



The State of Urban Freight:

Focus on Freight Mobility and Logistics in Metropolitan Areas



FOCUS ON FREIGHT

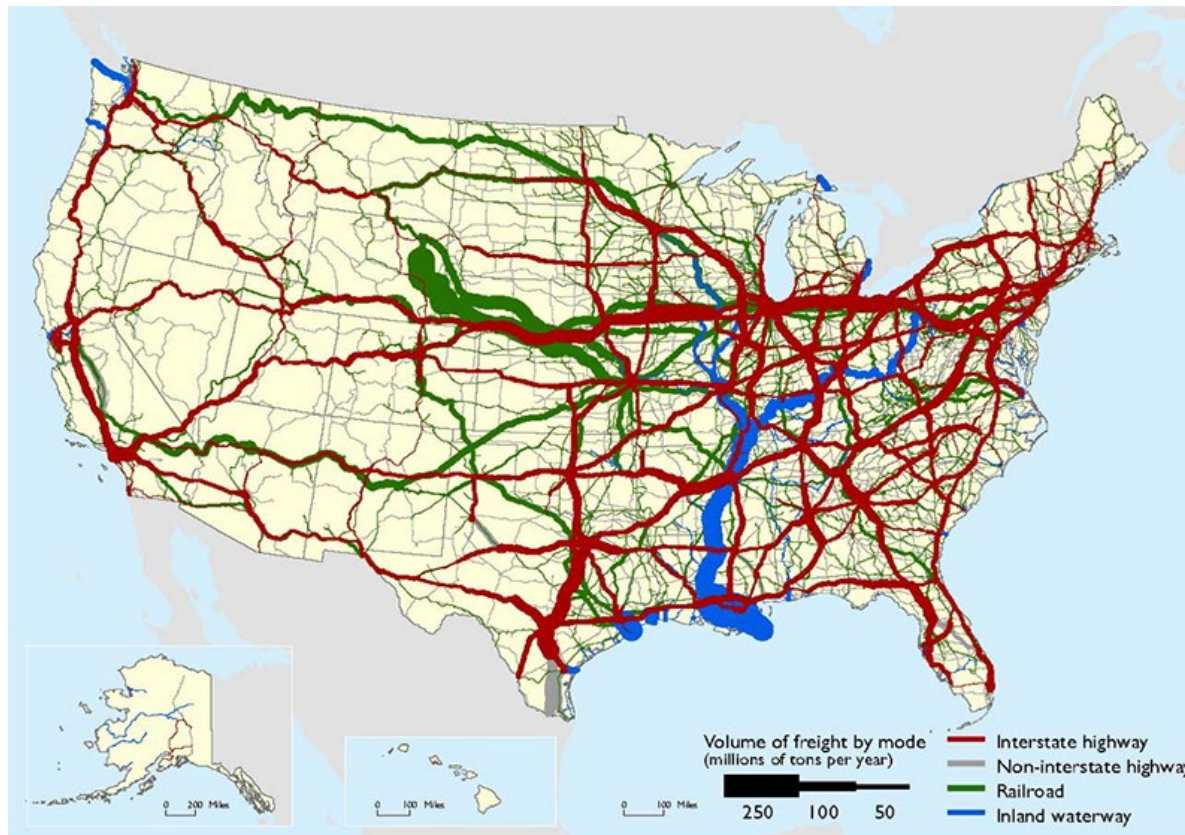
- National Freight Trends
- Operations Strategies in Metropolitan Regions
- Emerging Innovations
- Models of Collaboration
- Federal Support of Metropolitan Freight Activities





NATIONAL FREIGHT TRENDS

NATIONAL PICTURE: FREIGHT INFRASTRUCTURE



Tonnage on Highways, Railroads, and Inland Waterways, 2014

Our Nation's freight network is a critical component of the national transportation system. Efficient freight movement significantly contributes to economic development and a high quality of life.



INCREASING FREIGHT CONGESTION

Freight trucks experienced **1.2 billion hours of delay** on the National Highway System (NHS) in 2016.

That equals:

\$74
billion

Cost to the
freight industry

\$6,748

Average
congestion cost
per truck

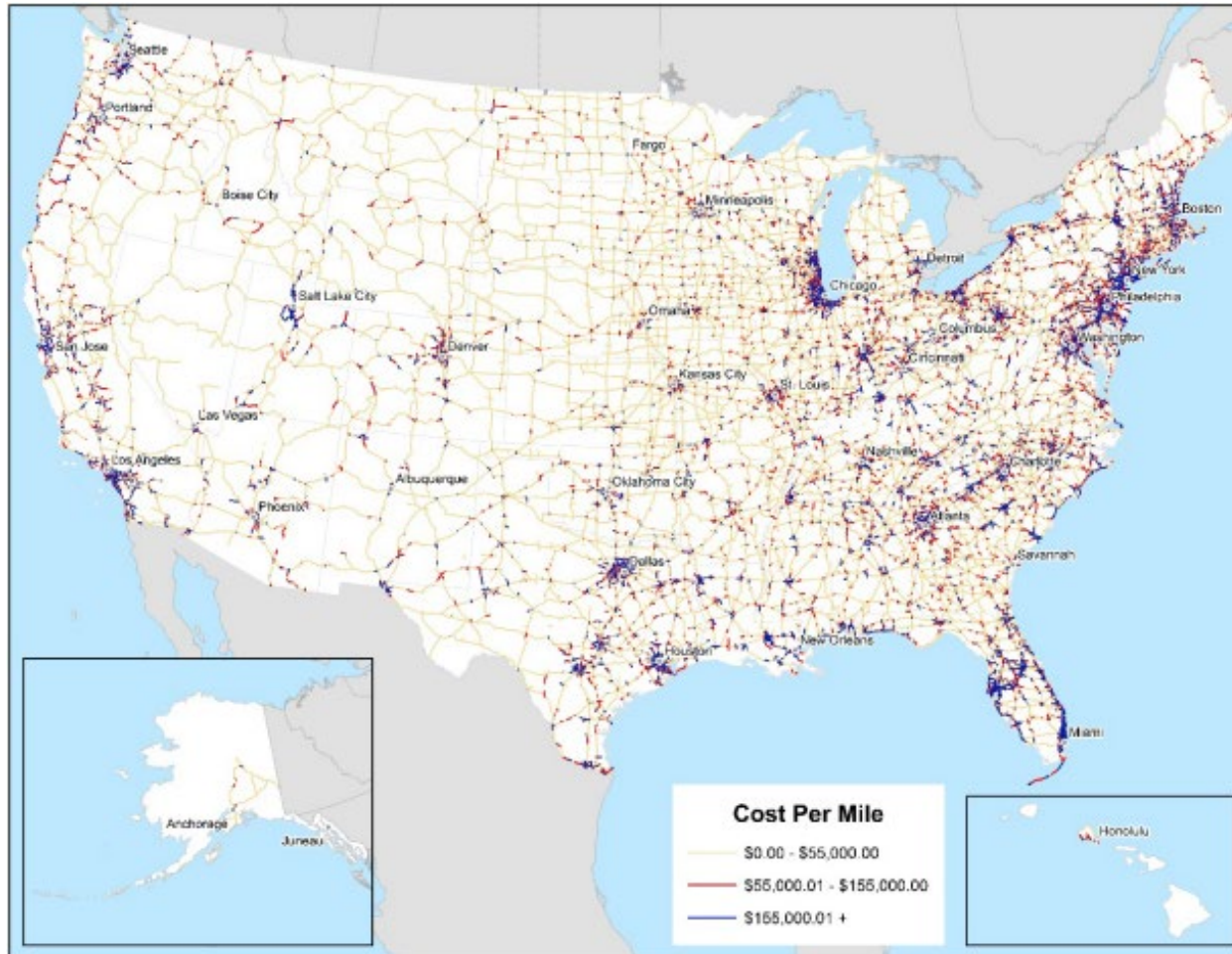
42%
increase

Average congestion
cost per truck, since
2014



Source: ATRI Cost of Congestion to the Trucking Industry, 2018 Update.

