for micromobility, and innovation incubators such as mobility labs, funding for pilots and tactical interventions such as pop-up cycle lanes or dedicated parking for deliveries by micromobility.

## → Accelerate

### 4 Remoding

Remoding deliveries to micromobility from cars, vans and trucks is a key step in accelerating the uptake of micromobility in the last mile delivery task. Remoding makes sense where there are dense city centres with micromobility presenting a positive alternative to reduce congestion, lower emissions and for quicker delivery times. Prominent approaches include micro-logistics hubs enabling deliveries to be consolidated closer to the end customer, with micromobility taking over for the last mile freight task; and businesses choosing to remode for local deliveries.

### 5 Test and scale

Testing ideas to promote last mile deliveries by micromobility through a culture of innovation can ramp up adoption. Trials and tactical initiatives are critical in developing use cases and building evidence on the effectiveness of last mile delivery by micromobility. They enable the industry in partnership with government to test what works and scale them up where it makes sense. Recent examples include pop-up cycle lanes, temporary reallocation of kerbside space, micro-logistics hub trials and drone deliveries.

No single city has nailed deliveries by micromobility, yet.

But many offer useful insights into what is possible.

## Alongside our recommended actions for city leaders to implement the Big Moves are case studies selected by *WSP's* global experts:

### → Fundamental

#### 1 Safe Moving

**Utrecht** – how investing in safe moving infrastructure connects to a cycling culture

**Montreal** – how safe moving infrastructure can support pilots

#### 2 Easy PUDO

**Paris** – how prioritising cycling can make deliveries by micromobility the easier choice

**Helsinki** – how data and innovation can support a shift to micromobility

#### 3 Policy Leadership

**Bogotá** – how a government can foster a culture of cycling and lead the transition

**Auckland** – how clear policy direction and well-thought-through planning conditions can support micromobility uptake

### → Accelerate

#### 4 Remoding

**London** – how micro-logistics hubs can shift deliveries from cars, vans and trucks

**Taiwan** – how demonstration projects can garner community and industry buy-in

#### 5 Test and Scale

**New York** – how pilots can build community support and industry capability

**Sydney** – how a culture of innovation can test new ways of doing things

→ **Fundamental**

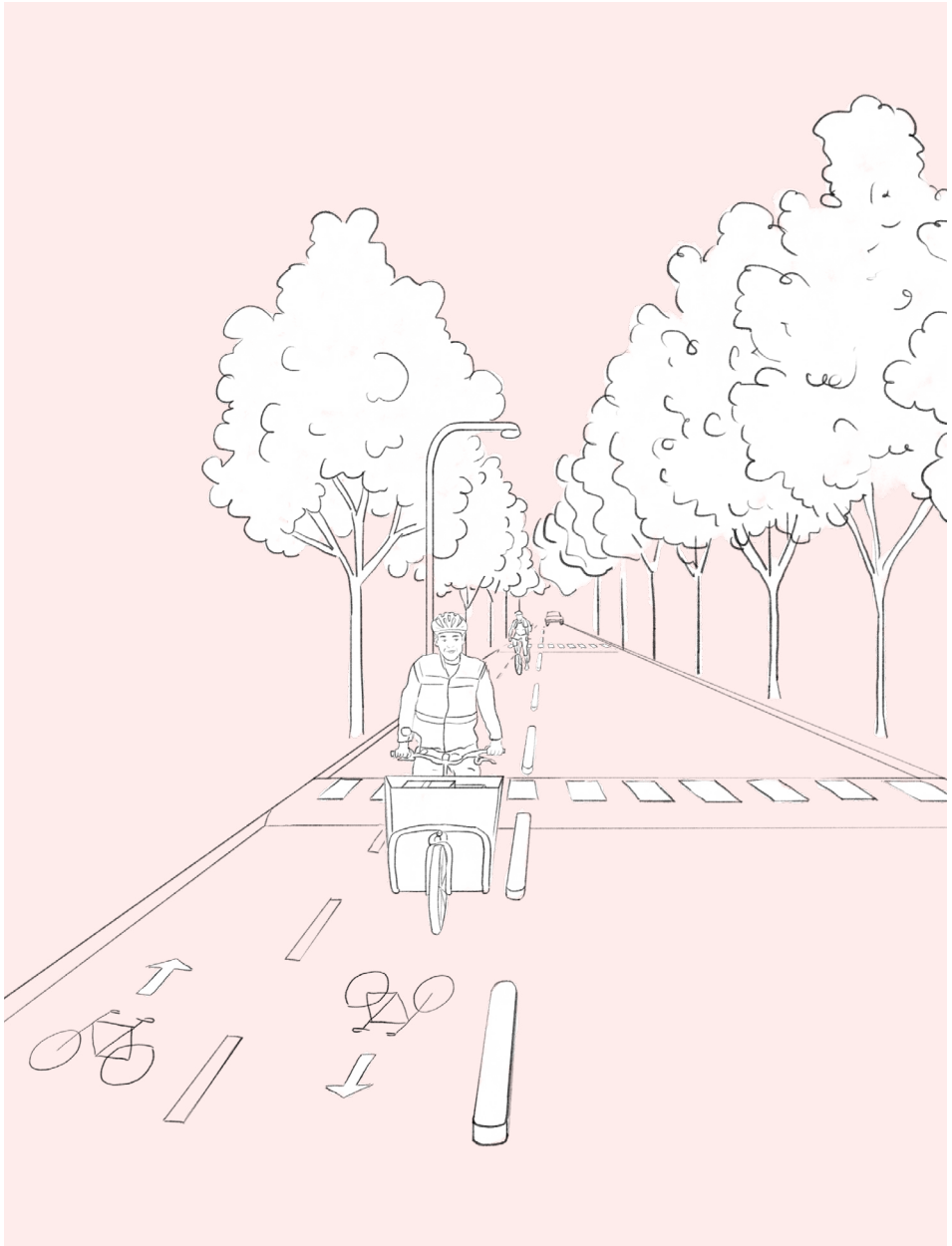
# 1 **Safe Moving**

## Make it safer for people to move around by micromobility.

Being and feeling safe getting from A to B is a fundamental enabler for people to travel and deliver by micromobility. *Vision Zero* is an approach championed by governments to take a safe systems view that recognises that all injuries and deaths are preventable. Key ingredients are safe moving infrastructure, regulatory change and education.

### Actions

- → Focussing regulatory tools on enabling micromobility, rather than cars, vans and trucks, makes it safer to move around city centres through lower speeds, low traffic neighbourhoods and low emission zones.
- → Safe moving infrastructure for micromobility in our cities must be prioritised by all, featuring extensive cycling networks that meet *NACTO* guidelines, self-explaining streets and proactive management.
- → Governments, operators, businesses and communities each play a role to create a micromobility culture in our cities with guidance, support and education such as maps, guides, training and trials.



# Utrecht, The Netherlands

POPULATION

**350,000**

people live in Utrecht[91]

MODE SHARE

**60%**

of all trips to the city centre are made by bike, compared to just 15% by car[92]

DEMAND FOR DELIVERIES

**35%**

increase in volume of parcels sent in The Netherlands in 2020[93]

Located on the banks of the river Rhine, Utrecht is a densely populated, historic city in the Netherlands with some buildings dating back to more than 800 years ago.

Utrecht's medieval footprint, consisting of a dense network of irregular roads and narrow canals provide an advantage for smaller vehicles.


## Challenge

Utrecht is experiencing a surge in delivery vans and lorries on city streets due to growing demand for online shopping, which have accelerated during the Covid-19 induced lockdowns.[94] The growing demand for deliveries in the city is leading to poor air quality, noise pollution and safety risks for vulnerable road users.[95]

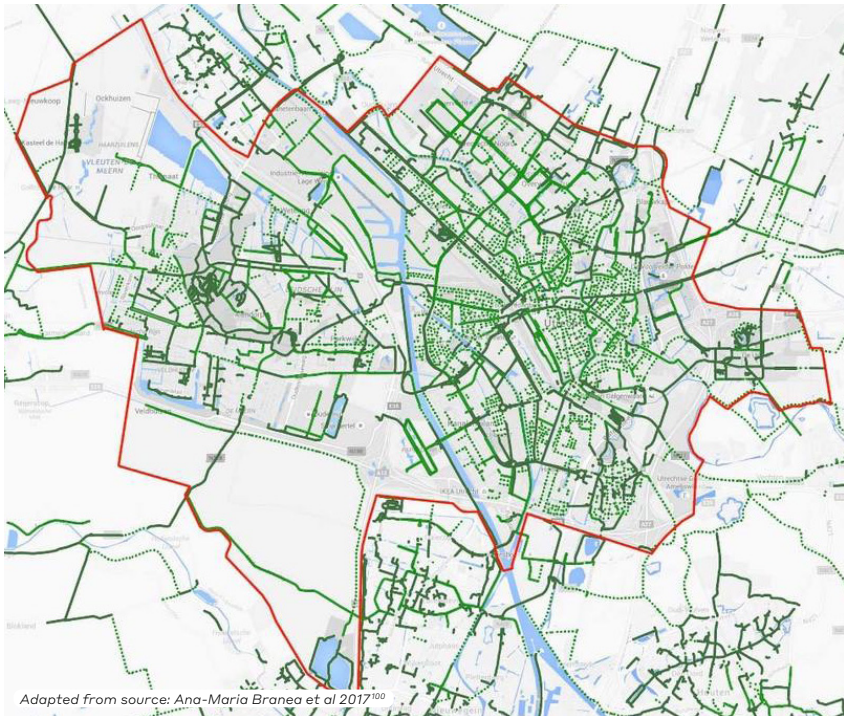
## Response

The people of Utrecht have supported government initiatives to enable safe cycling and make it more inviting through reforms focussed on safety, provision of safe moving infrastructure and prioritising cycling access over cars in the city. These reforms enable quick and safe journeys by micromobility in the dense urban centre of Utrecht. *Utrecht City Council* plans to double the city's extensive cycling network by 2030.[96] It spends over €49 million every year to build, improve and maintain its cycling network and supporting facilities.[97]

Utrecht's deep-rooted cycling culture, strengthened by its bike-friendly roads, is a key enabling factor in phasing out motorised vehicles from the city centre: 98% of households own at least one bike, with an average ownership rate of 2.9 bikes per household.[98]

**Savings from reduced air pollution and health care costs associated with cycling in Utrecht are estimated to be worth €300 million annually.[99]**

UTRECHT'S EXTENSIVE CYCLING INFRASTRUCTURE FOR SAFE MOVING




Utrecht's medieval footprint, extensive cycling network and low speed environment gives micromobility an advantage.

