French Institute of Science and Technology for Transport, Development and Networks

Project SOLUTIONS webinar series

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CITY LOGISTICS

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800,000 deliveries a day in the Paris region

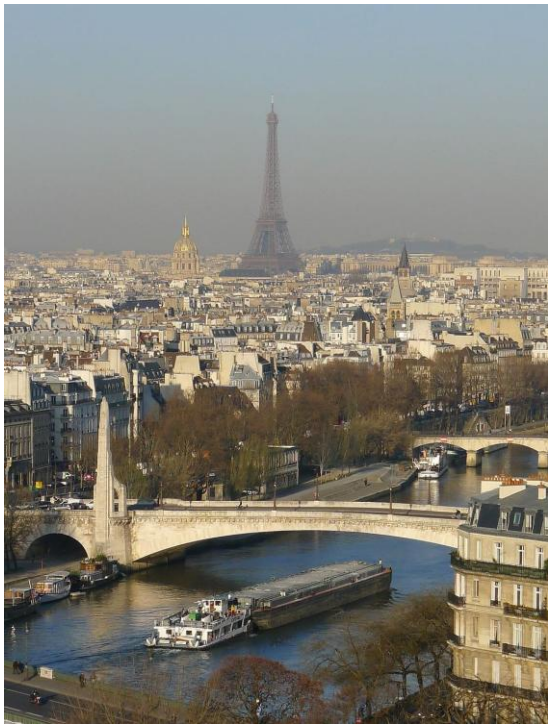
(*urban freight surveys*, *Lab. of Transport Economics, Lyon*)

- New urban freight survey for the Paris metropolitan area (LET, 2014)
- 0.70 delivery per week per employment job

(about 0.40 delivery per week per inhab.)

  - 24% small retail
  - 18% offices
  - 18% industry
  - 17% wholesale

- 2% of these deliveries are innovative urban logistics



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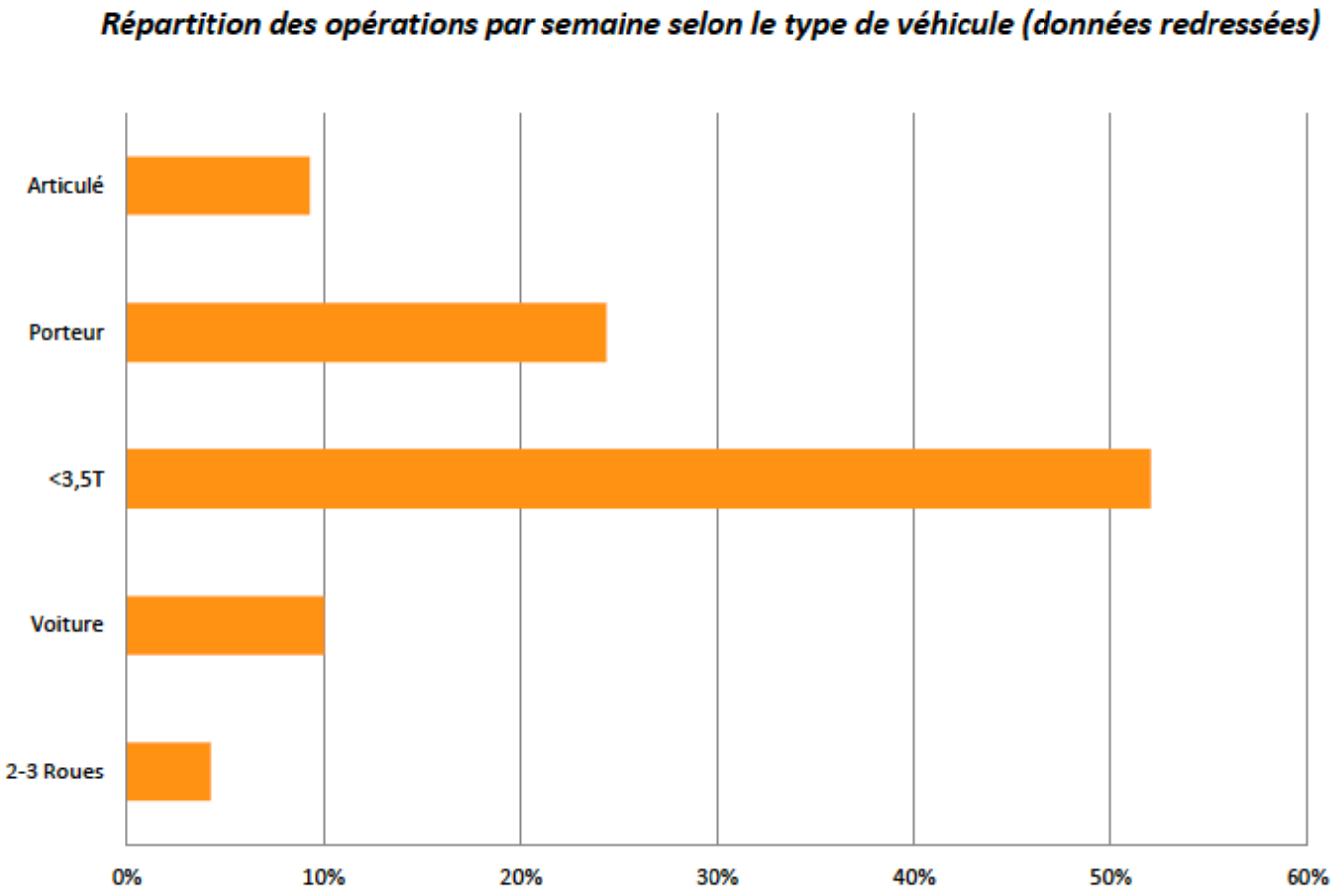
Types of vehicles: increase in two-wheelers

