

Planning logistics in 'the 15-minute city'

Abel Kebede REDA

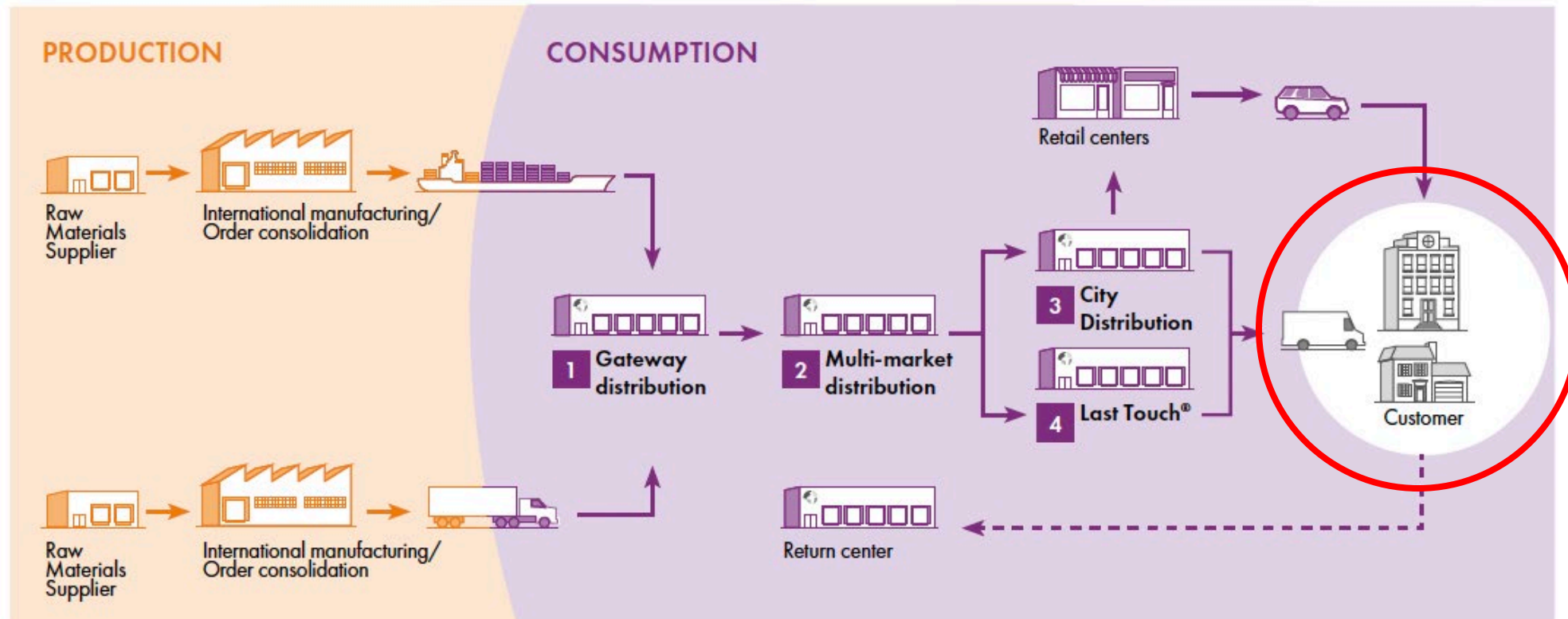
Presentation contents

- Proximity logistics
- Urban planning concept of “the 15-minute city”
- Integrate logistics in urban planning

Proximity in urban logistics

The organization of the contemporary supply chain

Source: Prologis Research, *The Evolution of the Modern Supply Chain and Implications for Logistics Real Estate Performance*, Supply Chain and Logistics Real Estate, 2019.