LEVEL OF CONGESTION



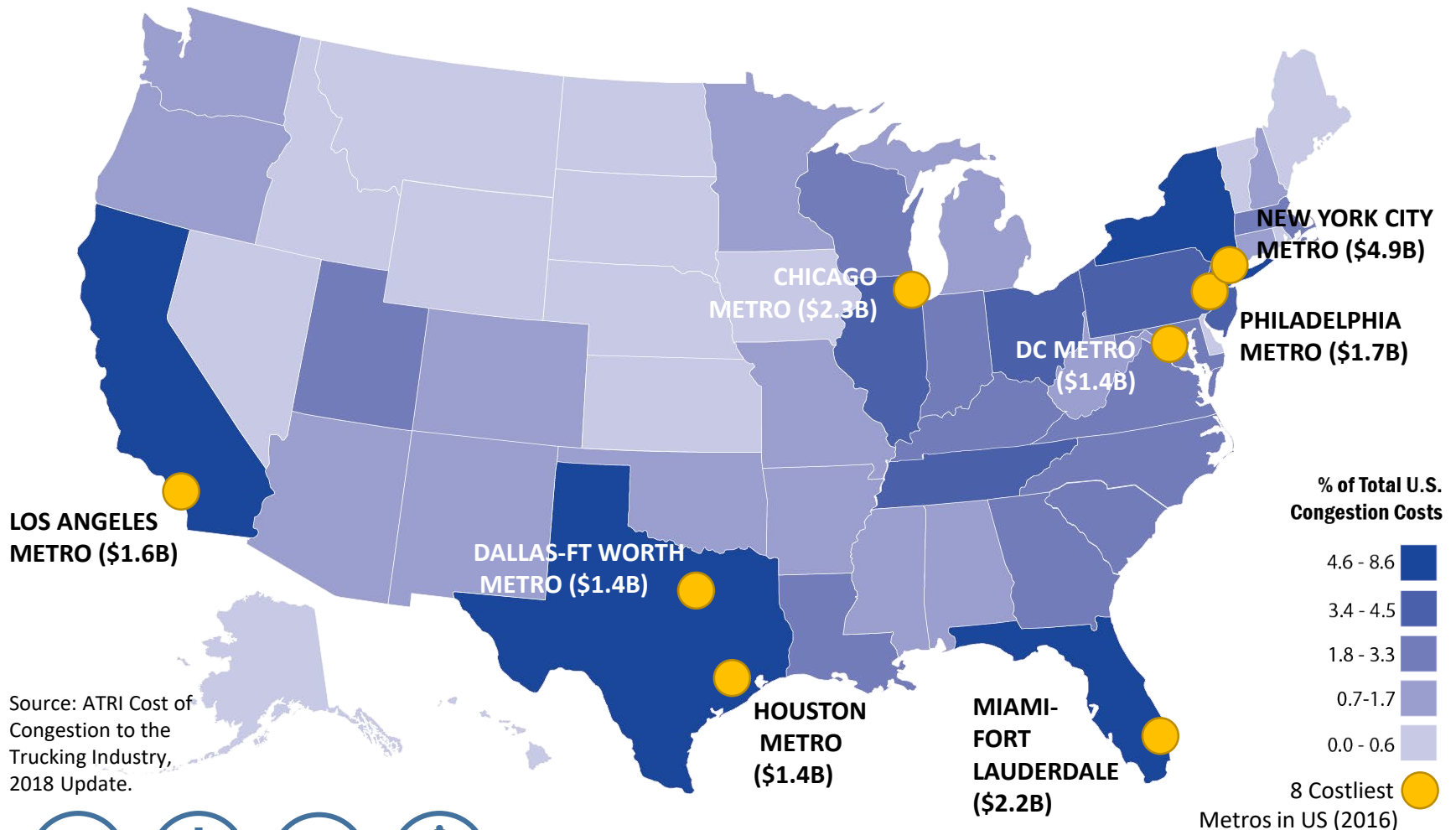
More than **91% of total congestion costs** in 2016 occurred in metropolitan areas.

Source: ATRI Cost of Congestion to the Trucking Industry, 2018 Update.

Cost of Congestion on a per Mile Basis, 2016

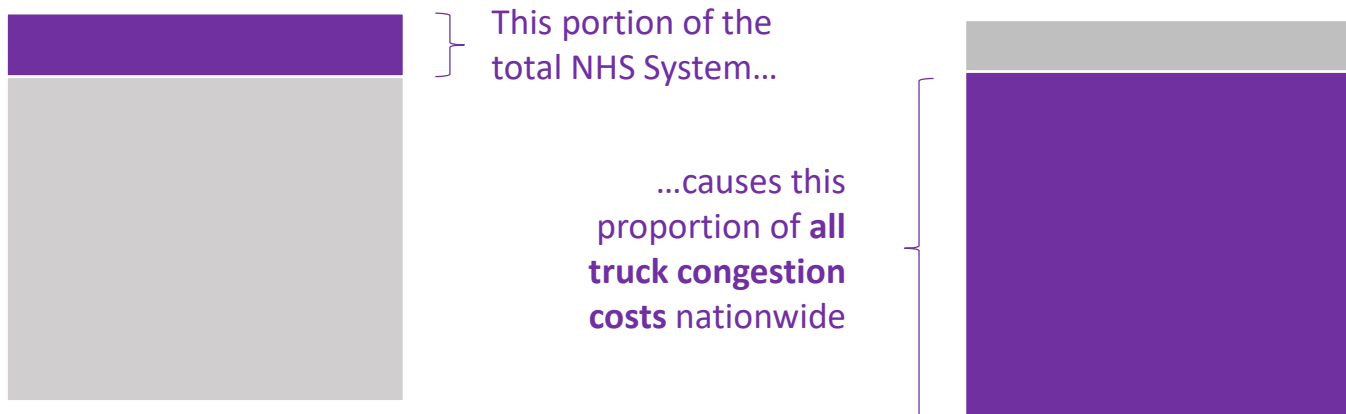


STATES AND METRO AREAS WITH HIGHEST CONGESTION COSTS



FREIGHT BOTTLENECKS

- Relatively small portions of the NHS system are creating most of the congestion.
- Just 17.2% of NHS miles represented 86.7% of total congestion costs nationwide.

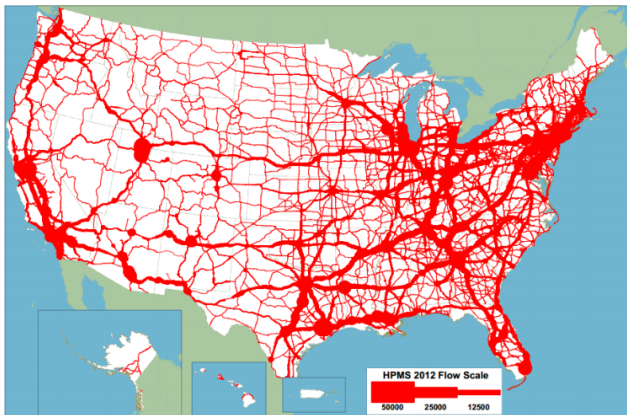


Source: ATRI Cost of Congestion to the Trucking Industry, 2018 Update.