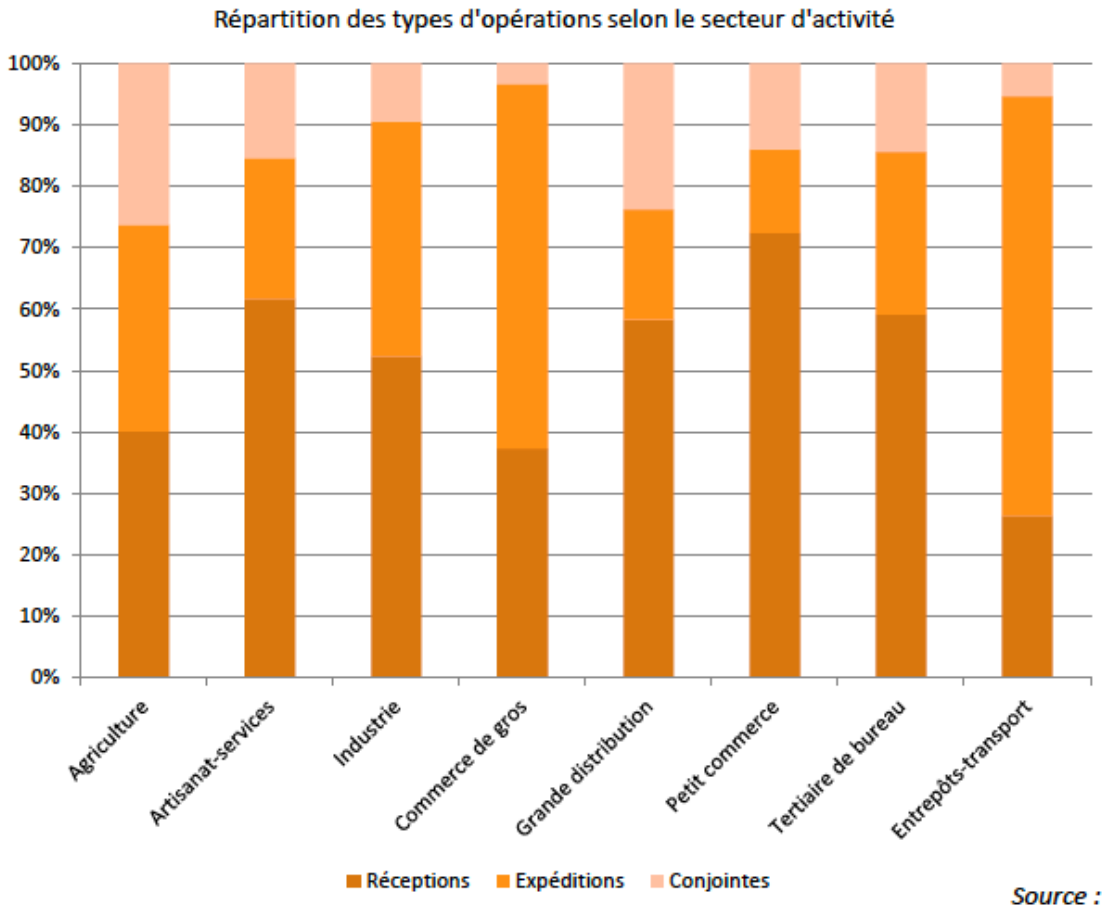


Source : LET, ETMV IDF, 2014

LET, 2014

Types of operations: increase in joint deliveries/pick-ups

- Les types d'opérations selon le secteur d'activité



LET, 2014

Source : LET, ETMV IDF, 2014

Different cities, different needs

- Chicago: the main **rail** hub for North America
- Los Angeles : **air pollution** and urban trucking associated with the port
- Shanghai: largest cargo port in the world, logistics as a major economic activity
- Tokyo: truck **congestion** to and from the ports
- Mexico City, 42% of the working population works in micro companies of which half are **home-based workshops or street-based**, generating specific patterns of deliveries
- Dabbawalas in Mumbay

- New York City: home deliveries!
- Every day in the metro area:
  - About 1.4 million deliveries to businesses
  - About 0.8 million internet deliveries

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Urban freight is a highly performing activity

- Serves customers despite fast changing urban economy and difficult traffic conditions
- The urban economy today is not the one from twenty years ago:
  - less independant retail activities
  - increased demand for express and courier deliveries
  - decrease of storage and demand for more frequent deliveries
  - development of e-commerce and home deliveries

Changing urban supply chains

Istanbul retail: from local stores to supermarket chains

⇒Consolidation of deliveries

⇒Larger trucks

