

FHWA Research Report

**Tracy Scriba, Team Leader, FHWA Office of Operations
AASHTO CTSO Meeting – August 2018**

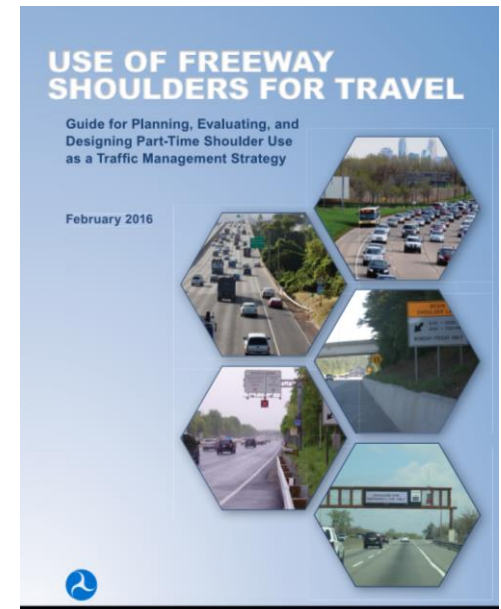


Operations Research Highlights

- Active Transportation and Demand Management (ATDM)
- Work Zone Management
- Strategic Highway Research Program (SHRP2)
- Establishing a Strong Foundation for TSMO
- Performance Measures and Management
- Freight
- Asset Management

Dynamic Part-Time Shoulder Use

- Follow-up to FHWA Guide on Part-Time Shoulder Use
<https://ops.fhwa.dot.gov/publications/fhwahop15023/>
- New project to develop a “playbook” to assist agencies with decisions on when to open and close dynamic shoulders.
- Synthesis of current practice complete, playbook methodology underway.



Parking Management

- Parking cruising and related congestion.
- Six-scenario, nine-city parking cash-out and commuter benefits study.
- Series of regional workshops - summary and supporting materials available.
- Many Value Pricing Pilot Program (VPPP) projects have included parking management strategies.

Work Zone Data Initiative

- **Vision:** easily enable sharing of Work Zone Activity Data (WZAD – the “what”, “where”, and “when” of WZs) through development of a national **WZAD specification**.
- **Result:** real-time, accurate, and comprehensive data in an open, standard format.
- This vision will be achieved through multiple efforts:
 - Project to develop critical documents, e.g., Concept of Operations for standardized WZAD, data dictionary, Implementation Guide
 - Extensive coordination with stakeholders, including:
 - *Stakeholder Engagement – Presentations, webinars, workshops*
 - *WZAD Pilots to demonstrate and evaluate the process*
 - *Symposium at National Work Zone Management Conf. (Sept. 11, 2018)*