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# Utrecht, The Netherlands *continued*

## Spotlight

### → Making deliveries by micromobility safer

*Utrecht City Council* is committed to making deliveries by micromobility safer by prioritising cycling over cars on its roads and investing in safe cycling infrastructure.[101]

Utrecht's *Mobility Plan 2040* has made 30 km/h the new normal on all streets in built up areas to make cycling safer.[102] It will remove 1% of car parking spaces each year and reallocate it to cycling.[103]

According to the Dutch policy, traffic should be mixed on low traffic streets with a speed of up to 30km/h, and movement by cycling should be separated from cars on high volume roads.[104] On arterial roads with a higher speed environment, people must be able to cycle at a safe distance from vehicle traffic.

*Utrecht City Council* deters deliveries by cars, vans and trucks to the city centre by imposing a *Low Emissions Zone for Logistics*. In addition, deliveries by fossil fuel-powered delivery vehicles will be banned from the city centre from 2025.[105] The Council also offers grants to buy or lease cargo bikes to help businesses shift to micromobility.[106]

### → Replacing delivery vans with micromobility in the city centre

In 2018, *PostNL* deployed electric bikes to replace 20 daily diesel-powered car journeys in Utrecht. This resulted in 560 emission-free delivery kilometres per day and a reduction in $CO_2$ emissions of around 35,000 kg per year.[107]

A Utrecht-based housing maintenance company is also trialling cargo bikes to deliver building materials to sites in the city centre.[108]

### → The industry is leveraging the safe moving environment to pivot towards micro-logistics hubs

There is a rise in investment in micro-logistics hubs to support last mile deliveries by micromobility. The centrally located *City Hub Utrecht*[109] and the *Utrecht Logistics Centre*[110] located 10km north of Utrecht lease distribution centre facilities to businesses and delivery companies to complete the last mile task by micromobility. *DHL* has also committed to construct 26 local distribution centres in the Netherlands, including in Utrecht to meet customer demands and enable a greener last mile.[111]

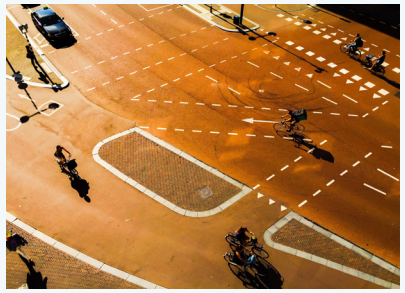
### → Offering 'green' delivery times

*Ibert Heijn Online* optimises delivery routes by encouraging customers to pick wider 'green' delivery windows to help reduce kilometres driven.[112]



*Before: Zadelstraat in Utrecht in the 1960s when cars could still use the street.*[113]

*After: Zadelstraat in 2017 after the street was closed to cars enabling safe movement on foot and by micromobility.*[114]



*Prioritising bikes at intersections in Utrecht.*[115]

### What can other cities learn from Utrecht?

A network of safe moving infrastructure supported by physical and regulatory changes that discourage delivery cars, vans and trucks from entering the city centre is making an impact.

Continued funding to expand and maintain Utrecht's safe moving infrastructure gives the industry confidence in the government's commitment to a transition towards micromobility for the movement of people and goods.

There are positive signs with industry transitioning towards micro-logistics hubs and prominent examples of industry leaders favouring micromobility over cars, vans and trucks.

Utrecht provides a successful 'build it and they will come' example to city leaders pondering whether to invest in safe moving infrastructure coupled with regulatory change.

*"Good bike infrastructure is important for the uptake of cargo bikes, as delivery riders require direct, safe, and attractive conditions for cycling."*

– Yiqian Zhang, Sustainable Mobility Officer at *ICLEI World Secretariat*[116]

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# Montreal, Canada

POPULATION

**2 million**

people live in Montreal,[117] equivalent to 4,662 people per square km[118]

MODE SHARE

**7.2%**

of people living in Montreal reported walking and cycling to work before 2020[119]

DEMAND FOR DELIVERIES

**74%**

increase in e-commerce sales during the year to September 2020 according to *Statistics Canada*[120]

Montreal is the largest city in Canada's Québec province. The French and English speaking city is characterised by its grid street structure and a dense central core surrounded by low density suburban development.

Montreal is the only city in North America to feature in the *Copenhagenize Index* every year since 2011.[121]


## Challenge

In 2019, Québec declared a climate emergency. An increase in the demand for deliveries is exacerbating traffic congestion, air pollution, noise and parking issues in Montreal.[122] It also adds to the safety risk for people walking and cycling.[123] Approximately 650 accidents including people on bikes occur annually on the roads and streets of Montreal.[124]

## Response

To achieve zero deaths and serious injuries on its roads by 2040[125], the mayor of Montreal has put a strong focus on improving the city's cycling network. The city boasts a cycling network of over 700 km[126] which is also an important part of the response to achieving carbon neutrality by 2050.[127]

Key reforms to increase the modal share of trips by bike in central neighbourhoods to 15% by 2032[128] include: the reallocation of space for people on foot and on bikes; localised improvements and lower speed zones;[129] and a push towards electric and micromobility vehicles for last mile deliveries.[130]

## What can other cities learn from Montreal?

Montreal highlights the value of safe moving infrastructure as an enabler for trials. Getting the base infrastructure right is the first step in encouraging the industry to shift to micromobility for last mile deliveries.

## Spotlight

### → Safe moving infrastructure is a key enabler for last mile deliveries by micromobility

*Canada Post* is trialling cargo bikes in downtown Montreal for deliveries, citing a good bicycle network, low speeds, density of customers and road congestion issues as the key reasons.[131]

### → Creating a safe moving environment

The *Montreal City Council* is running a two year pilot that has established a two-way cycling link on Rue De Verdun in the Verdun borough. In its first year, there was a 101% increase in the number of cyclists and a 33% decrease in the number of accidents.[132]

To make the environment safer for people walking and cycling under its three year *Vision Zero Plan*, the *Montreal City Council* has reduced speeds on main streets to 40 km/h residential streets to 30 km/h.[133] Additionally, the Council is making localised improvements to safety risk hotspots.[134] For example, CAD $300,000 was invested on *de Maisonneuve Bike Path* to reduce accidents involving people on foot and on bikes.[135]

In response to the Covid-19 lockdowns, the *Montreal City Council* also added an extra 327 km of bike paths and pedestrian lanes to make it safer for people to move on foot and by micromobility.[136]

### → Supporting local businesses

The mayor of Montreal launched an urban bike delivery system to support local businesses during the lockdowns induced by Covid-19 and to tackle the negative impacts associated with traditional methods of delivery.[137] The *Vélo Montreal Delivery project* was deemed a success and is now a permanent offering.[138]

### → Creating industry preparedness

In 2019, the *City of Montreal* launched *Project Colibri*, a trial to encourage the use of micromobility for the last mile freight task.[139] Participating operators are using an old bus depot as a micro-logistics hub where parcels can be loaded from trucks onto electric cargo bikes. Analysis of the trial shows that an e-bike is 30 to 40 per cent more efficient than a truck in terms of deliveries per hour.[140]


*Courant Plus, a participating business in Project Colibri in Montreal.*[141]

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→ **Fundamental**

# 2 **Easy PUDO**

## Change the built environment to facilitate safe and easy pick-up and drop-off from kerbsides and in buildings for people making deliveries by micromobility.

Being able to safely and conveniently pick-up and drop-off deliveries, and to quickly embark on the next delivery is fundamental to enabling a shift towards micromobility for last mile deliveries.

### Actions

- → Optimise managing and allocating the kerbside for people delivering by micromobility by reallocating car, van and truck parking and by designating places for (un)loading as well as providing infrastructure such as charging facilities and lockable parking.
- → Space and facilities for people to (un)load deliveries by micromobility must increasingly be available within office and residential buildings, restaurants and shops through updating building codes for new developments and by building owners retrofitting facilities to meet emerging demand.
- → Governments and delivery businesses have a key role in supporting people through guidance and tools to enable safe, productive use of kerbsides and of facilities within buildings, and to normalise using micromobility for deliveries.

# Paris, France

POPULATION

**2.2 million**

people live in Paris, equivalent to 21,000 people per square km[142]

MODE SHARE

**57%**

of deliveries are made by micromobility (of which 47 percentage points are by bicycle, and 10 by scooter) in Paris according to a 2021 survey[143]

DEMAND FOR DELIVERIES

**95%**

of Parisians ordered a non-food item online in 2017, according to a survey[144]

Located along the river Seine, Paris is the capital and largest city in France. Characterised by medium density housing, narrow streets and boulevards, space in its dense urban core is at a premium.

Paris is well served by public transport and is emerging as a cycling city.[145] It leapt from 13th place in 2017 to 8th in 2019 on *Wired's* list of the 20 most bike-friendly cities in the world.[146]


## Challenge

Paris was reported as being one of Europe's most congested cities with average speeds of around 15 km/hr in 2015.[147] Delivery vehicles represent 15-20% of traffic in Paris, but 45% of harmful particulates.[148]

High levels of congestion in Paris are linked to air pollution, safety risk for road users, climate change, noise and an inhospitable environment for street life.