FREIGHT DATA AVAILABILITY

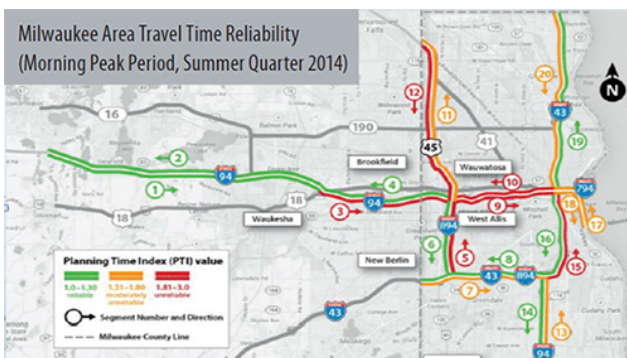
A persistent challenge for public freight planners!

Several national-scale datasets are available to the public sector, including:



Freight Analysis Framework v4 (FAF4)

Commercial truck volumes (tonnage and value).



National Performance Management Research Data Set (NPMRDS)

Commercial truck travel times (provided by the Federal Highway Administration [FHWA]).

Source: 2014 Urban Congestion Trends Report, FHWA HOFM website.



FREIGHT FLUIDITY

National Program Design

Issues	Approaches
What are we measuring?	<ul style="list-style-type: none"> • Travel time, travel time reliability, transportation cost. • Domestic movements – truck, rail, air, water. • Supply chains (end-to-end across modes) and component segments.
How much are we measuring?	<ul style="list-style-type: none"> • Representative sample of critical U.S. supply chains. • “Dow Jones Index” of key infrastructure based on actual industries.
How are index supply chains being chosen?	<ul style="list-style-type: none"> • Selected for coverage of primary economic sectors and high-growth sectors. • Use of all modes, coverage of U.S. regions. • Short- and long-haul moves, domestic/cross-border/global supply chains.
How is data being collected?	<ul style="list-style-type: none"> • Target industries identified and recruited. • Industries tell us their primary supply chain (commodity/mode/O-D patterns). • <u>No exchange of confidential information.</u> • Project team assembles data to tabulate metrics for supply chain patterns. <ul style="list-style-type: none"> • Real data, <i>not</i> models. • Supply chain-level, not regional/area level (like FAF/Transearch). • Public and private sources have been identified.
What are the outputs?	Initial “National Fluidity <i>Monitoring Dashboard</i> ,” updated quarterly.



FREIGHT FLUIDITY

Beta Tool Development

Goal: a database and visualization/mapping tool to track the cost, reliability, and travel time for multimodal freight movement across selected supply chains

Primary Data Sources	Information Obtained	Metrics Developed by Team
Leading U.S. companies representing 24 freight-dependent industry sectors	Descriptions of most important supply chains – commodities, modes, O/D pairs (not confidential)	<ul style="list-style-type: none"> • “Wiring Diagrams” of key trips • Database rows describing trips • Placeholders for performance metrics
NPMRDS	Highway link speeds	Truck metrics for O/D trips: median speed, median/95%/ 99% travel time, Travel Time Index, Planning Time Index
Chainalytics	Commercial data on shipment prices (covering primarily truck)	Truck metrics for O/D trips: cost per move, cost per mile
Surface Transportation Board Waybills / Federal Railroad Administration	Confidential rail costs	[In Progress]
U.S. Army Corps of Engineers	Waterborne shipping costs and navigation system time/delay	[In Progress]



FREIGHT FLUIDITY (BETA TOOL)

Tableau Outputs

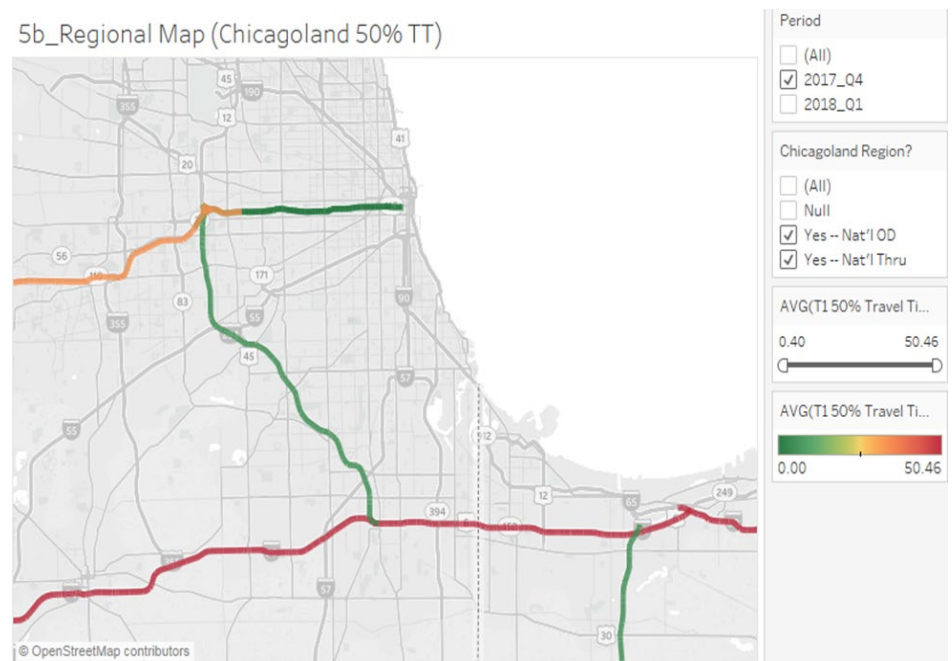
National Summary Metrics: 50% TT, TTI, \$/Load, \$/Mile
Food and Grocery Truck Trips over Two Quarters

Detail Level Mapping: Median Travel Time,
Food and Grocery Truck Trips, Chicagoland

3b_Dashboard Summary by Industry



5b_Regional Map (Chicagoland 50% TT)

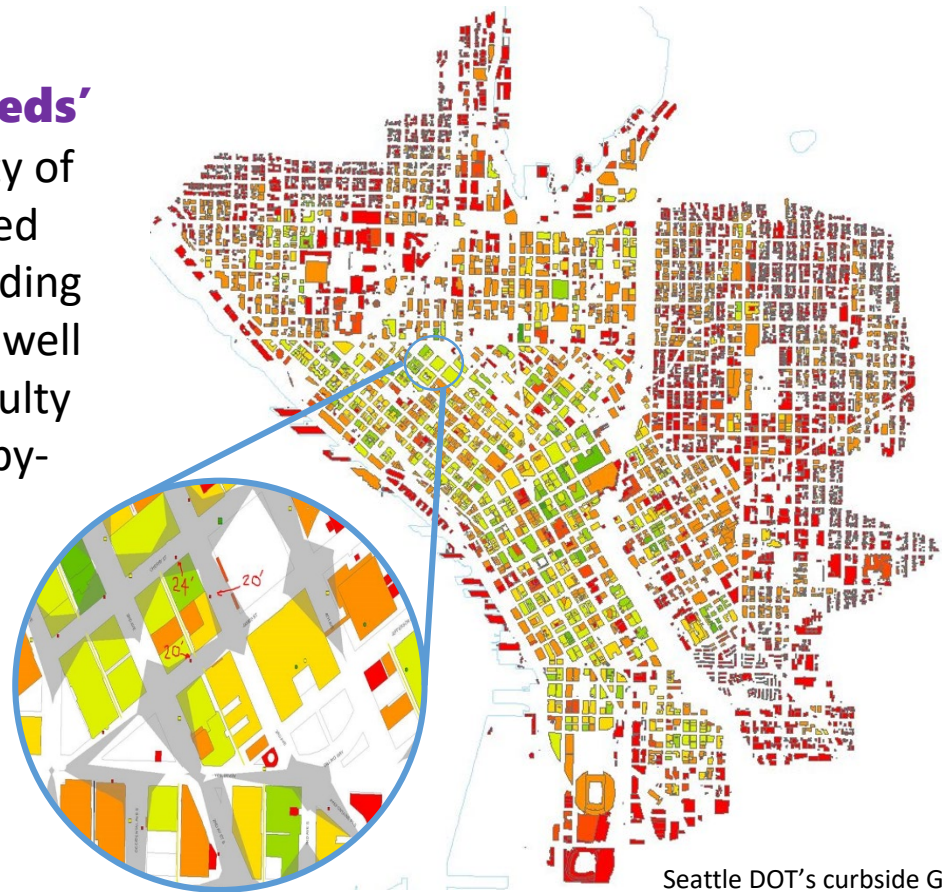


FREIGHT DATA AVAILABILITY

Many regions are finding ways to collect their own data.

