Urban Freight Initiatives: State of the Art and State of the Practice

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Acknowledgements

- Funded by National Cooperative Freight Research Program (NCFRP)
  - NCFRP Project 38 – Improving Freight System Performance in Metropolitan Areas
- Co-authors: J. Holguín-Veras, J. Wojtowicz, M. Browne I. Sánchez, M. Jaller, C. González, D.G. Haake, and S.D. Hodge

Background Considerations

Congestion problems are not new…

37th Street and 7th Avenue, New York City, 1945

Freight in metropolitan areas is growing…

- In the US, 80% of the cargo transported in the country has origins or destinations in the top 100 metropolitan statistical areas
- Freight transported varies among metropolitan areas:
  - In average, 20-30 kg/person-day
- More people are moving to urban areas →needs for cargo increase
- Amount of cargo transported increases with income
  - rising incomes → more challenges to the system

What Could the Public Sector do?

NCFRP Report 33 "Improving Freight System…"

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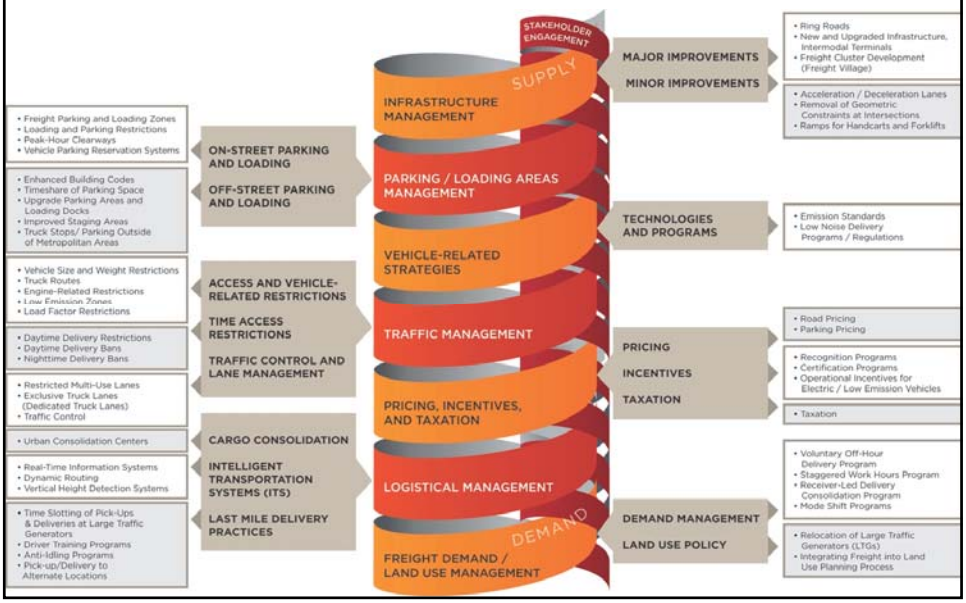

Planning Guide: Versions

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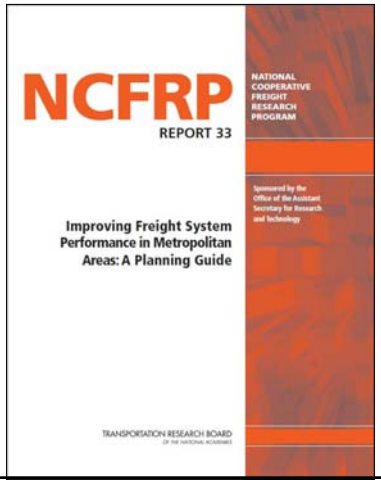
- **Print ready version**: http://onlinepubs.trb.org/onlinepubs/ncfrp/ncfrp_rpt_033.pdf
- **Interactive version**: http://coe-sufs.org/wordpress/ncfrp33/



What is known about these initiatives?

We asked experts and practitioners…

- Survey designed and disseminated worldwide
- Conducted in Summer 2017
- Three sections
  - Most familiar city
  - Assessment of each initiative
    - Familiar?
    - Implemented?
    - Most positive impact
    - Most negative impact
  - Impacts: Congestion, Delivery Costs, Emissions, Safety, Livability

Descriptive Summary

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- 48 complete responses (75 in total received)
  - 21% Practitioners/Planners
  - 79% Researchers/Academics
- Information collected from:
  - 19 Countries
  - 37 Cities
- Most represented cities
  - Rome (4)
  - NYC (3)
  - Paris, London, Mexico City, Sydney and Brussels (2)

