

Freight & Land Use

VDOT Transportation-Land Use Forum



American Planning Association
Making Great Communities Happen

Presenters

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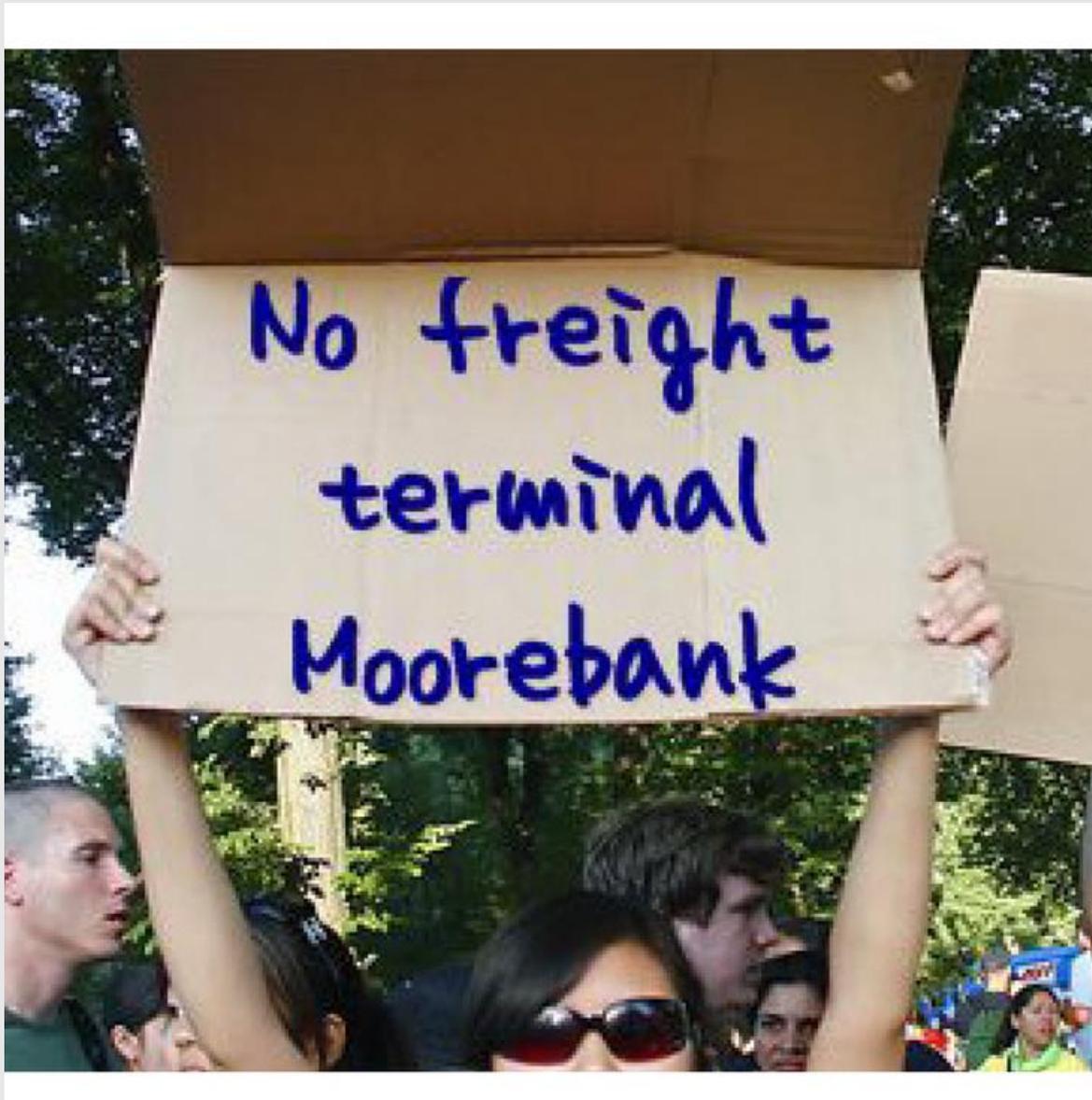
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AGENDA

APA Freight
Policy Guide

FAST Act

Trends in
Freight

Putting Freight
into Local Plans

Q&A

APA Policy Guides

APA develops Policy Guides that reflect the collective thinking of the 38,000 members of APA on positions of principle and practice