## Response

Under the directive of the mayor of Paris, the *Council of Paris* is committed to a shift towards cycling on its busy streets to improve health and safety outcomes and to meet the city's carbon reduction targets. It has set an ambitious target for Paris to be 100% cyclable by 2024 under the mayor's *Plan Velo: Act 2*.[149]

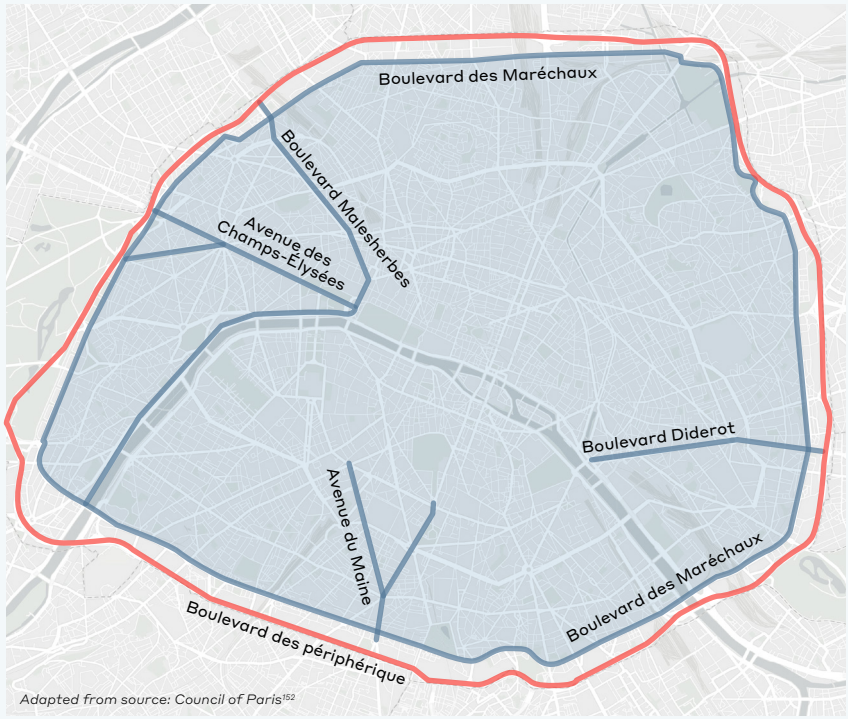
To enable the city's transition to a cycling city, the *Council of Paris* is implementing reforms focussing on safety, low emissions, reallocation of road space and prioritising funding for cycling infrastructure.[150]

These reforms will make it easier for delivery people to pick-up and drop-off orders and safely complete deliveries using micromobility.

*"Those who switch to cycling realise their quality of life improves, provided their route is safe. It is also faster to get around town by bicycle than by car."*

– Anne Hildago, mayor of Paris, *Journal du Dimanche*[151]

LOWER SPEED LIMITS ACROSS PARIS




*Adapted from source: Council of Paris*[152]

30km/hour 50km/hour 70 km/hour

The *Council of Paris* has reduced the vehicle travel speed limit to 30km/hr across the city except on main roads.[152] According to the *World Health Organisation*, the risk of a person on foot being killed in a collision is 80% at an impact speed of 50 km/h and only 10% at an impact speed of 30 km per hour.[153] The slow speed environment makes it easier and safer for people to pick-up and drop-off orders in the busy streets of Paris using micromobility, by removing the risk created by larger vehicles travelling at high speeds.

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# Paris, France *continued*

## Spotlight

**→ Making deliveries by micromobility safer and easier**

The *Council of Paris* is committed to establishing 650 km of cycleways by removing 72% (60,000) of on-street car parking spots by 2024.[154] The city's extensive cycling network is supported by reduced speeds, priority for people on foot and on bikes[155] and plans to ban diesel and petrol vehicles from the city centre by 2030.[156]

The mayor of Paris' *2021-2026 Cycling Plan* will make it easier to make deliveries by micromobility through 30,000 parking stands and an additional 1,000 spaces reserved for cargo bikes.[157] A 'two wheel parking' interactive map that uses the Council's open data for Paris makes it easy to find parking for bikes and cargo bikes in the city centre.[158]

**→ Incentives for deliveries by micromobility**

*The National Plan For Cycle Logistics* aims to reduce transport emissions by 28% by 2030 against a 2015 baseline and triple the share of deliveries by non-polluting transport by 2024.[159] It offers financial incentives for the purchase of cargo bikes[160] and up to €2 per parcel delivered by cargo bikes over three years.[161]

**→ Emergency services are choosing micromobility in Paris**

The emergency service in Paris is using e-bikes when responding to emergency calls.[162]

The bikes are designed to include an insulated storage box for medical supplies and are approximately twice as fast as traditional ambulances in the busy parts of Paris.[163]

**→ The industry is leveraging the growing focus on cycling in Paris to deliver by micromobility**

Paris has seen an influx of virtual kitchens and consolidation of warehouses in the city centre and surrounding suburbs to enable deliveries in less than 20 minutes, with the majority by bike.[164]

Socially and environmentally conscious platforms, such as *Urb-It*[165] and *BikeMessenger24*[166] only offer deliveries by foot, bike or public transport. *La Poste*, the national postal service has over 24,000 electric bikes as part of its fleet.[167]

Many other delivery platforms like *Hestia*, *Monoprix*, *Amazon Prime Now*, *Deliveroo*, *Uber Eats*, *Getir* and *Cajoo* make use of micromobility for the last mile delivery task in Paris.


*According to their designers, Emergency Bikes can reach urban Paris locations approximately twice as fast as traditional ambulances.[168]*


*Pop-up lanes implemented during the Covid-19 induced lockdowns.[169] Six in ten users of the pop-up lanes are reported to be new to cycling.[170]*


*Electric-powered bicycle used by La Poste.[171]*

### What can other cities learn from Paris?

Slower speeds, prioritising people travelling by bike and reallocation of space for cycling on roads, kerbsides and to access buildings makes it easier for delivery riders using micromobility to pick-up and drop-off orders without competing for space with cars, vans and trucks.

Ambitious plans, supported by investment, regulation and incentives, to embrace cycling as way to move people and goods in Paris has kick-started the industry's transition to micromobility for last mile deliveries. Positive examples of the industry leading the transition are starting to emerge. Even the city's emergency service sees micromobility as an efficient way to move in the city centre.

Paris provides a successful example of using physical and regulatory tools to move closer to becoming a cycling city, which in turn makes deliveries by micromobility an easier choice.

*"Paris' transformation has been nothing short of phenomenal. The 2021 to 2026 cycling plan represents a further leap forward and will make Paris even more attractive and livable as a cycling city."*

– Jill Warren, CEO of the *European Cyclists' Federation* in the context of the mayor of Paris' *2021-2026 Cycling Plan*[172]

# Helsinki, Finland

POPULATION

**643,000**

people live in Helsinki[173]

MODE SHARE

**9%**

of all trips are made by bike in Helsinki. The *Cycling Action Plan* aims to increase this to 20% by 2035[174]

DEMAND FOR DELIVERIES

**21%**

growth in revenue for the Online Food Delivery segment is expected in Finland in 2022[175]

Helsinki is the capital and most populous city in Finland.[176] It offers a high standard of urban living and frequently features highly in the world's most liveable city rankings.

With 1,300 kilometres of cycling routes,[177] Helsinki is recognised as being on its way to becoming a leader in bicycle-friendliness.[178]


## Challenge

Without action, Helsinki is expecting more cars, vans and trucks on the roads in the future[179] which brings pollution[180] and safety concerns. In 2019, Helsinki recorded zero deaths of people walking and cycling for the first time since 1960 setting a strong precedent for future years.[181]

## Response

The *City of Helsinki* is making the city attractive for people to move using bikes by putting safety first. It is committed to achieving zero deaths on its road and plans to become the world's third most bike friendly city.[182] To make deliveries by micromobility easier and to achieve its targets of carbon neutrality by 2035[183], *City of Helsinki* has cut speed limits and reallocated road space away from cars.[184] City leaders also have a strong focus on innovation through its open data sources[185] and innovation incubators. Its mobility lab and model district encourages the industry to come forward with pilots and projects, including making last mile deliveries easier.[186]

## What can other cities learn from Helsinki?

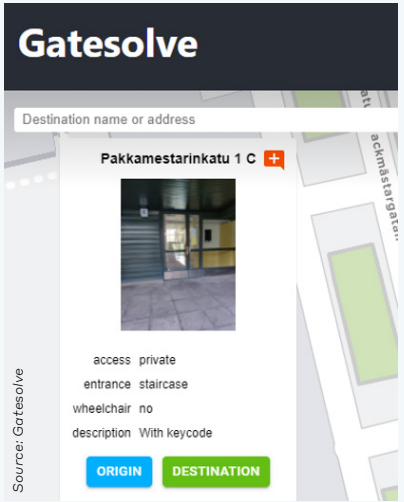
A strong focus on innovation guided by the right policy settings is laying the foundations for the uptake of micromobility in last mile deliveries in Helsinki. It is enabling the industry to test use cases and develop innovative tools to make deliveries by micromobility more efficient, safer and easier in a bid to lower transport-related carbon emissions and contribute to *Vision Zero*.

## Spotlight

### → Making pick-ups and drops easier

The *New Solutions in City Logistics 6Aika project* has collected detailed data on routes to buildings and entrances. The purpose of the data are to make it easier to find the right entrance and to speed up the delivery of goods. The data are stored and made available in *OpenStreetMap*.

A demonstration application called *Gatesolve* showcases how this information can be used to make pick-up and drop-offs easier, leading to even more efficient deliveries by micromobility.[187]




*Screenshot of the Gatesolve demonstration application providing specific details on the entrance at the delivery origin and destination.*[188]

### → Making micromobility an attractive choice

*City of Helsinki* released its *Bicycle Action Plan* in 2020 with the aim of increasing its cycling mode share to 20% by 2035.[189] The *Action Plan* includes specific actions for enabling deliveries by micromobility.

*Action 17* focuses on marking dedicated loading zones for deliveries by micromobility and *Action 26* focuses on improving the conditions of bicycle parking in buildings. *Action 34* emphasises the need to keep the cycling route maps updated.

### → Testbed for innovation

In 2020, *Jätkäsaari Mobility Lab* and *Forum Virium Helsinki* put out a call for pilots to test innovative mobility solutions to promote healthy, safe and/or sustainable mobility. Amongst others, a pilot measuring the condition of bike paths with sensors installed in bicycles to monitor issues and maintenance levels was selected.[190]

*Forum Virium Helsinki's New Solutions in City Logistics project* piloted last mile deliveries using electric cargo bikes and electric scooters. Also, at *REDI*, a shopping centre in the Kalasatama district, the project piloted a robot courier that delivers groceries to customers living in the next door high-rise building.[191]

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→ **Fundamental**

# 3 **Policy Leadership**

## Set long-term policy direction to create an enabling environment for a transition to micromobility for last mile deliveries in city centres.

Governments are responsible for setting the long-term policy direction guiding the future of cities. By setting long-term targets and market shaping strategies, governments can create the right environment to foster innovation in last mile deliveries.

### Actions

→ Governments, industry and communities must commit to *Vision Zero*, developing and delivering on actionable strategies to eliminate fatalities and serious injuries with safety embedded through all systems.

→ A commitment to achieving net zero emissions must deliver meaningful change in the design and operation of the transport sector by promoting zero emission vehicles over internal combustion engine vehicles.