City of Seattle 'Delivery Sheds'

In partnership with the University of Washington, Seattle DOT collected data on private loading bays, loading zones, and alley utilization and dwell times to evaluate the ease/difficulty of delivery access on a building-by-building level.

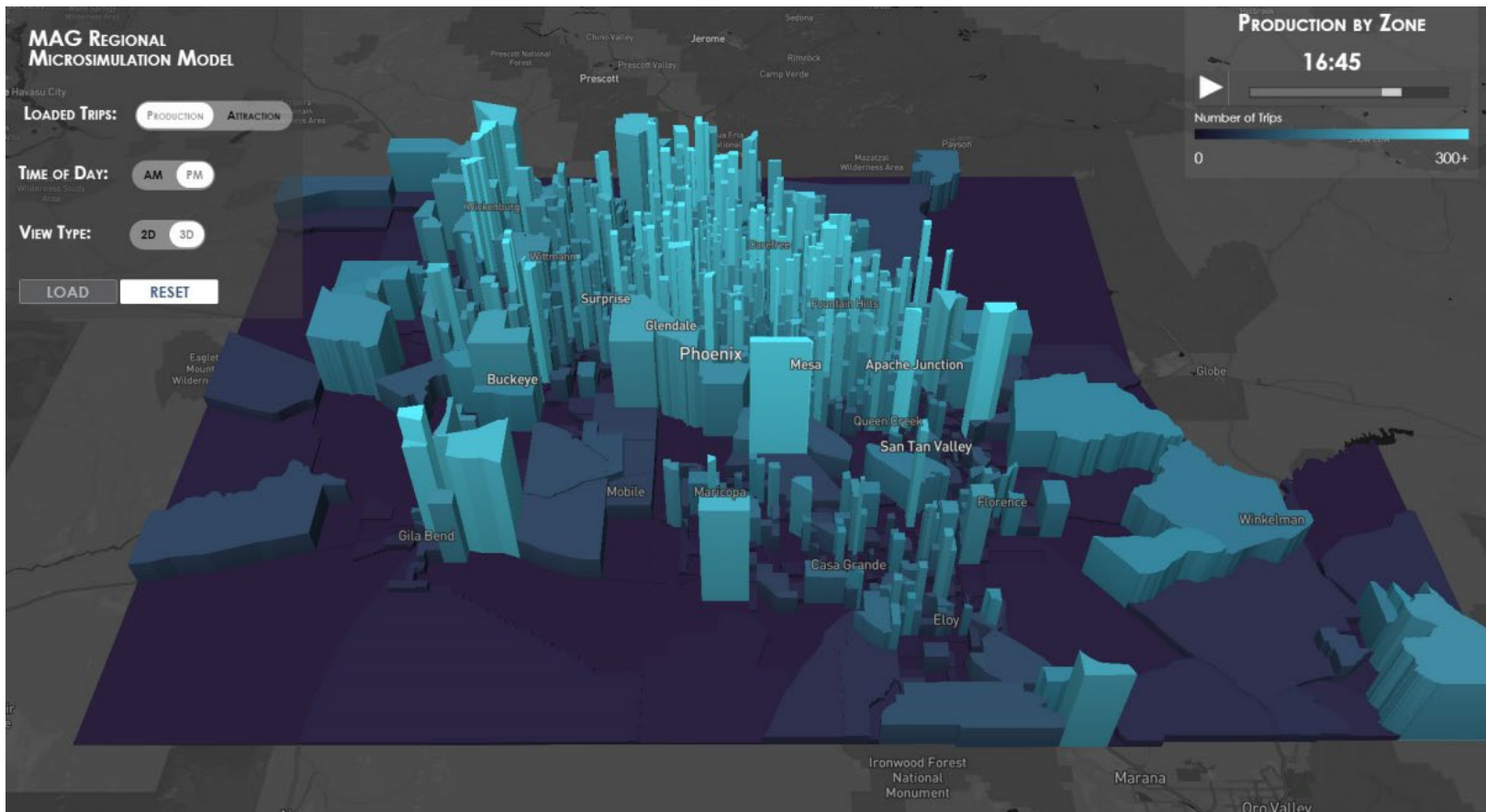


Seattle DOT's curbside GIS data model. Source: Seattle DOT.



FREIGHT DATA AVAILABILITY

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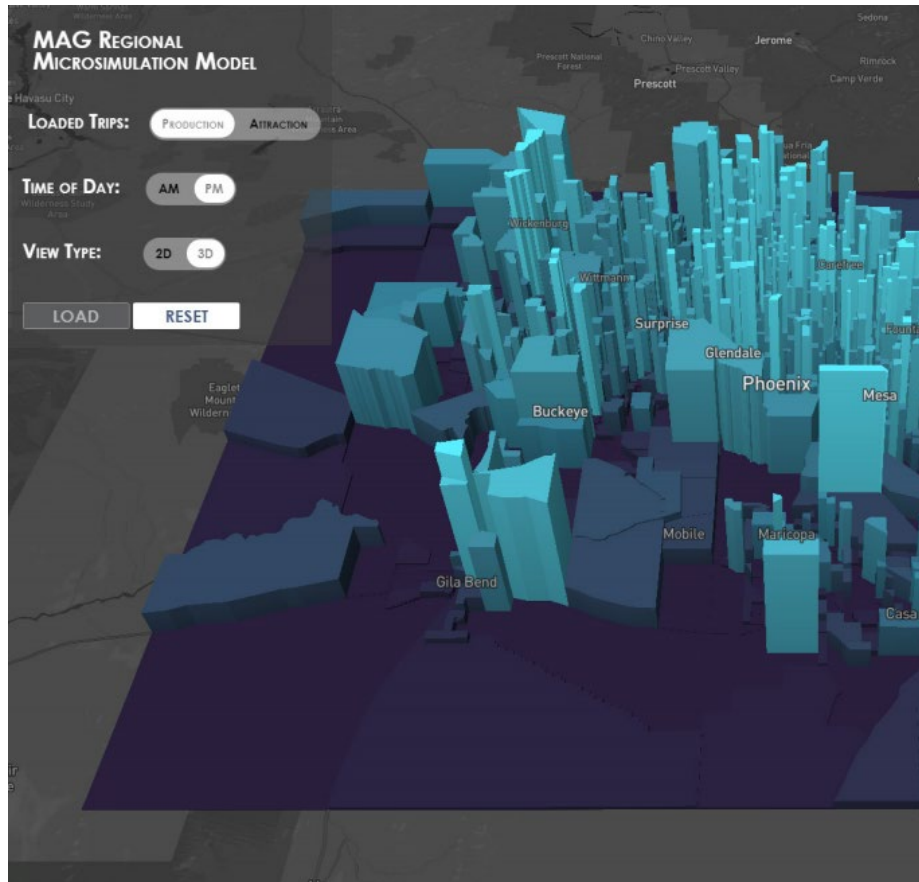


MAG's Regional Microsimulation Model. Source: Maricopa Association of Governments.