⇒Deliveries concentrated in morning hours

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‘City logistics’ is emerging

- *City logistics = any service provision contributing to an optimised management of the movement of goods in cities and providing innovative response to customer demands*
- Main postal/parcel delivery players still dominant
- New players: Star’s Service, Shurgard, Kiala (UPS), The Green Link, Colizen, Cargo Hopper, Binnenstadservice
- New concepts: automated lockers, urban consolidation centers, electrically assisted cargo tricycles, city barges

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City logistics innovations

solutions

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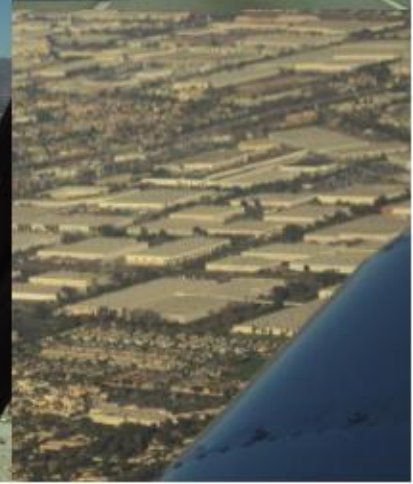
Environmental issues

- Very large companies on the one hand and very small operators on the other
- Huge diversity of vehicles - fleets are older in cities than on interurban roads
- In French cities, freight is responsible for a quarter of transport-related CO_2, a third of transport-related NOx and half of transport-related particulate matter (LET/Ademe)
- In metro Mexico city, 71% of $PM_{2.5}$ by mobile sources were from freight vehicles

A huge increase in warehouses and distribution centers in metro areas

- +200% freight facilities and warehouses in metro areas such as Atlanta and L.A. b/w 1998 and 2009
- Serving an import-based economy and global supply chains
- And new markets (fulfilment centers for e-commerce)



