Efficient and Sustainable Operation of Commercial Vehicles on Highways

ITS World Congress

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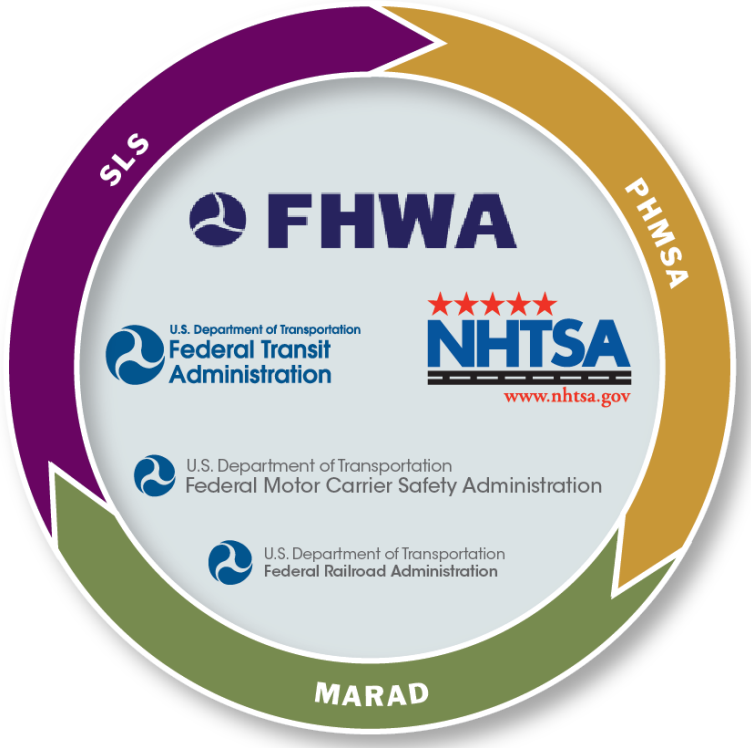
U.S. Department of Transportation (USDOT)

Role of U.S. DOT

- U.S. DOT Advisory Committee on Automation in Transportation.
- FMCSA Public Listening Session on Automated Commercial Motor Vehicles.
- NHTSA Federal Automated Vehicles Policy Guidance.
- FHWA National Dialogue on Highway Automation.
- Automation Pilot Programs
  - Automation Proving Ground Pilot Program.
  - ITS/JPO Connected Vehicle Pilot Deployment Program.
- U.S. DOT Multi-Modal automation research.
  - Freight Advanced Traveler Information Systems (FRATIS)
  - Border Wait Time Systems
  - Truck Parking Information and Management System (TPIMS)