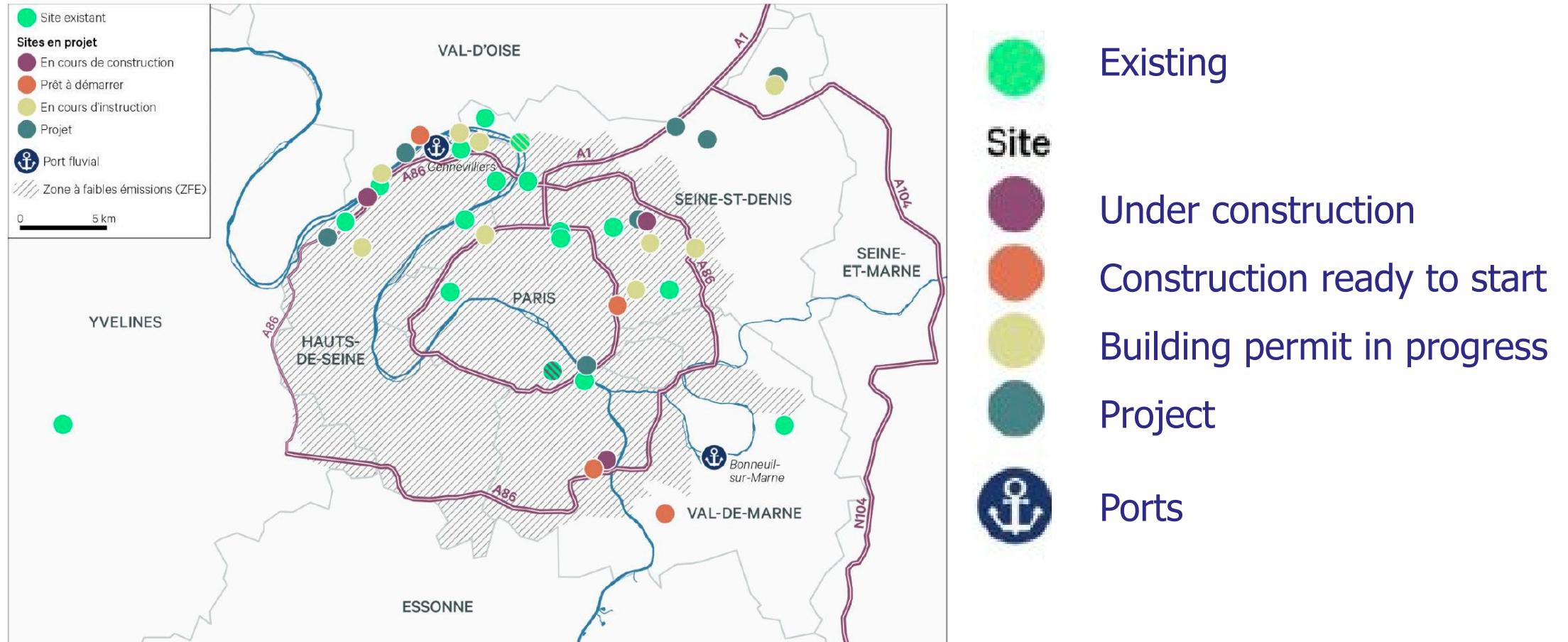
More focus

Proximity in urban logistics

“Proximity logistics” – trend of logistics facility development in urban, dense and mixed-use areas (*Buldeo Rai et al., 2022*)

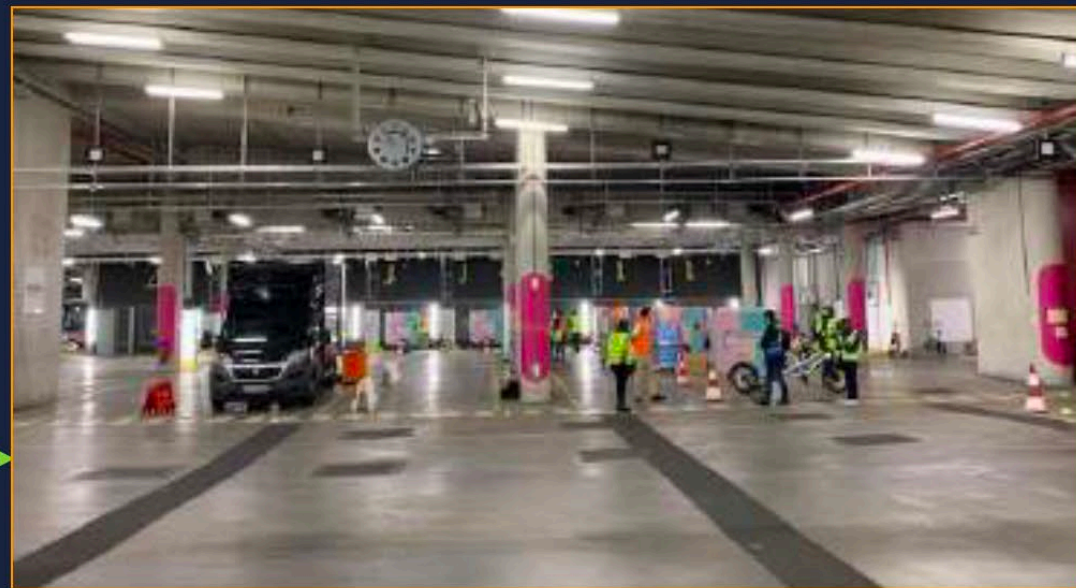
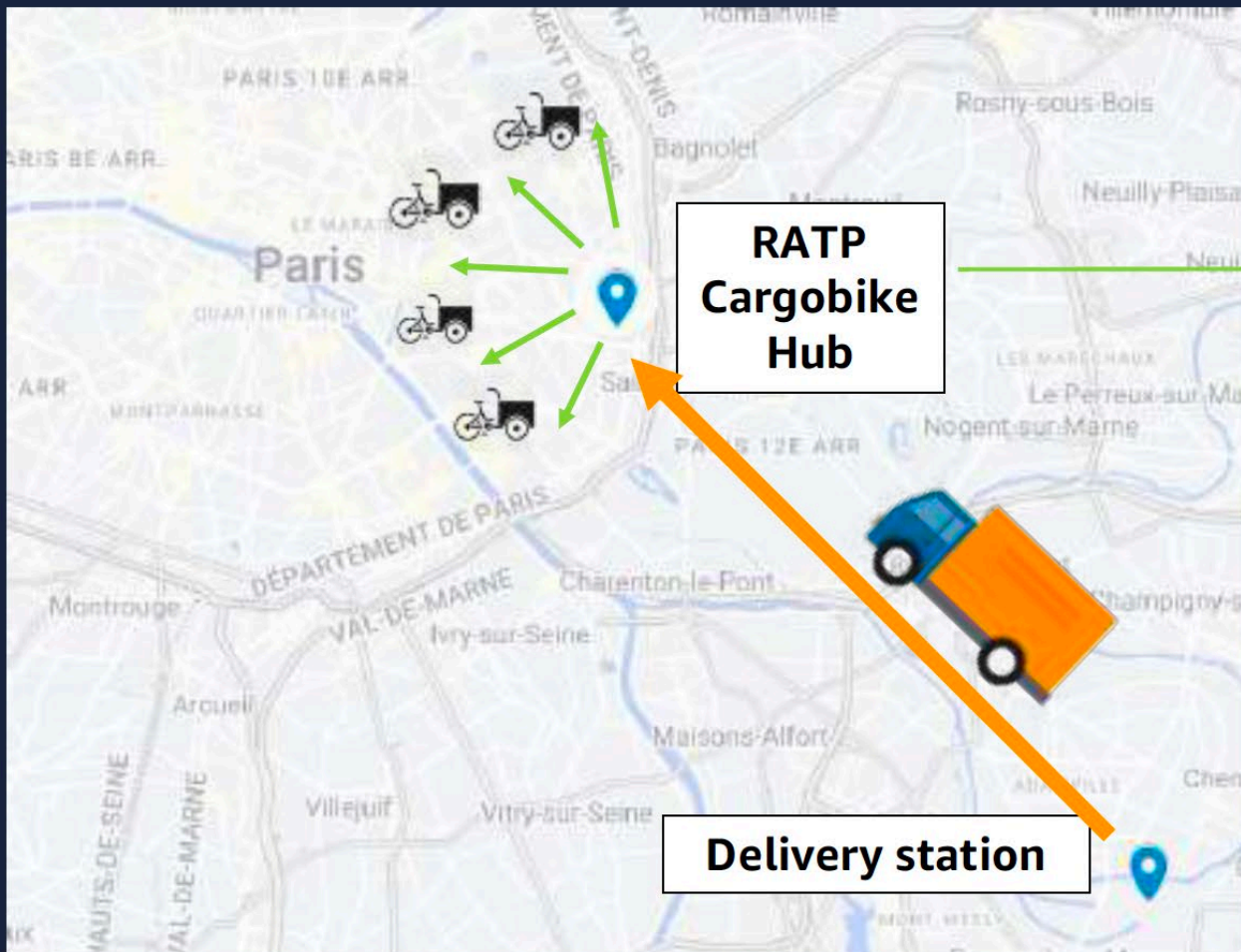
- Emergence of proximity logistics
 - E-commerce and the growing demand of quick delivery driven by consumer’s expectation
 - Rise of omnichannel models, where physical stores integrate online and offline channels and consumers shop and collect on multiple channels
- More presence and growth of **fulfillment centers, delivery stations** and **fast delivery hubs** in urban areas

