Transportation Planning Capacity Building

AASHTO Freight Planning Peer Exchange

A TPCB Peer Exchange Event

Location: Virtual

Date: September 28, 2020

Host Agency: American Association of State Highway and Transportation Officials (AASHTO)

National Peers: Jason Beloso, Washington Department of Transportation
Craig Hurst, Colorado Department of Transportation
Tom McQueen, Georgia Department of Transportation
Tom Murtha, Chicago Metropolitan Agency for Planning
Barbara Nelson, Port of Virginia
Dan Pallme, Tennessee Department of Transportation

Sponsoring Agency: Federal Highway Administration (FHWA)

U.S. Department of Transportation
Federal Highway Administration

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REPORT DOCUMENTATION PAGE		*Form Approved* *OMB No. 0704-0188*

Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503.

1. AGENCY USE ONLY (Leave blank)	2. REPORT DATE November 2020	3. REPORT TYPE AND DATES COVERED Final (November 2020)
4. TITLE AND SUBTITLE AASHTO Freight Planning Peer Exchange: A TPCB Peer Exchange Event		5a. FUNDING NUMBERS HW2LA5 / TJ692 HW2LA5 / UJ692
6. AUTHOR(S) Patricia Cahill, Emily Navarrete		5b. CONTRACT NUMBER
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) U.S. Department of Transportation John A. Volpe National Transportation Systems Center 55 Broadway Cambridge, MA 02142-1093		8. PERFORMING ORGANIZATION REPORT NUMBER DOT-VNTSC-FHWA-21-02
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES) U.S. Department of Transportation Federal Transit Administration/Federal Highway Administration Office of Planning & Environment/Office of Planning 1200 New Jersey Avenue, SE Washington, DC 20590		10. SPONSORING/MONITORING AGENCY REPORT NUMBER FHWA-HEP-21-006
11. SUPPLEMENTARY NOTES		
12a. DISTRIBUTION/AVAILABILITY STATEMENT This document is available to the public through the National Technical Information Service, Springfield, VA 22161.		12b. DISTRIBUTION CODE

13. ABSTRACT (Maximum 200 words)

This report summarizes proceedings of a virtual peer exchange sponsored by the Federal Highway Administration (FHWA) and hosted by the American Association of State Highway and Transportation Officials (AASHTO) on September 28, 2020. The purpose of the peer exchange was to discuss the experiences, successes, challenges, and lessons learned from State and local agencies regarding freight and freight planning, specifically surrounding the topics of data collection and data-driven decisionmaking, multimodal planning, truck parking, urban and rural goods movement, congestion and bottlenecks, and forecasting freight demand. This event was held the day prior to the AASHTO 2020 Virtual Joint Policy Conference. AASHTO seeks to use the discussion and information gleaned from this event to inform future programming. The event was sponsored by FHWA through its Transportation Planning Capacity Building Program, led in partnership with the Federal Transit Administration.

14. SUBJECT TERMS Keywords: freight planning, freight multimodal planning, data, congestion, truck parking, goods movement, transportation demand management			15. NUMBER OF PAGES 15
			16. PRICE CODE
17. SECURITY CLASSIFICATION OF REPORT Unclassified	18. SECURITY CLASSIFICATION OF THIS PAGE Unclassified	19. SECURITY CLASSIFICATION OF ABSTRACT Unclassified	20. LIMITATION OF ABSTRACT Unlimited

NSN 7540-01-280-5500

Standard Form 298 (Rev. 2-89)
Prescribed by ANSI Std. 239-18
298-102

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Peer Exchange Overview

The American Association of State Highway and Transportation Officials (AASHTO) requested a peer exchange from the FHWA TPCB Program to provide AASHTO members with an opportunity to share notable practices and lessons learned on key challenges related to State and regional freight planning and performance management. AASHTO also sought to use key takeaways from this peer exchange to inform its future freight planning research and activities.