U.S. DOT Connected Vehicle (CV) Pilot Deployment Program

PILOT SITES

ICF/Wyoming

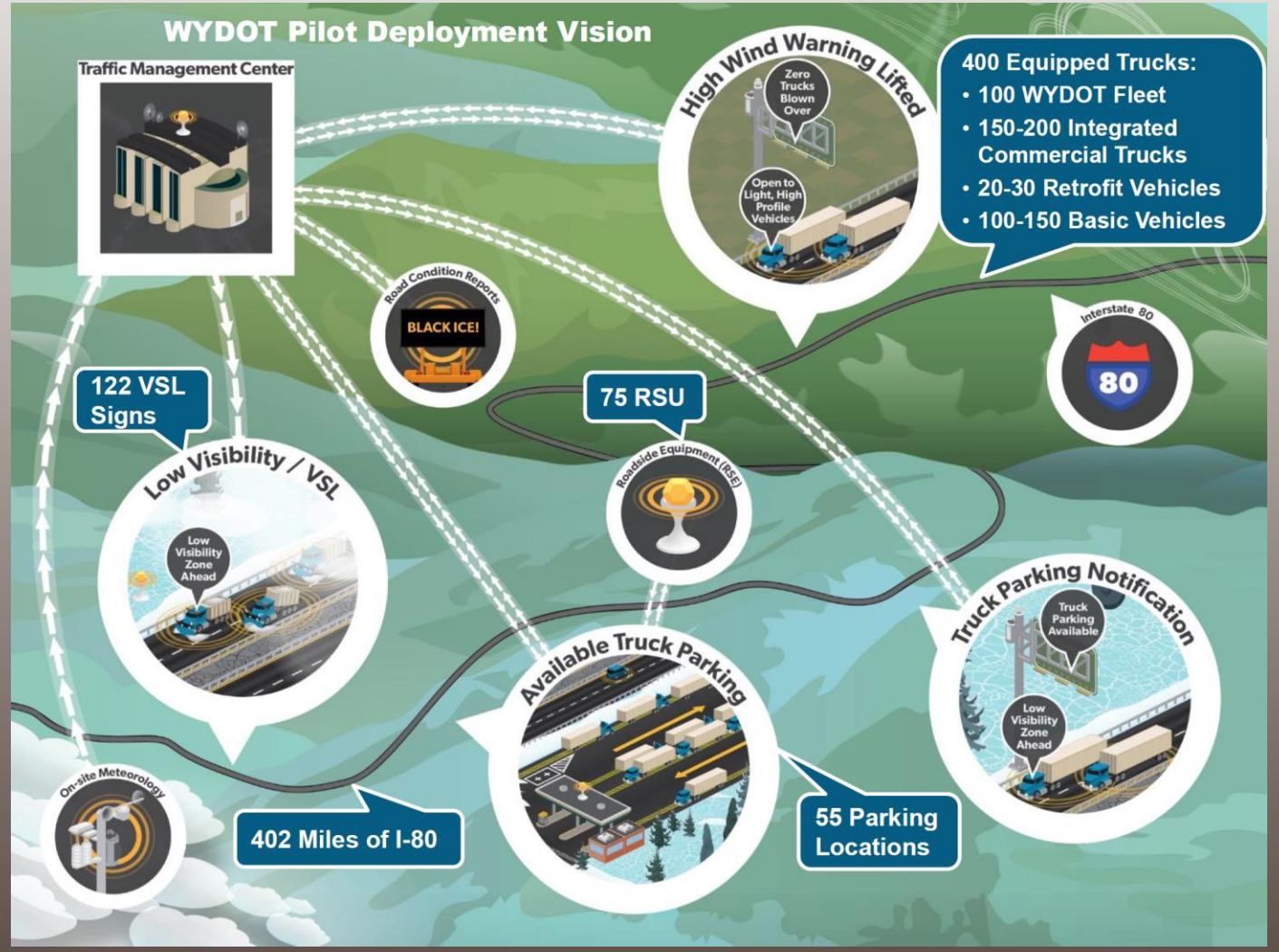
New York City

Tampa (THEA)

U.S. Department of Transportation
Federal Highway Administration

Wyoming Connected Commercial Vehicle Pilot

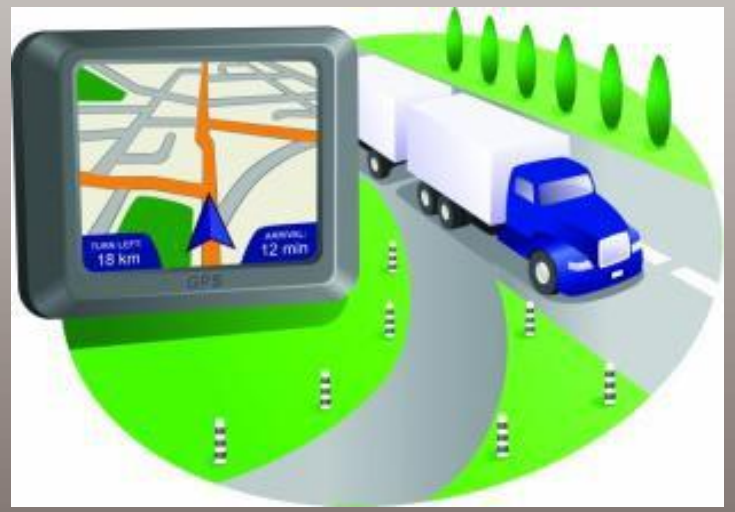
- Road weather advisories for trucks and vehicles.
- Automatic alerts for emergency responders.
- CV-enabled weather-responsive variable speed limits.
- Spot weather impact warning.
- Work zone warnings.
- Truck parking availability for freight carriers.
- Freight-specific dynamic travel planning.



U.S. Department of Transportation
Federal Highway Administration

Research: Freight Advanced Traveler Information Systems (FRATIS)

Freight-Specific Dynamic Travel Planning and Performance



Source: U.S. Department of Transportation

Drayage Optimization

Source: U.S. Department of Transportation

Modeled Results:

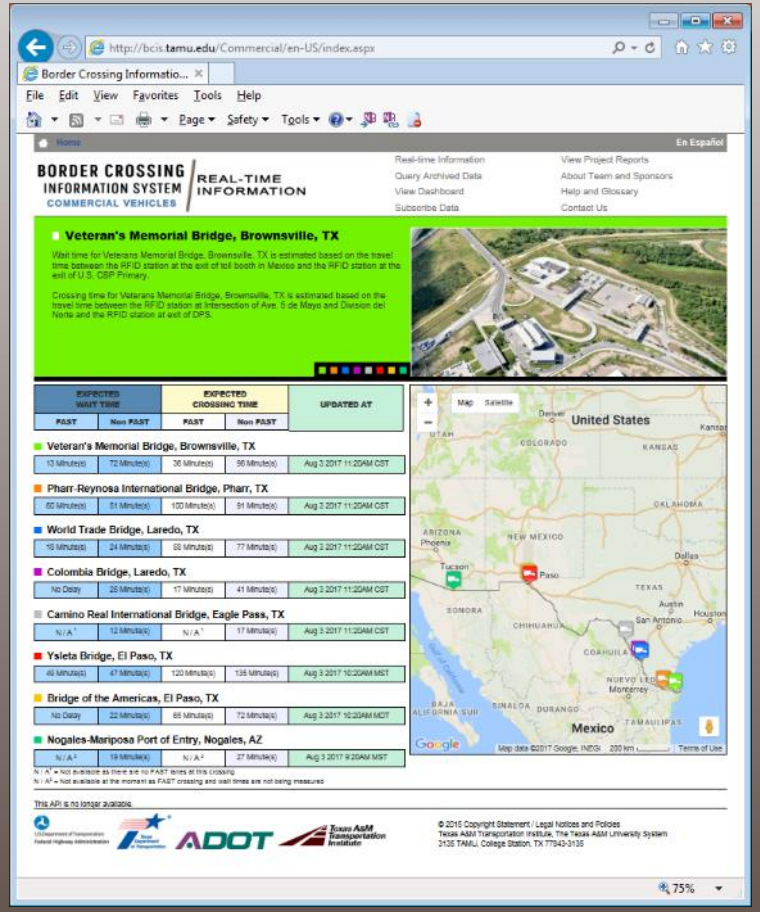
- 14% reduction in truck travel times.
- 10% reduction in unproductive moves/ bobtail trips.
- 20% reduction in terminal wait/turn times.
- 5% reduction in fuel consumption/emissions.

Border Wait Time Systems

Results:

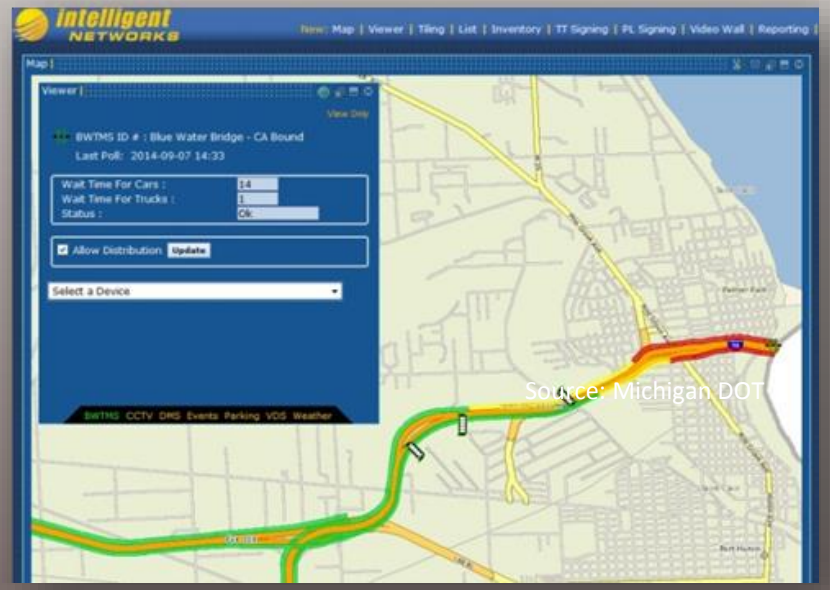
- Provide continuous wait time measures for cars and trucks.
- Increase operational and manpower efficiency.
- Provide real-time information to aid travelers in crossing choices.

Mexico/U.S.