45 vertical warehouses in Paris and inner suburbs of Paris



Source : CBRE Research, T3 2023

Cyclelogistics operations in bus depots: our partnership with RATP



Dark Stores during Covid: A Sainsbury, London



Source: Sainsbury's [thegrocer.co.uk, 07 Feb, 2020]

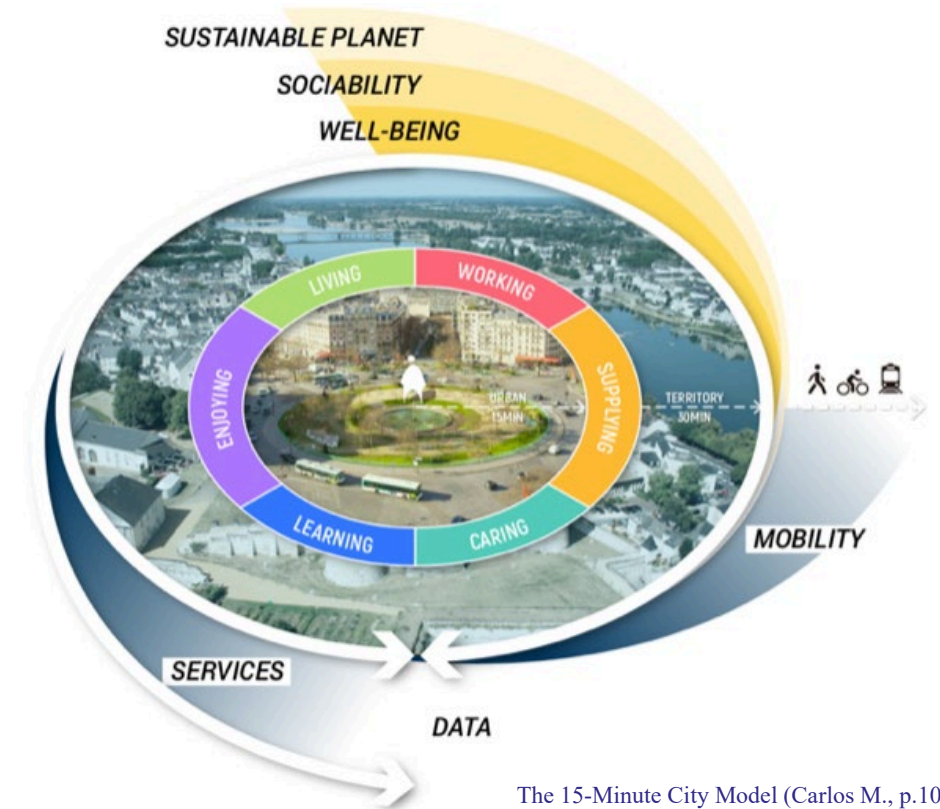
- Retail distribution outlets closed to the public
- Operate exclusively for online order fulfillment
- Transform to micro-fulfillment centers