APA Policy Guides establish specific guidelines that recommend specific actions that move toward an improved social and political environment for planning to play an effective role

Freight is the latest in a series of APA Policy Guides

Policy Guide Structure

- Declarations
- Rationale
- Key Facts
- Definitions
- Policy Outcomes



Purpose of Freight Policy Guide

- Consider how freight impacts and is impacted by:
 - Transportation Network
 - Built & Natural Environment
 - Communities
 - Land Use



Key Policy Outcome

- Take a holistic view and eliminate stovepipe approaches:
 - between freight modes
 - between freight and transportation in general
 - between transportation and other community goals
- Seven policy categories



Proposed Policies



- Economic Considerations
 - Develop “Complete Freight System” approach
 - Place increased emphasis on multimodal options
- Environmental Considerations
 - Expand use of “Green Infrastructure” in multimodal corridors & facilities
 - Limit hazardous materials shipments to specific corridors



Proposed Policies

- Community & Social Stewardship
 - Ensure that Environmental Justice principles are used in siting decisions for multimodal facilities



- Congestion
 - Focus on improving capacity constraints
 - Embrace new technologies and new vehicle types

Proposed Policies

- Resiliency/Safety/Security
 - Physically separate freight from non-freight movements in critical locations and corridors
 - Address security concerns with cross-border trade
 - Protect freight corridors from encroachment by incompatible land uses
 - Increased focus on pipeline routing and safety



Proposed Policies



- Best Practices
 - Develop more partnerships
 - Monitor network performance in real-time and adjust freight routing to maximize efficiency
 - Promote increased competition between and within modes
 - Add consideration of freight and ports to local comprehensive plans
 - Context-sensitive approach to land use planning considers freight

Proposed Policies

- Coordination
 - Collaborate and coordinate between public and private sectors as well as across governmental entities
 - Increase participation by freight industry professionals in transportation planning
 - Freight fully represented on regional transportation planning organizations
- Data
 - Create a national freight data architecture to address urban and metropolitan area challenges



Proposed Policies



- Funding
 - Increase investments in rail and port infrastructure
 - Expand TIGER grant and TIFIA loan programs and include freight movement as an eligible activity
 - Create sustainable and dedicated revenue streams that pay for infrastructure improvements

FAST Act Overview

FAST Act and Freight



Overview:

- Adds teeth to freight planning requirements
- Emphasizes freight stakeholder engagement
- Eliminates MAP-21 overmatch for interstates
- Establishes Programmatic Funding Program and Discretionary Funding Program for freight
- Continues from MAP-21 process to establish national freight goals and network

New Discretionary Funding



FASTLANE Grants:

- New competitive grant program designed to fund large projects
- Similar pool of applicants to TIGER grants (states, large MPOs, local governments, etc.)
- Funded at \$800 Million initially with annual increases up to \$1B in 2020
- Minimum project size \$100 M, except for 10% set-aside for smaller projects
- 25% of program set aside for rural projects, also a multimodal set-aside
- 60% max Federal share of projects

Freight Planning Requirements

Minimum Requirements:

- Trends, needs and issues
- Policies and performance measures
- Rural and urban critical corridors
- Alignment with national goals and policies
- Consideration of innovative technologies
- Heavy vehicle analysis
- Measures to address deterioration
- Identification of areas of congestion or delay caused by freight
- List of priority projects and investment plan
- Consultation with freight advisory committees