Countries in the Sample

12

Cities in the Sample

Preliminary Findings

Results – Overall Initiatives (1/2)

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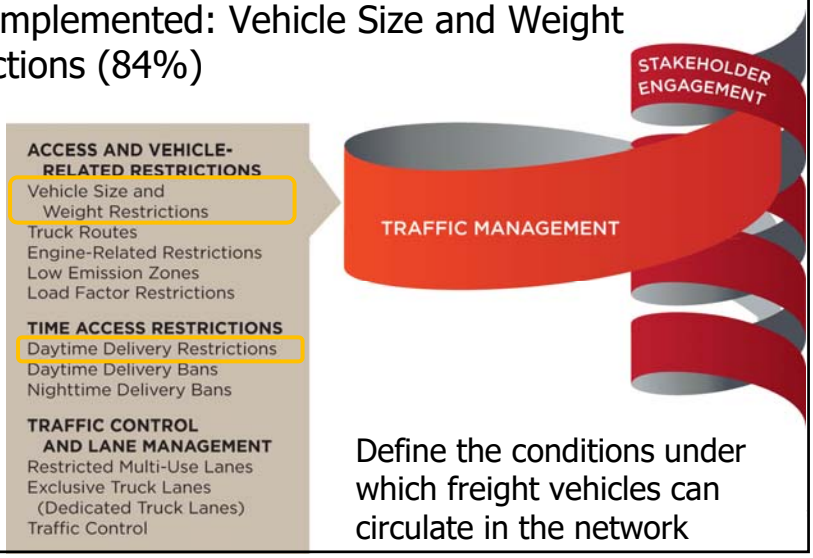
- Most Familiar: Daytime Delivery Restrictions (93%)
- Most Implemented: Vehicle Size and Weight Restrictions (84%)



Define the conditions under which freight vehicles can circulate in the network

Results - Overall Initiatives (2/2)

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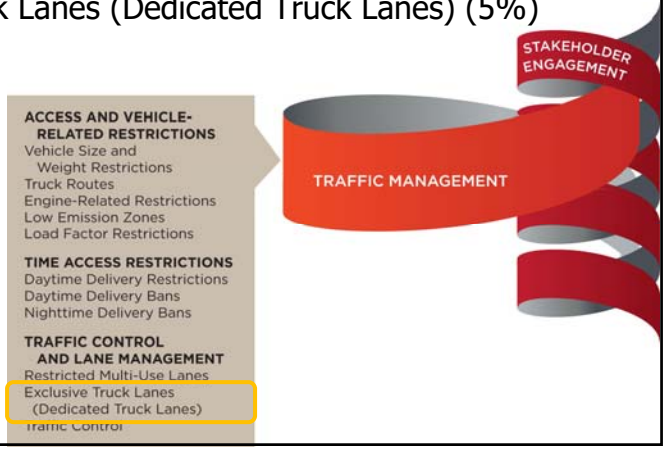
- Least Familiar:
  - Vertical Height Detection Systems (40%)
- Least Implemented:
  - Exclusive Truck Lanes (Dedicated Truck Lanes) (5%)



Results (1/6): Infrastructure Management

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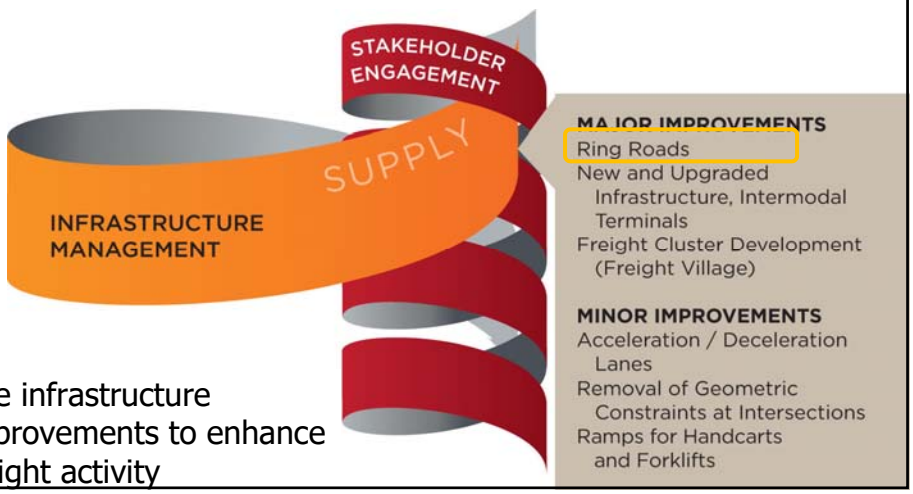
- Most Familiar/Implemented: Ring Roads (80%/58%)