Proximity in urban planning

The **15-minute city concept** wants essential services to be within a short distance, promoting sustainable, walkable, and accessible neighborhoods



dutpartnership.eu



The 15-Minute City Model (Carlos M., p.105)

Rise of the 15-Minute City Concept

Environmental and Social Challenges

The need to address urban issues



Climate Initiatives Highlight Proximity

COP21 emphasizes reducing emissions



COVID-19 Accelerates Adoption

Pandemic prompts rapid urban changes



Milan, Italy (before & during Covid-19)



Source: Skynews

Benefits of 15-Minute Urban Planning

Neighborhood Self-Sufficiency

Reduces need for long-distance shopping trips



Local Business Support

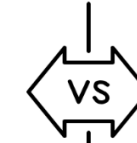
Integrates e-commerce to strengthen small retailers

Sustainable Transport

Encourages walking and cycling to reduce emissions

15-minute city

Pros



Cons



Enhanced accessibility



Improved quality of life



Reduced carbon footprint



Increased local economy



Greater community engagement



Implementation challenges



Potential for gentrification



Limited scalability



Resistance to change



Infrastructure costs

Case of Paris, France

Opportunities

- Olympic Games 2024
- Logistics Hotels
- Public-private collaboration
- Research program & funding

- Low emission zones (LEZs)
- Land-use plan, strategy, vision
- Charter for public-private partnership
- Research capacity
- Dedicated team at Transport dept.

Weaknesses

- Low compliance and enforcement of LEZs
- Limited space available
- Size of urban logistics team at Transport dept.

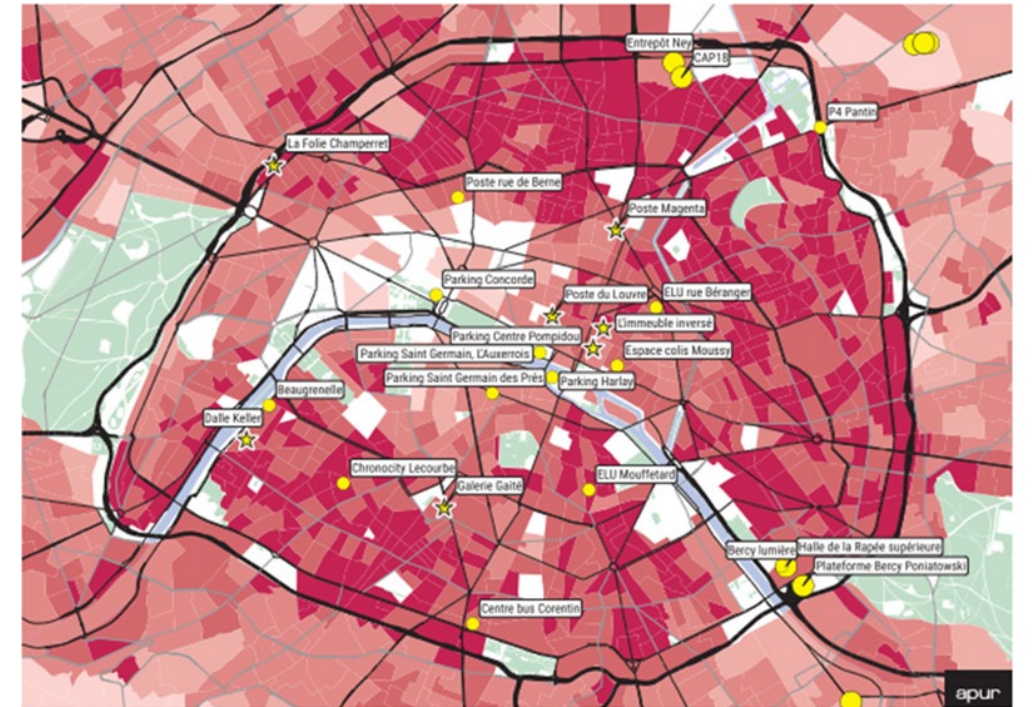
Strengths

- Technological resistance
- Speed of change
- Needs cooperation with surrounding municipalities
- Public opposition on urban logistics

Threats

Urban logistics for e-commerce in Paris

- Several inventories from APUR since 2020:
 - Small cross-docking facilities & medium-sized terminals
 - Large number of inhabitants but few logistics facilities → the east and north-west



B2C COURIER AND E-COMMERCE SITES



B2C courier and e-commerce sites in Paris (Apur, 2021)