Trends in Freight

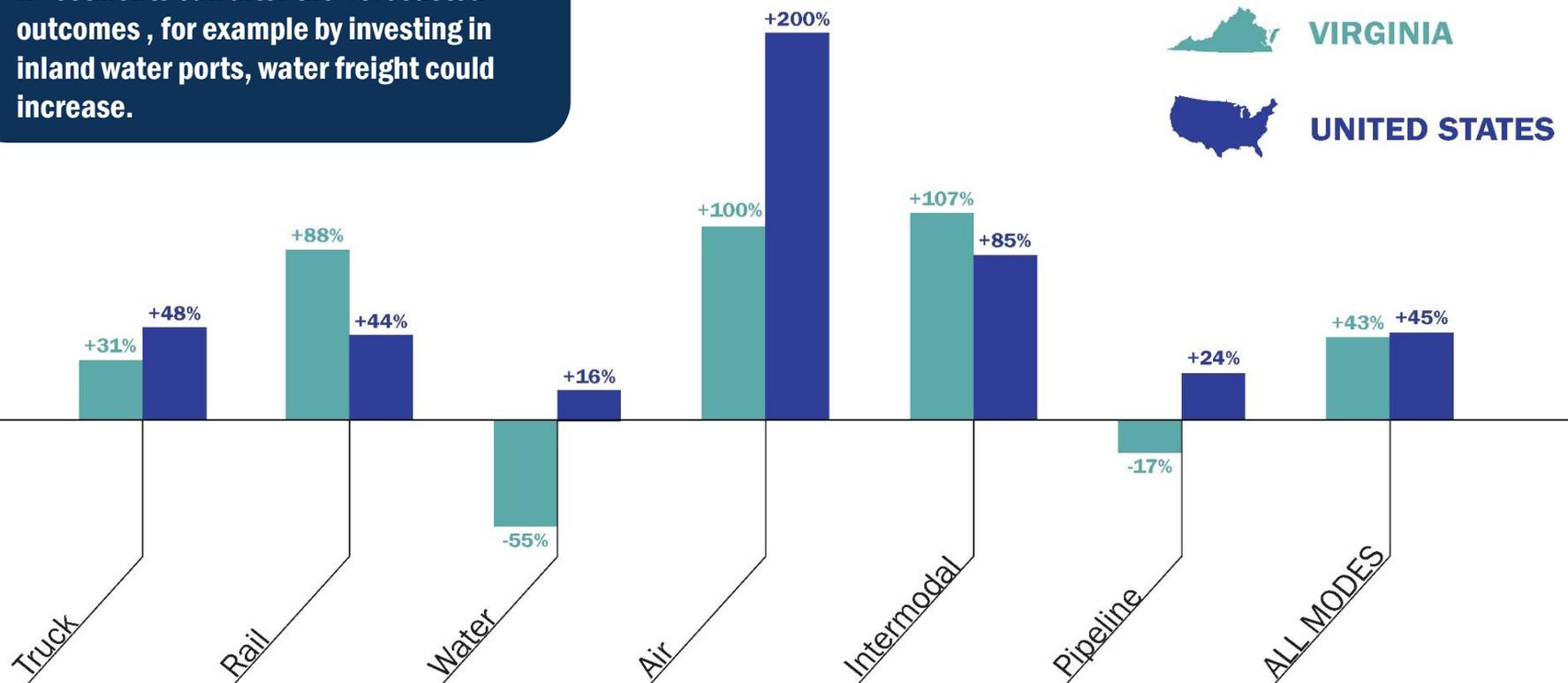
What's happening out there?

Trends in Freight Modes

FORECASTED TRENDS IN FREIGHT MODE GROWTH TO 2040

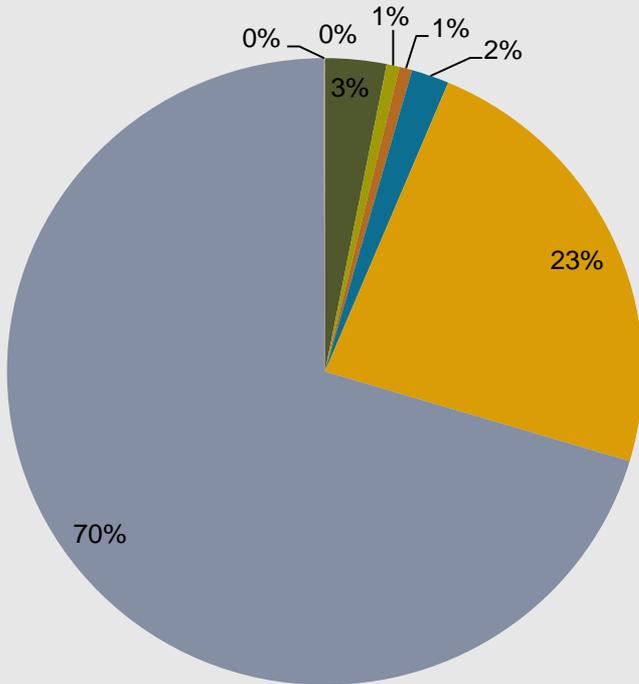
WHY IS THIS IMPORTANT?

Investments can alter the forecasted outcomes, for example by investing in inland water ports, water freight could increase.