Use infrastructure improvements to enhance freight activity

Results (2/6): Parking / Loading Areas Management

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- Most Familiar: Freight Parking and Loading Zones (86%)
- Implemented: Loading and Parking Restrictions (69%)

Improve the way parking facilities are used

Results (3/6): Vehicle-Related Strategies

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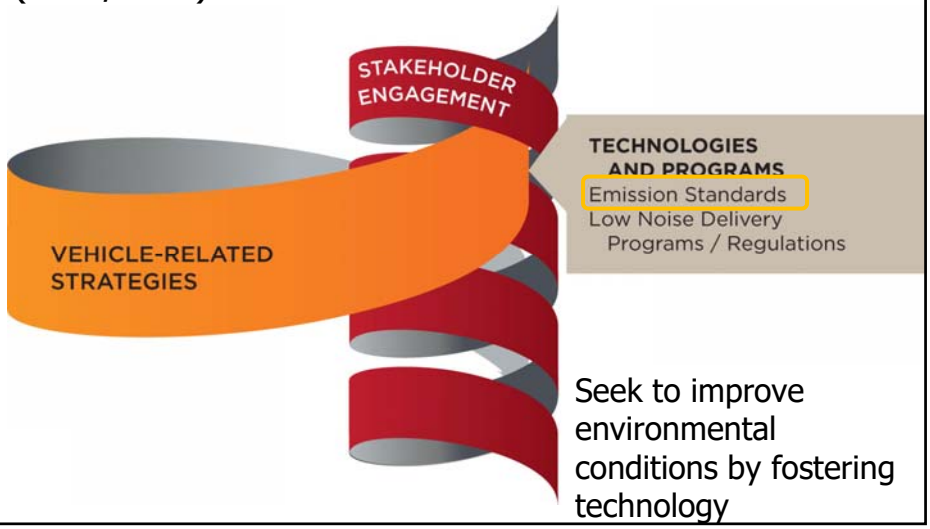
- Most Familiar/Implemented: Emission Standards (80%/58%)



Seek to improve environmental conditions by fostering technology

Results (4/6): Logistical Management

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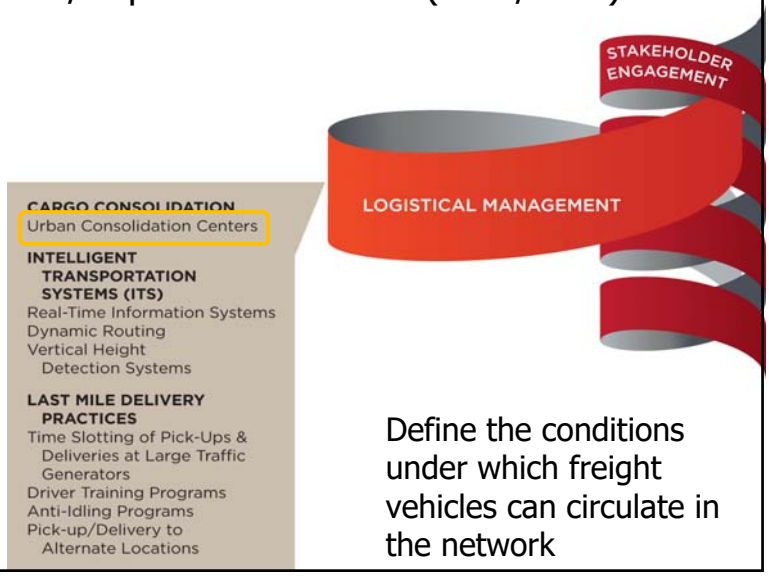
- Most Familiar/Implemented: UCCs (86%/39%)