Site de logistique P4 Porte de Pantin de Sogaris - Architecte Syvil

City of Paris,
Logistics Strategy 2022-2026

Green Dock project in Gennevilliers



CONNECT Paris



In 17th arrondissement, in Clichy-Batignolles

- Approx. 67,000 sqm last-mile logistics centre in the heart of Paris
- 5 logistics levels
- 1 panoramic office level
- Versatile, flexible and adaptable spaces
- Each level has a
 - Dedicated truck court for HGVs and
 - Indoor space for LGV and cargo bikes.
- 1 underground parking level (330 spaces, 20% with electric charging stations upon delivery)
- **Building permit obtained**

Logistics spaces in underground car parks

Louvre



Opera



Beaugrenelle

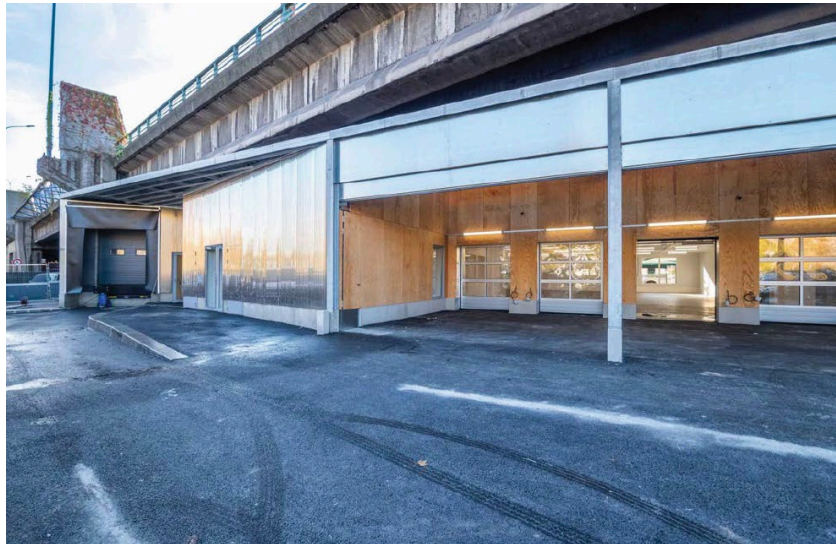


Concorde



Urban hubs

Hub under the Porte de
Pantin ring road



In a mixed project Paris
19th towards Rosa Parks
station



River logistics along Seine



Laetitia D.

Fludis and Transpack on the banks of the Seine



Laetitia D.

Temporary rental and time-sharing

Amazon, Paris 14ème
Use of the bus depot during the day



F. Bouchon Le Figaro

Mopeds (non-electric)

- In Paris, 36% of gig delivery drivers used a moped in 2022



Laetitia D.



15-minute City tested – City of Paris, France

- Promoting the 15-minute city, with **Local Urbanism Plan (PLU)**
- PLU
 - Adopted first in 2006, revised 2016, 2024
 - Schools are the capitals of neighborhoods
 - Schools, businesses, and healthcare are within easy reach, reducing the need for long commutes



Saint-Germain district of Paris (6th Arrondissement)
(photo by: Symeonidis Dimitrios/Shutterstock | governing.com)

Where are deliveries in the 15-minute concept?



Before-and-after images, from Paris Mayor Anne Hidalgo's re-election campaign website, illustrating what could occur when cars give way to walking and biking (Images: annehidalgo2000.com) – *Governing.com* July 20, 2021

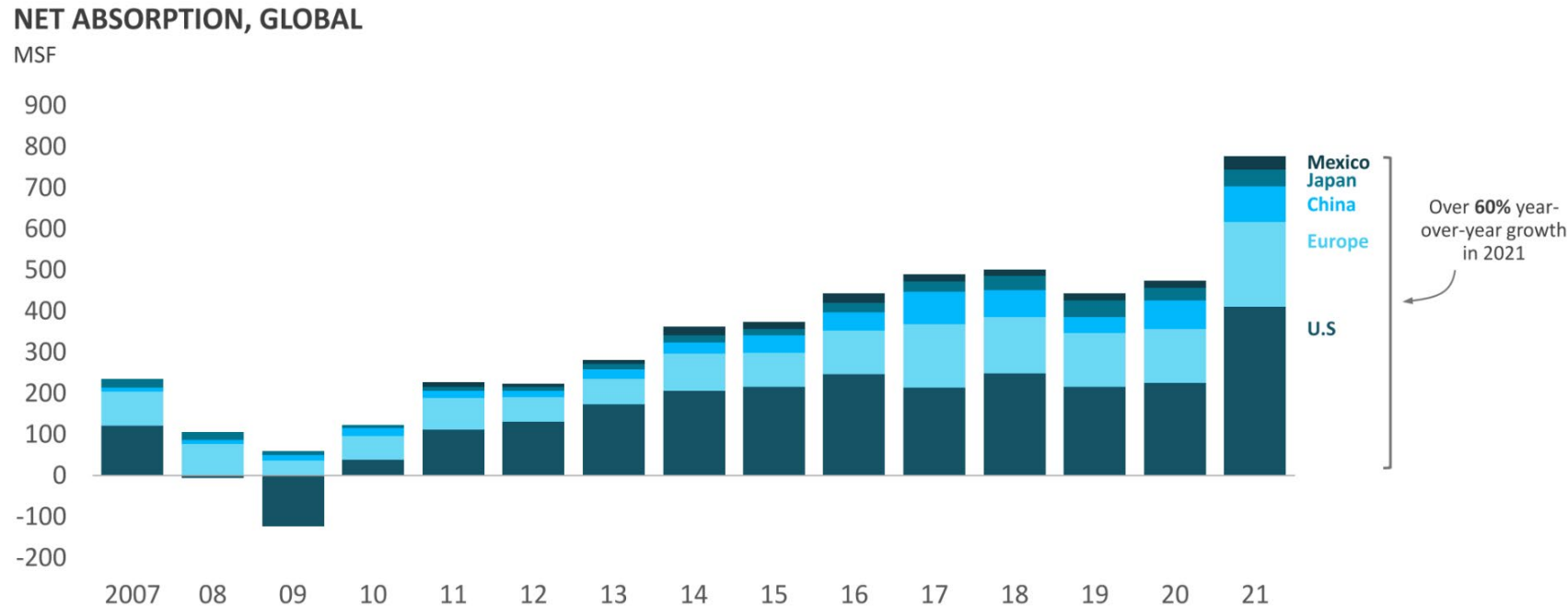
Integration of logistics in 15-minutes urban planning model