Source: VTrans2040 Trend Analysis, Cambridge Systematics, from FHWA FAF3 data
planning.org

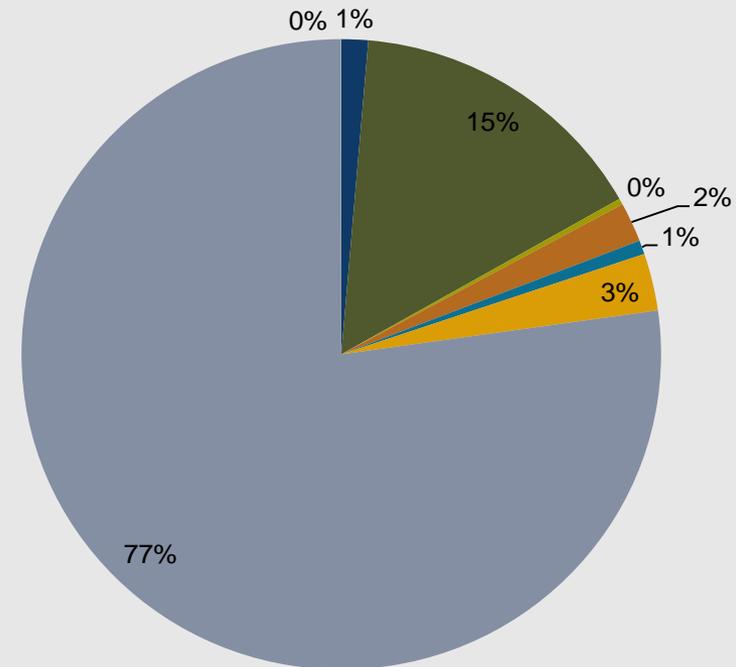
What are freight modes carrying now?



VA Mode Share by Weight, 2012

- Air (include truck-air)
- Multiple modes & mail
- No domestic mode
- Other and unknown
- Pipeline
- Rail
- Truck
- Water

VA Mode Share by Value, 2012



Source: VTrans2040 Trend Analysis, Cambridge Systematics, from FHWA FAF3 data
planning.org

Truck Trends & Issues



- Economic growth outpaces transportation investment
- Truck VMT increases faster than auto
- Bottlenecks are increasingly costly

Rail Trends & Issues



- Growing mode share due in part to larger ships at port
- Coordination with growing passenger rail demand
- Bottlenecks also on rail networks

Technology



- SAFETY – automated and connected vehicle features
- DISTRIBUTION – home delivery replacing personal auto trips

Importance of freight to key growth sectors in the economy

Value-added growth industries sensitive to transportation/energy costs

Need for flexibility in freight mode shifts in future

Improve efficiency of multimodal freight movement

Commuters, business travel and freight competing for highway and rail capacity

Potential improvements in freight logistics could improve efficiency of freight flows

Uncertain future for energy & transportation costs

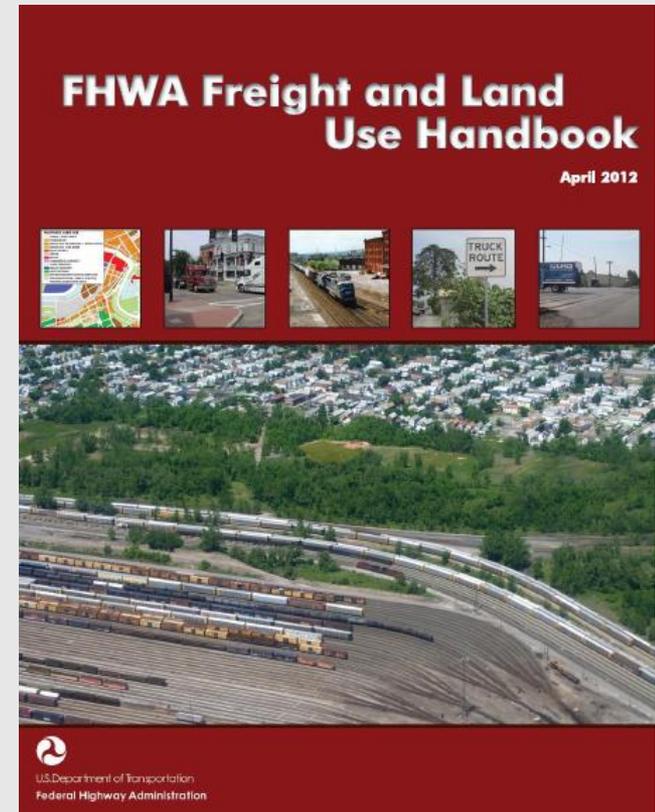
 **TRENDS**

 **OUTCOMES**



IMPLICATIONS

Community Impacts



<http://www.ops.fhwa.dot.gov/publications/fhwahop12006/>

Integrating Freight and Land Use

Where the rubber meets the road....