→ Integrated land use and transport strategies are integral to setting a shared vision to guide investments and policy decisions to make last mile deliveries by micromobility the easier choice for businesses and operators.

# Bogotá, Colombia

POPULATION

**8 million**

people live in Bogotá[192]

MODE SHARE

**9%**

of all trips in 2019 were by bike compared to 6% in 2015[193]

DEMAND FOR DELIVERIES

**31%**

increase of online food delivery users in Colombia between 2017 and 2019[194]

Bogotá is the capital of Colombia and its largest city. It is characterised by narrow streets and tightly packed neighbourhoods with 6,918 people per square kilometre.[195]

In 2019, Bogotá ranked 12th in the *Copenhagenize Index* of the most bike-friendly places in the world.[196]


## Challenge

Bogotá is considered one of the most congested cities in the world[197] resulting in the loss of productivity and increased transport costs.[198]

Transport of goods in Bogotá is linked to congestion, greenhouse gas emissions, safety concerns and noise.[199] 39% of particulate emissions in Bogotá is attributed to transporting goods by road.[200] Air pollution kills about 2,000 people every year.[201] Bogotá has repeatedly had to declare an environmental emergency due to high levels of air pollution.[202]

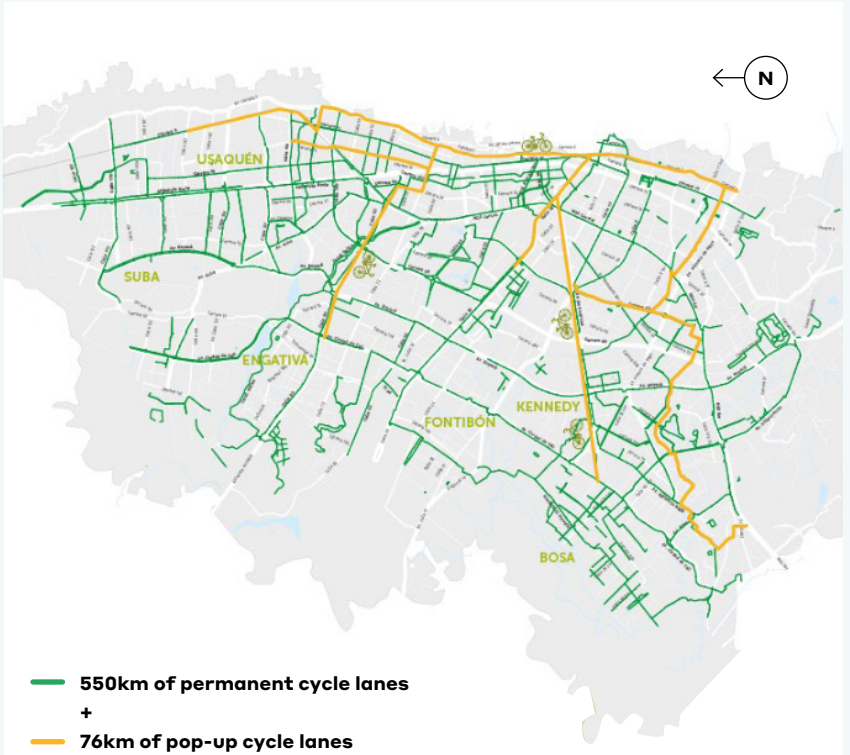
Personal safety is another challenge that limits the use of micromobility in Bogotá, especially amongst women.[203]

## Response

*Bogotá City Government* is creating industry preparedness by testing the application of micromobility for last mile deliveries and fostering a culture of cycling. It is also investing in infrastructure and implementing reforms focussed on reducing emissions and making cycling safer.

The *Colombian Government* has signalled a commitment to become carbon-neutral by 2050.[204] In response, the *Bogotá City Government* has placed restrictions on freight vehicles over 20 years old in its urban area to curb transport related emissions, pushing the industry to consider cleaner ways of completing deliveries.[205]

BOGOTÁ CYCLING NETWORK: POP-UP CYCLE LANES




*Adapted from source: Alcaldia Mayor de Bogotá D.C.*[206]

550km of permanent cycle lanes and 76km of pop-up cycle lanes have been implemented by the Bogotá City Government to address crowding on buses during the Covid-19 induced lockdowns.[206] These are set to become a permanent feature on city roads to encourage the movement of goods and people by micromobility.[207]

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# Bogotá, Colombia *continued*

## Spotlight

→ ***Bogotá City Government* is leading a shift towards micromobility for last mile deliveries by trialling new approaches**

Backed by funding from the *World Bank*, the *Bogotá City Government* launched a 6-month pilot project, *Bici Carga*, to create the right conditions for the use of alternative modes of transport in the last mile distribution of food, parcel, and medical services.

The *Bici Carga* initiative aims to save 16 metric tons of particulate matter each day by switching trucks for electric cargo bikes.[208]

The pilot tested the effectiveness of micro-logistics hubs in enabling an industry shift to micromobility for last mile deliveries within a distance of 5km.[209] It led to a reduction in carbon emissions and an increase in the number of deliveries due to the improved journey time reliability and operational efficiency.[210]

Preliminary results show that with the use of a micro-logistics hub up to 4.2 tons of emissions could be avoided per year from food and parcel deliveries using cargo e-bikes. The results also show that participating delivery vehicle drivers on average worked 2 fewer hours a day and completed 15% more deliveries.[211] Scaling up the shift to micromobility will also creates jobs.[212]

→ ***Bogotá City Government* is fostering a culture of cycling**

In 2016, the *Colombian Government* recognised cycling as a primary mode of travel and enacted a law to promote cycling throughout the country.[213]

To foster a culture of cycling, the *Bogotá City Government* bans cars from certain city streets each Sunday.[214] As part of its response to the Covid-19 induced lockdowns, 84 km of pop-up cycle lanes were added to Bogotá's existing cycling network of over 500km with plans to add 280 km more by 2024.[215] Public schools in Bogotá participate in promoting the uptake of cycling with initiatives such as *Bike Colleges* where students learn to ride.[216]

To enhance safety, the *Bogotá City Government* has dropped speed limits[217] and introduced a *Security Plan* to keep people using micromobility safe from crime.[218] This is supported by industry efforts such as *Uber's RideCheck* programme which proactively reaches out to delivery people who have been stopped for a long time to see if they need help.[219]

→ **The industry is also ready for disruption**

*Rappi*, a bicycle courier service has been operational in Bogotá since 2015.[220] *Pibox*, a Colombian logistics start-up plans to deliver parcels using electric bikes to navigate the congested streets of Bogotá.[221]


*Students learning to ride in a public school located in the neighbourhood of Bosa in Bogotá.*[222]


*Operators taking part in Bogota's Bici Carga trial to promote micromobility for last mile deliveries.*[223]

### What can other cities learn from Bogotá?

Government action in Bogotá is setting the conditions for industry to innovate by making micromobility more attractive for last mile deliveries than cars, vans or trucks through initiatives such as: lower speeds, extensive cycling infrastructure, reallocation of road space away from larger vehicles and a focus on personal safety.

The government's focus on engaging the community with car free days and bike education initiatives for students is getting Bogotá a step closer to promoting cycling as a mode of travel.

Bogotá is starting to see success with the industry beginning to pivot towards micromobility for local deliveries.

Bogotá provides an inspiring example of a city showing strong leadership to foster a culture of cycling and leverage the opportunity created by Covid-19 induced lockdowns to tackle the challenges associated with a growing freight task.

*"In this pilot, in which 15 companies will participate, of which 10 are cargo generators and 5 logistics operators, we are going to see reductions in pollution, congestion and road accidents."*

– Secretary of Mobility of Bogotá, Nicolás Estupiñán Alvarado[224]

→ **Fundamental**

# Auckland, New Zealand

POPULATION

**1.7 million**

people live in Auckland, forecast to grow to 2.7 million by 2048[225]

MODE SHARE

**48%**

increase in mode share of non-car modes across the region by 2050 is the target set by the *Auckland Climate Plan*[226]

DEMAND FOR DELIVERIES

**85%**

increase in freight kilometres is expected over the next 30 years in Auckland[227]

Auckland is New Zealand's most populous city, characterised by a busy and dense urban core surrounded by low-density, suburban development.

Home to the largest port and International Airport in the country, Auckland plays a pivotal role in the movement of freight.


## Challenge

Rising demand for deliveries is contributing to an increase in carbon emissions and negatively affecting the quality of life of Aucklanders.[228]

Online shopping in New Zealand grew by 25% in 2020.[229] According to the *2020 New Zealand eCommerce Review*, a third of online spending comes from Auckland.[230]

## Response

In response to the challenge of rising emissions, New Zealand has legally bound itself to achieving net zero carbon emissions by 2050 via the *Climate Change Response (Zero Carbon) Amendment Act 2019*.[231]

Auckland Council's climate plan has called for a 64% reduction in transport emissions by 2030.[232]

*Auckland Transport*, *Waka Kotahi NZ Transport Agency* and the *New Zealand Government* are enabling the transition by: reallocating street space to prioritise movement by zero emission and space-efficient modes, embedding conditions to accommodate deliveries by micromobility in buildings and offering funding opportunities.

## What can other cities learn from Auckland?

Auckland provides an example of how clear policy direction and well-thought-through planning conditions can set a city on course to unleash the potential for micromobility in last mile deliveries.

## Spotlight

### → Creating preparedness

Auckland's *Access for Everyone* master plan for the city centre includes a zero emission area,[233] and redeveloping the city centre to reallocate street space to prioritise the movement of people and goods by zero emission and space-efficient modes.

In 2020, *Auckland Transport* set out its plan to work with the micromobility sector via an *On-Demand and Shared Mobility Roadmap*[234] - this focused on people making trips as opposed to deliveries, but the principles could easily extend to deliveries.

### → Encouraging a shift to micromobility by embedding conditions during the planning stage

*Auckland Council* is redeveloping its Downtown Car Park into a mixed use development.

To deliver on the city's mode shift plans, attached to the planning conditions for its redevelopment are a number of transport outcome conditions including the inclusion of a flexible, accessible multimodal transport hub that supports public access to micromobility, end-of-journey facilities, mobility parking, and a micro-logistics hub.

### → Reform in funding allocation

New Zealand is considering expanding access to existing funds, such as the *Low Emissions Vehicles Contestable Fund*, recognising that "*as towns and cities look for opportunities to encourage the uptake of cycling, we should keep in mind how cycling networks can also be used to move goods as well as people*".[235]

### → Industry is ripe for disruption

As part of a drive to become carbon neutral from 2030,[236] *NZ Post* runs the largest fleet of small electric vehicles in the country, called the *Paxters*.