- Policy tools and mechanisms:
 - **Zoning regulations:** space allocation for e-commerce hubs and fulfillment centers in city plans
 - **Multi-use development:** integrate logistics hubs with residential, retail, and commercial spaces
 - **Street Design and Infrastructure:** designate areas for delivery bays, loading/unloading zones, and pickup lockers.
- Proximity as a concept, in urban planning and logistics

Zoning regulations

- Space allocation for e-commerce hubs and fulfillment centers in city plans

Record demand for logistics space (Mclaughlin, 2022)

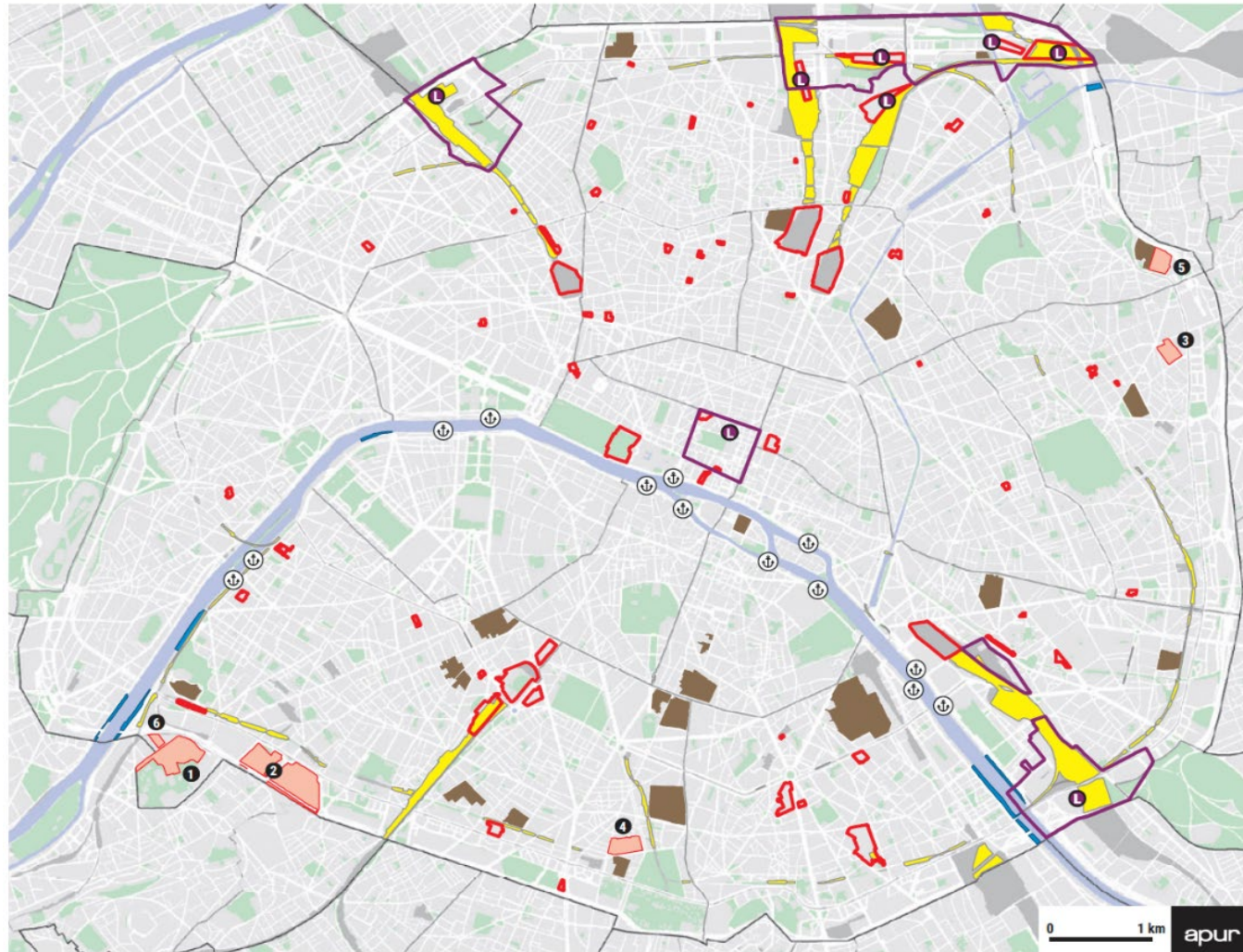


Source: CBRE, CBRE-EA, JLL, Colliers, CoStar, Gerald Eve, C&W and Fraunhofer

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
- According to Prologis (2019), e-commerce requires 3x of warehouse space than traditional retail (Mclaughlin, 2022)