Define the conditions under which freight vehicles can circulate in the network

Results (5/6): Pricing, Incentives and Taxation

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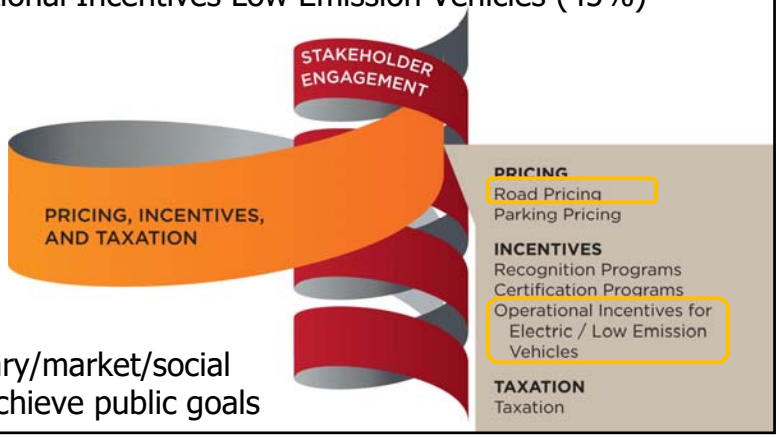
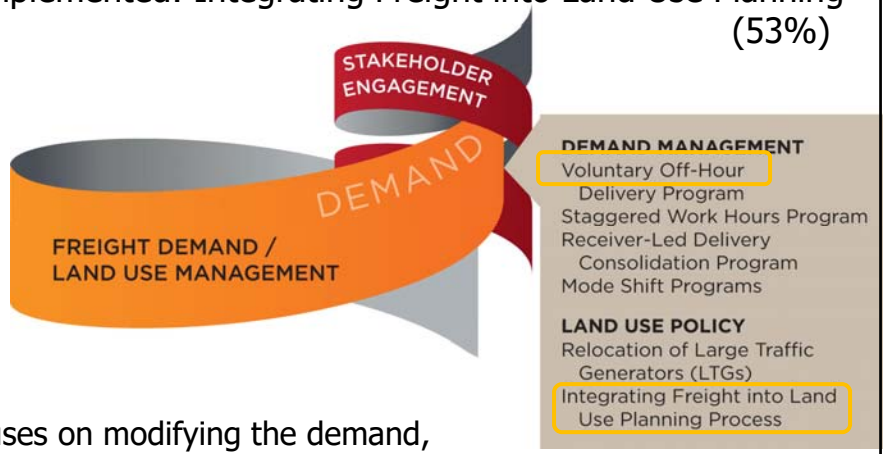
- Most Familiar/Least Implemented: Road Pricing (83%/27%)
- Most Implemented:
  - Operational Incentives Low Emission Vehicles (45%)



Use monetary/market/social signals to achieve public goals

Results (5/6): Freight Demand / Land Use Management

- Most Familiar: Voluntary Off-Hour Delivery Program (86%)
- Implemented: Integrating Freight into Land Use Planning (53%)



Focuses on modifying the demand, instead of modifying the logistical activities or the traffic

What about the impacts?

Analysis of Impacts (1/3)

- Positive Impacts of Initiatives
  - 63% →Improve Congestion – Significantly or Slightly
  - 25% →Reduce Emissions – Significantly or Slightly
- Negative Impacts of Initiatives
  - 57% →No negative effect
  - 43% → Increase Delivery Costs – Significantly or Slightly
- No Positive Effect
  - Nighttime Delivery Bans (32%)
- No Negative Effect
  - Real Time Information Systems (94%)
  - Recognition Programs (90%)

Analysis of Impacts (2/3)

- No Negative Effect (Stakeholder Engagement)
  - Educate Elected Officials (100%)
  - Develop Material and Hold Events to Raise Awareness about Freight (100%)
  - Provide Information about Urban Policies to the Private Sector (100%)
  - Designate a Freight-Person at Key Agencies (94%)
  - Provide a Platform for Stakeholders to Identify Problems and Solutions (94%)

Impacts (3/3) – Stakeholder Engagement

Impact: Improve Public-Private Relations

Closing Remarks

Final Thoughts

- Improving freight system performance is needed
- There is a wide range of initiatives
  - Multi-prong approaches are key
  - Every situation is different, local conditions matter…
- Trade-offs must be analyzed. If congestion improves delivery costs may increase. A balance should be reached
- Some under-utilized initiatives have great potential
- Traditional initiatives have not provided the best impacts. Even if practitioners are familiar with them, implementation does not always take place

We Need to …

- Undertake a holistic transformation of supply chains, inducing changes in behavior at key agents
- There is a space for collaboration. Involve all key stakeholders
- Transform existing freight policy and embrace innovation in urban freight
  - New trends and technology
- Use the tools available

Thanks!
Questions?

Reference Materials:

Planning Guide: PDF version
http://onlinepubs.trb.org/onlinepubs/ncfrp/ncfrp_rpt_033.pdf

Planning Guide: Interactive version
http://coe-sufs.org/wordpress/ncfrp33

Initiative Selector:
http://coe-sufs.org/wordpress/InitiativeSelector

Freight Trip Generation Software:
https://coe-sufs.org/wordpress/software/fsa-software

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