

Federal Highway Administration Office of Operations

Recent TSMO Resources

Communications Resources

Linking TSMO and Transportation Equity Factsheet

Fact sheet that offers a framework to support State and local transportation agencies in advancing transportation systems management and operations (TSMO) programs and projects in ways that can support equity goals.

Available at: <https://ops.fhwa.dot.gov/publications/fhwahop2338/fhwahop2338.pdf>

TSMO Benefits Outreach Materials

Presentation on *TSMO: Harnessing the Value of Transportation Systems Performance* that provides State-level examples of the measurable benefits of transportation operations strategies. The slides can be used by States or regions to highlight effective operations in their own presentations and outreach

Available at:

<https://ops.fhwa.dot.gov/publications/fhwahop22p048/fhwahop22p048.pdf>

Infographic on *TSMO: Getting More from Our Existing System* that demonstrates some of the benefits of using operational strategies. Available in an easy-to-read and understand format as a poster or slides.

Available at:

https://ops.fhwa.dot.gov/publications/fhwahop22067/fhwahop22067_8.5x11.pdf

Complete Trip Data Factsheet

Factsheet that provides results of recently completed research into the notion of Complete Trip Data—data that provide, at a minimum, location, time, and mode of travel for trips on the multimodal transportation system. The fact sheet contains information on Complete Trip Data, sample fields to be used in an acquisition, and potential uses of the data.

Available at: <https://ops.fhwa.dot.gov/publications/fhwahop22066/index.htm>

Advancing Transportation Demand Management in Resort Towns and Communities

Webinar providing a framework and examples of travel management approaches, including demand management strategies, used to improve mobility in and around resort communities and tourist destinations. Presentations are provided by representatives from the Association of Commuter Transportation and resort regions from Pensacola, Florida, Park City, Utah, and Lake Tahoe, NV.

Available at: <https://www.youtube.com/watch?v=Lov42tNRtM8>

Connecting TSMO and Safety

Webpage and set of resources highlighting opportunities for enhancing the integration and coordination of TSMO and safety programs. Effective practices for linking operations and safety in planning, project development, data, strategy identification, and organizational approaches are described. Resources include three case studies, two summary brochures, and a webinar conducted with the National Operations Center of Excellence.

Available at: https://ops.fhwa.dot.gov/plan4ops/focus_areas/integrating/safety.htm



Connecting TSMO with Other Disciplines

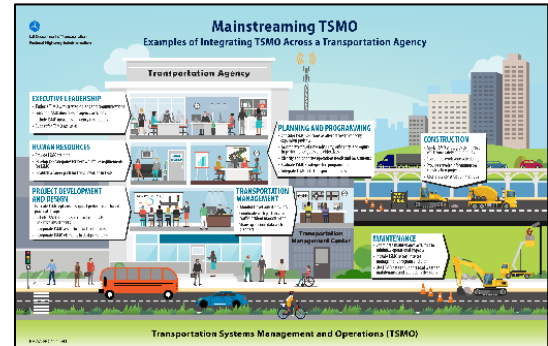
Set of presentation slide decks exploring ways that TSMO can collaborate with one of 10 other key disciplines in a transportation agency. The slides build on previously published TSMO fact sheets to provide more in-depth information about the relationship between TSMO and the respective discipline. Each presentation will be available for download as a PowerPoint® file so that TSMO professionals can modify and use them for presentations they can make to their colleagues in other disciplines.

Available at: https://ops.fhwa.dot.gov/plan4ops/focus_areas/integrating/tsmo_factsheets.htm

Mainstreaming TSMO

Set of resources to support mainstreaming TSMO in transportation agencies. Resources include:

- *Infographic* shows ways a transportation agency can integrate TSMO throughout its organization and the project and program lifecycle to advance and mainstream TSMO.
- *Webinars* on how policies and processes can be used to mainstream TSMO in an agency, and how using operations data for decisionmaking can advance and integrate TSMO.
- *Brochures* highlight aspects of mainstreaming TSMO with respect to agency culture and with respect to the development of a business case that communicating the benefits of TSMO.
- *Case Studies* of experiences from State DOTs on how they worked with key stakeholders to advance operations practice and mainstream TSMO. Five case studies: (1) experiences from Washington State and Iowa; (2) mainstreaming TSMO through the project life cycle; (3) communication strategies for mainstreaming TSMO; (4) mainstreaming TSMO through collaboration on information technology in Pennsylvania; (5) how a business case for TSMO can support mainstreaming.
- *White Papers* describe aspects of mainstreaming TSMO in detail and how they can help agencies develop and strengthen their TSMO programs. Four white papers: (1) policies and processes that support mainstreaming TSMO; (2) role of agency culture in mainstreaming TSMO; (3) use of decisionmaking and information management systems in mainstreaming TSMO; (4) value of a business case in mainstreaming TSMO.



Available at: https://ops.fhwa.dot.gov/plan4ops/focus_areas/mainstreaming.htm

Technical Reports, Training, Websites, and Tools

Case Studies on the Implementation of SHRP2 Reliability Data and Analysis Tools

Case studies highlighting findings from 18 State Departments of Transportation that implemented reliability data and analysis tools developed under the second Strategic Highway Research Program (SHRP2).

Available at: https://ops.fhwa.dot.gov/trafficanalysis/tools/case_studies.htm

Incorporating Reliability Performance Measures in Operations and Planning Modeling Tools

Report details pilot projects applying two tools developed under SHRP2, called Scenario Manager and Vehicle Trajectory Processor, to evaluate reliability performance measures at the planning level. The report includes results from test sites in Portland, Oregon and Phoenix, Arizona, and provides recommendations for conducting similar analyses.