Zoning regulations



Location perimeters for logistics facilities in Paris 2016 zoning plan

- Large urban service zones

	berges
	rail
	hôpitaux
	others

- 61 logistics location perimeters



Mixed formats/Multi-use development

- Integrate logistics hubs with residential, retail, and commercial spaces



M. Schorung

Gopuff in New York City

A warehouse AND a café AND a click&collect

- More than 10 stores of this type in NYC in September 2024
- 161 stores in California, Washington and Arizona

Gopuff runs **modified dark store format** that includes an **ordering kiosk for in-store shoppers**. Each dark store carries more than 4,000 national and global products along with “hyper-local” selections. ([grocerydive.com](https://www.grocerydive.com))

Click&collect in residential neighborhoods, also serving as rest areas for gig delivery drivers



Laetitia D.

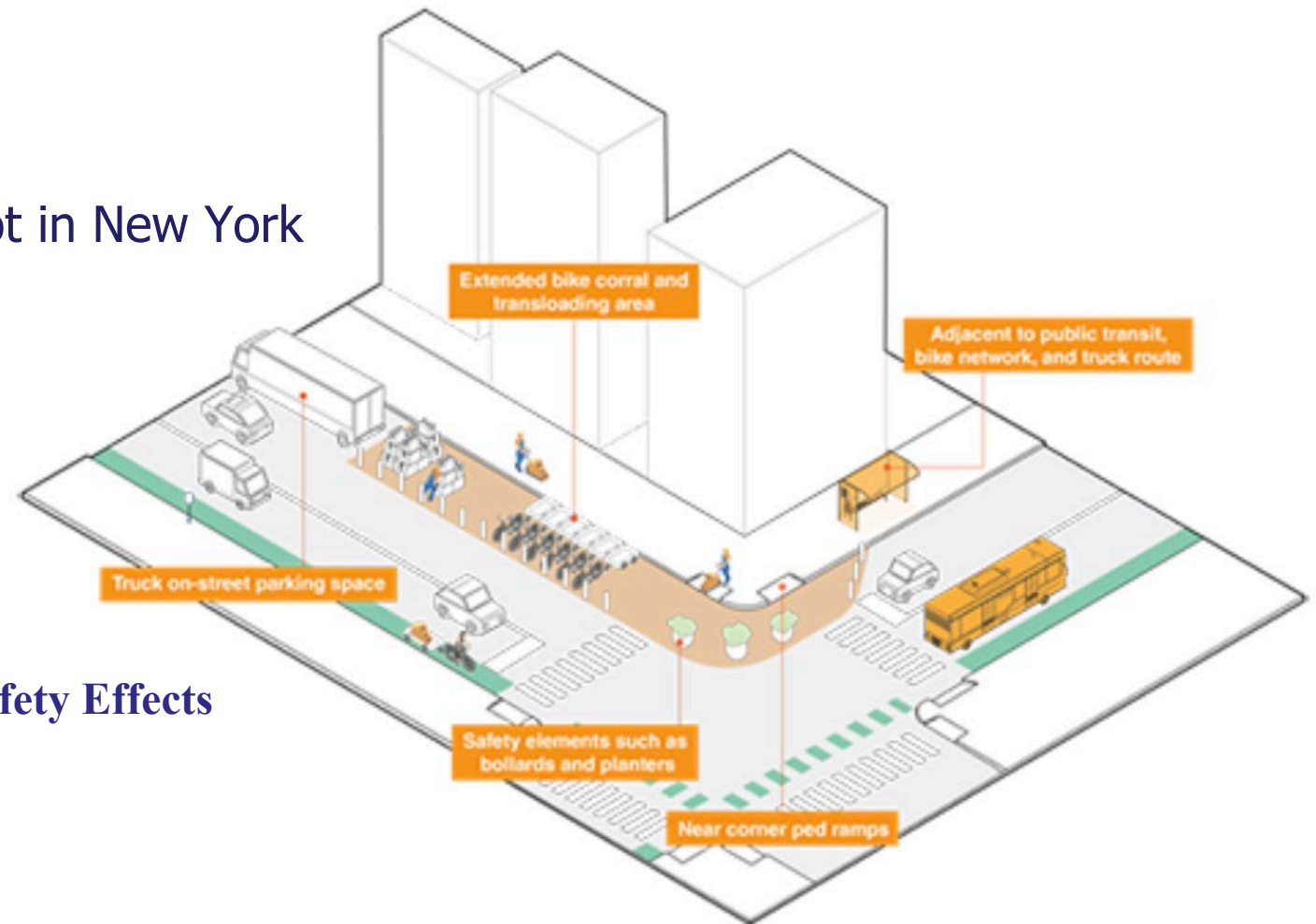
- Auchan click&collect + rest places for delivery workers



