

Multi-year Expert Meeting on Transport, Trade Logistics and Trade Facilitation

Sustainable Freight Transport Systems: Opportunities for Developing Countries

14-16 October 2015

URBAN FREIGHT PRESENTATION OF THE VREF URBAN FREIGHT INITIATIVE

by

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UNCTAD, Multi-year Expert Meeting on Transport, Trade, Logistics,
and Trade Facilitation
**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 accross 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

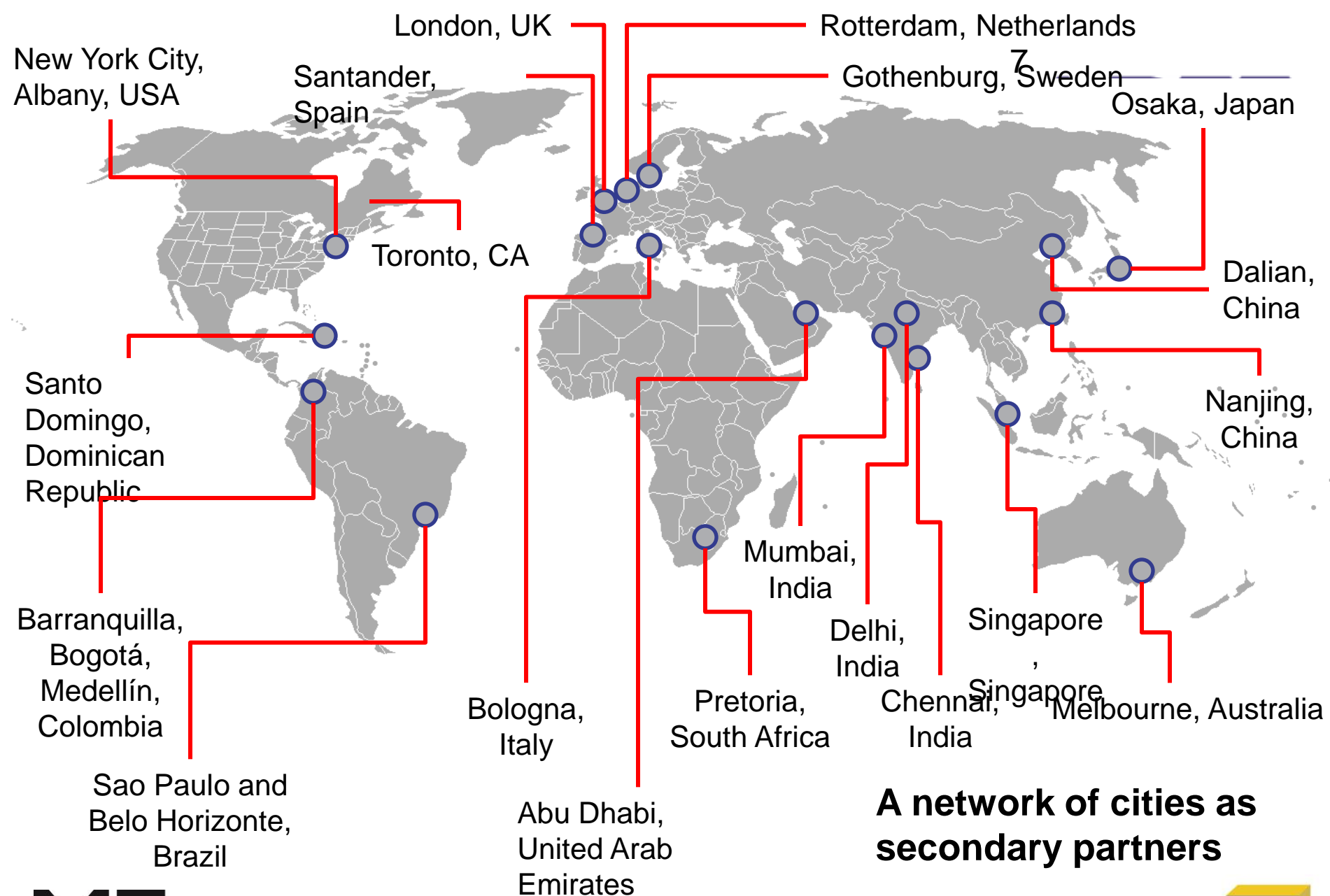
25 projects in progress or recently completed

