

Challenges of Applying Freight Performance Measures



**INSTITUTE FOR TRADE AND
TRANSPORTATION STUDIES**

Outline



- Does Data Matter?
- Scope of Performance Measures
- Implementation Challenges

Why do we even have Federal Data/Analytical programs?

- What are potential markets,
- What infrastructure is needed,
- What are implications from policy decisions,
- What are the emerging trends,
- What resources are necessary,
- Are we collecting all revenues due,
- To satisfy congressional mandates,
- The simple need to know.



Today's National Freight Analytical Climate

- Reauthorization
- Multiagency systems perspective
- Economic Competitiveness
- Environmentalism and livability
- Funding and Returns on Investment
- More data and tools are available
- Performance measures - SMART

The Ideal Database?

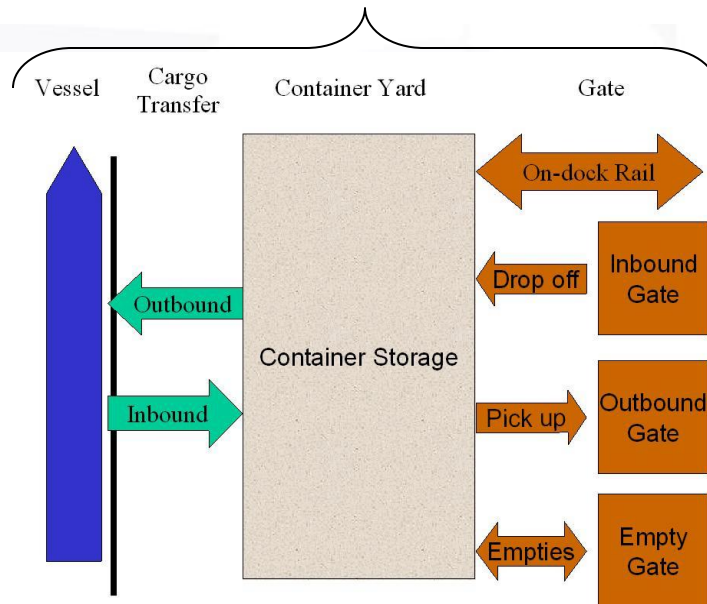
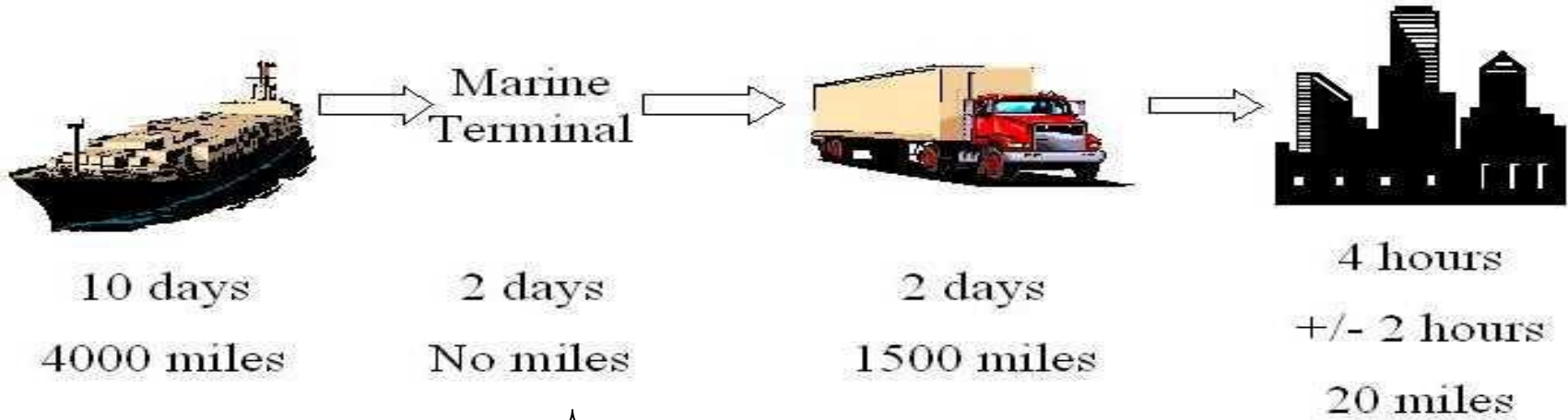
(Based on TRB Reports)