*On a Mission* is a start-up working in partnership with courier companies and online retailers to complete the final stage of deliveries within the city using micromobility.


*NZ Post has 450 Paxters in its fleet.[237] These small vehicles carry loads of up to 200kg but are still small enough to be used on the footpath and can easily navigate the hills of Auckland.[238]*

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# 4 Remoding

## Remode deliveries from cars, vans and trucks to micromobility for the last mile in city centres.

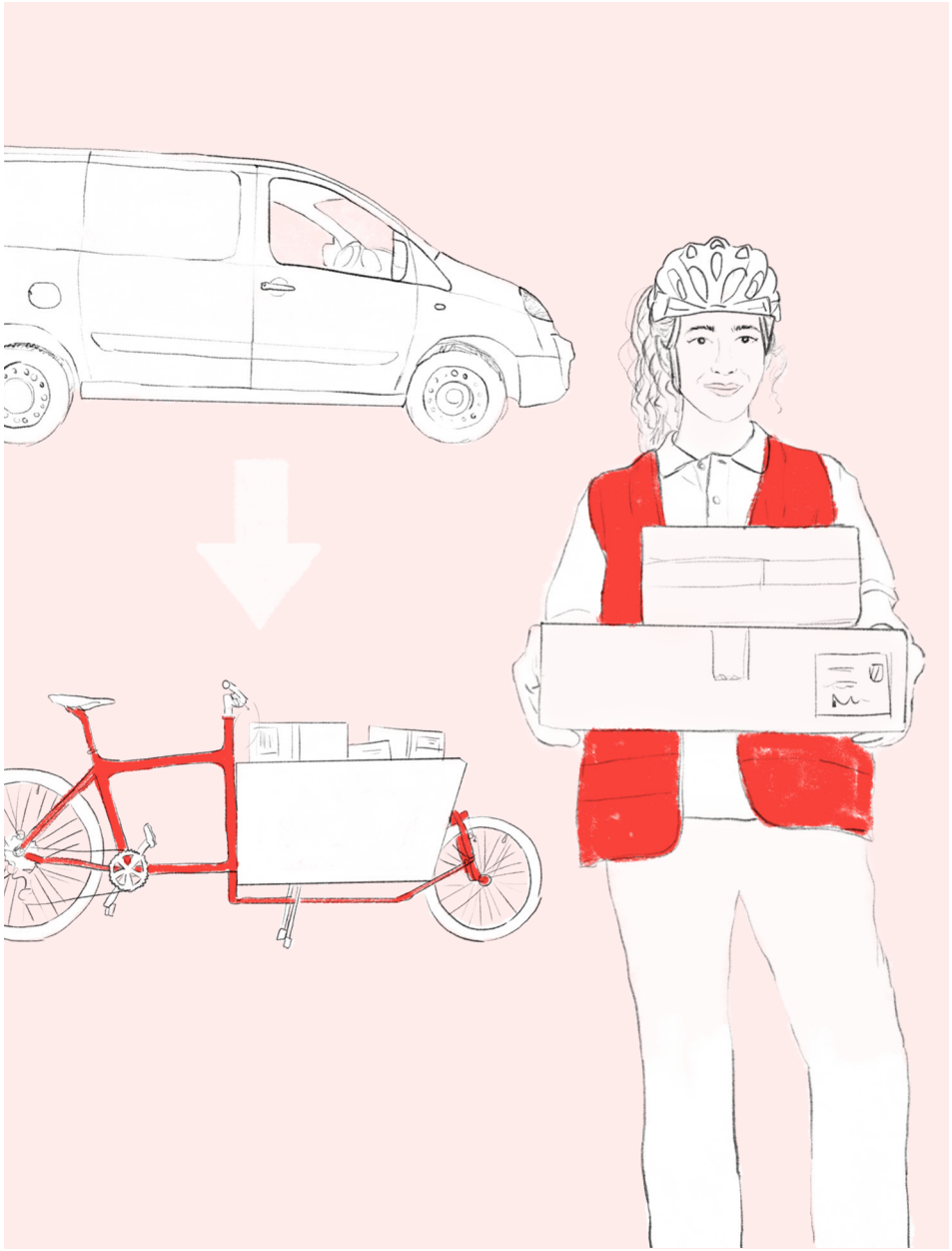
Remoding makes sense where there are dense city centres with micromobility presenting a positive alternative to reduce congestion, lower emissions and for quicker delivery times.

### Actions

→ Governments must make it easy for operators and businesses to find, secure, establish and use micro-logistics hubs in our cities through positive planning regulations, incentives, facilitating industry collaboration and directly creating hubs only when it makes sense to intervene.

→ Operators and businesses must continue to optimise the delivery chain by embracing opportunities to consolidate deliveries, move close to the customer and shift the last mile delivery task so that micromobility is the new status-quo instead of cars, vans and trucks.

→ Property owners can investigate and invest in under-utilised and well located assets as locations for micro-logistics hubs.



# Central London, England

POPULATION

**1.6 million**

people live in central London, equivalent to 12,129 people per square km[239]

MODE SHARE

**46%**

of all journeys across Greater London were made by walking and cycling between April and June 2020 compared to 29 per cent between January and March 2020[240]

DEMAND FOR DELIVERIES

**54%**

growth in van kilometres in London over the previous 25 years, forecast to increase by 43% over the next 25 years[241]

Many parts of central London follow a historic footprint, principally growing around the needs and travel patterns of people moving around on foot. The City of London is the primary central business district and historic centre of Greater London. The urban form varies from a densely populated central core to leafy suburbs to high activity centres.


## Challenge

The demand for more and faster deliveries is putting pressure on providers and on the already congested London roads leading to poor air quality, noise and negative impacts on the safety of vulnerable road users.[242]

Securing affordable spaces for micro-logistics hubs is becoming increasingly challenging in central London due to rising land values.[243]

## Response

In response to the rising demand for deliveries and to enable remoding of last mile deliveries, the *City of London Corporation* has been focusing on making it easy for the industry to find and secure space for micro-logistics hubs.[244]

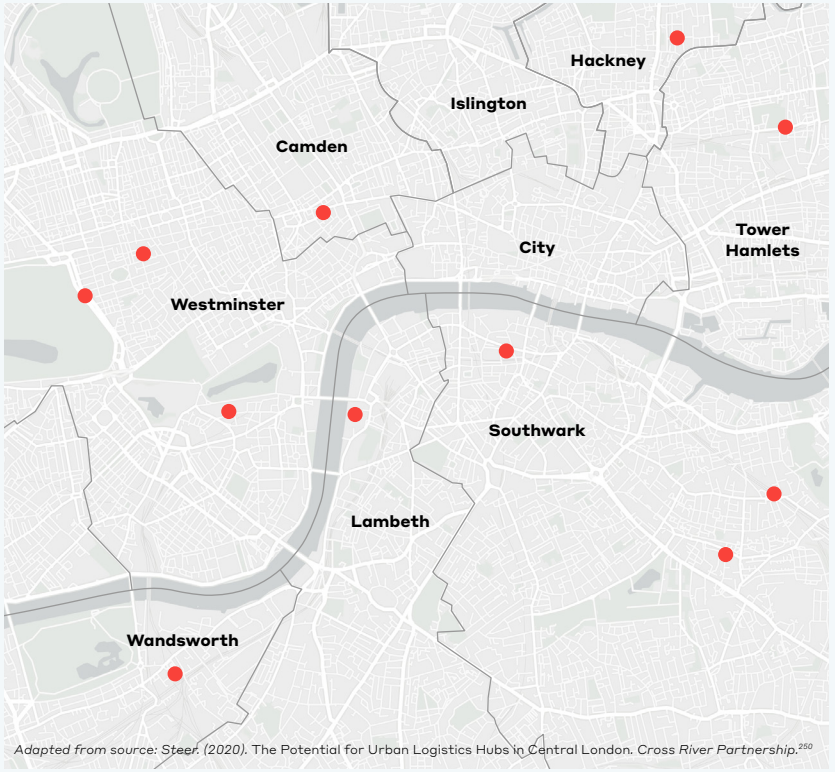
To nudge the industry, the *Greater London Authority* has set a target for net zero emissions,[245] implemented low traffic neighbourhoods[246] and established low emission and congestion charging zones.[247]

The national government is also committed to making it easier to walk and cycle with lower speeds and a 30% increase in funding allocated for active modes compared to last year .[248]

*"Replacing just 10% of the delivery miles currently covered by vans would save 133,300 tons of CO2 per year. That's crucial for London to achieve its goal to achieve carbon neutrality by 2030."*

– *Promise of Low Carbon Freight: Benefits of cargo bikes in London report*[249]

MICRO-LOGISTICS HUBS IN CENTRAL LONDON




*Adapted from source: Steer. (2020).* The Potential for Urban Logistics Hubs in Central London. *Cross River Partnership.*[250]

● Micro-logistics hubs in Central London — London Boroughs

Micro-logistics hubs are places where deliveries can be consolidated closer to the end customer, with micromobility taking over for the last mile, removing polluting, less space efficient delivery vehicles from city streets.

# Central London, England *continued*

## Spotlight

→ **Micro-logistics hubs contribute to improved delivery efficiency and reduced emissions**

A number of companies including *UPS*, *DPD*, *Amazon*, *Sainsbury's*, *Ecofleet* and *Gnewt* operate micro-logistics hubs in central London.[251] The *Gnewt* business model has resulted in a 52 per cent reduction in kilometres travelled per parcel, 88% reduction in $CO_2$ emissions and a 29% reduction in overall costs compared to the previous delivery setup.[252]

Last mile deliveries by cargo bikes and on foot from a new micro-logistics hub by *Amazon*[253] within the *City of London* is expected to take 85 vehicles off the road each day, resulting in 23,000 fewer vehicle journeys in central London every year.[254]

→ **The industry is pivoting to micro-logistics hubs to be closer to customers allowing last mile deliveries to be completed by micromobility**

Over the last year, a number of on-demand grocery companies, for example *Weezy*, *Jiffy*, *Dija*, *Zapp*, *Fancy*, *Getir* and *Gorillas*, have emerged in London.[255] *Deliveroo* offers extra payment for deliveries by bike in busy UK cities.[256]

These companies operate out of virtual stores, generally within the congestion charging zone, that stock a range of items and make their deliveries using micromobility in busy central London.