Freight Paradox

- Current Planning Theme about Freight
 - Freight is Great!
- Planners have to look at the Net Benefit
 - Physical Manifestation of the Economy
 - Lots of Negative Externalities



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

This is what we all want...





This is what we need to change...

What is source of all those trucks?

- In Manhattan:
 - 56 buildings create about 4% of delivery traffic
- 6,800 restaurants and drinking places generate more truck traffic than the port
 - 10 ZIP codes with freight parking demands larger than the parking capacity of the streets

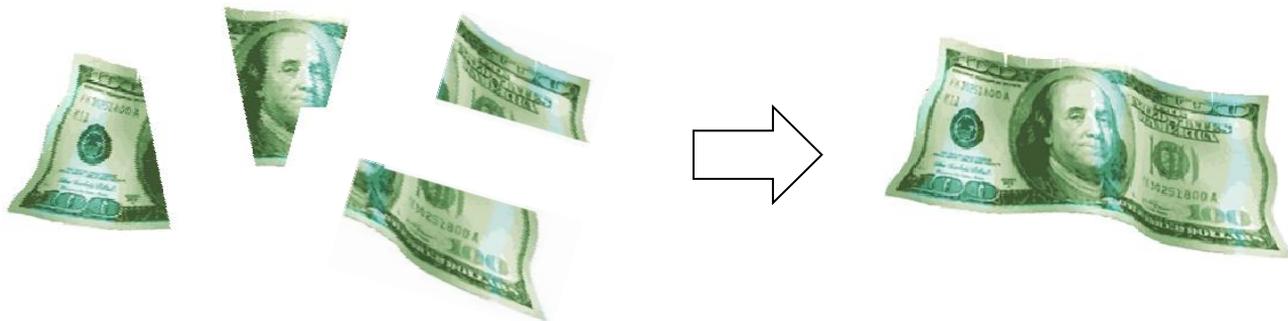


Why do we need to improve freight?

- **The Good:**
 - Freight is the physical expression of the economy,
impeding freight flows = impeding the economy
 - Between 5-10% of GDP is related to freight / logistics
- **The Bad:**
 - Freight traffic is a major consumer of resources and a major producer of externalities: pollution, noise, accidents, etc.
- **The Ugly:**
 - **Freight is good, freight traffic creates problems**
 - There are no easy solutions, no Magic Bullets
→ Multi-prong approaches are needed...
 - The system is complex and not well understood
 - Solutions are complex and involve multiple stakeholders

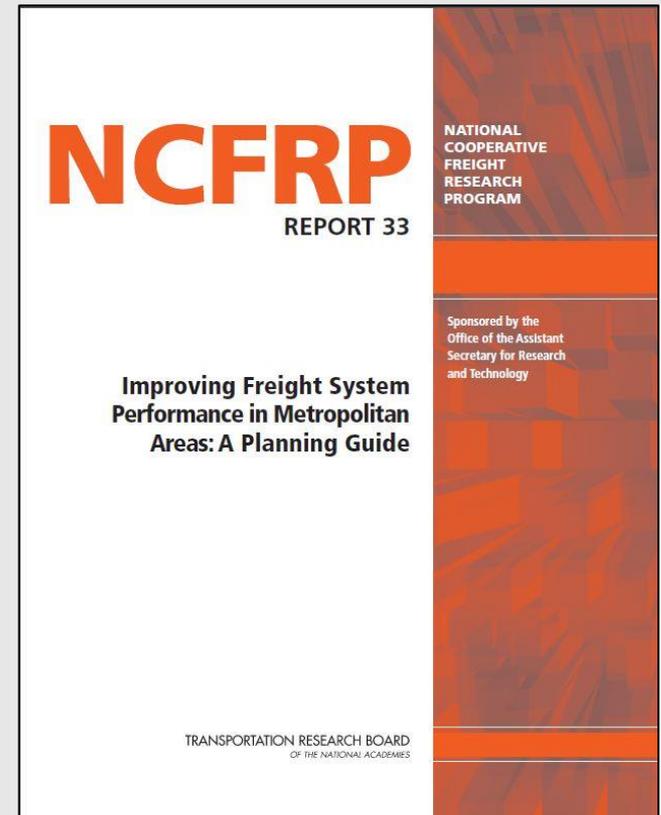
Collaboration is key...