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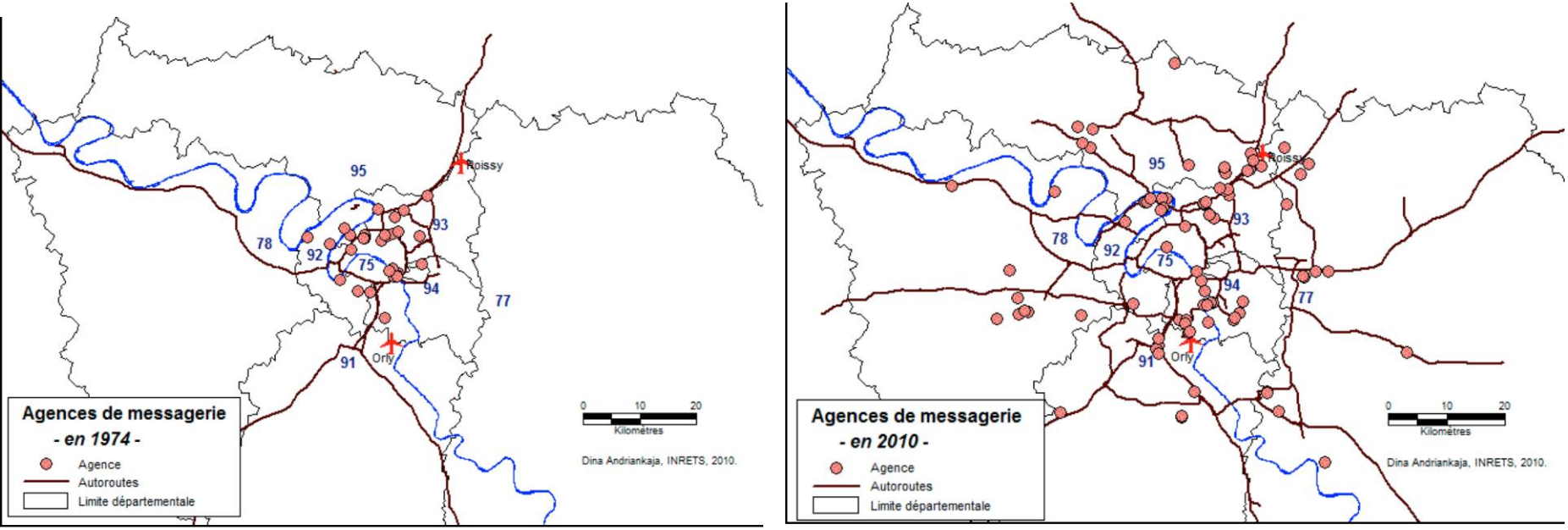
The location of cross-dock parcel companies' terminals in the Paris region between 1974 and 2010



Dablanc and Andriankaja, 2011

Paris, parcel transport industry, 1974-2010

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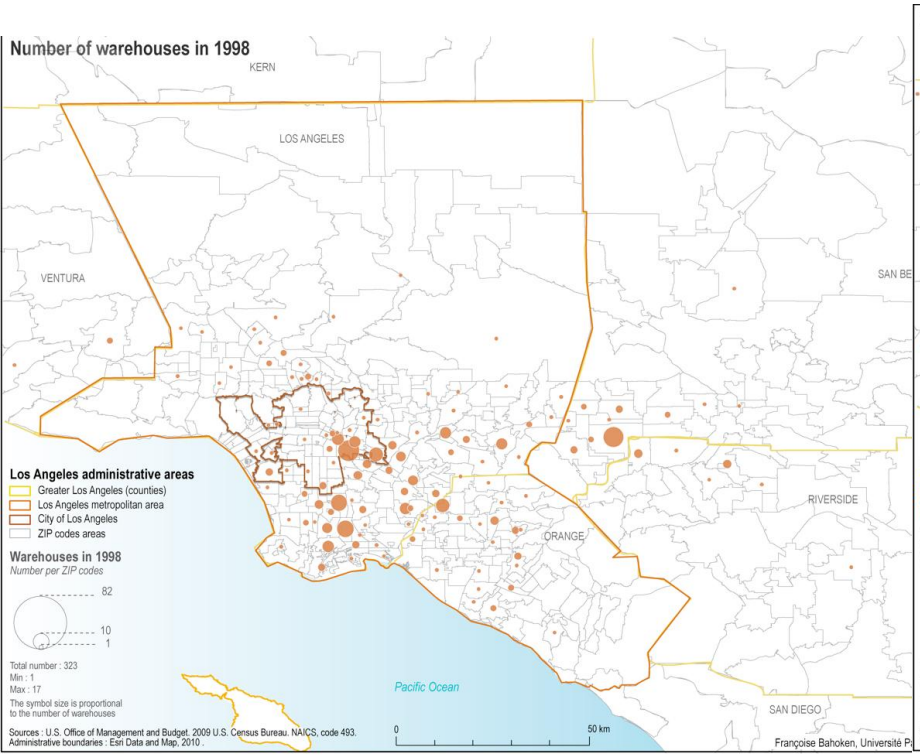