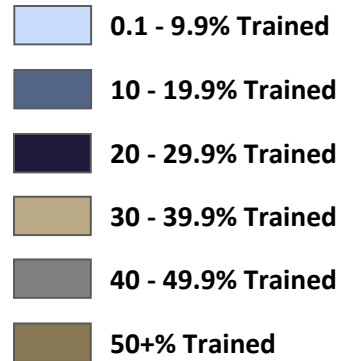
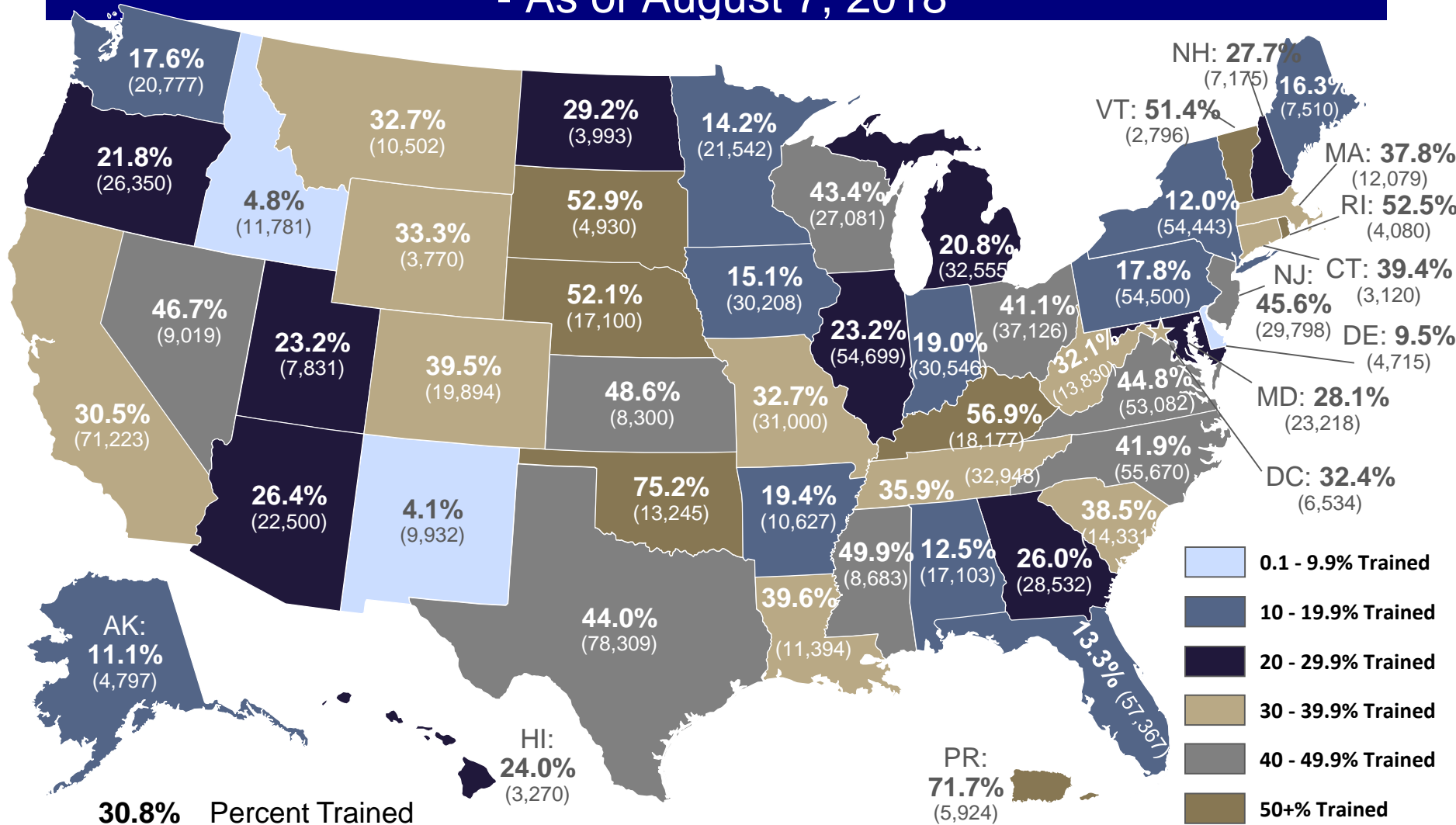
Work Zone ITS Planning Tool

- Implements the logic and methodology described in the **FHWA WZ ITS Implementation Guide**
 - Guides through 6-step WZ ITS decision-making process
 - Documents decisions made with supporting information
- Available for download and use off **USDOT's Open Source Application Development Portal**
<https://www.itsforge.net/index.php/community/explore-applications#/40/150>
- FHWA sponsoring demonstration workshops around the country
 - If interested in participating in a workshop, contact your Division Office representative or **Jawad Paracha** (jawad.paracha@dot.gov).