FREIGHT DATA AVAILABILITY

Many regions are finding ways to collect their own data.




Phoenix Regional Microsimulation Model

The Maricopa Association of Governments (MAG) combined public and proprietary data to develop an in-depth freight traffic volume and speed model for the Phoenix metro region. This helps the region better understand congestion, bottlenecks, and other local freight phenomena.



MAG's Regional Microsimulation Model. Source: Maricopa Association of Governments.



**OPERATIONS
STRATEGIES
FOR METROPOLITAN
REGIONS**

REUSING OLD MODES

Deliveries by Bicycle and Porter

- Using bicycles and portering (walking deliveries) as main methods for deliveries in urban areas.
- Benefits:
 - Reduces number of trucks on the road, congestion, and truck parking issues.
 - Decreases congestion costs and environmental impacts.



REUSING OLD MODES (continued)

Noteworthy Practice

Bicycle Deliveries – UPS Pilot in Pittsburgh

- UPS is piloting electric delivery trikes in many cities, including Pittsburgh.
- Cargo trikes aim to provide easier delivery to urban areas not built for large delivery truck access.
- Pilot using hub and spoke delivery routes to maximize efficiency.



UPS launches electric cargo trike delivery service in Pittsburgh.
Source: TreeHugger.com



REUSING OLD MODES (continued)

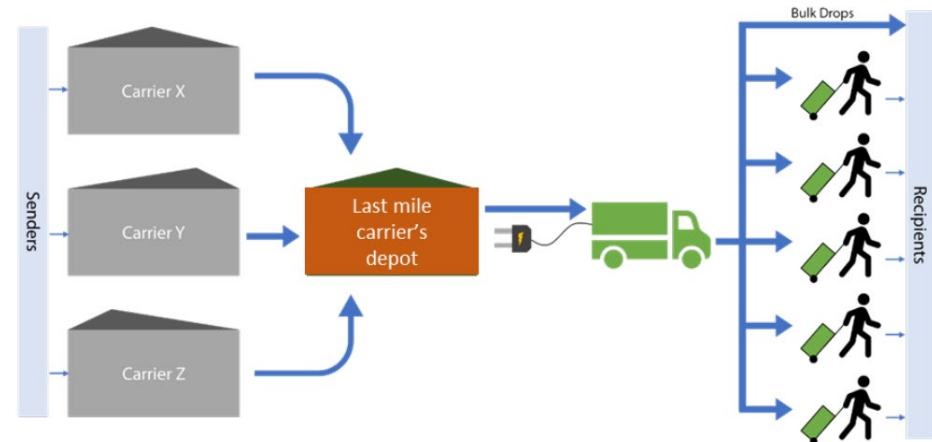
Portering – Pilot in London

Could reduce up to:

- 86% vehicle parking time at the curbside.
- 60% of vehicle driving time in parcel operations.

Improvements in:

- Greenhouse gas (GHG) emissions.
- Local air quality pollutants.
- Reductions in vehicle fleets required by parcel carriers.



Source: Using on-foot porters for last-mile parcel deliveries: 2 Results of a Trial in Central London.



OFF-HOURS DELIVERIES

- **Concept:** Shifting downtown freight traffic to off-peak hours (usually late nights/early mornings).
- Reduces congestion delays, but necessitates stronger collaboration among receivers, shippers, etc.
 - Stores not already open during off-hours may need to hire workers to receive goods overnight.



OFF-HOURS DELIVERIES

Noteworthy Practice

New York City Off-Hours Deliveries Program

- Encourages deliveries between 7PM-6AM.
- Program has been expanded due to success of original pilot between 2010-15.
- Estimated local benefits: \$200 M+ per year.



Source: NYCDOT



OFF-HOURS DELIVERIES

Noteworthy Practice (continued)

Orlando FL Off-Hours Delivery Pilot

- Pilot implemented from 2015-17.
- FDOT/FHWA/EPA partnered with major healthcare provider in downtown Orlando as receiver/carrier.
- Results led to benefits in travel time savings, productivity increases, and pollution decreases.



Source: Orlando Off-hours Delivery Pilot Program.



FREIGHT LOCKERS (continued)

- Packages delivered to one centralized location:
 - Often located at high-traffic locations, such as transit stops, grocery stores, etc.
 - Reduces trips by consolidating delivery points.
- Private and public models of deployment.
- 2015 study (Poland): lockers installed in centralized locations decreased truck Vehicle Miles Traveled by more than 50% and increased the number of parcels delivered by more than 10x.

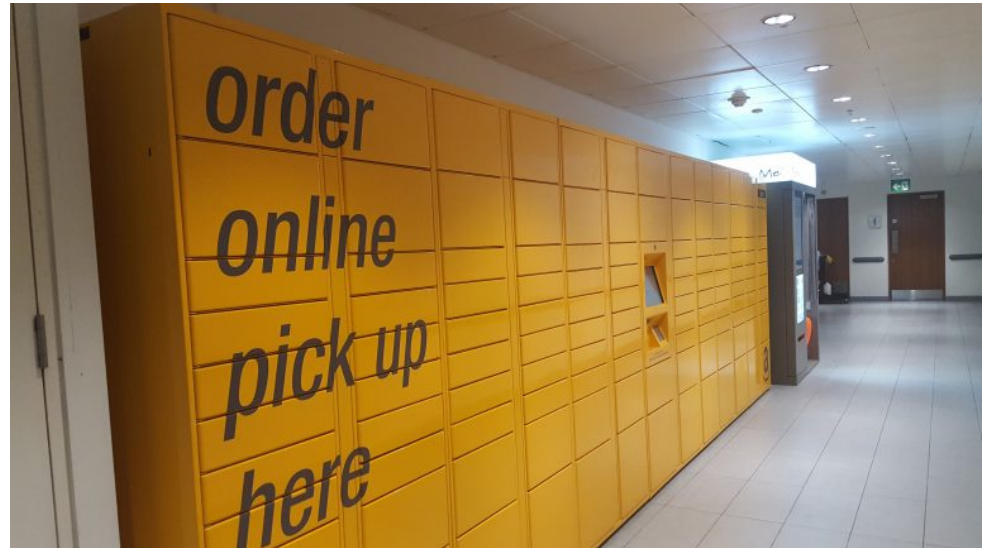


FREIGHT LOCKERS (continued)

Noteworthy Practice

City of Seattle Common Carrier Locker Pilot

- Developing a pilot to locate lockers at transit stations with residential housing less than 5 minutes walking distance.
- Research reveals strong interest in lockers from potential locker users/carriers.



Source: University of Washington Urban Freight Lab



CURBSPACE UTILIZATION

- Many cities and regions are paying more attention to vehicle utilization of curb space and implementing curbside management strategies.
- Several examples of curbside management programs around the country, including:
 - San Francisco Color Curb Program.
 - City of Miami Beach Freight/Alley Loading Parking Permit Program.
 - Washington, D.C. Commercial Loading Zone Management Program.