→ **Making it easier to find and secure space for micro-logistics hubs**

The *Cross River Partnership's* online tool, funded by the *Central London Sub-Regional Transport Partnership* and *Transport for London*, advertises space for use as micro-logistics hubs across central London.[257]

→ **Making best use of under-utilised real estate to boost the use of micromobility for last mile deliveries**

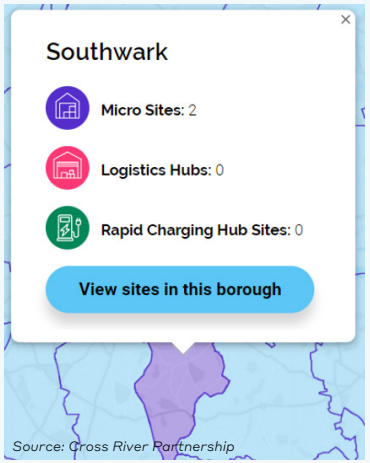
A 2020 report by the *Cross River Partnership* identified 29 spaces that have potential for use as micro-logistics hubs across London.[258]

*The City of London Corporation* is committed to delivering three micro-logistics hubs by 2022 and a further two by 2025.[259]

→ **Subsidies and behaviour change programs support a shift towards micromobility for last mile deliveries**

*Bikes for Business* is a behaviour change initiative by the *London Bridge Business Improvement District* that aims to get 15% of businesses to switch central London deliveries to cargo bikes.[260]

In 2019/2020, *Bikes for Business* offered subsidies to London businesses and non-profits to offset some of costs of switching from a car or a van to cargo bikes, through the nationally administered *eCargo Bike Grant Fund*.[261]




*Screenshot of Cross River Partnership online tool showing micro-logistics hubs advertised in Southwark, London.*[262]


*Ecofleet uses cargo bikes for last mile deliveries out of its South London base.*[263]

### What can other cities learn from London?

Micro-logistics hubs have been enabling a transition to micromobility in London by making it easier to consolidate deliveries and to change modes.

London provides an example of how cities can use policy levers to secure highly contested space for micro-logistics hubs and nudge the industry to act by implementing longer-term emission reduction targets and supporting reforms.

There are positive signs from the industry playing a leading role in establishing micro-logistics hubs to consolidate and remode deliveries for the last mile in central London.

London provides a good example of a city creating the right policy settings to empower the industry to solve the last mile delivery challenge.

**A recent study on the potential of micro-logistics hubs found that the use of micro-logistics hubs in London could reduce traffic volumes by 13% and reduce harmful vehicle-related air emissions by 17% by 2025, through the consolidation of deliveries and a shift to micromobility for the last mile deliveries.**

– Accenture (2021)[264]

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# Taoyuan City, Taiwan

POPULATION

**2.2 million**

people live in Taoyuan City[265]

MODE SHARE

**389**

motorcycles per square km makes Taiwan the most scooter-dense country in the world[266]

DEMAND FOR DELIVERIES

**150%**

increase in food deliveries across Taiwan in April 2020, since September 2019[267]

Taoyuan City is a major logistics hub in one of the most densely populated countries in the world.[268] Located in the northwest of Taiwan, Taoyuan City is characterised by a busy mixed-use district with commercial and residential areas.[269]

Travel by scooter/motorcycle is deep-rooted in the Taiwanese culture enabled both by the dense urban environment and government incentives.[270]


## Challenge

The logistics industry is critical to Taoyuan City's economy but the growing demand for deliveries is exacerbating challenges, such as air and noise pollution, traffic congestion, waste, wear and tear of roads and greenhouse gas emissions.[271]

Commercial and private vehicles colliding with people walking in the small and congested alleyways is identified as a safety risk in the older parts of Taoyuan City.[272]

## Response

In response to the challenge of the rising demand for deliveries, the *Taoyuan City Government* is supporting the creation of micro-logistics hubs to encourage a shift towards micromobility for last mile deliveries.

To support this transition, the *Taoyuan City Government* has implemented a low emission zone to discourage deliveries by polluting vehicles.[273] Subsidies are also offered for the purchase of electric scooters in a bid to move away from diesel/petrol powered alternatives.

## What can other cities learn from Taoyuan City?

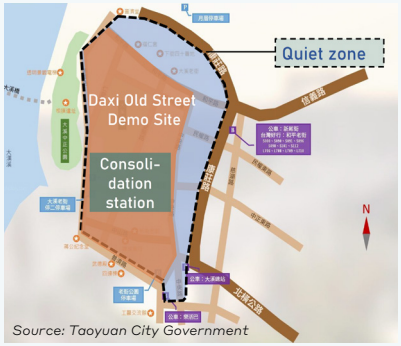
Taoyuan City demonstrates how governments can set up the base infrastructure, facilitate industry-wide learning and pave the way for the industry to transition to micromobility for last mile deliveries.

## Spotlight

### → Trialling micro-logistics hub to enable a shift to micromobility for last mile deliveries

In partnership with *ICLEI*,[274] the *Taoyuan City Government* has committed to the *Daxi Old Street Eco-logistics Demonstration Project* in the historic commercial district of Daxi. A key focus of the project is to enable the consolidation and remoding of parcels at a micro-logistics hub. Goods arriving by trucks will be transferred to electric tricycles, electric motorcycles and autonomous robots for the last mile.[275]

The project aims to reduce carbon emissions, road congestion, contribute to street safety and quality in the historic, narrow streets of Daxi.[276]




*A conceptual plan of the Daxi Eco-logistics Demonstration project.[277] It includes a micro-logistics hub and quiet zones with lower speeds and traffic management.*

### → Micromobility is the mode of choice for food deliveries in Taoyuan City

It's easier to move around using micromobility on the busy roads of Taoyuan city, similar to other cities in Taiwan. The preference for smaller vehicles is reflected in the mode share of *Uber Eats* deliveries. Registered fleet on the *Uber Eats* platform in Taiwan is comprised of 95% two-wheel scooters, of which 6.8% are electric.


*An Uber Eats courier using micromobility in Taiwan.*

### → Incentives to make the shift towards low emission vehicles

To achieve its commitment for a low-carbon, green-energy city, the *Taoyuan City Government* is offering subsidies for the replacement of old, polluting scooters with new electric scooters.[278] The scheme was a success in 2020 increasing the share of electric scooters to 6% of the city's fleet, which is more than any other city in Taiwan.

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# 5 **Test and Scale**

## Test ideas to promote last mile deliveries by micromobility and scale up what works.

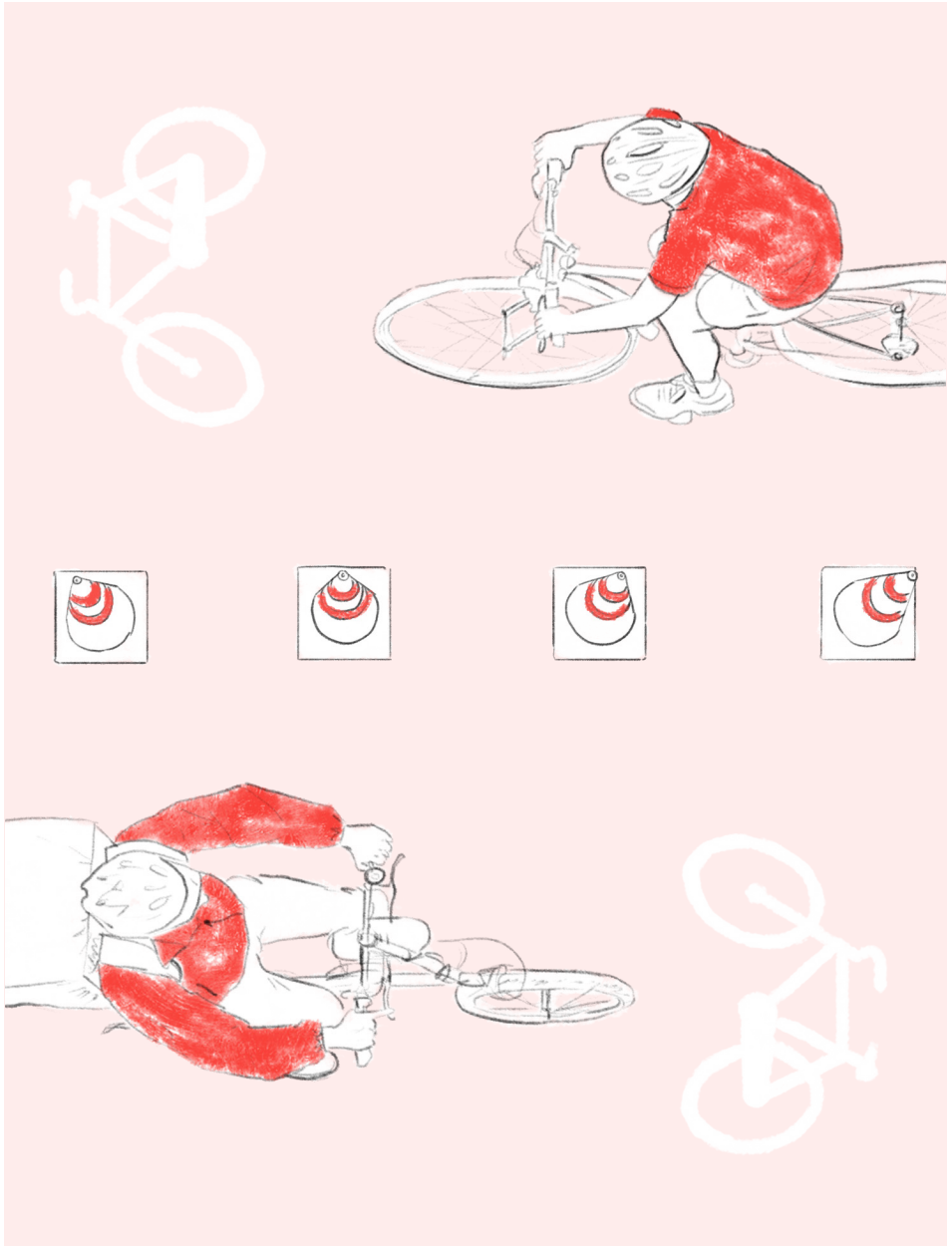
Trials and tactical interventions are critical in developing use cases and building evidence on the effectiveness of last mile delivery by micromobility. They enable the industry in partnership with government to test and scale up what works.