This peer exchange, held on September 28, 2020, served as a precursor to the AASHTO 2020 Virtual Joint Policy Conference held from September 29 – October 2, 2020, which brought together several AASHTO committees and councils. AASHTO and peer exchange participants shared key themes and lessons learned from the peer exchange with the AASHTO Committee on Planning and Special Committee on Freight during the conference.

FHWA and AASHTO planned the peer exchange as an interactive, virtual event with two peer panel sessions in the morning, four breakout group sessions in the afternoon, and a session for each breakout group to report out findings to all participants. To determine the topics for the peer exchange, AASHTO sent a questionnaire prior to the event asking participants to identify key challenges related to State and regional freight planning. Participants identified the topics listed below as key challenges, and as key elements to supporting freight performance management. Based on results from the questionnaire, FHWA and AASHTO structured each session to focus discussion on the challenges agencies face related to freight planning and performance management, and notable practices and opportunities for addressing these challenges.

- Peer panel topics
    - o Freight data
    - o Freight multimodal planning
- Break out group discussion topics
    - o Implementing truck parking
    - o Enhancing urban and rural goods movement
    - o Improving congestion and bottlenecks
    - o Forecasting freight transportation demand

Host and Peer Panel Discussions

FHWA and AASHTO Opening Remarks

FHWA Office of Freight Management and Operations (HOFM) and AASHTO provided opening remarks and discussed available and upcoming resources (listed in Table 1) that support State and regional freight planning and performance management.

AASHTO discussed the objectives for the peer exchange including how this event is a precursor to the AASHTO 2020 Virtual Joint Policy Conference.

Table 1: FHWA HOFM and AASHTO Freight Planning Resources

Peer Exchange Topic	Resource	Overview/Update	Anticipated Release Date
Freight Data	Freight Analysis Framework (FAF)	FHWA is developing the next version of FAF, version 5. It will include data from the 2017 Commodity Flow Survey with forecasts through 2050, and improve modeling and data extraction capabilities.	Summer 2021
	SHRP 2 Freight Demand Modeling and Data Improvement Research Road Map	FHWA and AASHTO collaborated together to develop this research road map which outlines an organizational approach that will help identify freight modeling and data priority needs, spur innovative ideas, and result in breakthrough solutions for wide application.	Available online
Freight Multimodal Planning	FHWA State Freight Plan Implementation Guidebook	This guidebook intends to support states as they begin updating their State Freight Plans, which are required to be updated every 5 years. It includes notable practices for improving data quality and sources, programming multimodal freight projects and keeping freight advisory committees involved.	2021
	FHWA Freight Multimodal Video Series, Primer and Peer Exchange	FHWA will release a series of videos of notable practices on multimodal freight planning to keep momentum going due to the postponed Multimodal Planning Peer Exchange (ModalPEX). The videos will also build upon the primer.	Fall 2020 - 2021
Implementing Truck Parking	Jason's Law Survey	FHWA is leading this survey to collect data from states on truck parking demand, supply, congestion and safety both from public and private sources.	Fall 2020
	FHWA Truck Parking Guidebook	Includes strategies to advocate for truck parking and combat human trafficking.	2021
Enhancing Urban and Rural Goods Movement	FHWA Primer for Improved Urban Freight Mobility and Delivery	Resource for stakeholders seeking to improve urban freight management in their regions.	Available online
Improving Congestion and Bottlenecks	FHWA Freight Mobility Tool	Currently in development. The tool identifies bottlenecks, congestion and other needs using NPMRDS data.	N/A
Forecasting Freight Transportation Demand	FHWA Quick Response Freight Methods, Third Edition	An overview of data, tools and techniques for forecasting freight demand.	Available online

Freight Data Peer Panel

This panel included four freight transportation practitioners from State Departments of Transportation (DOT) and a Metropolitan Planning Organization (MPO) from around the U.S. to discuss challenges, notable practices and opportunities related to freight data. This section includes key takeaways from the discussion.