Source: USDOT Volpe National Transportation Systems Center



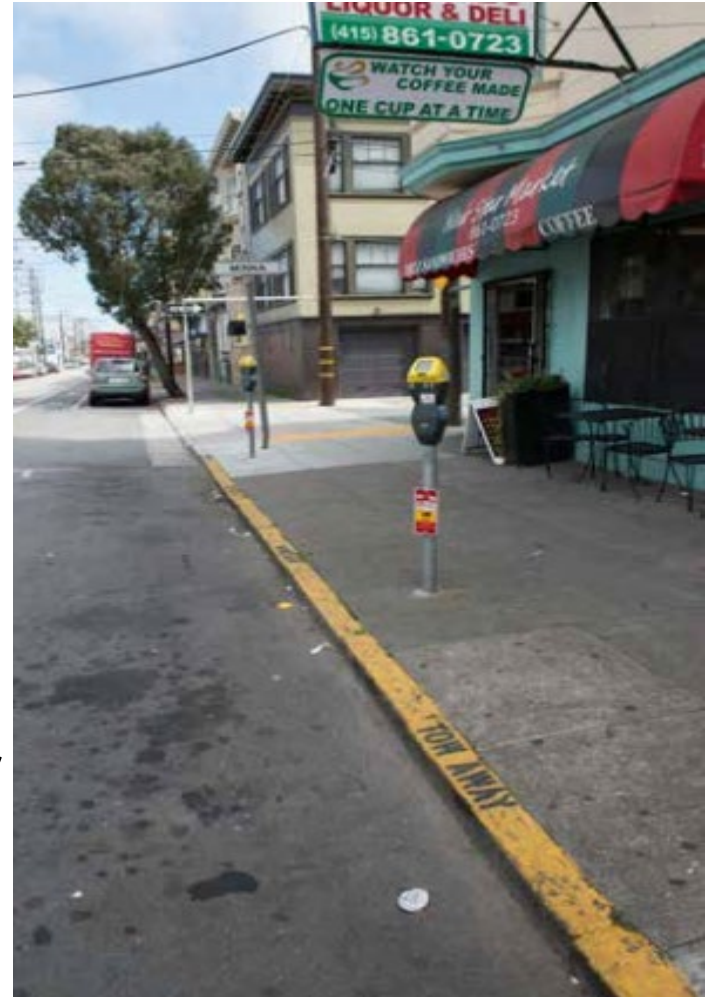
CURBSPACE UTILIZATION

(continued)

Noteworthy Practice

San Francisco Color Curb Program

- Managed by San Francisco Municipal Transportation Agency.
- Goal: provide sufficient space for both passenger and freight loading and unloading.
- Curbs painted one of five colors to clearly designate which activities can occur at curbside (e.g., yellow areas used for active freight loading/unloading).



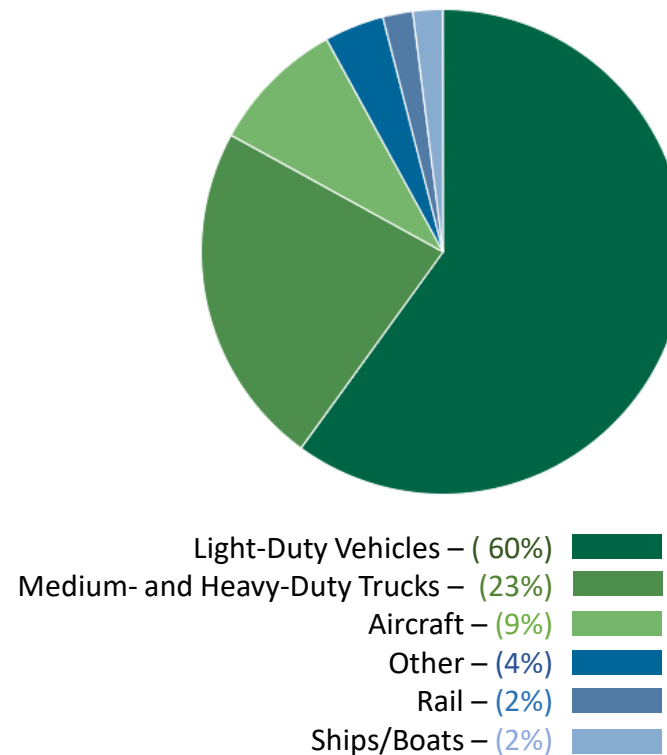
Source: San Francisco Municipal Transportation Agency



CLEANER FREIGHT VEHICLES

- Transportation accounts for about **one-third** of total U.S. greenhouse gas emissions (as of 2016).
- Air pollutant emissions related to freight delivery have **increased more than 50%** since 1990 through increased demand for freight.
- Many Federal, State, and regional/local programs developed to support implementation of cleaner freight vehicles.

2016 U.S. Transportation Sector GHG Emissions by Source



Source: <https://www.epa.gov/greenvehicles/fast-facts-transportation-greenhouse-gas-emissions>



CLEANER FREIGHT VEHICLES

continued - Noteworthy Practice

Clean Trucks Program at Port of Los Angeles (POLA) and Port of Long Beach (POLB)

- Joint POLA-POALB program—improves air quality, drayage service efficiency, and enhances POLA/POLB security and safety.
- POLA provided \$44 million to licensed motor carriers as incentive to purchase 2,200 cleaner truck models in 2008.
- POLB helped finance 750 clean trucks, 700 of which were liquefied natural gas-powered vehicles.
- Program reduced truck emissions at POLA by an estimated 80% and at POLB by an estimated 90% in 2012.



Source: POLB, <http://www.polb.com/environment/cleantrucks/>



TRUCK PARKING

- Truck parking shortages are a national challenge.
 - Increase in e-commerce has led to increase in demand for truck parking.
- 39% percent of commercial truck drivers take 1 hour or longer to find parking.
- Federal efforts focus on:
 - Protecting truck drivers and motorists from issues related to driver fatigue on the Nation's highway system.
 - Providing safe parking facilities on or adjacent to the NHS for commercial drivers to allow for adequate rest as required by the Federal Hours of Service regulations.
 - Jason's Law Survey developed per MAP-21 assessed truck parking capabilities across the Nation.



TRUCK PARKING (continued)

Noteworthy Practice

Truck Parking Information Systems (TPIMS)

- 8 Midwestern States collaborated to implement TPIMS.
- \$403 million in projected benefits:
 - Improvements to infrastructure.
 - More efficient movements of goods.
 - Less fuel consumption.
 - Reduced emissions.
 - Safer conditions for commercial truck drivers.



Source: American Association of State Highway and Transportation Officials.



TRUCK PARKING (continued)

Noteworthy Practice

Converting Obsolete Weigh Stations/Rest Areas into Truck Parking in Missouri

- 14 former rest areas and weigh stations converted to truck-only parking facilities.
- Number of truck parking spaces provided by MoDOT grew from 587 to 1,142 between 2002 and 2016 – 95% increase.
- MoDOT estimates that truck parking-only areas can cost 7x less than traditional rest areas to maintain.



Source: Missouri DOT





EMERGING INNOVATIONS

AUTONOMOUS DELIVERY

Pilots in Phoenix AZ and Miami FL

- Private grocery chains teaming up with tech companies, car manufacturers, and others to develop autonomous vehicle/freight delivery technologies.
- Use of autonomous vehicles for freight delivery may have significant implications in a number of areas including freight volumes, supply chains, and transportation infrastructure investments.



Source: Kroger. Image included in Washington Post



UNMANNED AERIAL DELIVERIES (DRONES)

Federal Aviation Administration's (FAA) Unmanned Aircraft System Integration Pilot Program

- Created in 2017.
- Provides opportunities for drone tests otherwise prohibited by FAA rules.
- Several pilot tests ongoing under the FAA pilot program:
 - City of San Diego, CA.
 - City of Reno, NV.
 - Memphis International Airport.
 - North Carolina DOT.
- Technology and economic potential:
 - \$82 billion in economic value potential.
 - Up to 100,000 jobs created.