- Time (date) associated with the shipment movement itself;
- Mode (truck, rail, water) and submode;
- Product origin and destination, including international shipments;
- Facility or equipment interchanges, including intermodalism;
- Type of equipment used to move the product;
- Product weight, density (measured in pounds per cubic foot) and value;
- Shipment size;
- Route used for domestic shipments.
- Shipper and receiver relationship (contractual);
- Transportation rates, fees, and costs;
- Time sensitivity (just in time, JIT) or perishability of the product;
- Equipment movements, including repositioning empties and backhauls;
- Other products moving on the same piece of equipment (multiple products from either the same or different shippers);
- The economic multipliers associated with the shipment (tied to other modeling efforts);
- Cargo ownership, including the names and addresses of the shipper, receiver, and carriage provider;
- Tax and fuel payments tied to shipment;
- The relationship between goods movement to the economy and jobs;
- Timely data collection and reporting of the shipment event to others (the information is reported fairly quickly after the shipment occurred);
- Identifying the actual product that was shipped?

Some Basic Research and Data Gaps

- Economic Multipliers and Jobs
- Data and planning guidelines that are cross agency and modally transparent
- How do users respond to extreme events
- Performance Measures to assist in project selection

Where is the priority?



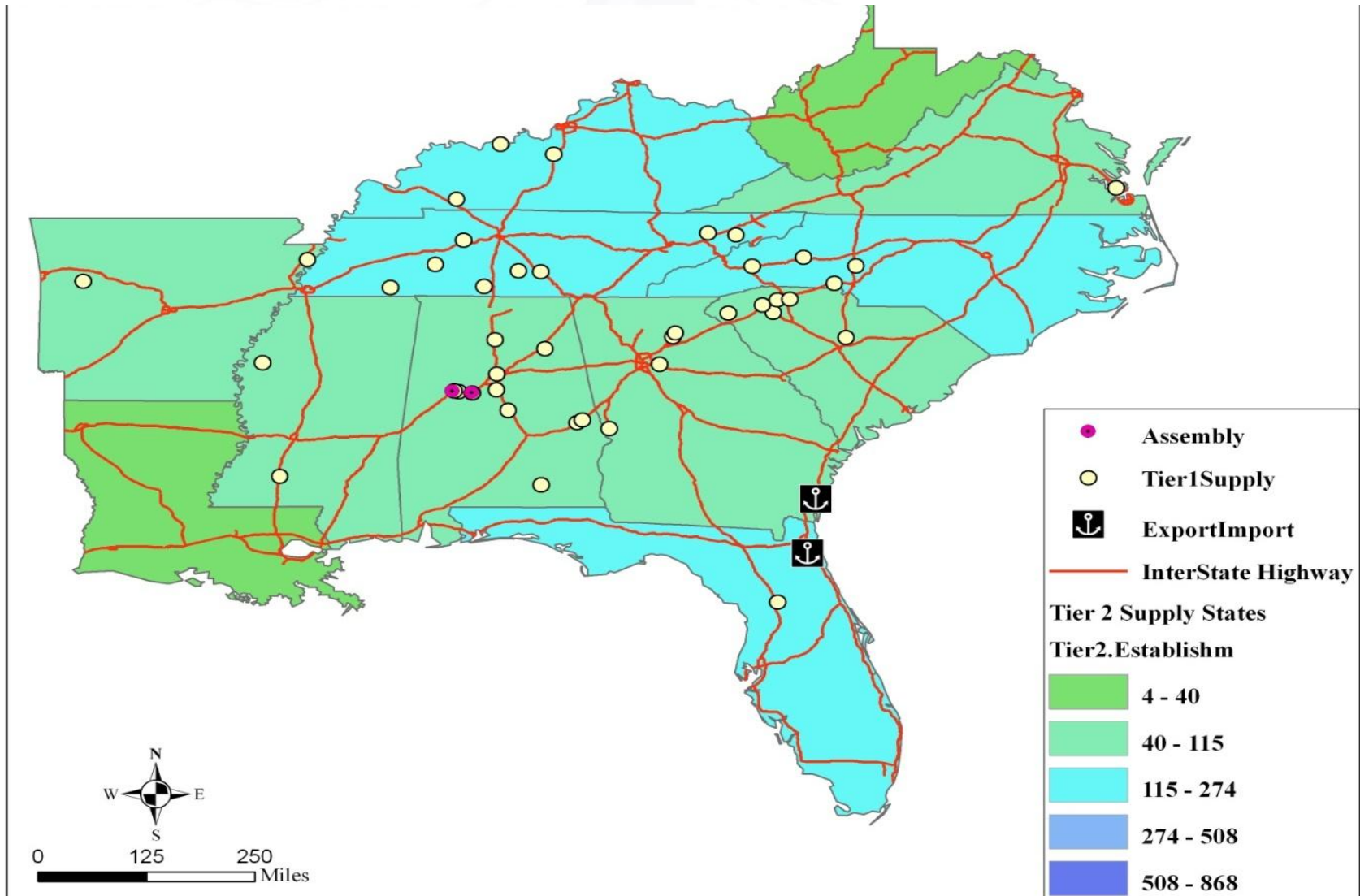
What Performance Measures Are Needed for Ports?