Moderator: Mike Vanderhoof, Illinois DOT

Panelists

- Craig Hurst, Colorado DOT (CDOT)
- Tom McQueen, Georgia DOT (GDOT)
- Tom Murtha, Chicago Metropolitan Agency for Planning (CMAP)

Main challenges

- Acquiring freight data from the private sector
  - The private sector owns and manages many freight facilities such as railroads, trucking companies, and shippers. Their data can be helpful to public transportation agencies in supporting short and long term planning initiatives. However, coordinating with the private sector to acquire their data can be difficult and expensive.
- Coordinating internally with other freight data staff
  - Depending on the organizational structure of an agency, internal coordination can be challenging to know what other departments and staff support freight data.
- Communicating data to freight stakeholders
  - Certain types of data, such as truck routing information, can be difficult for the public sector to communicate to stakeholders. For example, if truck drivers are not aware of safe freight routes and take a road that is not part of a freight route, it could lead to bridge strikes, which is when a truck does not meet the bridge height clearance and crashes into a bridge.
- Knowing what data sources to use
  - Understanding what freight data sources to use or purchase for different projects and needs requires time and expertise. With many sources available that offer different types of benefits, it can be challenging to know which ones are worth the investment.

Notable practices

- CDOT
  - CDOT uses oversize/overweight (OSOW) permit data to visualize routes and help understand infrastructure challenges (e.g. weight restrictions, low clearance areas, etc.). For example, on I-25 in southern Colorado, CDOT used OSOW data to highlight the areas where weight restrictions occur and the consequences for not improving it (such as limiting truck route options, causing congestion, etc.). This study informed decisions to fix the structure to remove the weight restrictions, resulting in more routing opportunities and reduced congestion.
- CMAP
  - CMAP uses data to identify key bottlenecks and justify investment on highways and rail-to-road connections.

- o CMAP expresses the value of data to private partners to show how their data can support public investments and improve freight mobility.
    - o CMAP uses a team approach to solve data problems and to convene the right resources.
- GDOT
    - o GDOT works with an informal group from within the agency as well as from other agencies to assist with data-related needs. Economic development agencies, in particular, are helpful since freight is a driver of economic growth.

Recommended data sources
- Vehicle permit data, such as OSOW data from local agencies.
- I-95 Corridor Coalition, now called The Eastern Transportation Coalition, for data and other freight planning resources.
- FHWA National Performance Management Research Data Set (NPMRDS) for freight performance data.

Opportunities for using data to mitigate freight issues
- Prioritize grade crossings with data.
- Acquire real-time data to support short-term solutions.
- Apply for funds from multiple sources.
- Encourage other practitioners to consider freight in addition to passenger mobility when planning or implementing transportation projects.

Freight Multimodal Planning Peer Panel

This panel included four freight transportation practitioners from State DOTs from around the U.S. and the Port of Virginia to discuss challenges, notable practices and opportunities related to freight multimodal planning. This section includes key takeaways from the discussion.

Moderator: Martin Kidner, Wyoming DOT

Panelists:

- Jason Beloso, Washington DOT (WSDOT)
- Barbara Nelson, Port of Virginia
- Dan Pallme, Tennessee DOT (TNDOT)

Main challenges
- Coordinating with many stakeholders who have conflicting interests
    - o Multimodal freight planning requires a mega-region perspective by all partners and stakeholders to understand the best ways to move freight by different modes. Coordinating with stakeholders representing different modes can be challenging to get consensus when they have conflicting interests and priorities.
- Acquiring freight data for all modes
    - o To understand how different modes interconnect and perform requires data from the private sector. Similar to the challenges listed in the Freight Data Panel, attaining data from the private sector can be difficult and expensive.