Image source: Smart Cities Dive



An aerial photograph of a freight rail yard. The image shows multiple parallel tracks with various types of freight cars. There are orange hopper cars, some filled with white bags, and several cylindrical tank cars in shades of blue and white. The ground between the tracks is dark and appears to be gravel or dirt. The overall scene is a busy industrial setting.

URBAN FREIGHT STAKEHOLDER COLLABORATION

LOCAL-LEVEL COLLABORATION

- Local level agencies typically know best what particular issues and solutions are most relevant for their area.
- Local governments can work with local businesses, interest groups, and citizens to pilot/implement new freight delivery solutions.
- Important that local agencies synthesize local trends and information, and communicate to regional, state, and private partners.
 - States and regions need this information to build effective partnerships with regional industry leaders and to build funding packages for infrastructure initiatives.



STATE AND MPO-LEVEL COLLABORATION

- Freight flows necessarily occur at a scale larger than simply the local level.
- States and MPOs can aid local decisionmaking by quantifying and describing the larger geographic context of the freight system.
- Additional roles:
 - Identifying and bring together the right stakeholders for input on how and where to invest in regional infrastructure (i.e., engaging with major industry players in the State or region and developing large-scale funding structures).



PRIVATE SECTOR COLLABORATION

- Freight is largely a private sector activity—private industry has a lot of important knowledge about the freight system.
- Coordinating with the public sector helps private industry more effectively shape public policy and investment decisions, leading to more efficient freight movement.
- Public planning efforts are more effective at supporting private activities when the various industry players provide insights and analysis.



BOTTOM LINE:

Freight moves better when stakeholders collaborate.



MODELS FOR COLLABORATION: PUBLIC-PRIVATE PARTNERS

- Public agencies convening a private sector freight advisory board to help identify and prioritize pressing freight infrastructure and operations investment needs.
- Assembling such groups opens lines of communication, and can help align private priorities and public constraints.
- Freight Advisory Committees (FACs) are a common example.



MODELS FOR COLLABORATION: PUBLIC-PRIVATE PARTNERS (continued)

Example:

- St. Louis Regional Freightway
 - Bi-state development agency convenes group of municipal-level leaders and private freight industry members.
 - 75 member Freight Development Committee
 - Provides members of the regional supply chain to rank infrastructure priorities based on their ability to lower transportation costs.



The Merchant's Rail Bridge is a major piece of infrastructure that regional industry leaders prioritized for investment via the St. Louis Regional Freightway. Source: St. Louis Regional Freightway.



MODELS FOR COLLABORATION: PUBLIC-PRIVATE PARTNERS

Example:

- St. Louis Regional Freightway
- Stakeholders Include:
 - *Manufacturing*
 - *Logistics*
 - *Class I Railroads*
 - *Trucking Companies*
 - *Barge Operators*
 - *Airports*
 - *Industrial Real Estate Brokers and Developers*
 - *Illinois and Missouri DOTs*
 - *St. Louis Region MPO*



The Merchant's Rail Bridge is a major piece of infrastructure that regional industry leaders prioritized for investment via the St. Louis Regional Freightway. Source: St. Louis Regional Freightway.



MODELS FOR COLLABORATION: UNIVERSITY CONDUITS

- Public agencies and private firms often collaborate through a university.
- Private firms may share data and industry insights with a university, which can anonymize and aggregate data and provide policy-level insights to public agencies.



MODELS FOR COLLABORATION: UNIVERSITY CONDUITS

(continued)

Examples:

University of Washington Urban Freight Lab (UFL)

- A structured work group comprised of senior executives from retail and wholesale companies, logistics and goods delivery firms.
- Members act to improve the management of both public and private operations of urban goods delivery systems through applied research techniques.



The Urban Freight Lab is a part of the University of Washington's College of Engineering, Supply Chain Transportation and Logistics program.
Source: University of Washington.



MODELS FOR COLLABORATION: UNIVERSITY CONDUITS

(continued)

Examples:

University of Washington UFL

- Stakeholders include:
 - *Retailers (such as Kroger, Nordstrom).*
 - *Technology companies (such as Boeing, Ford).*
 - *Goods delivery firms (such as UPS, USPS).*
 - *Building owners and real estate firms (such as Terreno).*
 - *City of Seattle.*
 - *Washington DOT.*
 - *University of Washington's Supply Chain Transportation and Logistics Center.*



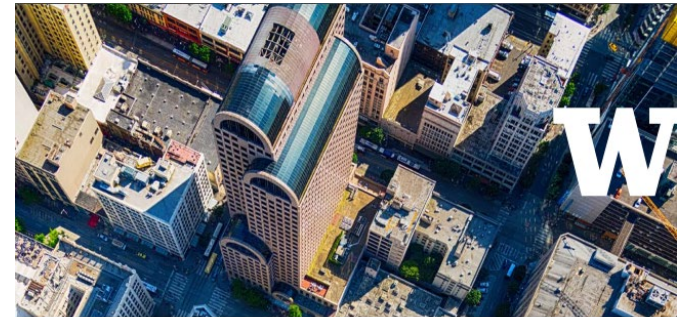
MODELS FOR COLLABORATION: UNIVERSITY CONDUITS

(continued)

Examples:

UFL's Final 50 Feet Program

- Uses a data-driven and pilot-based approach to study:
 - Truck utilization of curbs, private freights bays, and alleyways.
- UFL worked with the city to develop framework and collect data.
- Private firms validated data findings.



THE FINAL 50 FEET OF THE URBAN GOODS DELIVERY SYSTEM



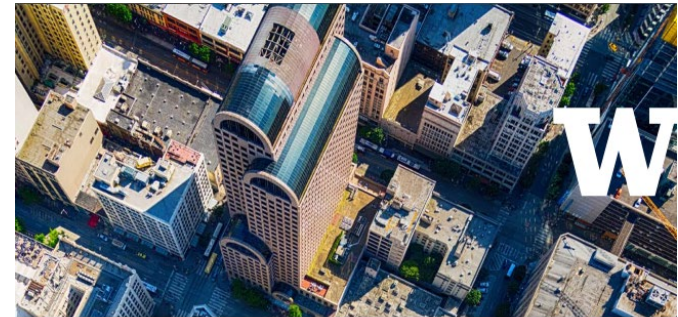
MODELS FOR COLLABORATION: UNIVERSITY CONDUITS

(continued)

Examples:

UFL's Final 50 Feet Program

- As a result, UFL developed measurable goals:
 1. Reduce number of failed first delivery attempts.
 2. Reduce dwell time in load/unload spaces.
- UFL working with the city and its lab members to act on these goals.



THE FINAL 50 FEET OF THE URBAN GOODS DELIVERY SYSTEM



MODELS FOR COLLABORATION: PROFESSIONAL ORGANIZATIONS

- Professional transportation and freight organizations often have a mix of industry representatives:
 - Various levels and type of government.
 - Academia.
 - Private sector.
 - Interest groups.
- These organizations provide a natural location for collaboration to occur.



MODELS FOR COLLABORATION: PROFESSIONAL ORGANIZATIONS (continued)

Examples:

- American Association of State Highway Transportation Officials (AASHTO).
 - Standing freight committee.
 - Provides a venue for public agencies and private firms to inform one another on various projects, priorities, and standards.
- Transportation Research Board (TRB)
 - Freight section contains half-dozen freight-related committees.
 - Provides a venue for private and public entities to articulate research needs and priorities in collaboration with academia.