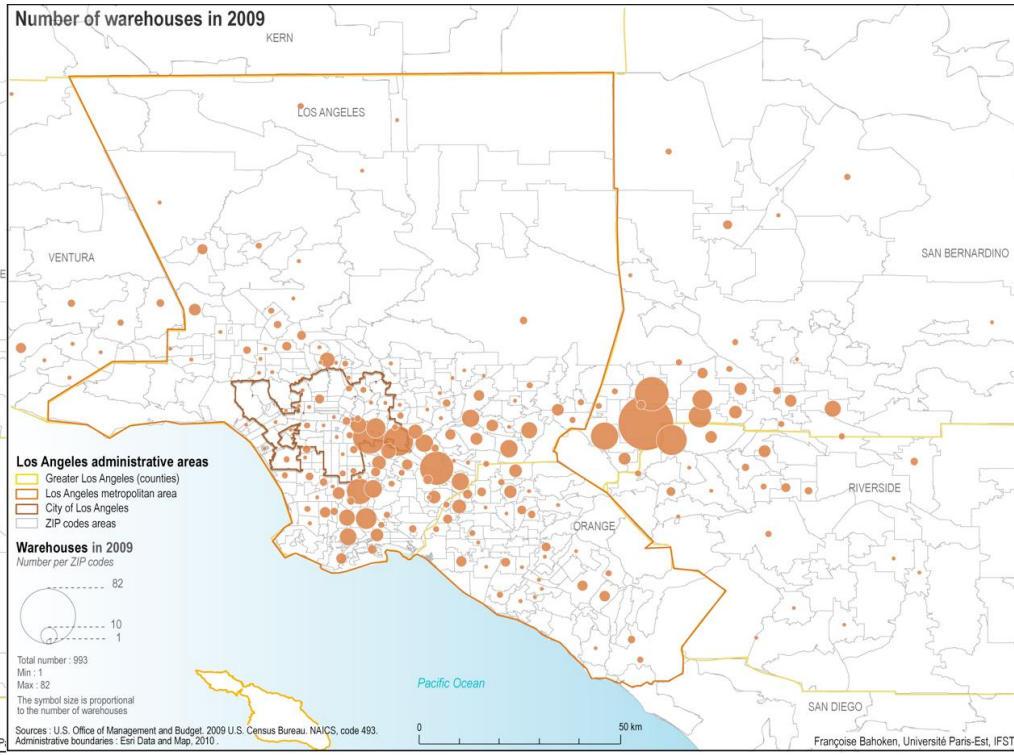

Dablanc and Farr, 2012

Los Angeles, warehouses, 1998-2009
(NAICS 493)

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‘Amazon shipment mobility’!

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Best practices: consultation, certification and training programs

- Freight forums, information portals, labels and training programs provide incentives for voluntary changes of behaviour and enhance the cooperation between local authorities and urban transport operators

Transport for London initiatives

Signing the Charter for Sustainable Logistics, City of Paris

Off peak hour deliveries

- Night and off-hour deliveries, combined with low noise delivery equipment, can be an efficient strategy to reduce vehicle-miles and congestion
- Ex. PIEK programme (NL), tests in Manhattan, Paris, Barcelona

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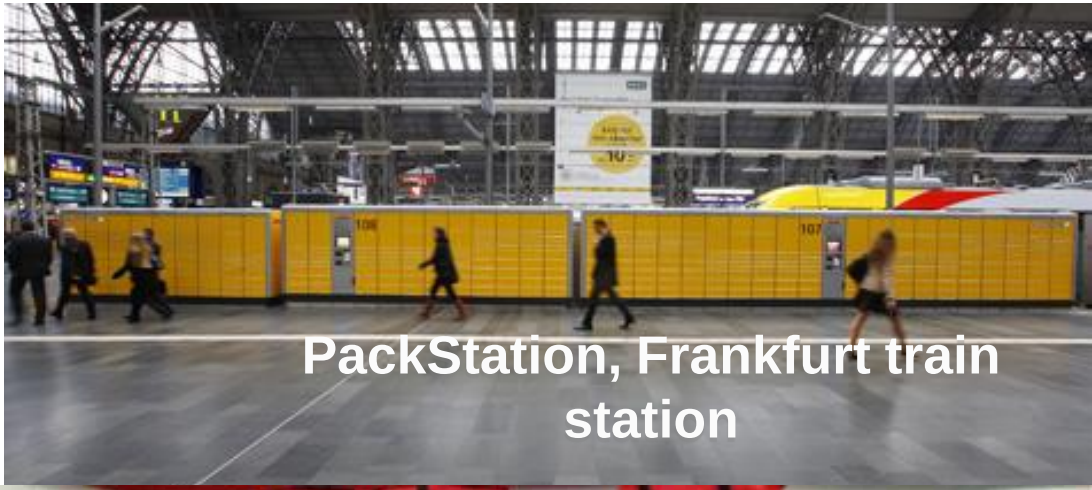
Pick-up points for e-commerce deliveries



