

Performance Measures Driving State Freight Planning

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Why are the Nation and States Pursuing Performance-Based Freight System Management?

- The Moving Ahead for Progress in the 21st Century (MAP-21) Act is a strong policy framework for performance-based freight transportation systems.
- States, regions and ports that are eager to keep and attract businesses and jobs while meeting residents' demands for healthy communities have adopted similar policy goals.
- However there is and will continue to be tension between managing freight corridors to improve the services we provide to our customers: freight-dependent businesses, freight carriers and residents, and political and organizational resistance to change.
- Freight data programs and models can be powerful tools to support customer-focused results by tracking current corridor-level performance to identify deficiencies, predicting performance outcomes of various investments, and tracking post-investment performance to evaluate progress and apply lessons learned.

What is the Nation Trying to Achieve?

- **MAP-21 freight policy goals (Section 1115) are focused on the national freight network and are to:**
 - Strengthen the contribution of the national freight network to the economic competitiveness of the U.S.
 - Reduce congestion
 - Increase productivity
 - Improve safety, security and resilience
 - Improve the state of good repair
 - Use advanced technology to improve safety and efficiency
 - Incorporate concepts of performance, innovation, competition and accountability into the operation and maintenance of the network
 - Improve economic efficiency
 - Reduce environmental impacts
- **MAP-21 freight movement and economic vitality performance goals (Section 1203) are to:**
 - Improve the national freight network
 - Strengthen the ability of rural communities to access national and international trade markets
 - Support regional economic development

How do States and Regions Translate Policy Goals into Measurable Performance Goals?

- Most state and regional policy goals for freight systems mirror the national goals.
- States that want to keep and attract businesses and jobs while meeting residents' demands for healthy communities will allow customers to set their freight performance goals within their policy framework.
- Freight system customers include:
 - Freight-dependent industry sectors such as manufacturing, agribusiness, retail/wholesale trade, construction, timber/wood products, and transportation,
 - Freight carriers, and
 - Residents.
- To drive performance improvement, freight performance measures must be:
 - Focused on a short list of performance goals that matter most to our customers,
 - Specific,
 - Measurable, therefore limited to areas where data exists for measuring progress,
 - Applied to freight systems we control or strongly influence.

Developing Effective Freight Performance Measures: a National Example

- The American Association of Highway Transportation Professionals (AASHTO) recently developed and recommended that the U.S. Secretary of Transportation adopt two truck freight performance measures for the interstate system, as directed in MAP-21 Section 1203, 150(c)(6):
 1. Annual Hours of Truck Delay (AHTD)—Travel time above the congestion threshold in units of vehicle-hours for Trucks on the Interstate Highway System.
 2. Truck Reliability Index (RI_{80})—The RI is defined as the ratio of the total truck travel time needed to ensure on-time arrival to the agency-determined threshold travel time.
- These were chosen because they:
 - Align with MAP-21 and State freight policy goals,
 - Drive progress towards freight customers' prioritized performance goals,
 - Focus resources on a very short list of key priorities, and
 - Are measurable; states have data to measure them on the Interstate system as required under MAP-21.

Developing Effective Freight Performance Measures: a State Example

The Washington State Department of Transportation (WSDOT) worked with three State Freight Plan Technical Teams to identify and prioritize the state's truck freight performance goals. Over 60 representatives of the state's key freight-dependent industry sectors, carriers, local governments and ports, air quality associations, labor and academic experts served on the Technical Teams.

They determined that six performance goals are strongly aligned with both state and federal freight policies, and are the most important to shippers, freight carriers, and residents in Washington State. These metrics will be used to measure the performance of the state's Truck Freight Economic Corridors.

Reducing:

1. Truck travel time
2. Direct truck operating costs
3. Truck engine emissions

Improving:

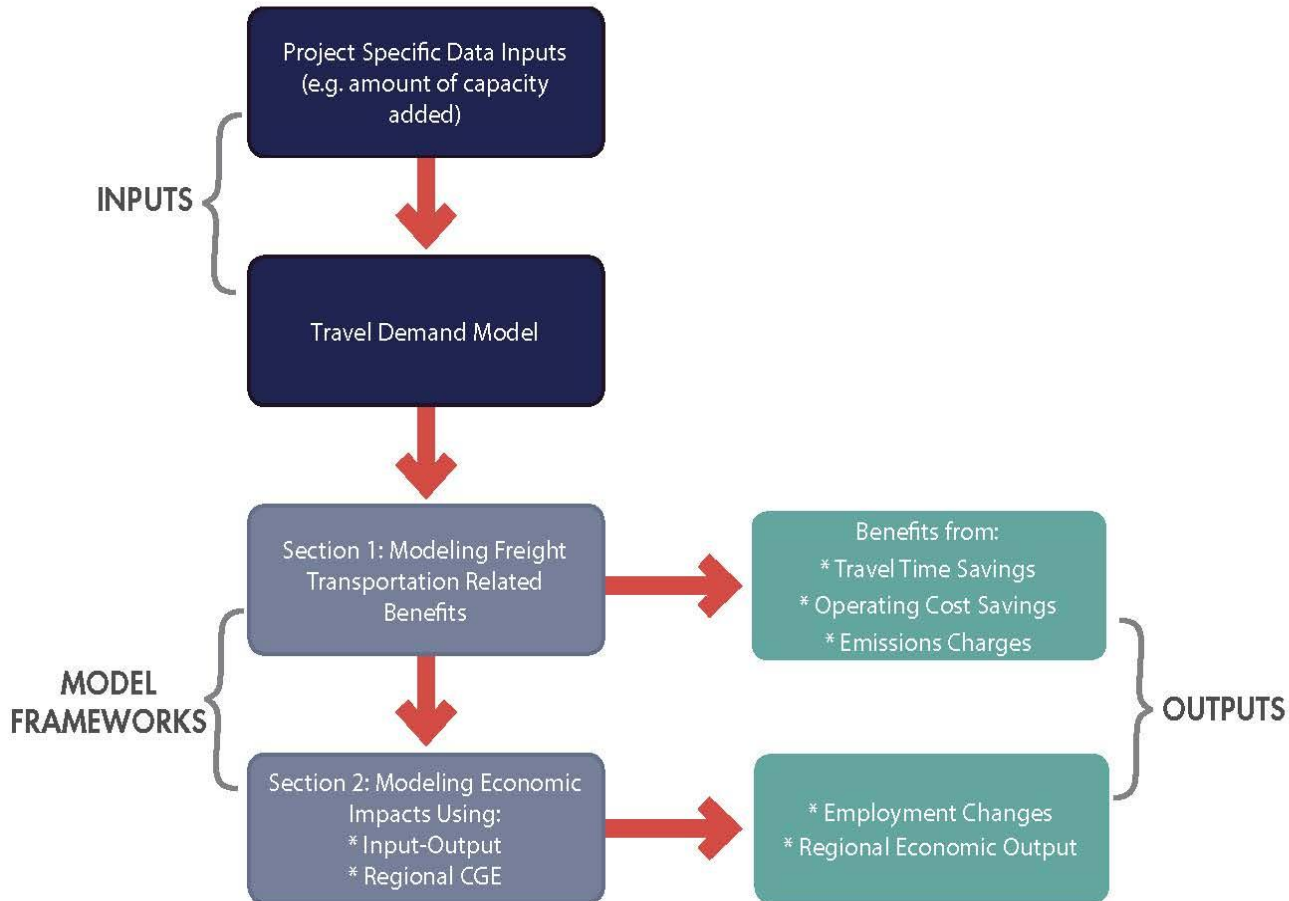
4. Economic output
5. Network resiliency
6. Reliability



Planning Processes to Measure Truck Freight System Performance: A State Example

- **Where will the state apply truck performance measures?** To develop the Washington State Freight Plan, WSDOT worked with Technical Teams, Metropolitan Planning Organizations and Regional Transportation Planning Organizations to develop criteria to be used to define the State Truck, Rail and Waterway Freight Economic Corridors. The criteria include:
 - Volume,
 - Connectivity to freight-intensive land use such as industrial-zoned land, agricultural processing centers, intermodal and military facilities, and
 - Resiliency; near detours for high-volume truck corridors.
- **How will WSDOT evaluate current performance?** WSDOT systematically and quantitatively analyzes the performance of State Truck Freight Economic Corridors highways to locate (1) slow-speed, (2) resiliency, and (3) legal-load truck bottlenecks, (4) severe truck collision, and (5) poor state of repair locations.
- **How can we predict how investments will affect truck freight performance?** WSDOT has developed methodology to model changes in truck travel times, economic impacts and emissions for highway project proposals.

Predicting Performance Improvements: DRAFT WSDOT Truck Freight Highway Benefit Evaluation Methodology



What Must be Done to Advance Freight System Performance Management?

- States and the federal government need better tools to:
 - Analyze the reliability of truck freight corridors from goods origin to destination, as well as for highway segments.
 - Analyze truck slow speed bottlenecks on very short segments such as highway on- and off-ramps.
 - Analyze zone-to-zone truck freight performance in urban areas.
 - Predict investment strategies' impacts on truck freight reliability.
 - Analyze and compare the performance of national and regional intermodal freight corridors to each other in terms that matter most to shippers and the economy: cost and service.
- If we're serious about improving performance the results must be benchmarked and published, and research and funding focused on improving overall corridor performance.

Questions?

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Washington State Freight Mobility Plan website:

<http://www.wsdot.wa.gov/Freight/freightmobilityplan>