Available at: <https://ops.fhwa.dot.gov/publications/fhwahop20042/fhwahop20042.pdf>

Traffic Analysis Capability Maturity Framework

Tool agencies can use to assess and advance their traffic analysis capabilities. Modern traffic analyses require capabilities and resources that are not always available. Building on the success of the TSMO capability maturity model (CMM), FHWA has now developed a Traffic Analysis capability maturity framework (CMF) to support agency advancement.

Available at: <https://ops.fhwa.dot.gov/publications/fhwahop21062/index.htm>

Providing a Pickup Priority for Ridehail Users Agreeing to Pool and Potential Impacts to Delay and Equity

Report on a study exploring the potential to enhance equity and reduce congestion experienced by city bus riders due to transportation network company (TNC) operations through select policy measures. The study analyzes data from a survey conducted by a large TNC, coupled with appended demographic and trip data, to ascertain the impacts of changing private party and shared party TNC pricing and trip times to encourage TNC customers to choose a shared instead of a ride-alone trip.

Available at: <https://ops.fhwa.dot.gov/publications/fhwahop23013/fhwahop23013.pdf>

Parking Cruising Analysis Methodology

Report documenting a methodology and tool that can be used to understand cruising for parking and the effects of policy interventions on parking search behaviors. It includes case analyses from four U.S. cities, identifying cruising hot spots by time of day and location and assessing policy impacts. The report also documents lessons learned relating to data quality, tool implementation, and the analyses results.

Available at: <https://ops.fhwa.dot.gov/publications/fhwahop23004/index.htm>

Assessment of the Expected Impacts of City-Level Parking Cash-Out and Commuter Benefits Ordinances

Report on an analysis of the impact city level parking cash out ordinances could have on vehicle travel, congestion, greenhouse gas emissions, crashes, and equity externalities for a sample of nine cities and five distinct scenarios. The final report describes the scenarios studied; the analysis approach, including inputs, outputs, methodology, limitations, and assumptions; data sources; and results for the sample of cities.

Available at: <https://ops.fhwa.dot.gov/publications/fhwahop23023/index.htm>

Planning for Operations Web-Based and Web-Conference Training

Three virtual training courses on Planning for TSMO to enhance the ability of agencies to further integrate TSMO into transportation planning and project development and on-going TSMO programs. Two courses, *NHI-133131: Planning for TSMO-Introduction* and *NHI-133132: Planning for TSMO Concepts and Applications* are web-based (independent, asynchronous). The third course, *NHI-133133: Planning for TSMO-Putting Concepts into Action*, is a web-conference, facilitator-led, training.

Available at: National Highway Institute <https://www.nhi.fhwa.dot.gov/home.aspx>

Identification of National Work Zone Safety Objectives and Activities: Summary Report

Report describing 11 specific strategic objectives to enhance work zone safety that resulted from a national effort to develop a list of needs, objectives, and activities for safety in and around work zones. The report aims to assist potential stakeholders in prioritizing work zone safety activities and implementing targeted work zone safety strategies.

Available at: <https://ops.fhwa.dot.gov/publications/fhwahop22059/fhwahop22059.pdf>

Work Zone Intelligent Transportation Systems - Technology Supplement

Technology supplement to the 2014 *Work Zone Intelligent Transportation Systems (WZITS) Implementation Guide* (Report No. FHWA-HOP-14-008). The guide forms the foundational framework, concepts, and methods for establishing a WZITS program. This supplement provides fact sheets and specification sheets for nine WZITS technology applications, such as dynamic lane merge and queue warning.

Available at: <https://ops.fhwa.dot.gov/publications/fhwahop21021/fhwahop21021.pdf>

Approaches for Communicating PM3 Measures, Metrics, and Targets

Report highlighting communication approaches agencies can use when discussing or presenting the third Performance Management Rule (PM3) measures, metrics, and targets to various audiences.

Available at: <https://ops.fhwa.dot.gov/publications/fhwahop22069/fhwahop22069.pdf>

Approaches to Target Setting for PM3 Measures

Report providing example approaches to setting targets for the PM3 measures. Approaches include technical options for developing the information to support target setting.

Available at: <https://ops.fhwa.dot.gov/publications/fhwahop19056/index.htm>

2021 Urban Congestion Trends Report

The 2021 Urban Congestion Trends report includes congestion and reliability measure trends in the 52 largest urban areas in the United States, along with information on data tools and an operational strategy evaluation (optimized traffic signal timing).

Available at: <https://ops.fhwa.dot.gov/publications/fhwahop22028/index.htm>

Advancing TSMO Through Organizational Structures

Report that applies concepts of organizational theory, specifically related to organizational structure, to explore how organizational models and structural mechanisms can be used to advance TSMO within DOTs. It includes several case studies of organizational structures in DOTs across the Nation and looks at how DOTs have used their structures to mainstream TSMO.

Available at: https://ops.fhwa.dot.gov/plan4ops/focus_areas/fhwahop22035.pdf

Applying TSMO in Rural Areas

Report providing local and State agencies with resources they can use to explain the benefits of implementing TSMO in rural areas. The report presents a business case for TSMO in rural areas, funding opportunities, and emerging trends and technologies. It also details 10 case studies in rural areas based on five topics: road weather management, traffic incident management, work zones, seasonal demand, and special events.

Available at: <https://ops.fhwa.dot.gov/publications/fhwahop22026/index.htm>

Resources Coming Soon

- *Planning for TSMO Practitioner Reference*
- Connecting asset management plan performance requirements to pavement and bridge conditions
- Three videos on mainstreaming TSMO
- *Performance Measures and Health Index of ITS Assets*
- *TSMO Strategy Toolkit*
- *Highlights from the Third Performance Management Rulemaking (PM3) Peer Exchange Series*
- *Operations Performance Management Primer*