**FEDERAL FREIGHT
SUPPORT
PROGRAMS**

FEDERAL FREIGHT FUNDING PROGRAMS

Program Title	Overview
National Highway Freight Program (NHFP)	Dedicated formula program for freight projects established by FAST Act.*
INFRA*	Competitive grant program to fund nationally and regionally-significant freight and highway projects.
BUILD*	Competitive grant funding awarded annually to spur transportation infrastructure investment.
Surface Transportation Block Grant Program	Flexible funding to preserve and improve the conditions and performance for eligible transportation infrastructure projects.
CMAQ*	Funds for transportation projects that will reduce vehicle-related emissions in non-attainment or maintenance areas.

*FAST Act = Fixing America's Surface Transportation Act of 2015

INFRA = Infrastructure for Rebuilding America

BUILD = Better Utilizing Investments to Leverage Development

CMAQ = Congestion Mitigation and Air Quality



FEDERAL FREIGHT FUNDING PROGRAMS (continued)

PROGRAM TITLE	OVERVIEW	FUNDING AMOUNT	EXAMPLE ELIGIBLE PROJECTS
NHFP	Dedicated formula program for freight projects established by FAST Act to strategically invest Federal resources and policies to improve the nation's freight network.	\$6.3 billion apportioned over 5 years (FY16-FY20).	Eligible projects contribute to the efficient movement of freight on the National Highway Freight Network, such as: <ul style="list-style-type: none"> • Truck-only lanes. • Real-time traffic or roadway condition information systems. • Additional road capacity to address highway freight bottlenecks.



FEDERAL FREIGHT FUNDING PROGRAMS (continued)

PROGRAM TITLE	OVERVIEW	FUNDING AMOUNT	EXAMPLE ELIGIBLE PROJECTS
INFRA*	Competitive grant program to fund nationally and regionally significant freight and highway projects.	\$4.5 billion over five years. \$855-\$902.5 million in FY19.	<p>Projects that support economic vitality and leverage federal funding, innovation, and performance and accountability, such as:</p> <ul style="list-style-type: none"> • Highway expansion to improve mobility. • Freight intermodal or freight rail project • Railway-highway grade crossing or grade separation project.

*INFRA = Infrastructure for Rebuilding America



FEDERAL FREIGHT FUNDING PROGRAMS (continued)

PROGRAM TITLE	OVERVIEW	FUNDING AMOUNT	EXAMPLE ELIGIBLE PROJECTS
BUILD*	Competitive grant funding awarded annually to spur transportation infrastructure investment.	Single year appropriation set by Congress; Varies each year. FY18 = \$1.5 billion.	Road, rail, transit, and port infrastructure projects aligned with BUILD criteria to improve safety, economic competitiveness, quality of life, environmental protection, state of good repair, innovation, and public-private partnerships.

*BUILD = Better Utilizing Investments to Leverage Development



FEDERAL FREIGHT FUNDING PROGRAMS (continued)

PROGRAM TITLE	OVERVIEW	FUNDING AMOUNT	EXAMPLE ELIGIBLE PROJECTS
Surface Transportation Block Grant Program	Flexible funding to preserve and improve the conditions and performance on any Federal-aid highway, bridge and tunnel projects on any public road, and other project types.	\$11.876 billion in FY19 (estimated)	<ul style="list-style-type: none"> • Construction of highways, bridges, and tunnels. • Operational improvements for traffic monitoring systems. • Highway safety infrastructure improvements.



FEDERAL FREIGHT FUNDING PROGRAMS (continued)

PROGRAM TITLE	OVERVIEW	FUNDING AMOUNT	EXAMPLE ELIGIBLE PROJECTS
Congestion Mitigation and Air Quality (CMAQ)	Funds for transportation projects that will reduce vehicle-related emissions in non-attainment or maintenance areas.	\$2.449 billion (estimated) in FY19.	<ul style="list-style-type: none"> • Diesel emission control technology for non-road diesel vehicles and engines used for port-related freight operations. • Port-related landside non-road or on road equipment. • Priority consideration of electric vehicle and natural gas infrastructure within designated corridors.



UNITED STATES-EUROPEAN COMMISSION FREIGHT TWINNING INITIATIVE

Purpose: highlight projects at all levels of government in the U.S. and Europe leading to on-the-ground improvements in urban freight mobility.



UNITED STATES-EUROPEAN COMMISSION FREIGHT TWINNING INITIATIVE (continued)



U.S. Department of Transportation
Federal Highway Administration



Source: USDOT Volpe Center.

- Partnership began in 2015.
- Twinning allows the U.S. and European Commission to develop research on topics of mutual interest, such as:
 - Freight corridors.
 - Freight data.
 - Fleet electrification.
 - Curbside management.
- Participants share insights from research, pilot programs, and innovative policies.



UNITED STATES-EUROPEAN COMMISSION FREIGHT TWINNING INITIATIVE (continued)

Twinning Initiative participant and study locations include:



Austria



France



Netherlands



Belgium



Germany



Norway



Bangladesh



Greece



Singapore



Brazil



Haiti



Spain



Canada



Ireland



Sweden



Croatia



Italy



United Kingdom



Denmark



Luxembourg



United States

...and more are added each year!



UNITED STATES-EUROPEAN COMMISSION FREIGHT TWINNING INITIATIVE (continued)

- Annual Urban Freight Research Prioritization Workshop.
- Annual Urban Freight Roundtables.
- Joint conference presentations.
- Site visits and exchanges.
- International Urban Freight Peer Exchange.
- Exchange of information through webinars.
- Development of noteworthy practices and other joint publications.



US-EC URBAN FREIGHT WEBINARS



Image source: Indiana DOT

Public-Private Collaboration in Urban Freight

Speakers Represented: City of London, State of Indiana, Conexus, Michiana Council of Governments.

Electrification of Urban Freight Fleets

Speakers Represented: City of Rotterdam, Houston-Galveston Council of Governments.



Image source: UPS

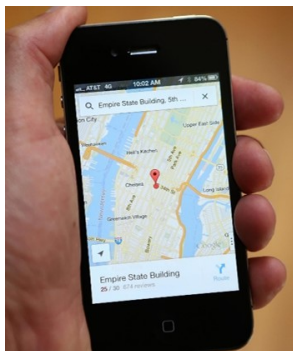


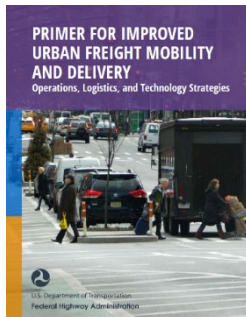
Image source: University of Southampton

Gaining Insights from Freight Data

Speakers Represented: Maricopa Associations of Governments, University of Southampton.



URBAN FREIGHT PRIMERS



Operations, Logistics, and Technology (OLT) Strategies Primer (2018)

Guide to implementing on-the-ground strategies to enhance urban freight mobility in urban areas.



Inform, Collaborate, and Partner (ICP) Strategies Primer (forthcoming Spring 2019)

Guide to identifying and engaging stakeholders to implement urban freight strategies and projects.

Multi-
Modal
Primer

Forthcoming Multimodal Focused Primer (anticipated 2020)

Strategies for identifying, prioritizing, funding, and building support for multi-modal projects.



PEER TO PEER (P2P) PROGRAM



International Peer Exchange; Image source: Volpe Center

Peer Exchanges

Provide opportunities for knowledge-sharing, information exchange, and technical assistance for State and regional/local government freight practitioners.



Downtown Delivery Symposium in Washington DC.
Image source: Washington Council of Governments

Downtown Delivery Symposia

Joint effort between FHWA and Institute of Transportation Engineers (ITE) to connect public sector freight practitioners with industry stakeholders to improve first- and last-mile freight movement and logistics.



Questions?

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