- Average ship turn-round time
- Average tonnage per vessel day
- Average vessel time at berth
- Average vessel time outside
- Average waiting (idle) time
- Average Waiting
- Tons per gang hour Rate
- TEUs per crane (hook)
- Dwell time
- Berth throughput
- Throughput per linear meter
- Berth occupancy rate (%)
- Berth utilization rate (%)
- Income (expenditure) per GRT (or NRT) of shipping
- Operating surplus per ton of cargo handled
- Rate of return on turnover

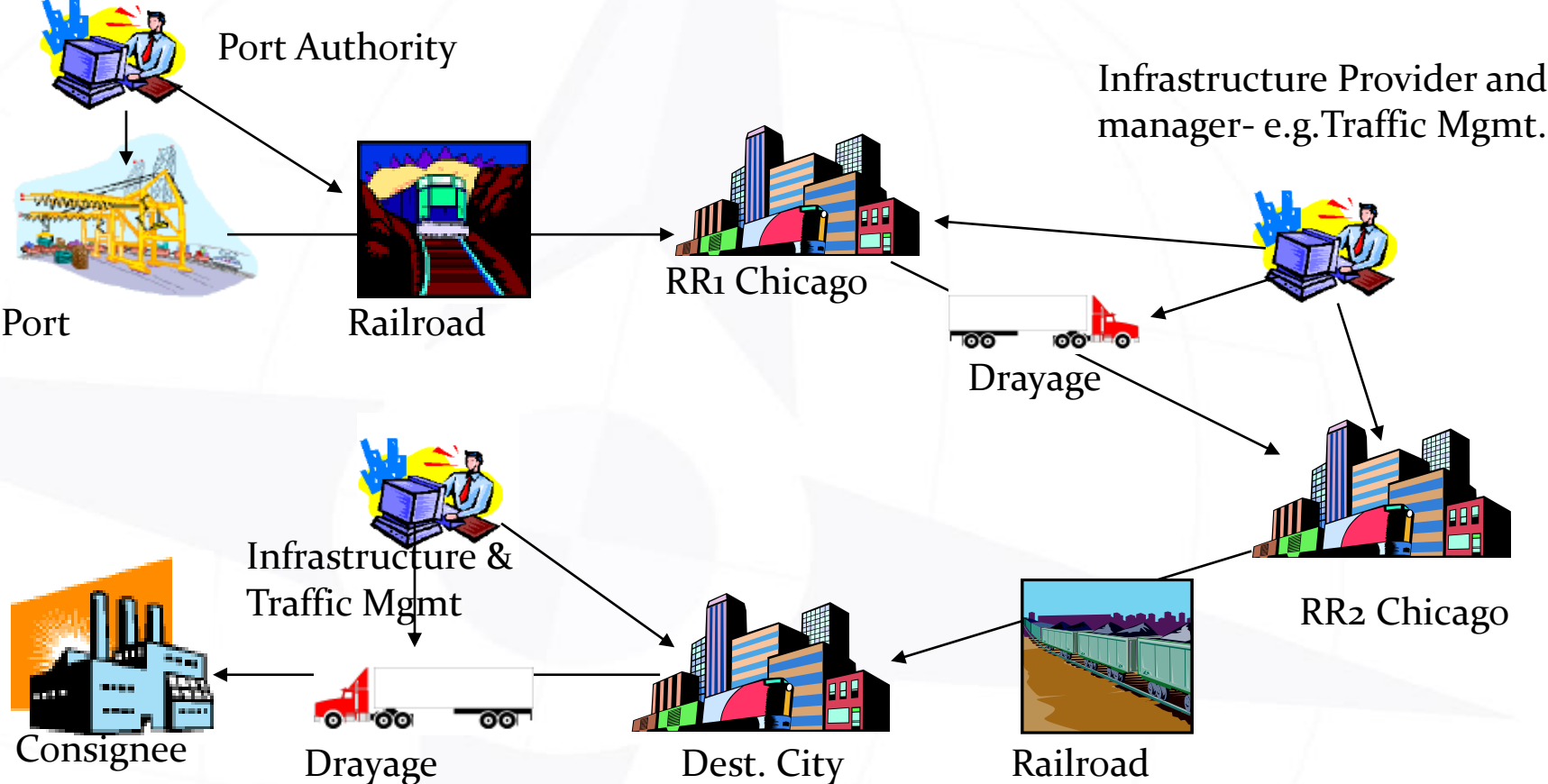
What Data are Needed for Regional Studies