- No single player could solve all freight issues by itself
 - Public sector → Regulates, manages highways, airports and water
 - Private sector → Operational movements....but also RR and Pipelines
 - Academia → Conducts research to find solutions
 - Communities → Enjoy freight benefits, suffer the impacts
- All players control a different piece, no one benefits from the status quo:



NCFRP Program – NAS/TRB

- National Cooperative Freight Research Program
- Established by SAFETEA-LU
- Project Panels
- Not continued in MAP-21
- Report 33: RPI Primary Author



Key Activities

Urban Freight Initiatives

STAKEHOLDER
ENGAGEMENT

MAJOR IMPROVEMENTS
Ring Roads

Initiative 1: Ring Roads for Bypass Traffic	
<p>Description: The construction of bypasses (high speed ring roads, or beltways) to move through-trucks to the periphery of the urban area. Only viable if they lead to cost savings to carriers.</p>	
<p>Targeted mode: Through traffic</p>	<p>Geographic scope: Corridor</p>
<p>Type of Initiative: Infrastructure management: major improvements</p>	<p>Primary objective: Reduce congestion</p>
<p>Expected costs and level of effort to implement: The cost and effort to construct a new ring road can be very high, involving construction of a new roadway, roadway crossings, and interchanges. Such a construction project will involve long-term planning and implementation, elaborate needs assessments, and impact analyses.</p>	
<p>Advantages:</p> <ul style="list-style-type: none"> • Reduce congestion • Enhance safety • Environmental sustainability • Reduce infrastructure damage 	<p>Disadvantages:</p> <ul style="list-style-type: none"> • High probability for unintended consequences <ul style="list-style-type: none"> - May lead to new development outside urban core - Environmental impacts on the communities affected by the new road • Environmental impacts associated with new construction • Require very high capital investments • Require private-sector acceptance
<p>Typical example:</p> <ul style="list-style-type: none"> • Sydney Orbital Network, Australia (Transport for NSW 2012) • "Through" Corridors in Atlanta, Georgia, United States (Georgia Department of Transportation 2011b) 	
 <p>Source: OpenStreetMap Contributors 2010</p>	 <p>Source: Georgia Department of Transportation 2011b</p>
<p>Related alternatives: 1. New and Upgraded Infrastructure, Intermodal Terminals; 2. Truck Routes; 3. Exclusive Truck Lanes (Dedicated Truck Lanes)</p>	
<p>References: Marquez et al. 2004; PIARC 2011</p>	

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Driver Training Programs
Anti-Idling Programs
Pick-up/Delivery to
Alternate Locations

Use Planning Process

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Land

- Compilation of programs, initiatives and policies regulating urban freight in metropolitan areas
- Critical analysis of each initiative and solution offered to find advantages and disadvantages
- Stakeholder Engagement

Street Based Activities

- Complete, Complete Streets
- Geometric Constraints at Intersections
- Ramps for Handcarts and Forklifts
- Loading Zones
- Parking Restrictions
 - Parking
 - Loading Docks
 - Staging Areas



Delivery Management

- Regulations vs Partnership
- Daytime Restrictions
- Off Hours Delivery
- Nighttime bans



Low noise lift platforms



Low noise carts

Neighborhoods

- Rise of E-Commerce
 - Customer Fulfillment Rate
 - What does it mean?
- Solutions
 - Smaller Delivery Vehicles
 - Unintended Consequences
 - Consolidation Centers
 - Delivery Boxes



• Freight Developments

- Plan for Freight and Workforce
 - Transit
 - Bike/Ped
 - Built Environment
- Freight Villages
 - PUD for Freight
 - Common Overhead
 - Dependent Relationships
 - Key to Retention



Final Thoughts

- Improving freight system performance is important
- Wide range of initiatives
 - There are no magic bullets, multi-prong approaches are key
 - The history is clear, traditional approaches have not reduced congestion, why do we keep using them?
 - Every situation is different, local conditions matter...
- Stakeholder Engagement
- Regulation vs. Partnership





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