PackStation, Frankfurt train station

Innovative street designs

UK ‘bus and lorry lane’

Barcelona’s multi use lanes and ‘delivery triangles’

Paris’
« Lincolns »

E-vans and cargocycles in city centers

- Becoming a key feature of busiest neighborhoods in Paris, London, Berlin

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Low Emission Zones

- Access to a certain area (e.g. city centre) is denied to trucks and vans which do not meet pollutant emissions levels
- 191 cities in Europe with LEZ
- Recent research (IFSTTAR/Ademe): a LEZ reduces the number of delivery companies while keeping quality of service

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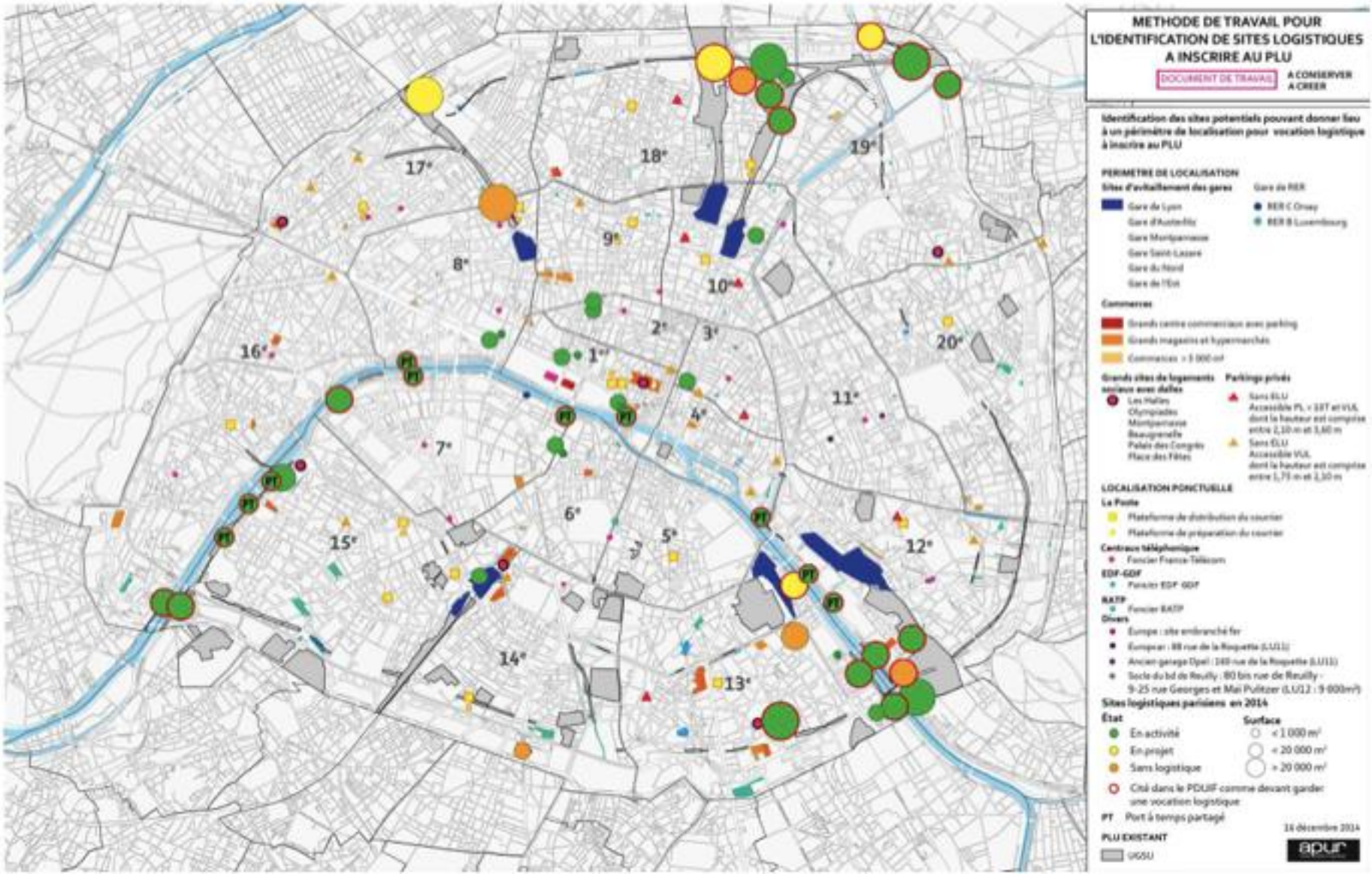
New urban logistics buildings