TIM Training Program Implementation Progress

Percent Trained – SIP 18 Goal of 30%

- As of August 7, 2018



30.8% Percent Trained
(1,149,916) Total Responders To Be Trained

SHRP2

- Organizational Capabilities
 - CMM - Case Studies, Peer Exchange Report
 - CMF – Resources
 - TSMO Business Process – Workshops, Case Studies
- Integrating Reliability in Planning, Analysis, and System Management
- Regional Operations Leadership Forums

Establishing a Strong Foundation for TSMO

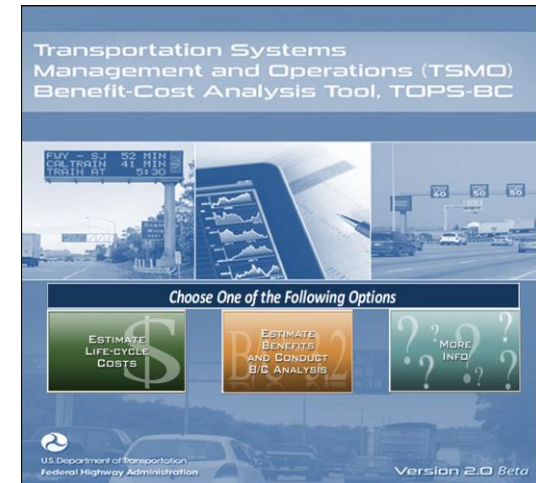
- TSMO Program Planning
- Business Case for Advancing TSMO Capabilities
- Mainstreaming TSMO
- Videos and Leadership Packet
- Factsheets - TSMO and Other Disciplines

Improving Agency Information Technology and ITS/TSMO Functions

- CMM results reveal barriers between TSMO technology and IT departments.
- Implications on many aspects of TSMO programs and their success.
- Products to include: *Reference for Effective Coordination of IT and TSMO/ITS*, peer exchanges, outreach, best practices, flyers, and technical assistance.
- Optional Task: Roadmap Digital Infrastructure/System Readiness for CAV and Connectivity.

Tool for Operations Benefit Cost Analysis (TOPS-BC)

- Excel-based sketch level Operations BCA tool
- Accounting framework for organizing costs (capital, incremental, O&M) and benefits (delay, reliability, safety, energy)
- Incorporates about 15 TSMO strategies
- New for V3.0
 - Updated defaults
 - Cost default matrix
 - 4 freight strategies
 - New ATM detail
 - Incorporates SHRP2 L03 reliability
 - Added graphics to cost and benefits sheets



PM3 Analysis Tools

- The TPM Capacity Building Pooled Fund PM3 Analysis Tools (UMD CATT Lab)
 - Metric and Measure calculation modules
 - Limited visualization tools
 - Metric Reporting Tool (to FHWA via HPMS)
 - Approximately 26 use for June 2018 submittal
 - Technical assistance
- \$23k-36k per year per state based on size (includes MPO usage)
 - 32 states have signed up
- Administered by AASHTO - contact is Matt Hardy, e-mail: mhardy@aaashto.org

Multimodal System Performance Measures Research Study

- Objectives:
 - Identify existing and potential multimodal data sources necessary to develop a true multimodal system performance measure(s).
 - Test the proposed measure(s).
- Piloted surrogate measures in Arlington, VA, Philadelphia, PA and Escondido, CA.
- Publish results and next steps by the end of 2018.

Freight Analytics

Existing Data and Tools

Freight Analysis Framework (FAF)

Inter Modal Inventory Cost Model (ITIC)

Vehicle Travel Information System
(VTRIS)

Highway Performance Monitoring
System (HPMS)

National Performance Management
Research Data Set (NPMRDS)

New Research

Freight Advanced Traveler Information
Systems (FRATIS)

Truck Size & Weight Research Roadmap

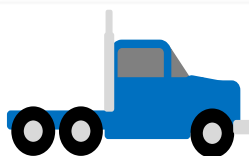
National Freight Fluidity Performance

National Behavioral Based National
Freight Model

Exploratory Advance Research (EAR)
Future Freight & Logistic Survey Project

Focus on Operational Improvement: FRATIS

Improve communications of intermodal logistics information by allowing technologies to work together to optimize drayage fleet movements.