Street Design and Infrastructure

- Designate areas for delivery bays, loading/unloading zones, and pickup lockers

Local Delivery Hub Pilot in New York



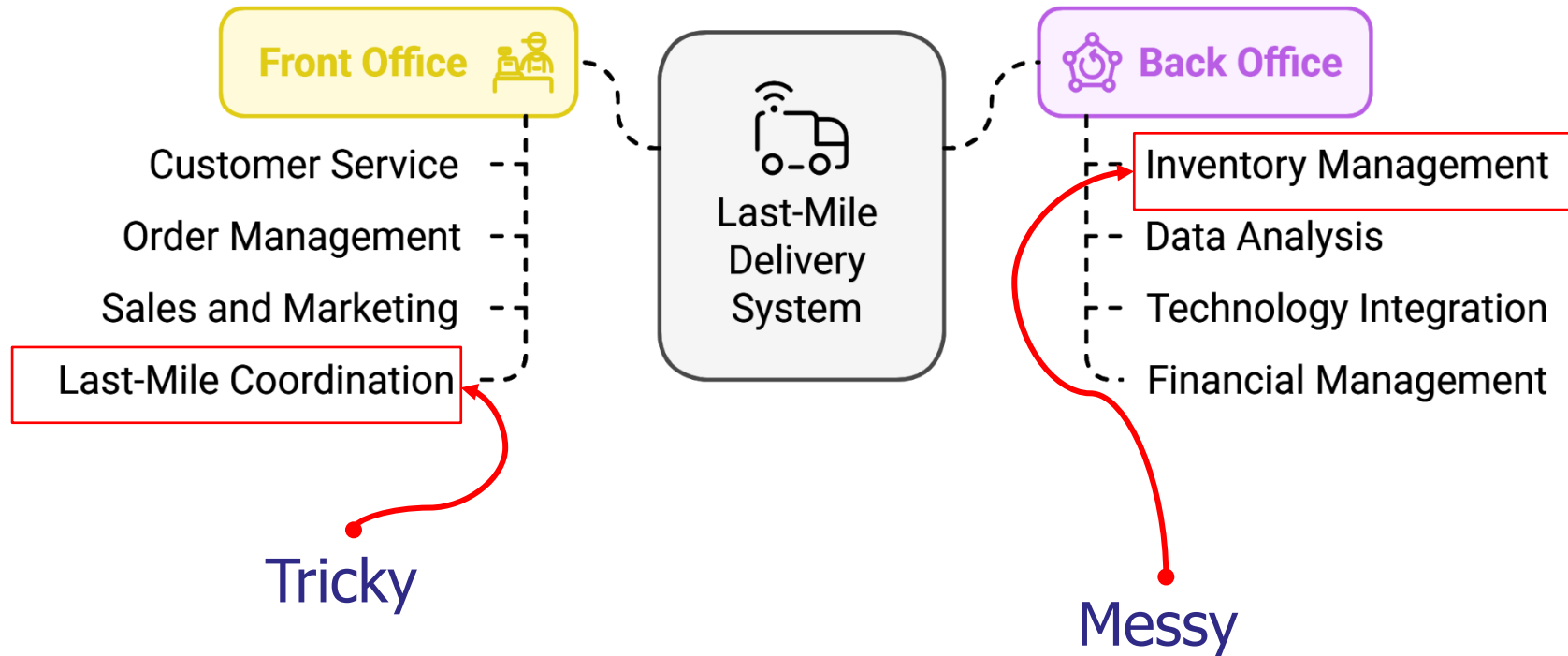
Reduce Negative Environmental and Safety Effects of Truck Deliveries

Proximity as a concept, in urban planning and logistics

Factors	Proximity, in	
	Urban planning	Logistics
Goal (shared)	minimizing travel distances	
Focus on service (diverge)	Easy accessibility	Cost, time & service quality
Main stakeholder	City wide (public)	Private companies
Dynamics, not Clear	<ul style="list-style-type: none"> • Integrating different elements • Space allocation • Retrofitting existing 	<ul style="list-style-type: none"> • Changing business models • Longer supply chains (outside of 15-minute dimension)

Proximity as a concept, in urban planning and logistics

Urban Logistics Last-Mile Delivery System



Conclusion and future outlook

- Opportunities for growth:
 - Continued rise in e-commerce demand (+9% for products sold online in Q1-3 2024 in France)
 - Technological advances in re-shaping last-mile delivery (e.g., drones, autonomous vehicles)

Conclusion and future outlook

- Challenges and threats
 - Gentrification, Social inclusion,
 - Service quality and Maintaining affordability

Conclusion and future outlook

- Call to action for cities and planners:
 - Encourage mixed-use neighborhoods with integrated logistics, infrastructure, and partnership
 - Support public-private partnerships for logistics innovations
 - More data and evidence-based decision making

Conclusion and future outlook

- Vision for the future:
 - Develop sustainable, proximity-driven urban logistics systems to be integrated to urban planning

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