- A diverse set of new logistics buildings are emerging in cities
- Freight villages, urban logistics spaces, micro-terminals, multi-story terminals, urban consolidation centers

Future Paris zoning ordinance: identification of ‘logistics sites’



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Experiments in non-road urban freight transport

- A larger use of waterways, heavy rail and light rail can reduce the number of trucks and vans in metro areas
- Ex. Volkswagen tram in Dresden, Monoprix and Franprix retailers' deliveries in Paris

VELOCE (Italy)
Vicenza Eco LOgistics CEnter

Bristol consolidation center (UK)

ELCIDIS (ELectric CIty DIStribution center, La Rochelle, France)

More than 150 **Urban Consolidation Centers** in Europe in the 1990s, about 20 today

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Survey among SUFS/VREF partner cities (Holguin-Veras, Oct 2015)

Applicability of sustainable urban freight initiatives to local reality?

Public Interventions	India			
Infrastructure Management	**Applicable**	**Applicable w/ minor changes**	**Applicable w/ major changes**	**Not applicable**
Major Improvements				
Ring roads	✓			
New and upgraded infrastructure, Intermodal terminals		✓		
Freight villages or freight cluster development				✓
Minor Improvements				
Acceleration/deceleration lanes			✓	
Removal of geometric constraints at intersections	✓			
Ramps for handcarts and forklifts	✓			
Parking / Loading Areas Management				
On-Street Parking and Loading				
Freight parking and loading zones			✓	
Loading and parking restrictions	✓			
Peak-hour clearways				✓
Vehicle parking reservation systems				✓
Off-Street Parking and Loading				
Enhanced Building codes	✓			
Timeshare of parking space			✓	
Upgrade Parking areas and loading docks		✓		
Improved Staging Areas		✓		
Truck stops/ Parking outside of Metropolitan Areas				✓
Vehicle Related Interventions				
Technologies and Programs				
Emission standards	✓			
Low noise delivery programs/regulations	✓			
Traffic Management				
Access and Vehicle-Related Restrictions				
Vehicle size and weight restrictions	✓			
Truck routes			✓	
Engine-related restrictions	✓			
Low emission zones	✓			
Load factor restrictions			✓	
Time Access Restrictions				
Daytime delivery restrictions		✓		
Daytime delivery bans				✓
Nighttime delivery bans				✓
Lane Management				
Restricted multi-use lanes				✓
Exclusive truck lanes (Dedicated truck lanes)				✓
Traffic Control	✓			

Conclusion

- Urban freight represents many jobs and an important **economic** asset for cities
- **Innovative** logistics services in cities are emerging but freight transport still generates many environmental **impacts**
- Local decision-makers can implement simple and **effective** policies to address part of the issues
- Freight and logistics issues **also depend** upon global economics, technical/organisational innovations or long-term national policies

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Resources

- www.bestufs.net
- www.sugarlogistics.net
- www.let.fr/Publications-du-LET
- www.citylogistics.org

- Dablanc, L. and Montenon, A. (2015) Impacts of environmental access restrictions on freight delivery activities, the example of Low Emission Zones in Europe, *Transportation Research Board 94rd Annual Meeting*, Washington DC, USA.
- *City Distribution and Urban Freight Transport, Multiple Perspectives*, ed. by S. Melo and C. Macharis, NECTAR Series in Transportation and Communication (2011)
- Dablanc, L. (2009) Freight Transport, A Key for the New Urban Economy, Report for the World Bank as part of the initiative *Freight Transport for Development: a Policy Toolkit,* 52p

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