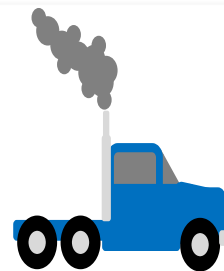
**Bobtail
trips
reduced
by 10%**



**Travel time
reduced
by 15%**



**Terminal
queue time
reduced by
20%**



**Emissions
reduced by
5%**



**Fuel
consumption
reduced by
5%**

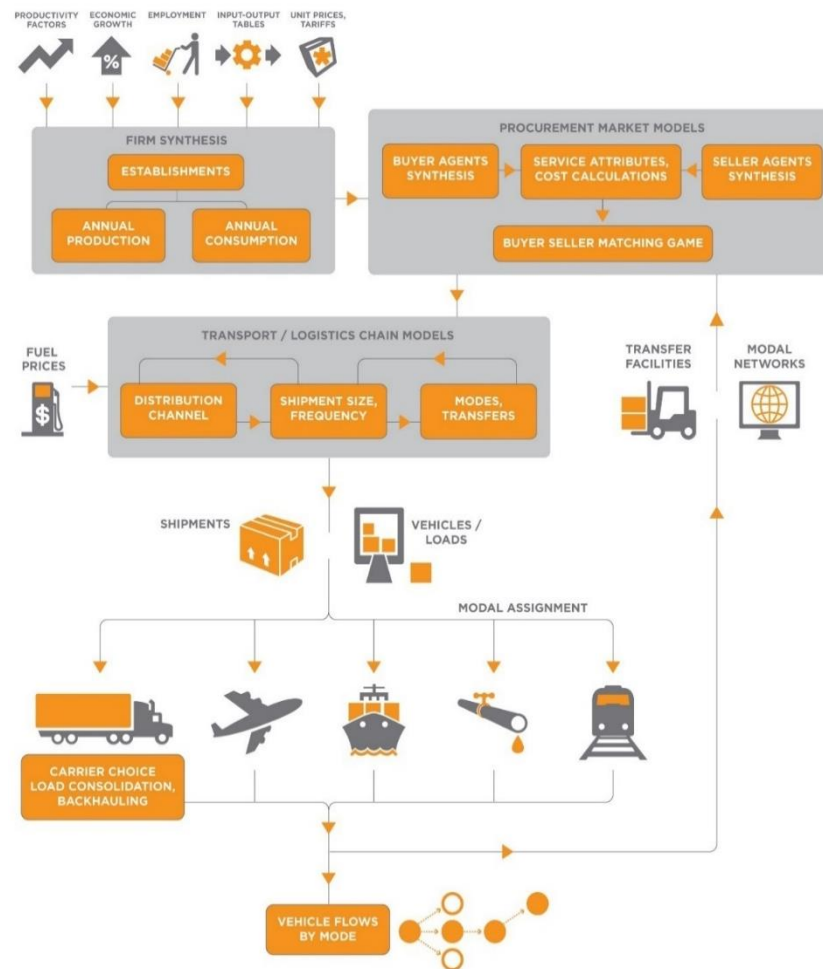
Focus on Multimodal Performance: Freight Fluidity

Demonstrate and improve the measurement of start to end performance using a supply chain perspective.



Focus on Analytical Tools: National Freight Model

- Deployment of a disaggregated freight modeling method that recognizes supply chain decisions.
- Tool to enable the assertion of assumptions about alternative future freight conditions.



Asset Management for Signals and ITS

- Develop guidelines for applying transportation asset management principles to signals and ITS.
- Use the format of the MAP-21 requirements for Transportation Asset Management Plans (TAMPs).
- Anticipated completion by early 2020.

FHWA Operations

ops.fhwa.dot.gov

Thank You!