See <http://www.metrotrans.org/research-projects/metrofreight>

SUFS: Sustainable Urban Freight Systems



Lead: Prof. Holguin-Veras, Rensselaer



A network of cities as secondary partners

- 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

- 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 CO₂
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 CO₂ in 2010 compared with 1974

Different cities, different issues and needs



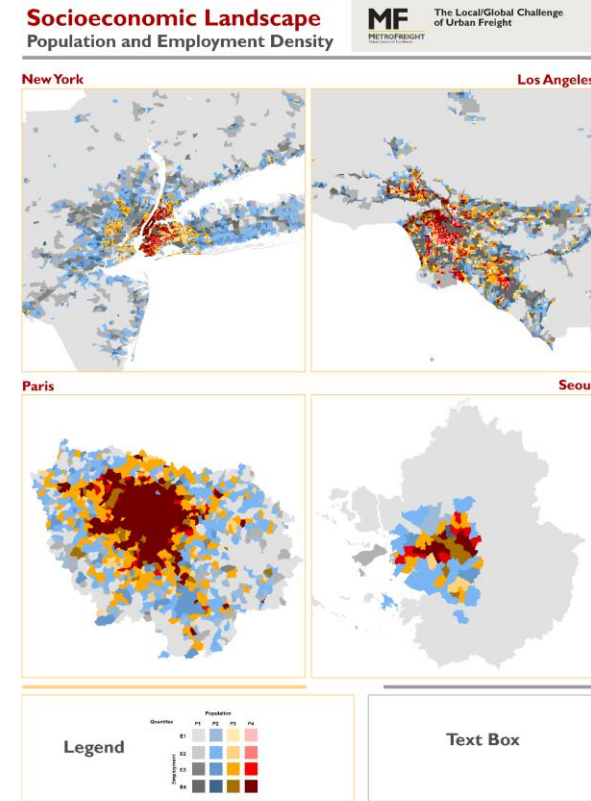
- Chicago: main rail hub for North America
- Shanghai: largest cargo port in the world
- Mexico City: 40% of the workforce in small workshops at home or as street vendors
- **Dual urban logistics** in emerging countries: informal sector alongside advanced industries and services with logistics concerns 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

VREF

- 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



VREF CENTER OF EXCELLENCE FOR
**SUSTAINABLE URBAN
FREIGHT SYSTEMS**



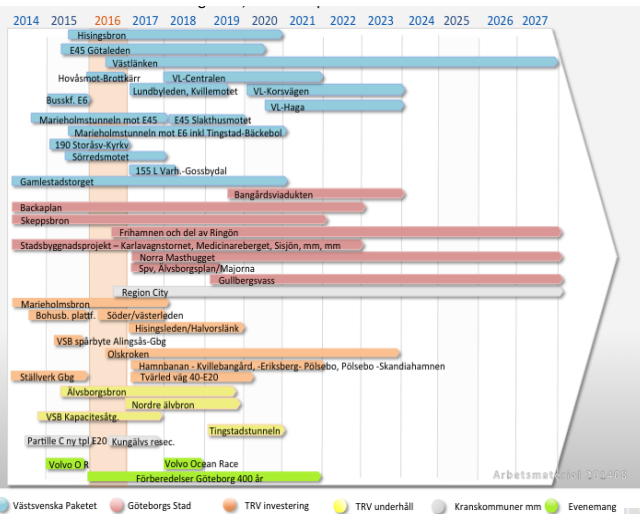
Cargo-cycles for urban freight deliveries

- Market for cycle delivery services in Paris has greatly increased since 2001
- Reduces emissions by about two tons CO₂/day
- Two additional tons CO₂/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



[Back to Transport for London](#)

Freight Operator Recognition Scheme



FORS
FREIGHT OPERATOR
RECOGNITION SCHEME

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[Application form](#)

FORS application form

If you are a road freight operator interested in full membership of the Freight Operator Recognition Scheme (FORS), or you would like information about FORS, please complete the form below.