### Actions

→ Lighter, quicker, cheaper demonstration projects, such as pop-up cycle lanes and temporary pick-up and drop-off zones for deliveries by micromobility make it easy for businesses, operators and communities to experience and embrace new ways of sending and receiving deliveries.

→ Ensuring nimble policy and regulatory frameworks are in place to support, and not block, testing new business models and technologies is essential for fostering innovation.

→ Governments must make it easy for communities, operators and businesses to engage by creating opportunities to provide feedback, facilitating knowledge sharing through platforms such as communities of practice and by establishing outcomes-based data sharing and reporting requirements.



# New York City, USA

POPULATION

**8.8 million**

people live in New York, forecast to increase to 9 million by 2050[279]

MODE SHARE

**63%**

growth in bike ridership on weekends between May and December 2020 compared to 2019[280]

DEMAND FOR DELIVERIES

**2.4 million**

packages were delivered daily in New York City in 2020, with 80% delivered to homes[281]

New York City is the most densely populated city in the United States of America. Made up of five boroughs, the city layout adopts a grid of blocks, avenues and streets supporting tall skyscrapers and dense living.[282]

The city is supported by a good public transport network and a growing cycling network but experiences high levels of congestion on its roads. In 2018, New York City was ranked as the second-most congested city in the world.[283]


## Challenge

Propelled by the lockdowns induced by Covid-19, New York City experienced a massive surge in online shopping. By 2045, the total volume of freight moving through New York City is expected to reach 540 million tons a year, up from 365 million tons in 2021.[284]

The heightened demand for deliveries is adding congestion to the city's already busy streets, contributing to poor air quality and creating more dangerous conditions for road users.[285]

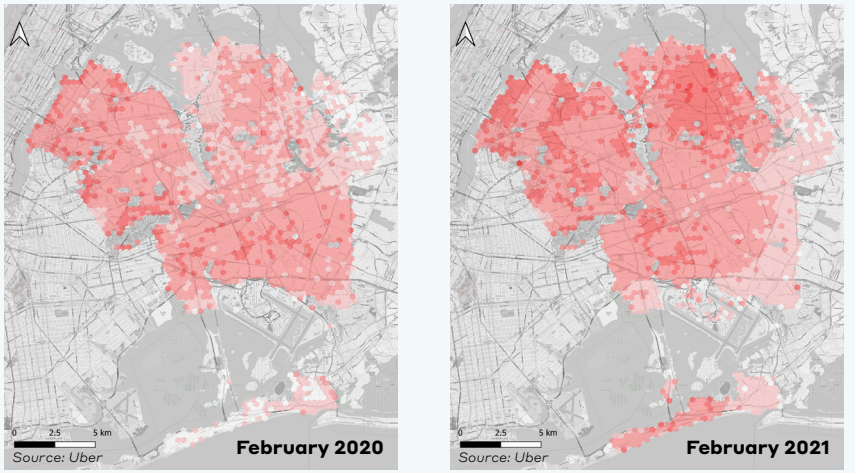
## Response

In response to the challenge of rising demand for deliveries, *New York City Council* is trialling tactical interventions along with a range of supporting reforms to make the transition to micromobility for last mile deliveries easier. For example, it is running a cargo bike trial and has implemented temporary bans on vehicle traffic on some streets.

It has also introduced flexibility in the management of kerb space,[286] legalised electric bikes and scooters[287] and expanded its bike network.[288]

A package of City Council bills to support micromobility for last mile deliveries is also under deliberation.[289] Proposed measures include: micro-logistics hubs, delivery and servicing plans for large commercial buildings and re-routing trucks.

MODE SHARE OF *UBER EATS* DELIVERIES COMPLETED BY REGISTERED BIKE COURIERS IN QUEENS, NEW YORK CITY




Deliveries by bike

0 - 20% | 21 - 40% | 41 - 60% | 61 - 80% | 81 - 100%

Food deliveries were deemed an essential service during the Covid-19 induced lockdowns in New York. Number of deliveries saw a 68% increase in New York in February 2021 compared to the same time last year.[290] The maps above show a noticeable increase in the mode share of *Uber Eats* food deliveries completed by registered bike couriers across Queens, particularly north-eastern Queens over the same period. Characterised by congested streets, north-eastern Queens has a high concentration of restaurants.

As part of New York's response to the pandemic, a number of streets across Queens have also been designated as 'Open Streets', prohibiting cars from entering to encourage more people to move on foot and on bikes.[291]

# New York City, USA *continued*

## Spotlight

**→ Trialling reallocation of road space to encourage uptake of micromobility**

In response to the Covid-19 induced lockdowns, the *New York City Department of Transportation* has been trialling the *Open Streets* programme which gives priority to people on foot and on bikes.[292]

Example initiatives include pop-up bike lanes, banning of through traffic and car-free streets.[293] The number of crashes on 34th Avenue Open Street dropped to 90 in the first year of operation compared to an average of 148 a year in the prior three year period.[294]

**→ The industry is innovating to make supply chains more efficient by making better use of micromobility for the last mile deliveries**

*Bond*, a New York start-up has set up hyperlocal micro-logistics hubs in small warehouses in basements, unused space in office buildings, parking garages and storefronts across New York City.[295] It, along with traditional delivery companies like *DHL* and *UPS*, offers last mile deliveries by electric cargo bikes in New York City from in-city locations. Another storage and logistics company in New York City is creating a system of micro-logistics hubs[296] recruiting 1,000 residents in Manhattan and Brooklyn to use their apartments to store goods for retailers.[297]

**→ Testing cargo bikes in New York to build industry capacity**

In 2019, *New York City Department of Transportation* launched a trial to replace last mile delivery vans with cargo bikes on Manhattan's 60th Street.[298]

The aim of the trial was to improve safety and reduce congestion caused by double-parked vans and trucks. Under the program, e-bikes were able to use bike lanes and avoid the planned congestion pricing scheme.[299]

More than 350 bikes operated by six operators were allowed to park in loading areas previously reserved for vans and trucks. Between May 2020 and January 2021, the trial resulted in a 109% increase in deliveries by cargo bikes.

20 cargo bike miles per day were shown to replace 20 van or box truck miles, resulting in a per bike $CO_2$ saving of approximately 7 tons per year, which is equivalent to over 100 planted trees, or 15,436 passenger car miles travelled.[300]

The *New York City Department of Transportation* is working on developing a permanent cargo bike programme given the success of the trial.[301] Key learnings from the trial included the need for dedicated kerbside space and prioritisation of bikes through innovative street design.


*Temporary ban on vehicular traffic on Broadway between 39th Street and 40th Street in Manhattan. Asphalt mural titled "Magic Hour" by Steed Taylor.*[302]


*Cargo bike corral for Whole Foods Houston St Manhattan implemented as part of the commercial cargo bike pilot.*[303]


*Deliveries being completed by cargo bikes as part of the Commercial Cargo Bike Pilot in New York.*[304]

### What can other cities learn from New York City?

Partnering with the industry to test the viability of deliveries by micromobility in New York City has enabled industry-wide learning and better customer service.

Lighter, quicker, cheaper demonstration projects provide an opportunity for participating companies to test vehicles, delivery models and technologies before scaling up. They also allow cities to understand conditions under which the industry can transition to micromobility for last mile deliveries. Such trials and tactical interventions create feedback loops between the city and the operators and lessons for future pilots and scalable programmes.

New York City is a good example of the 'pilot, test and grow' for city leaders considering taking a low risk approach to building community familiarity and industry capability.

*"The addition of a bicycle lane – whether a protected lane or a conventional one – improves the safety of cyclists by one third. The addition of those lanes also increases the volume of cyclists by an average of 50%."*

– *New York City Department of Transport* press release on the *Safe Streets for Cycling: How Street Design Affects Bicycle Safety and Ridership* report[305]

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# Sydney, Australia

POPULATION

**5.3 million**

people live in Greater Sydney[306] forecast to grow to 6.6 million residents by 2036[307]

MODE SHARE

**20%**

of Sydneysiders cycle regularly compared to 7% in 2017 with half taking up cycling in the past two years[308]

DEMAND FOR DELIVERIES

**57%**

year on year growth in online purchases across Australia in 2020 with Australians spending a record $50.46 billion online[309]

Sydney is a metropolis of three cities. The CBD, at the eastern edge of Sydney, is dense and characterised by busy, narrow streets and thoroughfares. The Central River City also features a dense urban core surrounded by suburban urban form. The Western Parkland City is characterised by low density suburban urban form supported by local activity centres, with aspirations for growth supported by rapid population increases.


## Challenge

A growing freight task and short delivery time frames is putting pressure on delivery providers to be more efficient.[310]

Lack of dedicated cycling infrastructure heightens the safety risk for delivery riders using micromobility.[311] Increased congestion and vehicle emissions are also negatively affecting the quality of life of people living, working and visiting Sydney.[312]

## Response

A collaborative approach with industry to trial ideas that could be scaled-up to address challenges associated with the growing delivery task is at play in Sydney.

The *New South Wales Government* is testing new ways of completing last mile deliveries and to improve safety, in consultation with industry. It has goals for net zero emissions and for keeping people safe on the roads.

The *New South Wales Government* has also released a *Last Mile Toolkit* that provides guidance to the industry and decision makers on freight and servicing demands in new building and precincts during the planning process.[313]

## What can other cities learn from Sydney?

Sydney provides a good example of a low risk approach to fostering a culture of innovation by partnering with the industry to test ways to increase the uptake of micromobility for last mile deliveries.

## Spotlight

### → Testing micro-logistics hubs

A micro-logistics hub trial has been operational since 2016 in a downtown car park.[314] It found that delivery by bike took half the time of a van, travelled shorter distances, used less space and was less affected by loading zone availability and traffic conditions.[315] The trial resulted in a 54% reduction in daily vehicle trip emissions, loading zone use dropped by 9.3 hours and the time spent driving in the CBD dropped 9.7 hours.[316]

### → Testing new ways of kerbside management

The *City of Paramatta Council* partnered with *Spot* to trial digital kerbside mapping and an app that provides delivery people with real-time parking options.[317]

During the Covid-19 induced lockdowns, the trial was extended to show temporary pick-up zones.[318] While not directly related to micromobility, the trial demonstrated the power of dynamic kerb management.