Notable practices

- WSDOT
    - [WSDOT Practical Solutions Lab](#) incorporates multimodal perspectives and strategies into project design.
    - WSDOT coordinates pooled funds from multiple stakeholders to support planning efforts and investment needs.
- Port of Virginia
    - Port of Virginia coordinates with the Virginia DOT Office of Intermodal Planning and Investment to collect data on performance measures and support long and short term planning.
    - Having Leadership at the DOT as well as many other stakeholders interested in freight has been helpful in advocating for freight projects.
    - [I-81 study](#) in VA is a successful example of outreach and engagement to multiple modes for improving freight mobility.
- TNDOT
    - TNDOT has planned several rail-water-truck projects through a grant program and continues to look for other multi-modal opportunities.
    - TNDOT is also coordinating with other states to implement a FHWA grant (National Economic Partnership) that affects multiple jurisdictions and agencies. This should be completed in November, 2020.

Opportunities for measuring success

- Emphasizing the supply chain and the importance of freight to the economy helps justify the need to plan for implementing multimodal freight projects to leadership.
- Using new technologies like truck platooning and Uber Freight to analyze data at a multimodal level.
- Measuring the amount of shift from truck to other modes.
- Piloting innovative practices to inform future projects.

Break Out Sessions

In the afternoon session, peer exchange attendees broke out into the following four groups to discuss challenges, notable practices, and the value of measuring performance for each topic. In addition, the small groups discussed other research needs that AASHTO or FHWA could take on in addressing the challenges discussed.

1. Implementing truck parking
2. Enhancing urban and rural goods movement
3. Improving congestion and bottlenecks
4. Forecasting freight transportation demand

Each breakout group presented their findings to the full team. Their key takeaways are displayed in the tables below.

Table 1: Breakout Group Topic Key Takeaways

1. Implementing Truck Parking			
Challenges	**Notable Practices**	**Measuring Performance**	**Additional research needs**
Capacity and resources concentrated in private sector Collaboration with stakeholders (e.g., private sector owners) Enforcement Land-use and design restrictions	Share resources: Arizona DOT negotiated a data agreement with the private sector to share information, enabling collaborative planning. Expand partnership networks: Tennessee DOT developed a truck parking availability tool with the University of Memphis. Identify data collection opportunities to inform future planning: Some DOTs use highway patrols to track infractions to better understand truck parking demand. Implement data collection efforts: Arkansas DOT created an annual survey to identify capacity and instances of illegal parking.	Minnesota DOT conducts truck parking studies and uses tools like GIS and StreetLight data to identify capacity metrics and map demand.	Examples of successful funding strategies, including Federal partnerships, State programs, and grant-funded projects. Methods to engage the private sector and to share information about topics like parking fees and facility capital and operation costs. Educational materials on new technologies and emerging topics. This includes scenario planning on the future of truck parking. Examples of successful public/private partnerships, and truck parking facilitated by non-government organizations (NGOs). Management systems standardization.

2. Enhancing Urban and Rural Goods Movement			
Challenges	**Notable Practices**	**Measuring Performance**	**Additional Research Needs**
Lack of communication and consensus between State and local stakeholders Adjusting goals and performance measures in times of uncertainty Non-interstate and rural routes and smaller MPOs lack resources and data First and last mile connections	Collect data at the multimodal, multijurisdictional level: Washington State DOT tracks performance measures at the multimodal system level by total volumes along corridors. The data is collected at the State's facilities; recently, the DOT has integrated municipal data. Advisory committees and staff also contribute qualitative data. Use databased decision-making procedures to balance competing needs: Wisconsin DOT uses a freight factors scorecard to help make decisions about project funding. The DOT tries to balance changing needs of the freight dependency of a corridor versus higher priority projects that may take precedent. Invest in multimodal partnerships and communication channels: Wisconsin DOT partners with freight facilities like ports to identify locations where intermodal sites are possible.	Caltrans developed a freight efficiency metric focused on economic and environmental measures like gross domestic product (GDP) and greenhouse gas emissions (GHG), but using these measures has been challenging. Atlanta MPO uses three criteria when examining projects: 1) public and private support 2) numerical, data-driven information and 3) qualitative information (to evaluate or counterbalance the rating found in #2).	Notable practices and other educational materials on urban and rural goods movement issues, specifically e-commerce and local delivery.

