URBAN FREIGHT
PRESENTATION OF THE VREF URBAN FREIGHT INITIATIVE

by

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Sustainable freight transport systems, opportunities for developing countries
Geneva, 14-16 October 2015

Urban freight
Presentation of the VREF Urban Freight Initiative

Dr. Laetitia Dablanc
VREF/MetroFreight, IFSTTAR, Univ of Paris-East
1. The VREF Initiative
Volvo Research and Educational Foundations’ Future Urban Transport Programme

- "Sustainable transport for equitable access in urban areas"
- Ten centers of excellence across the world since 2001
  - Including three urban freight centers since 2013:
    - MetroFreight
    - SUFS
    - Urban Freight Platform
- Urban, metropolitan, AND regional dimension of freight mobility
MetroFreight: Los Angeles, NYC, Paris and Seoul

• Partners:
  – University of Southern California/METRANS (lead, Prof. Giuliano, USC)
  – IFSTTAR French Institute of Science and Technology for Transport, Univ Paris-East
  – Korea Transport Institute (KOTI)
  – University Transportation Research Center (NY)

• Purpose:
  – Develop collaborative, sustainable solutions for urban freight problems

• Program:
  – Research in five thematic areas
  – Education and training
  – Information dissemination
Five Collaborative Research Themes

1. Policies and freight partnerships with industry
2. Last mile strategies
3. Improving passenger/freight interactions, rail and highway
4. Land use change dynamics
5. Changing consumer and producer behaviors

25 projects in progress or recently completed
See http://www.metrans.org/research-projects/metrofreight
SUFS: Sustainable Urban Freight Systems

Lead: Prof. Holguin-Veras, Rensselaer
A network of cities as secondary partners
SUFS goal

• To jumpstart an integrative process, involving cities, private sector, and researchers to develop new freight systems paradigms that:
  – Are sustainable
  – Increase quality of life
  – Foster economic competitiveness and efficiency
  – Enhance environmental justice
Urban Freight Platform

• Why
  – Improve links between Scandinavian researchers in this field
  – Provide a focus for engagement with wider academic and other communities at a European and global level

• What
  – Interaction between urban freight and urban form
  – Assessment models
  – Stakeholder engagement
  – Interaction of freight and passenger transport

• Dissemination
  – Conferences, workshops, etc
  – UFP Conference
  – E-Book

• Lead: Prof. Browne, Univ of Gothenburg
2. Urban Freight Issues
Urban freight

⇒ **Economic well being** of cities

⇒ **Impacts**: congestion, air pollution, noise, road safety, poor working conditions

⇒ A **new freight landscape** in large metropolitan areas around the world
A very efficient activity

• 800,000 deliveries every day in the Paris metro area
  – More contract transport
  – More express and courier deliveries
  – More home deliveries

• New York City metro area:
  – About 1.4 million deliveries to businesses
  – About 0.8 million internet deliveries
Changing urban supply chains

Istanbul retail: from local stores to supermarket chains
⇒ Consolidation of deliveries
⇒ Larger trucks
⇒ Deliveries concentrated in morning hours
Environmental challenge: urban freight is more polluting than long distance freight

- Vehicles are older
- Stop and go
- Vehicles often idling

Paris: freight =
20% vehicle- kms
25% traffic-related CO$_2$
33% traffic-related NO$_x$
50% traffic-related PM

Mexico City: 71% PM$_{2.5}$ generated by mobile sources are from freight vehicles

Paris chokes on pollution; City of Light becomes City of Haze
Safety and labour issues

- Accidents from trucks not very frequent but very serious
- Increasing use of bicycles and motorbikes, conflicts with trucks
- An easy job market to access but difficult working conditions
- Social problems (illegal work), especially in subcontracting
Decentralization and spatial dynamics: Amazon fulfilment centers in Los Angeles

Other example: the decentralization of parcel transport companies’ terminals in the Paris region added 16,000 net tons of CO$_2$ in 2010 compared with 1974
Different cities, different issues and needs

- Chicago: main rail hub for North America
- Shanghai: largest cargo port in the world
- Mexico City: 40% of the workforce in small workshops at home or as street vendors
- **Dual urban logistics** in emerging countries: informal sector alongside advanced industries and services with logistics concerns similar to developed countries
- Local initiatives: Dabawallas in Mumbai
3. Examples of VREF research and initiatives
Urban Freight Landscape research

- **Urban Freight Landscape Atlas** describes and explains spatial patterns in Los Angeles, NYC, Paris and Seoul
- Empirical tests of the relationship between these spatial patterns, transport supply, and freight flows
- Development and testing of a theoretical framework
Off-Hour Delivery Project in New York City

- Rensselaer Polytechnic and New York City Dept. of Transportation:
  - Designed incentives to induce **shift deliveries to off-peak-hours**
  - Reduced congestion and pollution
  - Increased competitiveness of the urban core
Ongoing Off-Hour Delivery pilot in Sao Paulo
Market for cycle delivery services in Paris has greatly increased since 2001
Reduces emissions by about two tons CO$_2$/day
Two additional tons CO$_2$/day saved from the use of bicycles by shoppers
Research project Dencity

To provide sustainable urban mobility for both passenger and goods in an area with limited street space as well as high demands on attractiveness and sustainability.

Includes assessment of construction logistics issues.
Freight transport in dedicated public transport lanes

- Evaluation and concept development in Gothenburg
Freight forums, information portals, labels and training programs

- To provide incentives for voluntary changes of behaviour from carriers, shippers, and local authorities
- Promote and enhance public/private cooperation
Survey among SUFS partner cities, Oct 2015

Applicability of sustainable urban freight initiatives to local reality?

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

• MetroFreight academic curriculum guide, graduate curriculum, professional training
• SUFS local workshops to bring together public/private sectors and academia (India, Brazil, Colombia, Canada, Mexico, Chile, Australia and New York City)
• SUFS Peer-to-Peer Exchange Webinar series to share global best practice cases and real world examples
• MetroFreight International Urban Freight Conference every two years (I-NUF, Long Beach, 2015)
• UFP VREF 2015 Urban Freight Conference in Gothenburg
2015 VREF Urban Freight Conference in Gothenburg

VREF Conference on urban freight organised by the Urban Freight Platform
Planning for tomorrow and delivering today
Gothenburg 5-6 March 2015
Resources and websites

www.mettrans.org/metrofreight
https://coe-sufs.org/
https://coe-sufs.org/wordpress/ncfrp33
www.chalmers.se/en/centres/lead/urbanfreightplatform/Pages/default.aspx/metrofreight
www.vref.se/urbanfreight