

Federal Motor Carrier Safety Administration
Office of Analysis, Research and Technology

Motor Carrier Efficiency Study Update

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ART Forum





Outline

- ◆ Motor Carrier Efficiency Study (MCES) Overview
- ◆ Phase I Study Results
- ◆ Phase II Current Activities
- ◆ Phase II Future Activities

Motor Carrier Efficiency Study (Sec. 5503)

- ◆ Conduct a study to
 1. Identify freight inefficiencies
 2. Evaluate the safety & productivity benefits of wireless technologies
 3. Conduct, as appropriate, field tests





MCES Program Elements

- ◆ Fuel monitoring and management systems
- ◆ Radio frequency identification technology
- ◆ Electronic manifest systems
- ◆ Cargo theft prevention
- ◆ Roadside inspection systems



MCES Phase I

◆ Freight Study

- Literature review with over 200 titles
- Held 10 stakeholder sessions
- Interviewed over 300 industry experts
- Enhanced FHWA's Freight Technology Assessment Tool
- Estimated technology benefits in different supply chains
- Completed Jan 2008



MCES Phase II

- ◆ Field Operational Tests
 - Based on Phase I findings
 - Initiated two tests — August 2008
 - Planned RFP for new tests — August 2009



Phase I Study Results

- ◆ 43 Inefficiencies in 7 categories
 1. Equipment/asset utilization
 2. Fuel economy and fuel waste
 3. Loss and theft
 4. Safety losses (i.e., crashes)
 5. Maintenance inefficiencies
 6. Data and information processing
 7. Business and driver management



Phase I Study Results

- ◆ Priority inefficiencies
 - Waiting time for unloading
 - Waiting time for border crossings
 - Congestion delays
 - Empty miles
 - Hours of Service
 - Fuel waste due to excessive speed
 - Lack of backhaul
 - Poor routing

Phase I Study Results – Inefficiency Effects

Inefficiency	Potential Gain to Carriers
Time loading/unloading	\$3 Billion annually
Empty Miles	\$2.7 Billion annually
Waiting in Ports	\$900 Million annually
Time in weigh stations	\$215 Million annually
Paperwork Delay at Borders	\$23 Million annually
Cargo Theft and Pilferage	Unknown



Phase II Current Activities

◆ Wireless Drayage Updating

- Integrated wireless solution for drayage motor carriers
 - Wireless load notification and selection
 - Truck-specific congestion avoidance
 - Wireless facility queuing notification and management (Virtual Queueing)
- Addresses:
 - Time loading/unloading
 - Empty miles
 - Congestion delays
 - Safety risks associated with bobtails
- Part of USDOT-led Cross-Town Improvement Program
- Partners: FHWA (lead), Kansas City Smartport, Mid-America Regional Council, Motor Carriers (Greer Transportation, Mid-Cities Transportation), Railroads (Union Pacific, Burlington Northern Santa Fe, Norfolk Southern, Kansas City Southern).



Phase II Current Activities

- ◆ **Wireless Roadside Inspection**
 - Safety compliance checks for trucks and buses at slow and highway speeds
 - Notifications to motor carriers and safety inspectors
 - Addresses
 - Safety compliance
 - Delays at weigh stations
 - Driver safety management
 - Crash-related congestion
 - Wasted fuel
 - Emissions
 - Testing integration of carriers' existing fleet management systems with Federal and State roadside and back office systems
 - Partners: Tennessee Department of Safety, Oak Ridge National Laboratory, National Transportation Research Center Inc., University of Tennessee, motor carriers, telematics providers, sensor providers.



Phase II Planned Activities

- ◆ Request for proposal
 - Based on Phase I findings
 - 4th Quarter FY 2009 (July-Sep 2009)
 - Interested parties should register for e-mail alerts from FMCSA on Federal Business Opportunities website at www.fbo.gov



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