3. Improving Congestion and Bottlenecks			
Challenges	**Notable Practices**	**Measuring Performance**	**Additional Research Needs**
Data

Funding

Coordination and communication

Prevention | <u>Use Federal travel demand modeling (TDM) resources and local data to develop models</u>: Some agencies are able to create predictive models—for travel demand, supply chains, etc.—using data they have collected on freight activity within their jurisdiction. Visit <u>FHWA's TDM website</u> to learn more.

<u>Join National and multistate stakeholder groups</u>: National level stakeholder organizations, like AASHTO, share information and notable practices, which is vital information for State and local agencies.

<u>Take advantage of Federal programs</u> like Megaregions and National Economic Partnerships to understand the state of the practice.

<u>Capitalize on Federal research programs</u>: Review the findings of Federal and other national-level research organizations, like NCHRP854, and use their findings to adjust State and local decision-making. | Some agencies use national and regional resources like the National Performance Management Research Data Set (NPMRDS) and Regional Integrated Transportation Information System (RITIS) to estimate travel time reliability.

Other data points include: congestion scans from loop data, Average Annual Daily Truck Traffic (AADTT) and Annual Average Daily Traffic (AADT), hours of congestion weighted by freight volume, complaints by State patrol or trucking partners, and rail data such as delays at rail crossings (provided upon request by the Federal Railroad Administration). | Automated vehicles

State of Good repair and impacts of poor maintenance

Electrification, especially impacts on design and maintenance

Changes to Federal regulations, especially hours of service (HOS) for motor carriers

Costs of delay for specific use cases like rail crossings

Impacts on the environment (especially air quality and emissions) and on environmental justice communities (e.g., safety, noise, access, economic benefits) |

4. Forecasting Freight Transportation Demand			
Challenges	**Notable Practices**	**Measuring Performance**	**Additional Research Needs**
Predicting and responding to outside influences, including: rapidly evolving supply chains, new/retiring businesses, and yearly peaks and falls of industry Proprietary data	Invest in scenario planning: Washington DOT uses Federal scenario planning tools for freight to create future options for the agency. Take advantage of Federal and other national resources, such as the National Freight Advisory Committee: These committees and organizations conduct research and share information that can inform agency activities. Remain informed of influencing factors: New York State DOT encourages their staff to remain aware of events and trends that may affect freight movement by reading trade publications, watching market shifts, and developing relationships for communication with cross sector partners. Invest in cross-sector partnerships to share information and better inform predictive modeling: Nebraska DOT created partnerships with private industry and public partners (such as ports) to share data on supply chain commodities, enabling more accurate predictive models.	Wyoming DOT studies patterns from past bottleneck activities and periods of inclement weather to plan for resilience and multistate freight movement. Multiple agencies discussed using Federal performance measures.	Support and/or incentives for regional cooperation and collaboration Methods of cost-effectively producing or acquiring data; examples of successful data gathering and data usage beyond the surface level

Conclusion and Key Takeaways

This peer exchange convened AASHTO members from State, regional, and local agencies across the U.S. to share notable practices and lessons learned on key challenges related to State and regional freight planning and performance management. Participants engaged in several group discussions where they learned about available resources and notable practices for addressing key challenges, and connected with others that share similar issues. For each topic discussed, participants provided additional research needs that AASHTO and FHWA can use to address key challenges.

Key takeaways from discussions:

- Collaboration is key to delivering successful freight planning initiatives
    - o Freight is cross cutting across multiple modes and functions (e.g. planning, rail, safety, engineering, etc.) and crosses many jurisdictional boundaries affecting many agencies. Collaboration within an agency and with other agencies, the private sector, and other stakeholders is key to gaining consensus, attaining information, and delivering projects and programs successfully.
- Examples of successful practices are valuable for practitioners
    - o Participants learned from each other by discussing lessons learned and notable practices during this peer exchange. When identifying additional research needs for each topic, participants suggested methods and notable examples to addressing key challenges.

Appendices

Appendix A: Key Contacts

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