### → Increased popularity of deliveries by bike is making way for new business models

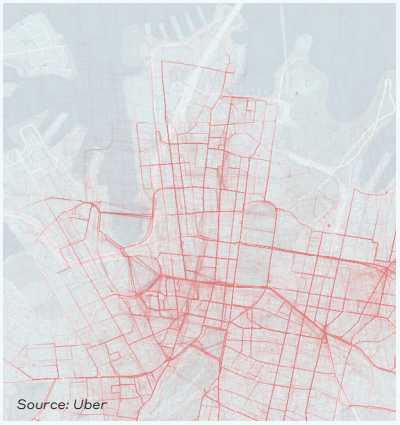
To reduce the initial cost of vehicle purchase, delivery platforms such as *Uber Eats* have partnered with players like *Zoomo* to offer certified, safe ebikes at discounted rates.

### → Trialling pop-up cycle lanes

The *City of Sydney* and the *New South Wales Government* installed 7km of pop-up cycle lanes as part of its *Covid-19 Safe Travel Plan* in six months during 2020.[319]

Described as *"quick and simple to implement, adaptable and inexpensive"*[320] by the *City of Sydney's* Lord Mayor, the pop-up cycles lanes were supported by reduced speeds making them safer for people using micromobility.[321]

Two of the six pop-up cycle lanes are set to become permanent, while the remaining will stay at least until 2023.[322]




— Routes used by *Uber Eats* couriers on bikes

*A sample of routes used by Uber Eats couriers on bikes in February 2021.*[323]

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# Big Moves checklist for city leaders

→ **Fundamental**

*Big Moves fundamental to creating the right operating environment for deliveries by micromobility.*

## 1 Safe Moving

### Make it safer for people to move around by micromobility.

- ☐ Focussing regulatory tools on enabling micromobility, rather than cars, vans and trucks, makes it safer to move around city centres through lower speeds, low traffic neighbourhoods and low emission zones.
- ☐ Safe moving infrastructure for micromobility in our cities must be prioritised by all, featuring extensive cycling networks that meet NACTO guidelines, self-explaining streets and proactive management.
- ☐ Governments, operators, businesses and communities each play a role to create a micromobility culture in our cities with guidance, support and education such as maps, guides, training and trials.

## 2 Easy PUDO

### Change the built environment to facilitate safe and easy pick-up and drop-off from kerbsides and in buildings for people making deliveries by micromobility.

- ☐ Optimise managing and allocating the kerbside for people delivering by micromobility by reallocating car, van and truck parking and by designating places for (un)loading as well as providing infrastructure such as charging facilities and lockable parking.
- ☐ Space and facilities for people to (un)load deliveries by micromobility must increasingly be available within office and residential buildings, restaurants and shops through updating building codes for new developments and by building owners retrofitting facilities to meet emerging demand.
- ☐ Governments and delivery businesses have a key role in supporting people through guidance and tools to enable safe, productive use of kerbsides and of facilities within buildings, and to normalise using micromobility for deliveries.

## 3 Policy Leadership

### Set long-term policy direction to create an enabling environment for a transition to micromobility for last mile deliveries in city centres.

- ☐ Governments, industry and communities must commit to *Vision Zero*, developing and delivering on actionable strategies to eliminate fatalities and serious injuries with safety embedded through all systems.
- ☐ A commitment to achieving net zero emissions must deliver meaningful change in the design and operation of the transport sector by promoting zero emission vehicles over internal combustion engine vehicles.
- ☐ Integrated land use and transport strategies are integral to setting a shared vision to guide investments and policy decisions to make last mile deliveries by micromobility the easier choice for businesses and operators.

## → Accelerate

*Big Moves to accelerate the transition towards last mile deliveries by micromobility in city centres.*

### 4 Remoding

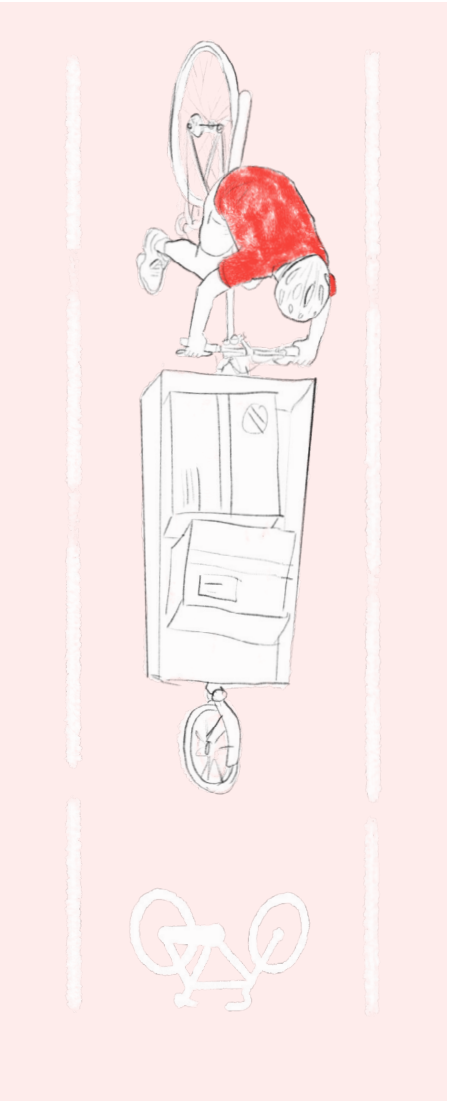
**Remode deliveries from cars, vans and trucks to micromobility for the last mile in city centres.**

- ☐ Governments must make it easy for operators and businesses to find, secure, establish and use micro-logistics hubs in our cities through positive planning regulations, incentives, facilitating industry collaboration and directly creating hubs only when it makes sense to intervene.
- ☐ Property owners can investigate and invest in under-utilised and well located assets as locations for micro-logistics hubs.
- ☐ Operators and businesses must continue to optimise the delivery chain by embracing opportunities to consolidate deliveries, move close to the customer and shift the last mile delivery task to micromobility so that micromobility is the new status-quo instead of cars, vans and trucks.

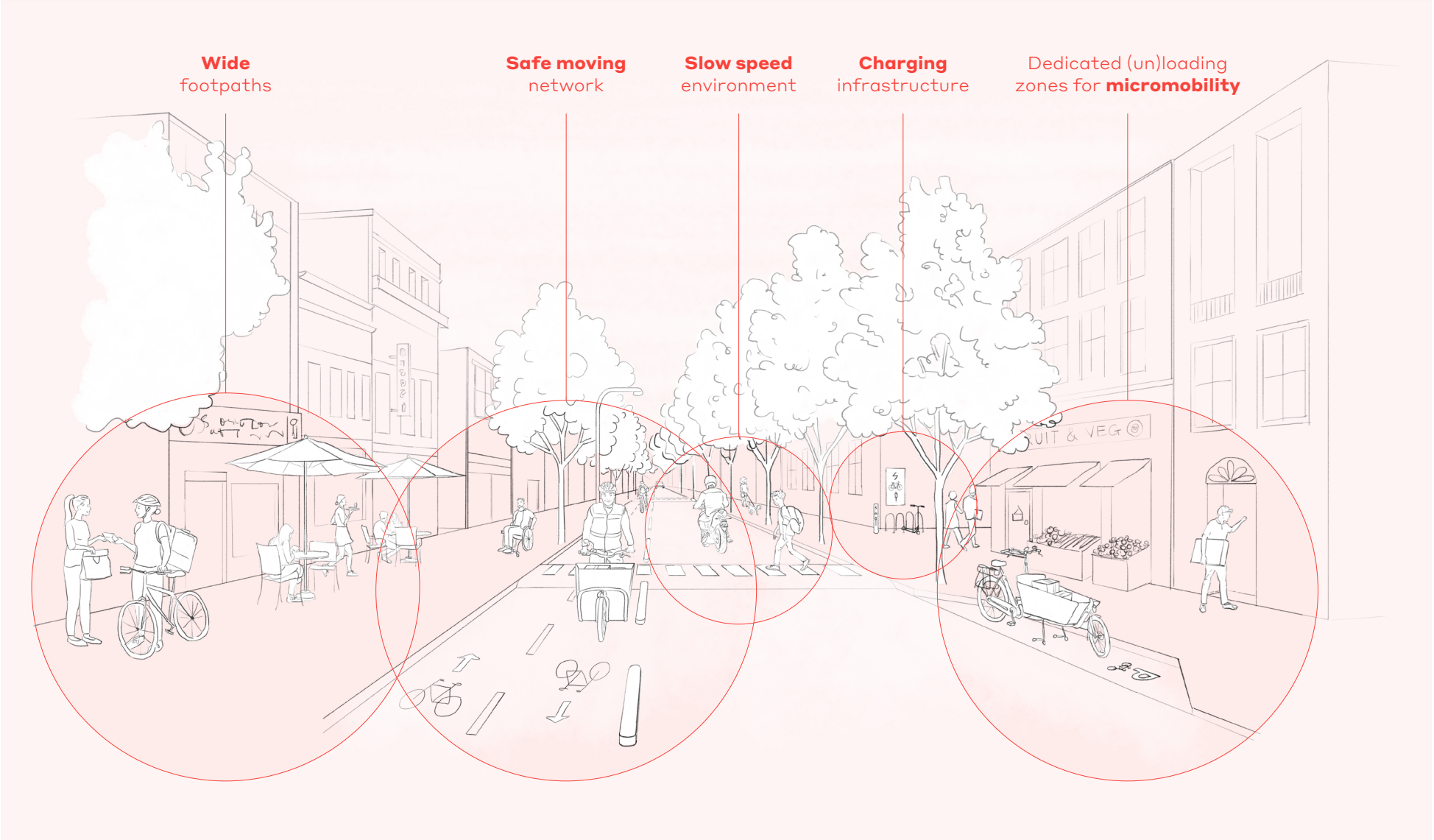
### 5 Test and Scale

**Test ideas to promote last mile deliveries by micromobility and scale up what works.**

- ☐ Lighter, quicker, cheaper demonstration projects, such as pop-up cycle lanes and temporary pick-up and drop-off zones for deliveries by micromobility make it easy for businesses, operators and communities to experience and embrace new ways of sending and receiving deliveries.
- ☐ Ensuring nimble policy and regulatory frameworks are in place to support, and not block, testing new business models and technologies is essential for fostering innovation.
- ☐ Governments must make it easy for communities, operators and businesses to engage by creating opportunities to provide feedback, facilitating knowledge sharing through platforms such as communities of practice and by establishing outcomes-based data sharing and reporting requirements.



# Designing our streets to support deliveries by micromobility



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