Survey among
SUFSS partner
cities, Oct 2015

**Applicability
of sustainable
urban freight
initiatives to
local reality?**

Public Interventions	India			
	Applicable	Applicable w/ minor changes	Applicable w/ major changes	Not applicable
Infrastructure Management				
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	✓			

- 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

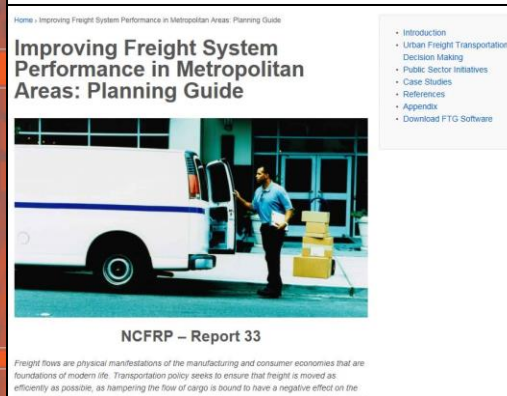
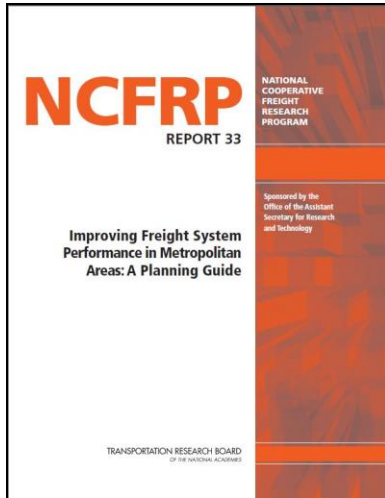
2015 VREF Urban Freight Conference in Gothenburg



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



FREIGHT TRIP GENERATION MODELLING

Authors: Iván Sánchez-Díaz, José Hólguin-Vera and Miguel Jaster

THIS BRIEF TARGETS

- Metropolitan planning organizations and local departments of transportation
- Urban planners and transportation authorities
- Researchers, practitioners and consultants interested in urban freight and freight-demand modelling

KEY MESSAGES

- The amount and impacts of freight traffic attracted by cities depends on the demand and inventory policies of individual establishments.
- Quantifying freight traffic – via Freight Trip Generation (FTG) modelling – is crucial for enabling local transport authorities to understand local needs, assess potential solutions to existing problems, and anticipate future needs.
- Having access to the right data and models can contribute toward a better understanding of the freight system and enable well informed decision making.

This research highlights the importance of quantifying freight trips as a step toward enhancing understanding of urban freight systems. The authors provide an overview of the different uses of Freight Trip Generation models and a glimpse into the state-of-the-art in freight-transport modelling.

Increasing urbanization around the globe, and the environmental and livability impacts associated with urban settings, have directed attention to the need for sustainable cities with efficient transportation systems. However, most public-sector transportation planning efforts have focused on passengers and ignored the movement of goods. This is due in part because of the complexity of freight transportation systems and lack of knowledge, and partly because freight has traditionally been seen as a private-sector issue. Yet, ensuring an efficient freight-transportation system requires public-sector attention, as it is crucial to maintaining vibrant cities with competitive economies.

Achieving sustainable urban development requires studying urban freight from a systems perspective and including freight systems in strategic urban development plans. In this context, joint efforts involving the public and private sectors, as well as research organizations to collect the right data and develop suitable models, can contribute toward

www.metrotrans.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



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