SHRP2SOLUTIONS
TOOLS FOR THE ROAD AHEAD

Fast Facts — Behavior-Based Freight Modeling
Implementation Assistance Program: Freight Demand Modeling and Data Improvement

Modeling projects organized under the SHRP2 C20 Freight Demand Modeling and Data Improvement program seek to integrate into conventional practices new, behavior-based freight modeling methods and innovative means for enhancing data use and value. The projects also help to break down barriers between public and private sector stakeholders, creating new, mutually beneficial avenues of interaction. Better planning and operations to support freight transportation needs is a key goal. Projects are also designed to provide elements transferable to peer organizations while serving as guidance for future research in behavior-based freight modeling.

Grant Recipient Agency	Project Synopsis
Arizona	
Maricopa Association of Governments Project Duration: **2014-2016**	**GOALS** » **Using Arizona's Sun Corridor, develop freight models applicable to the unique needs of expanding metropolitan regions known as a mega-regions.** » Develop an agent-based model to implement a micro-simulation approach to the freight system modeling in MAG region, including synthesis of establishments, disaggregation of relevant demo-economic data in the region, formation of supply chain, and establishment of interaction models and tour-based travel models. » Develop a multimodal freight model for major commodities relevant to the mega-region using commodity-based analysis of freight flows. » Use resulting, in-depth view of industry segment to better understand the drivers of each industry and to model them specifically, as well as to foster sharing by industry of directly applicable data and feedback.
	EXPECTED OUTCOMES » Improved and expanded knowledge of freight movements in the region by stakeholders/practitioners. » New modeling methods and models to reflect actual supply chain activities and practices. » Enhanced use of freight tools by public sector for planning and programming. » Improved availability and visibility of data between public and private sectors.
Maryland	
Maryland State Highway Administration Project Duration: **2014-2016**	**GOALS** » **Develop an operational regional, tour-based commercial vehicle model integrated with the long distance truck sub-models of the Maryland Statewide Transportation Model (MSTM), as part of a phased, multi-year model development approach.** » Conduct a model design workshop to capture State/regional policies, identify technical needs for policy analysis and project alternatives evaluation through freight-related, performance-based information. » Build staff skill sets for future transfer to local level. » Share implementation plan techniques and methods with modeling community for consensus leading to Federal guidance on micro-simulation of freight tour-validation practices.
	EXPECTED OUTCOMES » Innovative operational regional, tour-based truck model of intra-local distribution that is sensitive to long-distance truck flows represented in the Statewide freight model. » New technical capacity-building plan to expand local professionals' knowledge and capabilities.

Grant Recipient Agency	Project Synopsis
Oregon	
Portland Metro Project Duration: **2014-2017**	**GOALS** » **Transfer FHWA truck tour model framework to a metropolitan region, update its specification and re-estimate parameters using the results of separately funded local surveys; add model components to simulate movement of heavier classes of non-goods commercial vehicles (e.g., utility, construction), for which data will also be obtained in the local surveys.** » Simulate movement of individual shipments and vehicles, including transport type (private or common carrier/truckload or less), vehicle type, tour patterns and frequencies, number and sequence of stops on the tour, duration of stops, and pick-up/delivery times of day. » Develop a freight flow model that supports forecasting for a region with two MPOs (Portland Metro and Southwest Washington Regional Transportation Council) as well as regional cities (Portland, Vancouver, Beaverton, Gresham, Hillsboro) and numerous smaller municipalities.
	EXPECTED OUTCOMES » Accessible data integrated from land use, economic, demographic, and transport infrastructure, as well as behavior data from surveys and truck diaries, and contingency or proxy data sources. » A metropolitan truck tour model using the framework developed for FHWA and previously implemented as a demonstration project for the Chicago Metropolitan Agency for Planning (CMAP).
Wisconsin	
Wisconsin DOT Project Duration: **2014-2016**	**GOALS** » **Develop a new framework for multimodal State freight transportation modeling through the development of national, open-tour, supply chain and metropolitan, closed-tour delivery models for Wisconsin.** » Provide a context for Statewide freight transportation planning by linking freight industry concepts (e.g., the characteristics of supply chain and delivery operations for certain commodities) to WisDOT goals and planning procedures. » Represent characteristics of firms, shipments, supply chains and distribution channels, and describe trip touring during the delivery of goods. » Encourage trust and innovation by developing regular, ongoing outreach between private-sector stakeholders, WisDOT, Wisconsin's MPOs and other public agencies. » Identify and compare the similarities and differences in outputs between Wisconsin's behavior-based and trip-based freight transportation models.
	EXPECTED OUTCOMES » Definition of specific data needed to support Statewide freight tour models. » Stakeholder relationships that foster enhanced collection or generation of freight transportation data. » Open- and closed-tour freight transportation models for Wisconsin.

For More Information

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