- Modal Segment data (traffic, condition, LOS)
- Costs by mode and use
- Origin and Destinations
- Elasticities
- Equipment types and Costs
- Confidentially Clauses
- Maintenance estimates
- Total Traffic Counts
- Redundancy Estimates

Mercedes Benz Supply Chains for Alabama



Can You Improve What You Can't Describe?



Concerns Regarding Developing Performance Measurement Tools

“Grabbing the Data”

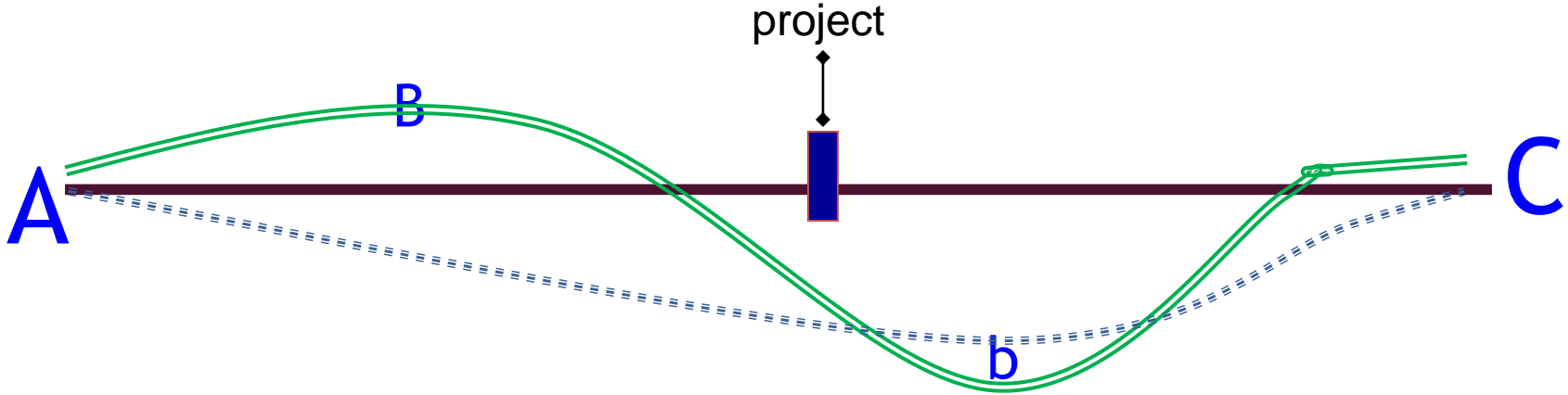
- Collection Issues
- Potential for system gaming
- Sacrifice accuracy for timeliness

“Sharing the Information”

- Confidentiality and competitive issues
- Equity versus efficiency issues in public debate
- Comparing to current program activities?
- The myth of one number



Example - Investment In Corridor A-C



Corridors will be more important in the future

- Panama Canal Expansion
- Intermodal/ inland ports developments
- Emphasis on Economic Growth Poles/Clusters
- Emergence of National Logistics Hubs
- Changing Urban and Rural demographics
- Carbon footprint and Sustainability
- Transparency and Security
- Incremental opportunities exist

Final Thoughts?

- What is the Federal/State/Local Role?
- Are we providing accurate information to satisfy or anticipate future requirements?
- Do we have too much information and needs for institutions to handle now
- Can we tell the story?
- Can we make others confident in telling the same story?
- Will people still make “bad” decisions?