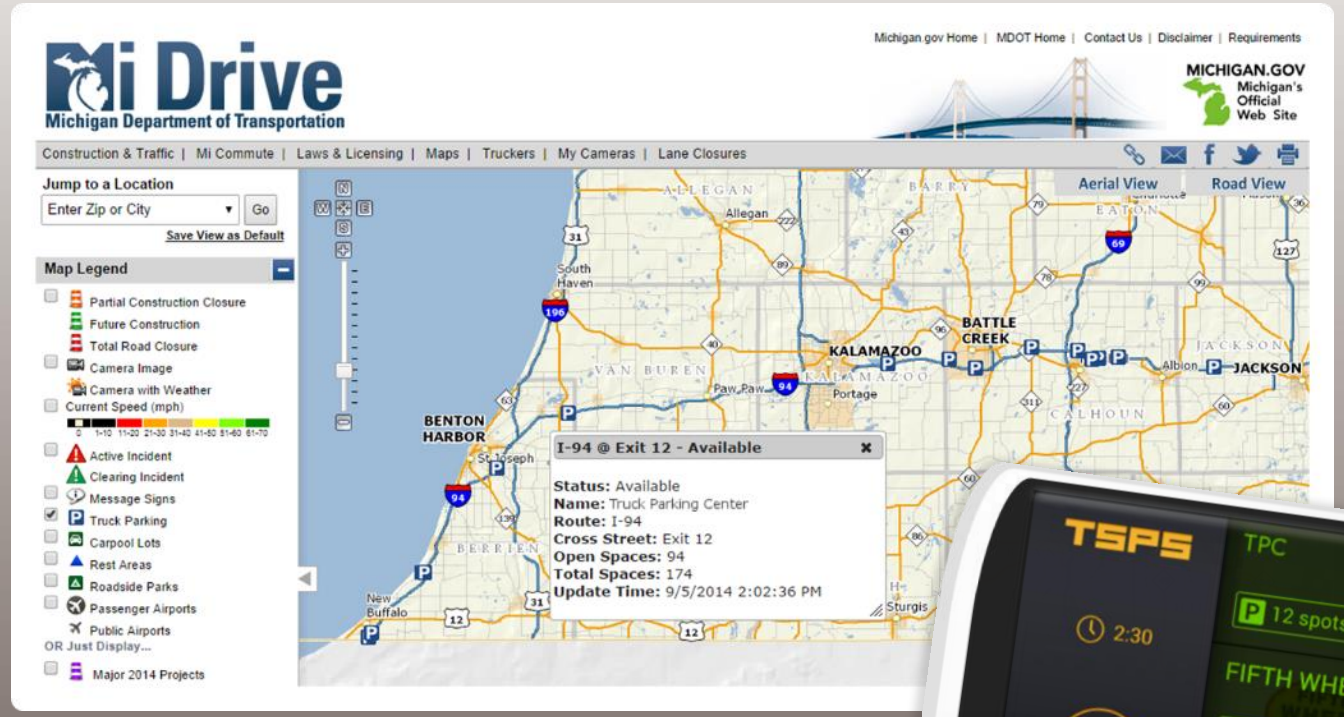
Source: Texas A&M Transportation Institute

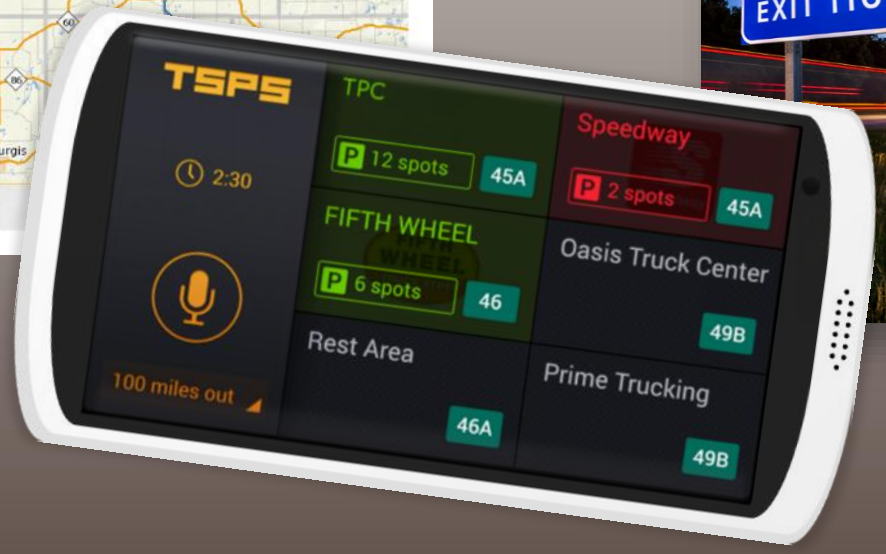
Canada/U.S.



Source: Michigan DOT

Truck Parking Information and Management System (TPIMS)





Source: Michigan DOT

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Automated and Connected Vehicle Opportunity Areas for Freight

Truck Platooning

- Increase efficiency.
- Reduce fuel consumption.

Long-Haul

- Improve safety.
- Minimize driver fatigue.
- Early deployment.

Driver Comfort

- Increase driver retention.
- Address driver shortage.

Urban Freight Delivery

- Automate last-mile of delivery.
- Increase efficiency gains/cost improvements.

Drayage and Intermodal

- Fully automate container movements.
- Optimize intermodal connections.